Master Thesis

Analysis of the natural resource curse in Colombia within the energy transition and the role of the private sector: the case study of La Guajira

Faculty of Social Science – Department of Media and Social Science

Study program: Master in Energy, Environment and Society

Author: Catalina Durán Valbuena

Candidate number: 268070

Supervisor: Brigt Dale

Spring semester 2023

Abstract

This study sought to analyse the natural resource curse phenomena within the energy transition and the role of the private sector in Colombia, using La Guajira as a case study to assess whether the recent boom in renewable energy investments can enable sustainable growth, or if the way these new investments are being done mimics an extractivism approach. The study was carried out using a framework for risk assessment proposed by Leonard et al. (2022), supported by an extensive literature review and 15 interviews with different actors from the private, public, social and academic sectors. The thesis found that an extractivist modus operandi is still present in Colombia and there is a high risk that specific symptoms of resource curse arising in La Guajira. The study specifically addressed the role of the private sector, and, through an empirical analysis, it was found that companies can play an active and relevant role in turning these risks into opportunities to support social development and justice. It was also identified that the critical path for this is the gain of trust with the local communities by promoting innovation, transparency, traceability and accountability.

1. Introduction

Energy and energy transition are hot topics on the international agenda. Both the Paris Agreement and the United Nations' Sustainable Development Goals (SDGs) call for a reduction of greenhouse gas emissions and the decarbonisation of the energy sector. Colombian energy production has been based on hydropower and fossil fuels such as coal, oil and gas; however, in the past five years, we have seen an increase in investments in bioenergy, wind, and solar energy production (Ritchie et al., 2022).

The recent focus on this subject in the country and the increase in private investment in renewable energy projects raises questions about how these investments are being done, and whether they promote environmental security and social development or whether they follow a pattern of extractivism[1] similar to that of oil, gas and coal projects in Colombia. These questions have risen specially in the northern region of La Guajira, where most of the wind energy projects are being developed today. La Guajira is therefore chosen as the region for analysis in this thesis.

1.1. Problem statement

In Colombia, the decision-making process in energy planning is largely oriented to exploration, exploitation, distribution, and consumption and there is less attention on the social and environmental relationships that are deeply immersed. Colombia's "energy planning and its institutional framework has been the advancement and maximization of the exploitation of energy resources for export purposes, instead of providing a guide to reorganise the system towards the reduction of energy consumption, the progressive replacement of non-renewable resources in favour of renewable sources, or energy justice" (Martínez & Castillo, 2019). In that sense, the literature review and reading of media articles conducted for this thesis suggest that these investments are following an 'extractivism' model similar to the one used in the country for non-renewable businesses.

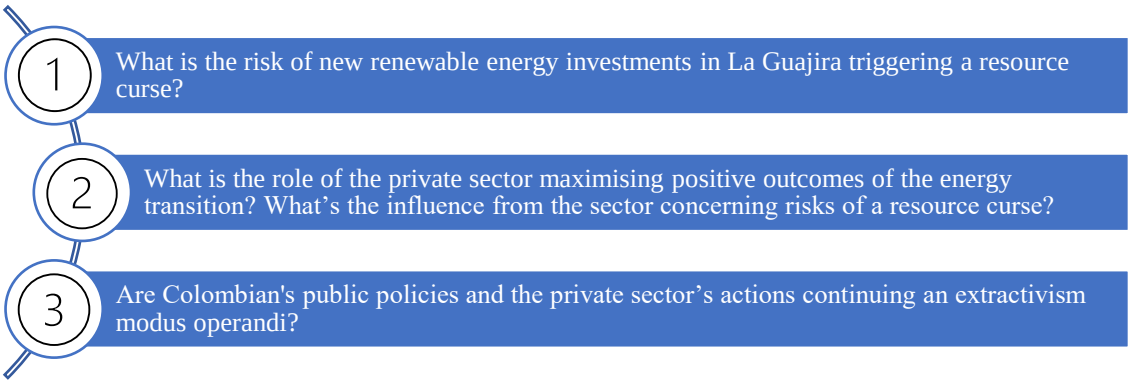
The purpose of this study will be to analyse the natural resource curse phenomena in Colombia in the context of the energy transition, and the role of the private sector. The investigation will be guided by a single case study: La Guajira, a Colombian region being the epicentre for wind and solar energy generation investments. The end objective will be to assess whether this recent boom in renewable energy investments can enable sustainable growth, with social justice and clean energy, or if the way these new investments are being made mimics an extractivism approach and has the risk of triggering or further strengthening a resource curse.

[1] Extractivism (*extractivismo*) is a concept that emerged around the late 1900s to describe resource appropriation in Latin America, specifically described as the removal of large quantities of raw or natural materials to be exported with minimal processing (Acosta, 2013).

It is important to note that the thesis seeks to be constructive in the analysis of the role of the private sector rather than highlighting the mistakes and negative impacts it can have in local and vulnerable areas. I am aware of the difficulties of avoiding entering into a scrutiny of the faults the companies make in local territories, but this study will seek to analyse and discuss the role it can have in maximising positive outcomes of the energy transition.

1.2. Research questions

Based on the theme of the study, the following research questions will be scrutinised:



The study focuses on the role of the private sector and will discuss the mechanisms, tools and mindset that actors in the sector could implement to further social development and avoid the consequences of the resource curse. It should therefore be relevant for companies and business associations involved in the green transition, but also governments and social organisations, and be used to understand the current opportunities of social development, the risks and how to better communicate and work together to create a holistic strategy and correct the mistakes that could lead to a resource curse in La Guajira and in the country.

1.3. Case study selection

Colombia is a Latin American country, the fourth-largest economy in the region and one of the most biodiverse countries in the world. As such, Colombia is considered a resource-rich country, represented by the strong dependency of the economy on natural resources, most of which is exported as commodities (World Back, 2021). Colombia's economy is based mainly on the exportation of crude oil, coal, coffee, emeralds, gold and cut flowers, being "the world's fourth-largest coal exporter, the second biggest cut flower exporter, and the third biggest coffee exporter" (IHS Markit, 2018). The country is also blessed with a geography and topography that enables production of renewable energy. The main source of renewable energy is water, as many rivers are used for hydropower, but continuous sunlight during the year makes solar power a potent addition, and La Guajira with constant strong winds

provides an opportunity also for wind power. Hence, Colombia sets an interesting scenario to analyse the resource curse concept within the energy transition.

Furthermore, as it will be presented in this study, La Guajira is one of the poorest regions in Colombia, with low energy and public services coverage. At the same time, the region is the epicentre of renewable energy generation in Colombia, especially for wind energy. Therefore, the region poses a good scenario to analyse: i) the energy transition in Colombia, ii) the concept of the subnational resource curse, and iii) the role of the private sector. For reference on the location of this region, figure 1 shows the Colombian map highlighting La Guajira.

Figure 1 La Guajira

1.4. Structure of the study

The investigation is divided into seven sections, including this introduction. Section 2 presents the theoretical literature review where the concept of "Resource curse" is introduced and framed among other relevant concepts within the scope of this study such as social development, energy transition and extractivism. This section also includes a brief overview of the Colombian and La Guajira context associated with such concepts and the role of the private sector. In section 3 the analytical framework that is used to analyse the finding of the investigation is presented. The analysis will be based on the resource curse risk assessment framework proposed by Alycia Leonard et al. (2022), including additional analysis of the role of the private sector in facilitating social development. The analysis will also include an assessment of a potential extractivism model, which can intensify some of the symptoms of the resource curse.

The fourth section presents the methodology, including the research methods, data collection process and limitations of the study. The next section presents the case study, which contextualised the study with the general description of the Colombian public stakeholders and regulatory framework and the background information regarding La Guajira, its history with extractive industries and main stakeholders in the development of renewable energy projects. Then, the sixth section present the

analysis and discussion, guided by the research questions and the analytical framework. It is important to note that the analysis of the findings is complemented with a risk assessment which includes a personal assessment based on information gathered from secondary sources and interviews. This section concludes with the discussion of the findings, aiming to answer the research questions. Finally, the paper concludes with the main findings and reflections.

2. Theoretical literature review

This section presents relevant literature on the concepts considered for this study. It starts by introducing the concept of the resource curse and describing the approach for this investigation. It continues with the concept of the resource curse within the renewable energy and energy transition. The third sub-section introduces the concept of "extractivism", and the fourth presents the definition of social development and the indicators to be used for this study. The fifth sub-section continues with the role of the private sector within the resource curse and social development. Finally, the sixth sub-section concludes with a brief assessment of the available literature.

2.1. Resource curse

The resource curse is used to refer to the phenomenon that countries with natural resource abundance, mainly non-renewables such as oil, gas and mining products, have low economic growth and a high risk of conflict in comparison to others (Smith, 2015). This concept is also known as the paradox of plenty, and "encompasses the significant social, economic and political challenges that are unique to countries rich in oil, gas and minerals" (NRGI Reader, 2015). The concept is better known from the early 1990's when Richard Auty discussed the evidence that the abundance of natural resources can distort the economy, translating the benefits into a curse (Auty, 1993).

Initially, the resource curse concept focused on its relationship with the economic performance of the countries; however, more recently, scholars have analysed broader implications of the resource curse. For example, the social and political implications of resource-rich countries (Biresselioglu et al., 2019) and the subnational resource curse, defined as the "set of unintended consequences that originate from resource extraction activity and trade that can end up negatively affecting the development of regions hosting the resources extraction industry" (Fleming & Measham, 2013, p. 7). Given the case study of La Guajira, this study focuses on the analysis of the social implications of a subnational resource curse, focusing on the social development and well-being of the population, and will not address an analysis of economic growth as a region.

On the social side, authors connect the concept of the resource curse "with the capacity of institutions to translate benefits from extractive activities into local sustainable development" (Carrillo Hoyos, 2019, p. 1134). According to the United Nations (n.d.), sustainable development relates to the "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." For it to be achieved, the harmonisation of economic growth, social inclusion and environmental protection is needed, and "eradicating poverty in all its forms and dimensions is an indispensable requirement" (United Nations, n.d.).

In line with this, Martín Ardanaz and Nuria Tolsá Caballero (2016) found that one relevant issue in subnational governments is the efficiency and levels of corruption when the revenue, like royalties from

non-renewables, increase. They highlighted that "the relationship between revenue windfalls and public spending efficiency is non-monotonic" (Ardanaz & Tolsá Caballero, 2016, p. 3). This results in having less efficient public investment in social development in areas with high revenues from royalties than it does with less dependency on this.

In terms of how vulnerable Colombia is to the resource curse, Biresselioglu et al. (2019) carried out a multidimensional assessment to measure the vulnerability to fall into the resource curse in selected resource-rich countries, analysing different factors such as economic, government, social and political issues. They found that several of the Latin American countries that were analysed, such as Colombia, Mexico, Peru, Brazil, Ecuador and Bolivia, have a high vulnerability to falling into the resource curse, Colombia being the most vulnerable. Biresselioglu et al. (2019) explained that:

> "*These countries suffer serious economic and social dilemmas since they have failed to utilise their resources adequately due to lack of proper economic planning and development, inadequate resource management, lack of industrial development and diversification policies. These countries have also fallen behind in promoting R&D*[2] *activities related to energy sector infrastructure, which has resulted in dependency on Western countries, Russia and China*" (p. 97).

Furthermore, Destek et al. (2022) noticed that Colombia's average resource dependence is "at levels that do not damage economic growth but do harm to sustainable development" (p. 7). This is mainly because it "bases its activities on resource wealth in economically sound areas while ignoring environmental harm" (Destek et al., 2022, p. 7), indicating that there is a lack of a concrete natural resource policy.

2.2. Resource curse within renewable energy sources and energy transition

Empirical findings suggest that not all resources are cursed. While an increase in oil prices seems to be related to the intensification of conflict in municipalities with oil reserves and pipelines in Colombia, the effect is the opposite when it comes to coffee prices (Dube & Vargas, 2006). This means that the effect of natural resource dependence concerning a resource curse effect is an empirical question, and not at all a given. With this in mind, the thesis will in the following look at whether renewable energy projects trigger a resource curse effect in La Guajira or if they can be a force for just social development in the region.

Recent evidence shows that renewable energy projects can trigger a resource curse; however, André Månsson (2015) does highlight the differences between non-renewable and renewable sources for energy generation. He highlighted two differences and two similarities associated with the vulnerability to conflict that the exploitation or extraction of natural resources can bring to a territory. First, renewable

[2] Research and Development.

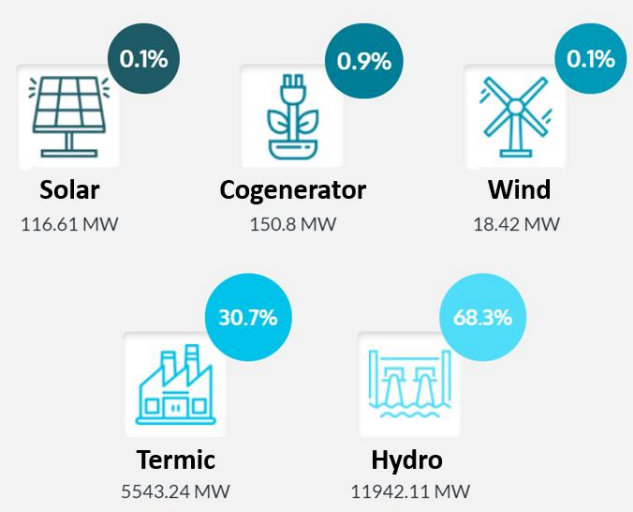
resources are harder to control and for such reason, the systems depend more on exploiting rather than extracting stocks. This makes the calculation of profits harder and unexpected due to changes in the weather. Second, resources tend to be more geographically distributed, lowering the "economic and geopolitical incentives for states to engage in conflicts to secure or control" the resources (Månsson, 2015, p. 1).

However, like non-renewables, renewables can create competition for land use, increasing the risk of local conflict and the reduction of traditionally protected spaces. Furthermore, Månsson (2015) also discussed the similarities of renewable electricity systems, such as hydro, wind and solar energy, with fossil-based systems, mentioning that "large-scale systems, can be vulnerable, exposed to hostile attacks and thereby used as a means in a conflict" (p. 6). Likewise, Kathleen J. Hancock and Benjamin Sovacool (2018) also found that resource curse symptoms associated with hydropower normally manifest in large hydroelectric projects, suggesting that large energy projects, rather than smaller ones, are more prone to be vulnerable to the resource curse.

In terms of energy transition, it refers to the "pathway toward transformation of the global energy sector from fossil-based to zero-carbon" (International Renewable Energy Agency, 2022). In other words, it refers to the decarbonisation of the energy sector, moving, in the case of Colombia, from oil, gas and coal to small hydropower, wind and solar as the main sources of energy. For this thesis, the case study of La Guajira, a region with high investments both in coal, wind and solar energy, is assessed. It is important to note that for the purpose of this study, I refer to energy transition as the introduction of Renewable Energy (abbr. RE) sources into the energy generation matrix rather than the decommission of coal energy projects or energy efficiency strategies.

Although the Colombian electricity generation matrix is one of the cleanest, ranking sixth in the world with 68% of the installed capacity coming from renewable sources, mainly hydropower (Acolgen, 2023), "the Colombian government only classifies small hydropower plants, generating 10MW or less, as renewable energy" (Grimes, 2021, p. 25), as a consequence of the environmental and social costs that large hydropower projects can produce. In this context, several hydropower projects are not considered as renewable; that said, "economic costs still favour large-scale hydro projects" (Grimes, 2021, p. 35). Additionally, Colombia's general energy mix and consumption is heavily dominated by fossil fuels, therefore, the introduction of RE in the generation mix is relevant for the energy transition in Colombia.

Figure 2 Energy consumption mix in Colombia, taken from Acolgen (2023) and self-translated. Annex 1. presents all original figures without the translation for reference of the changes.



2.3. Extractivism

According to Gudynas (2015) and Acosta (2016), extractivism refers to the over-exploitation and/or over-extraction of raw materials (such as oil, gas, coal, other minerals, agriculture products or activities associated with forestry and tourism) to export to richer countries to produce secondary products and supply to the manufacturing systems. Gudynas (2015) explains that, to gain control of these natural resources, there is a necessary step associated with conflict, more specifically, with the violation of human and labour rights.

Furthermore, according to Natacha Bruna (2022), extractivism relates to the approach to extract natural resources, and suggests that the "resource curse" is not necessarily related to the abundance but rather to the terms and conditions in which the resources are extracted. Making an especial mention on the characteristic of uneven power, uneven access to information and uneven creation of wealth and distribution.

Viviana Martínez and O.L. Castillo (2019) studied Colombia's energy transitions with the objective of "highlighting the link that exists between the Colombian extractivsm -as the model of energy exploitation and appropriation- and the social and political relations involved in this dynamic" (p. 1133). The main relevant insight identified for the study is that it appears to be a lack of connection between economic growth, interpreted as international investment in the country, and socio-ecological matters, showing that the country has a "narrow view on energy as an exportable resource" (Martínez & Castillo, 2019, p. 1140). Furthermore, according to Andrea Cardoso, "new renewable development is simply a 'corporate transition' seeking to continue what the Mining Code had been doing… the 'green extractivism' is just another way in which natural resources are taken from a territory without benefiting local communities nor providing much state benefits" (López Morales, 2022, as cited in Buchsbaum, 2022).

2.4. Social development

As mentioned before, this investigation will focus on the social aspect of the resource curse. Social development is a broad concept used to represent the degree of the well-being of people, in terms of physical, social, mental, and psychological aspects (Jacobs & Asokan, 1999). For this study, I will use multidimensional poverty,[3] education, unsatisfied basic needs, and access to water and energy to represent the state of social development in La Guajira, topics that are addressed specifically in different sections of this study. Regarding the social aspect of the energy transition and the resource curse, there are several points of views addressing the issue.

First, regarding why local communities usually do not benefit from the "blessing" of being resource-rich, Emma Gilberthorpe and Elissaios Papyrakis (2015) mentioned that "unfamiliarity combined with incompatibility can lead to a lack of engagement with the market structures that ultimately engender economic growth, and are thus likely to constrain the ability of local communities to transform their proximity to mineral extraction into a 'blessing'" (p. 386). However, these unfamiliarities and incompatibilities in the understanding of technical aspects, ways of communication, management of resources, motivations, and priorities can also be evident in the RE industry.

Furthermore, Jorge Heras and Mariano Martín (2020) studied that there is little in the energy transition literature addressing the concept of social equity in introducing and developing the technologies needed for such transition. During the study, Heras and Martín (2020) mentioned that normally the selection of the regions to install the facilities for the generation, production, and storage of energy is based on economic terms looking to maximise the use of wind and solar sources; however, it should also seek to create jobs for locals and wealth depending on the economy of the regions (Heras & Martín, 2020).

Third, Miller et al. (2013) also addressed the social issue in the energy transition and the big corporations managing this. As explained by them, the social aspect of the energy transition is less analysed in comparison to the study of the efficiency of the energy sources, technologies and regulatory framework. However, since societies are built around energy systems, production and consumption, the energy transition will undoubtedly bring a broader social change too (Miller et al., 2013).

Regarding the social factor of the energy transition in Colombia, Oliver Haubensak (2011) points out that REs are relevant to the plan to reach more remote and rural communities in Colombia that are not efficiently met due to the costs and geographical barriers to reach them. "The Colombian government's own objective targeting 30% of energy flowing in 'remote areas' to be coming from renewables by 2020 while their corresponding objective is only 6.5% for the nation as a whole" (Grimes, 2021, p. 40).

[3] Multidimensional poverty refers to a poverty index that takes into account monetary poverty, education, and basic infrastructure services.

2.5. Role of the private sector within the concept of the resource curse and social development

The literature review suggests that the role of the private sector is understudied concerning how it performs its activities and engages with local social policies to maximise positive outcomes or increase the likelihood of falling into a resource curse. The literature review is clear in suggesting that there is a mix of causes to fall into the resource curse, mainly associated with the government's role in preventing or facilitating it; however, there are limited studies on the role of the private sector. Therefore, this study focuses on the role of the private sector in maximising positive outcomes of the energy transition and mitigating the risks of the resource curse.

That said, it has been argued that it is the industry itself, and not the fact of being rich in natural resources, that facilitates the symptoms of the natural resource curse. Generally, Ivar Kolstad (2009) explained that there are two main ways of analysing the resource curse and the institutions involved: the first one studying "the selection of entrepreneurs into rent-seeking versus productive activities" (p. 10) and the second analysing "the use of patronage by politicians seeking re-election" (p. 10). The first one, as described by Kolstad (2009), highlights the role of the private sector institutions as governors of the profitability of productive enterprises. Thus, depending on whether the "institutions" have high quiality (are productive) or low quality (are rent-seekers), the system can fall or avoid the resource curse. By testing the role of public and private institutions, Kolstad concluded that:

> "*Only private sector institutions matter empirically. Policy makers and donors in poor resource-rich institutions should therefore prioritize the development of institutions governing the private sector*" (Kolstad, 2009, p. 4).

It is also important to establish why the private sector has an interest in avoiding the resource curse. It might be said that private businesses would have a limited interest in avoiding it with non-renewable resources, as once the non-renewable resource is exhausted and profit is dwindling the businesses can cut their losses and leave. However, as mentioned before, with RE the financial up-side are theoretically unlimited. The private sector therefore would have a strong interest in keeping their operations not just financially sustainable, but also socially and environmentally sustainable.

Here it is important to highlight the concept of Shared Value created by Porter and Kramer (2011) referring to the idea that, nowadays, companies are expected to avoid harm to social and environmental aspects and go beyond to support the development of society. Shared value "involves creating economic value in a way that also creates value for society by addressing its needs and challenges. Businesses must reconnect company success with social progress" (p.4); concept that differ from social responsibility, philanthropy, or even sustainability, but that seeks to achieve a new way of economic success by sharing and growing in hand with society (Porter & Kramer, 2011). From a pragmatical point of view, Porter and Kramer (2011) mentioned that this is relevant for all kinds of private

companies since societal needs and social harms can create internal costs for the operation of businesses, "and addressing societal harms and constraints does not necessarily raise costs for firms, because they can innovate through using new technologies, operating methods, and management approaches—and as a result, increase their productivity and expand their markets" (p. 5).

In this regard, other academics have stressed the importance of the "social-licence-to-operate", referring to the necessary trust, transparency and action taken by private companies to meet local concerns and expectations as a way to avoid negative community impacts that can lead to negative corporate reputation, loss of operational time and profits and jeopardise future investment opportunities (Wilson, 2016). In line with this, Vega-Araújo and Heffron (2022) highlighted that "the failure to understand and engage with the social structure and vision of the various individuals in the network that form the "community" is a common issue in gaining the social-license-to-operate" (p. 7).

Furthermore, Eitan et al. (2019) analysed the community–private sector partnerships in the RE industry, referring to these partnerships as those that are created with little involvement of the government, bringing the local communities and the private sector together to shape, develop and operate an energy project. They highlighted that "local community–private sector partnerships have been identified as key drivers of renewable energy transition" (Eitan et al., 2019, p. 95) and not only provide economic, regulatory and technical advantages but are also better positioned to answer to social and local acceptance challenges that arise especially when large projects are developed in rural areas where communities are normally marginalised. In their analysis, Eitan et al. (2019) also presented the importance of land-ownership in shaping this community–private sector partnerships because, depending on the way these are shaped, the dilemma of social justice and energy justice can arise.

In terms of Colombia's energy sector, it is highly dependent on international investment. Private companies, especially those that are foreign, play a relevant role in the country's energy planning. There is empirical evidence that shows that energy policies have been mapped to encourage more investment into the country and the sector. Furthermore, Ana María Rosso-Cerón and Viatcheslav Kafarov (2015) identified that one of the main barriers to investing in RE sources is the high capital needed due to the lack of industry to manufacture RE technologies in Colombia, bringing high input costs to importations, which translate on the need for more international investment. Aside from the issues that this dependency brings, Magwyer Grimes (2021) positively emphasises that the private energy sector in Colombia is highly efficient and, therefore, the sector in general is highly efficient.

Finally, and associated with the dependency that Colombia has on foreign companies, Magwyer Grimes (2021) stresses that these companies normally seek to extract as much as possible, earning as much as possible, without regard for the value chain or territory from which they extract their wealth. "Renewables hold the opportunity for Colombian energy companies to be domestically or even locally-owned which halts the degradation of the land and raises local incomes" (Grimes, 2021, p. 40),

translating to a more fair social development. However, and as presented below, this will depend on the local context and development of the territoires and communities.

2.6. Insights from the theoretical literature review

The literature shows that there is an association between resource curse, extractivism, energy transition, social development, and the way the private sector operates; however, there appears to be a gap in studying the interrelations between these. Because of this, I propose a study that connects the concepts of the resource curse and extractivism, focusing on the social dimension of these within the boom of new RE investments in Colombia, with the idea of analysing whether the private sector can play a positive role in maximising positive outcomes for the local communities of La Guajira.

3. Analytical framework

This section contains the analytical framework that is used in this study to present and analyse the findings: The resource curse in renewable energy: A framework for risk assessment proposed by Leonard et al. (2022). According to Chataigner (2017), "analysis frameworks help researchers to approach a problem with logic and in a systematic way, and to set a clear driving force behind their lines of inquiries" (p. 6). I chose a framework for risk assessment in RE since the approach it takes will facilitate the analysis of several topics associated with social development and the role of the private sector, creating a clear path that will allow me to identify risks of triggering a resource curse and evidence of an extractivims modus operandi.

3.1. Resource curse in renewable energy: A framework for risk assessment

This specific framework will help answer the first question of the problem statement: i) What is the risk of new renewable energy investments in La Guajira triggering a resource curse?

Leonard et al. (2022) based their risk assessment on 18 symptoms that can be identified in RE projects and assessed by the likelihood and the potential magnitude of these arising in the specific context. For this, they explain that the first step is to analyse whether these symptoms can arise based on the general context, and then assess the likelihood and magnitude of each identified symptom based on the specific characteristics of each project. Figure 3, taken from Leonard et al. (2022), presents a summary of the 18 symptoms and factors impacting likelihood and magnitude of the resource curse within the energy transition. Annex 2. presents a more detailed description of these symptoms.

Figure 3 Summary of the resource curse symptoms and potential negative risks - Taken from Leonard et al. (2022)

Resource curse symptom	RE-related negative risks
Crime	Boom-town crime, equipment theft.
Damage to local flora, fauna, and landscape	Habitat damage, strain on scarce resources (e.g. water).
Diversion of investments away from human capital	Under-skilled workforce, poor economic diversity, low education.
Diversion of land	Food insecurity
Diversion of talent from other sectors	Internal brain-drain.
Economic dependence	Dependence, influence, investment does not benefit population.
Expatriates dominating high-income/skilled jobs	Income inequality.
External conflict	Withholding RE as geopolitical weapon, hard to sanction RE exporters.
Gender inequality	Women discouraged from entering industrial RE work.
Income inequality	Disparity between RE owners and waged workers.
Income volatility and trade imbalance	Abrupt cuts to social programmes, exploitation.
Internal conflict	Land conflicts, political and civil unrest.
Land grabs	Rural land grabs for RE farms, displacement of poor inhabitants.
Loss of competitiveness of other export sectors	Exports more expensive, imports cheaper, local industry displaced.
Material dependence	Extortion, difficult to sanction provider country.
Reduced economic diversity	Low-diversity economy post-boom.
Technological or expertise dependence	Extortion, reduced autonomy, local content policies exacerbate other symptoms.
Weakening of institutions	Reduced investment, lowered democracy.

As assessed by the authors of the framework, the general context of the regions can be analysed through open-source research to identify which symptoms can arise in the regions; however, information related to the likelihood and magnitude of the of each of the symptoms may be difficult to collect since specific data for this is not likely found on open sources, other than limited media and blogs articles. Therefore,

they suggest conducting personal interviews with well-positioned individuals from different backgrounds such as from local communities, NGOs, private companies working in the area, industry experts and local and national governments.

This framework was chosen because it allows flexibility in adapting the analysis to a sub-national level to conduct a case study analysis, enabling a better understanding of the risks and opportunities of the energy transition in Colombia. It also allows incorporating additional analysis, for example, the role of the private sector and how its operations can impact the likelihood and magnitude of each of the symptoms. The flexibility of the framework is highlighted by the authors in their paper.

3.2. The role of the private sector and the extractivism model

As mentioned before, the framework itself will help answer the first question of the problem statement. However, I needed to include two steps to answer the other two questions ii) What is the role of the private sector maximising positive outcomes of the energy transition? What's the influence from the sector concerning risks of a resource curse? And iii) are Colombian's public policies and the private sector's actions continuing an extractivism modus operandi?

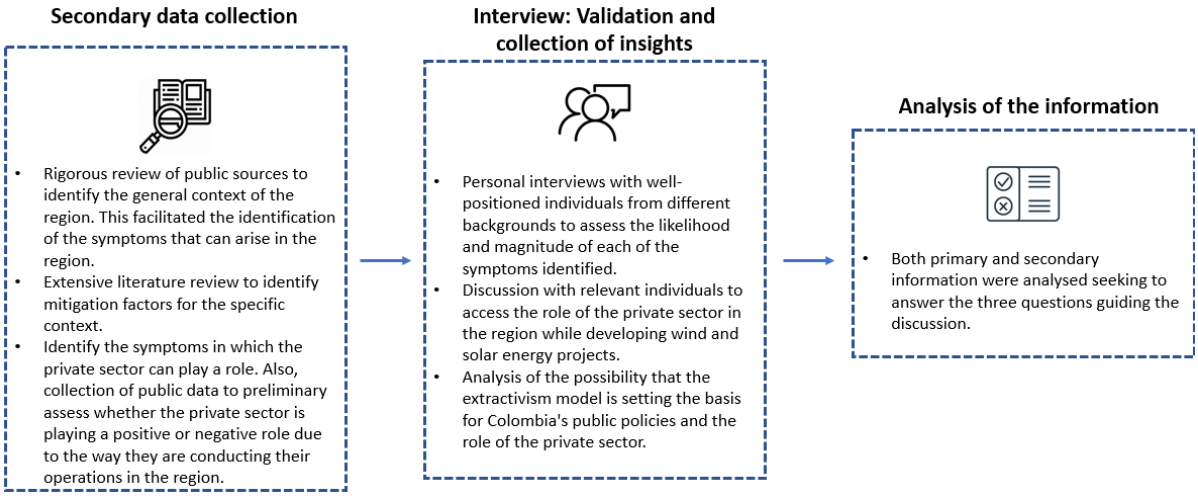
Due to the flexibility that the framework itself presents, an assessment of the role of the private sector was added to each of the symptoms identified as relevant for the study. Based on extensive literature review, the companies' operations will be assessed in regard to the factors impacting the likelihood and magnitude of each of the symptoms, identified by Leonard et al. (2022). The role of the private sector, the positive changes and mitigation factors it can implement will then be discussed during several interviews in order to get insights regarding the influence the private sector can have in facilitating positive or negative outcomes relating to each of the symptoms.

