

# Green or grey growth for Colombia?

Challenging fossil-based energy security

Ivan Briscoe  
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Research Report





# Clingendael

Netherlands Institute of International Relations



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October 2016

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# Disclaimer and acknowledgements

This report is an output from a project commissioned through the Climate and Development Knowledge Network (CDKN). CDKN is a programme funded by the UK Department for International Development (DFID) and the Netherlands Directorate-General for International Cooperation (DGIS) for the benefit of developing countries. The views expressed and information contained in it are not necessarily those of or endorsed by DFID, DGIS or the entities managing the delivery of the Climate and Development Knowledge Network, which can accept no responsibility or liability for such views, completeness or accuracy of the information or for any reliance placed on them.

Responsibility for the content of the report lies with the authors only. They would like to thank Ilmi Granoff and Leo Roberts for their useful and constructive comments on earlier drafts, and Eva Maas and Ernst Kuneman for research assistance.

# Executive summary

Colombia's extreme vulnerability to climate change, reliance on hydropower for most of its electricity supply, systemic exposure to sudden dips in the price of oil and desire for international recognition make up a series of strong reasons for the state to support green growth. Public opinion is closely attuned to environmental protection issues, as it is across Latin America, where the presence and interrelation of distinct eco-systems has long been understood as one of the region's great natural assets. But seen from a different perspective, these same issues can be moulded into arguments on behalf of more resource extraction, faster growth and rapid urbanisation.

This report analyses the politics of energy security and green growth in Colombia. It points out that Colombia's recent growth up to the end of the 'commodity super cycle' was largely driven by its extraction of oil and coal. Major domestic and multinational business interests are wedded to the extractive economy, and have shown themselves extremely unwilling to forsake such a lucrative business. Representatives and exponents of this model remain at the heart of the state, which, as in other Latin American countries, depended on natural resource revenues over more than a decade of economic boom for social spending and other public largesse. Recent power blackouts were used by some to support the argument that the country needs to reinforce its energy security through fossil sources rather than hydropower.

Taking into consideration legitimate energy security concerns and Colombia's economic and environmental objectives, this report makes four recommendations that could shape future policy by national authorities, civil society organisations and foreign donors:

- *Links to post-conflict.* If a new peace deal between the Colombian government and the FARC succeeds, one concrete and viable recommendation would be for the government to establish explicit links between the financial and tax incentives deriving from the 2014 law on renewable energy production, and the economic stimulus programmes designed for post-conflict territories. The aim would be to encourage take-up of renewable energy in these areas so as to ensure inhabitants have access to a stable electricity supply, to preserve local environments and to offer an energy model to other areas of Colombia.
- *Greening the private sector.* Important parts of Colombia's private sector not only support green growth, but have actively pushed to transform their own production processes. These examples need to be disseminated and replicated across the entire Colombian business community as an operational model that does not harm the revenue-making potential of the companies in question. Targeted tax and subsidy

arrangements, as recommended by the OECD in its 2014 review of Colombia, could also encourage greater corporate uptake.

- *The local vanguard.* The most outstanding practical applications of green growth in Colombia take place at local level. These include the programmes of certain well-organised local environmental bodies, as well as the activities of a number of major companies, especially in Medellín. A stronger role in transmitting local programming to the centre to inform and shape future policy should be played, as a matter of priority, by central state institutions such as the National Environmental System.
- *Reinvigorating the centre.* The Colombian state, however, has faced historical difficulties in achieving genuine institutional cohesion between the centre and the periphery. Environmental policy, despite its good intentions, will not be able on its own to bypass these entrenched dilemmas. But a reconfigured system of cohesive environmental management, with strong vertical and horizontal links, might provide a good example and even a model for more systemic reform of the state.

This report nevertheless counsels caution. Certain interest groups and lobbies in the state and in business will continue to seek ways and means to circumvent Colombia's environmental policy and pledges. Sudden energy, climate and environment-related shocks would pose major questions as to the future trajectory of Colombia's development. In such a scenario, and with the right support and evidence base, the country could well decide to intensify its pursuit of green growth rather than abandon it.

# 1 Introduction

After decades of absorption in its own internal security dilemmas, Colombia has blossomed in the past few years into an active partner in Latin America affairs and a rising presence on the international stage. Its high rates of economic growth (until 2014) qualified Colombia for membership of the supposed second tier of large emerging economies, the so-called CIVETS.<sup>1</sup> Its peace process with the Revolutionary Armed Forces of Colombia (FARC), which has been underway for close to four years, is set to become one of the rare cases of conflict resolution visible in the world today. And in terms of the environment, the country has already shown its sensitivity to the effects of rapid economic growth and demographic change, pioneering new models of clean public transport that became a vogue across Latin America, and is now positioning itself as a champion from the developing world of green growth and reduced greenhouse gas emissions.

This international profile in environmental affairs was epitomised by Colombia's stance at the Paris climate summit. Although the country only generates 0.46 percent of the world's greenhouse gases, the Colombian government pledged to reduce its emissions by 20 percent by 2030 compared to the business-as-usual scenario. In doing so, the country reaffirmed its joint leadership of a unique set of Latin American nations, the Independent Association of Latin America and the Caribbean (AILAC), whose goal has been to distance itself from the region's left-leaning governments by accepting large, voluntary cuts in their own greenhouse gas emissions and exploring market-based approaches to climate change mitigation.

President Juan Manuel Santos also took advantage of his presence at the Paris summit to announce the launch of a new initiative, *Colombia Sostenible* (Sustainable Colombia), which is designed to serve as a magnet for international and national funds supporting sustainable development in territories vacated by the FARC as the rebel force demobilises. Green growth is already one of the leitmotifs of the current manual of Colombian economic planning, the four-year National Development Plan. Also, with 50 percent of Colombians 'totally agreeing' with stronger measures for environmental regulation,<sup>2</sup> green growth policies have broad public support.

However, all is not as straightforward as this flurry of diplomatic and environmental activity suggests. Green growth in Colombia faces a dominant economic model based

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1 Standing for Colombia, Indonesia, Vietnam, Egypt, Turkey and South Africa.

2 Gallego, Gloria and Sigma Dos Colombia, op. cit., p. 60.



on the expansion of extractive industries, leading to fragmentation within the state as ministries and agencies that are tied to these sectors seek to protect their interests. Power-sharing agreements and lack of an integrated approach concerning green growth are some of the major impediments to realisation of Colombia's green potential. This paper explores the realities of Colombian environmental and economic policy making and implementation. It assesses energy security considerations and points to contradictions and tensions that surround the official approach to green growth. In short, it explores the political economy of energy security and green growth, where this is understood as an analysis of the interests and incentives that shape the way public decisions in these areas are made or not made, enforced or avoided.

## 1.1 The structure of the report

This report draws heavily on numerous in-depth interviews and a one-day workshop in Colombia with policy makers from different ministries and state agencies, scientific and environmental experts, activists, economists, political scientists, diplomats and representatives of various business sectors. It seeks to pinpoint the core issues for a political economy analysis of energy and green growth.

To do this, the report follows a structure of four steps. Chapter 2 delineates the fundamentals of Colombia's energy economy, the main issues affecting energy security in the country and the current uptake of green growth approaches. Chapter 3 moves onto the formal terrain of politics and the state: it explores the basic architecture and structural weakness of the Colombian state and outlines the policy frameworks that have been devised in the areas of the environment, green growth and climate issues. Chapter 4 seeks to burrow deeper under the formal trappings of policy and state institutions by exploring four of the key issues shaping Colombia's national development, and how these intersect with environmental protection and policy.

Chapter 5 looks at the interest groups and modes of influence that shape the real tussles on environmental policy and green growth. Here, the state of Colombian public opinion is contrasted with the numerous powerful obstacles in the path of green policy making. Chapter 6 draws conclusions with regard to the challenges related to enhancing energy security and promoting green growth in Colombia.

## 2 Energy security, greenhouse gases and green growth in Colombia

Colombia is an upper middle-income country, with a population of 48.2 million people and a GDP of 292 billion US dollars. Although declining, 28 percent of the population still lived under the poverty line in 2015.<sup>3</sup> Despite a recent dip in the country and across the region, Colombia has had one of the fastest growing economies in Latin America, driven in large part by exports of coal and oil. It has the largest coal reserves on the continent, and coal has traditionally accounted for around 15 percent of export earnings.<sup>4</sup> Since the discovery of two high-quality oil fields near Bogota in the 1980s, Colombia has become a net exporter of oil. Until the recent fall in prices, the sector managed to attract up to 30 percent of foreign direct investment, and in 2012 accounted for over 50 percent of export earnings.<sup>5</sup> According to Colombia's Mining and Energy Planning Unit (UPME), the chief technical planning bureau within the Ministry of Mines and Energy, coal, oil and other mining activities accounted for 7.3 percent of GDP in 2014.<sup>6</sup>

Electricity supply is dominated by hydropower, and is sold in a highly liberalised market. During the 1990s, the sector was privatised and energy production, electricity generation and infrastructure maintenance were unbundled. Competition between regional utilities was stimulated and barriers to entry by private investors eliminated. Also, Colombia was the first Latin American state that introduced a bidding system in its electricity market. Increased competition in the sector has improved distribution efficiency and has led to higher foreign investments.<sup>7</sup> Economic growth, greater public spending power and urbanisation have led to a doubling of energy consumption over the past 25 years, which reflects a steady annual growth rate of around three to four percent.<sup>8</sup> This increase

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3 World Bank, 'World Development Indicators: Colombia', <http://databank.worldbank.org/data/reports.aspx?source=2&country=COL&series=&period=> (accessed September 2016).

4 See breakdown of Colombia export earnings between 1992 and 2015 from the National Statistics Administrative Office (DANE), <http://www.dane.gov.co/index.php/comercio-exterior/exportaciones> (accessed February 2016).

5 Ibid.

6 Mining and Energy Planning Unit (UPME), *Plan energético nacional Colombia: Ideario energético 2050*, Bogotá: UPME, p. 33.

7 Kessides, I.N. 2012. 'The impacts of electricity sector reforms in developing countries', *The Electricity Journal* 25(6): 79-88.

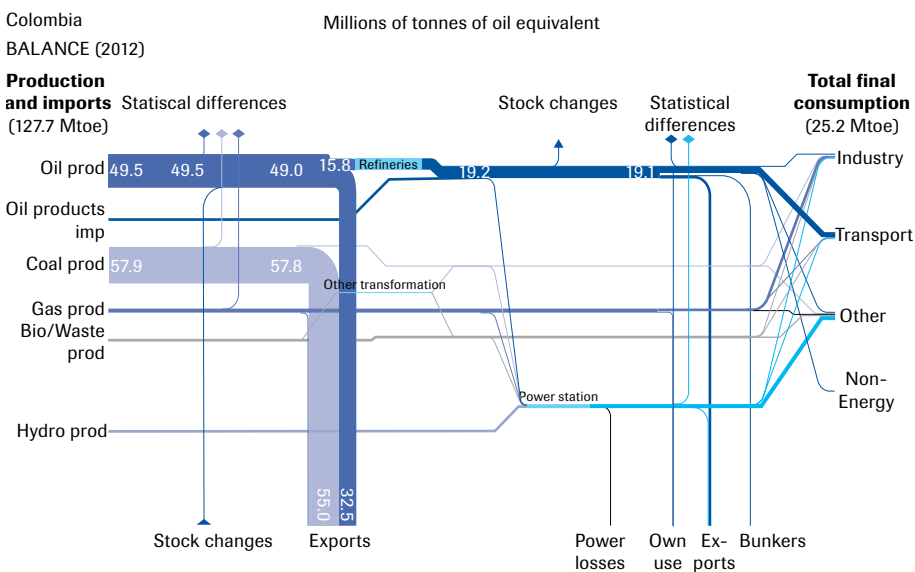
8 International Energy Agency (IEA), *Colombia: Indicators for 2013*, <http://www.iea.org/statistics/statisticssearch/report/?year=2013&country=COLOMBIA&product=Indicators> (accessed February 2016).

in demand is expected to continue for at least the coming 15 years. Current installed capacity is around 16 GW, and is expected to grow to 20 GW in 2028, mainly through additional hydropower. According to an analysis by Climatescope, Colombia is unlikely to see additional clean energy investments beyond small hydropower in the near future.<sup>9</sup>

As illustrated in figure 1, energy security can be considered relatively high and greenhouse gas emissions from domestic energy use low. Colombia produces much more energy than it consumes, with coal and oil representing important export commodities. The World Energy Council reports that ‘continued strong performance on the energy security dimension is largely driven by the energy exporter’s favourable total energy production [...] Energy sustainability performance is among the best in the world.’<sup>10</sup>

## 2.1 Energy production

**Figure 1 Energy balance of Colombia**



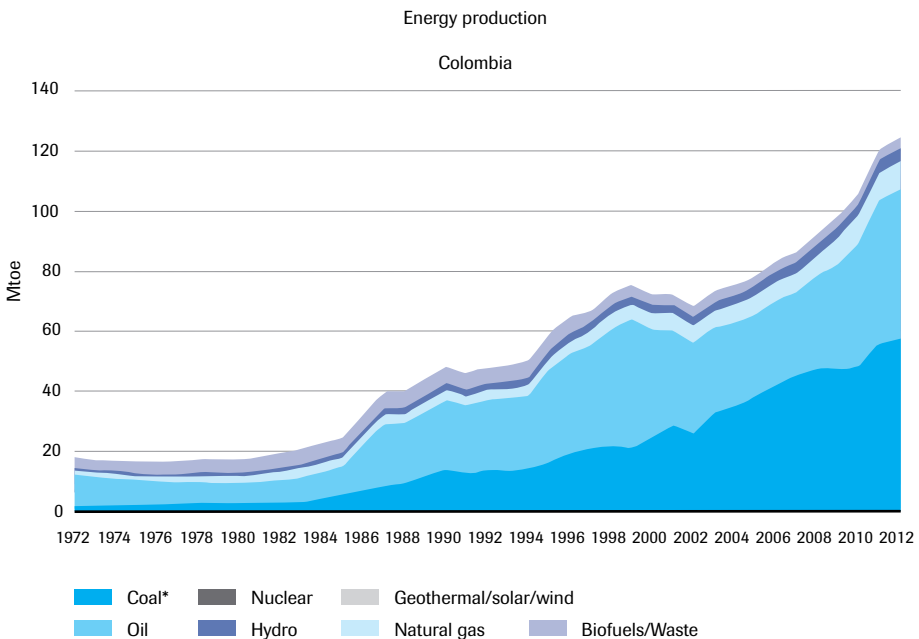
Source: IEA

9 ClimateScope, *Colombia country overview*, 2015, <http://global-climatescope.org/en/country/colombia/#/details>

10 World Energy Council, *Energy Trilemma Index – benchmarking the sustainability of national energy systems*, London, World Energy Council, 2014, <https://www.worldenergy.org/wp-content/uploads/2014/11/20141105-Index-report.pdf> (accessed February 2016).

