



Global
Green Growth
Institute

GGGI

Colombia Country Planning Framework 2016-2020



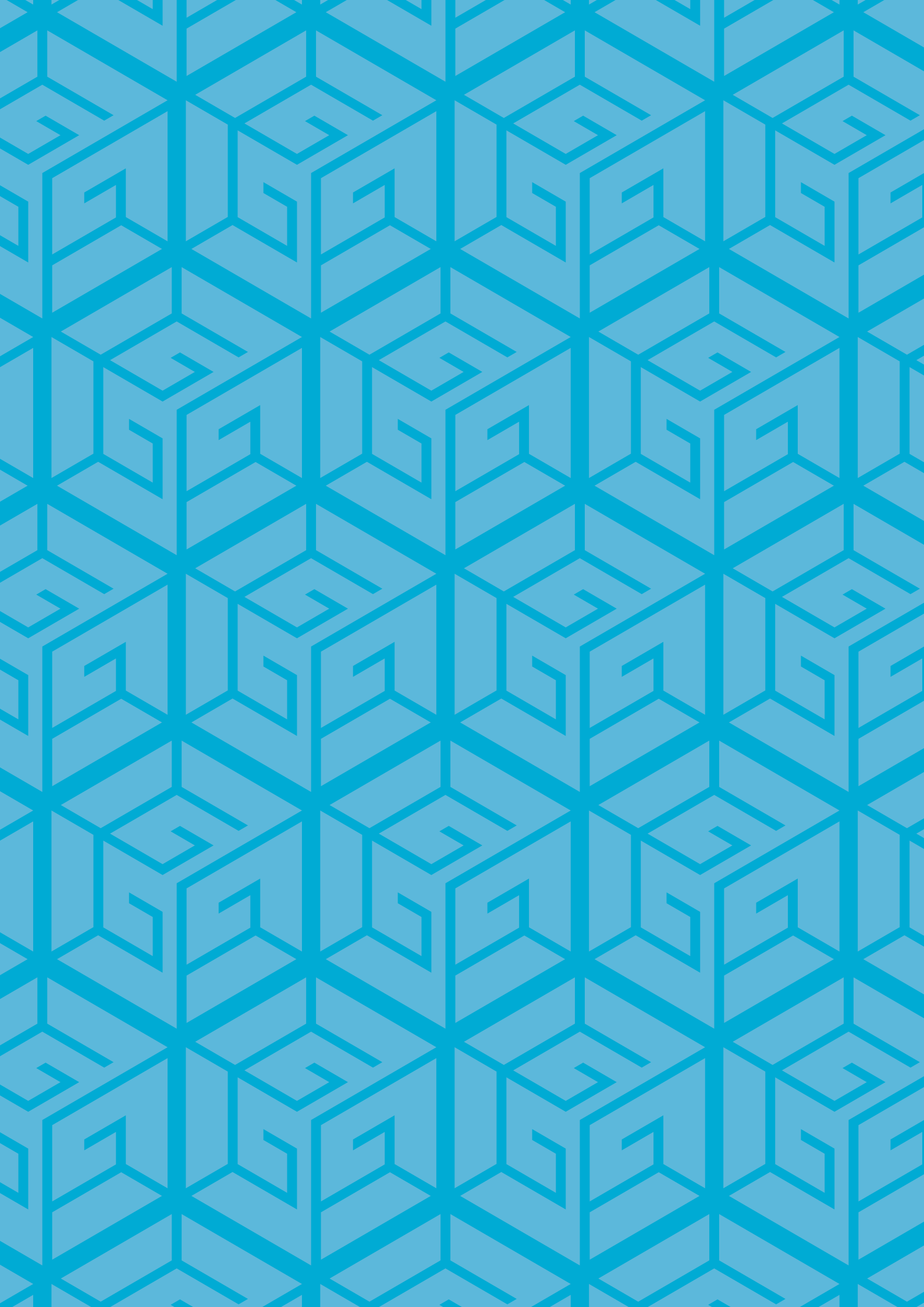
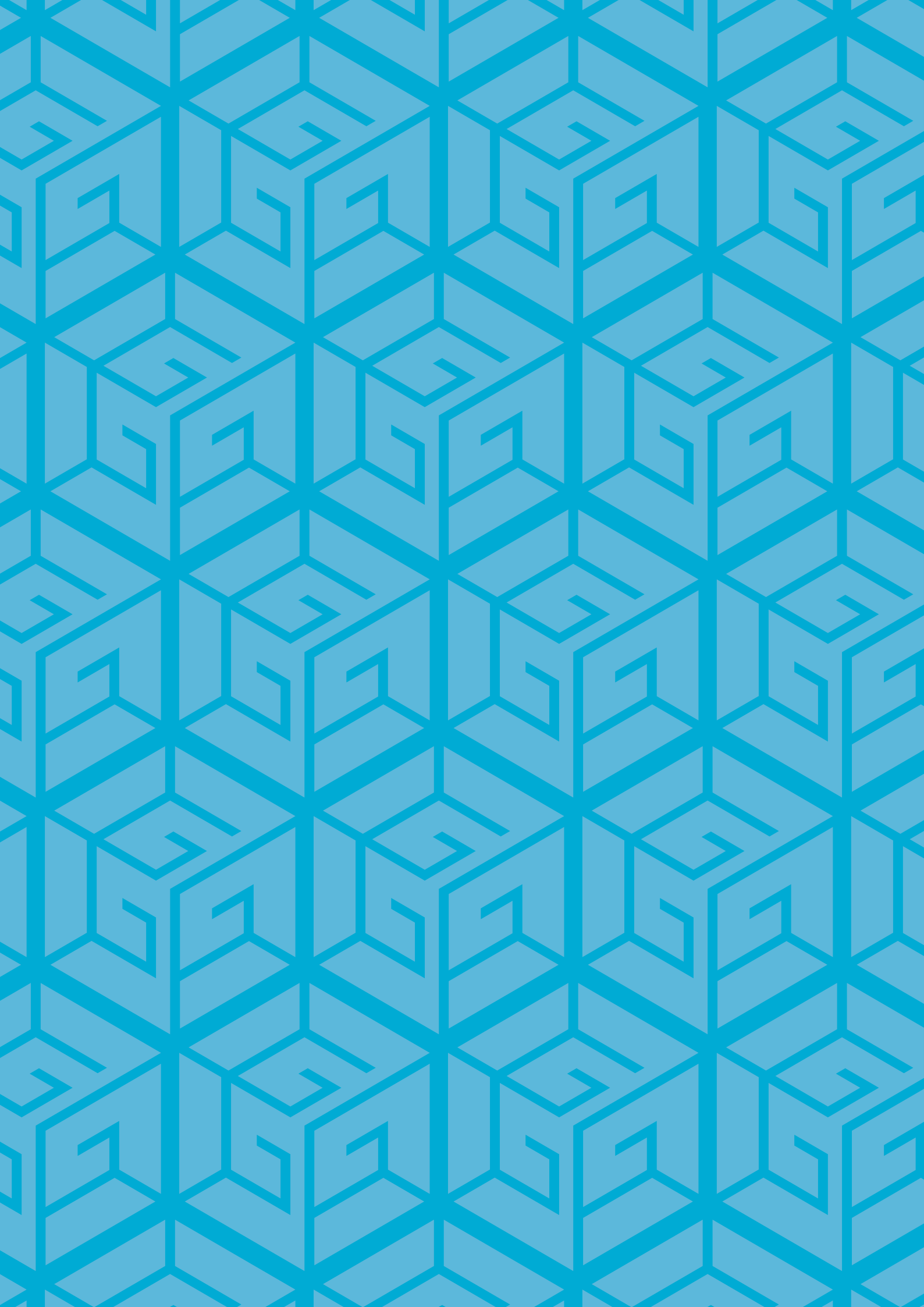


Table of Contents

Abbreviations and Acronyms	3
1. Introduction to the Country Planning Framework	5
2. Country Overview	7
2.1 Green Growth Performance Mixed	8
2.2 Impressive Socio-economic Growth, but Alternative Growth Engines are Needed	9
2.3 Colombia's Biodiversity and Ecosystems are Under Threat	10
2.4 Governance is Decentralized and Focused on Peace, Education and Social Equality	13
3. National Priorities	17
4. GGGI's Engagement in Colombia	21
5. Country Planning Framework Analysis	25
5.1 CPF Development Process	25
5.2 Strategic Analysis of Priority Green Growth Challenges	25
6. Strategic Response	33
6.1 Outcome 1: The Government of Colombia Makes Progress in the Definition and Institutional Articulation of a Green Growth Vision, with Long-term Policies and Financing Alignment Needed for its Implementation	33
6.2 Outcome 2: Strategic Sectors Increase Investments Generating Evidence of the Benefits of Green Growth Approaches	34
6.3 Outcome 3: Forestry Sector Becomes Engine of Green Growth	35
6.4 Alignment with the GGGI Strategic Plan, SDGs and INDC	36
Annex A: Consultation Summary	39
Annex B: Indicators for Green Growth Diagnostic	40



Abbreviations and Acronyms

APC	Agencia Presidencial de Cooperación (Presidential Agency for Cooperation)	GNI	Gross National Income
CAR	Corporación Autónoma Regional (Regional Autonomous Corporation)	IDEAM	Instituto de Hidrología, Meteorología y Estudios Ambientales (Hydrology, Meteorology and Environmental Research Institute)
CIPAV	Centro para la Investigación en Sistemas Sostenibles de Producción Agropecuaria (Center for Research on Sustainable Agricultural Production Systems)	INDC	Intended Nationally Determined Contribution
CO₂	Carbon Dioxide	MADS	Ministerio de Ambiente y Desarrollo Sostenible (Ministry of Environment and Sustainable Development)
CPF	Country Planning Framework	NDP	National Development Plan
DANE	Departamento Administrativo Nacional de Estadística (National Administrative Department of Statistics)	NFDP	National Forest Development Plan
DNP	Departamento Nacional de Planeación (National Planning Department)	OECD	Organisation for Economic Co-operation and Development
ECLAC	United Nations Economic Commission for Latin America and the Caribbean	REDD	Reducing Emissions from Deforestation and Forest Degradation
FEDEGAN	Federación Colombiana de Ganaderos (Colombian Federation of Cattle Ranchers)	SDG	Sustainable Development Goal
GDP	Gross Domestic Product	SISCLIMA	Sustainable Development Goal National System for Climate Change
GGGI	Global Green Growth Institute	UPME	Unidad de Planeación Minero Energética (Mining and Energy Planning Unit)
GHG	Greenhouse Gas		



1. Introduction to the Country Planning Framework

The Country Planning Framework (CPF) of the Global Green Growth Institute (GGGI) lays out the green growth objectives that GGGI's interventions aim to support Colombia in achieving. The CPF is formulated with the development challenges of Colombia in mind, and supports the national goals of economic growth, poverty reduction, social inclusion and environmental sustainability. The CPF is aligned with the organizational priorities of GGGI as articulated in the *GGGI Strategic Plan 2015-2020*.¹ The CPF is also aligned with the Sustainable Development Goals (SDGs) and Colombia's Intended Nationally Determined Contribution (INDC) to the United Nations Framework Convention on Climate Change. The CPF is thus a contextualized planning document for in-country programming.

The achievement of the CPF outcomes will require the support of the national government, private sector and other partners, and is contingent on the CPF's adherence to the following key principles:

- **Ownership** – It is co-owned by the government and endorsed by the lead ministry that GGGI has an agreement with;
- **Mutual accountability** – It demonstrates commitment by GGGI and the government to collaborate and provide support in implementing the CPF;
- **Alignment** – It is aligned to national objectives and informed by the *GGGI Strategic Plan 2015-2020*;
- **Leadership** – Its formulation is jointly led by the GGGI country team and the Government of Colombia.

Box 1. About GGGI

The Global Green Growth Institute (GGGI) was founded to support and promote a model of economic growth known as “green growth”, which targets key aspects of economic performance such as poverty reduction, job creation, social inclusion and environmental sustainability.

GGGI envisions a resilient world achieved through strong, inclusive and sustainable green growth, and is dedicated to supporting the transition of GGGI member countries toward a green growth model. In pursuit of these goals, GGGI works with developing and emerging countries to design and deliver programs and services that demonstrate new pathways to pro-poor economic growth.

GGGI supports stakeholders through two complementary and integrated work streams—Green Growth Planning & Implementation and Knowledge Solutions—that deliver comprehensive products and services designed to assist in developing, financing and mainstreaming green growth in national economic development plans.

GGGI's interventions emphasize change in four priority areas considered to be essential to transforming countries' economies including energy, water, land use and green cities.

Headquartered in Seoul, Republic of Korea, GGGI also has representation in a number of partner countries.

¹ GGGI, *GGGI Strategic Plan 2015-2020: Accelerating the Transition to a New Model of Growth* (Seoul, 2015).