Pertaining question iii), based on the theoretical literature review, the symptoms of an extractivism model happing are over-exploitation to export and supply external systems, creation of internal conflict, rights violations, uneven power distribution, uneven access to information, and uneven creation of wealth and distribution (Gudynas, 2015; Acosta, 2016; Bruna, 2022). Given the approach this framework suggests, both primary and secondary information collected will seek to identify these extractivist symptoms within the analysis of the resource curse.

4. Methodology, case selection and methods

Based on the description of the framework, the graphic below summarises the methodology and methods used during the study to analyses the findings with the framework.

Figure 4 Summary of the methodology



The study is supported by a qualitative research, both from primary and secondary sources. In this section, I start by presenting the research methods followed by the approach for the data collection. Then, I continue by describing the process of the case study selection. This section concludes with a brief discussion of the limitations of the study.

It is important to state here that I am a Colombian citizen with a background in business and experience conducting different research, mainly associated with reputational due diligence, environmental, social and governance assessments and risks assessments. My background is therefore relevant to this study and my studies, culture and passion for the social development of my country put me in the position to study a contemporary issue in Colombia.

4.1. Research methods

I choose to work with qualitative research in this case because it will support the acquisition of findings from a natural setting allowing the analysis of values and a constructed reality instead of objective facts, useful for a detailed understanding and interpretation (Neuman, 2013). The study aims to assess whether Colombia's recent boom in RE investments can enable sustainable growth or if the way these new investments are being made has the risk of triggering a subnational resource curse, mimicking the extractivist modus operandi. This will require a deep understanding of the context and interpretation of the findings, therefore, using qualitative information will be ideal on supporting this. Additionally, given the analytical framework chosen for this study, Leonard et al. (2022) also suggests using qualitative information to assess each of the symptoms to be studied.

Within this qualitative research, I will apply a single region case study approach, based on La Guajira experience. “The case study approach allows in-depth, multi-faceted explorations of complex issues in their real-life settings” (Crowe, Cresswell, Robertson, & et al, 2011, p. 1). The case study approach also allows me to use several primary and secondary sources such as open-source media, journal articles and interviews (Rowley, 2002) and then extract from the findings of the case of La Guajira a more general picture about Colombian green transition and to role of the private sector.

4.2. Data collection

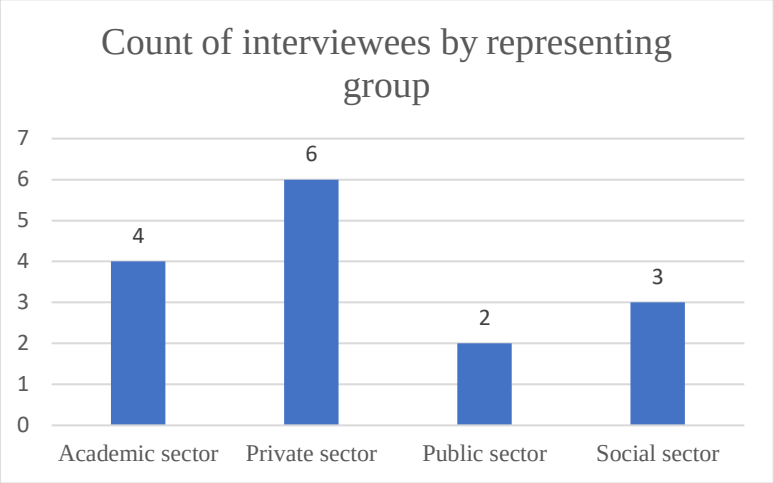
As mentioned before, the study is based on both primary and secondary information. First, the secondary data was collected from several sources such as academic articles, official data from Colombia public institutions, private corporate reports, and open media searches. Open media searches refer to regular media articles and independent investigations such as those conducted by NGOs or social organisations.

Primary data was collected throughout interviews. The interviews were conducted by me, online and in Spanish. They were done online given that I am in Norway and all the interviewees were located outside Norway, most of them in Colombia. Additionally, they were done in Spanish, the native language of Colombia. All translation has been done by me, and potential translation errors solely my responsibility.

The interviews process was done in two parts. Initially, five interviews were conducted to better understand the general trends in the private sector and regulatory framework pertaining the energy transition and investment in RE projects and create an initial picture of the social and business context in La Guajira. The remaining interviews were conducted to collect specific information concerning the symptoms used in the framework. The interview guide is presented in Annex 3.

A total of 15 interviews were conducted with well-positioned individuals from different backgrounds and followed a semi-structured approach with the aim of using guiding questions and the responses of the subjects “to pose more enhanced questions than the initially drafted ones” (Adhabi & Blash Anozie, 2017, p. 89). In order to obtain objective information that represents different interest groups and understanding the limitation of not being in the local region, I seek to have a varied and balanced group of interviews from the private sector, public institution, social and academic sector. Figure 5 presents the distribution of interviews by representing group.

Figure 5 Count of interviews by representing group.



Finally, the interviews are anonymous, therefore, the study will refer to the interviewees with a general description of their backgrounds. A description that helps to understand the relevance of the source, but that is vague enough that the person is not identifiable. The full list of the sources can be found in Annex 4.

4.3. Case study selection

At the beginning of the study, I intended to compare two case studies: La Guajira and El Valle del Cauca. This was intended to compare the different approaches, technologies and the role of the private sector. However, during the five first interviews conducted with the purpose of better understanding the general trends in the private sector and regulatory framework pertaining to the energy transition and investment in RE projects, it was clear that La Guajira was at the centre of the energy transition discussion and that there was a big debate pertaining the role of the private sector due to its particular context. Therefore, and to have a better use of time and limited interviews, I decided to focus on a single case study. Additionally, the number of news articles and studies regarding the role of La Guajira in the energy transition, and the way the private sector operates in the region helped me to conduct a more in-depth analysis of the situation, which would have been difficult in a region that is less documented.

Given the social and economic context of La Guajira and its position in the RE industry in Colombia, this case study poses a good scenario to analyse: i) the energy transition in Colombia, ii) the concept of the subnational resource curse, and iii) the role of the private sector.

4.4. Limitation of the study

There are four main limitations identified during the development of this study. First, and as mentioned before, I am a Colombian citizen; however, I am not directly from the area of study, and I was not able to directly conduct the research in the region, seeing and confirming the information collected from the

sources and open-source searches. The second major limitation was not being able to talk with the indigenous community. Due to the lack of electricity in the region and access to electronic devices, I was not able to connect with any local Wayúu community living in the areas where the RE projects are being developed and get their point of view directly. This is a major gap since I was not able to incorporate primary data from the communities I seek to understand and address their social development and relation with the private companies. To address these two limitations, I sought to speak with people from La Guajira with a different background that knows the communities and understand the territory and with academics that have been researching the territory within the development of wind energy projects.

The third limitation was encountered during the online research and the development of interviews. This is a contemporary topic with different political views that can shadow the answers of the people interviewed and the media reporting. To mitigate this, I tried to separate the data collected from political points of view and analyse the information base on the suggested approach by Leonard et al. (2022) in the most objective way possible by comparing information from both sources, the secondary information and talking with the academic sector which generally tend to have a more impartial point of view.

Finally, the role of corruption and the impact it can have on social development was not directly analysed. In terms of corruption, Caterina Gennaioli and Massimo Tavoni (2011) argued that the hundreds of USD billions flowing at the international level to support the development of RE projects sometimes arriving to resource-rich countries with weak institutions, which can lead to an increase of corruption in order to access such monetary resources. They showed that Italian regions promoting the development of wind energy projects, by introducing favourable policies, were more likely to experience corruption, showing that the number of wind farms increased at the same rate as corruption (Gennaioli & Tavoni, 2011).

This aspect can highly impact the success of social projects and the effectiveness of both public and private investments seeking to improve the life and living standards of the people. However, due to the scope of this study and the difficulties to analysis the role of corruption, this topic was not analysed by itself or in depth. That said, this topic was addressed by some of the sources consulted for this study and is taken into consideration in different symptoms.

5. Case study

This section presents the contextualisation of the case study. It begins with the general description of the Colombian context and then the background information regarding La Guajira.

5.1. Colombia

This sub-section presents the institutional structure of Colombia's energy sector, the main regulatory framework and the Colombian renewable energy (RE) generation market background.

Before starting, it is important to note that Colombia was ranked 25th out of 115 in the World Economic Forum's 2020 Energy Transition Index, an index that "benchmarks countries on the performance of their energy system, as well as their readiness for transition to a secure, sustainable, affordable, and reliable energy future" (World Economic Forum, 2020, p. 13).

5.1.1. Main public stakeholders

The energy sector in Colombia is well organised with several public institutions at the national level directing, managing and supervising the industry. The Ministry of Mines and Energy ("Minenergía") is the governing body of the industry and oversees the direction and presents the main standards for its development and organisation, in close relation with the presidents' guidelines. Furthermore, the Mining and Energy Planning Unit ("UPME"), is the technical body strategically evaluating and planning the needs for the expansion of the energy industry. This technical body has stated that the development of new non-conventional renewable energies,[4] such as wind and solar, will have the purpose of complementing the supply of traditional energy sources to meet future demand (Control Risks, 2022). The Energy and Gas Regulatory Commission ("CREG") is the agency in charge of regulating the energy and fuel-gas sectors, both by setting quality criteria and sales tariffs.

In terms of environmental issues associated with the activities of the energy sector, the National Environmental Licensing Authority ("ANLA"), a subdivision of the Ministry of Environment and Sustainable Development, is the technical body in charge of approving or rejecting environmental licenses of projects with over 100 MW. The Regional Environmental Authorities (CARs), Corpoguajira for the case of La Guajira, are the public entities at the regional level in charge of the environmental licensing for projects with less than 100 MW (Vega & Muñoz, 2023). In Colombia, the environmental license is a requirement for any work or project that generates serious deterioration of renewable natural resources or the environment, and/or considerable modifications or noticeable changes to the landscape. It is granted for the lifetime of the project, work, or activity and covers all phases: construction,

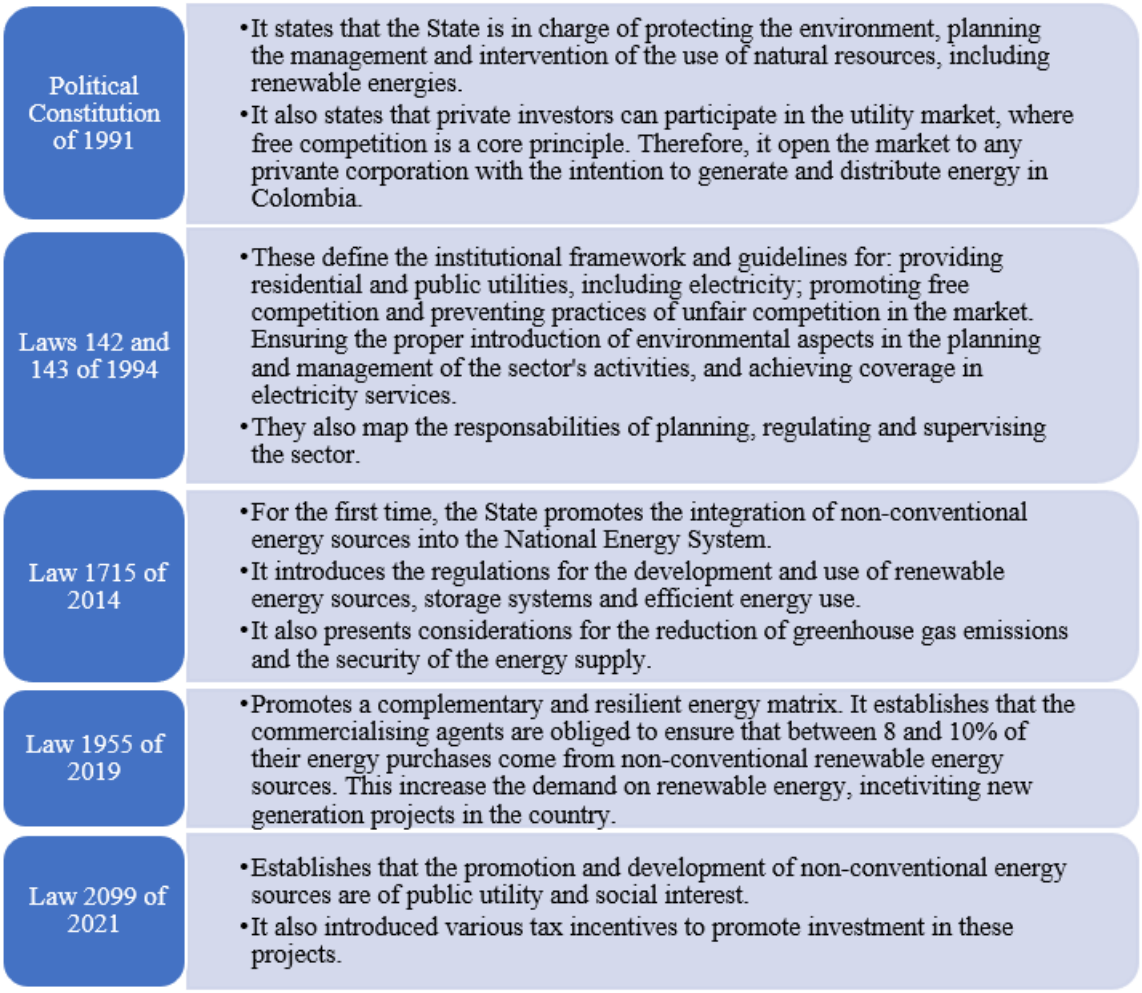
[4] "Non-conventional renewable energies" is the term use in the industry to refer, mainly, to solar and wind projects.

installation, operation, maintenance, dismantling, final restoration, abandonment and/or termination (ANLA, n.d.).

5.1.2. Regulatory framework

Historically, regulations and policies associated with the energy sector were mainly focused on conventional energy sources; however, since 2014 and as a consequence of the Kyoto Protocol (ratified in 2001) and the Paris Agreement (ratified in 2018), Colombia introduced regulations incentivising the investment and research on non-conventional energy sources, mainly those associated to RE (Maiorano, 2022). Figure 6 presents the chronology of the current regulatory landscape:

Figure 6 Colombia's regulatory framework - Based on Maiorano, 2022



Furthermore, in 2022 the National Council for Economic and Social Policy, of the National Planning Department, realised the 4075 CONPES with the Energy Transition Policy for Colombia. Even though the document states that, currently, the country depends economically and energetically on non-renewable sources such as coal, oil and gas, it also has a great potential to develop RE, especially from wind, solar and geothermal sources. Therefore, the policy integrates intersectoral actions and strategies

to implement an energy transition that favours the country's economic, energy, technological, environmental, and social growth (Maiorano, 2022).

The 4075 CONPES highlights that the energy transition strategy has different barriers, especially in regions such as La Guajira where coal is extracted and 35% of the regional GDP comes from such activity. Concerning this, the CONPES recommends to the Minenergía to "design a strategy for diversification, reconversion and gradual, progressive and safe socio-economic transition in the regions with a vocation for coal mining" (CONPES 4075, 2022, p. 75).

Environmental license

As mentioned before, the environmental license is issued by the ANLA or the CARs, depending on the size of the project, and is a requirement for any project that seeks to use natural resources and/or can impact the environment, landscape and/or biodiversity of the area of operation. According to Decree 1076 of 2015, every environmental license must include an environmental study. An environmental study can be an environmental diagnosis of alternatives or an environmental impact assessment. These studies require the local communities to be involved and have all the relevant information about the project or activity to be developed in their territories. For the purpose of this study, it is especially relevant to present the main requirements of the Environmental Impact Assessment ("EIA").

The EIA is mandatory for the analysis and approval of every environmental license and is the basic instrument for decision-making (ANLA, n.d.). This assessment is conducted by the private company that is bidding for the project. According to Decree 1076 of 2015, an EIA must:[5]

- Identify the land-use plan in place for each territory, which is outlined by each municipality.
- Identify "the communities and the mechanisms used to inform them about the project or activity". This includes the identification of indigenous groups or black communities nearby the project.
    - A previous consultation process (*Consulta Previa*) must be carried out if any indigenous or black communities are identified in the territory of operation or can be affected by the activities of the project. The objective of the previous consultation "is to analyse the economic, environmental, social and cultural impact that may be caused to an indigenous or black community by the exploitation of natural resources within their territory" (Decree No. 1320 of 1998). According to most of the interviews carried

[5] This information is based on a report presented in the Master course 'Energy and Environmental Politics and Policy in a Comparative Perspective' in the Spring of 2022 at the University of Stavanger. The information was presented by me based on Decree 1076 of 2015.

out, this is a critical path in most of the RE projects announced in La Guajira and the time and costs stipulated for the consultation process are often significantly extended.
    - Below, during the background information of La Guajira as case study, I expand on this topic.
- Specify the use of natural resources.
- Include the characterisation of the project's area of influence, for the abiotic, biotic and socio-economic environments, including a follow-up and monitoring programme.
- Include a proposal for an Environmental Management Plan, which needs to include the negative impacts identified and the mitigation plan.
- Describe the decommissioning and abandonment plan, defining the final land use, the main management and/or restoration.
- Include the definition of a biodiversity loss compensation scheme.

It is important to note that the EIA study does not only consider environmental impacts but also economic, social and cultural impacts. Under Colombian law "the indigenous territory is a much broader cultural concept in which the traditional, social, economic, cultural, spiritual and other traditional practices of these peoples take place" (ANLA, 2017).

The process to obtain the environmental license and the development of the EIA is important for this study because it is a process in which the private companies need to inverse themselves in understanding the territory. Additionally, according to several open sources referenced in this document, as well as the sources interviewed for this study, the prior consultation involved in the EIA process in La Guajira has had several difficulties and it is creating internal conflicts within local communities and is the critical path for all RE projects that are currently waiting to become operational in the territory.

Incentive for the development of non-conventional renewable energies

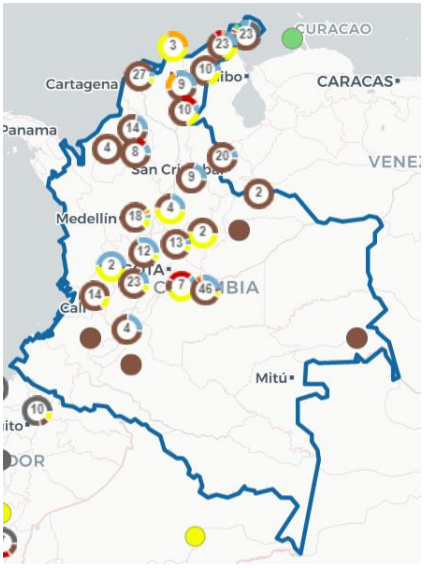
The consulting firm Control Risks (2022) briefly described the main tax incentives to invest in RE sources. Primarily, there are several tax benefits associated with the development of these projects, for example, the exclusion of VAT in the acquisition of goods and services associated with the project and exclusion from customs duties on the importation of machinery, equipment, materials, and inputs intended to be used exclusively for pre-investment work and investment projects of non-conventional RE sources. Additionally, and as mentioned before, there is a market obligation that secures, as of 2023, that between 8-to-10% of the energy demand of the commercialising agents of the Wholesale Energy Market must come from RE sources.

5.1.3. Renewable energy generation projects

For the object of this study, I focused exclusively on the energy generation market. Given that Colombia's energy sector is based on free competition, there are several private, mixed capital[6] and public companies playing in the market. In 2019, the CREG promoted the entry of new players into the power generation market, reducing the barriers for small and new international players. Consequently, in the last electricity generation auctions in the country (2019 and 2021) both new and established companies were awarded the generation of power in the country, consolidating an open market for the RE generation industry (Control Risks, 2022).

According to Global Energy Monitor,[7] currently there are approximately 300 solar and wind energy projects around the country in different phases: operations, construction, pre-construction, awarded or announced. About 80% of these projects are for solar generation and the rest for wind power generation, mainly onshore with a hand-full of projects planned offshore. As a general idea, Figure 7 shows the regional distribution of the RE projects. The graphic show that the projects are concentrated in the Caribbean (north of the country where La Guajira is located) and the Andean region (centre of the country).

Figure 7 Regional distribution of solar and wind energy generation - Taken from Global Energy Monitor



5.2. La Guajira

The focus region of this study, La Guajira, holds the greatest potential for the energy transition in Colombia, including both solar and wind power generation projects (Carvajal-Romo et al., 2019). At the same time, La Guajira has a complex context: being home to an indigenous community, being one

[6] Companies with both private and public capital.
[7] Company tracking the investment and development of energy in Latin America.

of the poorest regions in Colombia with lack of State presence, and a long-lasting relationship with the coal industry that has diminished the level of trust in the private sector in general. These topics are further developed during this section, starting with the presentation of background information including demographic, economic and cultural aspects, as well as the process of prior consultation necessary for the use of the indigenous territory. Then continue with the potential of RE generation in La Guajira and finally, a general stakeholder mapping pertaining the RE industry.

5.2.1. Background

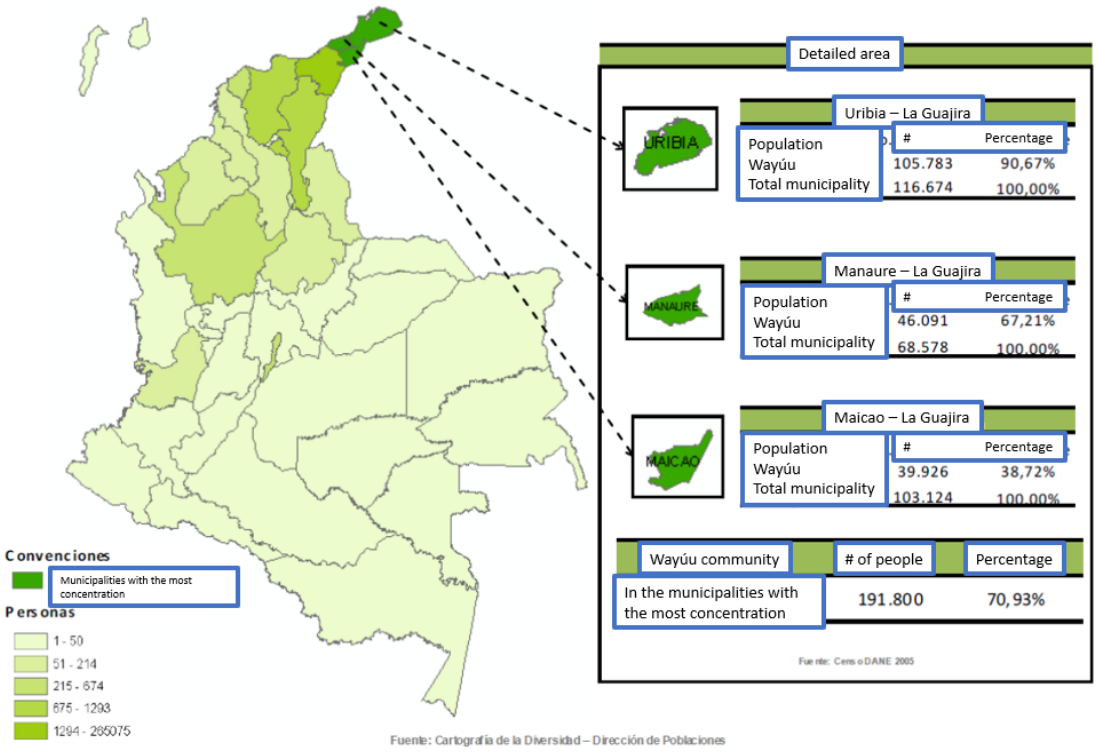
La Guajira is a department[8] in the north of Colombia with a population of approximately 1.093.671 people divided in 15 municipalities. The territory is also home of several indigenous groups, with the Wayúu being the largest, a community of approximately 380.460 people mainly located in the municipalities of Uribia, Manaure and Maicao, the northernmost part of La Guajira, and of Colombia (see figure 8). The region is one of the poorest regions in Colombia, with the Wayúu territory being one of the poorest within this region with over 75% of the population in multidimensional poverty and between 40% to 65% of its population with unsatisfied basic needs (National Administrative Department of Statistics, 2020). Additionally, despite of wind and solar energy projects being concentrated within their territory, the population within Uribia and Manaure has less than 30% of energy coverage and less than 20-30% of this territory has water and sewerage coverage (National Administrative Department of Statistics, 2020).

Regarding this, it is important to note that La Guajira is normally divided into three sub-regions: Upper (Alta), Middle (Media) and Lower (Baja) Guajira. According to interviews and the information retrieved from the National Administrative Department of Statistics (2020), the living standards of these communities vary dramatically, with Upper Guajira being the one with the worst social indicators.

This context is relevant to highlight since it sets the starting point for the fast-growing private investments in the region and the claim of sustainability and social development that the energy projects are promising to bring to the territory.

[8] Colombia is a republic consisting of 32 departments (country subdivisions with a certain degree of autonomy) and a Capital District, Bogotá DC. Each department has a capital which is normally the main city of the region.

Figure 8 Wayúu community population - Taken from Colombia Ministry of Culture and translated by the author. See Annex 1. for the original image.



The main economic activities of the Wayúu are farming (cattle rearing and grazing), small-scale fishing and agriculture. Salt mining is also a relevant economic activity in Manaure. Finally, Wayúu hand-woven artisanship are known throughout Colombia; however, for the Wayúu people weaving is more than an economic practice, it is part of their culture and an inheritance from their ancestors (Colombian ministry of Interior).

The right of land and the prior consultation

The Wayúu community is the biggest surviving indigenous community in Colombia and its territory is protected by law, comprising 10.000km2 of the 13.000km2 of La Guajira peninsula (Colombian Ministry of Culture). The National Constitution of 1991 gave multiple rights to the indigenous communities in the country, including the right to community land ownership and the right to participate in decisions and actions that may affect their communities. To comply with this, it incorporated the prior consultation procedure (Semper, 2006). However, there are several difficulties with the implementation of this prior consultation due to the specific context of La Guajira.

First, the Wayúu community is organised in '*Rancherías'* (the community's rural settlements), therefore, the right of ownership of land is divided among these and each of them can decide how to use their territory. Consequently, most decisions are not taken by the Wayúu community as a whole, but rather are fragmented by *Ranchería* (Rubiano, 2021).

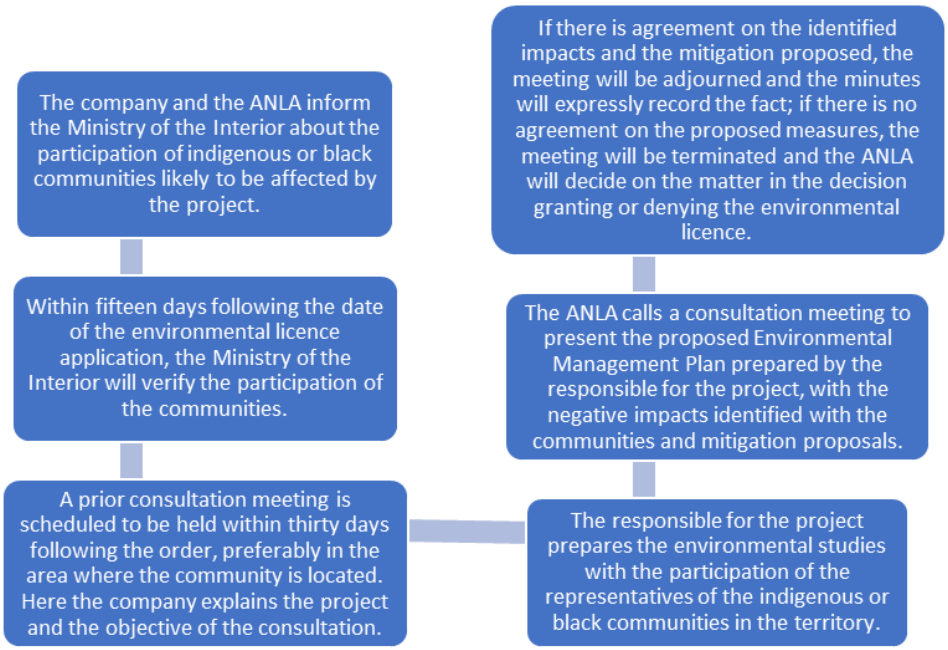
Furthermore, there is an issue of legitimate representation and participation within the Wayúu community. Historically, each Wayúu community, or *Ranchería*, has been represented by an 'Ancestral authority'; however, in 1993 the Colombian government created the figure of 'Traditional authority', the person that legally represents the community in administrative instances and is the one accepted by the national government to participate and approve the prior consultation process and EAI (Vega-Araújo & Heffron, 2022). According to several sources consulted for this study and as referenced by Vega-Araújo and Heffron (2022), "these two authorities are often in conflict since the Traditional Authority is perceived as an imposition from the government" (p. 6) and is not always legitimated in all Wayúu groups. Additionally, as mentioned by several of the sources consulted for this study, today, anyone can go to the local indigenous office and create a new Traditional authority, a process that has become a political procedure exploited by some members of the community.

This is even more aggravated in the case of prior consultations by the fact that in several cases, the Ancestral authority does not live in the territory so many companies and public entities only see the figure of Traditional authority. That said, the Constitutional Court ruled in favour of the Ancestral authorities, stating that they are the legitimate authority owner of the territory (Monsalve, 2023).