In terms of energy production, a six-fold increase has been realised since the early 1980s, most of which is due to expansion of coal-mining activities and oil exploration and production (see figure 2). Since 2003, the government has managed to strengthen the regulatory framework in order to attract private investments, establishing Colombia as a major energy producer in the western hemisphere and an important supplier of crude oil to the United States. However, especially in the past few years and throughout the peace process, guerrilla groups have frequently attacked oil infrastructure and disrupted production.<sup>11</sup>

**Figure 2 Energy production in Colombia, 1972-2012**



\*In this graph, peat and oil shale are aggregated with coal, when relevant.

Source: IEA

11 Rettberg, Angelika, 2015, *Gold, Oil and the lure of violence: the private sector and post-conflict risks in Colombia*, Oslo: Norwegian Peacebuilding Resource Centre (NOREF).

Colombia produces around 100 million tonnes of **coal** per year,<sup>12</sup> of which only three percent is used domestically. Its coal is ideal as an export commodity for Europe and North America due to its low production costs and its high quality: two-thirds of production is exported to Europe, and 20 percent to other countries in the region. Despite the fact that coal trade with the United States accounts for only four percent of Colombian exports, it nevertheless represents 73 percent of US coal imports.<sup>13</sup> Colombia intends to expand its coal production further, and direct some of it to the domestic market to replace reliance on falling supplies of home-produced oil and gas, as well as to compensate for expected decreases in international coal demand and export revenues.

Coal production in Colombia is exclusively carried out by private companies. The largest coal producer in Colombia is the Carbones del Cerrejón consortium, which operated an integrated system connecting mines, railroads and a Caribbean coast export terminal. US-based Drummond Company is the second-largest coal producer in Colombia, and has entered into an 80-20 percent partnership with Japan's Itochu Corporation, known as Drummond International. This partnership aims to increase coal exports to Japan and other Asian countries.

Colombia exports about half its **oil** production, mainly to the United States, and the state-owned company Ecopetrol is a major and highly profitable trading partner.<sup>14</sup> Colombian oil is found primarily in the Andean foothills and the eastern Amazonian jungle.

Oil for domestic use is subsidised, and costs the government between one and two percent of GDP. Since the 1970s the government has benefited from oil production through 'association contracts' in which the profits are shared between private producers and the state, and through varying tax and royalty arrangements. From 2008 onwards, changes in the regulatory framework have led to a surge in new private investments, despite the absence of new oil discoveries. Reforms under former President Álvaro Uribe (2002-2010) moved control over production away from Ecopetrol and towards the National Hydrocarbon Agency (ANH) and the Ministry of Mines and Energy. Recently, Ecopetrol was partly privatised in an attempt to boost investments in energy infrastructure.

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12 For comparison: with 490 mton per year, Indonesia is the world's top exporter of steam coal. Colombia ranks 5<sup>th</sup>. Baxter, Barry, 'Feeling the Pinch,' *World Coal*, 12 December 2015. <http://www.worldcoal.com/special-reports/07122015/Feeling-the-pinch-Colombia-Regional-Report-3210/> (accessed February 2016).

13 Energy Information Administration (EIA), Coal Data, <http://www.eia.gov/coal/data.cfm#imports> (accessed February 2016). At the same time, a trend towards phasing out coal power in the United States is emerging under the influence of the shale gas 'revolution' and the US pledge to impose emissions standards on power plants.

14 Steiner, Roberto and Vallejo, Hernán, 'The Economy', in Hudson, Rex, *Colombia: a country study*, Washington DC: Library of Congress, 2010.

After decades of self-sufficiency in natural **gas** supply, Colombia is expected to start importing natural gas from neighbouring Venezuela in 2016.<sup>15</sup> Resources are located in the Llanos and Guajira basins, and production is dominated by three major players: Ecopetrol, Equion Energia (a partnership between Ecopetrol and Talisman Energy) and Chevron.

The current government of President Juan Manuel Santos regards expansion of gas production as a priority due to increased domestic demand, export opportunities and the need to diversify electricity production away from climate-sensitive hydropower. Coverage for residential use of natural gas in the main cities is between 30 and 80 percent. Because of its high cost, the availability of natural gas in rural areas tends to be limited.

Colombia's fossil fuel exports can strengthen energy security as higher production and improved infrastructure can potentially be diverted towards domestic use (especially when Colombia's refinery capacity increases). However, prolonged export growth will result in lower reserves-to-production (R/P) ratios, in turn lowering potential domestic use and thus affecting energy security in the long term. This is especially true for Colombia, which has one of the lowest R/P ratios among the major oil-producing countries in the world.

## 2.2 Conversion, transmission and distribution

The total installed power-generating capacity is 15.5 GW and production is 136 TWh, which is projected to expand to 20 GW and 175 TWh by 2028. In 2013, 67 percent of electricity production was generated using hydropower, 27 percent using thermal generation, and five percent on the basis of other sources.<sup>16</sup> The government plans to install an additional 3 GW of **hydropower** over the coming decade.<sup>17</sup>

However, Colombia has experienced the effects of climatic variations on its electricity production, with lower than average precipitation in the two yearly rainy seasons leading to reduced hydropower capacity. This vulnerability is especially apparent in years when the El Niño Southern Oscillation causes weather disruptions. In the second half of 2015, for example, nine out of 32 provinces entered a state of emergency because of droughts,

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15 Platts, 'Colombia to Begin Natural Gas Imports in Early 2016: Ecopetrol', 23 November 2015, <http://www.platts.com/latest-news/natural-gas/bogota/colombia-to-begin-natural-gas-imports-in-early-26286963> (accessed February 2016).

16 UPME, 2014:120-122.

17 CLIMACAP Consortium, *Climate and Energy policy review for Colombia, Brazil, Argentina and Mexico*, 2014, [http://climacap.websitebuilderpro.com/download/i/mark\\_dl/u/4011847001/4613271160/CLIMACAP%20policy%20reviews.pdf](http://climacap.websitebuilderpro.com/download/i/mark_dl/u/4011847001/4613271160/CLIMACAP%20policy%20reviews.pdf)

extreme temperatures and forest fires.<sup>18</sup> According to a recent report, the government has planned an additional capacity of 662 MW of thermal capacity on top of the existing 4,521 MW of thermal power: three new coal-fired plants and one gas-fired plant are slated to come online before 2018.<sup>19</sup>

Colombia's power system works as a liberalised market, and is considered one of the most open in the developing world. In addition, a policy instrument called the 'Reliability Charge' has been in place since 2006, paying generating companies a fee for electricity production under conditions of scarcity, such as droughts affecting hydropower, regardless of the technology they use. According to UPME, there are currently 53 generating companies, with 10 large firms dominating the market and accounting for 93 percent of production.<sup>20</sup> These include the public companies *Empresas Públicas de Medellín* (EPM) and Isagén, which was sold early in January 2016 to the Canadian Brookfield Asset Management – currently under criminal investigation in the United States and Brazil – in a single bid transaction worth 6.4 billion dollars,<sup>21</sup> as well as the private Emgesa. Together, these generate almost 60 percent of total electricity in the country.

**Petrochemical refinery capacity** in Colombia is currently insufficient to meet domestic demand, with only five refining plants in use. This has led to a demand for imported end-products and investments in new capacity. Colombia has seven major oil pipelines, five of which connect production fields to the Caribbean export terminal at Coveñas. There are plans to double the current network, while the government is preparing for further off-shore exploration in the Pacific and Atlantic Oceans.

Since 2005, the Colombian government has established an **active biofuel policy framework**.<sup>22</sup> The formal goal has been to promote development and the productive use of agricultural land, improve energy security by offering an alternative to fossil fuel, and eventually to turn Colombia into an exporter of biofuels. Ethanol can be made from sugar cane, beets and yucca, among other plants, and replace gasoline. Biodiesel can be

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18 Dennis, Claire, 'El Niño in Colombia: what's happening and what will happen', *Colombia Reports*, 13 October 2015. <http://colombiareports.com/el-nino-in-colombia-whats-happening-and-what-will-happen/> (accessed February 2016).

19 ProColombia, 'Electric Power in Colombia: Power Generation', Bogotá: ProColombia, 2015, p. 13. [http://www.cc.lujfileadmin/user\\_upload/cc.lujManifestations/20150701\\_Mexico\\_Colombia\\_Mission/01\\_Electric\\_Power\\_Generation\\_in\\_Colombia\\_-\\_2015.pdf](http://www.cc.lujfileadmin/user_upload/cc.lujManifestations/20150701_Mexico_Colombia_Mission/01_Electric_Power_Generation_in_Colombia_-_2015.pdf) (accessed February 2016).

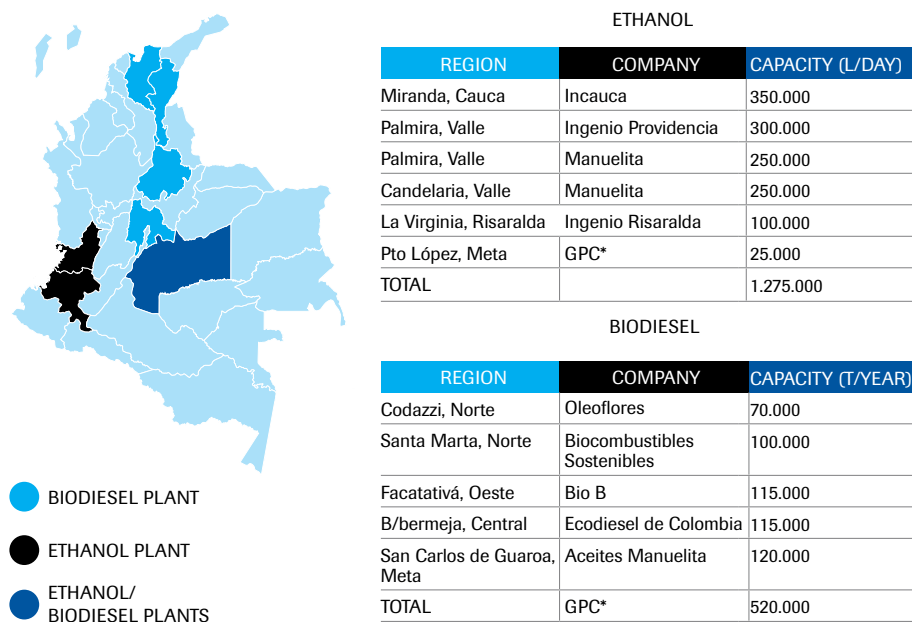
20 UPME, 2014, op. cit., p. 118.

21 See Gúesguán Serpa, Óscar, 'Venta de Isagén comprometería expansión del sistema eléctrico,' *El Espectador*, 13 January 2016. <http://www.elespectador.com/noticias/economia/venta-de-isagen-comprometeria-expansion-del-sistema-ele-articulo-610164> (accessed February 2016).

22 The opaque political origins of this policy, however, have come in for some scrutiny. This issue will be discussed later in Chapter 5.

made from palm oil, coconut oil or castor oil, and replace fossil diesel. When blended with traditional fossil fuel at relatively low rates of up to 20 percent, biofuels can be used for transport without having to adjust any distribution infrastructure or vehicle technology. The interests of the biofuel sector are represented by Fedebiocombustibles, which stands for Federación Nacional de Biocombustibles de Colombia (National Federation of Colombian Biofuels). Its mission is to contribute to the sustainable growth of the biofuel industry in Colombia by representing the interests of all its members, lobbying for sectoral policies, promoting information-sharing, research and development of new technologies while generating employment, protecting ecosystems and diversifying the energy portfolio. Its members include palm oil and sugar cane associations (both biofuel producers), as well as Ecopetrol (the Colombia oil company) and other private biofuel companies. In their own words, Fedebiocombustibles promotes the ‘conversion of the biofuels sector into means of leveraging wealth in regions where industrial centres are established’.<sup>23</sup> The distribution of ethanol and biodiesel production facilities are featured in figure 3.

**Figure 3 Distribution and details of biofuel industries in Colombia, 2015**



Source: [www.investincolombia.com.co/images/Adjuntos/Investment\\_in\\_the\\_Biofuels\\_Sector.pdf](http://www.investincolombia.com.co/images/Adjuntos/Investment_in_the_Biofuels_Sector.pdf)

23 Quoted from Fedebiocombustibles website: <http://www.fedebiocombustibles.com/main-pagina-id-15-titulo-mision.htm>

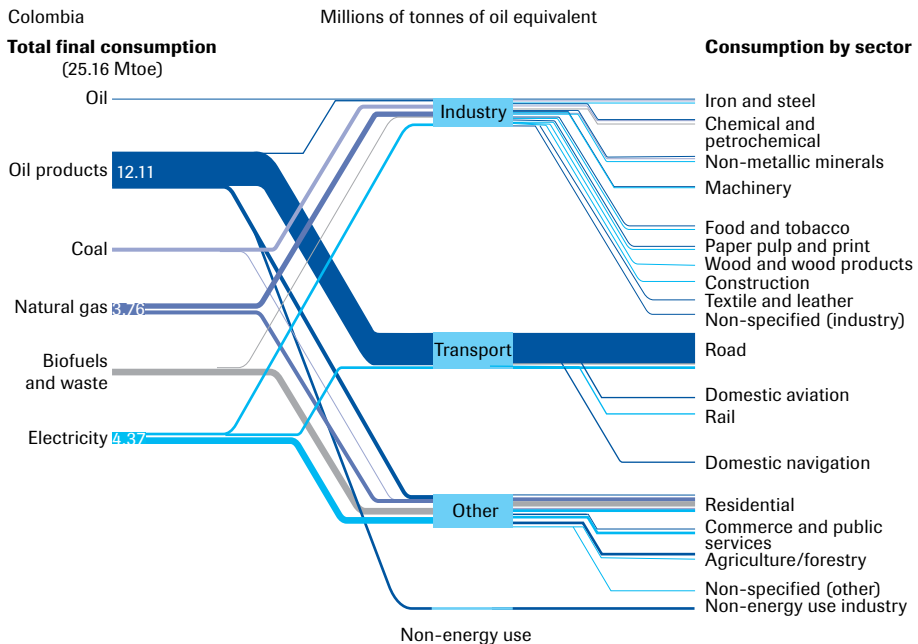


**Biodiesel** is primarily based on palm oil, of which Colombia is the fourth largest producer in the world. Of the nine plants using palm oil as feedstock for the production of biodiesel, four are owned by palm plantation owners and two are co-owned by the state firm EcoPetrol. The aim is for biofuels to become a new export product, but it is not yet certain whether this is achievable. One reason for doubt is the continued application of import tariffs on ethanol in trade agreements with the US and the EU.