2. Country Overview

Table 1. Colombia at a glance

Total population (projected), 2015	48 million
Area (sq. km)	2,070,408
GDP (current USD), 2013	378,4 billion
GNI per capita, purchasing power parity (current USD), 2013	7,590
OECD DAC classification	Upper middle-income
Human Development Index, 2014	0,711 (ranked 98 th)
Percentage of population under the national poverty line, 2014	28,5
CO ₂ emissions (metric tons per capita), 2015	4,5
GHG emission intensity (kg per USD of GDP at 2005 purchasing power parity), 2010	0.47
Forest cover (% of land area), 2010	55
Rate of deforestation (hectares/year), 2014	120,934
Land in cattle grazing (% of land area), 2006	33
Number of cattle heads per hectare, 2013	0,689
Estimated increase in the use of energy per year between 2010 and 2025 (%), 2007	2,3
Share of renewable electricity (%), 2012	4,72
Tons of freight transported by road (tons equivalent to 73% of total volume), 2013	220,309,000
Energy use by sector (%), 2014	
	Unidentified 2
	Construction 1
	Agriculture and mining 7
	Transport 44
	Industrial 21
	Business and official 6
	Residential 19
Total energy use (terajoule)	1,094,136
Availability of fresh water (m ³ per year per capita), 2010	49,000
National water demand by sector (million m ³ per year)	
	Services 528
	Industry 1,577
	Livestock 2,220
	Aquatic 2,584
	Domestic 2,606
	Energy 6,976
	Agriculture 19,386
Total	35,877

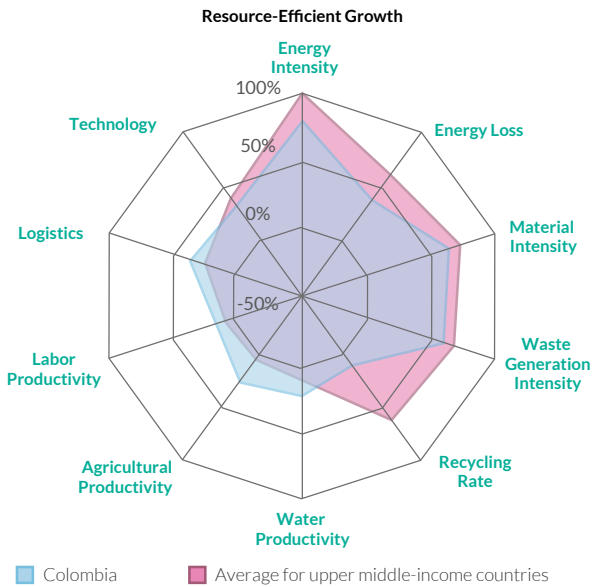
Sources: Anuario Estadístico Ministerio de Transporte, 2013; Censo Nacional Agropecuario, 2013; DANE, 2014 and 2015; FEDEGAN, *Plan Estratégico de la Ganadería Colombiana 2019* (2006); Food and Agriculture Organization of the United Nations, 2010; IAC; IDEAM, 2010 and 2014; International Energy Agency, 2010; MADS, *Contribución Prevista y Determinada a Nivel Nacional en Materia De Cambio Climático. Anteproyecto para difusión nacional* (Bogotá, 2015). United Nations Development Programme, *Human Development Report 2014 – Sustaining Human Progress: Reducing Vulnerabilities and Building Resilience* (New York, 2014), <http://hdr.undp.org/sites/default/files/hdr14-report-en-1.pdf>; UPME, 2007, 2012 and 2014; and World Bank, “Colombia,” <http://data.worldbank.org/country/colombia>

2.1 Green Growth Performance Mixed

GGGI has undertaken a rapid indicative assessment of Colombia’s recent performance in delivering green growth across four areas: resource efficiency, eco-friendliness, climate resilience and social inclusion (see Figures 1 to 4). This is called the Green Growth Potential Assessment. The larger the shaded area on the web diagram, the better the performance. Colombia’s performance is shown in blue and the average for upper middle-income countries is shown in pink. A description of the indicators and indexes used is provided in Annex B.

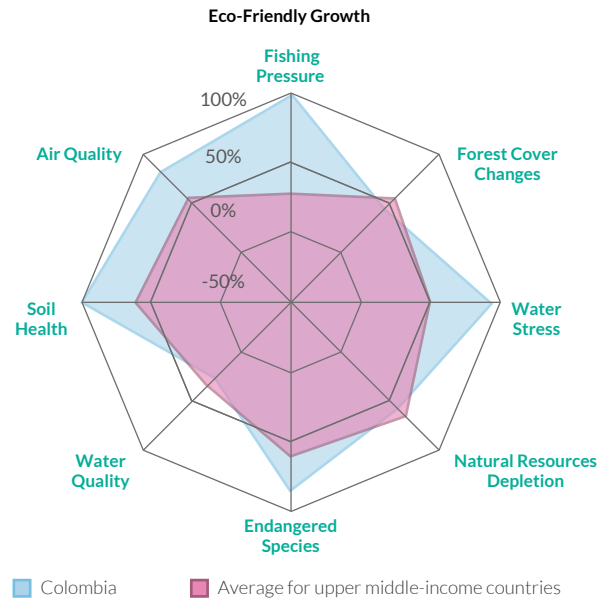
On resource-efficient growth (see Figure 1), Colombia is performing well across energy intensity, energy loss and recycling—but less favorably in labor, land and water productivity and logistics.

Figure 1. Colombia’s resource-efficient growth in comparison with upper middle-income countries



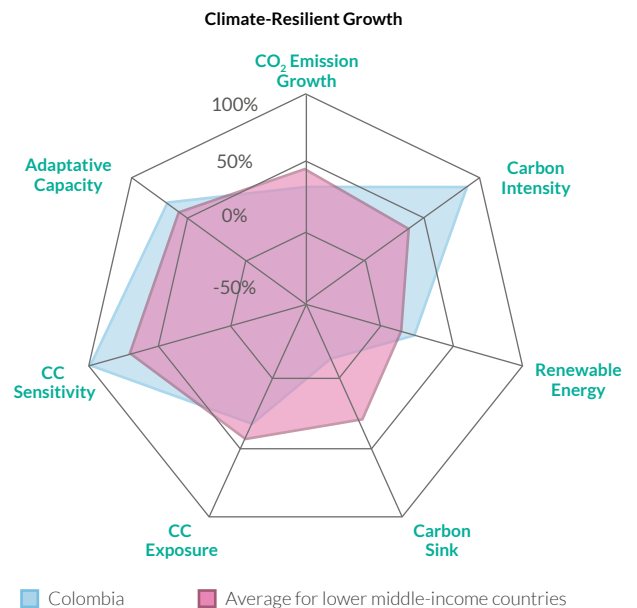
On eco-friendliness (see Figure 2), Colombia is doing much better than peers on soil health, air quality, fishing pressure and water stress, but less so in forest cover changes, natural resources depletion and water quality.

Figure 2. Colombia’s eco-friendly growth in comparison with upper middle-income countries



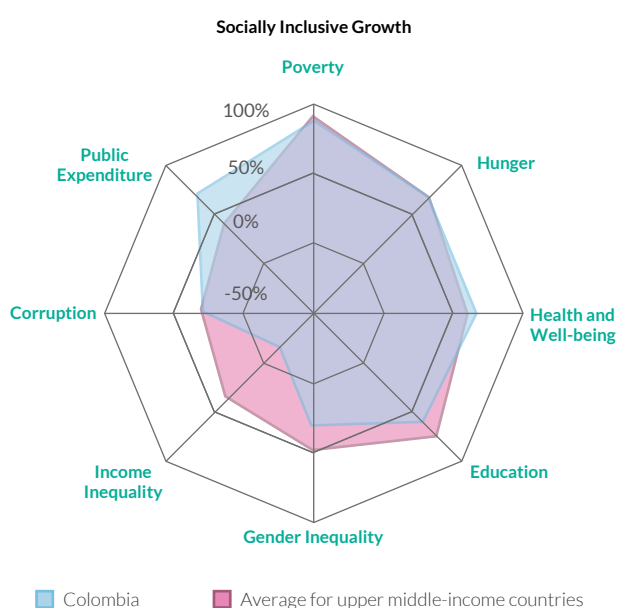
Regarding climate-resilient growth (see Figure 3), Colombia fares above peers on carbon intensity, climate change sensitivity and adaptive capacity, but not so well on CO₂ emissions growth, climate sinks and climate change sensitivity.

Figure 3. Colombia’s climate-resilient growth in comparison with upper middle-income countries



Finally, indicators on social inclusive growth (see Figure 4) highlight Colombia's better performance in public expenditure, but considerable underperformance in income equality, gender equality and education. A full report on this assessment will be completed for Colombia in 2016.

Figure 4. Colombia's social inclusive growth in comparison with upper middle-income countries



2.2 Impressive Socio-economic Growth, but Alternative Growth Engines are Needed

Colombia has experienced over a decade of sustained economic growth, with an average annual gross domestic product (GDP) growth rate of 4.2% between 2000 and 2014. This growth has largely been driven by a boom in the extractive industries (oil and coal), combined with strong domestic consumption and investment. The impressive economic performance is underpinned by sound macroeconomic and fiscal policies, and a marked improvement in national security.

The fall in the international price of commodities, however, particularly of oil and minerals, is forcing the Colombian economy to consider alternative engines of growth.² In 2014, the main engines of growth in the Colombian economy were

2 In 2014, the oil sector contracted by 2%, compared with an average growth of 12.9% in the previous six-year period. Asociación Nacional de Empresarios, *Colombia: Balance 2014 y perspectivas* (Bogotá, 2015).

the sectors of construction (including infrastructure), mining, agriculture and services.³ But Colombia is now confronting the effects of a transition from heavy reliance on extractive industries, and is seeking new engines to sustain economic growth, particularly in agriculture, manufacturing and tradable services.

While foreign direct investment almost doubled between 2008 and 2013, the expectation is that this will be lower now that international oil prices have declined. Official projections for economic growth in 2015 were revised down from 4.2% to 3.2%, although these growth rates were still above the regional average.⁴ Expected public and private investment growth rates were also revised down from the previous period, but the total investment rate is expected to be around 29% of GDP by 2018.⁵

Colombia's strong economic performance in the recent past has contributed to a significant reduction in overall poverty, from 49.7% of the population in 2002 to under a third (28.5%) in just twelve years.⁶ Extreme poverty also fell from 13.8% in 2002 to 8.1% in 2014, allowing Colombia to meet targets 1 and 2 of the Millennium Development Goal 1 to eradicate extreme poverty and hunger.

Despite being among the most dynamic economies in Latin America, income inequality fell only slightly in the GINI index from 57.2 to 53.8.⁷ As a result, Colombia has one of the highest income inequalities in Latin America, and among other upper middle-income countries. Furthermore, the reduction of poverty in the country has been uneven. For example, extreme poverty in rural areas (18%) is six times higher than in the 13 largest metropolitan areas in the country (2.7%).⁸ Indigenous and Afro-Colombian communities, alongside population affected by the armed conflict, such as the displaced population, suffer the worst poverty.⁹

3 Departamento Administrativo Nacional de Estadística (DANE), *PIB trimestral por rama de actividad económica, IV Trimestre* (Bogotá, 2014).

4 OECD and the United Nations Economic Commission for Latin America and the Caribbean (ECLAC) forecasted an average growth rate of 2-2.5% for the region in 2015. OECD, ECLAC and Development Bank of Latin America, *Latin American Economic Outlook 2015: Education, Skills and Innovation for Development* (Paris: OECD Publishing, 2014).

5 DNP, *Bases del Plan Nacional de Desarrollo 2014-2018: Todos por un Nuevo País* (Bogotá, 2015).

6 DANE, *Pobreza Monetaria y Multidimensional: resultados 2014* (Bogotá, 2015).

7 DANE, *Statistics Bulletin - Mar 2015* (Bogotá, 2015).

8 Ibid.

9 Colombia's population totaled 46.6 million in 2012. About 10% of the population is Afro-Colombian and the share of indigenous people is around 3%.

Employment rates have improved considerably. Between 2002 and 2014, the unemployment rate in Colombia fell from 15.6% to 9.1%.¹⁰ In the first quarter of 2015, the national unemployment rate was 9.8%, with women (13.1%) more likely to be unemployed than men (7.4%).¹¹

However, the size of the informal sector is very high, in part owing to a high tax burden on employers. A 2014 survey, conducted in the 13 largest cities in Colombia, showed that 48.7% of Colombian workers are employed outside the formal sector, which excludes them from several social benefits and services, as well as formal sources of credit. This rate of informal employment is higher in the rural areas (70%), and even more so in the agricultural sector (86%).

Colombia has a high degree of urbanization, with 75% of the population living in urban areas; by 2020 this figure is expected rise to 78%.¹² Since 1997, over 5 million people have been displaced by the armed conflict, and have settled hastily in urban areas, exacerbating urban concentration. This poses economic, social and environmental challenges, particularly since this process has been disorganized, often invading protected areas, or in peripheral areas that lack proper transport infrastructure and basic sanitation services.¹³

2.3 Colombia's Biodiversity and Ecosystems are Under Threat

As one of the world's top seventeen megadiverse countries,¹⁴ Colombia has an exceptional wealth of natural resources and biodiversity in terms of land, fresh water, fisheries, forestry and mineral resources. However, this patrimony is under increasing threat from the economic drive of the extractive industries (both regulated and illegal), extensive livestock farming that pushes the agricultural frontier, input-intensive agriculture, infrastructure development, and unplanned urbanization.

Moreover, the internal armed conflict has restricted the control and adequate management of protected areas for decades. The erosion of the rule of law in rural areas and marginal regions has inhibited measures

to properly address environmentally damaging activities, such as illegal mining, illegal logging and illicit crop cultivation.

While overall carbon dioxide (CO₂) emissions are low and individual emissions per capita are below the world's average,¹⁵ Colombia's greenhouse gas (GHG) emissions are likely to be following an upward trend.¹⁶ The results of the 2010 GHG inventory showed that agriculture and land use change continue to be the largest source of CO₂ emissions (58.2%), followed by energy (31.8%), solid waste (6.1%), and industry (3.8%).¹⁷

In April 2014, the Organisation for Economic Co-operation and Development (OECD) published its first Environmental Performance Review of Colombia, as part of the country's accession process. The review made a series of specific recommendations to bring Colombia closer to OECD best practices, and stressed the need to steer the economy in a more equitable and environmentally sustainable direction. Brief descriptions of the issues in Colombia's environmental context, which are of relevance to this CPF, are described below.

2.3.1 Deforestation and Ecosystems Degradation

Half of Colombia's land area is covered with forests (59 million hectares), making it the third most expansive forested area in Latin America after Brazil and Peru, and the fifth worldwide, in terms of primary forest coverage (8.5 million hectares).¹⁸ This natural capital is under serious threat, mainly due to deforestation caused by expansion of the agricultural frontier, particularly for cattle grazing, infrastructure development, and mining and wood extraction activities.¹⁹ Between 1990 and 2010, Colombia lost 6 million hectares of forest, mostly in the Amazon and Andean regions.²⁰ The rate of deforestation has fallen from 310,000 hectares per year in 2000, to 120,933 hectares per year in 2013, but this rate is still high.²¹ Since

10 DANE, *Statistics Bulletin - Mar 2015* (Bogotá, 2015).

11 DANE, *Mercado Laboral por Sexo - Trimestre enero - marzo de 2015* (Bogotá, 2015).

12 DNP, *Bases del Plan Nacional de Desarrollo 2014-2018: Todos por un Nuevo País* (Bogotá, 2015).

13 OECD, *Better Policies Series - Colombia: Policy Priorities to Boost Productivity and Social Inclusion 2014* (Paris, 2014).

14 These countries are defined as countries hosting the largest numbers of endemic species. United Nations Environment Programme, *Latin America and the Caribbean: Environment Outlook GEO LAC3* (Ciudad de Panamá, 2010).

15 According to the draft INDC for national discussion, based on 2010 GHG data, Colombia only contributes 0.46% of world's total emissions. MADS, *Contribución prevista y determinada a nivel nacional en materia de Cambio Climático* (Bogotá, 2015).

16 To be adjusted when Colombia's Third National Communication to the United Nations Framework Convention on Climate Change is released to the public.

17 Instituto de Hidrología, Meteorología y Estudios Ambientales (IDEAM), *National Biennial Update Report* (Bogotá, 2015).

18 Food and Agriculture Organization of the United Nations, 2010.

19 Helena García Romero, *Deforestación en Colombia: Retos y Perspectivas* (Bogotá: Publicaciones Fedesarrollo, 2014).

20 IDEAM, *Primer Informe Anual sobre Deforestación* (Bogotá, 2014); and MADS, *Informe del Estado del Medio Ambiente y de los Recursos Naturales Renovables* (Bogotá, 2010).