The issue with the prior consultation in La Guajira

The following is the stipulated process for a prior consultation according to Decree No. 1320 of 1998:

Figure 9 Prior consultation process and timeframes[9]



[9] This figure was taken from a report presented in the Master course 'Energy and Environmental Politics and Policy in a Comparative Perspective' in the Spring of 2022 at the University of Stavanger. The figure was created by me based on Decree No. 1320 of 1998.

That said, and as mentioned before, most of the interviewees for this thesis mentioned that such timeframes are normally exceeded, especially in La Guajira due to the issue with legitimate representation and need to reach an agreement with each *Ranchería* or, with each of the traditional authorities registered in the *Rancherías*. This poses a great challenge to private companies conducting the consultation and seeking to reach an agreement with each of the parties.

Due to this context and the challenges it poses to understand the territory and have a smooth and transparent conversation, companies are struggling with the timeframes. For example, Edsand (2017) mentioned that one company took three years to reach an agreement with the indigenous community to install one tower for measuring wind resources in La Guajira.

As mentioned by a well-placed consultant experienced in due diligence[10] consulted for this study and the former deputy minister of the Energy Ministry,[11] the process is not clear for the companies and even though most of them are making the effort to understand the territory and get informed, there is not a clear reference of how to conduct the process in such context. And the national and local government cannot even act as advisors due to the lack of legitimate information and appropriate understanding of the territory.

That said, the former deputy minister of the Energy Ministry also mentioned that companies also make some mistakes such as underestimate the process itself: "*Renewable energy companies are mostly international, and they assume that what they do in Europe will work here. They don't understand, they underestimate what it means to enter the territory*."[12] The source continued by mentioning that "*the communities say is that the consultations are a formality and not a consultation process*."[13] In the other hand, the source also commented that in many times both companies and communities take advantage of one side or the other. Comment in which the former public official of the Energy Ministry[14] agreed with.

Past history with the energy industry

La Guajira has a long-lasting relationship with the extraction of natural resources for energy purposes. To date, coal and gas extraction represents over 40% of the region's GDP (Rubiano, 2021); however, it only employees 1.6% of the population in La Guajira (National Administrative Department of Statistic,

[10] Interview # 10, 15 February 2023.
[11] Interview # 1, 3 March 2023.
[12] Interview # 1, 3 March 2023.
[13] Interview # 1, 3 March 2023.
[14] Interview # 2, 16 March 2023.

2022). The main project started operation in the 1980s and it is known as Cerrejón,[15] the largest open-pit coal mine in Latin America, located in La Guajira (Devia & Gomez Betancur, 2021). In terms of gas extraction, the main two operations are Ballena (onshore), Chuchupa A (offshore) and Chuchupa B (offshore)[16] located in the municipality of Manaure. These started operations in 1976, 1978 and 1996, respectively (Sánchez Jabba, 2011).

Figure 10 Location of Cerrejón

Continuing with the history of extraction of energy sources such as coal and gas, today La Guajira is the epicentre of wind power and plays a relevant role in the generation of solar energy. However, the turbulent relationship between the energy sector, the extractive industry and local communities (indigenous peoples, black communities, farmers and civil society in general) has been documented by the media, NGOs and international agencies. In general, it has been documented that despite large private investments from the energy generation and extractive industries, communities have been affected, social indicators have not improved, and conflict has continued. Moreover, human rights violations and forced displacement have been documented in the area.

Economic activities

There are two ways to describe the main economic activities in La Guajira: by GDP or by the percentage of inhabitants employed in a certain activity. By GDP, the main economic activity is mining; however, in terms of higher employability, the main activities are agricultural (agriculture, fishing and farming), retail trade and manufacturing, employing 64% of the population but only contributing with 11% to the GDP of the region (Guajira360, 2018). It is also relevant to note that according to the regional and national strategic development plans, tourism and generation of non-conventional energy sources will play a bigger role in the future (Guajira360, 2018).

In terms of education, relevant to the analysis of the employability and productivity of the economic sector, 16% of people in employment in the region do not have any education or only finished pre-

[15] The coal mine is operated by three international mining companies BHP, Anglo American and Glencore.
[16] Operated by the international company Chevron.

school, 27% finished until basic school, 33% high school and only 23% has higher education (Guajira360, 2018).

5.2.2. Why renewable energy projects in La Guajira

When asked why the private sector is interested in RE in La Guajira, many sources will state that the region is in a privileged place with constant solar radiation and strong air flows. According to Hans-Erik Edsand (2017), "by utilizing only half of its total technical wind energy potential, Colombia would be able to supply the entire country's demand for electricity", making La Guajira one of the regions with the greatest wind energy potential in South America.

The figures 11 and 12, taken from Carvajal-Romo et al. (2019), show the wind and solar potential in La Guajira, illustrating why, regardless of the social, political and cultural difficulties, companies seek to develop RE projects in this area.

Figure 11 Monthly map of Irradiation in La Guajira - Taken from Carvajal-Romo et al. (2019)

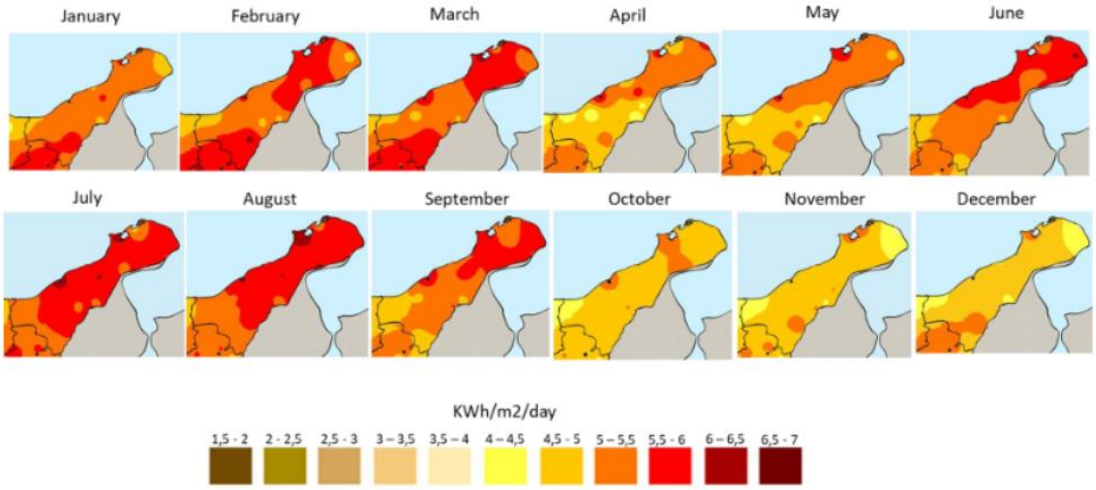
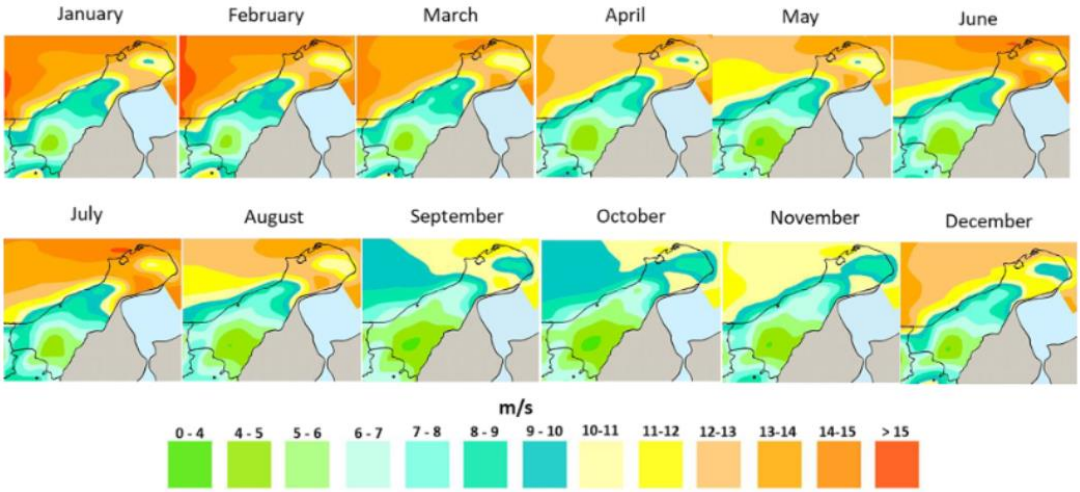


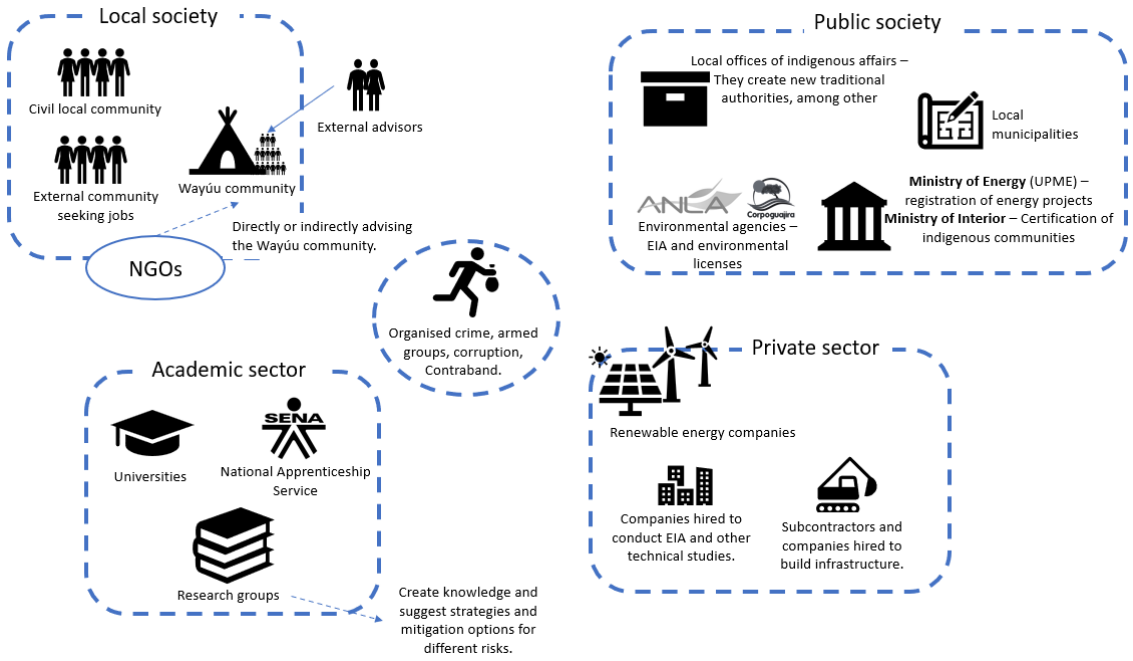
Figure 12 Monthly map of wind speed in La Guajira at 80 m - Taken from Carvajal-Romo et al. (2019)



5.2.3. Stakeholders mapping

Primary and secondary information collected during this investigation shows that the following groups are the main stakeholders in the context of the new development of RE and their impact on the social development of the communities. Figure 13 presents these stakeholders; however, it is important to note that this is not an in-depth map showing the relationship between each party, rather it intends to show the main group of individuals that play a role in the development of RE projects and integration of local communities into the projects.

Figure 13 Stakeholders mapping



6. Analysis and discussion

As mentioned before, the framework (Leonard et al., 2022) describes 18 symptoms to be analysed in terms of likelihood and magnitude. To conduct a risk assessment of the national resource curse within the renewable energy (RE) industry, these symptoms were analysed in the specific context of La Guajira.

This section first presents an analysis and selection of the relevant symptoms for the case study, both given the available information to be analysed and its impact on social development in the context of La Guajira. Additionally, it also includes an indication of the depth of the analysis for each of the symptoms.

Then it continues with the main findings of the data collected, both from primary and secondary sources. The data is analysed using the analytical framework to describe the insights for each of the symptoms of the resources curse. At the end of each symptom's analysis, I present a qualitative risk assessment indicating the likelihood of the symptom presenting itself in a negative way and the magnitude it may have on the social development of local communities, as well as the potential role of the private sector on maximising positive outcomes. It is important to note that this is a personal and empirical assessment based on information gathered from secondary sources and interviews. Finally, in the third section I enter the discussion of the findings focusing on the risk assessments and analysing whether this suggest an extractivist modus operandi, aiming to answer the three research questions.

6.1. Symptoms selection[17]

As the analysis focuses on the case study of La Guajira, the assessment of the symptoms in a subnational context is imperative, having a special focus on the social aspects of the curse. Therefore, external conflict as a symptom will not be included in the analysis. Furthermore, material dependence and technological or expertise dependence do not seem to play a relevant role in the case of La Guajira, especially since all RE equipment comes imported to Colombia with tax benefits and the development of a new manufacturing industry would only be possible in the long-term, having less impact in the social development of the local communities in the near future. That said, the expertise dependence topic will be cover under section 6.2.7. Expatriates dominating high-income/skilled jobs. Moreover, the symptom of loss of competitiveness will not be analysed since, as explained by Leonard et al. (2022), the current scale of the renewable business sector does not pose a risk for the exchange rate appreciation and La Guajira's context has a greater risk of having a big loss of competitiveness due to the mining industry rather than the recent RE industry.

[17] Annex 2 presents the symptoms of the resource curse with a brief description.

Income volatility and trade imbalance refer to the "risk of exploitation and revenue volatility depending on the market structure/power purchase agreements" (Leonard et al., 2022, p. 4); however, Colombia RE system is based on RE auctions that result on Power Purchase Agreement (PPA), which "can offer sellers stable revenues and thus certainty regarding price […] a long-term PPA resulting from an auction can hedge the seller against spot-market variability and improve the bankability of projects. Buyers also reduce their exposure to volatile spot-market prices, while making their spending for energy purchases more predictable" (IRENA and USAID, 2021, p. 10). Therefore, the topic of income volatility and trade imbalance is not included in this analysis.

Finally, the weakening of institutions, according to Leonard et al. (2022) refers to the political and institutional instability, like lower levels of democracy and the risk of authoritarian government, that could decrease rates of private RE investment. Therefore, this symptom relates to the government dynamics at the national level; however, for this study, the focus is on the sub-national level and this symptom is not considered in the analysis. That said, corruption, associated with public institutions, plays a relevant role in the social development of the local communities and the effectiveness of the investments that the private sector is injecting into the region. Given this, the symptom is analysed considering a different perspective.

As a consequence, the following 13 symptoms will be the subject of this analysis, with its associated assessment of the role of the private sector. It is also important to note that during the analysis, some symptoms were analysed more exhaustively than others due to different reasons explained in the table below.

Symptom	Depth of analysis
Crime	The symptom is analysed exhaustively since it plays a role in many other symptoms and is a key analysis to understand better the context in which the companies operate and the social development of the region.
Damage to local flora, fauna and landscape	The symptom is analysed exhaustively since, due to the context, environment impact is especially important for an indigenous community, ancestral owner of the territory. Furthermore, it is important to highlight the role of the private companies claiming to have a positive impact on environment due to the development of RE projects.
Diversion of investments away from human capital	The symptom is analysed exhaustively since it plays a role in many other symptoms. Furthermore, insights gathered from the interviews suggest that the private sector can play a relevant role in this area.
Diversion of land	Although this is a relevant topic especially associated with the cultural life and social development of La Guajira, due to lack of information and not being able to see the territory and talk with local indigenous, in addition to the lack of regulatory information associated with the change of land vocation in La Guajira, this topic was not analysed in depth.
Diversion of talent from other sectors	Due to the state of the economic landscape of La Guajira and the professional education towards RE in Colombia, this symptom was not analysed in depth.

Symptom	Depth of analysis
Economic dependence	The symptom is analysed exhaustively given the relevance it has to the analysis of social development and the investments done by the private sector.
Expatriates dominating high-income/skilled jobs	This topic is related to other symptoms previously addressed in more depth; therefore, it is not analysed in depth.
Gender inequality	There is not enough available data to exhaustively analyse this topic, therefore, during the section I focus on a specific risk and elaborate on that rather that describing and analysing the topic of gender inequality as a whole.
Income inequality	This topic is related to other symptoms previously addressed in more depth; therefore, it is not analysed in depth.
Internal conflict	The symptom is analysed exhaustively given the relevance it has to the analysis of social development and interaction between the private sector and local communities.
Land grabs	The symptom is analysed exhaustively since it directly impacts the local communities, and it reflects on many other symptoms.
Reduced economic diversity	The symptom is analysed exhaustively due to the context and current situation of the economic situation of the territory. Also, insights gathered from the interviews suggest that the private sector can play a relevant role in this area.
Weakening of institutions	Due to the focus of this study and the complexity of corruption itself, this symptom is not analysed exhaustively, but rather just presents preliminary information pertaining to the context and insights collected from the interviews conducted for this study.

6.2. Analysis of the symptoms and the role of the private sector

6.2.1. Crime

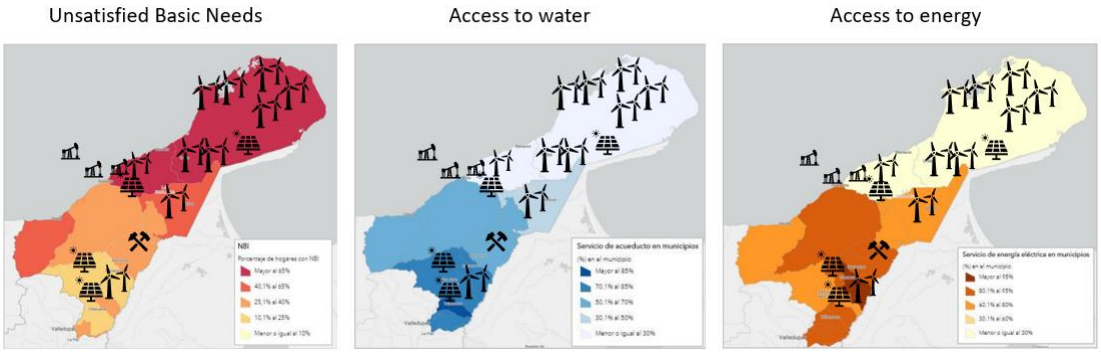
Leonard et al. (2022) found that regions experimenting a boom of private investments can be impacted by an increase in crime, mainly associated with the theft of equipment or, in the case of Colombia, insecurity for workers or people opposing the projects, as explained below. Furthermore, they state that the likelihood and magnitude that crime will have on the social development of the local communities will increase in regions with high levels of poverty and inequality.

To analyse this, it is important to highlight the poverty and inequality context of the region. Second, review the criminal history and finally assess the current situation and measurements to mitigate crime.

First, and as mentioned before, according to information retrieved from the National Administrative Department of Statistics (2020), La Guajira, and specifically the Wayúu region where wind energy projects are being developed today, is one of the poorest regions in Colombia with many unsatisfied basic needs. In addition to this, at least four interviewees highlighted the inequality within the territory, and how different people from Riohacha (capital of La Guajira) or the Wayúu communities in the south of the department live in comparison to those living in the areas where most of the wind projects are being developed. To illustrate this, below I present three graphics taken from the National

Administrative Department of Statistics (2020) presenting the Unsatisfied Basic Needs, access to water and energy, including an indication of where the Cerrejón coal mine and the gas extraction are located and where the wind and solar energy projects are being developed.

Figure 14 Unsatisfied basic needs, access to water and energy, compared to wind and solar projects and the location to the Cerrejón coal mine and gas exploitation[18] - See original graphics in Annex 1.



This illustration is relevant to show how the municipalities where the extraction of coal and gas is located compared to those without such extraction and where non-renewable projects are expected to happen. As shown, the regions close to the Cerrejón coal mine are better developed and have better social indicators in terms of basic needs, access to water and energy. Regarding the gas operation, it seems like Manaure, the municipality where the gas operation is formally located and where 67% of the population is identified as Wayúu, has one of the worse development indicators and has developed slower; however, the municipality to the south shows a better development.

Second, referring to the criminal history in the region, there were no available historical indicators; however, open sources have stated that illegality, smuggling, extortion to businesses, irregular toll collection and human trafficking have been characteristic of the region's economic dynamics, especially due to its characteristic of bordering with Venezuela (Aguilar Salas, 2020). The manager of an energy company with wind projects in La Guajira interviewed for the study also confirmed that the general economic activity in the regions where they are developing wind projects is linked to illegal smuggling or informal commerce. It is important to note that both the manager of the energy company and the former public official of the Energy Ministry mentioned that not all commerce activities might be illegal, but rather informal.

In terms of long-lasting Colombian internal conflict with guerrillas, La Guajira has been a strategic location for illegal groups. According to Badillo Sarmiento and Trejos Rosero (2021), there is the presence of various armed actors, such as guerrillas, and other local organised crime groups in the region, specifically on the border with Zulia, Venezuela. However, according to their data, there are no

[18] This is a representation of the location of the energy projects based on the information collected from the Global Energy Monitor; however, it does not precisely represent the location of the projects.

records of constant or direct armed confrontation. According to the published analysis, this is because each group has different interests and are not directly in the territory but operate through subcontracting local organised crime groups that compete to get hired by such big illegal organisations. This indicates that there are several local organised crime groups throughout the territory (Badillo Sarmiento & Trejos Rosero, 2021).

Regarding this, the former public official of the Energy Ministry mentioned, regarding the issue of illegal groups, that it "*improved substantially, La Guajira was very dangerous because it was a marvellous route for drug trafficking, so it was dangerous. After the agreements with the FARC,*[19] *even the arrival of the companies, the presence and being there, generated new conditions, took away space from these illegal groups.*"[20] Moreover, the security manager of an international solar company stated that "*in La Guajira, the ELN*[21] *undoubtedly has a way of operating by having cell groups that are closer to the communities and community support networks. Here the golden rule is "behave well with me, they don't bother you". They* [ELN, ex-Farc[22]] *are against extractives but still don't see solar and wind as "bad"".*[23]

Finally, referring to the current crime situation and the security in the territory, the high-profiled journalist mentioned that it is very common to see very humble houses armed, "*it's an indigenous community where you see a little ranch, the shabbiest thing in the world, and they are armed*."[24] Furthermore, the former public official of the Energy Ministry[25] stated that there is "regular" insecurity in the area and even some energy companies have been subject to robbery, this with means of explaining that La Guajira, being a large territory with a lack of police presence and with the living conditions of the communities, has a general culture of criminality.

In this regard, the Recognised Wayúu, noted that in La Guajira "*vandalism is a form of social protest*"[26] against energy projects in their area, meaning that some theft, block of roads and so on can been seen as a way of rejecting the presence of the private projects. The source continued by stating that the culture of criminality will coexist with the new RE projects. In this regard, the senior researcher in an environmental organisation stated that "*improving roads improves smuggling*",[27] showing how the new presence of private businesses and development in infrastructure might impact other illegal businesses.

[19] Fuerzas Armadas Revolucionarias de Colombia. Former armed group that signed a peace agreement with the Colombian government in 2016.
[20] Interview # 2, 16 March 2023.
[21] Ejército de Liberación Nacional. A Colombian guerrilla.
[22] Dissidents of the FARC group that signed the peace agreement in 2016.
[23] Interview # 11, 28 February 2023.
[24] Interview # 3, 3 April 2023.
[25] Interview # 2, 16 March 2023.
[26] Interview # 4, 14 April 2023.
[27] Interview # 8, 2 May 2023.

As a potential mitigation factor for crime, according to González Posso (2022), violence is increasing in the region and therefore some voices are calling for the militarisation of the entire territory to protect the energy projects. Concerning this, the former public official of the Energy Ministry stated that *"the companies are working on cooperation agreements with the public forces in order to provide more security in the area.* [Security] *not to the* [private] *projects, of course, the projects will benefit, but* [public forces] *to give more security to the area."*[28]

Both police presence and the militarisation of the region are highly criticised since it represents an authoritarian answer to protect "a national interest" that might bring more conflict and uncertainty for both the local communities and the private companies (González Posso, 2022). That said, a senior researcher in an environmental organisation,[29] interviewed for this study, mentioned that during a field trip to La Guajira s/he observed the presence of state police and military force in the territory, adding that currently there seems to be a smooth relationship between the public forces and the local community, noting that a local person mentioned that as long as there are no problems between the criminal groups and the public forces that affect the daily life of the communities, they have no problem with their presence there.

Crime risk assessment[30]

Crime		
Likelihood	According to Leonard et al. (2022), the likelihood of crime increasing in the region is linked to the levels of poverty and inequality. Based on my assessment, since La Guajira is a region with high poverty and inequality and a history of local organised crime, informality, and the presence of illegal groups, the likelihood of crime increasing is high, potentially involving new actors and increasing the recruitment of local people into illegal groups.	High[31]
Magnitude	The magnitude is assessed as medium because as mentioned by the Recognised Wayúu, most likely the crime will coexist with the new private energy investments. This situation will continue to affect the integral development of the communities; however, the success of the investment projects in local economies financed as a compensation mechanism by the energy companies for the use of the	Medium[32]

[28] Interview # 2, 16 March 2023.
[29] Interview # 8, 2 May 2023.
[30] This is a qualitative risk assessment indicating the likelihood of the symptom presenting itself in a negative way and the magnitude it may have on the social development of local communities, and it is in line with the framework of Leonard et al. (2022) and the way they suggest presenting the findings. It is important to note that this is a personal assessment based on information gathered from secondary sources and interviews and is meant to be part of the discussion section of this thesis.
[31] "High" indicates that crime in the region will most likely increase significantly. The red colour red indicates that it is a negative impact.
[32] "Medium" indicates how much or how negative can the increase in crime be in the local communities for their social development. The colour yellow represents that it is a medium negative impact.

	Wayúu territory and the increase of the labour market in the area (explained below) is essential so that the increase in criminality does not affect the local communities to a great extent.	
Role of the private sector	Although the private sector does not play a direct role in the increase of crime in the region by itself, its presence is changing the social and, possibly, the criminal dynamics in the territory.	Low

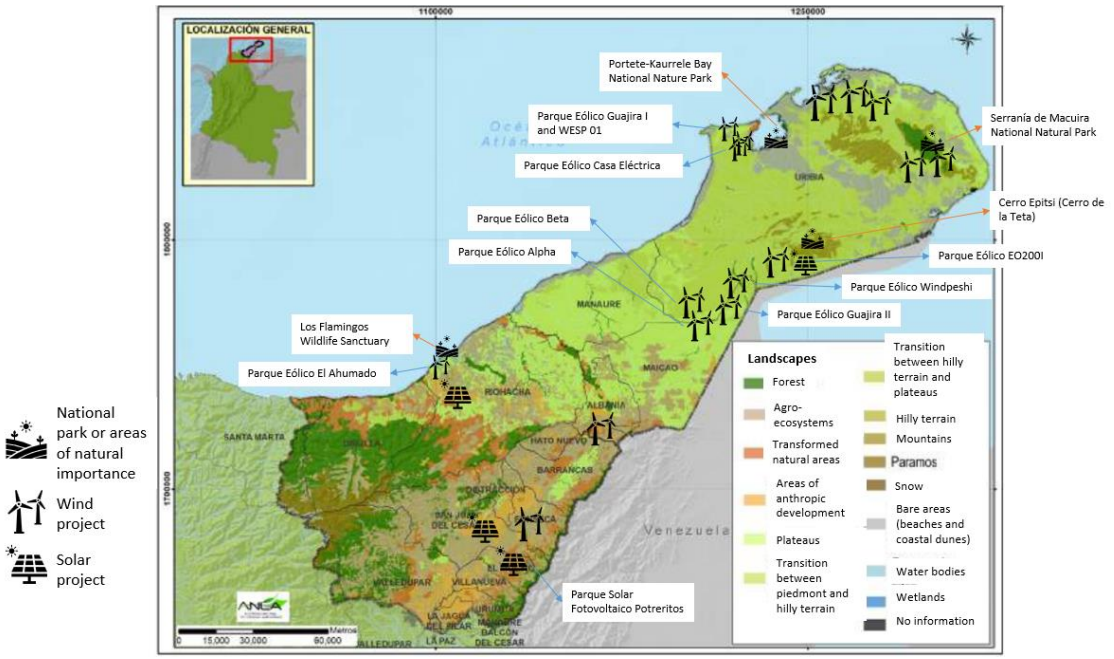
6.2.2. Damage to local flora, fauna and landscape

According to Leonard et al. (2022), RE projects have localised environmental risks related to environmental degradation, habitat loss, animal fatalities (mainly associated with wind projects), water use (for PV washing and construction phase of wind projects) and general threats to biodiversity; however, these tend to be localised and smaller compared to non-renewable energy projects. The negative effects can be minimised through public policies, careful placement in less vulnerable areas and other mitigation strategies (Leonard et al., 2022).

To analyse this, I seek to identify the region's geography and, more specifically, the biodiversity and landscape of the location of the projected RE projects, seeking to see whether the private sector is seeking to carefully place their projects in less vulnerable areas. Second, I review whether there are regulations and public policies that aim to mitigate environmental risks and the capacity of the public sector to implement them, specifically for wind and solar energy projects. Finally, I assess the information from identified EIAs and compare it with information collected from the interviews conducted for this study. Due to the number of projects announced in the region and the capacity of this study, I focus the analysis on eight wind projects and one solar project. These nine projects have started and/or have concluded licencing processes before the ANLA or Corpoguajira, therefore, the EIAs should be publicly available; however, I was not able to identify three of these EIAs, initially showing the limitations of accessing public information in this context. The basic information of these projects is presented in Annex 5.

Figure 15 presents a map taken from ANLA (2018), translated and adapted by the author. It indicates the location of current (the projects referenced in Annex 5.) and projected additional energy projects, compared with special natural areas of the region.

Figure 15 Landscapes of La Guajira and an indication of areas of great natural importance and the development of renewable energy projects[33] - See original image in Annex 1.



As presented in the figure 15, most of the projects, except for the solar farm and El Ahumado wind park, are located on plateaus, in low hilly terrains, not considered vital for agro-ecosystems; however, these could be relevant for grazing. That said, several of the wind projects are close to areas of natural importance such as Portete-Kaurrele Bay National Nature Park, Los Flamingos Wildlife Santuary, Serranía de Macuira National Natural Park and Cerro de la Teta (or Epitsi), a special place for the Wayúu community. This might indicate that in some cases there is a lack of carefulness in placing RE projects in less vulnerable areas.

