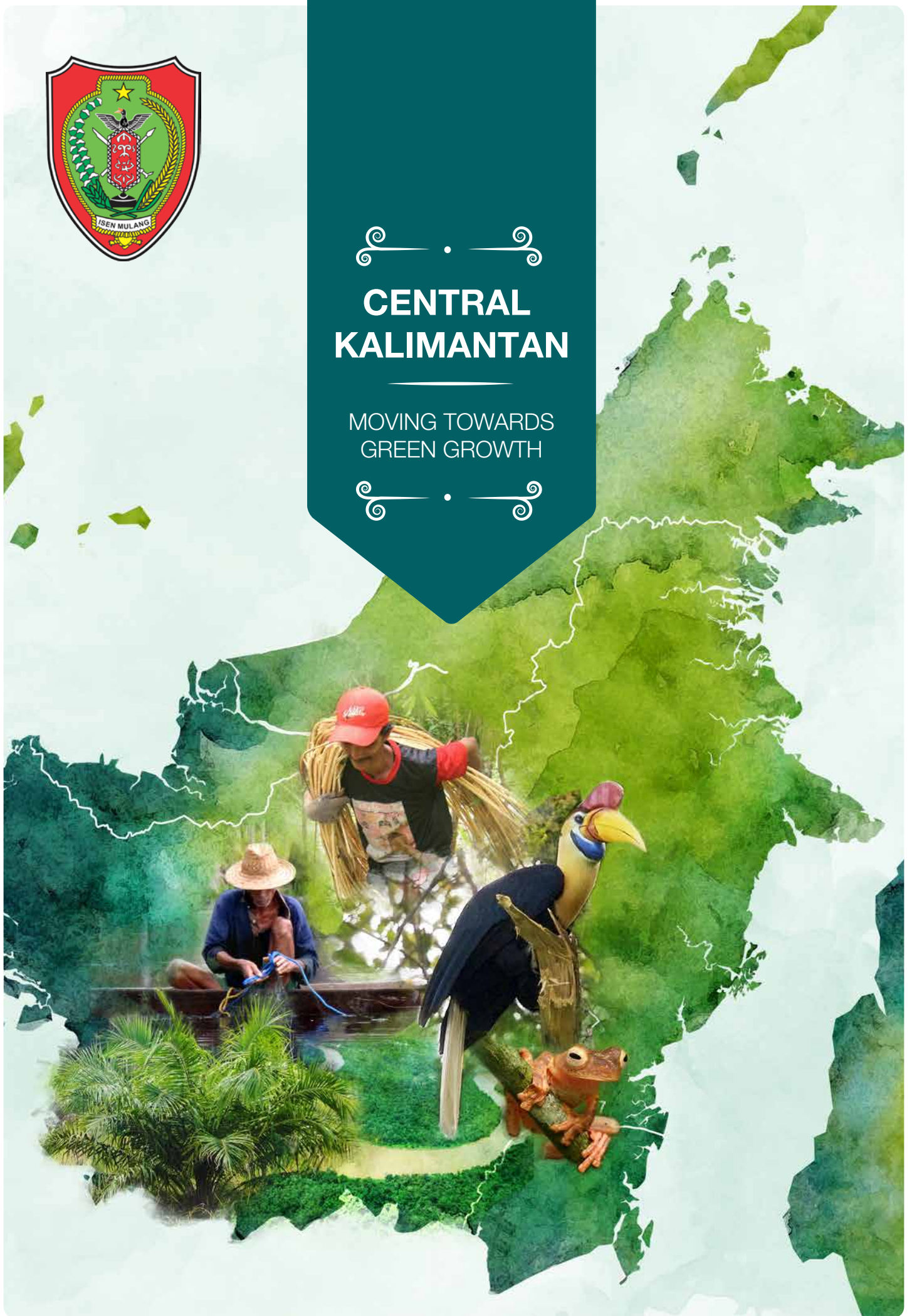




# CENTRAL KALIMANTAN

MOVING TOWARDS  
GREEN GROWTH







# CENTRAL KALIMANTAN

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MOVING TOWARDS  
GREEN GROWTH



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**Arranged by:**

Provincial Government of Central Kalimantan  
Ministry of National Development Planning/Bappenas  
and Global Green Growth Institute

**Designed by:**

Catalyze Communications

**Published in:**

January 2015



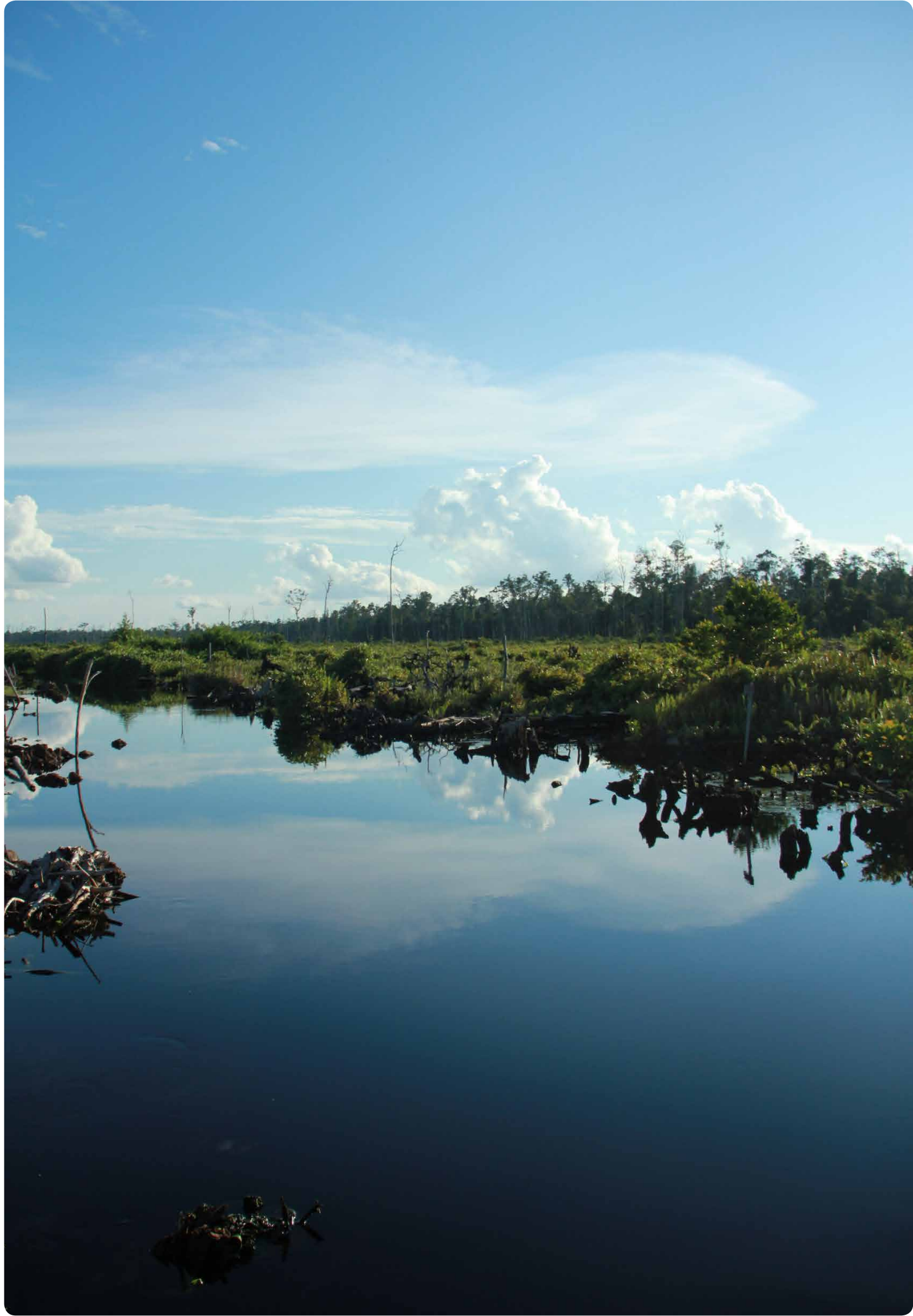




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# CONTENTS

<b>Foreword .....</b>	<b>1</b>
<b>1. Introduction .....</b>	<b>2</b>
<b>2. Overview of Central Kalimantan.....</b>	<b>4</b>
<b>3. Initiatives supporting Green Growth in Central Kalimantan .....</b>	<b>8</b>
Regulating the establishment and operations of palm oil plantations.....	10
Rubber revitalization program and related sectoral initiatives .....	12
Creating forest management units.....	14
Sustainable energy production and use.....	16
Education for Green Growth .....	18
Completing the provincial spatial plan .....	19
Improving land licensing processes .....	21
Supporting climate change actions.....	22
Reducing Emissions From Deforestation And Forest Degradation (REDD+) .....	24
<b>4. Implications for Green Growth .....</b>	<b>26</b>
<b>5. Green Growth in Central Kalimantan's development plans.....</b>	<b>32</b>
<b>6. Conclusions .....</b>	<b>36</b>



# FOREWORD



**Agustin Teras Narang**  
Governor of Central Kalimantan

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*“As a land-based economy, our long-term prosperity relies upon the responsible management of our natural assets.”*

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As Governor of Central Kalimantan, I believe that the long-term economic development of our province depends on balancing the utilization of our natural resources with protection of the environment on which we all depend. We seek to share the benefits of development more equitably among our people and build a greater level of resilience into our economy, society and ecological systems. Achieving these multiple goals, along with our low-carbon development ambition, requires a new kind of economic growth — Green Growth.