### 2.3 Energy consumption

Comparisons between the final energy consumption of 25 Mtoe (figure 4) with the domestic production of 125 Mtoe indicate that Colombia has a significant energy surplus, and has become a major energy producer and exporter. For domestic use, road transport represents the largest share of fossil fuel consumption, followed by industry, residential, commercial and agricultural users. Only 1 percent of its electricity is exported (through connections with Ecuador and Venezuela).

**Figure 4 Final energy consumption (2012)**



Source: IEA

**Figure 5 Coverage of National Interconnected System (NIS)**



Source: ProColombia

Colombia's national interconnected system (NIS) connects 48 percent of the national territory and covers 96 percent of the population. The remaining 52 percent of Colombia's land is populated by 625,000 people who generate electricity primarily through the use of diesel.

The percentage of the population with access to electricity is around 96 percent.<sup>24</sup> In the capital, Bogotá, reliability of the power system is high, and getting a commercial connection is relatively easy. Overall, Colombia ranks a little lower than the Latin American average for ease of access to a commercial electricity supply.<sup>25</sup>

## 2.4 Key issues for energy security

One of the main challenges for energy security in Colombia revolves around the supply from hydroelectric power plants. Due to an increased threat of drought, there is far greater interest in alternative energy sources: on the north coast a regasification plant is under construction to allow for imports of liquefied natural gas (LNG), coal-based power production is back on the agenda and bioenergy is being promoted under Law 1715 from 2014. This law builds on the plans for renewable energy use that were initially laid out in 2010 via the Rational and Efficient Use of Energy Programme (PROURE), which aimed for 6.5 percent of grid-connected renewable electricity production by 2020.<sup>26</sup>

A second concern relating to energy security, but more indirectly, derives from the heavy reliance on oil exports, and the vulnerability of the national budget and the exchange rate of the Colombia peso to oil price variations. This has become especially pertinent in the past year as a result of the sharp drop in international oil prices, which has been matched by a major devaluation of the peso. Driven by declining R/P ratios and a large reliance on fossil fuel exports, the first licences for fracking activities in Colombia were issued in December 2015<sup>27</sup> on the basis of new regulations from 2014 on the exploration and production of non-conventional fossil fuels.<sup>28</sup> This could in theory also enhance domestic energy security, when these would be used for domestic electricity production in the future.

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24 World Bank, *World Development Indicators: Colombia*, op. cit.

25 World Bank, 'Ease of Doing Business in Colombia', <http://www.doingbusiness.org/data/exploreeconomies/colombia/> (accessed February 2016).

26 International Renewable Energy Agency (IRENA) – International Energy Agency (IEA), 2016, *Joint Policies and Measures Database: Colombia*, <http://www.iea.org/policiesandmeasures/renewableenergy/> (accessed February 2016).

27 Serpa, Óscar, 2015, 'Conoco Phillips hará "fracking" en Colombia', *El Espectador*, 3 December 2015, <http://www.elespectador.com/noticias/economia/conoco-phillips-hara-fracking-colombia-articulo-603063> (accessed February 2016).

28 Details on website of the National Hydrocarbons Agency (ANH): <http://www.anh.gov.co/Paginas/REGLAMENTO%20PARA%20LA%20EXPLORACIÓN%20Y%20EXPLOTACIÓN%20DE%20YACIMIENTOS%20NO%20CONVENCIONALES.aspx> (accessed February 2016).

The considerable investments made in boosting coal and oil production appear hard to match with Colombia's climate change and renewable energy aspirations. They also seem to depend strongly on (foreign) private sector investors, whose interest in fossil sources hinges on global price levels and comparison with other potential producers

The 2014 law on renewable energy, for its part, intends to foster partnerships between the national government, the private sector and local authorities to bring about greater production and use of renewable energy sources. High on the list of priorities is the substitution of diesel in non-connected areas, as well as the creation of a fund to support renewable sources, small-scale energy sources and efficient energy management. Concrete details of the incentives and financial support for these measures have since been issued, although concerns persist over bureaucratic hurdles that stand in the way of access to tax rebates.

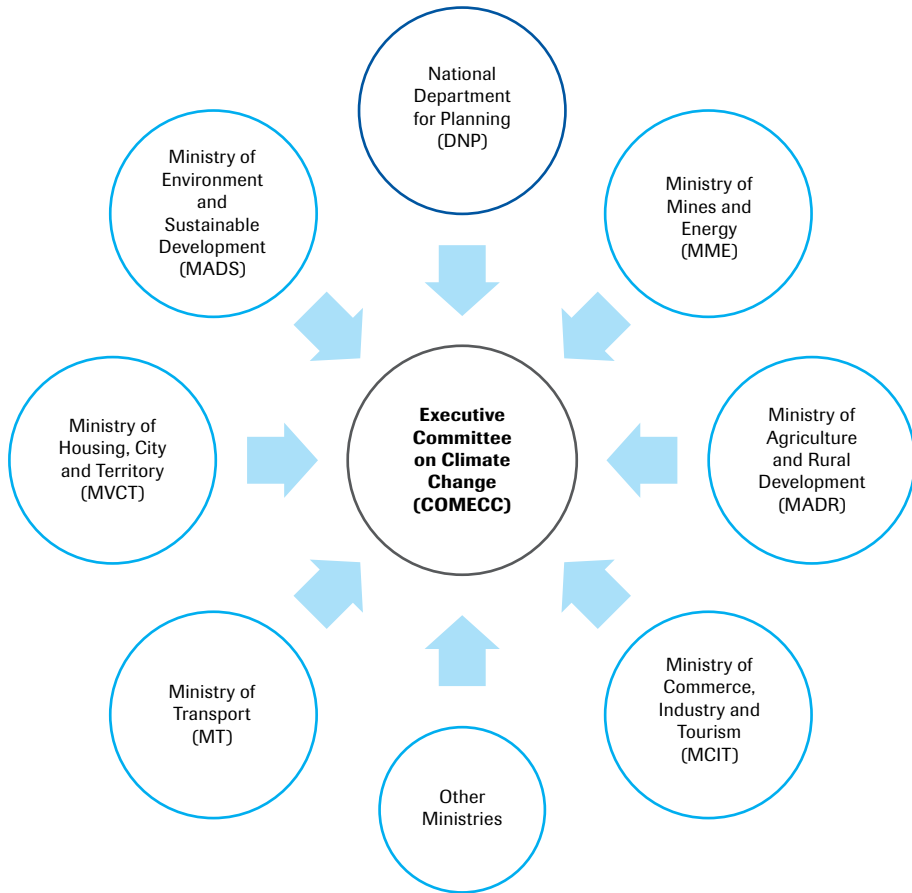
### 3 Colombia's policy framework for green growth

The range of institutions and policies designed to protect Colombia's environment and encourage green growth has greatly expanded over the past two decades, generating in the process new state institutions, mechanisms for coordination between official bodies, significant knowledge resources and a series of ambitious policy frameworks. However, certain practical limits to the reach of new legislation, as well as traditional flaws in Colombian governance, have seriously constrained the power of these laws and bodies.

In 1993, Law 99 created both the Ministry of the Environment and the *Sistema Nacional Ambiental* (National Environmental System, known as SINA), with a mandate to protect the country's biodiversity, guide sustainable growth, and manage and protect the environment. The Ministry is in charge of formulating national policies, overseeing regulations and heading the SINA. Most of its work is dedicated to protecting ecosystems, Colombia being one of the ten most biodiverse countries in the world.

Green growth and climate change are considered to be cross-cutting issues relevant to numerous parts of the Colombian state. Thus they fall under the responsibility of the Executive Committee on Climate Change (COMECC), in which a number of ministries and state bodies take part, and which is supported by Colombian and international scientific institutions. The Ministry of the Environment is responsible for the Executive Secretariat of COMECC, which was created in 2011.

**Figure 6 The make-up of COMECC**



Source: CLIMACAP

### 3.1 Key policies and processes

The main policies for green growth and climate change in Colombia have been elaborated within these and related institutional structures. They include the four-year National Development Plan as an overarching policy and programming framework, the Colombian Strategy for Low Carbon Development (*Estrategía Colombiana de Desarrollo Bajo en Carbón*, ECDBC),<sup>29</sup> which served as a basis for Colombia's Intended Nationally Determined Contribution (INDC) to greenhouse gas reduction, and the National Plan for Adaptation to Climate Change (*Plan Nacional de Adaptación al Cambio Climático*).<sup>30</sup> In addition, Colombia actively engages with policies to limit deforestation, so-called REDD+, although this field is somewhat less relevant for energy security and green growth.

The **National Development Plan (NDP)** is the country's framework for policies, processes and programming related to green growth and climate change. In 2014, green growth appeared for the first time as one of the six cross-cutting strategies that would guide public investment in the country over four years (2014-2018). However, the Plan's vision of green growth in the field of energy does not touch on oil, gas or coal production. Neither does it specify any targets for domestic oil consumption. In relation to the transportation sector, terminology is vague as it only says that the government will create incentives to promote the use of clean energy and non-motorised means of transportation such as bicycles or motored tricycles.

Instead, the NDP focuses on efforts to promote more responsible energy use by supporting renewable energy sources. Environmental experts agree that the Plan recognises the need to define a sustainable growth agenda aligned with international conventions and Organisation for Economic Co-operation and Development (OECD) policy frameworks. The Plan also mentions the implementation of an integrated system for the prevention and management of socio-environmental conflicts and underlines the need to implement road congestion and contamination charges. However, experts are critical of the intended implementation of the Plan's objectives, the budget spent on policies to promote renewable energy sources, and the absence of regulation to lessen the environmental impact of mining activities. The economic policy think tank

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29 Mendieta, María Paula, *Estrategía Colombiana de Desarrollo Bajo en Carbón (ECDBC)*, 2012, Ministry of the Environment and Sustainable Development, see [http://mitigationpartnership.net/sites/default/files/u1300/060312\\_ecdbc\\_cambio\\_climatico.pdf](http://mitigationpartnership.net/sites/default/files/u1300/060312_ecdbc_cambio_climatico.pdf) (accessed February 2016).

30 National Planning Department (DNP), *Plan Nacional de Adaptación al Cambio Climático*, Bogotá: DNP, 2012.

Fedesarrollo has also questioned Colombia's institutional capacity to sustain green policies and programmes.<sup>31</sup>

The **Colombian Strategy for Low Carbon Development** was launched in 2012 as the government's main greenhouse gas emission mitigation policy. The strategy began with a prospective analysis, followed by the identification of possible mitigation strategies. Between 2013 and 2014, sector-based plans were formulated in eight areas: transport (under the lead of the Ministry of Transport); electric energy, mining and hydrocarbons (under the lead of the Ministry of Mines and Energy); industry (under the lead of the Ministry of Commerce, Industry and Tourism); agriculture (under the lead of the Ministry of Agriculture and Integral Rural Development); and solid residues, housing and residual waters (under the lead of the Ministry of Housing, Cities and Territories). With eight sector-based plans in place, the next phase for the ECDBC began in 2015, and included: the development of a Climate Public Expenditure Review (a methodology to track public resources allocated to climate change mitigation); a public budget tagging system for climate change mitigation investments; a monitoring, reporting and verification system (MRV); and the identification and structuring of financing mechanisms.

Once these are in place, the implementation of the sector-based plans is expected to start at national and regional levels.<sup>32</sup> Notwithstanding the Colombian state's efforts to align with the international community in reducing greenhouse gas emissions, this policy operates largely within the economic paradigm favoured by the country since the start of the millennium, in that it is based on the 'motor' of extractive industries rather more than sustainable development. As such, the ECDBC envisages that the main sources of greenhouse gas reduction will arise from policies in the fields of deforestation and cattle, followed by waste, transport and agriculture.<sup>33</sup> Overall, the plans presented by Colombia to the COP21 in Paris envisage a 20 percent reduction, by 2030, in the production of greenhouse gases in relation to the business-as-usual scenario.<sup>34</sup>

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31 García, Helena and Hernández, Adriana, 2012, *Elaboración de una Evaluación Integral de Sostenibilidad (EIS) para Colombia*. Bogotá: Fedesarrollo, [http://www.repository.fedesarrollo.org.co/bitstream/11445/160/1/CDF\\_No\\_40\\_Junio\\_2012.pdf](http://www.repository.fedesarrollo.org.co/bitstream/11445/160/1/CDF_No_40_Junio_2012.pdf) (accessed February 2016).

32 See Mendieta, María Paula, *Estrategia Colombiana de Desarrollo Bajo en Carbon (ECDBC)*, Bogotá, 2012, [http://mitigationpartnership.net/sites/default/files/u1300/060312\\_ecdbc\\_cambio\\_climatico.pdf](http://mitigationpartnership.net/sites/default/files/u1300/060312_ecdbc_cambio_climatico.pdf) (accessed February 2016) [http://mitigationpartnership.net/sites/default/files/u1300/060312\\_ecdbc\\_cambio\\_climatico.pdf](http://mitigationpartnership.net/sites/default/files/u1300/060312_ecdbc_cambio_climatico.pdf) (accessed February 2016).