In terms of regulation, Colombia has ratified several international environmental agreements (Parques Nacionales Naturales, n.d.) and Law 99 of 1993 established 14 guiding principles for environmental policies in the country and adopted the concept of sustainable development established in Rio de Janeiro in 1992 (Rincón, 2022). The country has also made great efforts on regulating the EIA process. In 2016 and 2017, the government published two resolution regulation the EIA process and content specifically related to wind (resolution 1312) and solar (resolution 1670) energy projects.

Regarding this, the well-placed consultant experienced in due diligence stated that "*in the end, whether they are renewable or extractive or whatever, what the ministry* (of environment) *has said, and is complying with, is "here I am going to scrutinise and I am going to look closely at all these projects to*

[33] This is a representation of the location of the energy projects based on the information collected from the Global Energy Monitor and Barney (2023); however, it does not precisely represent the location of the projects.

prevent you from doing whatever you want". And it does not matter if it is a wind energy generation project or a coal extraction project, in reality, all of these projects are being scrutinised."[34]

That said, Colombia has a number of environmental problems and the different public agencies that have been created since the 1991 constitution have not achieved the necessary integration and operational capacity to prevent and mitigate negative environmental impacts on the territory (Pérez, 2020). Additionally, social inclusion in the development of environmental processes remains a challenge for the national government (Pérez, 2020). It is therefore reasonable to question how well the private companies and its operation are being monitored to avoid natural damages and introduce mitigation strategies on time.

Pérez (2020) highlights that the CARs,[35] such as Corpoguajira, have weak control and accountability which slows down processes such as EIAs and the development of the National Environmental Information System, concluding that "greater coordination and capacity are required among environmental organizations to establish more environmental control within the nation, and in concomitance, with the application of current environmental regulations" (p. 101). Based on this, it can be deduced that Colombia has the necessary regulations to prevent different environmental impacts and to follow international standards, but that implementation, control and monitoring is a challenge for regulations and policies to be effective, especially due to the low operational capacity of public entities.

Concerning this, the former deputy minister of the Energy Ministry[36] in Colombia mentioned that one of the biggest challenges of the CONPES 4075 for the Energy Transition is the implementation itself. Additionally, an economist and professor at a Colombian university stated in an interview for the project that the energy regulation is incomplete in terms of topics such as Carbon Credits, especially in the implementation of it and in the sense that communities feel they are not trading on a level playing field, "*it is not very clear or fair."*[37] This also reflects the gap in the implementation of energy policies in the territories of Colombia.

Pertaining to the EIAs, according to Pascualino, et al. (2015) the greatest environmental impacts related to wind and solar power generation in the Caribbean occur during phases of construction and installation of the necessary infrastructure for power generation or access (roads). That said, the operation of wind farms can also modify the habitat and the terrestrial and marine ecosystem, particularly affecting birds through collisions between the animals and the turbines, and the landscape change, considered as a visual impact of wind farms, should also be considered as negative impacts (Giraldo, et al., 2018).

[34] Interview # 10, 15 February 2023.
[35] The Regional Environmental Authorities (CARs), Corpoguajira for the case of La Guajira.
[36] Interview # 1, 3 March 2023.
[37] Interview # 6, 21 April 2023.

Associated to solar energy generation, the impact will depend on the size of the project, the type of soil and the biodiversity of the area (Giraldo, et al., 2018).

After reviewing the licence resolutions of the projects referenced in Annex 5., it is my assessment that they all seem to comply with the regulation, including the analysis of different environmental and social aspects that can be impacted by their activities. They also seem to comply with international guidelines for the development of these assessments. That said, and as mentioned before, there is empirical evidence suggesting that both Corpoguajira and ANLA have limited capacity to control and monitor the activities and risks described on each of the EIAs. Furthermore, Barney (2023) mentioned that "Corpoguajira's main sources of scientific information are the EIAs carried out by the same companies that are interested in licensing their wind projects."[38]

The review of environmental licensing resolutions available online also show that impact studies are usually done by a consultant, it is not the company itself that develops the study. This is normal given that energy generation companies are not usually experts in the analysis of fauna and flora, recognition of ecosystems and so on. However, and linked to this, the Recognised Wayúu[39] interviewed for this project pointed out that these studies should be done with the support of local communities because they are the ones who know the territory best and the impacts that industrial activities, or others, may have on ecosystems or on the way they live their territory. The source continued by saying that s/he has no trust in the way companies operate because in s/he view they simply do the bare minimum.

With regard to this, the economist and professor at a Colombian university interviewed stated that "*the key* (to EAI) *is a thorough diagnosis which I am not sure we are doing. We jumped in too quickly without the necessary studies. In general, impact assessment studies are rigorous, but they may not be thorough. Assessment studies should have an ethnographic component, i.e. the study should be done hand in hand with technical and environmental experts and a group of anthropologists."*[40] Likewise, Barney (2023) also highlighted that the EIA of different wind energy projects in the same area, side by side, show different results in terms of the fauna and flora identified, showing that there is a gap in how thorough these assessments are conducted.

Regarding this, the high-profiled journalist also noticed that impact assessments are done individually, each company does an impact assessment of its project, but "*there is no study of the overall impact that so many* [wind] *parks on the same place can have on the environment*."[41]

Damage to local flora, fauna and landscape risk assessment

[38] This information was not corroborated by this study.
[39] Interview # 4, 14 April 2023.
[40] Interview # 6, 21 April 2023.
[41] Interview # 3, 3 April 2023.

Damage to local flora, fauna and landscape		
Likelihood	The likelihood of having negative impacts due to the development of wind and solar energy projects is high, mainly because of the size, or more specifically, the number of projects being develop today or in the near future. Furthermore, Leonard et al. (2022) highlights the importance of a strong and clear regulation for environmental protection and mitigation strategies; however, as it was found in different studies and as mentioned by some of the people interviewed for this study, even though the regulation in Colombia is there and follows international standards, there is a challenge with the implementation, control and coordination of the different environmental institutions. That said, the manager of an international company trying to develop a wind project in La Guajira mentioned that the current government has stopped approving wind energy projects in La Guajira for now, maybe indicating that they are studying the current issues and assessing the current regulation and speed in which the wind energy investments were being done.	High[42]
Magnitude	Magnitude is assessed as high because the local environment is very fragile, and with a potential lack of efficient control and implementation of mitigation actions by public environmental authorities, solutions to environmental impacts may come too late. Furthermore, and as mentioned before, there are several wind parks close to great natural importance areas and energy projects main impact the biodiversity and the way animals and local communities interact with the territory.	High[43]
Role of the private sector	Clearly, the private sector has a role to play in environmental issues. While EIAs should be carried out by specialised technicians, companies should also promote that this study is done hand in hand with local communities, especially when talking about an indigenous community, and not only present the final EIA report during the prior consultation. This could bring confidence to the local communities that the company is doing everything possible to identify all the impacts that its activity could cause and mitigation factors. Creativity, innovation and good practices when conducting EIAs are the duty of the company and today there seems to be gaps in the implementations of these in La Guajira.	High

6.2.3. Diversion of investments away from human capital

Leonard et al., (2022) mentioned that the boom of investment for the extraction of minerals and fossil fuels has not been backed by funding for public services such as education, resulting in an under-skilled workforce, a low-diversity economy, and a lower GDP once resource boom is over. That said, due to

[42] "High" indicates that most likely there will be a damage on the fauna and flora of the territory. The red colour indicates that it is a negative impact.
[43] "High", represented with red, indicates how negative can the damage of the fauna and flora be in the local communities for their social development.

the way wind and solar energy projects work, they expect this to not be the case for investments in RE due to the necessary skills to build and maintain these infrastructures.

To analyse this, it is important to review the education context of La Guajira, see if further educational investments are being planned and whether the private companies are involved in the development of the educational system, for instance through investment schemes.

First of all, it is important to remember that the majority of the community in La Guajira, especially where the wind energy investments are being done, is an indigenous community, and that their traditional systems of education may differ significantly from the general education model in Colombia. According to the Ministry of Education (2007), initial education for children of the indigenous population is based on so-called "ethno-educational models" that take into account their cultural practices and knowledge. In this sense, they explain that for the Wayúu people, basic education, that is the first seven years of schooling for children, is handled by the families and the community, through which the focus is on understanding and learning what it means to be Wayúu – their identity, language and specific competencies (Ministry of Education, 2007). After the seven years of schooling, the children then continue with the traditional Colombian educational system.

Nevertheless, the education model in La Guajira, especially among the Wayúu people, has great challenges, both academic and infrastructural. In academic matters, the Colombian basic curriculum educates under a social mechanism of cultural reproduction, promoting ways of being and doing based on state policies and educational qualifications that are not appropriate or adequate for the reality and context of La Guajira (Durán Camelo, 2010). In terms of infrastructure, remoteness plays a fundamental role, and several schools operate as boarding schools. In addition, as mentioned above, water and energy coverage is very low in the region relevant services for an educational infrastructure (De la Hoz, 2023).

According to a local worker in an energy company interviewed for this project,[44] what is normal to see in upper and middle of La Guajira is some "*Rancherías*"[45] with small schools where you see one or two multi-grade classrooms, that is, classrooms where one teacher has students from different grades at the same time. The source mentioned that these are difficult conditions, and they are usually next to the house of the community authority, and "s*ometimes there are teachers hired by the state and in these cases, they are the ones who go and look for the children to go to class and make sure that they don't miss classes*."[46] According to the source, the kids attend primary school in their basic school in the community and when they graduate from fifth grade, they go to the boarding school to do their secondary education; however, due to economic and transport issues, some do not go or do not finish

[44] Interview # 14, 25 April 2023.
[45] The community's rural settlements.
[46] Interview # 14, 25 April 2023.

their high school studies.[47] Therefore, education has a long way to go in the region and further investment is necessary to strengthen the social and economic capacity of the region and local communities.

In terms of how appropriate the national professional education system is for the required human capital for RE projects, the CONPES 4075 highlights that the "human capital formation in new technologies, such as RE and hydrogen, is scarce in the country", suggesting that the country, and the region, is not ready to supply the demand for these jobs. The topic is further assessed in section 6.2.7. Expatriates dominating high-income/skilled jobs.

In terms of educational investment, in April 2023 several newspapers such as El Heraldo announced the investment of 30.000 million Colombian pesos (approximately USD 6.573.000) in the educational sector of La Guajira. According to the article, this investment comes from the tax commitments of Ecopetrol, a Colombian company with mixed capital (88% public ownership) in the oil & gas sector, and will be invested in the improvement of educational infrastructure of the region (De la Hoz, 2023).

Furthermore, and reviewing the documents of the prior consultations and EIAs, it can be noted that many companies also compensate the communities by investing in the educational programs and infrastructure. For example, it is regular to see that companies agree to create an educational funds seeking to coverage the educational and transportation cost of students, also to offer internships on the private companies and repair the existing school infrastructure and providing it with, among other things, water and energy.

Additionally, Tang et al. (2022) suggested that the private sector has a big role in optimising productive investments by increasing the investment in local human capital and educational programs. Regarding this, the manager of an energy company with wind projects in La Guajira[48] stated that they have a pilot project for technical education in RE with the SENA[49] and international cooperation and the first students should be graduating already.

The Recognised Wayúu[50] knows that there are some technical education projects in the community and that there is a willingness on the part of the private sector to educate the community interested in RE issues; however, is pessimistic as to how good this will be to support the social development of the community. The source continues by saying that RE projects can generate employment and training in areas such as security and driving and not in technical subjects due to the nature of these infrastructure

[47] Interview # 14, 25 April 2023.
[48] Interview # 12, 5 April 2023.
[49] National Apprenticeship Service.
[50] Interview # 4, 14 April 2023.

and how much labour it requires, but s/he does see investment in study funds and scholarships for the community in a positive light.

Diversion of investments away from human capital risk assessment

Diversion of investments away from human capital		
Likelihood	Due to the educational context and the visible efforts from the public and private sectors, it is unlikely a reduction of investment in human capital. Rather, there is a strong indication suggesting that schooling at all levels may improve in the coming years, given the increasing investments and commitments of private companies in their prior consultation documents. These commitments, by law, have to be fulfilled.	Low[51]
Magnitude	Based on the interviews, representatives of both the private and social sectors expect these investments in formal education and professional training to have a high and positive impact on the local communities. That said, these investments must be appropriate to the context and respectful of the way Wayúu people educate their children.	High[52]
Role of the private sector	There seems to be a willingness to contribute and train people to both pursue a career or get involved in the RE business. That said, it is important to note that, at the end of the day, it is not the private sector's responsibility to build or repair schools or promote an educational curriculum appropriate to the local context. Their focus should be on higher and professional educational, but it is understandable that due to the local context, the priority is to build, repair or provide water and energy to schools.	Medium

6.2.4. Diversion of land

According to Leonard et al. (2022), the diversion of land, focusing on the change of food production land to energy generation land, is context-dependent and the main risk related to this phenomenon would be potential food insecurity. They also mention that the willingness of having a dramatic change of land will depend on the comparative income obtainable from each activity.

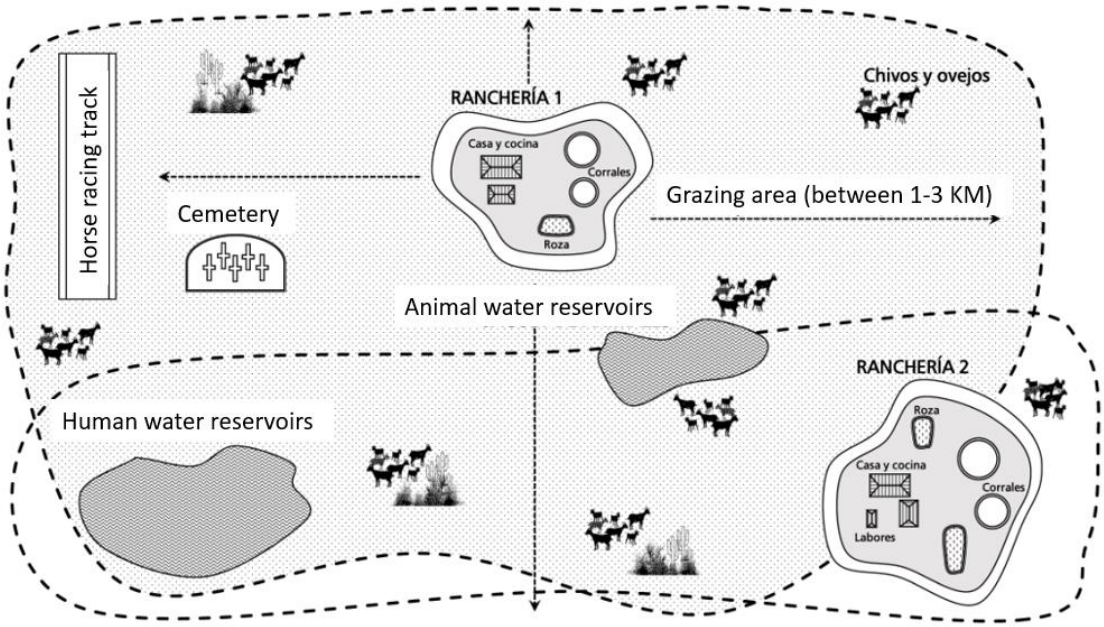
To assess this symptom, it is important to identify the current land use and understand the context of where these developments are being done. Also, it is important to analyse whether there is a regulation preventing an extreme change in the use of land. Due to the limitations of the study, the impacts of offshore wind power generation will not be analysed in this symptom.

[51] "Low" indicates that most likely there will be a low diversion of investment away from human capital. And the colour green indicates that this is a positive outcome.
[52] "High" indicates that the positive investment of human capital can bring a high and positive outcome in the social development of the community.

As shown on Figure 15, the land of Upper and Middle La Guajira is mostly considered plateaus, piedmont and low hilly terrains, with some bare areas, mountains and a forest. The south of La Guajira varies significantly with several agro-ecosystems and forests.

During the interviews and reviewing open-source media, the use of the land in the north and middle of La Guajira is divided among the Wayúu community by the living space, the graveyard,[53] the water reservoirs, animal grazing (mainly goats according to media outlets) and, in some cases where the tradition is still maintained and the terrain and climate permit, shared crop sites. Below I present a graphic representation of this, the figure was taken from Mendoza (2022) and translated by the author. From the figure, it is also important to note that the grazing area is not delimited but rather animals have a wide range to move and look for food.

Figure 16 Illustration of the land use in the Wayúu territory, taken from Mendoza (2022) and self-translated. – See original image in Annex 1.



During the interviews, and with the intention of identifying the current use of land, the interviewees were asked what was in the terrains where wind and solar energy generation are being developed today. In that sense, the former public official of the Energy Ministry[54] mentioned that in the middle and south of La Guajira can be competition from animal areas and some food plantations. For example, regarding to the south of La Guajira, the local worker of an energy company[55] mentioned that there is a higher risk of diversion of land use since companies are being able to rent private lands to develop solar farms, a process that is easier than negotiating the compensation in the middle and north of La Guajira since

[53] The graveyards are the most important and spiritual place for the Wayúu community. Among other meanings, the graveyards are proof that your ancestors were from that territory.
[54] Interview # 2, 16 March 2023.
[55] Interview # 14, 25 April 2023.

in the south there are less indigenous collective lands. This could be a representation of how local people will be willing to rent their land to a more profitable industry.

Moreover, the manager of an international company trying to develop a wind project in La Guajira mentioned that the area where they are planning the wind park is a grazing area; however, it is expected that both uses can live together once the windmills are in operation since "*people and goats could still walk around since there are no plans to enclose the area and the connections are underground.*"[56] That said, the high-profile journalist[57] mentioned during the interview that some projects are not respecting the grazing areas and during the construction of one wind park the company cut the "feeding area" of goats and half of the animals died due to the lack of food.

Furthermore, the high-profile journalist[58] and the Recognised Wayúu[59] highlighted the importance of tourism in the area and how the new RE projects will compete with this. According to them, the landscape will be damaged, and tourists would not want to come to see the industrialised indigenous territory, this is because, according to them, the current plans for wind energy projects will cover a vast part of the territory and will be very close to tourist attractions such as El Cabo de la Vela, Cerro la Teta and the Flamingos sanctuary.

It is also important to note that the change in the use of the land is recognised during the EIAs and the compensations for this and monitoring measurements are often stipulated in the environmental license resolutions. Concerning this, the former public official of the Energy Ministry[60] mentioned that the conditions in Upper La Guajira are very difficult and see the investments coming from the private sector as an opportunity to develop the necessary conditions to start communal plantations again since these investments can help to bring water to the areas and grow the food necessary for their subsistence. However, the local worker of an energy company[61] mentioned that even though the companies are promoting the development of other economic activities such as supporting water access to growing food, developing specialised areas to maintain animals, and technically training them for these activities, people might see that just "renting" their lands to the private companies is more profitable and "easier" and, especially in the middle and north of La Guajira, indigenous could lose their culture around it.

Pertaining to the regulation, a manager of an international company trying to develop a wind project in La Guajira[62] mentioned that every time they want to change the use of land, they have to present an

[56] Interview # 13, 17 April 2023.
[57] Interview # 3, 3 April 2023.
[58] Interview # 3, 3 April 2023.
[59] Interview # 4, 14 April 2023.
[60] Interview # 2, 16 March 2023.
[61] Interview # 14, 25 April 2023.
[62] Interview # 13, 17 April 2023.

application for it before the municipalities. The application will assess the current use and present the project to change it, including the risks for it. The former deputy minister of the Energy Ministry stated that "*I understand that there is no regulation today. The challenge is possible land use conflicts in the medium term, especially with wind energy. The Guajira is a complex territorial development issue*".[63]

Reviewing the current public policies, for example, the CONPES 4075, public policy for the energy transition, does not consider the risk of the change of use of the land. Under this study, I was not able to identify other regulations associated with the topic.

Diversion of land risk assessment

Diversion of land		
Likelihood	Based on the information presented before, the is a high probability of a large change in the use of land to develop energy projects in the near future. This is due to the incentives of the communities to "rent" their land and this activity being more profitable and economically secure than others.	High[64]
Magnitude	Currently, the North of La Guajira has a challenge of growing food due to the lack of rain and water in the area. The development of energy projects will, most likely, bring water and energy projects to the region and promote agro-businesses. However, this might change the way the Wayúu community use to see their land and produce and maintain their animals, having an impact on their culture. That said, the North of La Guajira suffers from food insecurity, and the investment in this matter and social programs promoted by the private sector might bring back some food security to the area.	Medium[65]
Role of the private sector	The private sector does not have the capacity to regulate the change in the use of land; however, it has the duty of being responsible in the type of changes and the size of it. EIA and Environmental, Social and Governance due diligence most include this topic as part of the analysis specially when it is known that many RE projects are under development in the same area.	Medium

6.2.5. Diversion of talent from other sectors

Leonard et al. (2022)., mention that to fill the jobs in the new RE industry there are two options, looking for the necessary skills-set in another industry or hiring and training new workers with the necessary skills. They mention that from countries, or regions, with high unemployment levels, hires in the RE

[63] Interview # 2, 16 March 2023.
[64] "High" indicates that most likely, there will be a large change on the use of land. It is yellow because these changes can be both positives and negatives depending on how the changes and mitigation factors are implemented.
[65] "Medium" indicates the severity that this can have on the population. It is yellow because these outcomes can be both positive and negatives, depending on how the mitigation factors are implemented.

sector are not expected to come at the expense of other industries, but this might change depending on the educational level in the context and whether the RE industry can pay more than other industries. According to Leonard et al. (2022), the risk in this case is creating an internal "brain drain".[66]

Therefore, to analyse this, it is important to review the unemployment levels in the region and analyse from which sectors the RE industry can directly hire workers with the necessary skills-set or if the industry will have to train new workers. Due to the state of the RE industry, there is no available information regarding how much will the RE pay in comparison with other industries. The stability and formality of the job generation in the RE industry are also relevant to analyse within this symptom.

According to the National Administrative Department of Statistics (2023), in 2022 La Guajira had an unemployment rate of 8.9%, an increase compared to the previous year's indicator of 5.2%. As mentioned before, there are two main economic activities in La Guajira, mining and agricultural (agriculture, fishing and farming), retail trade and manufacturing, the first with the highest share in the departmental GDP, and the second employing 64% of the population. Also relevant to note, 43% of the economically active population of La Guajira has up to primary education, while at the national level it is 29%, showing a serious gap in competitiveness (Guajira360, 2018). Informality also plays a relevant role in this discussion, according to the National Administrative Department of Statistics (2023), in 2023 the informality[67] in Riohacha, the capital of La Guajira, was 67.2%, one of the highest in Colombia.

Furthermore, regarding whether the RE industry can find skilled workers to work in the industry, the CONPES 4075 for the energy transition in Colombia states that "the decarbonisation of the economy poses new demands for knowledge and skills that the country's labour market is currently unable to supply. Similarly, the labour force is not prepared to apply these new technologies, so there are gaps in the relocation of workers from industries such as oil and coal to energy industries such as hydrogen or non-conventional renewable energies".

Most of the people interviewed for this study agree stating that diversion of talent from other sectors might not be a risk for La Guajira. For example, the former public official of the Energy Ministry mentioned that the "*energy sector will not be a competitor to other industries, but it can be a potential enabler to boost the economy.*"[68] That said, the researcher on coal and energy transition[69] stated that the coal industry will be close in the near future, leaving a number of well-trained employees that might go

[66] Brain drain refers to the loss of human capital from one area to another or from one industry to another.
[67] Refers to workers who are self-employed, who work for companies that are not registered with the chamber of commerce or have incomplete accounting, or who do not have health and pension contributions due to their employment relationship with the employer who hired them.
[68] Interview # 2, 16 March 2023.
[69] Interview # 5, 19 April 2023.

to the oil and gas industry but can also join the RE sector. Related to this, the lawyer at an NGO also stated that the energy transition in La Guajira can be "*an opportunity for labour reconversion*",[70] referring to the workers in the coal industry.

Pertaining to the idea of bringing skilled workers from the oil and gas and mining industry to work with the RE sector, the security manager on an international solar company[71] mentioned that it is important to retrain this workers in the new culture of doing things and dealing with the local communities, highlighting the importance of a good compliance and due diligence monitoring to avoid third-parties acting on their name with the "wrong" mind set.

That said, the local worker of an energy company[72] mentioned that there is a risk in the north of La Guajira in terms of the community leaving the little agricultural activity that they have today due to depending on the RE rents in their communities.

Regarding the stability and the formality of job generation in the RE industry, it is important to note that most of the job generation will come during the pre-construction[73] and construction phases, the human capital during the operation phase of the process will decrease and would most likely be linked to skilled jobs due to the nature of the operations. These topics will be further expanded in subsections 6.2.7. Expatriates dominating high-income/skilled jobs subsection.

Diversion of talent from other sectors risk assessment

Diversion of talent from other sectors		
Likelihood	Although the risk of a "brain drain" in a particular industry due to the introduction of the RE industry is low, there might be some diversion coming from the coal mining sector that, according to the researcher on coal and energy transition and the lawyers in an NGO, will close down in the short and medium term; however, this would be seen as a labour reconversion rather than a brain drain. That said, and as assessed in the diversion of land subsection, some people from the agro-business sector might find the RE industry more profitable.	Medium[74]
Magnitude	The magnitude is assessed as low given that the industry has few jobs during the operation of the project. This may motivate communities to maintain other economic activities and take advantage of the investment in productive projects	Low[75]

[70] Interview # 7, 28 April 2023.
[71] Interview # 11, 28 February 2023.
[72] Interview # 14, 25 April 2023.
[73] Referring to the elaboration of the EIA, other technical studies and the prior consultation.
[74] "Medium" indicates that there might be some diversion of talent from other sectors, but it is not expected to be a large one. It is yellow because these changes can be both positives and negatives depending on how the training and diversion are implemented.
[75] "Low" indicates the severity that this can have on the population. It is green because these outcomes most likely would be positives.

	that RE companies would make as compensation for land use and energy generation. In addition, investment in human capital, especially due to the lack of trained personnel for the construction and operation of RE projects, is likely to have a positive impact on the development of local communities.	
Role of the private sector	The private sector most likely will have to train employees with the necessary skills-set due to the lack of industries in the region with the kind of operations and culture to develop and operate these kind of energy projects. Even for engineers that might come from the extractvims sectors, the CONPES 4075 highlights that there is a gap in the education for the energy transition and the operation of RE technologies. Thus, the private sector would need to work closely with education institutions such as universities and SENA to promote educational programs associated with RE projects and technologies. The investment in human capital will be key for both the private sector and the development of the local communities and can bring a win-win situation. That said, the private sector needs to be clear in the kind of jobs it can offer and temporality of those so the local communities can make an informed decision for education investment and employability.	High

6.2.6. Economic dependence

According to Leonard et al. (2022), economic dependence refers to the dependence that a country, company or region has on international or external capital. According to them, many RE technologies can be modular and the capital entry barriers are lower than for fuel-based energy infrastructure; however, large projects in developing countries such as in Latin America often have an international dependence on technology and capital for RE generation projects. The authors highlight that the main risks in these cases are international dependence, the influence of policies from international parties, and that the investment does not benefit the local population, risks that can be mitigated by public policies and ensuring positive impacts for the local population.

To analyse this, I first review the investments in terms of the type of private companies working in the area and the capital they are using for the development of these projects. Next, I assess the policies that seek to promote private investment in the RE sector, and the regulation that seek to ensure positive impacts for the local populations.

As mentioned before, Colombia has an international material dependence as RE equipment comes imported to the country and with some tax benefits. Furthermore, regarding the technical expertise to install and operate such RE equipment, several of the interviewees agreed that most of the specialised technicians and engineers supporting the installation and operation of the RE technology are international or outside La Guajira. For example, the lawyers at an NGO stated that "*the top technicians*

are not in La Guajira, they are in Bogotá or Norway",[76] a topic to which the high-profile journalist[77] also agrees, and which will be discussed in subsection 6.2.7. Expatriates dominating high-income/skilled jobs.

In terms of the private companies investing in RE in La Guajira, Barney published a study in 2023 in which it states that, to date, there are 18 parent companies interested in developing and operating wind energy generation projects, according to the study, these companies are associated to several controlled companies in Colombia with 63 projects in different development stages, suspecting that not all will reach an operational stage (Barney, 2023). According to the information published in the study, the table below presents the summarised information of the number of parent companies, their nationalities and number of Colombian companies and projects associated.

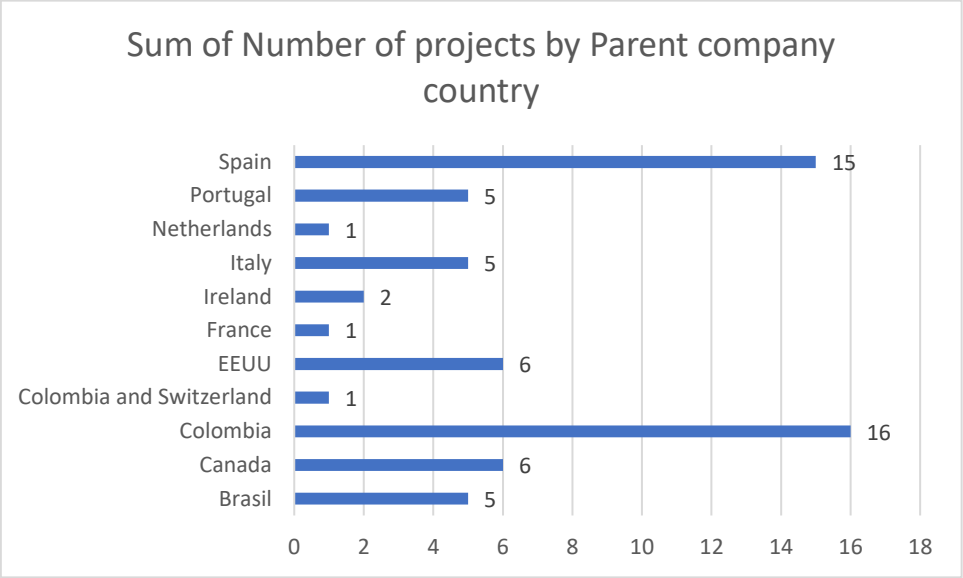
Table 1 Companies developing wind energy generation projects in La Guajira - Based on information taken from Barmey (2023).