We all recognize that some of the trends in our previous rapid growth have been unsustainable both environmentally and economically. We have lost vast areas of natural forest due to high rates of conversion for agriculture, mining and settlements. This development pathway has brought many benefits to the people of Central Kalimantan; however, as a land-based economy, our long-term prosperity relies upon the responsible management of our natural assets.

During my time as Governor, I have recognized this and worked to ensure that the development of Central Kalimantan remains both sustainable and equitable. This document highlights how many of our sectoral and cross-cutting initiatives and processes aim to deliver multiple economic, social and environmental benefits. By examining our progress to date, we also identify areas where further work is needed.

This report examines a range of government-led initiatives and demonstrates that Central Kalimantan is moving towards Green Growth. However, it also highlights the challenges that remain and need to be addressed through collaborative efforts among all concerned stakeholders. I hope that the report can act as a starting point for the province’s next medium-term development plan, which will be the next step in Central Kalimantan’s journey towards sustainable development.

I would like to acknowledge the dedicated work of the public servants of Central Kalimantan, together with that of the multiple international non-governmental and donor agencies supporting efforts in our province. In particular, I would like to thank the Global Green Growth Institute (GGGI) for their support under the Government of Indonesia – GGGI Green Growth Program and, specifically, for their assistance in developing this report. Finally, and most importantly, I would like to recognize the people of Central Kalimantan for playing a critical role in building local, sustainable economies that will deliver Green Growth in the province for the benefit of all its inhabitants.





# 1. Introduction

Traditionally, economic growth refers to positive quantitative changes in the economy, emphasising the importance of market and labour productivity and a rise in Regional Gross Domestic Product (GDP). This focus on Regional GDP and the *quantity*—as opposed to the *quality*—of growth has tended to undervalue other elements of development, such as well-being, environmental quality and social justice.

In contrast, Green Growth is an economic development approach that considers the full range of economic, natural and social values. In particular, Green Growth aims to:



**Ensure long-term, sustained economic growth;**



**Provide equitably-distributed increases in Regional GDP and living standards, and;**



**Avoid and curb greenhouse gas emissions;**



**Value and maintain the natural assets that underpin economic success.**



**Build resilience to future shocks, including unexpected economic, social and environmental events;**

In the context of development planning, a Green Growth approach must be tailored to suit the physio-geographic, socio-economic and cultural context of each region in which it is applied. The systematic integration of Green Growth into planning processes consists of several steps: (1) identification of Green Growth priorities, resources, and constraints; (2) adoption of the best available social, environmental, and economic assessment and modelling tools; (3) selection of reliable data sources and appropriate objectives, targets, and performance indicators, and finally; (4) integration of these steps and tools within national and regional development agendas.

This report explores Central Kalimantan's recent planning and regulatory efforts in key economic sectors—as well as cross-sectoral efforts—in order to identify ways in which these are contributing towards Green Growth. The report considers the relationship between these sectoral and cross-cutting initiatives and processes and the five desired outcomes of Green Growth: sustained economic growth; healthy and productive ecosystems; inclusive and equitable growth; social, economic and environmental resilience; and GHG emission reduction. By exploring whether and how current policies and programs are delivering across economic, social and environmental goals, the report aims to highlight progress to date, while identifying further opportunities and likely challenges to be faced in the future.





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**The remainder of the report is organized into four main chapters.**

#### CHAPTER 2



provides a brief overview of Central Kalimantan, including its economy, physical characteristics and people.

#### CHAPTER 3



presents nine sectoral and cross-cutting initiatives and processes introduced by Central Kalimantan during the past decade, each of which has important implications for Green Growth.

#### CHAPTER 4



defines five outcomes of Green Growth and summarizes the implications of the nine initiatives and processes for each of these outcomes.

#### CHAPTER 5



identifies the Green Growth implications and opportunities for Central Kalimantan's next medium-term development plan (in Indonesian, *Rencana Pembangunan Jangka Menengah Daerah*, RPJMD) for the period 2015 to 2020.





## 2. Overview of Central Kalimantan

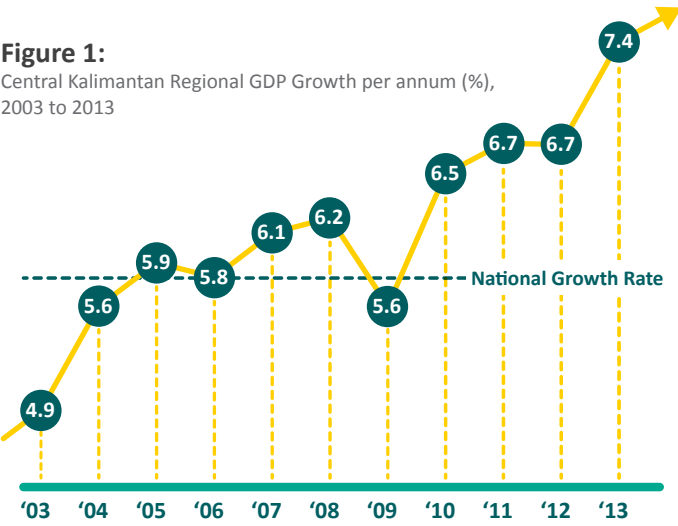
Central Kalimantan's annual provincial Regional Gross Domestic Product (GDP) growth rate has been gradually increasing over the last decade (see Figure 1). The province's 2013 Regional GDP growth of 7.4% is the highest among Kalimantan's five provinces and significantly higher than the national growth rate of 5.8%. Agriculture and mining are the largest and fastest-growing sectors, respectively, together accounting for over a third of provincial Regional GDP (see Figure 2). Palm oil alone contributes approximately 25% of provincial Regional GDP and dominates the plantation agricultural sector. Wood production has been declining in recent years, as natural forest stocks have diminished, and has become a smaller portion of the economy as other sectors have grown.

Over the past decade, the mining sector has grown at an annual rate of 26%; it currently accounts for almost 10% of provincial Regional GDP. Central Kalimantan is rich in minerals including gold, coal, and bauxite. Artisanal gold mining is a long-practiced source of income for both residents and migrants. However, the rapid growth of illegal, alluvial gold mining in recent years has contributed to dangerously high levels of toxic mercury in some rivers. Large coal deposits have been found in the Barito River basin and the upper Kahayan and Kapuas River basins, including deposits of valuable hard coking coal used for steel production. Central Kalimantan is a frontier for coal exploitation and the industry is expected to develop rapidly as mines are opened and transport systems improved.

Contributions to provincial Regional GDP vary greatly among the 14 districts and municipalities, with three districts (Kapuas, Kotawaringin Barat, Kotawaringin Timur) accounting for almost 45% of the provincial economy (see Figure 3), mostly as a result of palm oil and rubber production and processing.

**Figure 1:**

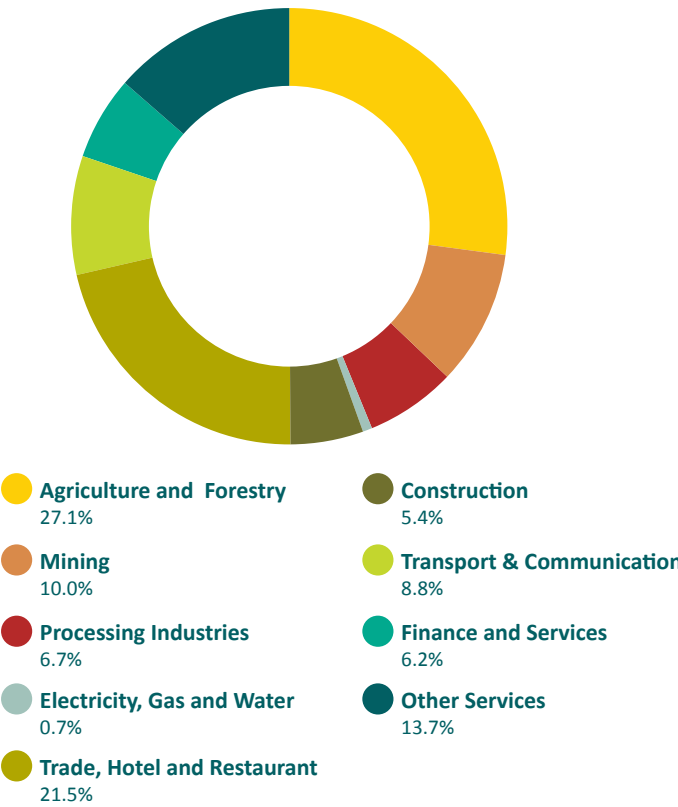
Central Kalimantan Regional GDP Growth per annum (%), 2003 to 2013



Source: Demografi Kalteng 2012, Bureau of Statistics, Central Kalimantan

**Figure 2:**

Sectoral Contributions to Central Kalimantan's Regional GDP, 2013



Source: Bureau of Statistics, Central Kalimantan

<sup>1</sup> Central Kalimantan Chapter of the Bureau of Statistics.