33 Interview with Econometría consultancy, Bogotá, August 2015.

34 See presentation to the United Nations Framework Convention on Climate Change (UNFCCC): Government of Colombia, *Intended Nationally Determined Contribution*, Bogotá, 2015, <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Colombia/1/Colombia%20iNDC%20Unofficial%20translation%20Eng.pdf> (accessed February 2016), <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Colombia/1/Colombia%20iNDC%20Unofficial%20translation%20Eng.pdf> (accessed February 2016).



The **National Plan for Climate Change Adaptation (PNACC)** was developed in 2015 and recognises that Colombia is extremely vulnerable to climate change. The effects of prolonged droughts and heavy floods have exacted a heavy toll on its people and the economy in recent years. The purpose of the PNACC is to provide guidelines for the reduction of risk and alleviation of the socio-economic and environmental impact of climate change. The implementation of the plan is based on the production of territorial and sectoral charters for climate change adaptation. So far, the production of these charters at municipal and departmental levels has been uneven, mostly due to the lack of expertise at local levels.

The PNACC includes strategies and actions to mitigate climate change effects by reducing greenhouse gas (GHG) emissions in all sectors, including the rural sector. In practical terms it means aligning the rural sector (agroindustry in particular) to sustainable green growth as a way to reduce GHG emissions of cattle (a significant contributor in Colombia) as well as mitigating deforestation for expansion of pastures for cattle. It also includes a reduction in the use of agrochemicals that are proven to contribute to land degradation. All ministries are mandated to incorporate the guidelines provided by PNACC into sectoral climate change adaptation plans, including the Ministry of Mines and Energy. In the case of the energy sector, the UPME (Unidad de Planeación Minero Energética) at the Ministry of Mines and Energy, has been taking the lead in developing a technical and financial road map for the energy sector (including hydropower) identifying vulnerabilities as well as technical and financial measures to mitigate climate change effects over the energy sector.<sup>35</sup>

### 3.2 Governance and the environment

Colombia has been a centralised republic since independence in 1810, establishing over time a presidential democracy in which the executive holds considerably more power than the legislature, which is itself formed by a bicameral Congress (a Senate and a Chamber of Representatives). Members of Congress are elected for four-year terms in the same year as presidential elections are held. Local officials are also elected for four-year terms, with elections held in the second year of the presidential term.

However, this formal apparatus of the country's democratic system does not take account of some of the most important determinants of governance, which are to be found in informal mechanisms of decision making and influence that serve to shape the space in which environmental policy is made and the capacities of the state to implement these policies. A brief overview of Colombia's system of governance points

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35 See for example: [http://www.siame.gov.co/Siame/documentos/Estudios/Implementacion\\_mapa\\_de\\_ruta/7\\_Estrategia\\_financiera.pdf](http://www.siame.gov.co/Siame/documentos/Estudios/Implementacion_mapa_de_ruta/7_Estrategia_financiera.pdf)

towards a number of elements that are crucial to understanding many of the country's policy dilemmas, and which directly affect the viability of environmental policy and green growth strategy.

First, the president chooses his or her Cabinet, and usually makes a choice that seeks to reflect the balance of power between diverse political parties and coalitions. Currently, the government of President Juan Manuel Santos, who was elected in 2010 and re-elected four years later for a final second term, is formed by a coalition of several parties. Among these, power is shared primarily between Santos' Social Party of National Unity and the Radical Change party, the force to which the current Vice-President Germán Vargas Lleras belongs, and which controls most of the budget for infrastructure investment. This style of executive power-sharing has often generated tensions and contradictions in the daily processes of government, which in the particular case of green growth have led to a split between President Santos' support for environmental goals and the sector-based interests of extractive industries, fossil-based transport and conventional large-scale energy projects.

Second, for most of its constitutional existence, Colombia has not maintained a clear distinction between holding public office and voicing or representing private interests within the state. The **'revolving door' of political life**, a practice that is deeply rooted and widely accepted in Colombia, safeguards and champions the movement of political appointees between the Cabinet or key decision-making positions within the government and the private sector. As a result, private interests mingle with legislative and regulatory decisions, often leading to concessions of reciprocal privileges or other forms of influence trafficking. Meanwhile, key Cabinet members are, for the most part, private sector investors with vested interests that sit awkwardly with the crafting of national policies and regulations.

This aspect of Colombia's political practice in turn reflects and reinforces a broader style of arbitrary and exclusionary governance. As noted in the World Justice Project's Rule of Law Index for 2015, Colombia performs relatively poorly at Latin American level, where it is placed 9<sup>th</sup> out of 19, and in the bracket of upper-middle-income countries, where it stands at 20<sup>th</sup> out of 31 countries. Of particular note in the Index's findings are Colombia's corruption levels, lack of respect for due legal process and limited capacity for legal enforcement.<sup>36</sup> Meanwhile, inequality rates remain among the region's highest: according to a 2013 report from UN Habitat, Colombia has some of the most unequal cities in the world.<sup>37</sup>

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36 See World Justice Project, 2015, *Rule of Law Index 2015*. Washington DC, p. 77.

See <http://worldjusticeproject.org/rule-of-law-index>

37 See UN-Habitat, 2013, *State of the World Cities Report 2012/2013*, Prosperity of Cities, Nairobi: UN Habitat, p. 84 <http://mirror.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3387>

A third crucial element that shapes Colombian governance involves the central state's links to, and **incomplete control over**, the nation's very diverse and often **far-flung territories**. In an effort to remedy the challenges that the ties between centre and periphery have thrown up, the country's institutional architecture has become increasingly complex, but in ways that do not always result in agile decision making, strong institutional coordination or better responses to local needs. Efforts to decentralise fiscal policies and spending have proven difficult to implement and levels of economic development and administrative capacity vary a lot. Perhaps not surprisingly, the weaker regions appear not to prioritise policies promoting green growth, while their resilience in coping with climate impacts is less developed also.

## 4 Colombia's development context: four key axes

The previous chapter pointed to the Colombian state's approach to energy security and green growth, and the impediments posed by long-standing weaknesses of the central state as well as the powers and privileges of local governments and interest groups, both formal and informal. Systemic flaws in the state-building process constitute a historical legacy that shapes and constrains the implementation of any programme of green growth. The ineffective role of the Autonomous Regional Corporations (CAR), the main regional authorities for environmental management and jurisdiction, is just one example of the ways in which Colombia's institutional legacy of formal rule, informal norms and local powers affects its ability to implement environmental policy on the ground.

However, in general terms Colombia is far from being paralysed by the historical trajectory of its state and society. Rapid investment-driven growth, demographic change, integration into the global economy, improved security conditions and the ending of 50 years of internal conflict together constitute a series of developmental shocks and advances that have altered the nature of politics and policy making without entirely erasing the basic flaws in the state-building process. These legacies include the resilience of traditional sources of social exclusion and limited state legitimacy, both of which may be exacerbated by the return to more unfavourable economic conditions in recent years. High rates of inequality, internal displacement, low levels of electoral turnout, and the continued territorial control and local political influence exerted by organised criminal networks remain broadly unchanged.<sup>38</sup>

Contestation of the state and legal system on the one hand, and rapid growth and modernisation on the other (with the resulting public demand for rule of law, democratic representation and accountability as well as respect for the environment and green growth) form the basis of Colombia's current development dilemmas. Where Chapter 3 analysed Colombia's specific environmental policies and governance structures, this chapter looks at four development issues that shape the substance of environmental policy through their effects on economic, security and urban concerns and perceptions, while impinging fundamentally on the ways in which the state is present and functions across national territory. Respectively, these are Colombia's economic and fiscal

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38 Novoa, José Luis, 'Tierras robadas, héroes sin rostro y escuelas fragmentadas. La desigualdad en Colombia en tres actos', *Nueva Sociedad*, May-June 2012, <http://nuso.org/articulo/tierras-robadas-heroes-sin-rostro-y-escuelas-fragmentadas-la-desigualdad-en-colombia-en-tres-actos/> (accessed February 2016).

constraints, the peace accord, urbanisation and growing energy demand, and its international commitments.

#### 4.1 Economic and fiscal constraints

Along with most of Latin America, Colombia enjoyed from 2003 a decade of largely uninterrupted, robust economic growth, averaging over four percent per annum. Yet, this pattern of growth was underpinned by a 'commodity super cycle':<sup>39</sup> a decade-long period of high prices for natural resources, driven in large part by rising oil prices, growing trade with China and improved export infrastructure.

With its oil and mining sectors growing fast,<sup>40</sup> and with foreign investment at record levels, Colombia's boom reached into its most peripheral and impoverished border regions, such as Caquetá, Córdoba and La Guajira.<sup>41</sup> By 2013, income from the oil industry, which included various forms of taxation and dividends from the state-run oil firm Ecopetrol, accounted for 22.1 percent of central state revenue.<sup>42</sup> Public sector finances improved, some increases in social spending took place, and royalty payments representing 1.2 percent of GDP were paid to regions and communities affected by extractive industries.

The effects of significantly lower oil prices<sup>43</sup> now stand at the centre of Colombian public debate. The implications of these changes for environmental policy are as yet ambiguous and contested. On the one hand, President Santos has responded to the fall in oil, gas and mining revenues by calling for a renewed emphasis on industrial and agricultural exports.<sup>44</sup> The decline in profits for extractive industries has been interpreted in Colombia and elsewhere in Latin America as an opportunity and an

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39 Dumitru, Alexandra, 2015, 'Latin America: the tide has turned', Rabobank Economics Research Department, 28 September 2015.

40 The share of oil and its derivatives in total Colombian exports rose from 26 to 55 percent between 2003 and 2013. Villar, Leonardo (et al.), 2014, *Evaluación de la Contribución del sector de Hidrocarburos Colombiano frente a diversos escenarios de producción*, Bogotá: Fedesarrollo, p. 2.

41 Revista Semana, 2013, 'Desigualdad económica en las regiones', 19 October, <http://www.semana.com/economia/articulo/crecimiento-economico-departamentos/361568-3> (accessed February 2016).

42 Villar (et al.), op. cit., p. 24.

43 Reasons for this include its floating exchange rate and low levels of public debt. From January 2014 to August 2015, Colombia's currency devalued 70 percent.

44 National System of Competitiveness, Science, Technology and Innovation (SNCCTI), 'Presidente Santos anuncia Plan de Impulso a la Economía y Exportaciones', 28 May 2015, <http://www.colombiacompetitiva.gov.co/prensa/2015/Paginas/Presidente-Santos-anuncia-Plan-de-Impulso-a-la-Economia-y-Exportaciones.aspx> (accessed February 2016).

imperative for economic diversification away from commodity production.<sup>45</sup> On the other hand, the president of Ecopetrol, Juan Carlos Echeverry, has argued that the company should engage in more fracking ventures: 'Oil in Colombia pays for pensions, health, education, the military, security, roads, bridges, ports and even traffic lights,' he explained in arguing for the imperative of such exploration in the light of an absence of new conventional oil reserves.<sup>46</sup> A first contract for fracking was signed in 2015, and it has become easier to obtain environmental permits for extractive industries.<sup>47</sup> Arguably this is not contributing to green growth, as it diverts investment funding towards fossil fuels, whereas more alternative energy production in, for instance, hydropower might be needed to meet future domestic demand.

## 4.2 The peace accord

Alongside his government's pledge of 'Prosperity for All',<sup>48</sup> President Santos has invested his political capital and considerable presidential power into peace negotiations aimed at ending the conflict with the Revolutionary Armed Forces of Colombia (FARC). The peace process had been anchored in an incremental series of agreements in six areas: integral rural development policy; political participation; illicit drugs; victims; the ceasefire and the handover of arms; implementation, verification and a final referendum.<sup>49</sup> On 24 August 2016 both sides reached a final accord that would end the guerrilla uprising, yet it did not gain a majority of votes in the plebiscite of 2 October.<sup>50</sup> Without the blessing of the population, it is no longer certain that the delicate process of demilitarisation and reintegration of the FARC into society can begin. Still, both President Santos and the FARC leadership have expressed their commitment to conclude the deal and success now depends on involving the political right – led by

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45 Arguments in favour of a 'post-extractivist' economic model in Latin America can be found in various quarters, and are not restricted to the pro-environmental lobby. See, for example, the special edition of Nueva Sociedad, *Emancipación o Dependencia? Los recursos naturales en América Latina*, Buenos Aires: Friedrich Ebert Stiftung, March-April 2013. For a brief summary of the argument that a new economic model is both possible and necessary, see Ocampo, José Antonio, 'The Return of Slow Economic Growth', World Bank Development blog, 15 May 2014, <http://blogs.worldbank.org/latinamerica/return-slow-economic-growth> (accessed February 2016).

46 Rueda, María Isabel, 'No podemos darnos el lujo de no hacer "fracking"', *El Tiempo*, 13 April 2015. <http://www.eltiempo.com/economia/sectores/entrevista-con-juan-carlos-echeverry-nuevo-presidente-de-ecopetrol/15558455> (accessed February 2016).

47 Part of the Ministry of the Environment.

48 The title given to Colombia's National Development Plan 2010-2014.

49 Office of the High Commission for Peace, 'Todo lo que Debería Saber sobre el Proceso de Paz,' Bogotá: National Press, April 2014, <http://www.kas.de/wf/doc/12888-1442-4-30.pdf> (accessed February 2016).

50 Government of Colombia and FARC-EP, 'Acuerdo final para la terminación del conflicto y la construcción de una paz estable y duradera,' 24 August 2016.

former President Alvaro Uribe – in the peace process and incorporating their demands in a new accord. President Santos has been internationally praised for his peace efforts, for which he was recently awarded with the Nobel Peace Prize. Increasing international status of the Santos administration also exerts additional pressure on the government to bring the peace process to a successful end.