21 Ibid.



deforestation is a dynamic process, new scenarios like peace talks can affect social and economic drivers, making deforestation one of the main challenges for Colombia. Despite efforts by government authorities, illegal logging is prevalent in the country with an estimated 40-50% of all timber harvested illegally, especially in primary forests, which is twice the worldwide trend of 20-25%.²²

Other important ecosystems such as high mountain ecosystems, known as páramos (which supply 70% of the water consumed by the Colombian population),²³ and marshlands are also being threatened by agricultural activities, mining and urbanization.

2.3.2 Inefficient Land Use and Land Degradation

Colombia has one of the highest degrees of land concentration in the world, and despite a succession of land reforms, a more equitable land distribution remains a critical political challenge, with significant

environmental implications.²⁴ A high concentration of land and low property taxes affect land markets, reduce the incentives for productive investments, and lead to low-productivity livestock grazing or to large tracks of land left idle.²⁵ In turn, a large portion of Colombia's land is used for purposes for which it is not best suited for. Cattle grazing, in particular, has become one of the main causes of land degradation and extends across 35 million hectares, when only 15 million are suited for this activity. Similarly, agricultural activities are confined within 5.3 million hectares, when 22.3 million are suited for this purpose.²⁶ This continued depletion of the natural resource base is closely linked to sustained high rates of poverty in rural areas, as it makes those livelihoods less productive, and more vulnerable to increased climate change and natural disasters.²⁷

22 OECD and ECLAC, *OECD Environmental Performance Reviews: Colombia 2014* (Paris: OECD Publishing, 2014).

23 El Gran Libro de los Páramos, http://www.paramo.org/files/El_Gran_Libro_de_los_Paramos.pdf.

24 In 2010, 77.6% of rural property was owned by 13.7 % of the population (Universidad de Los Andes, 2011).

25 Ibid.

26 Ibid.

27 J. Leibovich, GGGI Consultant, *Propuesta de Crecimiento Verde Inclusivo para el sector Agropecuario y Rural en el Plan Nacional de Desarrollo (PND) del Gobierno Nacional (2014–2018)* (Bogotá, 2014).

2.3.3 Unsustainable Use of Water Resources and Contamination

Colombia is rich in fresh water resources, with more than 49,000m³ per capita, well above the average in Latin America and the Caribbean (7,200m³).²⁸ However, the threats to Colombia's water are manifold. There is significant contamination in urban basins, due to rapid population growth and the low coverage of residential and industrial water treatment services, as well as the poor planning and implementation of recycling policies. Only 43% of wastewater is treated before going back to water bodies.²⁹ Another rapidly increasing source of contamination is chemical contamination due to mining activities, particularly mercury.

Rough estimations show that the agricultural sector is responsible for the highest withdrawal of water (82%), in some cases accessed illegally, and often managed inefficiently.³⁰ Water demand is projected to double by 2019, driven by growing agricultural production, particularly for cattle grazing.³¹ Good watershed management has been restricted to areas where strong governance exists, making water supply unreliable to consumers in a large percentage of the municipalities of Colombia.

Since the 1990s, however, progress has been made in improving water and sanitation services, and enforcing the protection of páramos and the river basins, as well as proper waste management from extractive industries.

2.3.4 Poor Air Quality in Urban Centers

Atmospheric pollution in urban centers has risen as a result of higher rates of motorization, and a reduction of the quality and low energy efficiency of the older bus fleet. This has led to greater human exposure to particulate matter and increased the health-related costs from 0.8% of GDP in 2002 to 1.1% in 2009.³²

28 IDEAM, *Estudio Nacional del Agua 2010* (Bogotá, 2010).

29 OECD and ECLAC, *OECD Environmental Performance Reviews: Colombia 2014* (Paris: OECD Publishing, 2014).

30 Ibid.

31 IDEAM, *Estudio Nacional del Agua 2010* (Bogotá, 2010).

32 World Bank, *Strengthening Environmental and Natural Resources Institutions, Study 2: Environmental Health in Colombia – An Economic Assessment of Health Effects* (Washington, D.C., 2012).

Solid particles are primarily generated by the use of fuels, particularly diesel. To confront atmospheric contamination, a policy for the Prevention and Management of Air Contamination was established in 2010. OECD recommends that the implementation of this policy could be more effective if it is complemented with a more comprehensive inventory of national emissions, and upgrades in the network of air quality monitoring. For example, at present, less than half of the environmental authorities in the country have sufficient information to know when air pollution levels merit environmental alerts, and only a few cities have emission inventories.³³

2.3.5 Vulnerability to Climate Change

Colombia is highly vulnerable to the effects of climate change, and has one of the highest rates of natural disasters in Latin America, mostly of floods and landslides. This situation is further aggravated by deforestation, slash-and-burn agriculture, and building of population settlements in areas at risk.³⁴ Inundations and landslides caused by the La Niña event in 2010 and 2011, for example, affected over 3 million people, and the country suffered huge economic losses (2% of the GDP in 2010). The devastating effects forced the country to reconsider the relationship between environmental and economic policies. This catalyst resulted in the consolidation of the National System for Disaster Risk Management, and to Colombia's further commitments toward addressing climate change.

33 OECD and ECLAC, *OECD Environmental Performance Reviews: Colombia 2014* (Paris: OECD Publishing, 2014).

34 There is an average of 600 natural disasters reported every year in Colombia (World Bank, 2014).

Box 2. The Case for Green Growth in Colombia

Colombia has a vast supply of natural resources, a relatively diverse economic base, an increasingly educated labor force, and a more stable and enabling socio-political context. The country is at an important juncture, with valuable opportunities to develop and strengthen growth drivers that promote long-term economic, social and environmental sustainability. Maintaining resource productivity and cost-efficiency, lowering risks and vulnerability, and mitigating the degradation of environmental quality and natural assets, are development objectives that Colombia can prioritize, while improving wealth, social inclusion and environmental quality in the long run.

Safeguarding environmental health and the preservation of the natural resources base, while reducing poverty and increasing social inclusion, is at the forefront of the decisions to be made by Colombia to ensure a greener growth trajectory. Green growth calls for reflection on long-term considerations when making short-term decisions, as well as the assessment of the full value of natural assets, and negative externalities on the environment. A greener growth will improve people's standard of living, especially for the poorer and marginalized groups that are usually most affected by the degraded environmental quality and natural resources base. It also serves as a framework to better understand the trade-offs when choosing development options.

According to OECD, green growth is about:³⁵

- Integrating the natural resource base into the same dynamics and decisions that drive growth;
- Developing ways of creating economic payoffs that more fully reflect the value of the natural capital into the economy;
- Acknowledging that investment in natural capital is an area in which public policy intervention is most needed because market incentives are weak or non-existent;
- Recognizing that innovation is needed to attenuate trade-offs that arise between investing in (depleting) natural capital and raising consumption or investing in other forms of capital.

Integrating these elements into policy is at the heart of green growth.

2.4 Governance is Decentralized and Focused on Peace, Education and Social Equality

The Republic of Colombia is a unitary republic comprising of 1,100 municipalities in 32 departments, and one capital district, Bogotá. As a constitutional democracy, Colombians elect the head of state and members of Congress to serve a four-year period. The most recent popular election took place in October 2015, to elect departmental governors, delegates to departmental assemblies and municipal mayors.

Colombia is one of the most decentralized countries in Latin America.³⁶ The 1991 Constitution cemented a long process of decentralization of governance, by devolving many political, fiscal and administrative powers to departmental and municipal authorities. National public expenditure and revenues have been

progressively decentralized, and departmental and municipal authorities set local taxes to raise their own revenues. Two of the most important channels to transfer funds to local authorities are the Royalty Sharing System and the General Participation System.

The incumbent president, Juan Manuel Santos, from the Social Party of National Unity, was re-elected in May 2014, with 50.9% of votes in a run-off election, extending his presidency until August 2018. The political priorities of the Santos Administration have been reflected in the *National Development Plan 2014–2018: Todos por un Nuevo País* (NDP 2014–2018), which include peace, education and social equality. Peace negotiations with the Revolutionary Armed Forces of Colombia are progressing, and the signature of an agreement is expected in 2016.

35 OECD, *Towards Green Growth* (Paris, 2011).

36 Guillaume Bousquet, Christian Daude and Christine de la Maisonnette, "Fiscal Decentralisation in Colombia: New Evidence Regarding Sustainability, Risk Sharing and "Fiscal Fatigue"" OECD Economics Department Working Paper No. 1202, <http://dx.doi.org/10.1787/5js30tzp18kj-en>.

In May 2013, during the first Santos Administration, OECD invited Colombia to initiate the route for accession to membership status, and shortly thereafter approved a roadmap to guide this process. Over the past two years, OECD committees have been engaged intensively with Colombian authorities, conducting technical reviews of the country's governance, policies and performance, and proposing recommendations to bring Colombia closer to OECD instruments or best practices.³⁷ This collaboration has contributed to the discussion of issues that are now reflected in the NDP 2014–2018, approved by Congress through the Bill 1753 of 2015.

2.4.1 Environmental Governance

The 1991 Constitution and the 1993 Environmental Management Law established a solid framework for modern and decentralized environmental management. The Ministry of Environment and Sustainable Development (MADS) drafts environmental policies and delegates their implementation to 33 Regional Autonomous Corporations (CARs) operating at the regional level throughout the country. As territorial environmental authorities, the CARs play a fundamental role in environmental enforcement and management, but, according to OECD, they often lack adequate planning and implementation capacity, several are underfunded, and their performance is not subject to strict controls.³⁸

More recent institutional developments have taken place in the interest of adopting and implementing the climate change agenda. In 2011, Colombia's National Council for Economic and Social Policy, approved the *Institutional Strategy for the Articulation of Policies and Actions on Climate Change in Colombia*. This policy document includes an institutional strategy, a funding strategy, and the policy basis to develop three main technical strategies: (1) the National Adaptation Plan; (2) the Low Carbon Development Strategy; and (3) the Reducing Emissions from Deforestation and Forest Degradation (REDD)+

Strategy.³⁹ The document has served to provide an institutional framework through which roles and functions of the various government agencies working on climate-related issues have been agreed.

³⁷ For example, see: OECD, *OECD Economic Surveys: Colombia 2015* (Paris: OECD Publishing, 2015); OECD, *Colombia: Policy Priorities for Inclusive Development* (Paris: OECD Publishing, 2015); and OECD and ECLAC, *OECD Environmental Performance Reviews: Colombia 2014* (Paris: OECD Publishing, 2014).

³⁸ Ibid.

³⁹ H. Meirovich, "Development of CONPES 3700 - Institutional Strategy for the Articulation of Policies and Actions on Climate Change in Colombia," Green Growth Best Practices, 2014.

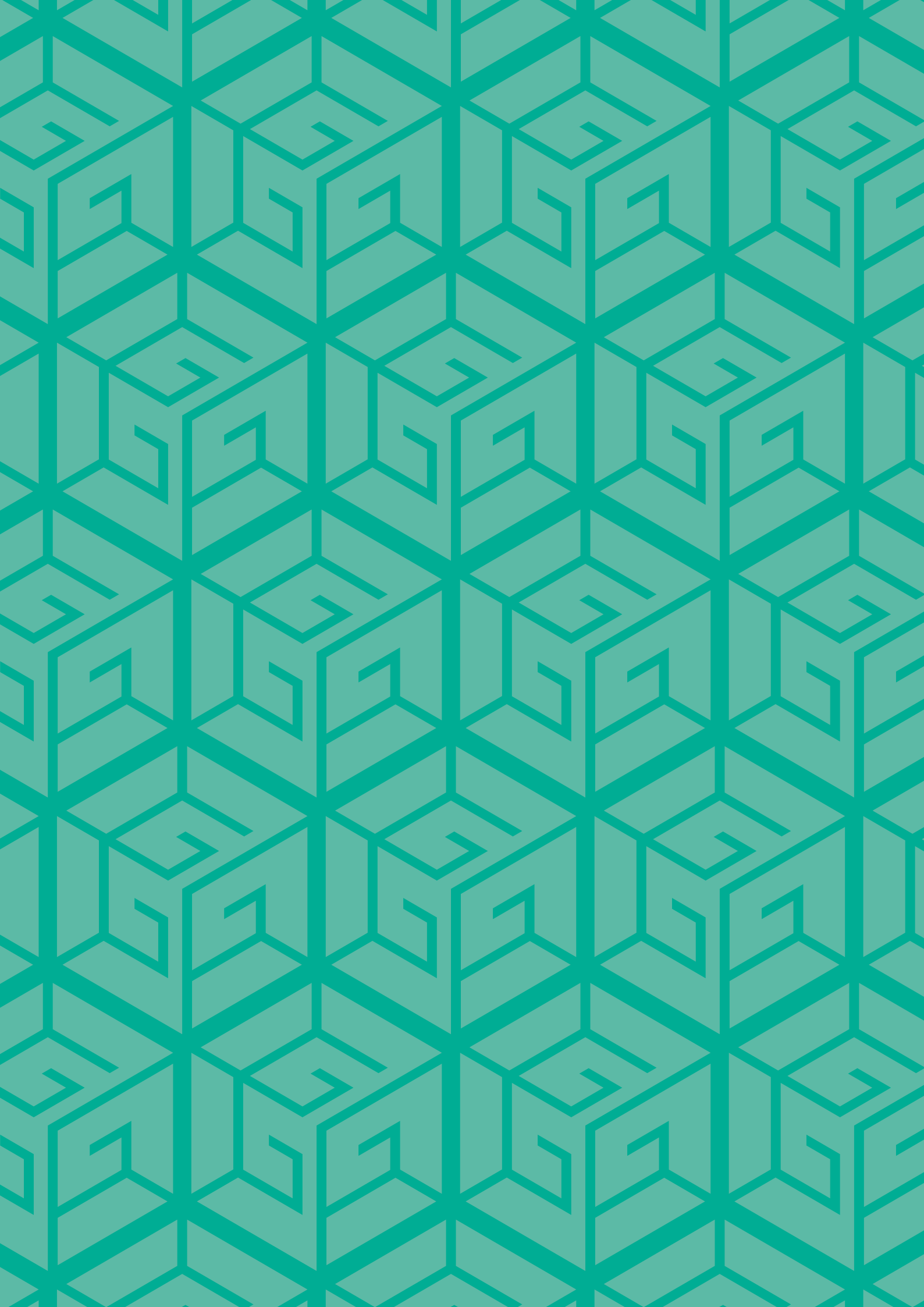




Photo courtesy of Jorge Mahecha

3. National Priorities

The importance of green growth, as an approach to economic and social development, has gained momentum in Colombia. This is not only due to the international commitment made by Colombia as signatory of the OECD's Green Growth Declaration (2009),⁴⁰ but also because of the evidence suggesting that Colombia's natural resources are being depleted at a faster rate than they are being restored. This economic growth model is unsustainable from an environmental standpoint, and contributes to a decline of the economy's productivity and competitiveness. At the same time, there is increasing awareness of the actual costs of pollution (on human health, for example), and the risks of ignoring the economic, productive and social effects of climate change, which disproportionately affect the living conditions of the most vulnerable sections of society.⁴¹

The National Planning Department (DNP) is responsible for leading the formulation and implementation of the country's economic, social and environmental strategic vision. This includes the formulation of Colombia's quadrennial NDPs, the design and evaluation of public policies, and the management and allocation of public expenditures. According to the NDP 2014–2018, a green growth development model is an opportunity to enhance the synergy between economic growth and the environment, and generate wealth and well-being for all Colombians today, and in the future, through increased efficiency, lower environmental impacts and greater resilience to a changing climate.⁴²

To make this vision a reality, a cross-cutting Green Growth Strategy was included in the NDP 2014–2018 to hasten the pace of transformational change in the country's path toward sustainable development. By incorporating green growth targets in several productive sectors, this strategy engages the leadership of the relevant ministries, as well

as other state institutions at national and sub-national levels. This Congressionally-approved strategy positions the discussion on green growth in Colombia beyond the realm of the environmental sector and into a strategic, cross-cutting issue affecting economic growth practices going forward.