Parent company name	Parent company country	Number of companies in Colombia	Number of projects[78]
BLUEFLOAT ENERGY	Spain	2	6
Gercol Renovables	Colombia and Switzerland	1	1
Brookfield Asset Management	Canada	1	6
EDF Renouvelables	France	1	1
AMDA	Spain	2	3
Mainstream Renewable Power	Ireland	1	2
AES Corporation	EEUU	1	5
ENEL	Italy	1	5
MPC Energy Solutions	Netherlands	1	1
EDP Group	Portugal	5	5
ENERFÍN / ELECNOR	Spain	5	5
Alupar Investimento	Brazil	1	5
EPM	Colombia	1	7
Argos	Colombia	1	4
ACCIONA	Spain	1	1
OAK CREEK Energy	EEUU	1	1
COLGEÓLICA	Colombia	2	4
GUALICA	Colombia	1	1

[76] Interview # 7, 28 April 2023.
[77] Interview # 3, 3 April 2023.
[78] 53 wind parks under development in different phases, and 10 air measurement antennas for the design of new projects.

Based on this, the graphic below presents the distribution by nationality of the capital invested in these wind energy generation projects in La Guajira.

Table 2 Number of projects by nationality



Out of the 63 projects, approximately 27% have a Colombian company leading the project, indicating that there is an international economic dependence to develop most of the projects. In addition to this, the manager of an international company trying to develop a wind project in La Guajira mentioned that even international companies like his are most likely financing these projects with investments from the multilateral bank. Furthermore, reviewing the CONPES 4075 and the tax and regulatory incentives, there appears not to be any special incentive for Colombian companies or banks to invest in these RE projects, the incentives are designed to equally benefit national and international companies.

Additionally, it can be noted that the Barmey (2023) study did not identify any company including the formal participation of the Wayúu community. When asking if there is a possibility of creating formal joint ventures with the local communities, the manager of an energy company with wind projects in La Guajira stated that:

> *"It does not have an economic problem, but it is not the best option for the Wayúu. It is a mistake to consider it as the best option for the Wayúu and I am going to explain this to you because there are several elements. The first element is that all these projects have to overcome financing processes and in the financing processes the partners enter with certain commitments and have obligations. If the project does badly and the project fails economically, this will affect and damage the communities in terms of capacities that the communities do not have. And that should not be like that. And in the management of certain risks such as, for example, financial and land ownership risks. Communities cannot enter into these risks. In this situation, one cannot go in and say to the banks 'we are going to*

guarantee because our partner has its own territory'. It is not a territory that can be titled."[79]

The source continued mentioning that the communities should be shield from these risks and "*like all partners, the communities have the capacity to take sides in the decisions that are being made about the project [...] The communities always have the spaces through the mechanisms of prior consultation or through social dialogue through all the mechanisms of participation, and what Escazú is opening up today*."[80] Regarding to this, the senior researcher in an environmental organisation[81] agrees on stating that there is a low to null possibility of seeing local energy companies that produce, specifically, electricity using wind as a source or in an amount/way that it can be connected to the national system. The source explained that "*this is not because it is La Guajira, but because it is an international issue and the way the 'auction' system is set up, there is no room for community projects*",[82] this is, due to the competition of public tenders seek to achieve low electricity prices (REN21, 2017), community projects would not have the capacity to win against bigger companies.

In terms of shared value, in Colombia exist the "energy transferences" that stipulate that 1% of the RE generation's revenue must go to the municipalities where the projects are located, and, if there are indigenes communities in the territory, 60% of the 1% must go to these communities. This model was created under the former National Development Plan lead by former president of Colombia, Iván Duque, and it is currently being review by the new government, seeking to increase the percentage. These transferences can be considered a type of "local taxation", a benefit sharing method "that diverts part of a project's revenue into local-level public spending" (REN21, 2017, p. 19). However, REN21 (2017) highlights that there are several drawbacks with this method, for example, the allocation of such resources sometimes is not appropriate or is disconnected to the context of the needs of the territories given that, as it is the case of La Guajira, often municipalities are disconnected (physical, socioeconomic or culturally) to the communities that are affected by the RE project.

Furthermore, by law, during the process of the prior consultation, companies need to agree on a strategy to invest back in the communities they operate in. Therefore, during this process, the companies agree with the local communities the investment in the social development of the territory in exchange for the use of the land to generate electricity. As mentioned before, these agreements include specific investments in education, improvement of infrastructure, and access to water and energy. Additionally, and according to several interviews, many companies agree to create a communal fund where they deposit an "X" amount of money depending on the MW produce in the territory, these funds are then jointly managed by the company, public and community representatives. The local communities can

[79] Interview # 12, 5 April 2023.
[80] Interview # 12, 5 April 2023.
[81] Interview # 8, 2 May 2023.
[82] Interview # 8, 2 May 2023.

then present a productive or social investment project. According to several of the interviewees, this can be considered a type of partnership to give back a percentage of the income to the communities around the projects. These types of funds can also be considered a type of benefit sharing according to REN21 (2017) and can be more connected to the needs of the local territories.

For example, the manager of an energy company with wind projects in La Guajira[83] stated that these new wind projects should be considered as seed capital for social and economic projects that the communities need and want to have. This way, these funds can be used for it. Furthermore, the Recognised Wayúu[84] mentioned that these kinds of funds are an acceptable method in a set of strategies needed to benefit communities.

That said, as it was highlighted by the researcher on coal and energy transition,[85] these investments are made with the communities that have agreements with the private companies, therefore, it is not an investment for La Guajira as a whole or for a municipality. This indicate that some rural communities can be left out of the deals and some groups might socially and economically develop over others. Reviewing the CONPES 4075, the public policy associated with the energy transition, the regulation of the EIA for wind and solar energy projects, or other open-source searches, I was not able to find any integrated plan for the development of La Guajira or the investment of resources from the private sector. During this study, I was also not able to get in contact with the National Development Agency to confirm whether there is a development and social investment plan for La Guajira in the context of the development of the new RE projects.

This goes in line with the concept of Shared Value and, specifically, with the “Ecosystem of Shared Value”, referring to the need to work together with different stakeholders such as NGOs, government and other private companies working in the same region to successfully promote social progress and capture the economic benefits of it (Kramer & Pfitzer, 2016).

In connection to this, the lawyer at an NGO stated that "*under the current scheme, on the one hand, companies are free to distribute profits, but this can affect traditional schemes* [the Wayúu way of doing things]. *All companies have benefits, even beyond regulation, and an interest in the development of communities*." However, the source also mentions that this is done "*without a monitoring or plan, it is likely to replicate schemes of misuse of resources and the enrichment of some already wealthy families*".[86]

[83] Interview # 12, 5 April 2023.
[84] Interview # 4, 14 April 2023.
[85] Interview # 5, 19 April 2023.
[86] Interview # 7, 28 April 2023.

Nevertheless, the high-profile journalist stated that the mechanisms that are being implemented today by the private companies in La Guajira *"are a very welfarist programme to replace the state."*[87] Concerning this, the senior researcher in an environmental organisation mentioned that "*the communities are impoverished, they already have food dependency, the dependency is already there*,"[88] explaining that international cooperation supports various food programmes, and that private companies and other organisations are facilitating access to water. Now, with the new investments in the wind energy sector, the source mentions that "*the main risk is the economic policy of a new social class among the Wayúu community and the rupture of the culture of governance of the communities".*[89] This topic is further developed in the sections 6.2.11. Internal conflicts and 6.2.15. Weakening of institutions.

Economic dependence risk assessment

Economic dependence		
Likelihood	As mentioned by one of the sources, the dependence is already there, and the likelihood of it increasing is also high, especially in the rural areas of the north and middle of La Guajira. Most of the investment in the RE sector, especially in wind energy generation, comes from international investments and even the Colombian companies are not based in La Guajira. Furthermore, the current public policies do not seem to prioritise local investments and are more focused on promoting general private investment in the RE sector. Finally, the national electric system and the general context of La Guajira do not seem to favour the creation of energy companies in the region with the involvement of the local communities.	High[90]
Magnitude	Currently, there are two main benefit-sharing mechanisms associated particularly with the wind energy projects that are under development in La Guajira: local taxation and the creation of community funds to use the compensation resources from the private companies in social and productive projects. The first has not had the best results in La Guajira since the resource from the coal royalties did not benefit the local communities. The second would be, potentially, more link to the needs of the local communities impacted by the private energy projects; however, these resources would not be available for all local communities, and some may benefit more than others, creating tensions among the Wayúu community and potentially affecting their own form of social organisation and governance.	Medium[91]

[87] Interview # 3, 3 April 2023.
[88] Interview # 8, 2 May 2023.
[89] Interview # 8, 2 May 2023.
[90] "High" indicates that there might be an increase in the economic dependence that La Guajira and local communities have on international or external investments. It is yellow because this economic dependence can be both positives and negatives depending on the communities' social investment mechanisms, especially in the communities' independent productive projects.
[91] "Medium" indicates the severity that this can have on the population. It is yellow because these outcomes can be both positive and negative depending on the benefit sharing and the implementation of it.

Role of the private sector	The willingness of the private sector to create real shared value and the way of doing it, promoting and creating private-social partnerships, will be key in avoiding the main social risk of economic dependence, investments not benefiting the local population. This should come with clear and complete information sharing so local communities understand their role and the fair compensations they should receive. The private sector is also call to introduce mechanisms to avoid corruption and the enrichment of some families, unbalancing the social and governance organisation of the Wayúu community. Furthermore, and understanding the context and lack of State in La Guajira, the private sector should be more innovative and create tools to work together to have a more holistic investment in the territories, creating an Ecosystem of Shared Value.	High

6.2.7. Expatriates dominating high-income/skilled jobs

Leonard et al. (2022) mention that the main risk of expatriates dominating high-income/skilled jobs is the consolidation and exacerbation of income inequality, a topic that will be addressed in section 6.2.9. This domination might arise depending on the level of skills required for such high-income jobs and the availability of gaining these skills locally. Although RE will require long-term maintenance, if relevant and specialised professionals are not available in the region, these will come from outside the territory. As mentioned before, this symptom is also related to the diversion of talent from other sectors and economic dependence.

For the analysis of this symptom, it is important to consider the types of skilled/high-income jobs the RE sector can offer in the different stages of the project, the educational level of the region, and the availability of educational and technical training associated with RE technologies and projects.

First of all, Law 2099 of 2021, that set up incentives for the development of non-conventional energy sources, established that "the generation, distribution and commercialisation of renewable energy projects should prioritize hiring local residents, for both qualified and unqualified positions"; however, it does not provide any enforcement mechanisms (Vega & Muñoz, 2023, p. 4). Regarding this, both the senior researcher in an environmental organisation[92] and the researcher with knowledge of the energy transition in La Guajira,[93] confirmed that during a study in April 2023 in La Guajira, they were able to confirm that in every location and among different companies, there were both locals from La Guajira and the Wayúu community working.

[92] Interview # 8, 2 May 2023.
[93] Interview # 9, 4 May 2023.

The development of the new RE projects in La Guajira will be divided into four main stages, which will require different types of jobs and specialities. Based on the information recovered from the interviews, most of the jobs will be available during the pre-development (elaboration of the EIA and prior consultation) and the construction of the parks and related infrastructure. During the operation phase, there will be less available jobs, mainly associated to maintenance and control, which require specialised skills.

As mentioned before, the education in La Guajira is low and, according to the CONPES 4570, the country does not have the current capacity to train in RE technologies. Additionally, according to the researcher with knowledge of the energy transition in La Guajira,[94] some Wayúu people do not even speak Spanish. Therefore, education in the region is a major barrier to access to high or specialised positions, but today there are some examples.

The senior researcher in an environmental organisation[95] mentioned that s/he met the environmental engineer of one of the energy companies, who was from La Guajira. Likewise, at least three sources mentioned that throughout the whole project (the four stages), people trained in communication and community liaison persons are required, jobs with a certain level of specialisation and which are also usually filled by people from the region. This show that there is an intention from the private sector to hire locally depending on the capabilities and needs, and as mentioned before, is investing several resources in promoting education and technical training in the region.

Regarding the role of the private sector in avoiding the domination of expatriates or, in this case, people from outside La Guajira, the researcher with knowledge of the energy transition in La Guajira stated that the companies working in the territory *"can or should be much clearer in their recruitment manuals, in the socialisation or pre-consultation stage"*, for example explaining "*how can you* [the local communities] *start training for other types of positions"*.[96] The source continued by mentioning that the private sector should also offer to articulate with the academia, which has been somewhat absent in the process of energy transformation in La Guajira.[97]

Expatriates dominating high-income/skilled jobs risk assessment

Expatriates dominating high-income/skilled jobs		
Likelihood	The likelihood of expatriates, or people from outside la Guajira and especially from outside the Wayúu community,	High[98]

[94] Interview # 9, 4 May 2023.
[95] Interview # 8, 2 May 2023.
[96] Interview # 9, 4 May 2023.
[97] Interview # 9, 4 May 2023.
[98] "High" indicates that there is a high likelihood of expatriates dominating high-income/skilled jobs within the development of the new RE generation projects. It is red because this would most likely bring negative consequence to the local communities.

	holding most of the high-income and skilled jobs is high. This is because of the education gap in the area, which will take a long time to fill, and in which there are current investments.	
Magnitude	The intense arrival of new people in the area, and the temporary nature of the jobs that most Wayúu can take, may affect the comfort and increase the dissatisfaction of local rural communities in the area, especially in the northern and middle Guajira where the energy-intensive wind projects are concentrated. This will also increase the inequality in the area, especially between the urban and rural areas.	Medium[99]
Role of the private sector	The private sector will look for the best trained personal and has the characteristic of seeking for the most effective way of doing so. That said, it cannot overlook the educational gap in the region and necessarily will need to acquire employees from outside the territory. That said, it could be more active and innovative on not presenting themselves and their employees as a "outsider" that does not even know the territory and the communities it operates with. Recruitment plans from day one should be clear and specific in the type of skills required for different types of jobs, so as not to generate dissatisfaction when the expected jobs do not arrive or arrive for others outside the local communities.	Medium

6.2.8. Gender inequality

According to Leonard et al. (2022), gender inequality can be exacerbated when there are barriers for women to enter the industry, barriers such as cultural norms, economic context, the amount of unpaid care work performed by women, and its compatibility with market work. Studies referenced by Leonard et al. (2022) indicate that the under-representation of women in booming industries may result in "higher fertility, lower education rates, and less influence for women and girls in both family and political or legislative spheres" (p. 3).

Based on this, and due to the focus of this study on the role of the private sector on social development, to assess gender inequality I focused on the role of the women within the Wayúu community to understand the approach the private sector is having towards the inclusion of local women in the workforce. Additionally, the analysis will also focus on the risk of lower education rates. Finally, it is also important to take into consideration the culture, ancestral believe and ways of doing things that the indigenous community has.

[99] "Medium" indicates the severity that this can have on the population. It is yellow because these outcomes might have some negative outcomes; however, these are not expected to have a high impact on the daily life of the local and rural communities.

As a general background, Vega and Muñoz (2023) noticed that in Colombia there is no official available data on gender distribution for the RE industry; however, using two solar projects level assessments in El Cesar,[100] region south of La Guajira, and El Meta,[101] region in the south of Colombia, preliminary reports suggest that men dominate the workforce. According to the study, in the first project, 15% of the workforce were women and in the second one, 38% were employed. Furthermore, the senior researcher in an environmental organisation mentioned that during a visit to a wind park in La Guajira, they were able to see that approximately 13% of the employees were women, "*mainly engineers and administrative staff*".[102]

Concerning the role of the Wayúu women, at least seven of the people interviewed mentioned that in the Wayúu culture the woman is the mediator, the person to be consulted and negotiated with, and the men are the warriors. As a reflection of this, three of the interviewees mentioned private companies gravitate towards hiring women for roles such as communication and community liaisons.

Pertaining to the kind of professional roles that women commonly take, the local worker of an energy company mentioned that most women go for studies such as "*social work, teaching and nursing*".[103] Also noting that "*in the communities you see that women are the ones who progress the most after high school,*" they are studying more.[104] The vision was also shared by the manager of an international company trying to develop a wind project in La Guajira.[105] In line with this, the senior researcher in an environmental organisation stated that "*in these contexts, if there is an educated woman, she does not stay in secondary school. If she has the possibility to study, she goes all the way*".[106]

The sources consulted for this study did not mention a specific role of the private sector within the gender inequality, that said, most their references to this topic were related to education.

Finally, and important to note since we are talking about an indigenous community with its own culture, according to the researcher with knowledge of the energy transition in La Guajira, "*although the Wayúu community is matriarchal, the leaders are male* [...] *As a company, you cannot suggest, that is the way of the Wayuu culture* [...] *The importance of the woman is that of a mediator. It is the conciliation.*

[100] The project analysed by the study was La Loma solar park located in El Cesar and is under construction by ENEL. The project is expected to big the biggest solar park in Colombia.
[101] The project analysed by the study was San Fernando Solar Park located in El Meta. The park is in operation and is owned by Ecopetrol, a Colombian energy company focused mainly on oil and gas.
[102] Interview # 8, 2 May 2023.
[103] Interview # 14, 25 April 2023.
[104] Interview # 14, 25 April 2023.
[105] Interview # 13, 17 April 2023.
[106] Interview # 8, 2 May 2023.

Companies have tried to use that to form social committees made up of women. But beyond that there is not much more detail".[107]

Gender inequality risk assessment

Gender inequality		
Likelihood	There is not enough information to assess whether gender inequality would be exacerbated. That said, there is secondary information and inputs made by the interviewees suggesting that there is a lack of representation of women in the development, construction and operation of RE projects in La Guajira. However, there seem to be good examples of women being part of skilled jobs and education might play a relevant role in this context. Furthermore, due to the size of the current RE industry in La Guajira, and the stage of the projects, it is hard to assess whether there would be an increase in gender inequality or not. Additionally, it is important to assess whether women are dominant in other economic activities such as handcrafting, relevant to the Wayúu culture.	Medium[108]
Magnitude	In terms of education, the risk that is being analysed under the gender inequality symptom, magnitude seems to be low since according to the sources consulted for this study, women tend to pursue more education in the context they live in and most of the jobs carried by women and mentioned by the sources are considered skilled jobs, both associated with the RE industry and others. Furthermore, and as mentioned before, the private sector is making an effort to invest in education in the region.	Low[109]
Role of the private sector	According to the analysis and focus of this study, it seems that the role of the private sector should focus on promoting education with a high focus on women since, as mentioned by several sources, women would seek to educate themselves if the opportunity presents itself. That said, the private sector needs to take into consideration the role of women within the Wayúu community and understand that gender equality might need to be studied taking a different approach and understanding the ancestral role of women in the community.	Medium

[107] Interview # 9, 4 May 2023.
[108] "Medium" in this context refer to the gender inequality that currently exists in terms of representation of women in the workforce of RE projects in La Guajira. However, it is represented in yellow since there is limited information and due to the local culture, it would be relevant to take into account women representation in other economic activities.
[109] "Low" indicates the severity that this can have on the population. It is green because, taking into account the available information and the focus on education, the mitigation factors and investment in education suggest that it could have a positive impact.

6.2.9. Income inequality

Leonard et al. (2022), state that the main risk of income inequality is the disparity between RE owners and waged workers, also producing minimal consideration for the productivity and wages of workers. They clarify that "owners" refer to the owners of either the land or capital, in this context we have both, owners of land that differ from the owners of capital. In that sense, the Wayúu community can be both owner (due to the land) and worker (employed by private companies to work in the RE projects developed in their territories). Some mitigation strategies are "maintaining low barrier to entry to the RE sector and ensuring that government RE subsidies benefit both the owners and the wage-earners" (Leonard et al., 2022, p. 7).

Due to the context explained before during the analysis of 2.2.3. investment in human capital, 2.2.6. economic dependence and 6.2.7. expatriates dominating high-income and skilled jobs, and understanding the current context and poor social development in the region, this symptom is analysed based on how social development can be improved so there is a fair standard of living among the local indigenous communities (owners of the land) and the rural and urban areas (workers from both La Guajira in general and people from the Wayúu community), topics that have been analysed in the previous mentioned sections.

As mentioned before, investment in human capital seems positive in the area with a high focus from the private sector. Economic dependence it already evident and most likely will increase; however, depending on the strategy of the social investments and compensation being done by the companies in the area, it can have a positive outcome for the social development of the communities. Similarly, the likelihood of expatriates dominating high-income and skilled jobs is high; however, the way it is approached and explained to the local communities and giving the opportunities to professionally grow with investment in education, the magnitude or severity of this can be low.

In addition to what has been mentioned in the previous sections, the researcher with knowledge of the energy transition in La Guajira suggests for the private companies "*generate standards* [as an industry in La Guajira], *you can generate standards that tell you how fair it should be, that tells you how the social approach should be*".[110] This seeking to being fair to the Wayúu community and distributing better the compensations and promoting holistic development of the region. According to at least two of the sources consulted for this study, the main risk is the creation of a new social class in the Wayúu community, which can be avoided by distributing fair benefits among the entire population and carefully creating protocols to manage the funds created by private companies as compensation for the use of the territory.

[110] Interview # 9, 4 May 2023.

Pertaining the likelihood of the formation of a new social class within the Wayúu community, the senior researcher in an environmental organisation mentioned that the distribution of compensations needs to be well managed among the leaders of the communities and there must be protocols for this. According to the source, "*the number of resources coming now is way higher than what it was* […], *the resources are a lot compared to nothing and what is happening is the capture* [of such resources] *by the leaders of the communities, which is creating a new social hierarchy*".[111]

Income inequality risk assessment

Income inequality		
Likelihood	Income inequality would be present since currently, local communities cannot access high-income jobs due to educational gaps, among others. In terms of the difference between the "owners" of both land and capital, inequality would also most likely exist since there is a large gap between the standard of life of both and the first one is, as today, dependent on different resources for the development of social programs.	High[112]
Magnitude	Since inequality is mainly based on different factors such as education and social and public services that are being addressed today by both the private and public sectors, and NGOs. The main risk to be addressed is the governance of the new resources entering the territory to avoid the creation of a new social class within the local Wayúu community.	Medium[113]
Role of the private sector	As mentioned in the magnitude analysis, the main risk the private sector should seek to avoid is that its support and payment of compensations do not end up creating a new social class due to the lack of a balance distribution, governance and control. Additionally, and referring to the need to have a holistic investment in the territory and the communication all players from the private sector should have to address this, private companies are called to avoid neglecting areas of the territory or local employers from outside their direct area of operation. It is necessary and requires a more active and innovative private sector in creating relationships with other companies, NGOs, resource management agencies, and the local public sector to avoid neglecting areas of the Guajira territory that are not within the direct area of operation of RE projects but are interrelated with their activities and are nearby communities.	High

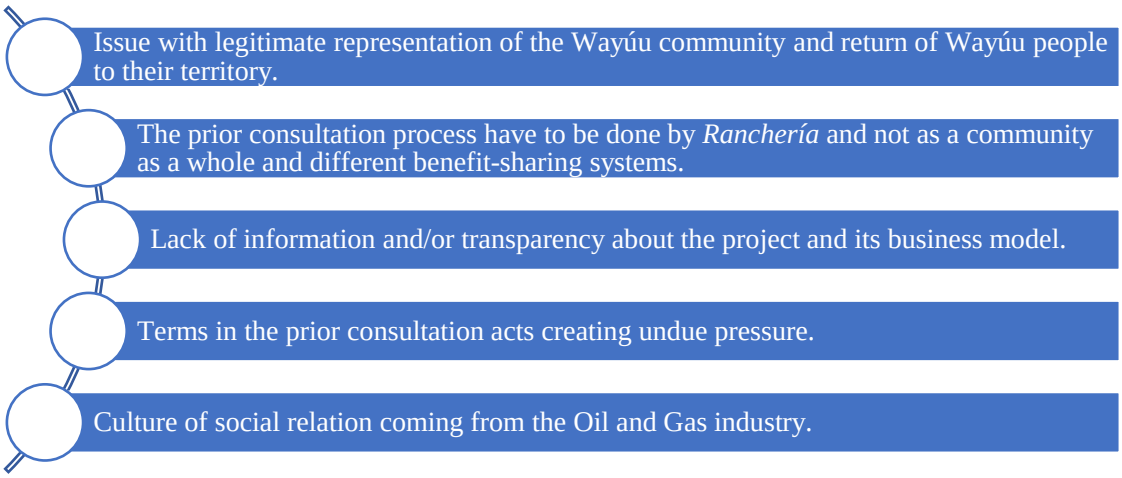
[111] Interview # 8, 2 May 2023.
[112] "High" refer to the probability of income inequality increasing within the context of RE projects in La Guajira. It is represented in red since, according to the analysis of available information and the sources consulted, it can have a negative impact in the local communities.
[113] "Medium" indicates the severity that this can have on the population. It is yellow because there are several other aspects that are being addressed and those outcomes can have either positive or negative impacts depending on how changes are implemented.

6.2.10. Internal conflict

According to Leonard et al. (2022), internal conflict associated with RE projects could lead to land conflicts and political and civil unrest. The likelihood is marked by the existence of civil or political conflict, evidence of inequalities, the disturbance to independent cultural communities such as indigenous groups, and the lack of benefits transferred to local communities. To reduce the severity and likelihood of internal conflict, both the approach taken by the private sector and public policies toward fairness and coordination with local communities will play a relevant role.

It is important to note that this is the only symptom in which Leonard et al. (2022) state the relevance of the way in which the private sector approaches its relationship with local communities and its particularities, therefore, the context of the region, it's characteristics and independent conflict plays an important role on addressing the behaviour of companies towards communities.

Therefore, to analyse this symptom there are several approaches; however, based on the scope of this study and limitations, I focus exclusively on the role of the private sector and its approach towards the implementation of public policies and interrelation with the civil society and public entities. Therefore, I do not analyse the fairness or efficiency of current public policies. Considering the collected data and the main insights from the interviews, and taking into consideration the analysis presented before pertaining to the perceived inequalities and challenges within the prior consultation in the region, below I describe five aspects that appear to be creating internal conflict and develop further on the context and role of the private sector. These aspects are:



Legitimate representation and the return to the territory

First, and as explained before, there is an issue with the legitimate representation of the Wayúu community associated with the Ancestral (historically legitimate representative that is not legally recognised for processes such as EIA and prior consultation) versus Traditional authority (legally

recognised authority created by the government and with lack of regulation). This causes internal disputed within the Wayúu community since sometimes “those two authorities do not always coincide” (Monsalve, 2023).

This become a problem for the private sector since according to the Ministry of Interior, they should conduct the prior consultation and reach agreement with the Traditional authorities; however, the Colombia Constitutional Court stated that the Ancestral authority is the legitimate authority and therefore the one with the capacity to decide for its territory, requesting to the Ministry of Interior to resolve the situation with a transitional process (Monsalve, 2023; Vega-Araújo & Heffron, 2022). However, today one of the biggest challenges for the private sector is that, according to a local worker of an energy company consulted for this study, sometimes the companies need to act as a mediator between both authorities and innovate in the way they conduct the prior consultation with both without offending any of the parties.[114] Other three sources consulted for this study agreed with the challenge; however, other two sources stated that the companies are the ones that do not understand the territory and therefore are causing conflicts within the communities.

In addition to this, it has been reported, and also mentioned on the interviews, that there is an issue and lack of transparency with the creation of Traditional authorities before the local office of indigenous affairs. As mentioned by the manager of an international company trying to develop a wind project in La Guajira, the same system of Traditional Authorities promotes the separation of communities, today "*anyone can go and open a new authority for separation of families*",[115] which means that now that person can access to government support and projects (Vega-Araújo & Heffron, 2022). This was also mentioned by Monsalve (2023), by reporting that if you go and ask for the Traditional authority of a specific area or *Ranchería*, you can find five papers stating different people. For the private sector, this means that they need to conduct a prior consultation with five different “families” and reach five different agreements. This is despite the fact that they are the same family that split because of their own conflict or because of the fact that they could have access to more resources by doing so.

Furthermore, the local worker of an energy company consulted for this study mentioned that when starting the Scouting,[116] process that most private companies do, companies try to map all relevant individuals in the territory and identify the Ancestral authority; however, this information is sometimes hard to find and it takes a lot of field research and interviews with the locals to identify the correct information; otherwise, the Traditional authority will state that they are the owners and the ones they should talk with from the beginning.[117] Another example was stated by Monsalve (2023), “throughout

[114] Interview # 14, 25 April 2023.
[115] Interview # 13, 17 April 2023.
[116] Process of collecting relevant information about a territory or business sector in a specific context before starting the formal business processes or consultations.
[117] Interview # 14, 25 April 2023.

La Guajira, the Wayúu claim that these documents [the prior consultation] were not signed with the owners of the land, but with communities that inhabited the land, but were not responsible for deciding on it."

In this sense, the researcher with knowledge of the energy transition in La Guajira stated that there are "*institutional limitations in supporting these processes* […] *In the absence of an accompanying person, someone that supervise, you find yourself with a company trying to navigate the uncertainty and they make some mistakes.*"[118]

In addition to this, several of the studies referenced in this document and the sources consulted for the study mention that due to the current political and social situation in Venezuela, many Wayúu people that were living in Venezuela are returning to La Guajira. This situation is bringing back past conflicts to the community. And some of them state that they are coming seeking for the resources that the private companies are bringing to the territory.

Therefore, the initial field work and a full understanding of the territory is fundamental for the success of the following consultation and relationship between companies and local communities and in creating appropriate strategies to communicate and deal with internal conflicts that are not necessary created by the companies.