Either way, the peace process marks a crucial point in Colombia's state-building trajectory, especially with regard to state legitimacy, the monopoly on force and territorial autonomy. If a new agreement can be reached, approved by the population and successfully implemented, a 52-year old conflict will end and large swathes of land should come under *de facto* state regulation, thereby appearing to make (foreign) investment more attractive, whether 'green' or 'grey' in nature. An enforced peace deal should thereby stimulate Colombia's development and green growth potential, but with no legal guarantees in place chances are that FARC members will seek their security by other means, as they are now technically fugitives.

According to the initial report of the *Misión Rural*, an expert body appointed by the government in 2014 to explore rural matters in light of the peace process, 89 percent of Colombia's rural population is either poor or at risk of falling beneath the poverty line.<sup>51</sup> Early findings from the Third National Agricultural Census<sup>52</sup> show that 0.4 percent of landowners control 41.1 percent of agricultural land through holdings of over 500 hectares.<sup>53</sup> The first agreement between the Colombian state and the FARC on integral rural reform addressed these issues and pointed to the need to close the gap between rural and urban areas by eradicating rural poverty, strengthening smallholders' economies, and guaranteeing food security, nutrition and access to markets, thereby laying a framework in which decentralised renewable energy growth could potentially fit. Even though development of post-conflict territories is crucial to post-conflict stability and the overall success of the peace process, opponents of the initial deal have rejected these ambitious programmes on the grounds that they would put too much pressure on the state budget. With ex-President Uribe now having a seat at the table it is unclear if these plans will be incorporated or succeed at all.

The High Commissioner for Peace, Sergio Jaramillo – who is the second most senior negotiator for the Colombian state in Havana – has promoted the concept of 'territorial peace' as a way to implement the initial peace accords with the FARC at local level by accounting for the specific context and challenges of each conflict-affected zone,

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51 Ocampo, José Antonio, 'Misión para la transformación del campo', Bogotá: DNP, 2014, p. 9.

52 The last census was carried out 44 years ago.

53 El Tiempo, 'Censo del agro confirma fuerte atraso del campo colombiano', 12 August 2015. <http://www.eltiempo.com/economia/sectores/censo-nacional-agropecuario-atraso-en-el-campo/16221076> (accessed February 2016).

in collaboration with all relevant stakeholders, such as civil society, the private sector, non-governmental organisations and the international community.<sup>54</sup>

Although the concept of territorial peace has been central to the peace process, the rejected peace agreement itself made no explicit connection between the post-conflict period and green growth; green growth was not mentioned at any point in the 297 pages of the supposedly final peace deal, although frequent reference was made to environmental sustainability. This is surprising given that the roots of the conflict in Colombia are closely tied to the use, ownership and availability of land for agriculture, watersheds and natural resources.<sup>55</sup> Post-conflict rural development is also of high significance for the environment and climate change given that agriculture is reported to be responsible for 38.1 percent of the country's emissions of greenhouse gases, while deforestation and grassland conversion account for a further 9.2 percent.<sup>56</sup>

The likely ambiguous effects of a peace deal on the environment and on energy issues are reflected in the government's cautious approach to agricultural reform, as evident in the preparatory work of the high-level *Misión Rural* and the Third Census.<sup>57</sup> A source from the Ministry of Agriculture noted in 2015 that there had not been any requirement that the Ministry's technical staff adapt their planning to the agreement on rural reform struck in Havana two years earlier.<sup>58</sup> Meanwhile, a number of interest groups affiliated with the political right have clear material stakes in the peace deal and have exerted influence where possible. An expert on the country's energy sector observed that representatives of the Ministry of Mines and Energy had an important voice in peace

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54 See Jaramillo, Sergio, *La Paz Territorial*, Bogotá: Office of the High Commissioner for Peace, 2014, <http://www.interaktive-demokratie.org/files/downloads/La-Paz-Territorial.pdf> (accessed February 2016).

55 See Marquez, Germán, 'Medio Ambiente y Violencia en Colombia', *Análisis Político* 44: 58-76, Bogotá: Instituto de Estudios Políticos y Relaciones Internacionales (IEPRI), Universidad Nacional de Colombia, 2001, [http://www.idea.unal.edu.co/public/docs/mambient\\_econm.pdf](http://www.idea.unal.edu.co/public/docs/mambient_econm.pdf) (accessed February 2016). See also El Tiempo, '¿Qué le espera al medio ambiente en el escenario del postconflicto?', 7 February 2015, <http://www.eltiempo.com/estilo-de-vida/ciencia/medioambiente-en-el-posconflicto/15210177> (accessed February 2016), and UNDP, *Construcción de una Paz territorial Duradera, Estable y Sostenible en Colombia*, Bogotá: UNDP, 2014.

56 Falzon, Hames and Di Sbroaiavacca (eds), *CLIMACAP. Climate and Energy Policy review for Colombia, Brazil, Argentina and Mexico*, Energy Centre for the Netherlands, 2014, p. 24.

57 EFE news agency, 'Santos anuncia una profunda reforma del sector agrícola colombiano', 4 December 2015, <http://www.efe.com/efe/america/portada/santos-anuncia-una-profunda-reforma-del-sector-agricola-colombiano/20000064-2781302> (accessed March 2016).

58 Interview in Bogotá, August 2015.



talks.<sup>59</sup> Furthermore, it has been noted that the US envoy to the talks, Bernard Aronson, is a businessman with stakes in the Colombian oil industry.<sup>60</sup>

With the rejection of the peace deal, the outcome of the peace process itself has become uncertain. Links between peace and green energy growth have been minimal, and with the political right gaining influence in the process, that is not likely to increase. Yet, if peace can be achieved a new set of political and economic opportunities will arise. Whether these benefit green growth depends crucially on the dominant power structures in the country and the stakeholders involved, and these are addressed in Chapter 5.

### 4.3 Urbanisation and energy demand

With a fast-developing and urbanising economy, Colombia's energy demand is rising rapidly.<sup>61</sup> Although its current per capita usage is one of the lowest in Latin America, a two percent yearly increase in electrical energy requirements is expected in the coming years.<sup>62</sup> By far the largest increase in energy demands is expected to come from the transport sector, accounting for half of all demand by 2050.<sup>63</sup>

Colombia's transition from a largely rural economy to one based on a number of thriving and densely populated cities influences its possibilities of green growth. Between 2003 and 2009, Colombia's middle class doubled in size, making it the fourth largest of its kind across the region. Notable consequences include citizens having more access to information and a tendency towards more progressive viewpoints.<sup>64</sup> Urbanisation and growth in Colombia also brings with it a concentration of consumption and energy-using activity that has stretched the limits of the country's urban infrastructure and environment.

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59 Interview in Bogotá, April 2015.

60 El Espectador, 'Delegado de EE UU para el proceso de paz, como afectado del derrame del petróleo', 10 June 2015, <http://www.elespectador.com/noticias/politica/delegado-de-eeuu-el-proceso-de-paz-afectado-del-derrame-articulo-565647> (accessed February 2016).

61 Goldthau, Andreas and Sovacool, Benjamin, 'The uniqueness of the energy security, justice and governance problem', *Energy Policy* 41, 2012, pp. 232-240.

62 UPME, 2015, *Plan Energético Nacional Colombia: Ideario Energético 2050*, Bogotá: Ministry of Energy and Mines, p. 114.

63 Id., p. 166.

64 Gallego, Gloria and Sigma Dos Colombia, *Ubicación Ideológica de los Colombianos*, Bogotá: Registraduría Nacional de Estado Civil, 2014, pp. 29-33.

The tensions between the moderately progressive outlook of the new urban bourgeoisie and its material and consumerist aspirations are most acute when it comes to transport. For instance, the Ministry of Transport reports there are now close to 10 million vehicles in use in Colombia, primarily cars and motorbikes, compared to 3.3 million in 2002.<sup>65</sup> Transport in turn generates 12 percent of Colombia's greenhouse gas emissions.<sup>66</sup> Urban congestion and air pollution have become chronic problems in several major cities. Responses to these dilemmas have included policies aimed at encouraging bicycle use or walking, or Bogotá's initiation in 2000 of the Transmilenio bus system and the continuous expansion of this service.<sup>67</sup>

Meeting the demands for urban transport can in principle be achieved in ways fully compatible with green growth. The UPME's scenarios for greater electricity generation, for instance, include possibilities for greater efficiency savings, increased use of renewable energy, and a far larger stock of electric vehicles.<sup>68</sup> An ambitious plan to rationalise the sector is underway but implementation of projects that reduce transport costs and GHG emissions are still in a very early stage. Private use of electric vehicles is hampered by high costs, whereas significant infrastructural investments are currently impeding a broader transition to electric vehicle transport.<sup>69</sup>

Although various sociopolitical variables will shape Colombia's choice of energy generation, two elements stand out. Colombia is no stranger to blackouts – crisis measures were reported late in 2015 in three hydroplants, and in 2016 the government introduced emergency energy-saving measures. Yet it is precisely this combination of drought, heat, high electricity demand and reduced hydroelectric generation that is currently affecting Colombia and endangering electricity supply to cities in the north.<sup>70</sup> Higher rates of access to electricity by an expanding middle class thereby increases the risk of protests when there are blackouts. Electricity demand is expected to double by 2030 to 125,000 Gwh/year. According to UPME projections, pressure on the grid will result in more renewable energy demand (mainly hydroelectric and wind power as

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65 Figures from Ministry of Transport, *Transporte en Cifras. Estadísticas 2014*, Bogotá: Ministry Transport, 2014, p. 92.

66 National Planning Department, *Todos por un nuevo país. Plan Nacional de Desarrollo 2014-18*, Bogotá: DNP, 2015, p. 581.

67 CDKN, 'Good practices in energy efficiency: Bogotá, Colombia – bus rapid transit for urban transport', 15 August 2010, [http://cdkn.org/resource/good-practices-in-energy-efficiency-bogota-colombia-bus-rapid-transit-for-urban-transport/?loclang=en\\_gb](http://cdkn.org/resource/good-practices-in-energy-efficiency-bogota-colombia-bus-rapid-transit-for-urban-transport/?loclang=en_gb) (accessed September 2016).

68 UPME, op. cit., pp. 170-171.

69 Marchán, Estefania and Lisa Viscidi, 'Green Transportation: The Outlook for Electric Vehicles in Latin America', *Energy Working Paper*, October 2015.

70 Interview, Bogotá, October 2015.

well as electricity imports from Ecuador).<sup>71</sup> It thus appears that the high costs of fossil fuels for the country following its steep currency devaluation is also serving to make renewable energy sources much more attractive.

A second related issue, whose consequences are extremely hard to foretell, concerns the demographic impact on Colombia. Although this issue will be dealt with in more depth later in this paper, it is important to note that expected rising temperatures in the north and east of the country, as well as the very sharp rises in rainfall on the Pacific coast, will tend to affect the country's least resilient and poorest regions, such as Chocó and La Guajira.<sup>72</sup> The exposure of the country's most vulnerable people to the most harmful effects of climate change reflects the way in which environmental stresses often compound existing problems of poorly governed territories.<sup>73</sup> Climate changes could increase forced displacement and urban growth while triggering state, humanitarian and environmental responses that seek to address acute challenges to the cohesion of Colombian society.

#### 4.4 Colombia's international projection

After a long period in which Colombia was absorbed in its own internal security dilemmas and became heavily dependent on US military and judicial assistance, it has undertaken a major effort towards diversifying its foreign partnerships and strengthening its profile on the international stage.

The diplomatic opening has taken place on various fronts. Improved relations with other Latin American countries have been a central objective for President Santos' administration, including rebuilding peaceful ties with left-leaning neighbours Ecuador and Venezuela, and participating more actively in a number of recently created regional fora, such as the South American Union (UNASUR), the Community of Latin America and Caribbean States (CELAC), and the free-trade oriented Pacific Alliance. Moreover, Colombia has opened various embassies in Africa, sought to broaden its cooperation with the United States, and made strenuous efforts to align with the multilateral system. Its main target in this respect has been membership of the OECD,<sup>74</sup> which produced

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71 Mining and Energy Planning Unit (UPME), *Proyección de Demanda de Energía Eléctrica en Colombia*, Revisión Marzo de 2013, Bogotá: UPME, 2013.

72 Institute of Hydrology, Meteorology and Environmental Studies (IDEAM), *Nuevos Escenarios de Cambio Clático para Colombia 2011-2100*, Bogotá: IDEAM, 2015.

73 See Rüttinger, Lukas et al., 2015, *A New Climate for Peace. Taking Action on Climate and Fragility Risks*, Adelphi: Berlin.

74 Ibid.

a critical review of Colombia's environmental policy<sup>75</sup> that spurred the country's embrace of green growth in its latest national development plan.

Colombia's activism in the field of climate change has been pronounced. Alongside Costa Rica, Colombia is the informal leader of a group of like-minded, pro-market states that in 2012 formed the Independent Association of Latin America and the Caribbean (AILAC). Working within the framework of negotiations on climate change, the platform has sought to promote voluntary commitments to greenhouse gas reduction while eschewing some of the more virulent rhetoric against the historical responsibility for pollution of the Global North. The Association has termed itself 'the revolt of the middle'; its emergence can be regarded as part of the many processes leading to the serious resumption of international climate change commitments after the disappointment of the 2009 Copenhagen Summit.<sup>76</sup>

These and other actions undertaken by Colombia in the domain of international environmental protection have made the country a reference point in the climate change negotiating process. However, critics within the country argue that this high profile on the diplomatic stage corresponds to nothing more than 'window dressing'. Business sectors within the country and the ministries that represent them, above all Trade, Agriculture, Infrastructure, Transport, and Mines and Energy, remain wary of the process, and are mainly devoted to forms of international integration for Colombia that place far greater emphasis on national competitiveness and short-term domestic economic interest. Although diplomats from the Ministry of Foreign Affairs lead the climate change negotiating process, they do not represent the core business or political interests that shape economic policy in Colombia. Nor are they the intermediaries for the multinational corporations that are engaged in exploiting Colombia's natural resources and exporting the country's fossil fuel surplus, especially coal and oil, to the rest of the world. As one diplomat engaged in these processes observed, negotiations with certain important domestic business bodies have been strained and difficult.<sup>77</sup> According to a former environment minister, in Colombia as in several other Latin American countries, 'a number of climate policies... are more symbolic than real'.<sup>78</sup>

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75 OECD, op. cit.