The Green Growth Strategy, included in the NDP 2014–2018, outlines three overall objectives, each with their respective strategies:

Objective 1 – Moving toward low-carbon sustainable growth.

- Strategy 1 – Steer economic sectors toward a more efficient, low-carbon path.
- Strategy 2 – Improve sectoral management to reduce the negative impact of economic development on health and the environment.

Objective 2 – Efficient use and protection of natural capital and improvement of environmental quality.

- Strategy 1 – Ensure the sustainable use of marine and land-based natural capital.
- Strategy 2 – Integral territorial planning for sustainable development.
- Strategy 3 – Improve environmental quality, by strengthening the environmental performance of the productive sectors, which in turn improves their competitiveness.
- Strategy 4 – Consolidate a policy framework on climate change, and integrate it to environmental, territorial and sectoral planning.
- Strategy 5 – Strengthen institutions and governance to optimize: (1) the performance of the National Environmental System; (2) education and investigation related to the environment; and (3) the generation of environmental information and knowledge.

40 OECD, "Declaration on Green Growth," adopted at the Meeting of the Council at Ministerial Level on June 25, 2009, <http://www.oecd.org/env/44077822.pdf>; and OECD, "Green Growth in Countries and Territories," <http://www.oecd.org/greengrowth/greengrowthincountriesandterritories.htm>.

41 DNP and GGGI, *Hoja de ruta para la implementación de un modelo de crecimiento verde inclusive compatible con el clima del país* (Bogotá, 2014).

42 DNP, *National Development Plan 2014–2018* (Bogotá, 2015).

Objective 3 – Achieve resilient growth and reduce vulnerability to disaster risks and climate change.

- Strategy 1 – Strengthen the risk management processes: knowledge, reduction and management.
- Strategy 2 – Strengthen development planning with criteria on climate change adaptation.
- Strategy 3 – Reduce existing disaster risks, the manifestation of new risks, and lower the impact of disasters on sectors.

In addition to the objectives defined in the Green Growth Strategy, Colombia has established a roadmap for international cooperation for the period from 2015 to 2018. This roadmap is led by the Presidential Agency for Cooperation (APC), which has established three priorities: (1) conservation and environmental sustainability; (2) sustainable rural development; and (3) peacebuilding. All three are definitive for achieving a long-term view of green growth in Colombia.

The Green Growth Strategy in the NDP 2014-2018 is articulated with other policies for sustainable development, such as the Disaster Risk Management System, the National Climate Change Adaptation Plan, the Low Carbon Development Strategy, the Low Deforestation Development Vision for the Amazon (Amazon Vision), the Sustainable Colombia Initiative (forthcoming), and the INDC. All these policies will be critical in providing input to the design and implementation of a climate-compatible, sustainable growth model that becomes the framework for national economic policy.

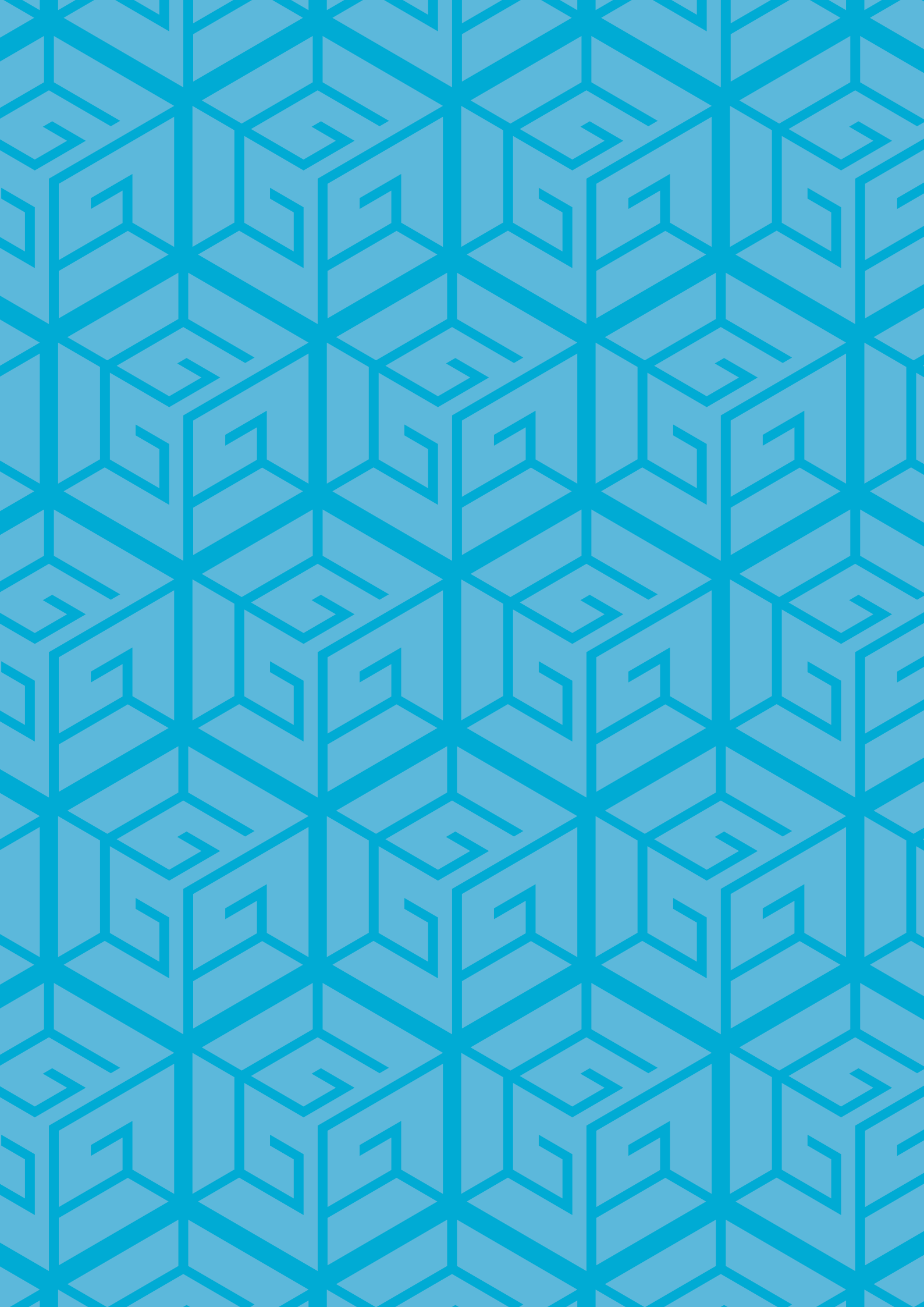
International commitments, with specific targets, have been defined mainly by the INDC in which the Government of Colombia commits to a 20% reduction of GHG emissions from the business-as-usual level by 2030.

This implies reducing total estimated emissions from 335 to 268 million ton CO₂eq, or an estimated reduction in per capita emissions from 5.8 to 4.6 ton CO₂eq/capita by 2030. If international support is provided, this target could be increased to 30%.⁴³

NDPs are adopted every four years; therefore targets proposed are limited to this timeframe. In this sense, the DNP recognizes that the Green Growth Strategy in the current plan is only a first step in a much longer process for the discussion and formulation of a long-term green growth policy with consequent targets. For this purpose, the NDP 2014–2018 includes an article that mandates the government to “define a long-term green growth policy that will determine objectives and targets for sustainable economic growth.”⁴⁴

43 Government of Colombia, “Intended Nationally Determined Contributions,” September 2015, <http://www.minambiente.gov.co/index.php/component/content/article?id=1784:plantilla-cambio-climatico-46#indc-contribuci%C3%B3n-prevista-y-determinada-a-nivel-nacional-indc-colombia>.

44 Ibid., Article 170.





4. GGGI's Engagement in Colombia

GGGI's engagement in Colombia began in 2013, with the purpose of advancing the country's green growth agenda. This engagement is at two levels—national and territorial.

At the national level, GGGI has supported the DNP in the development and implementation of the country's Green Growth Strategy. It has included mainstreaming green growth into the nationwide planning and financing instruments, and within several strategic sectors, namely agriculture, energy, forestry and transport. Underpinning this effort, is Colombia's recent adoption of green growth as a cross-cutting strategy in the NDP 2014–2018, and the implementation of the sectoral green growth targets and environmental policy defined therein.

During 2014, GGGI increased capacity within the DNP to adopt green growth as a planning framework and supported the technical discussions and documentation for the green growth chapter included in the current NDP 2014–2018. It also supported the preparation of sector-level green growth options analysis and target setting in the agriculture, energy and transport sectors.

In GGGI's current biennium (2015-2016), collaboration has focused on: (1) the implementation of sector-level green growth targets, as defined in the NDP 2014–2018 for the three strategic sectors; and (2) the mainstreaming of green growth into a long-term policy with its respective planning and financing instruments.

At the territorial level, GGGI has supported the formulation of the Amazon Vision, a sub-national REDD+ initiative that aims to achieve net zero deforestation by 2020 in Colombia's Amazon region.⁴⁵ GGGI has partnered with MADS, to tackle deforestation drivers and enhance low-carbon development opportunities in the region.

The focus of GGGI's intervention has been on technical assistance in the formulation of the investment plan, and the establishment of the institutional arrangements needed for the implementation of the Amazon Vision.

In 2013, a joint declaration was signed between the governments of Colombia, Germany, Norway and the United Kingdom to support the Amazon Vision as a low-carbon development approach to Colombia's Amazon forests. Potential resources could amount to approximately USD 100 million.

In 2014, the first phase of implementation began. Key government institutions and GGGI worked steadfastly to develop an investment plan that prioritizes activities that tackle the drivers of deforestation in two key departments of the region, Caquetá and Guaviare. This process will be extended to the departments in Putumayo, Guainía, Vaupés and Amazonas in 2017/18. In the last trimester of 2014, GGGI facilitated the agreement between the Government of Colombia and participating donors, outlining the basic conditions and critical steps required to finalize and launch a payment-for-performance scheme under the German Development Bank's REDD+ Early Movers Program. This scheme is expected to enter in operation in early 2016.

During the first months of 2015, GGGI supported the inclusion of the Amazon Vision as a key initiative to meet deforestation targets in the NDP 2014–2018. GGGI also guided the formulation of the draft investment plan to address drivers of deforestation in the Amazon region, particularly in the departments of Caquetá and Guaviare. This plan is now adopted by the key stakeholder entities responsible for its implementation, and will become the foundation for future engagements with donors and other funding partners.

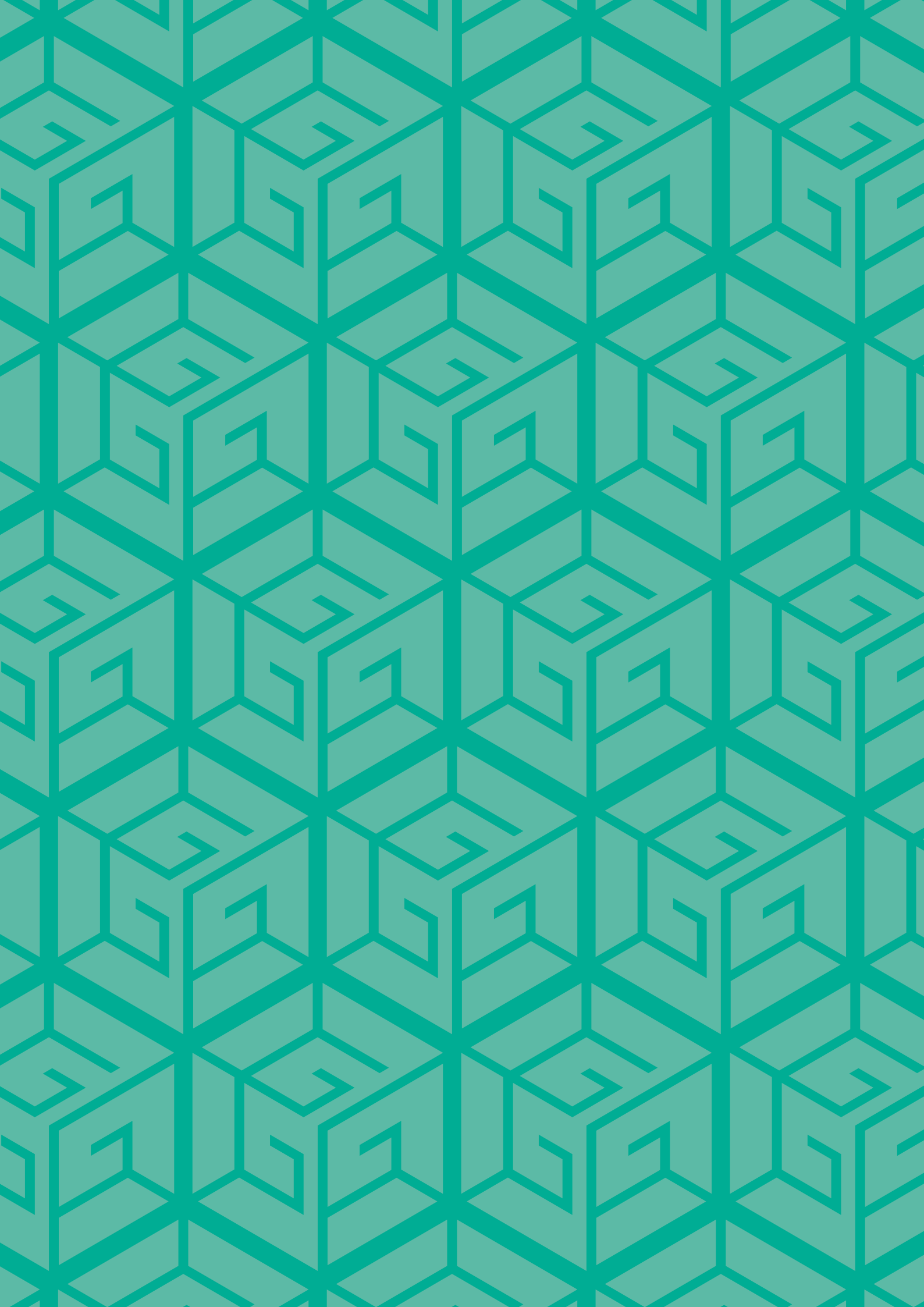
⁴⁵ The REDD+ initiative awards a financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. It complements the earlier UN-REDD agenda, because it goes beyond deforestation and forest degradation, and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks.