Prior consultation by *Ranchería*[119]

Another particularity of the territory is that given the natural Wayúu organisation system, the prior consultation process and decision-making process is done individually. In terms of the prior consultation process, this has led to several conflicts within the whole community since companies have to make individual agreements so even when a project is approved to be developed, for example, in *Ranchería* A's territory, companies do not consult *Ranchería* B, even though they are neighbouring communities and the decision impact them both, or even when both *Rancherías* are included, the might not be compensated in the same way, which has left a sense of fragmentation in the community and the right to land (Rubiano, 2021).

Furthermore, according to Rubiano (2011), due to the poor situation of the *Rancherías*, private companies exploit the situation to reach agreements and compensations individually. This does not truly recompense for the use of their land and does not benefit the community, affecting the internal relationships (Rubiano, 2021). However, sources consulted for this study suggest that the private companies are in the middle of a situation that they cannot control.

[118] Interview # 9, 4 May 2023.
[119] The community's rural settlements.

That said, when asking why the process were not conducted with all the communities at the same time, both a Recognised Wayúu[120] and a manager of an energy company with wind projects in La Guajira[121] interviewed for this study stated that by law and also because of the Wayúu culture, these processes most be conducted separately. In the same line, the senior researcher in an environmental organisation stated that "*companies have different approaches, some try to agree community by community* [...] *others try to make agreements and pay equally, which has seemed to be more effective and frees them from restrictions*", noting that it avoids questions like "*why do they get this more than us, why do they get this and not us*".[122]

When asking how private companies should address this issue, the researcher with knowledge of the energy transition in La Guajira stated that companies can create standards: "*You can create standards that tell you what should be fair, that tell you what the social approach should be. The communities themselves are developing protocols on how to relate to them*".[123] In that sense, there is a need for a private sector that promotes more transparency in the negotiation process and that can be accountable for how it reaches one agreement or another depending on the context or impacts identified in the different communities.

Lack of information and/or transparency

According to Vega-Araújo & Heffrom (2022), there is a lack of information provided by the companies about the project and its business model which causes "an unbalanced company-community negotiation on compensation and undue pressure suffered by the community from both the company and community advisors" (p. 6). In this regard, both a high-profile journalist[124] and a Recognised Wayúu[125] stated this situation is preventing the communities to make an informed decision and negotiate fair compensations.

For example, the researcher with knowledge of the energy transition in La Guajira stated that "*one thing is the legal compensation that companies must pay, and another is the voluntary compensation that is negotiated with the communities. This is often not clear to the communities, which makes the negotiations difficult*."[126]

Undue pressure

[120] Interview # 4, 14 April 2023.
[121] Interview # 12, 5 April 2023.
[122] Interview # 8, 2 May 2023.
[123] Interview # 9, 4 May 2023.
[124] Interview # 3, 3 April 2023.
[125] Interview # 4, 14 April 2023.
[126] Interview # 9, 4 May 2023.

According to a high-profile journalist interviewed for this study, some companies are creating terms in the prior consultation acts that undue pressure, for example, some companies would say that compensation will only be paid if it is guaranteed that there will be no blocking of operations by the community, "*so they are inciting to something, to kill each other* [...] *So, the mess, the mess is huge*".[127]

This was an isolated comment from a source; however, a similar situation was reported in a newspaper, stating that a company neglected the consultation of a family, which received "threats and confrontations from another family that had been consulted and agreed with the implementation of the project within Wayuu indigenous territories" (Guerrero, 2022).

The situations illustrate the sensitivity of the situation and how certain companies can exacerbate the problem if they do not understand the territory and try to cut any corners.

Culture of social relation coming from the Oil and Gas industry

According to a security manager at an international solar company interviewed for this study, due diligence, compliance and monitoring of employees and third parties are a key part of creating a new culture for RE companies, a sector that is relatively new in Colombia, and avoid an extractivism modus operandi. The source mentioned that they "*have realised that their people on the ground come from extractivism* [oil, gas and mining industries], *and they solve everything* [blockades] *very quickly with the ESMAD*".[128] The ESMAD is the Colombian Mobile Anti-Disturbance Squadron that act in riots, blockades and any other situation that might end up in social disturbance, and according to the source, Cerrejón mine has its own ESMAD unit within its operations.

In this sense, the source stresses the importance of educating inside the companies and re-educating them in the sense of doing things differently, through dialogue and communication with the communities.[129]

To conclude the internal conflict section, it is important to highlight that at least three of the sources consulted for this study stated that there are many companies in the territory and their operations cannot be generalised. According to them, some are doing things right, making mistakes but trying to understand the territory and coming up with innovative strategies to communicate, reach agreements and operate in this difficult region. However, others do not understand and do things that directly cause conflict within the territory. According to a former public official of the Energy Ministry interviewed for this study,[130] you can see which companies try to do things right and which do not, because those

[127] Interview # 3, 3 April 2023.
[128] Interview # 11, 28 February 2023.
[129] Interview # 11, 28 February 2023.
[130] Interview # 2, 16 March 2023.

who do things honestly and transparently, communicating to their nearby communities, tend to have fewer conflicts and operate more smoothly than others.

In the same line, the senior researcher in an environmental organisation stated that "*communities are not opposed to technology. What they want is to be given the benefits. In all cases, when we asked them: knowing what it is like to have a wind park next door, if you were given the opportunity to go back to the past, would you have the park again? They all said yes, they would prefer more benefits, maybe, but they would all support the wind park again.* [...] *Companies have learned a lot; they are doing things much better. There has been a lot of learning.* [...] [But] *the region is difficult, and I wouldn't be surprised if companies pull out*."[131]

Finally, in summary, the communities apparently benefit economically in one way or another. The problem is that, as mentioned by a senior researcher in an environmental organisation interviewed for this study, the communities complain that in general the "*money brings disputes*",[132] generating or increasing internal conflict. And since negotiations are done privately by *ranchería*, and there is no standard of compensation for directly or indirectly affected communities, but rather it depends on who is negotiating, there is no transparency or general standards for the whole Wayúu community, that all companies can follow. This generates dissatisfaction and unrest within the community.

Internal conflict risk assessment

Internal conflict		
Likelihood	As mentioned in previous sections, La Guajira is marked with inequality, land conflicts and crime. This context, and as found by Leonard et al. (2022), facilitates the emergence of internal conflicts linked to the development of new RE projects. Furthermore, it is also clear that the new RE projects are disturbing, in one way or another, an independent cultural community. These communities economically beneficiate to some degree from these RE projects; however, these compensations and their distribution are also causing internal conflicts within the Wayúu community.	High[133]
Magnitude	Due to the diversity of conflicts and how deeply rooted they are in the community, and the difficulty for companies to deal with the different situations, added to the absence of the state in the territory, suggests that the severity of this symptom is high.	High[134]

[131] Interview # 8, 2 May 2023.
[132] Interview # 8, 2 May 2023.
[133] "High" indicates that most likely there will be an increase of internal conflict in the territory. The red colour indicates that it is a negative impact.
[134] "High", represented with red, indicates how negative can the increase in internal conflict can be for the local communities and their social development.

Role of the private sector	The engagement with the community must be constant and not only during the prior consultation. Transparency, clarity, traceability and accountability will also play a relevant role in creating and maintaining trust, allowing them to get the "license-to-operate". Furthermore, innovation and a strong social program will allow them to understand, navigate and support the communities in addressing their own conflicts, allowing them to better operate and have better results in the engagement and strengthening of the communities. As mentioned by several sources, companies that manage to do this are the most likely to be successful in their operations in the area. Additionally, the private sector needs to be more aggressive in requesting support from the public sector and seeking the institutional strengthening that would enable this support.	High

6.2.11. Land grabs

Leonard et al. (2022) stated that RE projects require extensive land and are often developed in rural areas with poor living conditions, resulting in locals suffering from information asymmetry, monopolistic power from the companies and/or threat of violence. This causes local dispossess or unfair compensation for the use of land. According to them, governmental citizen protection laws are key factors to avoid and reduce the severity of this symptom.

To analyse this, first, it is important to remember the social context of La Guajira compared to the aspects mentioned by Leonard et al. (2022). Then, due to the indigenous context in the region, land grabs also need to be analysed in the sense of how much of the Wayúu territory can be occupied by people from outside their community, changing their way of organising and living. Finally, thoughts from the sources consulted for this study are presented, pertaining to the prior consultation process and its capacity to facilitate or avoid land grabs based on the way the process is formulated and the way the private sector implements it.

As mentioned in section 6.2.10. Internal conflict, there are allegations of information asymmetry, monopolistic power from the companies and threat of violence, aspects that directly negatively impact the concept of land grabs described by Leonard et al. (2022). Similarly, as illustrated in the section 6.2.1. Crime, the region is marked with severe inequality and how its population suffers from unsatisfied basic necessities and access to water and energy.

That said, and as presented in sections 6.2.3. Investments in human capital and 6.2.6. Economic dependence, the private sector has different methods to compensate the local communities for the use of their territory and that seek to improve the living situation and social development of the locals. According to the collected data and analysis of it, presented in the aforementioned sections, depending in the way these compensations and social investments are made, and their communication, traceability

and transparency, the assessment of how fair these are in terms of compensating the Wayúu community for the use of their land can vary.

Pertaining to the appropriation of the indigenous territory, figure 17 (presented on the next page), taken from Barney (2023) and translated by the author, illustrate La Guajira with the projection of wind energy projects and related interconnection infrastructure compared to the Wayúu territory. The image shows that, if all projects come to life, after 2026 a great portion of this territory will be covered by wind energy projects. This is particularly interesting when knowing that, according to a researcher with knowledge of the energy transition in La Guajira[135] consulted for this study, most of these communities won't be benefit from the energy that is produced there since they are not connected to the national electricity system and there are no plans to connecting them due to different challenges.

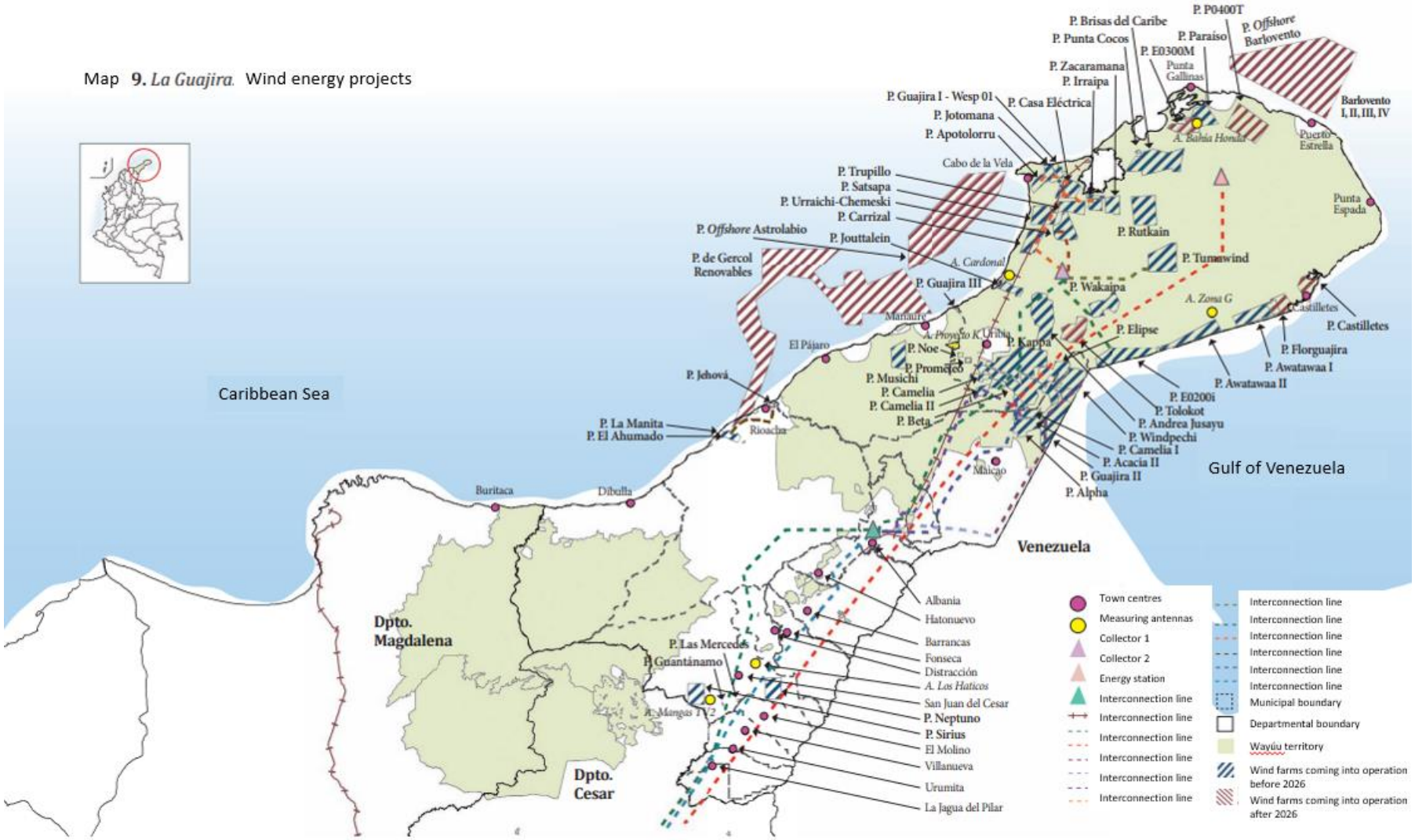
When analysing this, sources were asked whether there is a regulation regarding how much of the Wayúu territory can be used for energy generation and whether companies need to conduct a study to make sure that their wind park is "X" km away from the next one. All sources that where ask about this, including the two managers of energy companies developing energy projects in La Guajira,[136] stated that there is no regulation regarding this topic.

Regarding this, the researcher with knowledge of the energy transition in La Guajira[137] mentioned that if they (the industry, government and private sector) want to have a social based planning, the auctions of the projects must start in the territory, first agree with the communities where there can be energy generation projects and then auction those to the private sector, and not the other way around as it is done today.

Furthermore, in terms of the prior consultation, a senior researcher in an environmental organisation consulted for this study mentioned that the prior consultation process is not appropriate to prevent land grabbing because "*the issue of limiting the affected area* [by RE projects] *is not well defined in some cases. Much of the blame lies in the fact that there is no proper census, nor resources or regulation to do so*."[138] In that sense, what the Ministry of Interior files say is very different from the reality of the territory and in some cases, it is seen that communities close to the projects are not certified in order to be able to carry out prior consultation.[139]

[135] Interview # 9, 4 May 2023.
[136] Interview # 12, 5 April 2023 and Interview # 13, 17 April 2023.
[137] Interview # 9, 4 May 2023.
[138] Interview # 8, 2 May 2023.
[139] Interview # 8, 2 May 2023.

Figure 17 Projected wind energy projects. - Taken from Barney (2023) and translated by the author, the original image can be found in Annex 1.



Additionally, and as mentioned by several of the sources, the prior consultation does not give the right to veto. As stated by a former public official of the Energy Ministry consulted for this study:

> *"Prior consultation does not give the community the right to veto projects, what happens is that in the process we may not reach agreements, so the big question is: what happens at that moment, especially when it comes to projects that are considered to be of national interest such as these energy projects.* [...] *The ideal situation is that we manage to reach an agreement, even if it takes us two years to talk, but* [if we don't reach an agreement] *there is a line of thought that says that in these cases the State could take decisions, not in the sense of not recognising the consultative process or that it is going to grab the land, but that the State could establish compensation measures* [...]. *I must say that it is an option, but the truth is that it is a bad option because at the end of the day the community is there and the community is not going to let you carry out the project, it's as simple as that,* [...] *it's a rather complicated clash.*[140]

Regarding this, the source continues but highlighting the fact the Colombia's constitutions and the Supreme Court would most likely reject this approach and call for a new negotiation.

> *So, what the jurisprudence says,* […] *is that the prior consultation has a principle called flexibility, so you* [the companies] *can adapt this process as much as you want to be able to reach a consensus, do it differently, look for ways to do it, because what is very undesirable is that projects are carried out without this agreement, even if it can be done, sometimes the question is not whether it can be done but whether it really should be done.* [...] *And we have other cases in the sector where the proportionality test has been applied, which is a bit like this category of "they did not reach an agreement", and the Constitutional Court has always overturned these processes,* [...] *it has always called on the companies and the communities to sit down again and try again".*[141]

Discussion: Land grabs risk assessment

Land grabs		
Likelihood	As stated by Leonard et al. (2022), information asymmetry, monopolistic power from the companies and threat of violence are symptoms that can lead to a form of land grabs. The context of the territory increases the likelihood of land grabs and as showed by Barney (2023) there is a lack of planning to avoid the appropriation of a large portion of the Wayúu territory. Furthermore, the prior consultation process has a lot of gaps that can lead to undue pressures and neglect to different smaller communities in the region.	High[142]

[140] Interview # 2, 16 March 2023.
[141] Interview # 2, 16 March 2023.
[142] "High" indicates that most likely there will be situations of land grabs. The red colour indicates that it is a negative impact.

Magnitude	As mentioned before, the prior consultation and the way the system is set in La Guajira is causing different internal conflicts, among those, the perception of land grabs is one of those that influence the most the creation and persistence of conflicts.	High[143]
Role of the private sector	Communication, traceability and transparency are key words to avoid information asymmetry, monopolistic power from the companies and threat of violence, and are actions in the hands of the companies. The private sector, especially in this context, needs to be creative and innovative in communication and create mechanisms to secure traceability and transparency. Although the private sector cannot change the system of awarding energy projects, more respect for the territory and the application of international best practices are expected, where in several cases there are limits to the proximity of wind projects. An approach from the industry as a whole should be taken into account.	High

6.2.12. Reduced economic diversity

Leonard et al. (2022) found that depending on the context, a boom in RE investments can either reduce or empower the development of other economic activities. So economic diversity can be reduced if there are limited connections between RE and other industries or increased if electrification can enable other industries to grow.

In that sense, to analyse this symptom within the context, it is important to assess first how the new RE projects can affect existing economies. Second, whether the RE companies are stimulating investment in different economic activities or if the local communities are mostly shifting towards being associated in one way or another with the RE sector.

It is important to note that, as mentioned before, there are two ways to describe the main economic activities in La Guajira. If it is looked at by GDP, the main economic activity is mining and in terms of employability, the main activities are agriculture (agriculture, fishing and farming), retail trade and manufacturing; however, these industries appear to have low productivity since they only account for 11% of La Guajira's GDP. In that sense, it can be stated that La Guajira lost economic diversity with its reliance on the mining sector.

Second, also as mentioned before, a researcher with knowledge of the energy transition in La Guajira[144] consulted for this study highlighted that most of the Wayúu communities in La Guajira are not going to be covered by the wind energy that is produced in their territory since they are

[143] "High", represented with red, indicates how negative can land grabs be for the local communities and their social development.
[144] Interview # 9, 4 May 2023.

not connected to the national electricity system. According to several of the sources consulted for this study, the plan to electrify this territory is with solar projects. In this regards, the manager of an energy company with wind projects in La Guajira[145] stated that during the prior consultations they would agree on creating a localised water access point, including a solar energy generation station that would both help extract water from the ground and also provide energy to the community.

In terms of how the new RE impact the current economic activities in the area, Barney (2023), in her study regarding the different wind energy projects projected in La Guajira, mention that several of these projects can affect different economic activities such as fishing and tourism. Fishing due to the offshore wind projects that are being planned and tourism because of the change in the landscape, changing from a natural to an industrial landscape.

That said, at least nine of the sources consulted for this study were asked during the interviews if there was a risk for the reduction of economic diversity in the area due to the boom in RE investments. To this question, eight of these sources consider the arrival of the private sector in the region, and investment in the communities, as an opportunity to diversify the economy in La Guajira, especially in the north where most of the wind energy projects are being developed. For example, a manager of an energy company with wind projects in La Guajira consulted for this study, mentioned that they are working with the communities to train them in commerce, artisanship, tourism and other activities that can be useful for them to be able to invest in other economic activities.[146]

In line with this, a former public official of the Energy Ministry consulted for this study stated that this an opportunity for companies to give back to the communities, an "*opportunity to bring that productive potential back to the territory and* [for the companies] *to stimulate, through social investment or through prior consultation agreements, productive projects to rebuild pasturelands, to improve their agricultural projects.*"[147] However, a researcher with knowledge of the energy transition in La Guajira[148] consulted for this study mentioned that these projects normally come with one year of follow up and support from the private companies, but due to the local context and educational level of the communities, these projects should have longer support projects to actually make them sustainable in time.

The researcher with knowledge of the energy transition in La Guajira continued mentioning that "*installing a wind farm has been seen as, the wind itself, has been seen as an economic*

[145] Interview # 12, 5 April 2023.
[146] Interview # 12, 5 April 2023.
[147] Interview # 2, 16 March 2023.
[148] Interview # 9, 4 May 2023.

opportunity, and before it was not like that. The Wayúu economy tends to be a subsistence economy, based on the goat as an exchange mechanism."[149] The source goes on to say that nowadays there have been reports of the goats being affected and of the fragmentation of grazing areas due to the construction of roads, "*but these roads also represent access to tourism*",[150] highlighting the opportunity that companies and local communities have in hands to revitalise the local economy.

Finally, two source mentioned that they have found some lack of economic vision in the territory, within the local Wayúu population. A senior researcher in an environmental organisation consulted for this study stated that there is not risk of having a reduction of economic diversity in the territory where wind energy projects are being developed because currently there is not an economic diversity "*there are goats and artisanship*".[151] The source goes on noting that during their fieldwork they have held workshops with the Wayúu community and have asked them what they want to invest the resources that are arriving, what they expect now, and their answer is "*goats, water and artisanship, they don't ask for an economic plan, nor development, nor an export plan. They don't understand economic development*".[152]

Similarly, a local worker of an energy company interviewed for this study stated that a great number of local communities are interested on being trained in different economic activities such as artisanship; however, this as long as they are assured that there is a contract to buy what they make.[153] The source goes go by noting that normally they have to sell the idea that all the investments coming from the private companies will go to economic projects and that it is better than cash, "*they prefer the cash over the economic projects*".[154]

Discussion: Reduced economic diversity risk assessment

Reduced economic diversity		
Likelihood	Most of the sources highlighted the fact that there is already a low economic diversity and that the private sector is trying to empower other local economic activities typical of the region and the Wayúu community. Additionally, although the energy produced by the wind parks will not be distributed in the rural areas, according to the information collected, all the companies operating in the region are pushing for other solutions to electrify the territory and thus leverage other industries such as tourism. Most of the	Low[155]

[149] Interview # 9, 4 May 2023.
[150] Interview # 9, 4 May 2023.
[151] Interview # 8, 2 May 2023.
[152] Interview # 8, 2 May 2023.
[153] Interview # 14, 25 April 2023.
[154] Interview # 14, 25 April 2023
[155] "Low" indicates that most likely there will be a low reduction of economic diversity and the colour green indicates that this is a positive outcome.

	sources see these new investments as an opportunity for the region and revitalisation of the local economy.	
Magnitude	The new investment in the region seems largely positive; however, companies need to be careful and work together with experts in the region to avoid damaging typical economic activities such as fishing and tourism. Furthermore, they need to support and create strategies to facilitate the sustainability of these economic investments so local communities can be independent in the future.	High[156]
Role of the private sector	The private sector has the opportunity to actively contribute and have a positive impact on the communities by supporting and facilitating the diversification of the economy, which can also have positive external outcomes for their operation in the region. That said, this opportunity needs to consider the particularities of the territory, the level of education of the communities, and the traditional economic activities of the Wayúu community to not damage their culture and not make them more dependent on external and private investments.	High

6.2.13. Weakening of institutions

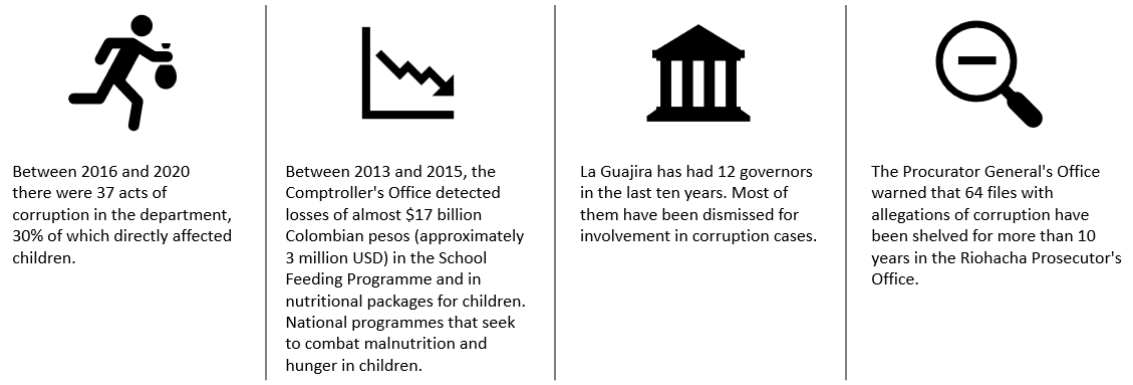
As mentioned above, this symptom is addressed considering a different perspective than the approach proposed by Leonard et al. (2022). This section briefly reflects on the corruption in the region and its dynamics with the private sector, in a way to assess the strategies to secure the effectiveness of the investments that the private sector is injecting into the region.

This section starts with a general context of corruption in the region in order to understand the mitigation strategies that the private sector is expected to implement and continues with comments made by different sources consulted for this study that reflects on the topic.

According to Dejusticia (2022), corruption has a direct impact on human rights, especially among the most vulnerable populations, for example, in La Guajira, corruption has for years affected the right to health and food of indigenous communities, especially children. Figure 18 below presents data on the corruption in La Guajira, the information on this graphic was taken from Dejusticia (2022).

[156] "High" indicates the severity that this can have on the population, suggestion that their social development would be highly impacted by diversification of the economy. It is yellow because these outcomes can be both positive and negatives, depending on how communities are prepared and the are strategies to avoid economic dependence.

Figure 18 Corruption data in La Guajira - Information based on Dejusticia (2022)



Although this data is not directly associated with the RE projects or energy industry, it does reflect on the corrupt environment where companies would operate. Pertaining to this, and as mentioned before, as "local taxation" for the RE market in Colombia there is a regulation stipulation that 1% of the RE generation's revenue must go to the municipalities where the projects are located, and, if there are indigenous communities in the territory, 60% of the 1% must go to these communities. A senior researcher in an environmental organisation mentioned that "*for the companies* [that] *1% is a social expense, the communities receive nothing because it goes to the municipality*,"[157] and the money is not seen after that, it gets lost in the process. The source continues then suggesting that the 1% does not have any impact on the negotiations with the communities. Similarly, a well-placed consultant experienced in due diligence consulted for this study stated:

> *"The thing is that there is a regulatory issue that is very complex because, as you rightly say, the traditional way is 'you come under a contract with the State, you have the right to exploit resources and, on those resources, you pay certain rights and on top of that you pay certain taxes and on top of that you pay royalties'. But then of course, when in La Jagua de Ibirico[158] there is still absolute poverty and the coal company is absolutely buoyant and sells at 1000 million dollars a kilo, the people say, 'but how is it possible, you are evil, you take all the wealth, etc.'. Well no, they say 'here's the bill, I've paid the state X in royalties, if* [they] *steal all the money and nothing happens to the aqueduct and everything, it's not my fault... Change the system, I'm still going to contribute the same, if you tell me to pay it to the Mayor of Chigorodó[159] or to pay it to the government to distribute it, then you tell me what I have to do'. Part of the problem then is a regulatory issue, which is obviously linked to corruption, theft."*[160]

In this line, a former deputy minister of the Energy Ministry stated during the interview that "*it is the companies that should be concerned about the leadership of the communities where they*

[157] Interview # 8, 2 May 2023.
[158] La jagua de Ibirico is a municipality in the Cesar region, bordering La Guajira. In this region, the second biggest coal mine is operated.
[159] Chigorodó is a municipality in Antioquia, in the centre of Colombia.
[160] Interview # 10, 15 February 2023.

operate, feeling part of the territories. Governments do not have the capacity."[161] This suggests that in terms of social investment and development in La Guajira, the private sector is expected to have much more active role, deeply connecting with the communities around their operations.

In terms of the benefit sharing, the social investment and compensations that the private sector is paying to the local communities, the senior researcher in an environmental organisation[162] suggested that private sector needs to be careful in the way the benefits are shared within the communities, also mentioning that according to the local communities they were able to interview, money in general tend to create conflict within the community. In line with this, the local worker of an energy company mentioned that the company is encouraging communities to create companies/associations rather than being just one person managing the money coming as social investments. And in the governance of that company/association, they suggest, there should be a board with representation from someone in the government and someone from the company, in addition to representatives of the local communities.[163] This with the intention of shielding resources and being more effective in social investment.

Weakening of institutions risk assessment

Weakening of institutions		
Likelihood	Due to the context of La Guajira, there is a high risk of corruption and local taxation not reaching the communities. Additionally, companies and communities have also the challenge of properly distributing the compensations and benefits to avoid benefitting a small group of people.	High[164]
Magnitude	As mentioned before, corruption has a big impact on the social development of communities. Additionally, as mentioned by one of the sources, money and its distribution tend to create conflict within the local communities.	High[165]
Role of the private sector	There is only so much that the private sector can do to avoid corruption; however, understanding the context of their operations creating mitigation strategies, and having transparent and public communication about their social investment might be key to increasing effectiveness and avoiding unconformities within the territory.	Medium

[161] Interview # 1, 3 March 2023.
[162] Interview # 8, 2 May 2023.
[163] Interview # 14, 25 April 2023.
[164] "High" indicates that most likely there will be a weaking of institutions. The red colour indicates that it is a negative impact.
[165] "High", represented with red, indicates how negative can the weaking of institutions be for the local communities and their social development.

6.3. Discussion

In this section, I answer the three guiding questions of the study based on the findings of the previous section and my empirical analysis of it. Therefore, the section is divided into three, starting with addressing the risk of new renewable energy (RE) investments in La Guajira triggering a resource curse. A discussion then follows on the role of the private sector in maximising positive outcomes of the energy transition and its influence on the risks of a resource curse. Finally, the section concludes with an empirical analysis of whether Colombia's public policies and the private sector's actions are continuing an extractivism modus operandi.