<sup>2</sup> According to February 2014 data from the Central Kalimantan Chapter of the Bureau of Statistics

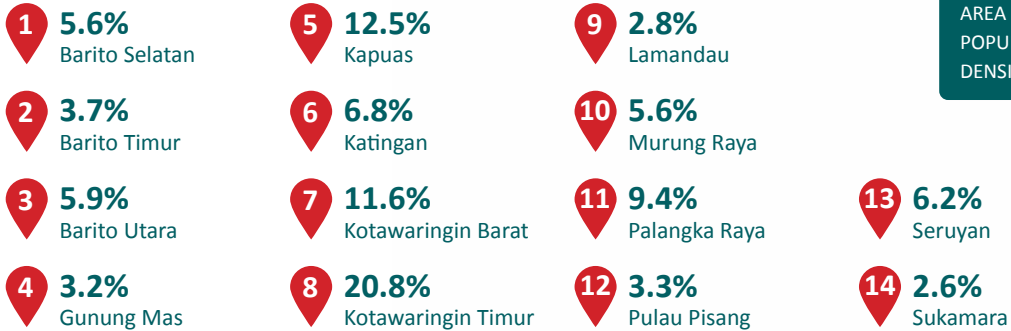
The agricultural sector provides the most jobs in Central Kalimantan, employing 560,594 people or 52.7% of the workforce as of August 2013<sup>1</sup>. About 14.0% of workers are in the service sector, while 13.9% work in trade, hotels and restaurant industry.

In 2013 Central Kalimantan exported USD \$1.4 billion worth of goods outside of Indonesia, a 21.7% increase from 2012. Metal ores (primarily bauxite with some gold and nickel) made up 29.5% of exports, coal 28.8%, rubber and rubber products 15.9%, crude palm oil and related products 14%, and timber and wood products 10.65%<sup>2</sup>. The province's current medium-term development plan (RPJMD 2010-2015) projects that domestic investment will grow from IDR 19.9 trillion in 2010 to IDR 26.7 trillion by 2015.

**Map:**  
Central Kalimantan

**CENTRAL KALIMANTAN**

**Figure 3:**  
District and Municipality Contributions to Provincial Regional GDP (2012\*)



\* Provisional figures

Source: National Land Board of Central Kalimantan Province



Inadequate transportation and logistics infrastructure continues to represent a key constraint to economic development of the province. Rivers remain the primary mode of transport, and most cities, towns, and villages are located close to major rivers and their tributaries. The road network is slowly being expanded despite the difficulty of road construction and maintenance in this landscape of swamps and rivers. The Trans Kalimantan Highway was recently completed and governments at provincial and district levels are investing to further expand and upgrade the road network, which is expected to grow from 1,084 km in 2010 to 1,437 km by 2015, according to the province's medium-term plan (RPJMD 2010-2015). To support transport of goods, especially coal, five major harbours are being constructed and upgraded along the coast of Central Kalimantan and the total number of seaports is expected to double to 20 by 2015. Four new airports are planned to be completed by 2015, adding to the 10 already in operation.



A snapshot view of Central Kalimantan

Central Kalimantan, situated in the southern part of the island of Borneo, is Indonesia's third largest province, covering more than 15 million hectares just south of the equator. The Müller – Schwaner Mountains form the province's border with West and East Kalimantan and are largely forested. Eight major rivers flow across Central Kalimantan from north to south. The middle and lower sections of these river basins undulate through flat terrain with vast areas of sandy soils and peat swamp. The Java Sea coast, forming the province's southern boundary, is a complex of estuaries with tidal and freshwater swamps formed on alluvial sediments. Central Kalimantan experiences moderately high temperatures and significant rainfall throughout the year, with approximately four relatively drier months. In recent decades, occasional lengthy droughts have been associated with El Nino events. Most soils are low in fertility and many are acidic, posing significant challenges for agriculture.

Borneo supports the largest expanses of tropical rainforests in Southeast Asia and is the richest of the Sunda Islands floristically in terms of total species richness and diversity, rivalling the Amazon Basin. The Central Kalimantan province is host to a diverse range of forest habitats, including lowland forests, heath forests, peat swamp forests, mangrove forests, and montane forests, each of which supports a unique assemblage of mammals and birds. The upper and midstream forested landscape of the province are part of a tri-country initiative between Brunei, Indonesia and Malaysia, known as the Heart of Borneo (HoB) Initiative, which acknowledge critical functions of these forests and is aimed to conserve and sustainably manage forested areas. The province is home to the largest population of orangutans in the world. Forests—including logged-over forests and secondary growth—cover 80% of the province, providing important ecosystem services to society and the economy. The central plains and hills were originally heavily forested, but large areas have been degraded as a result of logging and fire and are increasingly being converted to plantation agriculture.

Based on the results of the 2010 population census, Central Kalimantan's 2010 population was approximately 2.2 million, and the average annual population growth rate was 1.8% over the period

2000 to 2010. Population density differs significantly among the districts (see **Map: Central Kalimantan page 5-6**) Indigenous Dayak peoples are the largest set of ethnic groups in the province (37.9%), followed by Banjarese (24.2%), Javanese (18.06%), and various ethnic groups from elsewhere in Indonesia. The Dayak population consists of three major groups divided into a mosaic of linguistic and cultural sub-groups whose livelihood strategies traditionally combined subsistence agriculture, hunting, fishing, gathering of food and medicinal products from the forest, and collection and sale of non-timber forest products such as rattan. People from traditionally rural, agricultural areas have increasingly entered the wage economy in recent decades, first in forestry and more recently in the oil palm sector, mining industry and government service. The Banjarese have a long history as traders in coastal areas. A majority of Javanese and other non-indigenous peoples came to the province in recent times as agricultural workers, including through the Transmigration Program in the 1970s and 80s.

At 6.2%, Central Kalimantan's 2013 poverty rate was the second lowest among the five Kalimantan provinces, after South Kalimantan. The unemployment rate is also low, just above 3% in 2013.



3. Initiatives supporting Green Growth in Central kalimantan

Central Kalimantan's rapid economic growth has come at the expense of losing a substantial portion of the province's natural capital—particularly its upland forests and peat swamp forests—together with the ecosystem goods and services that these areas had been providing. Today, the province remains heavily reliant on agriculture, mining, and timber to drive its formal economy. At the same time, a large proportion of the province's rural population continues to rely on subsistence agriculture and the collection, production and trade of natural products for their livelihoods. Central Kalimantan's natural assets continue to represent an important foundation for the economy, for maintenance of biodiversity and ecosystem services and a basis for future sustainable growth.

A Green Growth approach offers a way for Central Kalimantan to balance the importance of maintaining its natural capital with the need to take advantage of economic opportunities and realize equitable social outcomes. Such an approach would be resource-efficient, would conserve natural habitats and maintain carbon stocks, promote long-term sustainable growth and ensure that all strata of society share in the benefits of growth. A Green Growth approach would support the people of the province as they carefully consider and balance multiple physical, social and economic objectives and targets.

The Government of Central Kalimantan considers Green Growth as a fundamental basis for long-term, sustainable economic development. However, enabling Green Growth requires

challenging the status quo and making difficult choices about the utilisation and protection of forest, land, and other natural resources. Partners from the private sector, civil society and donor agencies are working together to support the government in pursuing a Green Growth vision that is resource efficient, conserves natural habitats, maintains carbon stocks, promotes long-term sustainable growth and ensures that all strata of society can share the benefits of progress.

Central Kalimantan's development vision should be based on the premise that optimizing the province's long-term prospects will involve increasing agricultural productivity, relocating production onto suitable low-carbon lands and sustaining critical ecosystems and carbon stocks as sources of essential environmental services. At the heart of this vision lie parallel ambitions to raise the annual economic growth rate to 7.5%, reduce poverty and unemployment below 2%, and resolve critical land issues that threaten to undermine equitable sharing of benefits.

Since 2005, the Central Kalimantan government has designed and implemented numerous initiatives, policies and regulations related to the economy. Some of these initiatives have focused primarily on enhancing economic growth. Others have done more. They range from actions designed to strengthen key economic sectors while generating positive impacts on sustainability, local economic growth and resilience to cross-sectoral initiatives involving multiple sectors. While not deliberately conceived within the context of a Green Growth