76 Edwards, Guy and Timmons Roberts, J., *A Fragmented Continent. Latin America and the Global Politics of Climate Change*, Cambridge (MA): MIT Press, 2015, p. 150.

77 Presentation at workshop in Bogotá, August 2015.

78 Edwards and Timmons Roberts, op. cit., p. 152.

Colombia, in this respect, suffers the same tensions in its climate change diplomacy as many other Latin American countries. There is a constant tension between the sense of international responsibility for the environment and the simultaneous need to support economic growth and the aspirations of a burgeoning middle class. The result is a series of conflicting demands that create highly divergent interests at the heart of the state.<sup>79</sup>

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79 Edwards and Timmons Roberts, op. cit., Chapter 1: 'Paradoxes of a Neglected Region'.

# 5 Interest groups and green growth: support, opposition and the role of stakeholders

The previous chapter explored how four issues at the heart of Colombia's ongoing processes of demographic change, development and state-building shape the conditions under which arguments for or against green growth are made, and how support for such measures is constructed. All four of these issues, however, are deeply ambiguous as to whether they favour more commitment to environmental protection and green growth, or whether they militate against this approach by insisting that growth and prosperity have greater value than the environmental costs they incur. At the same time, these conflicting processes take place against the historical backdrop of a state and legal system that have long been affected by internal fragmentation and a lack of real control over the aggregate national territory. This chapter looks at how interest groups influence energy security and green growth activities.

The most significant stakeholders in relation to green growth are not necessarily the most well represented. In a country with deep economic and social inequalities, and with large sections of the population living close to or below the poverty line – notably those on the Atlantic and Pacific coasts or in the country's eastern Amazonian interior, population groups that would be the most important beneficiaries of green growth also have the least influence in shaping debate on these issues.

Instead, far more important influences on the viability and enforcement of green growth policies in Colombia are to be found elsewhere. These are now largely composed of interest groups and lobbies that have formed and coalesced on the basis of the political economy axes discussed in the previous chapter, and depend on the informal workings of the fragmented and porous Colombian state. Entrenched and powerful obstacles to the achievement of an effective environmental strategy in Colombia have emerged as a result. Still, the tensions and dynamics of the development processes have also thrown up interesting and potentially powerful sources of support for green growth.

## 5.1 Public awareness and framing

What Colombia may lack in terms of a clear and cross-sectoral commitment to a green development path does not reflect any refusal to accept the significance of environmental damage and the reality of climate change. Colombia as a whole is acutely

sensitive to the need to protect its unique ecological system and its high vulnerability to climate change. Its exposure to the risks of climate change, and its ability to manage climate-related crises in the future, stand out as two elements that are recognised across the spectrum of Colombian society, politics and business. In one survey, 50 percent of Colombians ‘totally agreed’ with stronger measures for environmental regulation.<sup>80</sup> Meanwhile, Latin America as a whole stands out in the world for its high level of public concern over climate change: 74 percent regard climate change as a serious problem, more than in any other region, according to a Pew Research survey from 2015.<sup>81</sup>

However, this tendency to recognise the reality of climate change and sympathise with the values of green growth overlaps, and at times conflicts with, private interests that are primordial in much of the country’s public and business life, as well as with other development and state-building priorities discussed above. According to the OECD ‘the lack of coherence between economic sectoral plans and environmental goals persists, and economic sectors are not accountable for their environmental performance’.<sup>82</sup>

Besides Colombia’s public awareness and the disconnect between economic and environmental goals, there is the irony that Colombia will feel the effects of climate change disproportionately compared to its share of GHG emissions (0.46 percent of world’s total). In this context, different constituencies differ in interpretations as to what balance the country’s society and policy makers should establish between: 1) a focus on protecting the national environment; 2) a more general responsibility for the global climate; and 3) precautionary measures for the effects of climate change instead of GHG reduction. At the centre of these divergences is the question of how to address, divert or use the country’s large reliance on export of fossil fuels.

To understand the way these positions are articulated, as well as the material and ideological interests that underlie them, it is essential to grasp the likely shifts in state emphasis and social practice regarding Colombia’s environmental policy. The following section sketches the composition and approach of some of the most important interest groups that are likely to shape the debate on energy security and green growth, and the logic that underlies their arguments and approaches.

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80 Gallego, Gloria and Sigma Dos Colombia, op. cit., p. 60.

81 Stokes, Bruce, Wike, Richard and Carle, Jill, ‘Global Concern About Climate Change, Broad Support for Limiting Emissions’, 5 November 2015, <http://www.pewglobal.org/2015/11/05/global-concern-about-climate-change-broad-support-for-limiting-emissions/> (accessed February 2016).

82 OECD, op. cit., p. 76.

## 5.2 Key obstacles to green growth; stakeholders not (yet) convinced

In the forefront, the lack of clear and resolute leadership by the government on green growth has postponed a substantive debate on the economic issues identified in the last chapter: namely, the political and economic viability of green growth in the face of a dominant economic model based on the expansion of extractive industries.<sup>83</sup>

The consequences are that green growth lacks the full support of all government bodies, leading to fragmentation within ministries and government agencies. Each government body interprets green growth strategies according to its own interests, resulting in a cacophony of often contradictory policies and regulations.

### 5.2.1 State resistance

This lack of an integrated approach is aggravated by power-sharing agreements between the major political forces that form President Santos' national coalition. Capitalising on this is Germán Vargas Lleras, Santos' Vice-President and a favourite to win the next presidential elections in 2018.<sup>84</sup> From his office, Vargas Lleras controls three of the so-called 'locomotives' of growth – infrastructure, housing and extractive industries – as well as the newly created *Agencia Nacional de Licencias Ambientales* (National Agency for Environmental Licenses, ANLA), which is now in charge of issuing environmental licenses.

Attached to a model of economic growth that perceives sustainable development to be a hindrance, Vargas Lleras and the ministries of Mines and Energy, Infrastructure and Housing, as well as the powerful *Agencia Nacional de Hidrocarburos* (National Agency for Hydrocarbons, ANH) and the *Agencia Nacional Minera* (National Mining Agency, ANM) regard environmental regulations as legal hurdles that need to be overcome, and are far from endorsing the implementation of green growth strategies when these are considered to be obstacles to competitiveness.

The critical economic role played by the four sectors that still tend to dismiss environmental considerations – infrastructure, housing, agro-industry and extractive industries – can be seen in many of the inconsistencies of the National Development Plan. As a result, green growth is interpreted by certain Colombian analysts as an exercise in *realpolitik*: a rhetorical device used by President Santos to produce political capital in the international arena and with OECD member states, but without any clear

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83 Urrutia, Carolina, '¿Dónde está el Crecimiento Verde?', *Revista Semana Sostenible*, 10 July 2015, <http://sostenibilidad.semana.com/medio-ambiente/articulo/donde-esta-crecimiento-verde-del-gobierno-colombiano/33174> (accessed February 2016).

84 Ramírez, Socorro, *op. cit.*



goals, direction or cross-sector strategies for implementation at national level. After all, the NDP allocates only 1.35 percent of the national budget to green growth strategies, leaving the rest of funding to the discretion of each ministry.<sup>85</sup>

## 5.2.2 The public-private 'revolving door'

Fragmentation and multiple interest groups within the institutional architecture of the state stand out as fundamental blocks to green growth. One notorious case has demonstrated the links between private interests and government policy on matters crucial to the environment. Press and judicial investigations have established that major financial contributions to former President Álvaro Uribe's electoral campaigns in 2002 and 2006 were made by palm oil growers, who were later rewarded with, among other things, legislation in 2007 that established a compulsory portion of biofuel in diesel and gasoline. Tax exemptions and privileged access to agricultural subsidies were also forthcoming. Several prominent members of Uribe's Cabinet in his second term of office, meanwhile, had direct links to the palm oil sector.<sup>86</sup>

The interest-driven fragmentation of the state is exacerbated by this latter phenomenon of the 'revolving door' in politics, whereby ministers are often chosen not for their technical expertise but for their role and interests in the private sector. The current Agriculture Minister, Aurelio Iragorri Valencia, for example, was legally obliged not to be involved in the preparation of legislation on access to and productive use of land. This issue might be regarded as a fundamental prerogative of a minister of agriculture, a key issue in the peace negotiations with the FARC, and essential to the viability of green growth at sub-national level. However, Iragorri has been prevented from doing so because of his investments in land in the conflict-affected Cauca region and his family ties to people who illegally acquired 3,800 hectares of land in the Vichada region.<sup>87</sup> To overcome this impediment, Santos commissioned the Superintendent of Notaries and Registry to lead the discussions on land matters, causing policy decisions on the issue to

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85 Becerra Rodríguez, Manuel, 'La economía verde sin presupuesto', Razón Pública.com video, 5 April 2015, <http://www.razonpublica.com/index.php/videocolumnas/8365-la-econom%C3%ADa-verde-sin-presupuesto.html> (accessed February 2016).

86 Evertsson, Nubia, 'Corporate Donations to Electoral Campaigns: A Case Study of White-Collar Crime,' *State Crime* 2.1 spring 2013.

87 Álvarez, Camilo Segura, 'Los nuevos impedimentos de Cristo e Iragorri', *El Espectador*, 19 September 2014, <http://www.elespectador.com/noticias/politica/los-nuevos-impedimentos-de-cristo-e-iragorri-articulo-517827> (accessed February 2016).

get bogged down at the expense of initiatives by the National Planning Agency and the Office of the Peace Commissioner.<sup>88</sup>

This example is not isolated. By intermingling in various ways private sector interests with public powers, the single-sector focus of each ministry or agency is reinforced. The fragmentation within state institutions is familiar to government decision makers, who often see their first task as involving endless negotiating rounds with ministers in a bid to seek a compromise between otherwise recalcitrant positions.

Examples of this sort of hybrid public-private opposition abound in the area of green growth. Public and private sector bodies coincide on the need for rapid development of major infrastructure projects, at the expense of sound environmental impact studies; the transportation sector, often co-opted by local and regional politicians, resolutely opposes fleet renewals and pollution taxation; the hydrocarbon sector insists on advancing with fracking despite its high levels of water demand and the mounting evidence of its effects on toxicity in watersheds; the mining sector is protected by law as an activity of public value and social interest, and its own maps identifying potential sites for exploration and exploitation override territorial plans for land use and natural resource protection; the overuse of fertilisers in agroindustry (Colombia uses four times more fertilisers per hectare than the average in Latin America)<sup>89</sup> is a result of aggressive PR campaigns by the industry, backed up by tax exceptions in their production and distribution, all adding to increased soil erosion and drops in productivity. Overall, private interests still dominate over the public good and drive rival ministerial agendas. They are also the root causes of failures in the enforcement of existing laws, in sanctions from regulatory bodies, and in the derailment of policy implementation.

Despite the wealth of scientific knowledge and the information-gathering instruments in place, interest groups operating within ministries keep crucial information from circulating so as to protect their own agendas. As a result, state institutions do not capitalise on the wealth of scientific knowledge at their disposal, nor do they take advantage of the best practices that regional and local territories have developed in green growth and sustainability.

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88 Reyes Posada, Alejandro, 'La incapacidad de engendrar el cambio rural', *El Espectador*, 23 May 2015. <http://www.elespectador.com/opinion/incapacidad-de-engendrar-el-cambio-rural> (accessed February 2016).

89 UN Periódico, 'Agroquímicos envenenan suelos en Colombia', Universidad Nacional de Colombia, 9 November 2013, <http://www.unperiodico.unal.edu.co/dper/article/agroquimicos-envenenan-suelos-en-colombia.html> (accessed February 2016).

### 5.2.3 Centre-periphery disconnect and the land issue

Lastly, the legacies of a heavily centralised state with limited control over its territory has perpetuated a deep disconnect between Bogotá and the country's periphery. The problems arising from this legacy have already been noted with respect to the CARs. However, on the issue of land, the centre still seeks to impose its control, even though local and departmental administrations have, by law, the mandate to plan the use of their territory, and as such are key actors in green growth strategies and implementation. The results of these central interventions are frequently inimical to green growth.

The *Planes de Ordenamiento Territorial* (territorial land use plan, or POT) and the *Planes de Ordenamiento y Manejo de Cuencas Hidrográficas* (plans for the use and management of watersheds, or POMCAS) are the two key instruments that local administrations use as platforms for consensus-building on land issues between civil society, public institutions and the private sector in their areas. Despite the mandate for local decisions on land use, protected areas and water resource management are continuously at risk of being exploited with the blessing of the central government, which can make use of *Proyectos de Interés Nacional* (projects of national interest, or PIN) to override local agreements. Projects of national interest include all sectors linked to the so-called locomotives of growth: infrastructure, agroindustry, extractive resources and housing. Consequently, the discrepancy between regional and local authorities on the one hand and the central state on the other concerning land and economic issues is acute and often the source of significant social and political conflict.

## 5.3 Opportunities for green growth

Despite the depth, scale and structural character of the obstacles to green growth policy and implementation, opportunities to embed green growth in a more sustainable way in development policy are emerging, although not necessarily within the institutional frameworks and business sectors envisaged in the National Development Plan.

### 5.3.1 Public opinion

As noted earlier, the *Colombian public* is highly sensitive to the issue of climate change and recognises the need to protect the country's biodiversity. The success of local models of public transport that reduce emissions have shown that environmental protection can successfully be wedded to programmes that support public welfare and economic growth. As evidence of the impact of climate change and extractive industries on Colombia's environment grows, public support for green growth is very likely to intensify.

### 5.3.2 Territorial peace and green growth

Of the emerging opportunities, the most obvious and complex is the one posed by the prospect of ratification of the definitive peace agreement with the FARC. The office of the UN Resident Coordinator in Colombia, in anticipation of the need to pair peace building with green growth, published a document for discussion that recommends four key actions:<sup>90</sup>

- advance the sub-national processes of territorial ordering (definition of land and watershed use and protection) and coordination of land use policy between different state institutions;
- strengthen sustainable development by taking advantage of the country's biodiversity and the services it provides;
- re-examine the effects of extractive industries, in particular mining, and their effects on peace building;
- strengthen the cluster of public institutions in charge of the environment and their role in peace building.