6.3.1. Risk of triggering a resource curse

The table below presents a summary of the likelihood of the analysed symptoms of a resource curse in section 6.2. arising within the context of the energy transition in La Guajira.

Likelihood of crime	High	Likelihood of gender inequality	Medium
Likelihood of damage to local flora, fauna and landscape	High	Likelihood of income inequality	High
Likelihood of diversion of investments away from human capital	Low	Likelihood of Internal conflict	High
Likelihood of diversion of land	High	Likelihood of land grabs	High
Likelihood of diversion of talent from other sectors	Medium	Likelihood of reduced economic diversity	Low
Likelihood of economic dependence	High	Likelihood of weakening of institutions	High
Likelihood of expatriates dominating high-income/skilled jobs	High		

This shows that, due to the context of La Guajira, the type and size of the industry, and the dynamics between the public, private and social sectors, there is a high probability of negative outcomes arising with the boom of investments in RE projects. That said, the positive investment in human capital and the empowerment of a more diverse economy in the region can bring positive externalities such as crime reduction as youth and adults have other social and economic opportunities.

Furthermore, even though there is a high economic dependence in the territory, and this is prone to increase due to the social context and the humanitarian crisis, the high social investment that the private sector is bringing can enhance the social development of different local communities. Most of the sources consulted see this boom of RE investments in the region as a huge opportunity for the private sector to gain the trust of communities by supporting the communities' growth,

which at the same time can bring economic savings in the future since the "social cost" can be reduced. That said, the sources highlighted that these investments need to have a more holistic approach to be more effective.

In conclusion, some symptoms seem to be able to help avoid the consequences of the resource curse. If the RE industry, the public and social sectors collaborate on strengthening these symptoms and boosting development from these bases, a large social development platform can be created. Although given the backward context of La Guajira, growth may take a long time, a stable base can have a favourable impact on the development of this territory from an early stage.

6.3.2. Role of the private sector in maximising positive outcomes

The table below presents a summary of the level of impact that the private sector can have concerning the symptoms of the resource curse.

Impact of the private sector on crime	Low	Impact of the private sector on gender inequality	Medium
Impact of the private sector on damage to local flora, fauna and landscape	High	Impact of the private sector on income inequality	High
Impact of the private sector on diversion of investments away from human capital	Medium	Impact of the private sector on Internal conflict	High
Impact of the private sector on diversion of land	Medium	Impact of the private sector on land grabs	High
Impact of the private sector on diversion of talent from other sectors	High	Impact of the private sector on reduced economic diversity	High
Impact of the private sector on economic dependence	High	Impact of the private sector on weakening of institutions	Medium
Impact of the private sector on expatriates dominating high-income/skilled jobs	Medium		

As presented in the table, the private sector's operations have a high impact on most of the symptoms associated with the resource curse. The way companies approache these topics can bring both positive and negative outcomes and, as will be explained below, its way of understanding and modifying its operation and communication can also greatly impact the extractivism modus operandi.

As we saw during the analysis, the companies seeking the development of RE projects in La Guajira are expected to go an extra step on social responsibility and shared value. On most of the EAIs and prior consultation negotiations, the companies end up with commitments and responsibilities that are more appropriate to the public sector, but given the context of the territory,

communities are demanding that companies play a very active role in these issues. It is understandable that, even though companies are not, and cannot be, the State, in a context of great social difficulties and an absent State, the companies seeking an environmental and social licence to operate sees this as a valuable strategy that can be utilised to promote both social development and the efficient operation of RE projects.

In line with this, companies cannot fill the role of the State, nor can they do the comprehensive planning and investment work for them. However, they can promote these spaces to happen and facilitate regulations to change in order to have better outcomes for communities. In this sense, a more aligned work between the companies in the energy sector, the government and the social sector is expected to avoid fragmented and atomised efforts.

Finally, during the analysis, words such as innovation, transparency, traceability, accountability and creation of standards show up as facilitators to implementing successful operations and reducing conflict in the territory. Therefore, these are the baseline that all companies should have in mind while developing any kind of project in La Guajira and Colombia.

6.3.4. Continuity of extractivism as a modus operandi

As presented during the theorical literature review, a symptom of extractivism is over-exploitation of raw materials to be exported to supply to the manufacturing systems. In the case of La Guajira, it was clear through literature review and the insights from the interviews, that wind energy is exploited with the objective to supply the national grid which is not supplying energy to the territory where this wind is collected to be transformed into energy. Therefore, suggesting a mimic of the extractivist modus operandi.

Additionally, the literature review suggested that the resource curse is not necessarily related to the abundance but rather to the extractivism approach in which the resources are extracted, characterised by uneven power, uneven access to information and uneven creation of wealth and distribution. These three characteristics were present in the analysis section, impacting several of the symptoms, especially in the analysis of Internal Conflict and Land Grabs, aspects that highly impact the living situation of the local communities and their social development. Therefore, as of today, the situation is suggesting there is a high risk of an extractivist modus operandi in La Guajira.

A step the government can take is to adjust the auction system for regions where there are indigenous communities. For example, an indication of the extractivist model that rules within the industry relates to the fact that companies are awarded energy projects before the indigenous communities are asked whether this would be an option. As a consequence, private companies

commit to projects that they do not know at the outset whether they will be approved by the local communities, creating pressure and time constraints when negotiating. Another way of doing this process, more in line with the context of the region, is to first agree with the Wayúu on the areas where renewable energy projects could be carried out, avoiding natural and sacred areas. Once this has been agreed upon between the government and the communities, the companies can bid for these areas and then continue with the EIA and prior consultation processes. This could help better distribute the project within the territory and better communicate the scale and impact that these projects could have on the Wayúu way of living.

In conclusion, while great efforts are being made in terms of social investment, the approach from the beginning is extractivist, which slows down the process of dialogue and confidence-building in the territory.

7. Conclusion

The purpose of this study was to analyse the natural resource curse phenomena within the energy transition and the role of the private sector in Colombia, using as a case study La Guajira. Assessing whether the recent boom in RE investments can enable sustainable growth, with social justice and clean energy, or if the way these new investments are being made mimics an extractivism approach and has the risk of triggering a resource curse.

The chosen framework incorporated all the relevant "symptoms" that were presented during the literature review pertaining to the resource curse, and by analysing each of these symptoms, it was also possible to witness how characteristics of an extractivist model started to show in the findings. Additionally, Leonard et al. (2022) suggestions on how to analyse each of the symptoms resulted in the introduction of several social development aspects of La Guajira, tying each of the relevant theoretical concepts. It also allowed me to easily incorporate the analysis of the private sector, finding empirical evidence suggesting that the likelihood and magnitude of the resource curse's symptoms can be highly impacted by the way companies operate in the region.

In line with this, the most important thing to highlight regarding the chosen framework is that it allowed me flexibility for the analysis. I was able to adapt the framework from a national level analysis, as initially presented by Leonard et al. (2022), to a sub-national analysis to be use as a case study. Furthermore, given its structure, it allowed me to further deepen the analysis of some of the symptoms without having to sacrifice the analysis of others, adapting the presentation of the data in a creative and differentiated way for each of the topics.

That said, and as explained in the methodology section, it is a qualitative framework that allowed me to make an empirical analysis of the situation and is intended to be the beginning of a conversation around the role of the private sector from a more constructive perspective, reflecting on the risks and opportunities that currently exist in La Guajira and Colombia. In this sense, the framework does not allow, and it was not the intention of this paper, to generate quantitative conclusions based on hard data. Rather, and as mentioned as a limitation of this study, the qualitative methodology and the characteristics of this contemporary topic, which encompasses different political and social order ideologies, require taking the results of this study as a starting point for further studies that may incorporate more measurable, trackable and traceable data.

Additionally, this thesis avoided going into the mistakes the private sector makes by operating in countries such as Colombia with underdeveloped regions like La Guajira, examples of this are endless in the newspapers. But rather tried to present a comprehensive picture of the local context to show how adapting the private sector's operations can empower them to better operate in specific regions and stand out by incorporating innovative actions that strengthen the social and

just development of the communities that inhabit the territory. This is without trying to ignore the negative impacts.

In conclusion, the gathered information for this thesis shows that the extractivism modus operandi is still present and there is a high risk of symptoms of the resource curse arising. However, this is not the full story. Due to the social context of La Guajira in terms of unsatisfied basic necessities, criminality and education, the analysis of the 13 symptoms show that the private sector can play an active and relevant role in turning these risks into opportunities to support the social development of a marginalised indigenous community. However, there is a critical path: gaining trust by promoting innovation, transparency, traceability and accountability. The private sector cannot expect to operate in the same way it would operate in any other region, especially in Europe where most of the companies operating in the region come from. It has to be even more present, more knowledgeable of the territory and more transparent in the way it shares its value.

References

Acolgen. (2023). *Capacidad instalada en Colombia*. Retrieved from www.acolgen.org.co: www.acolgen.org.co

Acosta, A. (2016). Las dependencias del extractivismo: Aporte para un debate incompleto. *revista Aktuel Marx (V. 20)*, 1-22.

Adhabi, E., & Blash Anozie, C. (2017). Literature Review for the Type of Interview in Qualitative Research. *International Journal of Education*, 86-97.

Aguilar Salas, N. (2020, February 10). *La Guajira y Cesar: un territorio en manos del crimen.* Retrieved from www.pares.com.co: https://www.pares.com.co/post/la-guajira-y-cesar-un-territorio-en-manos-del-crimen

ANLA. (2017, August 1). Retrieved from www.anla.gov.co: https://www.anla.gov.co/eureka/images/pdf/conceptosjuridicos/29072021-2017042746-3-%20001.pdf

ANLA. (2018, August). *Reporte de alertas zona hidrográfica.* Retrieved from www.anla.gov.co: https://www.anla.gov.co/documentos/biblioteca/report-guajira-final.pdf

ANLA. (n.d.). *Licencia Ambiental Subdirección de Evaluación y seguimiento*. Retrieved from /www.anla.gov.co: https://www.anla.gov.co/01_anla/tramites-y-servicios/servicios/licencia-ambiental

Ardanaz, M., & Tolsá Caballero, N. (2016). *A subnational resource curse? Revenue Windfalls and the Quality of Public Spending in Colombian municipalities.* V JORNADAS IBEROAMERICANAS DE FINANCIAMIENTO LOCAL.

Auty, R. (1993). *Sustaining Development in Mineral Economies: The Resource Curse Thesis.* Routledge.

Badillo Sarmiento, R., & Trejos Rosero, L. F. (2021, November 24). *GOBERNANZA CRIMINAL FRONTERIZA EN LA GUAJIRA: GRUPOS ARMADOS SIN GUERRA.* Retrieved from www.lasillavacia.com: https://www.lasillavacia.com/historias/historias-silla-llena/gobernanza-criminal-fronteriza-en-la-guajira-grupos-armados-sin-guerra/

Barney, J. (2023). *Por el mar y la tierra guajiros, vuela el viento Wayuu.* Bogotá: Instituto de estudios para el desarrollo y la paz, Indepaz.

Biresselioglua, M. E., Demirb, M. H., Goncaa, A., Kolcu, O., & Yetim, A. (2019). How vulnerable are countries to resource curse?: A multidimensional assessment. *Energy Research & Social Science (V. 47)*, 93-101.

Bruna, N. (2022, May 30). A climate-smart world and the rise of Green Extractivism. *The Journal of Peasant Studies (V. 49)*, 839-864. Retrieved from https://www.tandfonline.com/doi/full/10.1080/03066150.2022.2070482

Buchsbaum, M. (2022, October 13). *Colombian Conundrum: Cleaner energy or green extractivism poses another challenge for nation's 1st Left-Green government.* Retrieved from www.energytransition.org: https://energytransition.org/2022/10/colombian-conundrum-cleaner-energy-or-green-extractivism-poses-another-challenge-for-nations-1st-left-green-government/

Carrillo Hoyos, S. (2019). Extractive industry revenues and the subnational resource curse: The case of the Peruvian Andes. *The Extractive Industries and Society (V. 6)*, 1134-1142.

Carvajal-Romo, G., Valderrama-Mendoza, M., Rodríguez-Urrego, D., & Rodríguez-Urrego, L. (2019). Assessment of solar and wind energy potential in La Guajira, Colombia: Current status, and future prospects. *Sustainable Energy Technologies and Assessments V. 36*, 1-15.

Chataigner, P. (2017). *A framework analysis of analytical frameworks.*

Colombian Ministry of Culture. (n.d.). *CARACTERIZACIONES DE LOS PUEBLOS INDÍGENAS DE COLOMBIA: Wayúu.* Retrieved from www.mincultura.gov.co: https://www.mincultura.gov.co/prensa/noticias/Documents/Poblaciones/PUEBLO%20WAY%C3%9AU.pdf

Colombian ministry of Interior. (n.d.). *Pueblo wayúu.* Retrieved from www.mininterior.gov.co: https://pruebaw.mininterior.gov.co/sites/default/files/upload/SIIC/PueblosIndigenas/pueblo_way_u.pdf

Colombian national planning department. (2022). *CONPES 4075: Política de transicíon energética.* Bogotá.

Control Risks. (2022). *Powering the Future Uncovering Myths and Navigating Risks for Renewable Energy in Colombia.* Bogotá.

Corredor, S. (2023, January 16). *Energía eólica en La Guajira: un dilema sin resolver para los wayuus.* Retrieved from www.elespectador.com: https://www.elespectador.com/colombia-20/conflicto/el-costo-del-progreso-parques-eolicos-en-la-guajira-un-dilema-sin-revolver-para-los-indigenas-wayuus/

Crowe, S., Cresswell, K., Robertson, A., & et al. (2011). The case study approach. *BMC Med Res Methodol 11*, 1-9.

Cust, J., & Viale, C. (2016). Is There Evidence for a Subnational Resource Curse? *National Resource Governance Institute*, 1-22.

De la Hoz, F. (2023, April 12). Anuncian en La Guajira inversión por $30.000 millones en sector educativo. *El Heraldo*, pp. https://www.elheraldo.co/la-guajira/la-guajira-anuncian-inversion-por-30000-millones-en-sector-educativo-992581.

DeJusticia. (2022, February 4). *6 datos sobre la corrupción en La Guajira y 10 recomendaciones para superarla.* Retrieved from www.dejusticia.org: https://www.dejusticia.org/6-datos-sobre-la-corrupcion-en-la-guajira-y-10-recomendaciones-para-superarla/

Destek, M. A., Aydın, S., & Destek, G. (2022). Investigating an optimal resource dependency to prevent natural resource curse: Evidence from countries with the curse risk. *Resources Policy (V. 79)*, 1-9.

Devia, T., & Gomez Betancur, L. (2021, February 8). *How to get away with impunity: Cerrejón's evasion from Accountability.* Retrieved from www.corpaccountabilitylab.org: https://corpaccountabilitylab.org/calblog/2021/2/8/how-to-get-away-with-impunity-cerrejns-evasion-from-accountability?rq=cerrej

Dube, O., & Vargas, J. F. (2006). Resource Curse in Reverse: The Coffee Crisis and Armed Conflict in Colombia. *CEDE 2006-46*.

Durán Camelo, V. H. (2010). Cuerpo y educación en la cultura Wayúu. *Revista Educación física y deporte, No. 29-2*, 239-252.

Edsand, H.-E. (2017). Identifying barriers to wind energy diffusion in Colombia: A function analysis of the technological innovation system and the wider context. *Technology in Society, V. 49*, 1-15.

Eitan, A., Hermanb, L., Fischhendler, I., & Rosen, G. (2019). Community–private sector partnerships in renewable energy. *Renewable and Sustainable Energy Reviews (V. 105)*, 95-104.

Fleming, D., & Measham, T. (2013). Disentangling the natural resources curse: National and regional Socioeconomic Impacts of Resource Windfalls. *The Commonwealth Scientific and Industrial Research Organization (CSIRO)*, 1-21.

Gallego, J., Maldonadoa, S., & Trujillo, L. (2020). From curse to blessing? institutional reform and resource booms in Colombia. *Journal of Economic Behavior and Organization*, 174-193.

Gallegoa, J., Maldonadoa, S., & Trujillo, L. (2020). From curse to blessing? institutional reform and resource booms in Colombia. *Journal of Economic Behavior and Organization*, 174-193.

Gennaioli, C., & Tavoni, M. (2011). Clean or "Dirty" Energy: Evidence on a Renewable Energy Resource Curse. *SSRN Electronic Journal ER - Working Papers*, 1-53.

Gilberthorpe, E., & Papyrakis, E. (2015). The extractive industries and development: The resource curse at the micro, meso and macro levels. *The Extractive Industries and Society (V. 2)*, 381-390.

Giraldo, M., Gómez, J. D., & García, D. (2018, October). *Las energías renovables en Colombia: problemática social, ambiental y jurídica desde una perspectiva territorial.* Retrieved from www.foronacionalambiental.org.co: https://foronacionalambiental.org.co/wp-content/uploads/2018/10/Politica-publica-50.pdf

González Posso, C. (2022, January 24). *GUAJIRA 1. LAS VERDADES OCULTAS DEL ÚNICO PARQUE EÓLICO INSTALADO – "RENOVABLES SÍ, PERO NO ASÍ", DICEN COMUNIDADES.* Retrieved from www.indepaz.org.co: https://indepaz.org.co/guajira-1-las-verdades-ocultas-del-unico-parque-eolico-instalado-renovables-si-pero-no-asi-dicen-comunidades/

Grimes, M. (2021). The State of Renewable Energy in Colombia. *Anthós: (V. 10)*, 33-42.

Guajira360. (2018, September). *Producción y ocupación en La Guajira.* Retrieved from www.guajira360.org: https://guajira360.org/wp-content/uploads/2018/09/Producci%C3%B3n-Guajira-2017.pdf

Gudynas, E. (2015). *Extractivismos. Ecología, economía y política de un modo de entender el desarrollo y la Naturaleza.* La Paz: CLAES - CEDIB.

Guerrero, S. (2022, April 18). *Comunidad wayuu cierra parques eólicos Alpha y Beta en la Guajira.* Retrieved from El Heraldo: https://www.elheraldo.co/la-guajira/la-guajira-comunidad-wayuu-cierra-parques-eolicos-alpha-y-beta-902203

Hancock, K. J., & Sovacool, B. (2018). International political economy and renewable energy: hydroelectric power and the potential for a resource curse. *International Studies Review (V. 20)*, 615-632.

Heras, J., & Martín, M. (2020). Social issues in the energy transition: Effect on the design of the new power system. *Applied Energy (V. 278)*, 1-12.

IHS Markit. (2018, November 13). *ihsmarkit.com*. Retrieved from ihsmarkit.com: https://ihsmarkit.com/research-analysis/the-trade-numerologist-colombias-dependence-on-commodities.html

International Renewable Energy Agency. (2022). *www.irena.org*. Retrieved from www.irena.org: https://www.irena.org/energytransition

IRENA and USAID. (2021). *Renewable energy auctions in Colombia: Context, design and results.* Abu Dhabi: International Renewable Energy Agency.

Jacobs, G., & Asokan, N. (1999). Towards a comprehensive theory of social development. *Human Choice, World Academy of Art & Science*.

Kolstad, I. (2009). The resource curse: which institutions matter? *Applied Economics Letters (V. 16)*, 439–442.

Kramer, M. R., & Pfitzer, M. W. (2016). The Ecosystem of Shared Value. *Harvard Business Review*, 1-11.

Leonard, A., Ahsan, A., Charbonnier, F., & Hirmer, S. (2022). The resource curse in renewable energy: A framework for risk assessment. *Energy Strategy Reviews (V. 41)*.

López Morales, J. D. (2022, September 12). *Pierden con el carbón y sin él: los dilemas de la transición energética en Cesar.* Retrieved from co.boell.org: https://co.boell.org/es/2022/09/12/pierden-con-el-carbon-y-sin-el-los-dilemas-de-la-transicion-energetica-en-cesar

Maiorano, F. (2022, November 28). *COMPETITION IN ENERGY MARKETS – NOTE BY COLOMBIA.* Retrieved from OECD: https://one.oecd.org/document/DAF/COMP/WP2/WD(2022)15/en/pdf

Månsson, A. (2015). A resource curse for renewables? Conflict and cooperation in the renewable energy sector. *Energy Research & Social Science (V. 10)*, 1–9.

Martínez, V., & Castillo, O. (2019). Colombian energy planning - Neither for energy, nor for Colombia. *Energy Policy (V. 129)*, 1132-1142.

Mendoza, D. A. (2022). *Sin chivos ni cementerios.* Copenhague: Iwgia.

Miller, C. A., Iles, A., & Joners, C. F. (2013). The Social Dimensions of Energy Transitions. *Science as Culture (V. 22)*, 35 – 148.

Ministry of Education. (2007, June-August). *Educación más allá de las dificultades*. Retrieved from www.mineducacion.gov.co: https://www.mineducacion.gov.co/1621/article-133931.html

Monsalve, M. M. (2023, May 14). *Los 16 proyectos eólicos y dos líneas de conexión que planean construirse en este departamento generan conflictos territoriales entre las comunidades wayuu.* Retrieved from www.elpais.com: https://elpais.com/america-futura/2023-05-14/el-viento-de-la-transicion-energetica-lleva-disputas-a-la-guajira-colombiana.html

Mordor Intelligence. (2020). *Colombia Renewable Energy Market.* Retrieved from Mordor Intelligence: https://www.mordorintelligence.com/industry-reports/colombia-renewable-energy-market#:~:text=The%20renewable%20energy%20market%20in,the%20growth%20of%20the%20market.

National Administrative Department of Statistic. (2022, December 30). *Gran Encuesta Integrada de Hogares.* Retrieved from www.mincit.gov.co: https://www.mincit.gov.co/CMSPages/GetFile.aspx?guid=4a894153-1d3e-4416-847c-5bfd304039fb

National Administrative Department of Statistic. (2023, April 5). *Mercado laboral por departamentos - Año 2022.* Retrieved from www.dane.gov.co: https://www.dane.gov.co/files/investigaciones/boletines/ech/ml_depto/Boletin_dep_22.pdf

National Administrative Department of Statistics. (2020, February). *La Guajira.* Retrieved from www.dane.gov.co: https://www.dane.gov.co/files/investigaciones/planes-desarrollo-territorial/050220-Info-Gobernacion-La-Guajira.pdf

Neuman, W. (2013). Understanding Research. En W. Neuman, *Understanding Research* (pág. 30). Pearson Education Limited.

NRGI Reader. (2015, March). *resourcegovernance.org.* Retrieved from resourcegovernance.org: https://resourcegovernance.org/sites/default/files/nrgi_Resource-Curse.pdf

Parques Nacionales Naturales. (n.d.). *Convenios Internacionales Ratificados por Colombia.* Retrieved from www.parquesnacionales.gov.co: https://www.parquesnacionales.gov.co/portal/es/normatividad/marco-normativo-del-sistema-de-parques-nacionales-naturales/resoluciones/

Pascualino, J., Cabrera, C., & Vanegas, M. (2015). The environmental impacts of folic and solar energy implementation in the Colombian Caribe. *Prospect, Vol 13, N° 1*, 68-75.

Pérez, M. (2020). RETOS DE LA POLÍTICA AMBIENTAL COLOMBIANA FRENTE A LOS DESAFÍOS DE LA OCDE Y LOS ODS. *Análisis político, vol.33 no.99*, 101-120.

Porter, M. E., & Kramer, M. (2011). Creating Shared Value. *Harvard Business Review*, 1-17.

REN21. (2017). *Renewable Energy Tenders and Community [Em]power[ment]: Latin America and the Caribbean.* Paris: REN21 Secretariat.

Rincón, D. (2022). *Environmental law in Colombia.* The Netherlands: Kluwer Law International B.V.

Ritchie, H. R. (2020). *CO_2 and Greenhouse Gas Emissions.* Retrieved from OurWorldInData.org: https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions

Ritchie, H., Roser, M., & Rosado, P. (2022). *Colombia: Energy Country Profile.* Retrieved from OurWorldInData.org: https://ourworldindata.org/energy/country/colombia

Roser, M., & Ortiz-Ospina, E. (2013). *ourworldindata.org.* Retrieved from ourworldindata.org: https://ourworldindata.org/extreme-poverty#:~:text=Most%20people%20in%20the%20world,less%20than%20%241.90%20per%20day.

Ross, M. (2015). What Have We Learned about the Resource Curse? *Annual Review of Political Science (V. 18)*, 239-259.

Rowley, J. (2002). Using Case Studies in Research. *Management Research News*, 16-27.

Rubiano, M. P. (2021, May 3). *In Colombia, Indigenous Lands Are Ground Zero for a Wind Energy Boom.* Retrieved from www.e360.yale.edu: https://e360.yale.edu/features/in-colombia-indigenous-lands-are-ground-zero-for-a-wind-energy-boom

Sánchez Jabba, A. (2011). *El gas de La Guajira y sus efectos económicos sobre el departamento.* Caratgena: Banco de la República.

Semper, F. (2006). Los derechos de los pueblos indígenas de Colombia en la jurisprudencia de la Corte Constitucional. *ANUARIO DE DERECHO CONSTITUCIONAL LATINOAMERICANO*, 761-778.

Smith, B. (2015). The resource curse exorcised: Evidence from a panel of countries. *Journal of Development Economics (vol. 116)*, 57-73.

Tang, C., Irfan, M., Razzaq, A., & Dagar, V. (2022). Natural resources and financial development: Role of business regulations in testing the resource-curse hypothesis in ASEAN countries. *Resources Policy (V. 76)*, 1-10.

United Nations. (2022). *Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all*. Retrieved from United Nations: https://sdgs.un.org/goals/goal7

United Nations. (n.d.). *The Sustainable Development Agenda*. Retrieved from UN.org: https://www.un.org/sustainabledevelopment/development-agenda-retired/#:~:text=Sustainable%20development%20has%20been%20defined,to%20meet%20their%20own%20needs.

Vega, J., & Muñoz, M. (2023, March). *Solar and wind power in Colombia: 2022 policy overview.* Retrieved from www.sei.org: https://www.sei.org/wp-content/uploads/2023/03/solar-wind-colombia-sei2023.015.pdf

Vega-Araújo, J., & Heffron, R. J. (2022). Assessing elements of energy justice in Colombia: A case study on transmission infrastructure in La Guajira. *Energy Research & Social Science*, 1-15.

Wilson, E. (2016). What is the social licence to operate? Local perceptions of oil and gas projects in Russia's Komi Republic and Sakhalin Island. *The Extractive Industries and Society V. 3*, 73-81.

World Back. (2021, October 6). *www.bancomundial.org*. Retrieved from www.bancomundial.org: https://www.bancomundial.org/es/country/colombia/overview#1

World Economic Forum. (2020). *Fostering Effective Energy Transition.* Geneva: World Economic Forum.