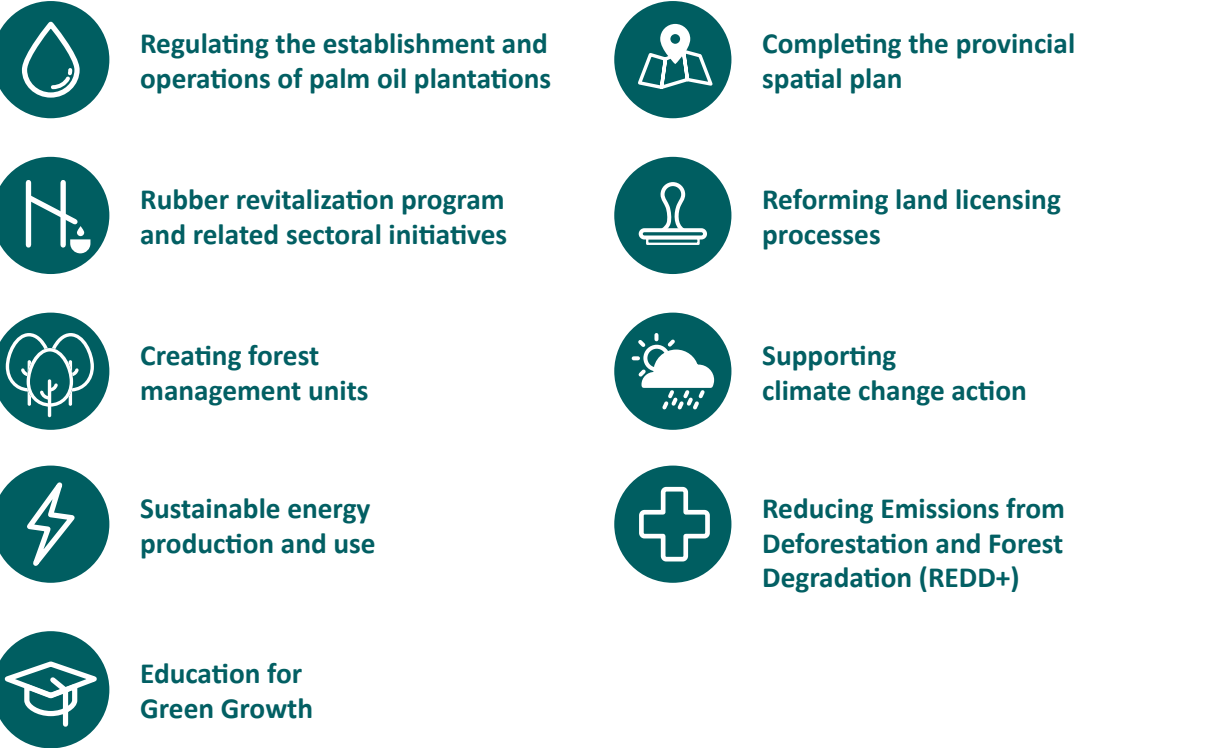
strategy, nevertheless these various strands of policymaking together have laid a substantial foundation for a transition to Green Growth in the province.

Within the framework of the RPJMD, the Governor issued a **Green Government Policy** during his first term in office (2005-2010). This policy focused on forest fire prevention and control, spatial planning, restoration of degraded land, management of water resources, provision of clean water and sanitation, improved air quality and waste management, and adaption to and

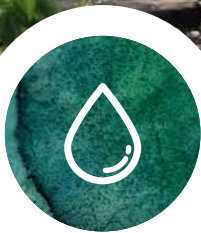
mitigation of climate change. During his second term (2010-2015), the Governor declared a **Green and Clean Province** program, prioritizing socio-economic development, the environment, good governance, legal compliance and enhanced transparency relating to land and licensing issues.

The remainder of this chapter reviews a number of additional initiatives that have made significant contributions to Green Growth in Central Kalimantan since 2005. In Chapter 3, these initiatives are re-examined from the perspective of specific Green Growth outcomes.

Figure 4: Initiatives contributing to Green Growth in Central Kalimantan



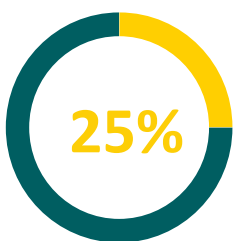




## Regulating the establishment and operations of palm oil plantations

Palm oil currently contributes approximately

**25%**  
of provincial  
Regional GDP



*Oil palm was first planted in Central Kalimantan in the late 1980s, in conjunction with a government-sponsored transmigration scheme. The sector has expanded rapidly in response to several factors, including: high demand and prices; ambitious national, provincial, and district government production targets, and; availability of land at low-cost to developers.*

As of 2010, 302 oil palm plantation licenses had been issued, covering 3,775,000 ha. Of this area, approximately 35% had been planted by 2013. Production of crude palm oil has increased dramatically in recent years, from some 1.7 million tons in 2009 to nearly 2.8 million tons in 2012. Palm oil currently contributes approximately 25% of the province's Regional GDP and dominates the plantation agricultural sector.

The sector is dominated by commercial firms. Approximately 85% of the planted area is managed by such firms and the remainder by smallholders, many of whom work in partnership with the companies.

Oil palm is the province's most important driver of economic growth and socio-economic development. However, it is also a leading cause of deforestation and environmental degradation, including water pollution, sedimentation, pesticide





*Palm oil is undoubtedly a major source of **economic growth** for a large proportion of the population. It contributes strongly to **inclusivity and equity**, but poor management and rapid and vast expansion has significant negative impacts on GHG emissions and ecosystem functions.*

overload and impoverished soils. The rapid expansion of oil palm has thus been accompanied by substantial external environmental costs.

Recognising both the strategic economic importance of oil palm and the associated risk of negative social impacts and environmental degradation, Central Kalimantan legislators passed the ground-breaking Provincial Regulation No. 5 (2011) on Sustainable Management of Plantation Businesses. This is the first provincial-level regulation of its kind in Indonesia—one which includes a number of social and environmental provisions that exceed those specified by national regulations.

This regulation, which was developed through extensive stakeholder consultations, directs new plantations to degraded, low carbon areas rather than existing forest. High Conservation Value (HCV) assessments are mandatory prior to opening new plantations to determine areas that must be maintained for their social and ecological functions. Reducing forest conversion by limiting oil palm expansion into standing forest areas is expected to yield substantial benefits in terms of conserved ecosystem functions and biodiversity and avoided GHG emissions.

The regulation also includes requirements for monitoring and reporting of social and environmental impacts and associated mitigation measures and defines requirements for resolution of conflicts and investment in smallholder farms. Taken together, these requirements are expected to lead to more equitable and inclusive growth.

Following on from this regulation, in 2013 the Central Kalimantan government developed a ‘roadmap to low-deforestation rural development’, which outlines actions that reduce deforestation while increasing palm oil production and elevating rural incomes of smallholder families. The provincial government is also developing new regulations relating to company-community partnerships, which will provide a legal basis for collaboration between the large firms and smallholders. Such instruments are expected to encourage more inclusive and equitable growth in communities living in and around oil palm plantations. Finally, wider adoption of best management practices in the sector will help to ensure sustained growth through greater per hectare yields.





## Rubber revitalization program and related sectoral initiatives

*Indonesia is the world's second largest producer of natural rubber; in 2011, it produced 3.5 million metric tonnes on some 3.1 million ha. However, yields remain relatively low compared with those in other producer nations. Indonesia's natural rubber production continues to be dominated by smallholder rubber farmers, though the proportion from plantations (both state enterprise and private) is increasing.*

Unlike oil palm, smallholder rubber cultivation has a long history in Central Kalimantan. For decades, farmers have tapped rubber within traditional agroforestry systems, often under a shifting cultivation regime. Currently, rubber covers 445,134 ha<sup>3</sup> in Central Kalimantan, most of which is owned by smallholders. The province produces 273,843 tons of processed rubber annually, making it a leading rubber-producing province in Indonesia.

In general, rubber yields from smallholder farms in Indonesia as a whole, at 200–800 kg/ha, are significantly lower than yields achieved under more intensive, plantation management. Low yields are the result of poor tapping and handling practices by farmers, insufficient institutional and extension support for smallholders, and limited distribution of improved clonal varieties.


International and domestic demand for rubber products has increased dramatically in recent years. However, market prices have been subject to wide fluctuations due to volatile demand and increasing competition between rubber producers. This situation has caused considerable uncertainty for local smallholders and processors alike.



© Kemal Reza / Katingan Project

<sup>3</sup> Plantations Office, 2013.





*Rubber has a long history of cultivation by Central Kalimantan smallholders, contributing to **inclusive and equitable growth** in remote communities. Maintenance of well-managed rubber agroforestry also contributes to maintenance of **ecosystems** & reductions in **GHG emissions**.*

A national Rubber Revitalization Program highlights expansion of smallholder rubber as a tool to help reduce the recurrent problem of fire and haze. The program encourages the establishment of smallholder rubber plantations in agro-forestry buffer areas around sensitive, high carbon peat ecosystems as a way of countering forest and peat fires, which are the largest cause of the province's GHG emissions.

Another issue facing the rubber sector in Central Kalimantan is price volatility, which is being addressed through the development of local rubber processing capacity. In addition, efforts are being made to reduce the influence of middlemen in the value chain, thereby helping to increase the sector's resilience.

Equally important to inclusivity, equity and sustained growth is the availability of improved transport infrastructure to lower product transport costs and increase villagers' access to markets. There is significant scope to increase yields of smallholder rubber through distribution of higher quality planting materials, improved extension services and interventions that improve farm-gate quality to bolster the value chain.

Smallholder opportunities can also be enhanced through closer cooperation between communities and nearby plantations and processors. To this end, the Central Kalimantan government is encouraging new rubber plantation investments to collaborate closely with communities in the establishment of high productivity, community-operated "plasma" areas, and to include agro-forestry rubber belts as components of intensive plantation design.



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## Creating Forest Management Units

*Effective forest management can help to minimize carbon emissions, enhance ecosystem services and provide economic benefits for surrounding communities—objectives that lie at the heart of Green Growth. With 80% of Central Kalimantan's population living in and around forests, the Government recognizes forests' important role in promoting rural economic growth and in maintaining critical ecosystem services such as biodiversity, watershed integrity and flood mitigation.*

Forests have been the basis of Central Kalimantan's rural economy for centuries, both through low-intensity harvesting of timber and non-timber forest products (NTFP). While commercial logging of natural forests has occurred since colonial times, harvest levels began to increase rapidly in the 1970s, with the rate of logging reaching a peak (including an illegal logging boom) between the late 1990s and the early 2000s, before falling to relatively low levels in recent years. There are currently 72 natural forest logging concessions in the province, covering 4.9 million ha, and 14 industrial timber estates covering over 650,000 ha (Ministry of Forestry, 2012). However, many concessions are either not operational or are no longer commercially viable.