GGGI has continued to provide essential technical and strategic guidance for the definition of the institutional arrangements required to operationalize the Amazon Vision.

This initiative makes Colombia a leading country in REDD+ readiness and implementation, and can serve as a source of useful experiences for South-South collaboration. Through this experience, GGGI is adding to the already existent expertise in payment-for-performance schemes in other countries, and in the implementation of REDD+ at the sub-national level.

Additionally, GGGI has identified energy efficiency as a key area to engage with the private sector in, to increase investments in clean energy technologies and energy efficiency. Colombia has been selected to pilot a Risk Mitigants Information Exchange Tool, a user-friendly web-based product that facilitates informed decision-making for project developers contemplating investment opportunities in energy efficiency and renewable energy projects. GGGI is exploring potential areas of collaboration to promote renewable energies and energy efficiency. Both of these efforts will continue in 2016 and should lead to additional activities in the coming years.







5. Country Planning Framework Analysis

5.1 CPF Development Process

This CPF was developed in a series of stages. The work began with a situational analysis of the sectors that GGGI was engaged in during the last two years in Colombia, which identified the main challenges and opportunities for green growth in each sector and the sector-based targets set by the Green Growth Strategy in the NDP 2014-2018. This was followed by a set of bilateral sectoral consultations on possible areas of focus for GGGI's collaboration. The consultations, between GGGI and representatives from five sectors,⁴⁶ were used to adjust the situational analysis, refine definition of issues, and identify common problems. These meetings were also an opportunity to consolidate alliances with the institutions that would be instrumental in implementing Colombia's green growth agenda.

The third stage of the CPF process was a two-day workshop held in May 2015 in Bogotá, which was attended by 30 participants from several ministries and other governmental agencies. Participants were challenged to validate their sector's situational analysis, and then prioritize the areas where they would like to see collaboration with GGGI. The prioritized areas of intervention were subsequently screened by the GGGI country team, selecting those where GGGI has a mandate,⁴⁷ position and capacity to act. Finally, concrete interventions for each area were defined. The combination of careful context analysis, bilateral sectoral consultations, and the validation of the strategic priorities, highlighted several areas of intervention and points of entry for GGGI in Colombia. See Annex A for a summary of the CPF development process.

5.2 Strategic Analysis of Priority Green Growth Challenges

The sectoral analyses and consultations highlighted several common issues confronting a vision for green growth in Colombia. First and foremost, the concept of green growth is relatively new in Colombia, and has yet to be mainstreamed across the governmental and private sectors, and among public opinion. As a result, the level of understanding on how green growth combines environmental sustainability with economic growth, poverty alleviation and social inclusiveness is low. Secondly, there is a tendency toward inertia from decision-makers both in the public and private realms, largely as a result of the struggle between short and long-term objectives, which makes it more difficult to adopt a growth model that requires a long-term perspective. Thirdly, there is a misalignment between the sectoral policies and the country's aspirations on environmental performance, revealing poor inter-sectoral coordination. Finally, there is a general sense of ineffectiveness in the existing measures and instruments that would promote green growth, combined with a lack of adequate information or indicators to improve policy decisions.

On the basis of this structural context and taking into account the inputs from the CPF analysis, the GGGI Colombia team and the government counterparts identified three main challenges where GGGI's comparative advantage can best be applied:

1. Leadership, institutional drive and capacity to advance green growth are weak;
2. Unsustainable policies and practices reduce long-term competitiveness in strategic sectors and territories;
3. Management of the forestry sector is underdeveloped.

⁴⁶ Agriculture, energy, environment, transport and national planning.

⁴⁷ GGGI's mandate is defined in: GGGI, *GGGI Strategic Plan 2015-2020: Accelerating the Transition to a New Model of Growth* (Seoul, 2015).

5.2.1 Leadership, Institutional Drive and Capacity to Advance Green Growth are Weak

Integrating sectoral goals within the Green Growth Strategy in the NDP 2014-2018 has been a significant milestone for Colombia. It has raised the importance of environmental objectives and has mainstreamed green growth in economic development policy and planning.

However, the scope of the current targets defined in the NDP 2014-2018 is too narrow to bring about transformational changes toward a development path that is low-carbon, resilient and sustainable.

Furthermore, as the recent OECD review of Colombia's environmental performance asserts, existing green growth-oriented policies do not constitute a coherent and comprehensive green growth policy framework.⁴⁸ Indeed, the mandate to formulate a long-term green growth policy is within the NDP 2014-2018, and represents a critical task for the Colombian government. The development of this policy will require a sound understanding of the drivers of green growth and the tools to monitor and assess them.

The implementation of the current Green Growth Strategy is in its initial stages, and faces common challenges related to the involvement of high-level decision-makers, and the inter-sectoral coordination and cooperation that green growth inherently calls for. Many existing coordination mechanisms, such as inter-ministerial and inter-sectoral agendas, are not always effective.⁴⁹ Hence, most public policy and investment planning that takes place at the sectoral level are not considering the trade-offs between various interventions and policy options, and their aggregated, long-term impacts. Consideration on how these policies and plans are implemented at the territorial level is also limited, creating a disconnect between what is promised at the national and international levels, and what gets implemented at the local level.

Although Colombia has a carefully designed Environmental Information System, which has seen improvements in the scope and quality of environmental information, its contribution to strategic decision-making has to be enhanced by

strengthening its economic and social components, and consolidating environmental accounting.⁵⁰

Currently, the Colombian government is being supported by the World Bank's "Accounting Wealth and Valuation of Ecosystem Services" initiative. The initiative aims to strengthen institutional capacities in the development of environmental accounts, specifically those related to water, forests and ecosystems; and the integration of information derived from these accounts into decision-making tools. This is a step forward in the right direction, and one which will contribute to long-term green growth planning and implementation.

Nonetheless, the lack of systematic analytical instruments to assess where the country stands in terms of green growth, or how policies are effectively advancing toward it, has to be overcome. The linkage between economic indicators used for macroeconomic policy and green growth indicators should be built, including those that reflect resource productivity, environmental quality, competitiveness and green jobs, to mention some. Credible information and solid analytical evidence on the benefits of green growth options before it has incidence in sector-level strategic decisions and plans is indispensable. Likewise, public and political support, necessary for the adoption of a green growth model, will depend on the availability of this type of evidence.

Any advance toward green growth has to be supported by the alignment of public and private financing toward greener growth options, particularly in areas of clean energy, energy efficiency, sustainable productive systems and sustainable transport, among others. In light of this, efficiency in environmental public spending is an important condition to attain long-term, green growth results. Public expenditure efficiency, alignment with development objectives, and a revision of taxes and subsidies to discourage negative externalities, is a solid foundation for a greener growth development framework. This will require adjustments in instruments such as territorial transfers, compensation mechanisms and public investment allocations.

Some key instruments to align public financing with green growth objectives include: standards and

48 OECD and ECLAC, *OECD Environmental Performance Reviews: Colombia 2014* (Paris: OECD Publishing, 2014).

49 Ibid.

50 Ibid.



technologies selected in infrastructure investment projects, green growth criteria in public investment projects, and the coordination of environmental investment with other mechanisms of public expenditure.⁵¹ Other instruments for public investment allocation, such as the Environmental Compensation Fund, the Compensation for the Loss of Biodiversity Fund, and the General Royalties System, face challenges in prioritization, efficiency and results monitoring. To advance toward a greener growth, these instruments will have to be improved.

The Colombian government is already promoting inter-sectoral coordination through a National System for Climate Change (SISCLIMA). Led by the DNP, this system articulates ten ministries at the technical and political level, to provide guidance on the implementation and evaluation of policies, plans and programs related to climate change. Within the SISCLIMA, a Financial Management Committee is responsible for guiding the development of a national

financial strategy for climate change, including financial strategies developed at national, sectoral and regional levels. This effort will help optimize the use of international and national climate funds to address national mitigation and adaptation priorities. It will also help leverage traditional financing toward green growth goals.

Furthermore, Colombia is currently one of the recipient countries of the Climate Finance Readiness Project financed by the Government of Germany and implemented by the United Nations Development Programme, United Nations Environment Programme and World Resources Institute. This project focuses on: (1) strengthening national capacities; (2) financing information and monitoring; (3) project development; and (4) capacity building for financial institutions. As a result of this process, Colombia would be enabled to access international funding through performance-based financing, as well as through international financing institutions such as the Green Climate Fund.

51 Ibid.

5.2.2 Unsustainable Policies and Practices Reduce Long-term Competitiveness in Strategic Sectors and Territories

In the process of mainstreaming green growth in Colombia, it is essential to involve the sectors that are strategic to the economy. The primary areas of intervention that GGGI and government counterparts have prioritized during the CPF development process are within the agriculture, energy and transport sectors.⁵² A fourth sector, namely forestry, will also be addressed.

Transport

The transport sector is one of the most strategic in the economy, because of its impact on most productive activities. Moreover, this sector is fundamental in Colombia's Low Carbon Development Strategy, since it is the largest consumer of energy, and is responsible for 12% of the total GHG emissions⁵³ of the country. There are two areas in this sector where interventions from a green growth perspective are important: freight logistics and urban mobility.

Freight Logistics – Colombia's road network infrastructure is insufficient to meet the country's needs, and is highly vulnerable to extreme weather associated with climate change.⁵⁴ Despite these shortcomings, a growing percentage of the country's freight is transported by road (70% of total volume). This trend is unsustainable, given that road freight transport is expensive, a sizeable energy consumer, and an important source of Colombia's GHG emissions.⁵⁵ Indeed, the cost of Colombia's domestic freight transport is among the highest in the world, which has significant impact on productivity and competitiveness, particularly in export-oriented sectors.⁵⁶

52 GGGI's thematic areas are: Energy, Green Cities, Land Use and Water.

53 Amounting to 20 million tons of CO₂ equivalent in 2009. D. Hidalgo, GGGI Consultant, *Crecimiento Verde Inclusivo en el sector del Transporte en Colombia* (Bogotá, 2014).

54 For example, damages to transport infrastructure experienced during the La Niña event in 2010-2011 represented losses of 0.8% of GDP. Ibid.

55 In 2009, road freight transport was responsible for 90% of the transport sector's GHG emissions, and consumed 35% of oil-derived products (transport fuels). Ibid.

56 OECD and ECLAC, *OECD Environmental Performance Reviews: Colombia 2014* (Paris: OECD Publishing, 2014).

To address these challenges, the Colombian government has a number of initiatives to modernize transport logistics, eliminate bottlenecks and adopt multimodal transport systems. This includes increasing investment in the transport infrastructure, but no longer prioritizing shorter distances and higher speeds. Instead, the focus is on interventions that have lower environmental impact, and higher energy and cost efficiency. These ambitions are included in the NDP 2014–2018, and are articulated with instruments such as the National Logistics Plan, the Multimodal Transport Plan, and the restoration of navigability of the Magdalena River.

Urban Mobility – Recent trends in transport foresee a rise in demand for freight and passenger transport, between 3% and 4% per year. Private vehicle usage, particularly motorcycle use, is expected to rise by more than 10% per year. While 50% of journeys occur on public transport, this percentage is falling as a result of the significant rise in motorcycle journeys (212% increase between 2000 and 2010).⁵⁷ Given the concentration of vehicles in urban areas, it is estimated that almost half of the total GHG emissions come from urban areas, and these would rise substantially with higher levels of motorization. There is a social dimension to this in that Colombia has seen an increase in mortality rate due to traffic accidents by 1% per year between 2004 and 2013.⁵⁸

To respond to the pressures of motorization, and address the ensuing rise in congestion, contamination and accidents, the government is providing financial and technical assistance at national and sub-national levels, to modernize and improve public transport with intelligent transport systems to increase efficiency. It is also promoting the participation of sustainable modes of organized transportation that facilitates public, low-cost mobilization options. In practice, city authorities are finding that there are institutional and financial complications when implementing these types of service provisions, which can only be addressed if the entities and private companies responsible for managing logistical and contractual operations are technically and administratively strong.

57 D. Hidalgo, GGGI Consultant, *Crecimiento Verde Inclusivo en el sector del Transporte en Colombia* (Bogotá, 2014).

58 Instituto de Medicina Legal y Ciencias Forenses, *Comportamiento de muertes por accidentes de transporte 2013* (Bogotá, 2013).

Energy

The energy mix in Colombia is comparatively “green”, with hydropower accounting for 67% of all electric energy in 2013. Yet, this also makes Colombia more vulnerable to the effects of climate change. This vulnerability could lead to the adoption of coal-based energy sources that are more reliable and relatively cheap, but more carbon intensive.

Based on the registry for energy supply projects by September 2014, 88.7% are hydropower based, followed by 7.8% thermal based. This gives the impression that the diversification of Colombia’s energy sources under a “business-as-usual” scenario is likely to create a more carbon-intensive energy mix in the long run.⁵⁹ The NDP 2014–2018 highlights the strategic need to diversify the country’s energy mix, and proposes the evaluation of mechanisms to encourage investment in technological alternatives to reach a more reliable balance of energy sources. Furthermore, these initiatives will take into account OECD’s recommendations to integrate low-carbon intensity options, such as renewable energy sources, which has the potential to grow considerably in Colombia. In line with the proposed SDG7, the NDP 2014–2018 includes the target of ensuring access to electrical energy for all by 2018.⁶⁰

During the period from 2010 to 2025, overall energy consumption is expected to rise by 2.3% per year,⁶¹ slightly lower than the annual GDP growth rate. However, it is estimated that only 40% of the energy produced is used, with nearly 60% of energy losses, equivalent to USD 5.2 billion. In 2014, Colombia’s demand for electric energy grew at its fastest rate in the last decade (4.4%), consuming 63,571 GWh. The highest increase in energy demand came from the regulated market (residential and small business sectors), with a 5% increase. Electric energy demand is primarily coming from the residential (46%), industrial (30%) and commercial (23%) sectors. Based on potential energy consumption scenarios defined by the

Mining and Energy Planning Unit (UPME), a reduction of 8% in electricity could be achieved by 2020.⁶²

The government has promoted policies, including tax incentives that favor energy efficiency. These efforts are complemented with international cooperation funds from the United Nations Industrial Development Organization, the United States Agency for International Development and the World Bank. Private financing is also available for the same purpose.