Should the international community prove willing to back it, President Santos' basket fund of *Colombia Sostenible* is perhaps the outstanding concrete opportunity to pair peace and green growth in conflict-affected territories.

### 5.3.3 The greening of all sectors and international pressure

While experts have insistently argued that a fully-fledged green growth strategy would require an economic model distinct from the current one, the Intended Nationally Determined Contribution (INDC) blueprint has been recognised by more moderate sectors within the country's environmental community as an opportunity to begin the process of greening different sectors, including those that resist any such change. The blueprint will identify viable actions within each sector as bases for climate change adaptation, green growth and economic development. While the blueprint is still in the making, it has the potential to gain traction in a larger number of business sectors so long as international pressure is applied and proof of compliance demanded, not least from the OECD.

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90 UN Resident Coordinator, *Construcción de una Paz Territorial Estable, Duradera y Sostenible en Colombia, Sistema de las Naciones Unidas en Colombia*, 2014, pp. 10-15, <http://www.co.undp.org/content/dam/colombia/docs/MedioAmbiente/undp-co-pazyambiente-2015.pdf> (accessed February 2016).

### 5.3.4 Emerging initiatives: leads from the private sector

The energy sector has been the leader in gathering experiences and implementing best practice in climate and environmental responsibility, and is spearheading what it refers to as the country's green transition – namely, a move to cleaner energies. ISAGEN, Colombia's foremost electricity generating company, the *Empresas Públicas de Medellín* (EPM), the local provider of public services in Colombia's second city, and the locally based dairy company Nutresa have been at the forefront not only in greening their operations but also in engaging local communities in efforts at natural resource protection, climate change adaptation and mitigation. The international Climate Action Network, through its Colombia chapter, is partnering with ANDESCO (the National Association of Public Service and Communications Providers), CECODES (Colombian National Business Council for Sustainable Development) and the French Development Agency (AFD) to transmit the best practices adopted by ISAGEN and EPM to other public service providers in the country, including telecommunications, water and sewage, and energy distribution.

The expansion in Colombia of the B corporation model<sup>91</sup> has attracted not only nascent local business, but global and Latin American multinationals. This trend responds to the value that investors put on environmental and social issues, but also to a global tendency in markets to reward social and environmental initiatives. An increasing number of local and multinational businesses operating in Colombia are assessed through the Dow Jones Sustainability Index<sup>92</sup> and the B corporation network of affiliates.

Despite the short history of the B corporation model in Colombia, significant changes are already in the making: in 2013 the National Banking Association created a green protocol for its affiliates providing guidelines for sustainable consumption.<sup>93</sup> Furthermore, the banking sector has adopted an environmental and social risk analysis for its credit operations,<sup>94</sup> and has developed a line of soft credits for investments

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91 The B corporation movement was born in the US in 2006 as an attempt by some corporations to redefine success in business by creating viable companies that offer solutions to social and/or environmental problems. B Corps' business model and decision making rely on four fundamental areas: governance, workers, community and environment. B Corps must incorporate a sustainable approach into their structure and legal framework, and are assessed and scored upon this each year. See <https://www.bcorporation.net>

92 The Dow Jones Sustainability Index tracks the stock performance of companies in terms of economic, environmental and social criteria. The indices serve as benchmarks for investors who integrate sustainability considerations into their portfolios, and provide an effective engagement platform for companies that want to adopt sustainable best practices.

93 Asobancaria, *Guía de Gestión de Compras Sostenibles para Entidades Financieras en Colombia*, 2014, <http://www.asobancaria.com/portal/pls/portal/docs/1/4412829.PDF> (accessed February 2016).

94 Through this procedure, the banks identify, analyse and evaluate the environmental and social risks associated with credit requests.

in renewable energy, reforestation and renewal of industrial machinery. The push by businesses ascribing to the values and philosophy of a B corporation have led to conversations with the Superintendent of Companies over the possibility of changes in legislation that would reflect the distinctive B corporation charter.

## 6 Conclusions and recommendations

The forces and interest groups arrayed against efforts to strengthen Colombia's environmental protection and green growth trajectory are powerful and well connected. But the political economy analysis offered in this paper points to the nuances and complexities in the balance of power on green issues and energy security, and the sources from which the environmental cause can draw strength and influence over government and private sector decision making in the years to come.

These include, most obviously, formal declarations by the Colombian government in favour of green growth and climate change mitigation – an official stance closely connected to its efforts to gain favour with OECD member states and other Western allies. More significantly, the rapid development of Colombia's economy, society, cities and energy sector raise a number of highly charged issues and concerns that are ambiguous as to their long-term effects on support for green growth. Green growth, in short, could well receive a fillip of support in the state, business and society should it appear to support the country's transition to an economically buoyant, post-conflict society of energy-secure big cities. On the other hand, if green growth is seen – in the way important political and business constituencies currently regard it – as an obstacle to growth and peace, a threat to Colombian competitiveness, and a fast track to irregular electricity supplies, then it is highly unlikely the strategy will gain substantial public approval.

In other words, the public success of the case for green growth will hinge on the way it is deployed and presented by its proponents, inside and outside the state. And in this respect, it is essential that green growth be framed as a response to the four key issues of Colombia's development process. Its contribution to a viable post-extractive economy, its intimate connection to peace and stability in post-conflict rural territories and its role as a purveyor of energy and electricity that is not vulnerable to climate change nor to a sudden shift in the global price of oil and gas stand out as the major benefits that green growth could supply. Colombia's success in becoming an emerging power in Latin America, with a regional co-leadership role and a network of global political and diplomatic connections, also depends on the integrity of its claims to be a supporter of sustainable development.

As this report has made clear, Colombia's manifest exposure to the risks of climate change, its relatively low-carbon power supply as well as its numerous protests and stand-offs relating to mining and other extractive businesses, are propitious for the

cause of green growth. However, the effects of both climate change and resource extraction are distributed unevenly and inequitably, and generally affect the poorest and least powerful communities in the country. At the same time, the lobbies and interest groups supporting extractive economies and looser environmental protection are well resourced, organised and benefit from excellent connections to different sections of the Colombian state. The tendency of the state towards fragmentation between ministries and agencies serves to exacerbate the leverage of individual business sectors, while the limited reach of the state in its peripheral territories continues to pose the problem of how well-intended policies and programmes could actually get enforced on the ground.

In the medium to long term, chances are significant that Colombia's fossil fuel sector will face increasing external and internal pressures. It is possible that fossil fuel demand from Colombia's export markets will decrease due to implementation of climate change objectives in those states, which is becoming more likely with the near ratification of the Paris Agreement (COP21). Internally, higher fossil fuel production rates and lower R/P ratios threaten the longevity of the sector altogether. Colombia will therefore have to diversify its export income, while electrification of the transport sector and declining importance and power of fossil fuel industries will provide important opportunities for the country's future green growth potential.

In the face of these challenges, uncertainties and opportunities, it is possible to outline a number of suggestions as to how the case for green growth could best be supported by local actors and international donors. These suggestions are far from comprehensive. But they are at least rooted in the political economy analysis that is provided in this report, appear at face value to be financially and politically feasible, and resonate with the need to lock green growth into an appreciation of the dynamics of Colombia's development process.

- *Links to post-conflict.* The concept and application of 'territorial peace', and its links to green growth, should be explored and deepened. A conclusion of the peace process with the FARC would offer an unrivalled opportunity to bring the benefits of decentralised small-scale energy production, preservation of environmental resources and local decision making over future land use to large swathes of Colombian territory. One concrete and viable recommendation would be for the government to establish explicit links between the financial and tax incentives deriving from the 2014 law on renewable energy production, and the economic stimulus programmes designed for post-conflict territories. The aim would be to encourage take-up of renewable energy in these areas so as to ensure inhabitants have access to a stable electricity supply, to preserve local environments and to offer an energy model to other areas of Colombia. The crossover between green energy planning and post-conflict recovery should be preceded by an attempt to map energy and electricity needs and potential in areas formerly under FARC control so as to provide a clear knowledge base available to all stakeholders. Linking the



implementation of the peace agreements in the territories with context-specific locally driven green growth strategies would ensure the pairing of territorial peace with environmental peace.

- *Greening the private sector.* Important parts of Colombia's private sector not only support green growth, but have actively pushed to transform their own production processes. These examples need to be disseminated and replicated across the entire Colombian business community as operational models that do not harm the revenue-making potential of the companies in question. The Ministry of the Environment could play a crucial role in sponsoring these new business models and persuading partner ministries, above all those of trade, infrastructure, transport, housing, and mines and energy, to acknowledge the merits of these approaches. More targeted and sophisticated tax and subsidy arrangements, as strongly recommended by the OECD in its 2014 review of Colombia, could also encourage greater corporate uptake.
- *The local vanguard.* The most outstanding practical applications of green growth in Colombia have taken place at local level. These include the programmes of certain well-organised CARs, notably Corponare in Antioquia, as well as the initiative to compensate financial damage to key ecosystems, in the shape of a compensation mechanism called Banco2. As mentioned earlier, major companies in Medellín have assumed a vanguard role in greening their production chains and in acknowledging the risks of climate change. Local initiatives have also aimed to adapt the coastal city of Cartagena to climate change risks while retaining its economic vitality (the so-called Plan4C), while a similar programme has been underway since 2012 in the southern region of Huila. However, it remains the case that the achievements, experiences and challenges of these programmes are rarely conveyed to central government in a way that would strengthen future policy and programming. A stronger role in transmitting local programming to the centre to inform and shape future policy should be played, as a matter of priority, by the National Environmental System.
- *Reinvigorating the centre.* The limited role of local programming raises a deeper issue: the historical difficulties faced by the Colombian state in achieving genuine institutional cohesion between the centre and the periphery. Environmental policy, despite its good intentions, will not be able on its own to bypass these entrenched dilemmas. But if progress is made in tying green growth to post-conflict reconstruction, and in making central bodies more responsive to local green initiatives, then a reconfigured system of environmental management might provide a good example and even a model for more systemic reform of the state.

While pointing to these recommendations, this report has also counselled caution. Certain interest groups and lobbies in the state and business will continue to seek ways and means of circumventing Colombia's environmental policy and pledges. At the same time, this report notes the prominent role of public opinion, the agenda for peace in post-conflict territories, and a vanguard of Colombia's businesses as potential members of a powerful coalition that could work on behalf of green growth. Sudden energy, climate and environment-related shocks would pose major questions as to the future trajectory of Colombia's development model. In such a scenario, and with the right support base, the country could well decide to intensify its pursuit of green growth rather than abandon it.

# References

- Álvarez, Camilo Segura, 'Los nuevos impedimentos de Cristo e Irigorri', *El Espectador*, 19 September 2014, <http://www.elespectador.com/noticias/politica/los-nuevos-impedimentos-de-cristo-e-irigorri-articulo-517827>
- Asobancaria, *Guía de Gestión de Compras Sostenibles para Entidades Financieras en Colombia*, 2014, <http://www.asobancaria.com/portal/pls/portal/docs/1/4412829.PDF>
- Baxter, Barry, 'Feeling the Pinch', *World Coal*, 12 December 2015, <http://www.worldcoal.com/special-reports/07122015/Feeling-the-pinch-Colombia-Regional-Report-3210/>
- Becerra Rodríguez, Manuel, 'La economía verde sin presupuesto', Razón Pública.com video, 5 April 2015, <http://www.razonpublica.com/index.php/videocolumnas/8365-la-econom%C3%ADa-verde-sin-presupuesto.html>
- CLIMACAP Consortium, *Climate and Energy policy review for Colombia, Brazil, Argentina and Mexico*, 2014, [http://climacap.websitebuilderpro.com/download/i/mark\\_dl/u/4011847001/4613271160/CLIMACAP%20policy%20reviews.pdf](http://climacap.websitebuilderpro.com/download/i/mark_dl/u/4011847001/4613271160/CLIMACAP%20policy%20reviews.pdf)
- Climate and Development Knowledge Network (CDKN), 'Good practices in energy efficiency: Bogota, Colombia – bus rapid transit for urban transport', 15 August 2010, [http://cdkn.org/resource/good-practices-in-energy-efficiency-bogota-colombia-bus-rapid-transit-for-urban-transport/?loclang=en\\_gb](http://cdkn.org/resource/good-practices-in-energy-efficiency-bogota-colombia-bus-rapid-transit-for-urban-transport/?loclang=en_gb)
- ClimateScope, *Colombia country overview*, 2015, <http://global-climatescope.org/en/country/colombia/#/details>
- Dennis, Claire, 'El Niño in Colombia: what's happening and what will happen', *Colombia Reports*, 13 October 2015, <http://colombiareports.com/el-nino-in-colombia-whats-happening-and-what-will-happen/>
- Dumitru, Alexandra, 'Latin America: the tide has turned', Rabobank Economics Research Department, 28 September 2015.
- Edwards, Guy and Timmons Roberts, J., *A Fragmented Continent. Latin America and the Global Politics of Climate Change*, Cambridge (MA): MIT Press, 2015.
- EFE news agency, 'Santos anuncia una profunda reforma del sector agrícola colombiano', 4 December 2015, <http://www.efe.com/efe/america/portada/santos-anuncia-una-profunda-reforma-del-sector-agricola-colombiano/20000064-2781302>
- El Espectador*, 'Delegado de EE UU para el proceso de paz, como afectado del derrame del petróleo', 10 June 2015, <http://www.elespectador.com/noticias/politica/delegado-de-eeuu-el-proceso-de-paz-afectado-del-derrame-articulo-565647>
- El Tiempo*, '¿Qué le espera al medio ambiente en el escenario del postconflicto?', 7 February 2015, <http://www.eltiempo.com/estilo-de-vida/ciencia/medioambiente-en-el-posconflicto/15210177>
- El Tiempo*, 'Censo del agro confirma fuerte atraso del campo colombiano', 12 August 2015, <http://www.eltiempo.com/economia/sectores/censo-nacional-agropecuario-atraso-en-el-campo/16221076>
- Energy Information Administration (EIA), Coal Data, <http://www.eia.gov/coal/data.cfm#imports>