Management of forest functions is most effective at the landscape scale. This is particularly true in upland watersheds and in peat dome systems. Indonesia's Ministry of Forestry introduced the concept of Forest Management Units (*Kesatuan Pengelolaan Hutan*, KPH) as an institutional framework for managing forests in 1999. However, their development has been supported more effectively since the issuance of relevant regulations in 2007 and 2008. KPHs facilitate and supervise multiple forest uses within each management area and allow for greater participation of local government and communities as well as other stakeholders on the ground, utilizing valuable local knowledge.

KPHs offer opportunities for rural economic development and sustained growth in previously underutilized forest areas, while generating increased revenues for local governments and creating employment opportunities in the forest sector. KPH boundaries may coincide with natural landscape features such as





*The management of forest functions is most effective at the landscape scale so the establishment of forest management units, both in conservation and production areas, can contribute strongly to **GHG emissions** mitigation, the maintenance of critical **ecosystems**, and support **inclusivity and equity** of forest-dependent communities.*



watersheds—which helps to create unified management systems for important ecosystems—and must be proposed by the district head (*bupati*) or governor and approved by the Minister of Forestry.

By placing forestry professionals at the local and field levels, KPHs can facilitate better law enforcement, improved outreach to local communities, and more structured and localized approaches to addressing land-based conflicts and improving local people's access to forests. The introduction of KPHs is intended to improve and further decentralize forest management, increase accountability over forest outcomes, improve local stakeholder involvement and increase transparency.

In 2010, Central Kalimantan submitted KPH proposals to the Ministry of Forestry covering a total of 8.5 million ha, with individual management areas ranging in size from 50,000 ha to over one million hectares. There are currently 33 KPHs in Central Kalimantan, consisting of 29 production KPHs and 4 protection KPHs, KPH-produksi (KPHP) and KPH-lindung (KPHL), respectively. In the accelerated development of KPH, district and provincial governments, assisted by academics and other stakeholders, have drafted long-term management plans for two KPHs, including a protected peat swamp forest landscape in Kapuas District and an area of production forest in Seruyan District, with two more KPH management plans (Lamandau and Kotawaringin Barat Districts) due for completion in 2014.

*KPHs offer opportunities for rural economic development and sustained growth in previously underutilized forest areas*

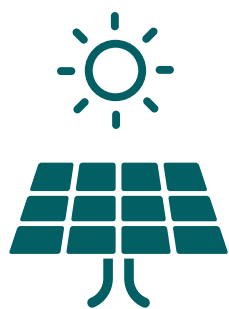




*There is considerable potential for new and renewable energy in Central Kalimantan, but development remains at a feasibility study and pilot phase. A new energy strategy has the potential for contributing towards all desired outcomes of Green Growth.*



## Sustainable energy production and use



*Between 2005 and 2010,  
**17,748 units***

*of 50 WP solar power home systems were distributed and four centrally mounted 5000 W units were installed in the province*

*Central Kalimantan's vast land area, its dispersed population—totalling less than 2% that of densely populated Java within a 25% larger land area—and its limited infrastructure present significant challenges for the electrification of remote rural communities. The province's electrification ratio, a measure of power availability compared with the area requiring power, is 61.1%, with 529 villages still lacking access to power.*

By comparison, the electrification ratio for Indonesia as a whole is 71%. Central Kalimantan has 76.5 MW of installed power (2010), but peak demand falls well short of generating capacity. The annual growth rate in electricity demand is 9.7%, reflecting the province's rapid economic development.

In addition to replacing fossil fuels, alternative energy sources have the potential to provide significant co-benefits. Micro-hydro generators, which depend on water from forest catchment areas, demonstrate to villages the benefits of protecting adjacent forests. Using waste biomass from agriculture also reduces the quantity of waste going to landfills, and cuts GHG emissions, while minimizing contamination of local rivers with effluents.

While currently dependent upon coal-fired power stations, Central Kalimantan's potential for utilizing new and renewable energy resources is high. While this potential has still not been used in an optimal manner, a number of studies have identified opportunities in Central Kalimantan:



**Hydro power potential is highest in Murung Raya, Gunung Mas, Katingan and Lamandau districts, where feasibility studies have been carried out for potential small-scale hydro projects, ranging from 15 KW to 3.2 MW <sup>4</sup>. This scale is suitable to serve small, rural communities. There are also opportunities for developing large-scale hydropower plants in Central Kalimantan with an estimated total potential of 353 MW <sup>5</sup>.**



**Biomass energy has high potential in the province, primarily because Central Kalimantan is the fourth largest producer of palm oil in Indonesia. This sector produces fiber, empty fruit bunches and kernel shells equivalent to 2.4 TWh <sup>6</sup> and capable of generating as much as 337 MW; however, this resource currently goes to waste. In addition, Central Kalimantan has the potential to produce 174,690 MWh <sub>e</sub> of energy from processing waste rice husks and 179,945 MWh <sub>e</sub> from unused coconut husks. Waste from woodchips is also a useful source of biomass energy.**



**With the large amount of palm oil production in the province, biogas energy also has good potential as an energy source. Waste from palm oil processing in the form of effluent, or POME (Palm Oil Mill Effluent) can generate up to 36 MW of electricity;**



**Solar energy is a viable energy source for Central Kalimantan. The province's location on the equator give it one of the highest intensities of solar light radiation in Borneo, 4.8 Wh/m<sup>2</sup>. This potential has already begun to be tapped and between 2005 and 2010, 17,748 units of 50 WP <sup>7</sup> solar power home systems were distributed and four centrally mounted 5000 W units were installed in the province.**



**Wind energy as a source of energy is being explored along the 750 km long beach of Central Kalimantan on the Java Sea. Survey results highlight a wind speed between 4 to 7 m/s at various locations indicating the potential to build a power plants with power range between 5 sd. 10 KW.**



**The potential of natural gas in Central Kalimantan can be found in Bangkanai, North Barito district with a potential of 20 MMSCFD and can potentially be used as a source of electrical energy for 20 years.**

Central Kalimantan policy direction under the RPJMD (2010 – 2015) is to supply affordable energy by further developing its electricity infrastructure. In accordance with Law No. 30 of 2007, Central Kalimantan is developing a Provincial Energy Plan to guide development of sustainable, affordable and reliable electricity in the province. By 2015, the Central Kalimantan government plans to increase low-carbon electrical generation capacity by installing both micro- and pico-hydropower plants, developing biogas generators for household use and installing solar power panels across the province. This is being done by local NGOs which encourage private sector firms to employ these technologies. In addition, the provincial government plans to build a 150 KV transmission line to ensure that power generated in larger plants—including a planned 280 MW hydropower plant in Murung Raya District—will reach as many population centres as possible.

<sup>4</sup> Energy and Environmental Partnership with Indonesia (EEP Indonesia): BASELINE STUDY I

<sup>5</sup> Central Kalimantan Mining and Energy Agency (2014)

<sup>6</sup> TWh<sub>e</sub> = TerraWatt hours of estimated potential heat energy in the case of biofuels.

<sup>7</sup> "WP" means Watts peak, which is the maximum amount of power a solar panel could produce in perfect conditions.





## Education for Green Growth

*Education is a key component of Central Kalimantan's medium-term development plan (2010-2015), with the government emphasising the need for high-quality teaching in remote rural communities. With almost 30 percent of Central Kalimantan's current population in school, education represents a powerful tool for preparing the next generation to be active participants in, and beneficiaries of, the province's future development.*

Introducing the concept of Green Growth to students at an early age is a crucial step in ensuring that future generations are well prepared for the challenges and opportunities related to the next phase of Central Kalimantan's development. A well-educated public is an essential prerequisite to enhancing welfare, and to ensuring that the public exerts its influence on policy makers to take full account of social and environmental concerns in future development.

In recent years, the Central Kalimantan government has been providing environmental education to the general public at district level, as well as supporting province-wide education programmes. In 2013, the Central Kalimantan Government, with support from the national REDD+ Task Force, launched the Pusat Informasi Lestari (Sustainability Information Center) in Buntoi, Pulang Pisau district. Situated in an area of the ex-Mega Rice project, the initiative aims to educate communities to enhance livelihoods in sensitive peat land areas, while increasing their resilience to climate change. With financing and technical support from several UN agencies, the center represents a central hub for community consultation, technical training and information sharing related to environmental sustainability.

The provincial Environment Agency (BLH), in cooperation with the REDD+ Task Force, has initiated a program to integrate environmental and local knowledge within the formal school curriculum. This Education for Sustainable Development (ESD) program aims to increase the educational focus on Green Growth through development of teaching modules, staff and appropriate facilities. For the pilot phase, 11 schools (from elementary to senior high school level) were selected, in Palangkaraya and in the districts of Kapuas, Kotawaringin Timur and Kotawaringin Barat.

*A well educated population is more likely to be aware of the critical role that the environment plays in delivering economic and social benefits to the province.*



## Completing the provincial spatial plan



*Provincial spatial plans, known as Rencana Tata Ruang Wilayah Propinsi (RTRWP), delineate land areas that may be allocated to different uses. These decisions have important implications for the quality of future economic development and the maintenance of natural ecosystems and their services.*

According to the 2007 Spatial Planning Law and the Forestry Law, provincial governments and the Ministry of Forestry need to reach consensus on the extent and functions of the forest estate (*Kawasan Hutan*). In September 2013, the President issued a decree (Inpres 8/2013) intended to accelerate the spatial planning process in provinces where it had not yet been completed. The decree states that disputed land within a province should be classified as a 'Holding Zone', thus enabling the completion of the spatial plan for remaining, undisputed areas.