Despite the availability of funds and lines of credit to improve energy efficiency, businesses are not using them to the extent expected. This is largely because energy efficiency is not considered part of the “core business model” of companies. Energy efficiency is seen as an operational issue, and not a strategic issue or a key factor for competitiveness and rise in profits. For this reason, it is not a priority at the management level. In contrast, more attention is given to the issue of energy tariffs. These barriers from the private sector are exacerbated by the lack of technical capacity to assess, gauge and structure energy efficiency projects, both in the public and private sectors. Competencies such as the evaluation of projects, risk assessments, process engineering and ISO50001 regulations, measure of carbon footprint, and cost-benefit analysis, are neither widespread nor strong in companies or institutions. This capacity gap prevents energy efficiency projects from reaching sound bankable stages, which in turn makes financing more limited.

Non-conventional renewable energy (NCRE) sources only amount to 4.72% of renewable energy in Colombia, despite a reduction in the cost of NCRE technologies worldwide, and a clear potential for growth in this area. NCRE sources are expected to play a role in the ambition to provide electricity to 100% of the country by 2018.⁶³ NCRE sources account for 20% of electricity generated in non-interconnected zones, and the rest comes from diesel generators or small hydropower plants. The government decreed Law 1715 in 2014, to increase the use of NCRE, improve energy efficiency, reduce GHG emissions

59 J. Rodríguez, GGGI Consultant, *Propuesta de Crecimiento Verde Inclusivo para el sector de energía eléctrica en el Plan Nacional de Desarrollo* (Bogotá, 2014).

60 The SDG7 is: “Ensure access to affordable, reliable, sustainable and modern energy for all,” and the goal of the NDP 2014–2018 is “Electrical Energy for All” (page 560).

61 UPME, *Plan Energético Nacional 2006–2025: Contexto y Estrategias* (2007); and UPME, *Plan Energético Nacional: Ideario Energético 2050* (Bogotá, 2015).

62 UPME, *Proyección de Demanda de Energía Eléctrica y Potencia Máxima en Colombia* (Bogotá, 2015), http://www.siel.gov.co/siel/documentos/documentacion/Demanda/UPME_Proyeccion_demanda_energia_electrica_Marzo2015.pdf.

63 At present, 94% of the country has access to electricity as part of the National Interconnected System, and 1.76% lies in non-interconnected zones. J. Rodríguez, GGGI Consultant, *Propuesta de Crecimiento Verde Inclusivo para el sector de energía eléctrica en el Plan Nacional de Desarrollo* (Bogotá, 2014); and UPME, *Proyección de Demanda de Energía Eléctrica y Potencia Máxima en Colombia* (Bogotá, 2015), http://www.siel.gov.co/siel/documentos/documentacion/Demanda/UPME_Proyeccion_demanda_energia_electrica_Marzo2015.pdf.

and improve the reliability of energy supply. Some of the instruments proposed by this law include: (1) the establishment of the Fund for Non-conventional Sources of Energy and Energy Efficiency; and (2) the promotion of public-private initiatives for the development and management of programs and projects to encourage energy efficiency.⁶⁴

Agriculture

According to the Rural Mission, which serves as a think tank on rural development under the leadership of the DNP, Colombia's poverty gap between the urban and rural areas has grown in the last decade.

Rural poverty is partially explained by the low levels of income generation from agricultural activities, which is reflected in the poor performance of this sector in Colombia.⁶⁵ In the last 15 years, the agricultural sector has grown on average by 2.5% per year, which is far below the growth rates of the economy as a whole (4.5%), and is 2.5 times lower than in other countries in the region such, as Peru and Brazil.⁶⁶ The low-income generating activities, social exclusion, displacement and violence have encouraged migration from rural to urban areas, and a noteworthy migration of settlers to regions in the agricultural frontier with natural forests.

The misalignment between land suitability and its actual use perpetuates low levels of productivity and efficiency, evidenced by the excessive use of fertilizers, agrochemicals and water. If left unchecked, these trends will result in increased GHG emissions from agricultural activities, continued deforestation of natural forests, and expanded low productivity cattle grazing that is degrading the environment.

Extensive cattle grazing is not only low in productivity (4.5 liters of milk/cow/day, compared with 13 liters in Argentina, or 25 liters in the USA), it is also one of the main contributing factors to Colombia's degradation and deforestation of land, GHG emissions, and contamination of water. The unsustainable, extensive cattle grazing

practices in Colombia have the following environmental impacts:⁶⁷ (1) high GHG emissions and biodiversity loss due to slash and burn deforestation and clearing of land; (2) chemical fertilization and use of pesticides; (3) organic and chemical contamination of water; and (4) transformation of land and water biomes (such as lakes and wetlands), with subsequent loss of natural ecosystems; among others.

Tax incentives and government subsidies tend to support the concentration of ownership of land, even if it is underutilized, which gives way to market inefficiencies and increased inequalities. In this sense, the adjustment of the financial incentives that encourage extensive cattle grazing can stimulate more intensive, low-carbon and sustainable practices.

The primary effort underway to address this threat is the Colombian Sustainable Livestock Project. This is an initiative of the Colombian Federation of Cattle Ranchers (FEDEGAN), Center for Research on Sustainable Agricultural Production Systems (CIPAV), Fund for Environmental Action and Childhood, and Nature Conservancy. The project is financed with contributions from the Global Environment Fund and the United Kingdom, and administered by the World Bank. This project is providing piloting experience to improve the livestock production business through friendly environmental practices, and integrating silvopastoral systems and conservation of native forest trees on the farm. Lessons learned from this experience will inform and guide further actions toward the formulation of bankable projects that would lead to the scale up of sustainable cattle ranching practices. These practices would promote sustainable rural development, increase farmers' income and mitigate current environmental impacts.

The agricultural sector receives significant government support, but financial incentives to minimize environmental impacts are lacking. Support from the Ministry of Agriculture and Rural Development includes access to special lines of credit, capital subsidies (e.g., the Incentive for Rural Capitalization that covers up to 40% of credit payments by small farmers), and subsidies for agricultural insurance and irrigation. Many of these mechanisms of support are channeled through the Agricultural Sector Finance Fund, and are intended to increase productivity and incomes for

64 UPME, *Plan Indicativo de Expansión De Cobertura Eléctrica 2013 - 2017* (Bogotá, 2014); and Law 1715, May 13, 2014.

65 DNP, "Misión para la Transformación del Campo Colombiano," <https://www.dnp.gov.co/programas/agricultura/Paginas/mision-para-la-transformacion-del-campo-colombiano.aspx>.

66 OECD, *Better Policies Series - Colombia: Policy Priorities to Boost Productivity and Social Inclusion 2014* (Bogotá, 2014).

67 Ibid.

agricultural activities, but do not take into account their environmental impacts.⁶⁸ Uptake of these credit lines and financial incentives, however, continues to be low and concentrated in already better-off areas. On the other hand, a number of implicit subsidies increase environmental pressure, such as is the case for water tariffs and fertilizer prices. As a consequence, and in light of the OECD's recommendations on this issue, there is an important opportunity to optimize agricultural subsidies to ensure that they have fewer negative environmental impacts.⁶⁹

5.2.3 Management of the Forestry Sector is Underdeveloped

In Colombia, about 55% of its land is covered by natural forests, yet most of these are not available for commercial development given the poor infrastructure conditions and sector development. As a result, the participation of legal timber and non-timber forest products in the overall economy remains miniscule. Yet, illegal timber has been estimated at roughly 40-50% of the total timber consumed nationally.⁷⁰

Although deforestation rates have declined in the past fifteen years, they continue to be high. There is also the risk that they deforestation rate will increase again. The country's Amazon region holds the largest deforestation hotspots, and if current trends continue, 1.8 million hectares of additional forest would be lost in the Amazon region—an average of 85,000 hectares per year.⁷¹

On the other hand, although Colombia is a net exporter of wood and wood products, current timber plantations in the country amount to a total of 477,000 hectares, when potentially, 17 million hectares is available for commercial forestry.⁷² Between 2000 and 2008, silviculture and the extraction of wood contributed only 2.26% to the agricultural sector's GDP, and 0.21% to national GDP. According to the World Bank, between

2004 and 2013, forestry rents stayed unchanged at 0.3% of GDP, while neighboring Brazil's were 1.5% of GDP in 2013.⁷³

Both deforestation, and the untapped development of sustainably used timber and non-timber forest products, are associated with institutional and policy-related weaknesses that prevent the effective management and protection of the country's forestry potential, both at national and sub-national levels. These include:

- The distribution of critical responsibilities across several authorities that are not effectively coordinated and do not share a common vision of the sector;⁷⁴
- Poor performance control and promotion functions at the sub-national level by the CARs and local authorities;
- Ineffectiveness of the sector's key economic instruments (e.g., the Forestry Incentive Certificate) to promote reforestation and forestry development;
- Lack of adequate integration of forest planning and management instruments.

Furthermore, the infrastructure and technical capacity of the timber value chain is precarious. Roads, mills and processing facilities are inadequate and scarce, and technical and business competencies in the sector are rather limited. This substantially limits the productivity and market competitiveness of these products. These and other factors have resulted in a limited advancement in the implementation of the National Forest Development Plan (NFDP) and other related forest policies for the promotion of a forest-based economy.⁷⁵

Colombia is an Early Mover of Reduced Deforestation and Degradation, and is advancing in the formulation and early implementation of its REDD+ strategy. But the enabling conditions and institutional capacities are still limited, and thus, the financing going through REDD+ schemes to help curb deforestation rates is also limited.

68 García Romero y Calderón Etter, 2013; and OECD and ECLAC, *OECD Environmental Performance Reviews: Colombia 2014* (Paris: OECD Publishing, 2014).

69 OECD and ECLAC, *OECD Environmental Performance Reviews: Colombia 2014* (Paris: OECD Publishing, 2014).

70 Banco Mundial, *Fortalecimiento de la Gobernabilidad y Aplicación de la Legislación Forestal. Confrontando un Obstáculo Sistémico al Desarrollo Sostenible* (Washington, D.C., 2006).

71 Government of Colombia, *Colombia's Low Deforestation Development Vision for the Amazon (draft)* (Bogotá, 2015).

72 J. Leibovich, GGI Consultant, *Propuesta de Crecimiento Verde Inclusivo para el sector Agropecuario y Rural en el Plan Nacional de Desarrollo (PND) del Gobierno Nacional (2014-2018)* (Bogotá, 2014).

73 IDEAM, *Estudio Nacional del Agua 2010* (Bogotá, 2010); World Bank Data, "Forestry profits (% of GDP)," 2015; and OECD and ECLAC, *OECD Environmental Performance Reviews: Colombia 2014* (Paris: OECD Publishing, 2014).

74 There are three ministries responsible for the forestry sector—MADS, Ministry of Agriculture and Ministry of Commerce.

75 OECD and ECLAC, *OECD Environmental Performance Reviews: Colombia 2014* (Paris: OECD Publishing, 2014).



Photo courtesy of Camilo Ortega P

6. Strategic Response

Evidence of the costs and benefits of greener growth options, both on the ground and at the sector level, are the foundation for accelerating Colombia's transition toward sustainable development. The mandate provided through Article 170 of Law 1753 of the NDP 2014–2018 is a strong step forward in this direction, creating the political and regulatory basis for the advancement toward more ambitious, strategic and long-term green growth objectives.

Extensive in-country consultations with key government counterparts revealed the need to provide tangible results to build a strong case for green growth. This gives GGGI a clear mandate to help position green growth as a framework for decision-making, while leveraging short-term opportunities for long-term competitiveness within strategic sectors. Implementation of programs and investments to strengthen the development of the forestry sector as an engine of growth is paramount if Colombia wants to diversify its economic base to one that relies on the sustainable use of its vast natural wealth.

Colombia has fallen short in taking significant steps toward long-term green growth objectives. This is mainly due to: (1) weak coordination and cooperation among government agencies; (2) lack of capacity to define and follow-through on long-term goals; and (3) inability to translate policy into actionable, financed plans with appropriate implementation and monitoring mechanisms.

Consequently, GGGI's strategic response is to ensure that existing green growth approaches in sectoral and local policies and plans are effectively implemented and monitored, and are using the lessons and evidence to build a stronger case for a cross-cutting, overarching, greener approach to economic development. Furthermore, this programming framework will ensure that Colombia also fulfills its peace building targets, which are very closely aligned with green growth goals and the local agendas that will target reconciliation and reintegration of ex-combatants. This response builds upon the progress and results obtained so far with GGGI's work plan and budget for Colombia since 2013.

Within this context, the CPF for Colombia foresees GGGI's support to the Government of Colombia in its transition toward green growth, by:

- Strengthening the technical capacity, coordination capabilities and political will for long-term, green growth-oriented decision-making and planning;
- Leveraging short-term opportunities for long-term competitiveness within strategic sectors (agriculture, energy and transport) and territories;
- Enhancing the development of forest-based activities as engines of green growth.

These overarching goals will be attained by focusing on the following three outcomes:

- Outcome 1 – The Government of Colombia makes progress in the definition and institutional articulation of a green growth vision, with long-term policies and financing alignment needed for its implementation.
- Outcome 2 – Strategic sectors increase investments generating evidence of the benefits of green growth approaches.
- Outcome 3 – Forestry sector becomes engine of green growth.

6.1 Outcome 1: The Government of Colombia Makes Progress in the Definition and Institutional Articulation of a Green Growth Vision, with Long-term Policies and Financing Alignment Needed for its Implementation

The purpose of this strategic outcome is to build on the progress already made through the inclusion of the cross-cutting Green Growth Strategy in the NDP 2014–2018. GGGI will help the government fulfill its intention to develop a planning framework for long-term economic development in line with green

growth-related policies, such as the Low Carbon Development Strategy, National Adaptation Plan, National REDD+ Strategy and Sustainable Colombia Initiative.⁷⁶

In close collaboration with other agencies supporting related efforts, such as the United Nations Environment Programme, World Bank (through its WAVES program and country program), and OECD, as well as others, GGGI will support the DNP, MADS and other government institutions, to define policy, planning and financial instruments that contribute to the achievement of green growth sectoral objectives in the NDP 2014–2018.