- Evertsson, Nubia, 'Corporate Donations to Electoral Campaigns: A Case Study of White-Collar Crime', *State Crime* 2.1 spring 2013.
- Falzon, Hames and Di Sbroaiavacca (eds), *CLIMACAP. Climate and Energy Policy review for Colombia, Brazil, Argentina and Mexico*, Amsterdam: Energy Centre for the Netherlands, 2014.
- Financial Times*, 'The New Colombia', 3 June 2013, <http://www.ft.com/intl/reports/new-colombia-2013>
- Gallego, Gloria and Sigma Dos Colombia, *Ubicación Ideológica de los Colombianos*, Bogotá: Registraduría Nacional de Estado Civil, 2014.
- García, Helena and Hernández, Adriana, *Elaboración de una Evaluación Integral de Sostenibilidad (EIS) para Colombia*, Bogotá: Fedesarrollo, 2012, [http://www.repository.fedesarrollo.org.co/bitstream/11445/160/1/CDF\\_No\\_40\\_Junio\\_2012.pdf](http://www.repository.fedesarrollo.org.co/bitstream/11445/160/1/CDF_No_40_Junio_2012.pdf)
- Goldthau, Andreas and Sovacool, Benjamin, 'The uniqueness of the energy security, justice and governance problem', *Energy Policy* 41, 2012.
- Government of Colombia, *Intended Nationally Determined Contributions*, Bogotá, 2015, <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Colombia/1/Colombia%20iNDC%20Unofficial%20translation%20Eng.pdf>
- Government of Colombia and FARC-EP, 'Acuerdo final para la terminación del conflicto y la construcción de una paz estable y duradera,' 24 August 2016. [https://www.mesadeconversaciones.com.co/sites/default/files/24\\_08\\_2016acuerdofinalfinalfinal-1472094587.pdf](https://www.mesadeconversaciones.com.co/sites/default/files/24_08_2016acuerdofinalfinalfinal-1472094587.pdf)
- Güesguán Serpa, Óscar, 'Venta de Isagén comprometería expansión del sistema eléctrico', *El Espectador*, 13 January 2016, <http://www.elespectador.com/noticias/economia/venta-de-isagen-comprometeria-expansion-del-sistema-ele-articulo-610164>
- Institute of Hydrology, Meteorology and Environmental Studies (IDEAM), *Nuevos Escenarios de Cambio Clático para Colombia 2011-2100*, Bogotá: IDEAM, 2015.
- International Energy Agency (IEA), *Colombia: Indicators for 2013*, <http://www.iea.org/statistics/statisticssearch/report/?year=2013&country=COLOMBIA&product=Indicators>
- International Renewable Energy Agency (IRENA) – International Energy Agency (IEA), 2016, *Joint Policies and Measures Database: Colombia*, <http://www.iea.org/policiesandmeasures/renewableenergy/>
- Jaramillo, Sergio, *La Paz Territorial*, Bogotá: Office of the High Commissioner for Peace, 2014, <http://www.interaktive-demokratie.org/files/downloads/La-Paz-Territorial.pdf>
- Kessides, I.N., 2012, 'The impacts of electricity sector reforms in developing countries', *The Electricity Journal* 25 (6): 79–88.
- Marchán, Estefania and Lisa Viscidi, 'Green Transportation: The Outlook for Electric Vehicles in Latin America', *Energy Working Paper*, October 2015.
- Marquez, Germán, 'Medio Ambiente y Violencia en Colombia', *Análisis Político* 44: 58–76, Bogotá: Instituto de Estudios Políticos y Relaciones Internacionales (IEPRI), Universidad Nacional de Colombia, 2001, [http://www.idea.unal.edu.co/public/docs/mambiente\\_econm.pdf](http://www.idea.unal.edu.co/public/docs/mambiente_econm.pdf)
- Mendieta, María Paula, 'Estrategia Colombiana de Desarrollo Bajo en Carbón (ECDBC)', Bogotá: Ministry of the Environment and Sustainable Development, 2012, [http://mitigationpartnership.net/sites/default/files/u1300/060312\\_ecdbc\\_cambio\\_climatico.pdf](http://mitigationpartnership.net/sites/default/files/u1300/060312_ecdbc_cambio_climatico.pdf)
- Mining and Energy Planning Unit (UPME), *Proyección de Demanda de Energía Eléctrica en Colombia*, Revisión Marzo de 2013. Bogotá: UPME, 2013.

- Mining and Energy Planning Unit (UPME), *Plan de expansión de referencia generación-transmisión 2014-2018*, Bogotá: UPME, 2014.
- Mining and Energy Planning Unit (UPME), *Plan energético nacional Colombia: Ideario energético 2050*, Bogotá: UPME, 2015.
- Mining and Energy Planning Unit (UPME), *Plan de Expansión de Referencia Generación y Transmisión 2015-2029*, Bogotá: UPME, 2015.
- Ministry of Transport, *Transporte en Cifras. Estadísticas 2014*, Bogotá: Ministry of Transport, 2014.
- National Planning Department, *Plan Nacional de Adaptación al Cambio Climático*, Bogotá: DNP, 2012.
- National Planning Department, *Todos por un nuevo país. Plan Nacional de Desarrollo 2014-18*, Bogotá: DNP, 2015.
- National Statistics Administrative Office (DANE), *Comercio internacional: exportaciones*, <http://www.dane.gov.co/index.php/comercio-externo/exportaciones>
- National System of Competitiveness, Science, Technology and Innovation (SNCCTI), 'Presidente Santos anuncia Plan de Impulso a la Economía y Exportaciones', 28 May 2015, <http://www.colombiacompetitiva.gov.co/nprensa/2015/Paginas/Presidente-Santos-anuncia-Plan-de-Impulso-a-la-Economia-y-Exportaciones.aspx>
- Novoa, José Luis, 'Tierras robadas, héroes sin rostro y escuelas fragmentadas. La desigualdad en Colombia en tres actos', *Nueva Sociedad* May-June 2012, <http://nuso.org/articulo/tierras-robadas-heroes-sin-rostro-y-escuelas-fragmentadas-la-desigualdad-en-colombia-en-tres-actos/>
- Nueva Sociedad, *Emancipación o Dependencia? Los recursos naturales en América Latina*, Buenos Aires: Friedrich Ebert Stiftung, March-April 2013.
- Ocampo, José Antonio, 'The Return of Slow Economic Growth', World Bank Development blog, 15 May 2014, <http://blogs.worldbank.org/latinamerica/return-slow-economic-growth>
- Ocampo, José Antonio, 'Misión para la transformación del campo', Bogotá: DNP, 2014.
- Organisation for Economic Co-operation and Development (OECD), *Environmental Performance Review: Colombia*, Paris: OECD, 2014.
- Platts, 'Colombia to Begin Natural Gas Imports in Early 2016: Ecopetrol', 23 November 2015, <http://www.platts.com/latest-news/natural-gas/bogota/colombia-to-begin-natural-gas-imports-in-early-26286963>
- ProColombia, 'Electric Power in Colombia: Power Generation', Bogotá: ProColombia, 2015, [http://www.cc.lu/fileadmin/user\\_upload/cc.lu/Manifestations/20150701\\_Mexico\\_Colombia\\_Mission/01\\_Electric\\_Power\\_Generation\\_in\\_Colombia\\_-\\_2015.pdf](http://www.cc.lu/fileadmin/user_upload/cc.lu/Manifestations/20150701_Mexico_Colombia_Mission/01_Electric_Power_Generation_in_Colombia_-_2015.pdf)
- Ramírez, Socorro, 'La presidencia de Santos: avances e incertidumbres en Colombia', *Nueva Sociedad*, November-December 2015, <http://nuso.org/articulo/la-presidencia-de-santos-avances-e-incertidumbres-en-colombia/>
- Reuters, 'Power outage plunges most of Venezuela into darkness', 2 December 2013, <http://www.reuters.com/article/2013/12/03/us-venezuela-blackout-idUSBRE9B202T20131203>
- Rettberg, Angelika, *Gold, Oil and the lure of violence: the private sector and post-conflict risks in Colombia*, Oslo: Norwegian Peacebuilding Resource Centre (NOREF), 2015.
- Revista Semana, 'Desigualdad económica en las regiones', 19 October 2013, <http://www.semana.com/economia/articulo/crecimiento-economico-departamentos/361568-3>

- Revista Semana, 'Lo bueno, lo malo y lo feo del lado verde del Plan de Desarrollo', 16 February 2015, <http://sostenibilidad.semana.com/medio-ambiente/articulo/plan-nacional-desarrollo-bueno-malo-feo-del-lado-verde/32575>
- Reyes Posada, Alejandro, 'La incapacidad de engendrar el cambio rural', *El Espectador*, 23 May 2015, <http://www.elspectador.com/opinion/incapacidad-de-engendrar-el-cambio-rural>
- Rueda, María Isabel, 'No podemos darnos el lujo de no hacer "fracking"', *El Tiempo*, 13 April 2015, <http://www.eltiempo.com/economia/sectores/entrevista-con-juan-carlos-echeverry-nuevo-presidente-de-ecopetrol/15558455>
- Rüttinger, Lukas et al., *A New Climate for Peace. Taking Action on Climate and Fragility Risks*, Berlin: Adelphi, 2015
- Serpa, Óscar, 'Conoco Phillips hará 'fracking' en Colombia', *El Espectador*, 3 December 2015, <http://www.elspectador.com/noticias/economia/conoco-phillips-hara-fracking-colombia-articulo-603063>
- Steiner, Roberto and Vallejo, Hernán, 'The Economy', in Hudson, Rex, *Colombia: a country study*, Washington DC: Library of Congress, 2010.
- Stokes, Bruce, Wike, Richard and Carle, Jill, 'Global Concern About Climate Change, Broad Support for Limiting Emissions', Pew Research Center, 5 November 2015, <http://www.pewglobal.org/2015/11/05/global-concern-about-climate-change-broad-support-for-limiting-emissions/>
- UN Periódico, 'Agroquímicos envenenan suelos en Colombia', Universidad Nacional de Colombia, 9 November 2013, <http://www.unperiodico.unal.edu.co/dper/article/agroquimicos-envenenan-suelos-en-colombia.html>
- United Nations Development Programme, *Construcción de una Paz territorial Duradera, Estable y Sostenible en Colombia*, Bogotá: UNDP, 2014.
- United Nations Habitat, State of the World Cities Report 2012/2013, Prosperity of Cities, Nairobi: UN Habitat, 2013, <http://mirror.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3387>
- United Nations Resident Coordinator, *Construcción de una Paz Territorial Estable, Duradera y Sostenible en Colombia*, Bogotá: UN, 2014, pp. 10-15, <http://www.co.undp.org/content/dam/colombia/docs/MedioAmbiente/undp-co-pazyambiente-2015.pdf>
- Urrutia, Carolina, '¿Dónde está el Crecimiento Verde?', *Revista Semana Sostenible*, 10 July 2015, <http://sostenibilidad.semana.com/medio-ambiente/articulo/donde-esta-crecimiento-verde-del-gobierno-colombiano/33174>
- Villar, Leonardo (et al.), *Evaluación de la Contribución del sector de Hidrocarburos Colombiano frente a diversos escenarios de producción*, Bogotá: Fedesarrollo, 2014.
- World Bank, 'World Development Indicators: Colombia', <http://databank.worldbank.org/data/reports.aspx?source=2&country=COL&series=&period=>
- World Bank, 'Ease of Doing Business in Colombia', <http://www.doingbusiness.org/data/exploreeconomies/colombia/>
- World Energy Council, *Energy Trilemma Index – benchmarking the sustainability of national energy systems*, London: World Energy Council, 2014, <https://www.worldenergy.org/wp-content/uploads/2014/11/20141105-Index-report.pdf>
- World Justice Project, *Rule of Law Index 2015*, Washington DC, 2015, <http://worldjusticeproject.org/rule-of-law-index>

# Appendix – People interviewed in Colombia

Fabio Arjona	Conservación Internacional
César Ruiz	Conservación Internacional
Angelika Rettberg	University of the Andes
Claudia Martínez Zuleta	CDKN lead Colombia
Angela Inés Cadena Monroy	University of the Andes
Helena García Romero	Fedesarrollo
Leonardo Villar Gómez	Fedesarrollo
Angela Paola Chia Bernal	IDEAM
Dian Maria Quimbay Valencia	IDEAM
Javier Eduardo Mendoza	IDEAM
María Carolina Latorre	Econometría
Guillermo Rudas	Econometría
Juan Pablo Ruiz	National Council of Economic and Social Policy (CONPES)
Henry Martínez	Colombian Oil Association (ACP)
Rafael Herz	ACP
Susana Vélez Haller	World Wildlife Fund
Manuel Rodríguez Becerra	Former Minister of the Environment
Eduardo Chávez	Revista Catorce6
Brigitte Baptiste	Instituto Humboldt
Juliana Agudelo	Instituto Humboldt
Silvia Calderón	National Planning Department (DNP)
Laura Vélez	Sistema B
Manuel Guzmán Hennessey	Latin American Network of Climate Change
Roberto Leon Gómez	Fundación Natura
Elsa Matilde Escobar	Fundación Natura
Juan Soto	Acción Verde
Carlos Herrera Santos	National Industrial Association (ANDI)
Liliana Ramos	CDKN Colombia
Juan Fernando Botero Mesa	Ecoflora
Andrea Zapata	Management Unit for Disaster Risks (UNGRD)
Marianella Botta	UNGRD
Santiago Uribe	Ministry of the Environment
Carolina Jaramillo	Global Green Growth Institute Colombia
Angela Rivas	Ideas for Peace Institute
Elkin Ramírez	National Federation of Departments

Andrés Mauricio Comba Morales	Ministry of Trade
Alonso Ojeda	Contact person between ELN guerrilla and government
Amylcar Acosta	National Federation of Departments
Nelson Lozano	Ministry of Agriculture
Martha Arévalo	Netherlands Embassy in Colombia
Alicia Lozano Vila	Netherlands Embassy in Colombia
Carlos García	Ministry of Mines and Energy, Mining and Energy Planning Unit (UPME)