Two recent Constitutional Court decisions influence the fate of the Forest Estate and hence the availability of land for development. Under decision MK 45/2011, the Court amended the Forestry Law so that the National Forest Estate can no longer simply be 'designated' without undergoing the full, formal gazette process. In decision MK 35/2012, the Court ruled that the rights of indigenous people to forest land within their customary domains must be recognized and that their lands should be excluded from the National Forest Estate. Both decisions have potentially far reaching implications for the way in which provincial lands are allocated to various functions—with corresponding implications for development planning.

Central Kalimantan has been working for over two decades to finalize its spatial plan. In 1982, the entire landmass of Central Kalimantan was included in the Forest Estate. Following the 1999 Law on Regional Autonomy, the Governor proposed a compromise, allocating 10.4 million ha to the Forest Estate and 5.3 million ha to other purposes. In 2003 district and provincial officials were empowered to issue agricultural land licenses in accordance with the 2003 version of the spatial plan. However, legal uncertainty continues to surround licenses issued in areas considered by the Ministry of Forestry to be within the National Forest Estate.


Central Kalimantan is currently moving towards enacting a regulation that will finalize the spatial plan in areas of consensus while halting further issuance of licenses within the 'Holding Zone'. This Holding Zone is expected to cover some 3.5–4.5 million ha, or about 25% of the total area of the province. An approved spatial plan will increase legal certainty for communities and industry. Clarity over the designation of Central Kalimantan's land within the spatial plan will also reduce risks for investors and help to improve the investment climate within the province. Finally, agreement between the regional and central governments will greatly support efforts to safeguard forest assets, at least in those areas that are agreed to be part of the National Forest Estate.



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*The spatial plan, while not yet finalised, offers an opportunity to accommodate community rights (including customary rights), protect forests and designate degraded lands for development. As a result, it has the potential to provide an important foundation for Green Growth.*





*The provincial Moratorium, and simultaneous efforts to enhance the licensing process through legal review and One Map, together represent a significant contribution to enhance **sustained growth** and **inclusivity and equity** of resource use.*





## Improving Land Licensing Processes

*Licensing decisions greatly impact how landscapes are developed. An improved licensing process will provide greater legal certainty to government, businesses, and communities, thereby promoting long-term investment, reducing extractive pressure on natural resources and decreasing the likelihood of conflict over land use and tenure.*

The vast majority of land in Kalimantan and other sparsely populated parts of Indonesia is administered as state land by national and local government agencies. Commercial enterprises or state-owned firms apply for licenses for specific land uses in accordance with regulations that prescribe an application process and approval criteria.

The Ministry of Forestry has the authority to issue licenses for timber concessions and industrial timber plantations within the Forest Estate and to grant requests by license applicants to remove land from the forest estate for non-forest uses. District heads are empowered to issue licenses for agricultural uses within lands designated for development under the district spatial plan. The Ministry of Energy and Mineral Resources is responsible for managing the sub-surface mineral estate and shares authority with local governments to issue exploration and production licenses.

All licensing processes require completion of an environmental impact assessment (EIA) prior to development. EIAs are meant to prevent licenses from being granted in environmentally or socially unsuitable places. They can also help to identify mitigation measures and monitoring procedures to ensure that social and environmental impacts are well managed throughout the lifetime of the activity.

Central Kalimantan has affirmed the implementation of the Presidential Instruction on the Suspension of New Licences in Primary Forest and Peatlands (Inpres No. 10 2011) and its two-year extension (Inpres No. 6 2013). This 'Moratorium' provides an opportunity to improve forest governance and supports the National Action Plan for Greenhouse Gas Emissions (RAN-GRK) as well as Central Kalimantan's own action plan (RAD-GRK).

Central Kalimantan has worked closely with the REDD+ Task Force and the Presidential Working Unit for the Supervision and Management of Development (UKP4) and will continue to work with the National REDD+ Agency on a comprehensive review of forestry, oil palm, and mining licenses. This review has already been completed in Barito Selatan, Kapuas, and Kotawaringin Timur districts in line with the Governor's policy to ensure that all land licenses are 'clean and clear', i.e. do not overlap with other concessions and are in accordance with the spatial plan. In the future, those same districts will work with the REDD+ Agency to develop an Information Management System for centralizing license



data collection as part of a ‘One Map Initiative’. This system will allow government agencies to avoid issuance of overlapping licenses, ensure appropriate due diligence, and facilitate effective law enforcement.

The Province has also committed to accelerate the process of gazettelement of the Forest Estate in order to provide greater certainty for land use planning and forest management as well as enhanced security for communities and license holders. As highlighted in the spatial planning section above, the Governor issued a moratorium in 2013 on issuing licenses in disputed ‘Holding Zones’, defined as areas where provincial and national authorities continue to disagree on land function. The recent Constitutional Court decision MK 35/2012, requiring that customary forests be excluded from the National Forest Estate, will also have an impact on where and how future licenses are granted.

## Supporting climate change action



*In 2010 Indonesia announced a national commitment to reduce greenhouse gases (GHG) emissions by 26% on its own and by 41% with international support, against a business-as-usual (BAU) projected baseline for 2020. This ground-breaking pledge was the first of its kind from an emerging economy country. The government followed up by developing a national action plan on GHG emissions reduction, the Rencana Aksi Nasional penurunan emisi Gas Rumah Kaca (RAN-GRK), which sets emissions targets and provides guidance for each sector on how to achieve these targets. Provinces are required to develop corresponding emissions reduction plans tailored to local conditions.*

In 2012, Central Kalimantan completed its regional action plan for GHG emission reductions, *Rencana Aksi Daerah penurunan emisi Gas Rumah Kaca (RAD-GRK)*, for the period 2010-2020. This action plan



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*Central Kalimantan's RAD-GRK contributes strongly to regional GHG emissions mitigation, while the priority actions support **resilience** and the conservation of ecosystems.*

lays out the province's over-arching climate change action policy framework and identifies concrete actions to reduce land-based emissions involving agriculture, forests, peatlands, energy, transport and industry. In particular, it sets targets for reducing degradation and conversion of forests and peatlands. The plan comprises five main elements:

- 1. **Identifying potential GHG emissions sources;**
- 2. **Estimating current and future projections of BAU GHG emissions for baseline comparisons;**
- 3. **Proposing mitigation actions, including rough budget estimates and time needed to implement them;**
- 4. **Setting priorities among proposed activities, and;**
- 5. **Establishing implementing and funding institutions.**

The RAD-GRK divides responsibility for implementing and supervising emissions reductions among national, provincial and sub-provincial governments. Annual monitoring and evaluation is coordinated by provincial authorities and includes participation by government, private sector and civil society. An extensive consultation process serves to raise climate change awareness and knowledge among provincial stakeholders related to efforts to mitigate its causes and adapt to its impacts. Importantly, the RAD-GRK calls for government to integrate proposed mitigation and adaptation actions into regional development plans, from province down to the district and municipal level, thereby mandating a range of far-reaching Green Growth related actions under a transparent reporting framework.



## Reducing Emissions from Deforestation and Forest Degradation (REDD+)

*REDD+, which stands for reducing emissions from deforestation and forest degradation, together with conservation of forest carbon stocks, sustainable management of forest and enhancement of forest carbon stocks, represents the cornerstone of Indonesia's commitment to GHG emissions reductions of 26% by 2020, and 41% with international support. Its importance reflects the large volume of GHG emissions associated with forest loss and degradation, the relatively low abatement costs and the expectation that REDD+ has the potential to generate significant financial inflows.*

A massive store of forest and peat carbon makes Central Kalimantan a critical location for Indonesia's efforts to mitigate climate change, under the overall framework of the RAD-GRK (see previous section). In 2010, Central Kalimantan was selected as Indonesia's first REDD+ pilot province, placing it at the centre of sub-national efforts to integrate low carbon development and Green Growth with economic, land-use and development planning. A recent provincial carbon emissions assessment<sup>8</sup> estimated that, under a business-as-usual scenario, emissions are projected to grow from 300 MtCO<sub>2</sub> in 2005 to 430 MtCO<sub>2</sub> by 2015. Most emissions would result from licensing and development of 5.8 million hectares of forest and peatlands for agriculture, mining and forestry, thereby threatening 30% of the province's total carbon stock. The assessment identified the use of fire for land clearance—particularly in peatlands—as the largest driver of emissions, followed by peat decomposition after drainage. Given

<sup>8</sup> CIFOR 2014, TFD-4FS, Indonesia: fact sheet about Central Kalimantan





*Central Kalimantan's REDD+ efforts emphasise the **GHG emission reduction potential** related to the proper management of forest and peat **ecosystems**. Activities in the REDD+ STRADA focus on **inclusivity** of communities and promoting **resilience**.*

that forest and peat fires cause a range of other environmental and social issues, reducing their size and frequency will create many Green Growth related benefits.

As a REDD+ pilot province, Central Kalimantan has taken important steps to identify and remove regulatory, social and political barriers to operationalizing REDD+. The province has become a hub for demonstration activities designed to test approaches to ecosystem restoration, social and environmental safeguards, community-based forestry, forest management units and peatland rehabilitation.