The primary potential beneficiaries of these efforts are both poor rural families and urban dwellers, as they are the hardest hit by the effects of the unsustainable growth path of the current model, such as climate change, air, water and soil pollution, and resource degradation.

GGGI's support will potentially be in the following areas:

- Mainstreaming of green growth criteria and long-term objectives into planning and financing tools and approaches, to ensure that decision-makers align their policies and finances toward these objectives;
- Elaboration of green growth indicators suitable for Colombia, including those that reflect the relationships between resource productivity, environmental sustainability, green jobs and social inclusion;
- Revision of environmental expenditure accounts and public investment instruments, and provision of recommendations for alignment with green growth targets;
- Enhancement of economic instruments to internalize environmental externalities into private sector activities (productive and infrastructure);
- Provision of support in the articulation and dialogue among different government agencies, both at the national level and between the national and local

levels, to help build common understandings of green growth benefits, and overcome trade-offs and other challenges;

- Provision of support in the development of a long-term green growth policy, including the investment plans and institutional arrangements for its implementation.

6.2 Outcome 2: Strategic Sectors Increase Investments Generating Evidence of the Benefits of Green Growth Approaches

This outcome is in line with targets under Objective 1 of the Green Growth Strategy in the NDP 2014–2018 that seek to improve the performance of each sector, with higher levels of competitiveness, lower environmental impacts, and increased focus on poverty reduction and social inclusion.

Green growth approaches in some of these sectors will highly benefit urban populations (transport, energy and housing) and rural ones (sustainable agricultural practices), primarily improving quality of life conditions for segments marginalized from basic services or dependent on natural resources as their main livelihood. These sectoral aspirations are latent opportunities to prepare bankable projects that channel public and private financial resources into pilot initiatives, policies, programs and investments to achieve green growth targets.

Consistent with the sectoral targets in the NDP 2014–2018, GGGI will support the following actions as per demand and means:

- Improvement of the investment criteria for prioritized transport infrastructure investment plans and transport logistics;
- Provision of recommendations for the formulation and implementation of instruments that promote energy efficiency and the reduction of particulate matter emissions in the transport sector;
- Identification of key entry points to remove bottlenecks in the development and financing of energy efficiency projects, mainly in industrial and residential sectors;
- Provision of support in removing barriers and transferring best practices for the adoption of NCRE projects, especially in non-interconnected zones;

⁷⁶ The Sustainable Colombia Initiative is a proposal to leverage funding for rural development, peace building and environmental sustainability that is being advanced with the interest of promoting investments in areas where post-conflict activities will be prioritized. The Initiative is coordinated by APC and facilitated with support from the Inter-American Development Bank. Various ministries are involved in its development.

- Provision of support to improve policy and financing frameworks for sustainable housing, particularly for low-income population;
- Offering of advisory services to enhance economic and financial instruments and policy⁷⁷ for the promotion of sustainable agricultural practices that are socially inclusive and lead to poverty reduction.

For all the three sectors discussed above, GGGI can support the exchange of best practices with other national or local government through the Green Growth Knowledge Platform or Best Practice platforms, as well as other communication channels, in close coordination with the APC and any other official instruments. Exchange of experiences could range from direct inputs to programs such as the Amazon Vision, to overall lessons learned from green growth planning, implementation and financing. These exchanges will be organized in collaboration with GGGI's existing partners, including the World Resources Institute, New Climate Economy, Clinton Foundation, Nature Conservancy, WWF, and others.

6.3 Outcome 3: Forestry Sector Becomes Engine of Green Growth

This outcome is an essential component in the development of a green economy in the medium to long-term in Colombia. Effective management of the forest sector, which includes the sustainable exploitation of timber and non-timber products, as well as its conservation and protection, could position this sector as a potential engine of economic growth and national income, and a source of employment.

The main beneficiaries of an invigorated forestry sector are primarily the inhabitants of rural forested areas, including peasant and indigenous communities, for which forests are their main livelihood, both as subsistence living or as profit-driven enterprises. Other potential beneficiaries are communities that have degraded their forested areas but continue to heavily depend on subsistence-living or low-productivity agriculture.

Building on past and current efforts by agencies such as Conservation International, Food and Agriculture Organization of the United Nations, GIZ, Sinchi Institute, WWF and other national non-governmental organizations working on reduced deforestation and forest-based development, actions could include the following:

- Provision of support to the operationalization and institutionalization of the Amazon Vision;
- Provision of support to the implementation of the National REDD+ Strategy, including other jurisdictional-level projects or international payment-for-performance agreements;
- Review of the progress made on the implementation of the NFDPP and other past forest policies and norms, in order to propose a set of options to overcome the bottlenecks that prevent or limit their implementation;
- Assessment of market flaws, institutional barriers and regulatory weaknesses that restrict the development of forest-based activities and the private sector's engagement in the generation of socio-economic benefits from forests;
- Identification of strategic actions that will contribute to meeting the NFDPP and other related policies within the framework of the NDP 2014–2018;
- Provision of support to the design or revision of a set of economic and financial instruments to promote forestry activities and increased investments in forest-based enterprises;
- Strengthening of forest governance;
- Promotion of projects that will induce ecosystem and forest-based enterprises, leading to increased investments in forested areas.

⁷⁷ These include the Incentive for Rural Capitalization for sustainable agriculture and cattle grazing, the Forestry Incentive Certificate, and Payment for Ecosystem Services schemes.

6.4 Alignment with the GGGI Strategic Plan, SDGs and INDC

6.4.1 Alignment with the GGGI Strategic Plan

In Table 2, the strategic outcomes are mapped against Colombia's strategic objectives in the NDP 2014–2018, and GGGI's thematic priorities and value chain.

Table 2. Alignment with the GGGI strategic areas and the NDP 2014–2018

Strategic Outcomes	NDP 2014–2018 Objectives	GGGI Thematic Priorities	GGGI Value Chain	
1	The Government of Colombia makes progress in the definition and institutional articulation of a green growth vision, with long-term policies and financing alignment needed for its implementation	Article 170: Government has committed to establishing a long-term green growth policy	Cross-cutting	Green impact assessment Sector/Sub-sector strategy and planning
2	Strategic sectors increase investments generating evidence of the benefits of green growth approaches	Quality transport services for all (p.144): National Logistics Plan; Multimodal Transport Plan Electrical energy for all (p. 186): Plan Indicativo de Expansión de Cobertura; Planes de Energización Rural Sostenible	Green Cities (Transport) Energy Land Use	Green impact assessment (green cities) Sector/Sub-sector strategy and planning (energy and land use)
3	Forestry sector becomes engine of green growth	Reduce annual deforestation rate (p.571) through the Amazon Vision, among other policies Colombia's REDD+ strategy	Land Use	Design, financing and implementation (i.e., policy preparation)

6.4.2 Alignment with the SDGs

The Colombia CPF responds to the following SDGs:

- Goal 2 – End hunger, achieve food security and improved nutrition, and promote sustainable agriculture;
- Goal 7 – Ensure access to affordable, reliable, sustainable and modern energy for all;
- Goal 8 – Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all;
- Goal 9 – Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation;
- Goal 11 – Make cities and human settlements inclusive, safe, resilient and sustainable;

- Goal 13 – Take urgent action to combat climate change and its impacts;

- Goal 15 – Sustainably manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity loss.

Outcomes 1 and 2 contribute to the achievement of goals 7, 8, 9, 11 and 13.

- SDG7 (Affordable and Clean Energy): The outcomes address targets related to the expansion of infrastructure and technology uptake to provide clean energy and energy efficiency, and ensure universal access to affordable, reliable and modern energy services. The outcomes are particularly relevant to Target 7.2 on increasing the share of renewable energy within the overall energy mix.

- **SDG8 (Decent Work and Economic Growth):** The CPF aims to integrate green growth as a cross-cutting strategy in the NDP 2014–2018 through the development of green growth instruments in specific sectors. Hence, it is relevant to Target 8.3 – promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small-, and medium-sized enterprises, including through access to financial services.
- **SDG9 (Industry, Innovation and Infrastructure):** The outcomes address Target 9.4 associated with the upgrade of infrastructure and retrofitting of industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes.
- **SDG11 (Sustainable Cities and Communities):** The outcomes will contribute to achieving Target 11.2 on providing access to safe, affordable, accessible and sustainable transport systems for all.
- **SDG13 (Climate Action):** Efforts under outcomes 1 and 2 will primarily contribute to Target 13.2 about integrating climate change measures into national policies, strategies and planning; and Target 13.a on mobilizing financial resources to support mitigation actions in developing countries.
- **SDG15 (Life on Land):** Through the design and implementation of the Amazon Vision, GGGI aims to strengthen institutional capacity of the forestry sector at national and sub-national levels. The outcomes are relevant to the following targets:
 - Target 15.2 – Promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and increase afforestation and reforestation globally;
 - Target 15.9 – Integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts;
 - Target 15.b – Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation.

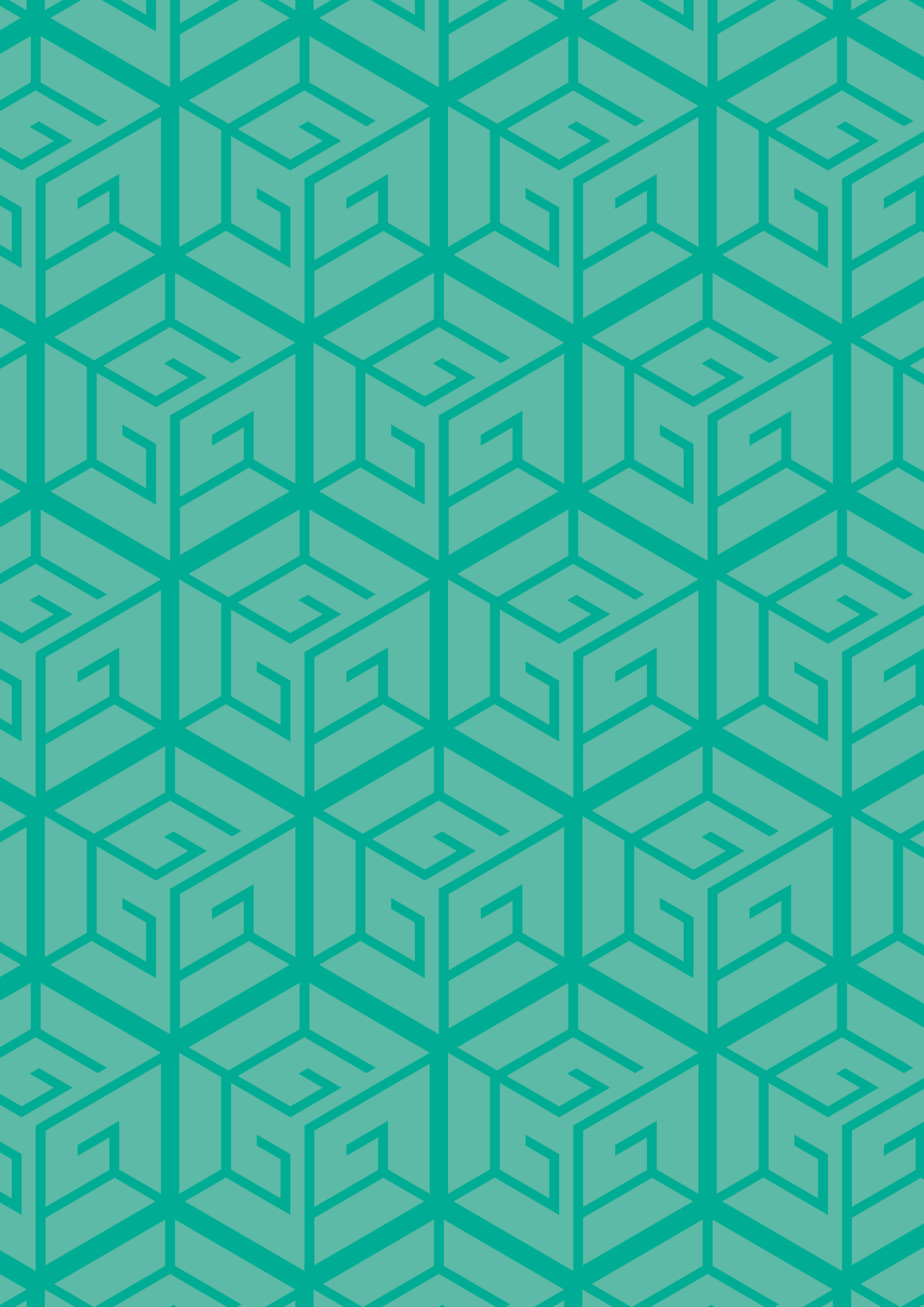
Outcomes 2 and 3 contribute to the achievement of goals 2, 13 and 15.

- **SDG2 (Zero Hunger):** This goal is particularly important in the context of green growth in Colombia. The CPF could be relevant to meet Target 2.3 on doubling agricultural productivity and income levels for small-scale producers, as well as Target 2.4 to ensure the sustainability and resilience of food production systems, while contributing to the maintenance of ecosystems and gradually improve the quality of the land and soil.
- **SDG13 (Climate Action):** Outcome 3 will support resource mobilization and contribute to Target 13.a, through the work under the Amazon Vision, support in the REDD+ strategy, and initiatives with the private sector, among others.

6.4.3 Alignment with Colombia's INDC

The CPF is well aligned with Colombia's INDC, presented to the United Nations Framework Convention on Climate Change in September 2015. Under the Paris Agreement at the United Nations Climate Change Conference COP21, Colombia committed to reduce 20% of its GHG emissions by 2030 based on the trajectory of the business-as-usual scenario, and up to 30% if international support is provided.⁷⁸ Considering that land use change and agriculture combined add up to 58% of the total emissions in the country, this CPF will well support government goals to comply with such intended contributions. The Paris Agreement is expected to be ratified by Colombia by 2018, when the INDC will become Nationally Determined Contribution.

⁷⁸ Government of Colombia, "Intended Nationally Determined Contributions," September 2015, <http://www.minambiente.gov.co/index.php/component/content/article?id=1784:plantilla-cambio-climatico-46#indc-contribuci%C3%B3n-prevista-y-determinada-a-nivel-nacional-indc-colombia>.