Annex 1. – Original figures

Figure 2. Energy consumption mix in Colombia, taken from Acolgen (2023)

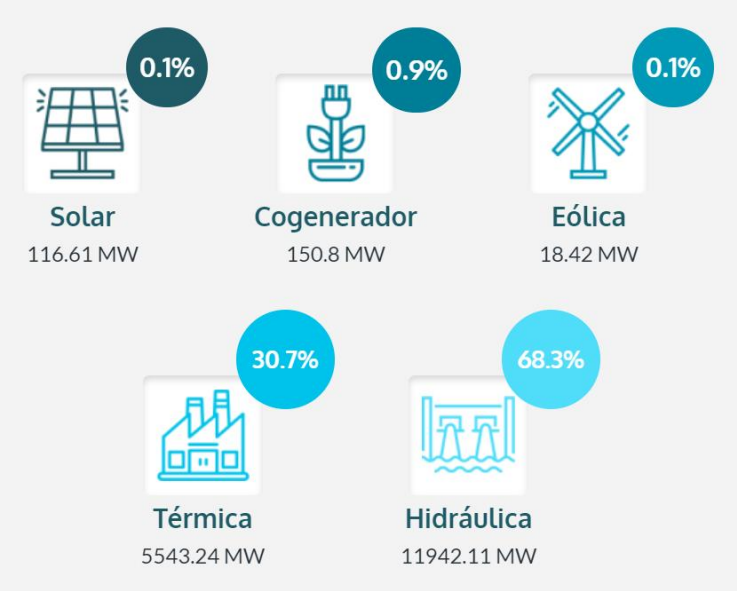


Figure 8. Wayúu community population - Taken from Colombia Ministry of Culture

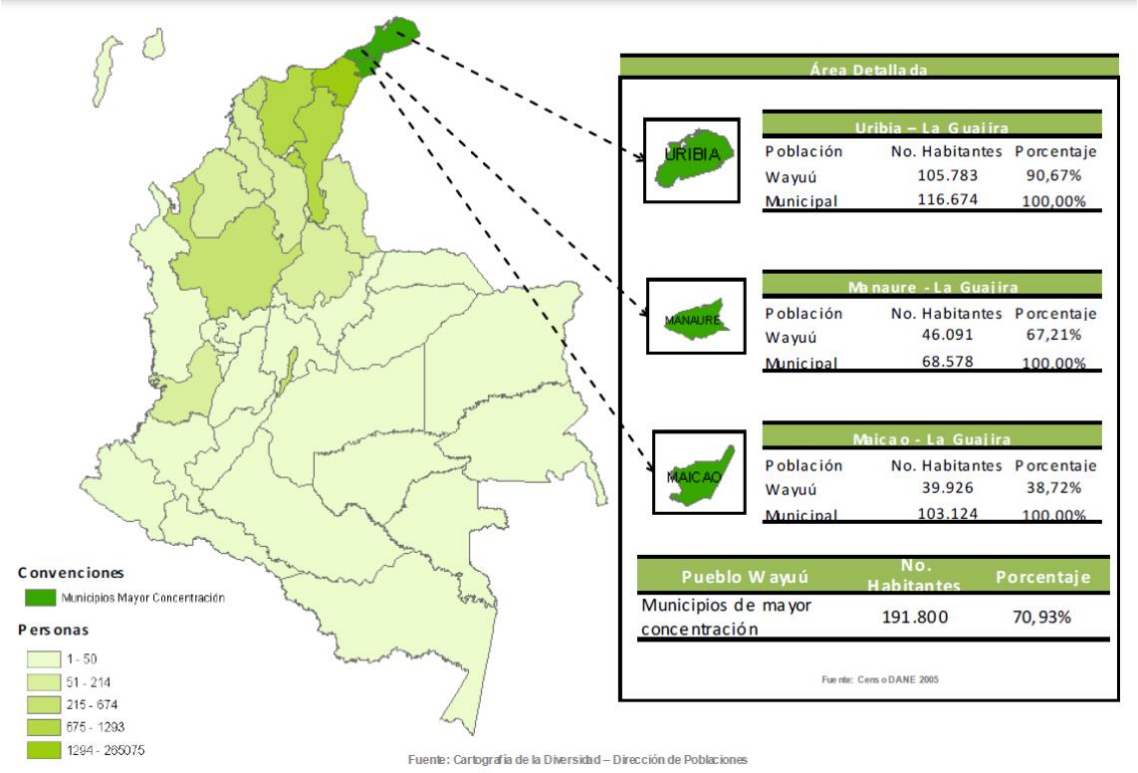


Figure 14. Unsatisfied basic needs, access to water and energy – Taken from National Administrative Department of Statistics (2020)

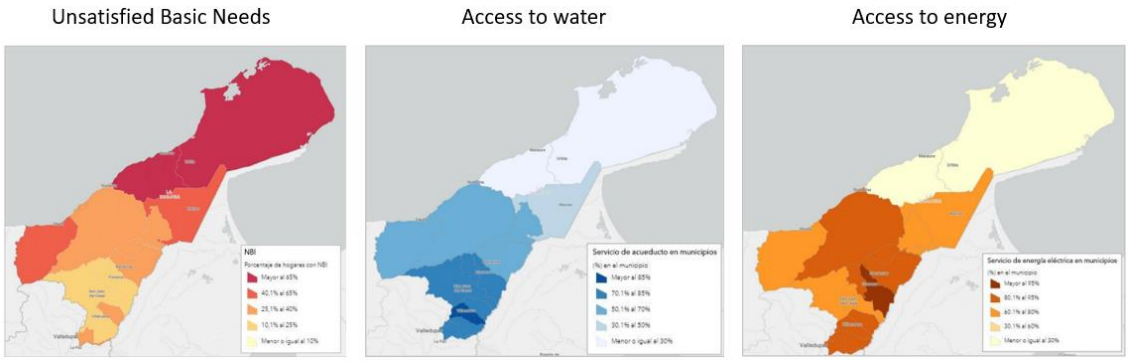


Figure 15. Landscapes of La Guajira - Taken from ANLA (2018)

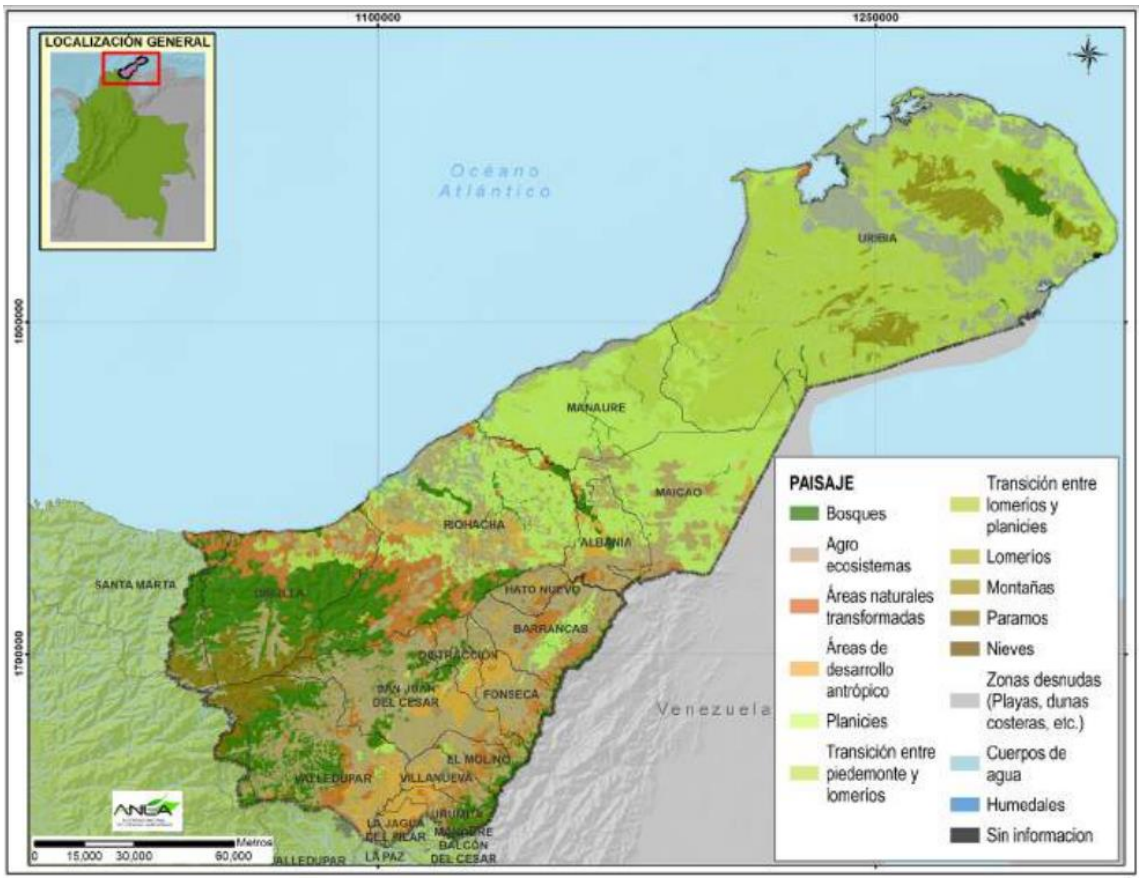


Figure 16. Illustration of the land use in the Wayúu territory - Taken from Mendoza (2022)

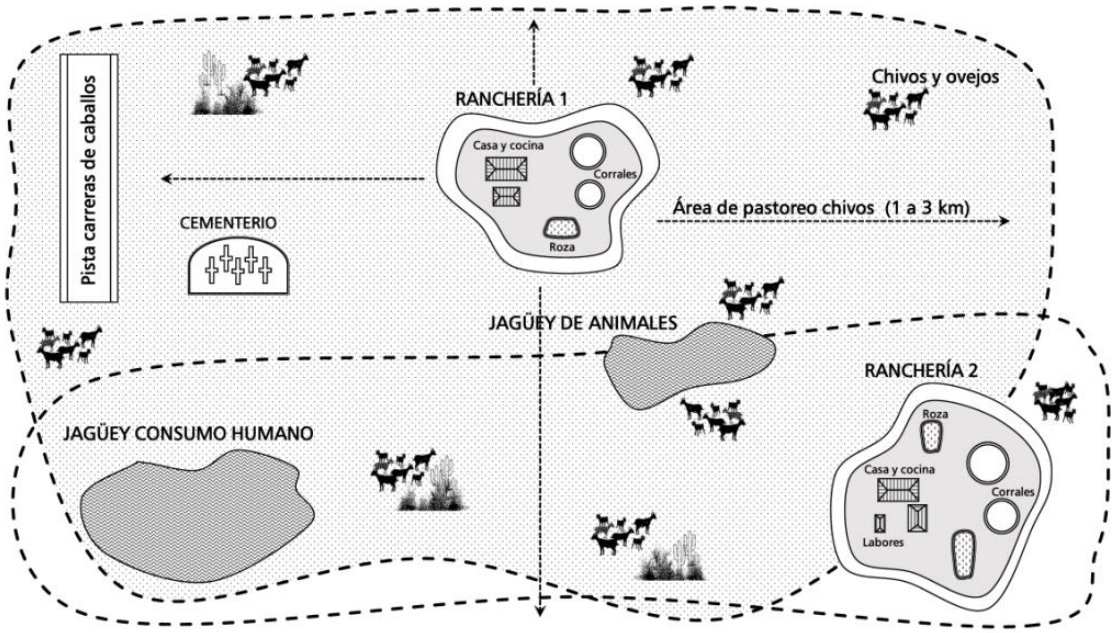
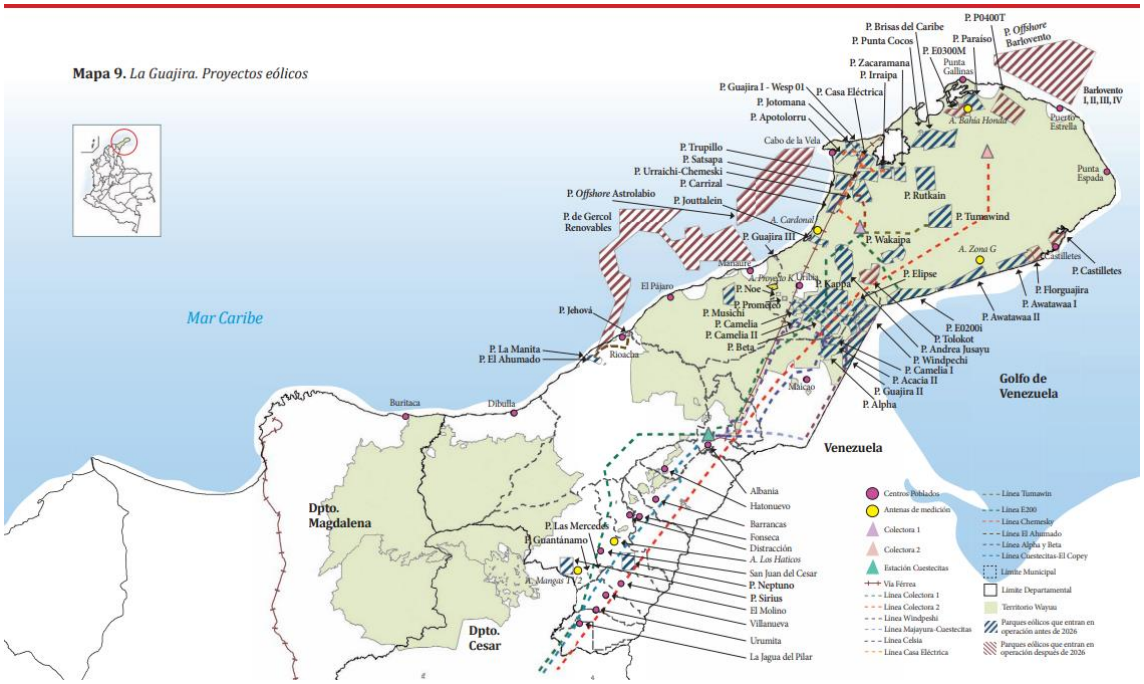


Figure 17. Projected wind energy projects - Taken from Barney (2023)



Annex 2. – Symptoms of the resource curse

The table below, taken from Leonard et al. (2022) and summarised by the author, presents the symptoms and factors impacting likelihood and magnitude of the resource curse within the energy transition:

Table 3 Synthesis of the resource curse symptoms, their possible RE-relevant negative risks, and the factors impacting their likelihood and severity – Taken from Leonard et al. (2022)

Symptom	Factors impacting likelihood and magnitude
Crime	Increase in crime is common in resource-abundant areas, particularly in boom-towns. Likelihood and severity will increase in regions with high levels of poverty and inequality, particularly if there are pre-existing networks of unattached young men already involved in a cycle of conflict and illicit economies.
Damage to local flora, fauna and landscape	The development of RE infrastructure and its associated supply chains can thus cause environmental degradation, habitat loss, animal fatalities) and threats for biodiversity. The severity of the impacts is highly dependent on the regulations and policies implemented to limit negative impacts and promote environmental benefits.
Diversion of investments away from human capital	While this symptom has been documented in the context of fossil fuels where wealth from underground resources can be obtained without needing to invest in social capital, we expect that investment in skill-building will be seen as a prerequisite for large-scale RE development, and as such that ambitious RE goals will promote investment in education.
Diversion of land	The likelihood of this resource curse is highly context-dependent, conditioned on land availability, the amount of overlap between lands useable for RE production and for food production, and the comparative income obtainable from each activity. The severity could be severe if food prices are impacted, however most RE is not produced on arable land.
Diversion of talent from other sectors	For countries with high unemployment levels, hires in the RE sector are not expected to come at the expense of other industries. However, depending on the education levels of each country, RE industries may need to provide skill training in case there is a shortage of skilled workers at the national level and that hiring such workers directly would cause internal brain-drain.
Economic dependence	The economic dependence of countries seeking to scale up RE production on external investors will depend on the barrier to entry for local investors, both economic and regulatory. Thankfully, many forms of RE are modular and initial investments can be low relative to fossil fuel-based energy infrastructure. For large-scale resource extraction infrastructure with substantial capital investment required, loans may need to be taken up from other countries or international organisations, creating or exacerbating economic dependence. Depending on how these loans are negotiated in terms of ensuring positive impacts for local populations and growth, this could have a large resource curse impact. Policy design to mitigate this issue

Symptom	Factors impacting likelihood and magnitude
	should be a focus, as previous policies have had mixed results in oil and gas.
Expatriates dominating high-income/skilled jobs	The two main factors conditioning the materialisation of this symptoms are the level of skills required for high-income jobs, and the availability of these skills in the country. If training is unavailable in-country, expatriates may dominate the job market for technical and specialised roles. This exacerbates income inequality as locals do not benefit from resource jobs. RE development could provide significant economic opportunities for local populations as they require long-term infrastructure maintenance and generate more local jobs requiring specialised skills than oil or gas have done. However, the relevant training may not be available in many low-income countries.
External conflict	External conflict can arise over control of resources or land and the distribution of their benefits. The higher the value of resources that can be easily appropriated through fighting, such as minerals and oil, the greater is the incentive to fight over them. However, access to RE resources is more evenly distributed, and the related infrastructure assets and high-potential land are less easily appropriated. RE could also be sanctioned or withheld as a geopolitical weapon; though, this is debatable, as RE trade is likely to be bi-directional, based more on balancing than dependence, and such prosumer activity is suggested to minimise tensions. Furthermore, energy trade has also been shown to have a pacifying effect, rendering the importer more docile. Trade with neighbours was shown to reduce the duration and the intensity of conflict, to encourage the reallocation of resources to more efficient activities, and thus to open up opportunities and creates jobs. Factors that can impact the likelihood and severity of conflict are the changes in relative prices as a result of trade, the volatility of trade flows, existing historic grievances, the state's institutional capacity and the form of political arrangements, conditions in neighbouring countries, for example the level of violence, that might encourage or discourage conflict in the country of interest, and policies that affect the transmission of changes in international commodity prices to the domestic market.
Gender inequality	The factors impacting the share of women entering the RE industry include cultural norms, economic context, the amount of unpaid care work performed by women, and its compatibility with market work. The gap between the likelihood of studying STEM subjects like engineering, manufacturing, and construction between women and men is lower in low-income countries than in high-income ones. While it is hoped that the professional and economic opportunities provided by large-scale RE development could benefit women, this risk remains to be assessed with experimental data.
Income inequality	Income inequality is prominent in ethnically divided societies and possibly inverted in ethnically homogeneous societies. Resource abundance can increase the wealth of resource owners (i.e. rent seekers) with minimal consideration for the productivity and wages of workers, increasing income inequality. This is particularly concerning in low-income

Symptom	Factors impacting likelihood and magnitude
	countries with high existing poverty levels. While those with the land or capital needed to extract fossil fuel and own generation infrastructure could profit while waged workers were left behind, the distributed nature of the wind and sun resources means that fairer competition can exist, where workers dissatisfied with their income can find other opportunities to gain wealth from the RE resources. Maintaining low barrier to entry to the RE sector and ensuring that government RE subsidies benefit both the owners and the wage-earners will be key factors in determining the likelihood and severity of this symptom.
Income volatility and trade imbalance	Natural resource prices can fluctuate, especially given the natural variability of solar and wind resources. The energy sector was the most volatile sector in the 2010s, so national economies relying on energy-based income are more susceptible to fluctuations. However, for low-income countries, deriving revenues from RE resources may be part of an economic diversification strategy and help promote a more balanced overall national portfolio. As RE has zero marginal costs, there is a risk of exploitation and revenue volatility depending on the market structure/power purchase agreements.
Internal conflict	Factors that will determine the likelihood and severity of this symptom include existing civil or political conflicts, inequalities, location of the RE resources to be extracted (e.g. if causing disturbances to independent cultural communities, particularly if they may not benefit economically from the extraction of the RE resources). Conflicts could arise over land valuable for RE development and RE revenues could exacerbate perceived inequalities. Both the approach taken by private companies with regards to their impacts on local communities and public policies towards promoting fairness will be key.
Land grabs	Poor and rural citizens can be dispossessed or unfairly compensated due to information asymmetry, monopolistic power, or threat of violence. This is especially prevalent in low-income countries with poor governance and enforcement of human rights. RE developments require land and are often developed in rural low-income areas where land is plentiful and cheap, making residents susceptible to unfair land agreements. Key factors determining the severity and likelihood of this symptom are therefore both the amount overlap between RE resource-rich areas and community-inhabited lands, and governmental citizen protection laws.
Loss of competitiveness of other export sectors	While this symptom can be severe, as exemplified by the Dutch disease, the current scale of RE industries in the studied low-income countries does not pose immediate risks of exchange rate appreciation. At this stage of development, increase in exports would be desirable, though this risk could become relevant in the future.
Material dependence	RE development depends on the mining of metals, minerals, and other critical materials for solar photovoltaics and batteries (e.g. for electric vehicles). There is therefore a high likelihood that countries will be dependent on a few concentrated mining areas for material imports which could engender out-sized dependence

Symptom	Factors impacting likelihood and magnitude
	and influence. There is also the consideration of scarcity: while some metal deposits are not yet nearing exhaustion, others are demonstrating their finite nature. About half of all copper deposits, for instance, are already in use or in landfill. As materials are increasingly mined for RE production, they will become both more in demand and scarcer. While studies suggest that current metal reserves are adequate to accommodate future renewable generation needs, certain technology types may be limited, and increased demand for lithium is highlighted as a key challenge. Technological advances reducing the dependence on few rare metals (e.g. cobalt) could reduce the likelihood and severity of this risk.
Reduced economic diversity	In low-income countries, a focus on the RE sector could be at the expense of other sectors, especially if there are limited connections between RE and other industries. However, other industries also rely on RE for the electricity they need to grow. So, depending on the situation, RE development could empower the development of other industries and diversify the economy, or detract from them.
Technological or expertise dependence	Importing resource extraction technology and staff can create dependence on foreign equipment suppliers and labour, as observed for fossil fuels and minerals. As RE technologies advance, up-to-date expertise is required for research, manufacturing, installation, and maintenance. Meanwhile, governments are incentivised to import equipment and labour to maximise RE rents. While local content policies (i.e. promoting the use of local labour and locally-produced equipment) can help to mitigate this, they may exacerbate other resource curse symptoms, (e.g. they may weaken institutions through patronage or increase income inequality through rent-seeking).
Weakening of institutions	Resource-abundant countries tend to experience lower levels of democracy and higher likelihood of authoritarian government. Given that political and institutional instability decreases rates of private RE investment, such a focus on regulatory stability can also mitigate the concerns of RE investors and encourage investments. It is uncertain whether RE revenue could potentially render a government sufficiently wealthy to disregard the will of its people or reject democracy.

Annex 3. – Interviews guide

1. Introductory interviews

Trends in the private sector

- How is the Renewable Energy ("RE") sector changing in Colombia? Thoughts on La Guajira?
- Which companies are getting more involved in the "energy transition"? What about Ecopetrol?
- Do you see a difference in the way companies look to invest in the O&G sector in comparison to the strategy for RE projects?
- Do you know any community–private sector[166] partnerships made concerning RE projects? What do you think about this? Do you think companies will be interested in getting into this? What are the risks?
- How do private companies implement the mandatory Environmental Risk Assessment? Is there space for improvement in this?
- Which role is the Environmental, Social and Governance due diligence playing in the strategy for each project?

Regulatory trends

- How is the regulatory framework changing with the introduction of Renewable Energy ("RE") in Colombia? Which changes should we expect in the energy industry to accommodate the new RE developments?
- What is the role of local governments?
- Are there incentives for local investment in RE projects? What barriers do you see for local investments leading the energy transition?
- Regarding Land-Use are there regulations protecting that, for example, farm land do not change to energy production?
- Are there specific regulations to prevent environmental impacts caused by new RE projects?
- Regarding education, how is La Guajira positioned to supply the necessary talent to take on specialised jobs for RE installations, management and maintenance?

Social perspective and the role of the private sector in the regions

- How is the Renewable Energy ("RE") sector changing in Colombia? Thoughts on La Guajira?
- How do you think Local communities can benefit from new Renewable Energy ("RE") projects in their regions? How are communities getting involved in these new processes?
- Do you know any community–private sector[167] partnerships made concerning RE projects? What do you think about this?

[166] Referring to these partnerships as those that are created with little involvement of the government, bringing the local communities and the private sector together to shape, develop and operate an energy project.

[167] Referring to these partnerships as those that are created with little involvement of the government, bringing the local communities and the private sector together to shape, develop and operate an energy project.

- Any thoughts on the resource curse associated with RE projects and the way the government and private companies are "implementing" the energy transition in La Guajira?
- How do private companies implement the mandatory Environmental Risk Assessment and prior consultation process? Is there space for improvement in these processes?
- Do you see any difference in the way the investment is being made in La Guajira and other regions?

2. Likelihood of symptoms of the resource curse

Symptom	**Factors impacting likelihood and magnitude**
Crime	• What is the perception of poverty and inequality within the region and especially close to energy projects/developments? • Is there existing crime in the region and/or presence of illicit economies?
Damage to local flora, fauna and landscape	• Is there an environmental impact of the energy projects in the region? Is there a risk of habitat loss? • Is there any regulation in place for the environmental protection of biodiversity, fauna and flora? Is there a risk of habitat loss? • Are companies expected to pay royalties for the exploitation of RE resources? If yes, how are they planned to be used? • How are private companies implanting environmental regulations? Are they taking any additional steps toward the environmental protection of the area they are working on?
Diversion of investments away from human capital	• Is it expected to promote education within the RE sector within the regions? Especially to undertake skill-building and maintenance activities? • Which role is the private sector taking to promote investment in education in these areas?
Diversion of land	• Currently, which activities are taking place in the lands that are going to be used for RE projects? Is it expected, in the regions, to have a major change in land-use activities (ex. From food to energy production)? • If there is a change in land-use, how and why is this happening? Is any private company involved? • Is there any regulation protecting the land-use for specific activities such as farming?
Diversion of talent from other sectors	• What is the likelihood of a diversion of talent happening? (Hires for the RE sector coming from other sectors that then might have a shortage of workers). • Where is the private sector finding skilled workers for the RE developments?
Economic dependence	• Are the new projects being developed with international investment? • Is there any local company/organisation investing in these projects? • Are there incentives in place to promote local investments in the development of RE? Which are the

Symptom	Factors impacting likelihood and magnitude
	barriers to this happening? Could this be a mitigation factor for economic dependence? • Are the private international companies open to community–private sector partnerships?
Expatriates dominating high-income/skilled jobs	• Do people from the local communities have the level of skills to be able to get a specialised job or "high-income job"? • Are the incentives to long-term hire people from the local communities? Or is there more expectancy for short-term seasonal jobs during the construction of the projects? • Which role is the private sector taking to try to hire more local workers rather than "import" skilled workers?
External conflict	• Is there any risk of these developments triggering external conflict such as with Venezuela (boarder with La Guajira)? Or with any neighbour department/region?
Gender inequality	• Is there any gender gap in relation to the ratio of women and men getting involve in RE projects in different roles? • Are there incentive for women to study engineering or building careers that will help them get jobs in specialised works?
Income inequality	• What is the risk of these developments triggering income inequality in the regions? • Are there any subsidies for wage-earners involved in this industry?
Income volatility and trade imbalance	• What is the risk of local communities suffering from an income volatility due to the change of energy prices?
Internal conflict	• What is the risk of internal conflict in the areas due to the development of new RE? • Are the new developments disturbing independent cultural communities? Are independent cultural communities economically benefiting from the developments? • How are the private companies addressing local conflicts and/or local acceptance of the projects? • Are private companies properly addressing their local impact in the communities? • Are policies such as the implementation of Environmental and social Impact Assessments, Environmental Management Plan or previous consultation process helping reduce the internal conflict?
Land grabs	• Does the previous consultation process (Consulta previa) effectively work to avoid land grabs? How can it be improved? • How are the local communities compensated for the use of their lands? Which is the process and approach of the private sector to reach these agreements for land-use?
Loss of competitiveness of other export sectors	• Is there a risk of loss of competitiveness in other economic activities in the region?

Symptom	Factors impacting likelihood and magnitude
Material dependence	• Where are raw materials to build RE infrastructure coming from? • Which mining metals, minerals and other materials can Colombia provide to these projects? Any of these available in the areas of interest? • Is the government promoting the local consumption of minerals and other materials? • Is the private sector implementing circular economy practices to secure material for new projects?
Reduced economic diversity	• Is there a risk for the reduction of economic diversity in the area? • Is the development of RE promoting the development of new industries associated to the industry?
Technological or expertise dependence	• How can the risk of being technological and expertise dependant to international organisations be mitigated?
Weakening of institutions	• Are there any mechanisms in place to protect the development of these projects to fall into corruption? • Are there changes in the organisation of local governments that will enable them to properly oversee and manage the projects and resources that result from them?

Annex 4. – List of sources interviewed

As mentioned before, the interviews are anonymous, therefore, the names and identifiable information are not presented in the below. To reference the interviews, in the table below I present a general description and background of the source and the group to which the interviewee was categorised: from public institutions, from the private sector, and from the social sector or representatives of local communities.

No.	Interviewee	Background	Group that represents	Date of interview
1.	Former deputy minister of the Energy Ministry	Approximately 20 years of experience in the public sector and international financial institutions. Extensive experience on policy, governance and stakeholder engagement in the energy and extractives industries.	Public sector	3 March 2023
2.	Former public official of the Energy Ministry	Large experience in the environmental office of the Colombia energy and mines ministry. Extensive experience in accompanying the process of prior consultation with communities and private companies.	Public sector	16 March 2023
3.	High-profile journalist	Well place journalist working for a NGO, who has accompanied communities during the development processes of renewable energy projects and has researched the topic extensively.	Social sector	3 April 2023
4.	Recognised Wayúu	Professor and anthropologist focus on the study of the Wayuu culture.	Social sector	14 April 2023
5.	Researcher on coal and energy transition	Academic researcher specialised in the coal transition and the experience of La Guajira.	Academic sector	19 April 2023
6.	Economist and professor at a Colombia university	Economist and professor at a university in Bogotá with knowledge on the energy transition in the country.	Academic sector	21 April 2023
7.	Lawyer at an NGO	Lawyer with experience in Energy Policy and Climate Change.	Social sector	28 April 2023
8.	Senior researcher in an environmental organisation	Senior researcher on an environmental research group with experience researching the topic of energy transition in La Guajira.	Academic sector	2 May 2023
9.	Researcher with knowledge of the energy transition in La Guajira	Researcher from La Guajira with experience in the energy transition in the region, working on an environmental research group.	Academic sector	4 May 2023

No.	Interviewee	Background	Group that represents	Date of interview
10.	Well-placed consultant experienced in due diligence	Consultant experienced in the energy industry supporting the investment of new energy projects.	Private sector	15 February 2023
11.	Security manager on an international solar company	Manager of a company with solar projects in Colombia, well-place to talk about the energy transition in the country.	Private sector	28 February 2023
12.	Manager of an energy company with wind projects in La Guajira	Manager leading the wind energy projects in La Guajira with experience in engaging with local communities.	Private sector	5 April 2023
13.	Manager of an international company trying to develop a wind project in La Guajira	Project manager of an international company trying to develop a wind project in La Guajira. Currently, they are in the pre-construction phase of the project.	Private sector	17 April 2023
14.	Local worker of an energy company	Project manager of an energy company located in La Guajira	Private sector	25 April 2023
15.	Local consultant with knowledge on the energy industry	Local consultant involve within the private and social sector, supporting social development projects in Colombia and Mexico.	Private sector	16 February 2023

Annex 5. – Reviewed EIAs

Project	Company	Type	Municipality	Size	Others
Parque Eólico Guajira I and WESP 01	ISAGEN	Wind energy	Uribia	16 turbines 32 MW	These projects were known as Project "Jouktai". Environmental licence by resolution 03357 of 29 December 2009
Parque Eólico Guajira II	ISAGEN	Wind energy	Maicao	54 turbines (approved) and 18 turbines (need to be relocated) 300 MW	Environmental licence by resolution 01511 of 27 August 2021
Parque Eólico Alpha	Vientos del Norte – Part of EDPR	Wind energy	Maicao	65 turbines 234 MW	Environmental licence number 02059 of 16 November 2018[168]
Parque Eólico BETA	Eolos Energía – Part of EDPR	Wind energy	Uribia and Maicao	52 turbines Between 150 and 200 MW	Environmental licence by resolution 1555 of 2 August 2019
Parque Eólico Windpeshi	ENEL	Wind energy	Maicao	45 turbines 200 MW	Environmental licence by resolution 261 of 13 February 2020[169]
Parque Solar Fotovoltaico Potreritos	Acciona	Solar energy	San Juan del Cesar and El Molino	430,800 PV modules 168 MW 278 hectares	Environmental licence by resolution 02153 of 30 November 2021
Parque Eólico Casa Eléctrica	Jemeiwa ´Kai – Part of AES Colombia	Wind energy	Uribia	56 turbines 180 MW	Environmental licence by resolution 00666 of 29 March 2022[170]
Proyecto Eólico EO200I	EPM – Empresas públicas de Medellín ESP	Wind energy	Uribia	40 turbines Between 200 and 224 MW	Environmental licence by resolution 01743 of 11 August 2022

[168] The resolution was not found by open-source searches.
[169] The resolution was not found by open-source searches.
[170] The resolution was not found by open-source searches.

Project	Company	Type	Municipality	Size	Others
Parque Eólico El Ahumado	Enerfin / Elecnor	Wind energy	Riohacha	16 turbines 50 MW	Environmental licence by resolution 01074 of 29 July 2020