Formulation of Central Kalimantan's REDD+ Strategy (REDD+ STRADA) began in 2011, in line with a 2010 Letter of Intent between Indonesia and Norway. The Central Kalimantan government is determined to develop strategies and action plans that meet national objectives, while addressing unique local characteristics and concerns. Their vision is *"to achieve sustainability of forests and peatland resources for the benefit and dignity of the people of Central Kalimantan."*

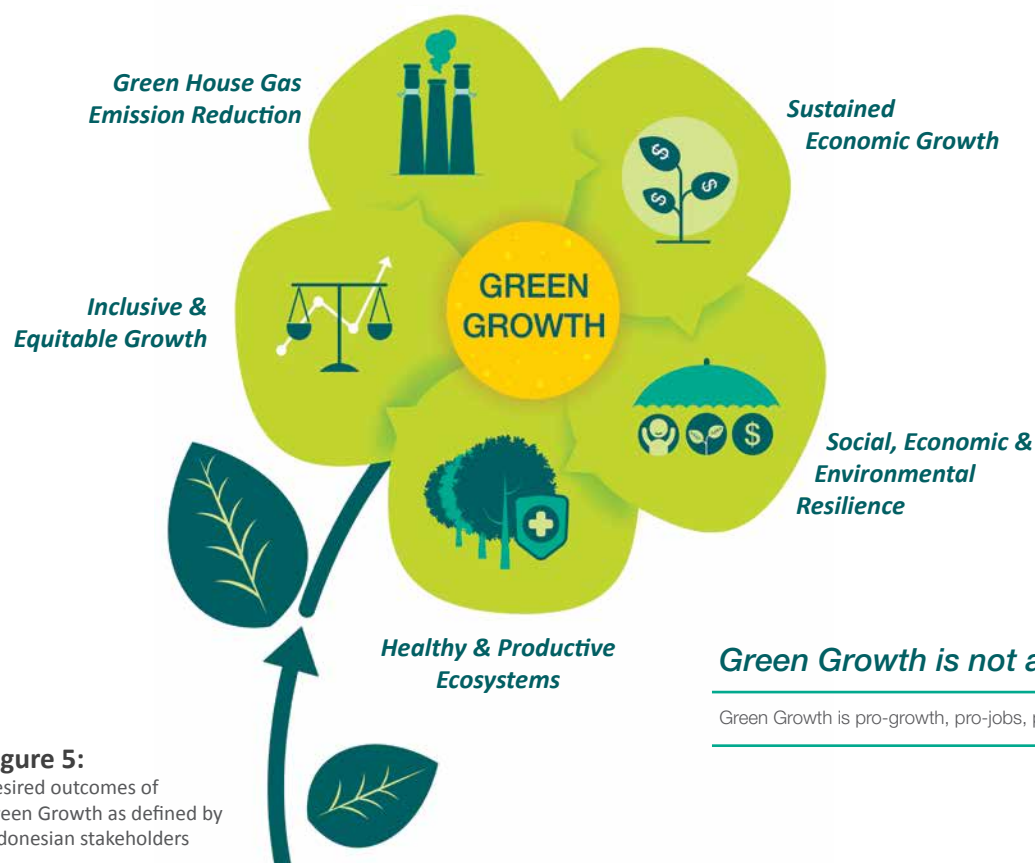
In consultation with stakeholders, priority actions were identified under the provincial strategy, including mainstreaming policies on forest and peatland

management, developing a REDD+ implementing institution, and enacting a provincial moratorium on new licenses in forests.

The REDD+ strategy also calls for efforts to improve the livelihoods of communities living in and around forests and peatlands by promoting alternative sources of incomes and raising the value of green products coming from these areas. It envisions a community-based approach to REDD+, recognizing that communities are central to the success of REDD+ and can benefit from successful implementation through sustained ecosystem products and services, recognition of land rights and economic incentives.

Central Kalimantan's REDD+ STRADA was legally adopted by Governor Regulation No. 10/2012 and is in the process of being upgraded to a Provincial Regulation. This will secure its role as Central Kalimantan's roadmap for reducing emissions from deforestation and forest degradation, while ensuring co-benefits related to ecosystem services and social welfare. With a community-based approach, the REDD+ STRADA has significant potential to promote inclusive and equitable growth in rural, marginalized, forest-edge communities.

## 4. Implications for Green Growth



**Figure 5:**  
Desired outcomes of  
Green Growth as defined by  
Indonesian stakeholders

### Green Growth is not a new concept

Green Growth is pro-growth, pro-jobs, pro-poor and pro-environment.

*The Government of Indonesia and the Global Green Growth Institute (GGGI), under the collaborative Green Growth Program<sup>9</sup>, have supported the development of a Green Growth Framework (GGF) for Indonesia. This framework considers interdependencies among the nation's economic drivers and their implications for social development and environmental performance. During the process, stakeholders have helped to define five key desired outcomes of Green Growth which are important to Indonesia (see Figure 5).*

Green Growth is rooted in an understanding of the social and economic value of natural capital and provides an approach for achieving a number of simultaneous objectives of sustainable development. This can be done by boosting

growth through smart policies which drive green investments and innovative efficient technologies as well as sustainable practices. This would simultaneously reduce greenhouse gas emissions, build resilience to external shocks, use resources more efficiently, value the often economically invisible natural assets that have underpinned economic success over the centuries and contributes to inclusive and equitable growth.

Whether in the context of regional planning or investment project design, the five outcomes provide a framework for evaluating the full range of potential positive and negative impacts of various development options. A Green Growth approach encourages a holistic and long-term approach to achieving all five desired outcomes.

<sup>9</sup> Direct counterparts to the Green Growth Program are BAPPENAS, the Coordinating Ministry of Economic Affairs, the Ministry of Energy and Mineral Resources, the REDD+ Agency, and the Provincial Governments of Central and East Kalimantan. Other ministries involved in the steering committee of the Green Growth Program are the Ministry of Finance, the Ministry of Public Works, the Ministry of Environment, the Ministry of Forestry and Ministry of Agriculture as well as representatives from the private sector and civil society.












The remainder of this chapter reviews the impacts of the initiatives and processes described in Chapter 3 on each of the five desired Green Growth outcomes.



## Sustained economic growth

**Sustained economic growth** highlights the importance of national, provincial and district Regional GDP, sustained in such a way that it delivers broad-based social development and prosperity with minimal environmental impacts. This type of growth can leapfrog the resource-intensive and environmentally unsustainable model of industrial development pioneered by advanced economies.

The table below summarizes the impacts of current sectoral and cross-cutting initiatives and processes on sustained economic growth in Central Kalimantan.


Sector, initiative or process	Contribution to sustained economic growth
 <b>PALM OIL</b>	Palm oil is of strategic economic importance to Central Kalimantan; efforts to increase efficiency (yield per hectare) and promote better management practices, and avoiding environmentally risky peatlands, will ensure a more productive sector.
 <b>FORESTRY</b>	KPHs can help create new economic activities in previously underutilized forest areas, have the potential to generate revenue for local governments and can increase employment opportunities in the forest sector.
 <b>RUBBER</b>	The Central Kalimantan government is encouraging new rubber plantation investments to establish high-productivity, community operated “plasma” areas, which will help maintain the province’s position as a leading rubber producer in Indonesia.
 <b>ENERGY</b>	Central Kalimantan is developing a Regional Energy Plan that aims to increase the province’s generating capacity and electrification ratio.  There are plans to build new transmission lines to ensure that power generated in larger plants will reach as many population centres as possible, thus providing a reliable electricity supply—a crucial element for economic growth.
 <b>EDUCATION</b>	The Sustainability Information Centre in Pulang Pisau includes education on how to enhance livelihoods in peatland areas, thus preparing local communities to maximize economic opportunities from low-carbon development.
 <b>SPATIAL PLANNING</b>	An approved spatial plan with a ‘Holding Zone’ will provide assurance to communities and industry to continue economic development activities in the designated areas with greater legal certainty.
 <b>LAND LICENSING</b>	The completed review of forestry, palm oil and mining licenses in three districts provides greater legal certainty to business and promotes long-term investment.
 <b>CLIMATE CHANGE ACTION</b>	A number of mitigation activities in the RAD-GRK strengthen key land use sectors’ long-term contribution to the regional economy by ensuring their sustainability.
 <b>REDD+</b>	Central Kalimantan’s REDD+ STRADA calls for efforts to increase the livelihoods of communities living in and around forests and peatlands by promoting alternative sources of incomes and raising the value of green products from these areas.



## Healthy and productive ecosystems

**Healthy and productive ecosystems** emphasise growth which sustains natural capital, especially the natural stocks which provide a continuous supply of important ecosystem services. Natural capital stocks, including biodiversity, provide essential contributions to economic growth and human well-being. However, they are not traditionally recognized or valued as inputs to economic production and as a result are generally overlooked in economic planning processes. A Green Growth approach seeks to redress these market and policy failures.

The table below summarizes the impacts of current sectoral and cross-cutting initiatives and processes on the maintenance of healthy and productive ecosystems in Central Kalimantan.