Annex A: Consultation Summary

The consultation process for the Colombia CPF included the following steps:

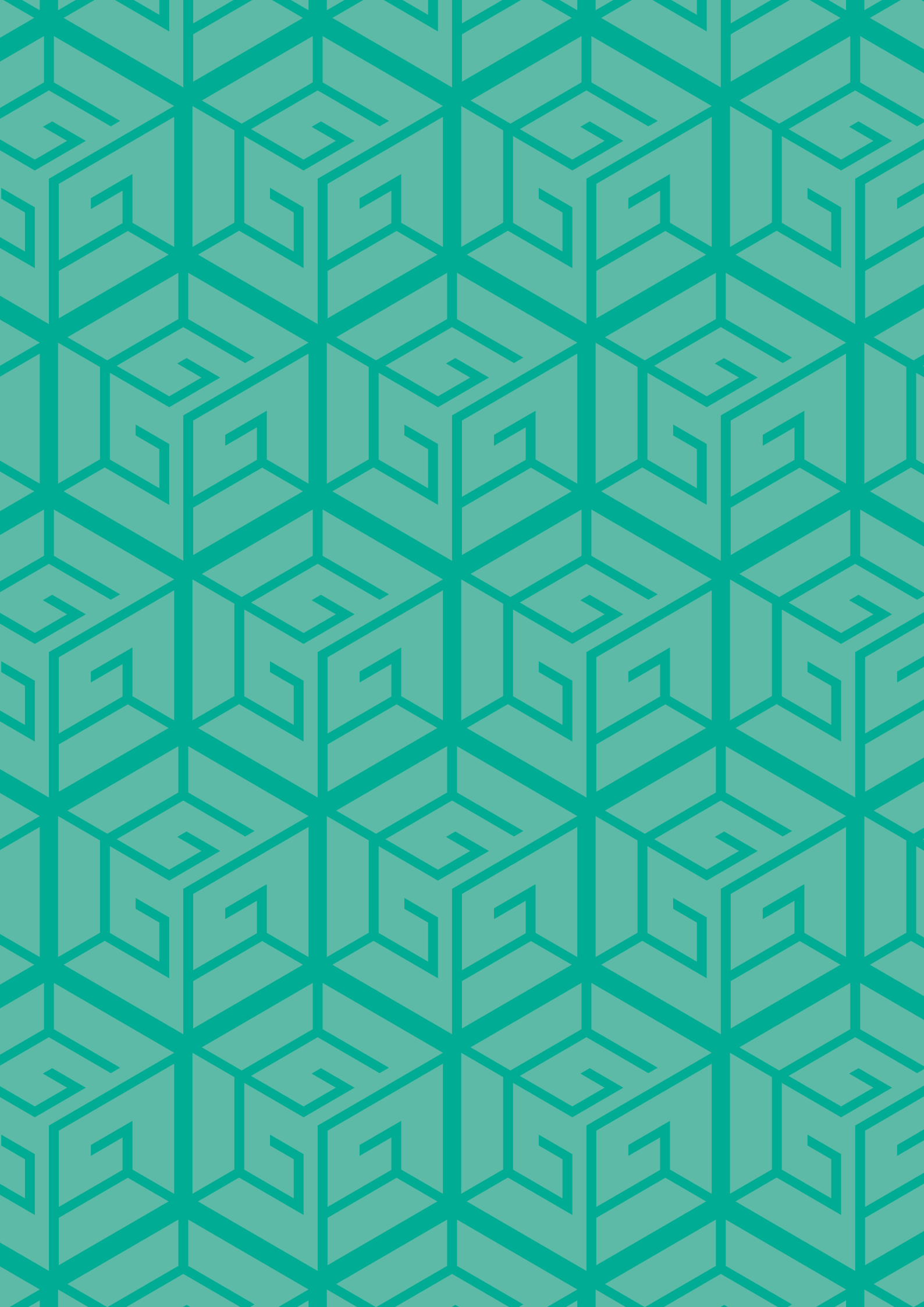
1. Review and analysis of Colombia's *National Development Plan 2014-2018* and its associated green growth targets and policies;
2. Identification of relevant ministries and key stakeholders to carry out bilateral consultations for preliminary priority identification;
3. Bilateral technical consultations with five ministries relevant to green growth (including the National Planning Department and the Foreign Affairs Ministry, to receive their ideas and needs assessment);
4. A consultation workshop hosted by GGGI to brainstorm and receive feedback from proposed CPF priorities, which included approximately 30 participants from relevant line ministries of the national government;
5. High-level bilateral consultations with key ministries to discuss final strategic approach and potential lines of work;
6. Document write up and internal consultations within GGGI's management to receive feedback.

Annex B: Indicators for Green Growth Diagnostic

Theme	Sub-theme	Indicator	Unit	Definition	Source
Resource Efficient Growth	Energy Efficiency	Energy intensity	MJ/USD	Ratio between energy supply and GDP measured at purchasing power parity http://data.worldbank.org/indicator/EG.EGY.PRIM.PP.KD	WB
		Distribution losses of electricity	% of total	Ratio of total electricity generation and losses in transmission between sources of supply and points of distribution and in the distribution to consumers, including pilferage http://data.worldbank.org/indicator/EG.ELC.LOSS.ZS	
	Resource Productivity	Material intensity	Kg of domestic consumption per unit GDP (USD)	Ratio between GDP and the total amount of domestic materials (construction/industrial minerals, metal, ores, fossil fuels and biomass) extracted http://www.materialflows.net/data/datadownload (flow type "Extraction" flow sub-type "Used" reference parameter "Per GDP")	SERI
		Fresh water productivity	Unit GDP (USD) per m ³ of fresh water withdrawal	GDP in constant prices divided by the annual fresh water withdrawal http://data.worldbank.org/indicator/ER.GDP.FWTL.M3.KD	WB
		Municipal solid waste generation intensity	Kg of waste per unit GDP (USD)	Ratio between GDP and municipal solid waste generated http://www.atlas.d-waste.com/ http://data.worldbank.org/indicator/NY.GDP.MKTP.CD	Dwaste WB
		Recycling rate of solid waste	% of total waste generated	Recycling rate of municipal solid waste generated http://www.atlas.d-waste.com/	Dwaste
		Agricultural (land) productivity	USD per hectare of arable land	Ratio between agricultural production and total area of arable land under permanent crops, and under permanent pastures http://faostat3.fao.org/download/Q/QV/E (Gross Production Value constant 2004-2006) http://data.worldbank.org/indicator/AG.LND.AGRI.K2	FAO WB
	Other Productivity Factors	Labor productivity	GDP (1,000 USD) per worker	GDP per worker of labor force (Definition of labor force: ages 15 and older who meet the ILO definition of the economically active population) http://www.ilo.org/global/statistics-and-databases/research-and-databases/kilm/lang--en/index.htm (Indicator: Output per worker (GDP constant 2005 USD))	ILO
		Logistics performance index	1 – 5 (higher the better)	Performance of countries in six areas that capture the most important aspects of the current logistics environment (efficiency of customs clearance process, quality of trade and transport-related infrastructure, ease of arranging competitively priced shipments, quality of logistics services, ability to track and trace consignments, and frequency with which shipments reach the consignee within the scheduled time) http://data.worldbank.org/indicator/LP.LPI.OVRL.XQ http://siteresources.worldbank.org/INTLAC/Resources/ConnectingtoCompete.pdf	WB
		Technological readiness	1 – 7 (higher the better)	The Technological Readiness Index aims to measure the agility with which an economy adopts existing technologies to enhance the productivity of its industries. The index covers the areas of: (1) technological implementation (availability of latest technologies, firm-level technology absorption, FDI and technology transfer); and (2) use of information and communication technologies (Internet users, broadband Internet subscriptions, Internet bandwidth, mobile broadband subscriptions, mobile telephone subscriptions, fixed telephone lines) http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2014-15.pdf	WEF

Theme	Sub-theme	Indicator	Unit	Definition	Source	
Eco-Efficient Growth	Quantity of Natural Assets	Coastal shelf fishing pressure	ton/km ²	The percentage of a country's total catch from trawling and dredging gears (mostly bottom trawls) divided by total area of exclusive economic zone area http://www.epi.yale.edu/files/fisheries_0.xls	EPI	
		Changes in forest cover	Annual % change during 2000-2012	Annual % change in forest cover between 2000 and 2012 (Definition of forest: Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10%, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use) http://faostat3.fao.org/download/R/RL/E	FAO	
		Water stress	0 – 5 (higher the greater competition among users)	Total annual water withdrawals (municipal, industrial, and agricultural) to total renewable supply http://www.wri.org/sites/default/files/aqueduct_country_rankings_010914.pdf	WRI	
		Natural resources depletion	% of GNI	The sum of net forest depletion, energy depletion, and mineral depletion, as a percentage of GNI. Net forest depletion is unit resource rents times the excess of round wood harvest over natural growth. Energy depletion is the ratio of the value of the stock of energy resources to the remaining reserve lifetime (capped at 25 years). It covers coal, crude oil, and natural gas. Mineral depletion is the ratio of the value of the stock of mineral resources to the remaining reserve lifetime (capped at 25 years). It covers tin, gold, lead, zinc, iron, copper, nickel, silver, bauxite, and phosphate http://data.worldbank.org/indicator/NY.ADJ.DRES.GN.ZS	WB	
	Quality of Natural Assets	Changes in the number of engendered species	% change during 2013-2015	Changes in number of endangered species in a country, based on the "IUCN Red List of Threatened Species" http://cmsdocs.s3.amazonaws.com/summarystats/2015-4_Summary_Stats_Page_Documents/2015_4_RL_Stats_Table_5.pdf	IUCN	
		Water quality index	0 – 100 (higher the better)	The Water Quality Index uses three parameters measuring nutrient levels (Dissolved Oxygen, Total Nitrogen, and Total Phosphorus), and two parameters measuring water chemistry (pH and Conductivity) to understand levels of water quality http://www.epi.yale.edu/files/2010epi_data.xls	EPI	
		Trends in soil health	0 – 50 (higher the better)	Trends in Soil Health Index measures: (1) The physical part related to loss of soil mass and structure; and (2) the long term chemical well-being of the soil in terms of nutrients and absence of toxicities built up http://www.fao.org/nr/lada/index.php?option=com_docman&task=doc_download&gid=773&lang=en	FAO	
		Population-weighted exposure to PM _{2.5}	micrograms per m ³	Average exposure to PM _{2.5} or particles smaller than 2.5 micrometers http://www.epi.yale.edu/files/air_quality_0.xls (Sheet name: PM2.5)	EPI	
	Climate Resilient Growth	Climate Change Mitigation	CO ₂ emission trends	Annual growth rate (%)	Annual growth rate in national emissions of CO ₂ over the latest five years available http://data.worldbank.org/indicator/EN.ATM.CO2E.KT	WB
			Carbon Intensity	Tons of CO ₂ per unit GDP (USD)	Amount of CO ₂ emissions (those stemming from the burning of fossil fuels and the manufacture of cement) per unit of gross domestic production http://data.worldbank.org/indicator/NY.GDP.MKTP.CD http://data.worldbank.org/indicator/EN.ATM.CO2E.KT	
Renewable energy production			% of total electricity production	Share of electricity production from renewable energy in total production including geothermal, solar, tides, wind, biomass and biofuels. (excluding hydroelectric) http://data.worldbank.org/indicator/EG.ELC.RNW.X.ZS		
Carbon stock in living forest biomass			million tons/year	Annual changes in carbon stock, which is a quantity of carbon contained in a reservoir or system of living forest biomass that has the capacity to accumulate or release carbon http://www.fao.org/docrep/013/i1757e/i1757e14.pdf	FAO	
Climate Change Adaptation		Climate change exposure	0 – 1 (lower the less exposed)	The degree to which a system is exposed to significant climate change from a biophysical perspective. It is a component of vulnerability independent of socio-economic context. Exposure indicators are projected impacts for the coming decades and are therefore invariant overtime http://index.gain.org/ranking/vulnerability/exposure	NDGAIN	
		Climate change sensitivity	0 – 1 (lower the less sensitive)	The extent to which a country is dependent upon a sector negatively affected by climate hazard, or the proportion of the population particularly susceptible to a climate change hazard. A country's sensitivity can vary over time http://index.gain.org/ranking/vulnerability/sensitivity		
		Adaptive capacity to climate change	0 – 1 (lower the higher adaptive capacity)	The availability of social resources for sector-specific adaptation. In some cases, these capacities reflect sustainable adaptation solutions. In other cases, they reflect capacities to put newer, more sustainable adaptations into place. Adaptive capacity also varies over time http://index.gain.org/ranking/vulnerability/capacity		

Theme	Sub-theme	Indicator		Unit	Definition	Source
Social Inclusive Growth	Quality of Life	Poverty	Poverty headcount ratio at USD 1.90 a day (2011 PPP)	% of population	The percentage of the population living on less than USD 1.90 day http://data.worldbank.org/indicator/SI.POV.DDAY	WB
		Hunger	Prevalence of undernourishment	% of population	The percentage of the population below minimum level of dietary energy consumption (also referred to as prevalence of undernourishment). It shows the percentage of the population whose food intake is insufficient to meet dietary energy requirements continuously http://data.worldbank.org/indicator/SN.ITK.DEFC.ZS	WB
		Health and well-being	Healthy life expectancy at birth, total	years	Average number of years that a person can expect to live in "full health" by taking into account years lived in less than full health due to disease and/or injury. Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity http://apps.who.int/gho/data/view.main.HALEXv	WHO
		Education	Net primary enrolment rate	%	The number of children enrolled in primary school who belong to the age group that officially corresponds to primary schooling, divided by the total population of the same age group http://data.uis.unesco.org/Index.aspx?queryid=145	UNESCO
	Inequality	Gender inequality	Gender Inequality Index (GII)	0 – 1 (higher the greater inequality)	The GII measures gender inequalities in three important aspects of human development: (1) reproductive health, measured by maternal mortality ratio and adolescent birth rates; (2) empowerment, measured by proportion of parliamentary seats occupied by females, and proportion of adult females and males aged 25 years and older with at least some secondary education; and (3) economic status, expressed as labor market participation and measured by labor force participation rate of female and male populations aged 15 years and older http://hdr.undp.org/en/composite/GII	UNDP
		Income inequality	GINI Index	0 – 100 (higher the greater inequality)	The GINI index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution http://data.worldbank.org/indicator/SI.POV.GINI	WB
	Governance	Corruption	Corruption Perception Index (CPI)	0 – 100 (higher the less corrupt)	The CPI scores and ranks countries/territories based on how corrupt a country's public sector is perceived to be. It is a composite index, a combination of surveys and assessments of corruption, collected by a variety of reputable institutions https://www.transparency.org/cpi2015/results	TI
		Public expenditure	Public expenditure on health and education	% of GDP	Public health expenditure consists of recurrent and capital spending from government (central and local) budgets, external borrowings and grants (including donations from international agencies and non-governmental organizations), and social (or compulsory) health insurance funds. Public expenditure on education (current, capital, and transfers) consists of government expenditure for all levels of education, and includes expenditure funded by transfers from international sources to government http://data.worldbank.org/indicator/SH.XPD.PUBL.ZS (Public Health expenditure) http://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS (Government expenditure on education)	WB





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