Sector, initiative or process	Contributions to healthy and productive ecosystems
 <b>PALM OIL</b>	The provincial regulation makes High Conservation Value (HCV) assessments mandatory before opening new plantations, thus maintaining key ecological functions and protecting sensitive conservation areas.
 <b>FORESTRY</b>	The province is promoting the development of KPHs, whose boundaries typically coincide with natural forest landscapes, thus facilitating sustainable management of critical ecosystems, such as upland watersheds.
 <b>RUBBER</b>	Central Kalimantan's rubber revitalization program protects sensitive peat ecosystems by promoting the use of rubber in agro-forestry buffer areas.
 <b>ENERGY</b>	Central Kalimantan's investment in micro-hydro power plants will encourage communities to sustainably manage forest catchment areas.
 <b>EDUCATION</b>	The province's Education for Sustainable Development program will integrate environmental knowledge into the formal school curriculum, thus improving future generations' awareness about the value of ecosystem services.
 <b>SPATIAL PLANNING</b>	The optimization of Central Kalimantan's proposed 'Holding Zone' will provide opportunities to protect critical ecosystems by identifying locations suitable for conservation and restoration, while guiding agriculture and other development activities onto degraded or deforested land.
 <b>LAND LICENSING</b>	Central Kalimantan's affirmation of the Presidential Instruction on the suspension of licences on peat and primary forest helps protect critical natural forest ecosystems.
 <b>CLIMATE CHANGE ACTION</b>	As the majority of the province's emissions are produced by land-based sectors, the RAD-GRK's plan for mitigation activities focuses on reducing degradation and conversion of forests and peatlands, which will result in the sustainable management or conservation of critical ecosystems and habitats.
 <b>REDD+</b>	Existing REDD+ activities in Central Kalimantan include ecosystem restoration, landscape-level forest management units and peatland rehabilitation. Central Kalimantan's REDD+ system for measurement, reporting and verification (MRV) will include non-carbon impacts, ecosystem services and biodiversity.





## Inclusive and equitable growth

**Inclusive and equitable growth** highlights growth for the benefit of all people, those in urban as well as in rural areas, for the affluent as well as for the marginalized. This desired outcome is a central aspect of Green Growth, and is generally correlated with economic growth and environmental quality. Regions with higher levels of poverty and inequality are unlikely to achieve long-term, sustained growth.

The table below summarizes the impacts of current sectoral and cross-cutting initiatives and processes on inclusive and equitable growth in Central Kalimantan.










Sector, initiative or process	Contribution to inclusive & equitable growth
 <b>PALM OIL</b>	The provincial regulation defines requirements for resolution of conflicts and investment in smallholder farmers. Central Kalimantan is developing new regulations relating to company-community partnerships, which provide a legal basis for collaboration between large firms and small holders.
 <b>FORESTRY</b>	The Central Kalimantan government is working with NGOs to accelerate the process of identifying and approving forest areas that are suitable for community management schemes.
 <b>RUBBER</b>	The Central Kalimantan government is encouraging new rubber plantations to collaborate closely with communities, while also aiming to increase individual or cooperative ownership of rubber plantations.
 <b>ENERGY</b>	Central Kalimantan future Regional Energy Plan aims to provide affordable electricity to its population and to increase the electrification ratio towards the Indonesian average.
 <b>EDUCATION</b>	<p>The Central Kalimantan's government efforts to prioritize high-quality teaching in the remotest rural communities supports inclusive development.</p> <p>The province realizes that a pre-requisite for enhancing welfare is a public that is well-educated and exerts its influence on policy makers to fully recognize environmental concerns in future development plans.</p>
 <b>SPATIAL PLANNING</b>	Central Kalimantan's implementation of Constitutional Court ruling MK 35/2012 will ensure that forested land within the customary domain of indigenous people will be placed outside the National Forest Estate.
 <b>LAND LICENSING</b>	<p>The completed review of forestry, palm oil and mining licenses in three districts should help to improve transparency and accountability, which will support inclusive decision-making processes.</p> <p>Central Kalimantan's involvement in the 'One Map Initiative' promotes greater transparency and facilitates effective law enforcement.</p>
 <b>CLIMATE CHANGE ACTION</b>	The RAD-GRK includes a number of mitigation activities that are community-based, e.g. community fire prevention and community forest management, which strengthens the role that local stakeholders play in managing and benefiting from their natural resources.
 <b>REDD+</b>	<p>Central Kalimantan's REDD+ STRADA adopts a community-based approach that recognizes the central role of communities in the success of REDD+.</p> <p>The goals of Central Kalimantan's REDD+ STRADA include increasing local community living standards and their independence in managing natural resources.</p>



## Social, economic and environmental resilience

**Resilience** emphasises the ability to withstand or recover from external economic, financial, social, and environmental shocks, e.g. by adapting to the physical impacts of a changing climate, diversifying economic sectors, enhancing food security, or fostering currency and trade stability.

The table below summarizes the impacts of current sectoral and cross-cutting initiatives and processes on social, economic and environmental resilience in Central Kalimantan.

Sector, initiative or process	Contribution to social, economic and environmental resilience
 <b>PALM OIL</b>	The resilience of the palm oil sector will increase as HCV assessments will ensure that new plantations are only opened in appropriate locations, thus protecting key regulatory environmental services that reduce the risk of fires, floods, pests etc.
 <b>FORESTRY</b>	Greater support for producing sustainable NTFPs helps diversify, and build resilience of, rural economies.
 <b>RUBBER</b>	Smallholder vulnerability to rubber price fluctuations is being addressed by developing local rubber processing capacity and by reducing the influence of middlemen in the value chain.
 <b>ENERGY</b>	The province aims to move away from fossil fuel use to establish a more diversified and localised energy generation mix, which will help protect against future energy price fluctuations.
 <b>EDUCATION</b>	The Sustainability Information Centre aims to increase local communities' ability to adapt to climate change impacts.
 <b>SPATIAL PLANNING</b>	A finalized spatial plan will increase legal certainty across much of the province, thus allowing stakeholders to develop long-term land use plans.
 <b>LAND LICENSING</b>	The province is accelerating the process of gazettelement of the Forest Estate, which, together with community-based forestry licenses, will provide enhanced security for forest communities.
 <b>CLIMATE CHANGE ACTION</b>	The RAD-GRK supports the integration of mitigation and adaptation actions into regional development plans at the province, district and municipal level.
 <b>REDD+</b>	REDD+ demonstration activities in Central Kalimantan include building the province's capacity to address forest and peat fires, thus contributing to a more resilient economy.














## Greenhouse gas emission reduction

**Reduction of greenhouse gas emissions** highlights the importance of low-carbon growth to contribute to international, national and regional efforts to mitigate climate change and minimise future adverse impacts on local and global society.

The table below summarizes the impacts of current sectoral and cross-cutting initiatives and processes on GHG emission reduction in Central Kalimantan.

Sector, initiative or process	Contribution to greenhouse gas emission reduction
 <b>PALM OIL</b>	The provincial regulation directs new palm oil plantations onto degraded, low-carbon land, thus reducing emissions from the conversion of high-carbon, natural forest and peat degradation
 <b>FORESTRY</b>	The Central Kalimantan government recognizes that improvements in forest management are necessary to minimize GHG emissions and is promoting various schemes to achieve this, like community-based forest management.
 <b>RUBBER</b>	The rubber revitalisation program promotes the cultivation of rubber in agro-forestry buffer areas around high-carbon peat ecosystems with the aim of reducing fires, the largest cause of the province's GHG emissions.
 <b>ENERGY</b>	The Central Kalimantan government plans to increase low-carbon generation of electricity by installing micro-hydro power plants, biogas generators and solar panels across the province. Progress has already been made to achieve this goal with 17,748 units of 50 WP solar power home systems and four centrally mounted 5,000 W units being installed between 2005 and 2010.
 <b>EDUCATION</b>	Central Kalimantan's environmental education efforts have been focused on communities living in sensitive peatland areas, which should increase awareness and capacity to reduce emissions from these carbon-rich ecosystems.
 <b>SPATIAL PLANNING</b>	The Central Kalimantan government is working to enact a regulation that will establish a 'Holding Zone' for disputed areas within the province's spatial plan. No further licenses will be issued in this 'Holding Zone', which provides an opportunity to optimize the use of this land and divert development away from remaining natural forests and peatlands, thus reducing GHG emissions.
 <b>LAND LICENSING</b>	Central Kalimantan's affirmation of the Presidential Instruction on the suspension of licences on peat and primary forest supports national efforts to reduced greenhouse gas emissions.
 <b>CLIMATE CHANGE ACTION</b>	Central Kalimantan's RAD-GRK was completed in 2012 and identifies GHG emission reductions across key economic sectors that are in line with the national commitment.
 <b>REDD+</b>	Central Kalimantan's REDD+ STRADA aims to create the regulatory, social and political conditions to reduce emissions from deforestation and forest degradation.



# 5. Green Growth in Central Kalimantan's development plans






In Indonesia, development plans provide frameworks for policy implementation and annual budgeting at the province, district, city, and village levels. Development planning objectives are often ambitious, requiring coordinated action by a range of actors inside and outside government whose contributions are constrained by capacity, funding and perverse incentives.

*The current RPJMD is fundamentally strong in its contribution across all five dimensions, with particular emphasis on **sustained growth and promotion of inclusivity and equity.***

Development plans have traditionally focused on achieving economic growth, with only limited recognition of the broader social and environmental elements associated with green growth. Nevertheless, they represent potentially powerful tools to support green growth, including green growth outcomes such as reduced GHG emissions and healthy and productive ecosystems. Development plans can be especially useful in coordination with spatial plans, sectoral strategies, and strategic environmental assessments to create a comprehensive green growth planning framework. By defining a longer-term direction, they have the potential to act as central instruments in guiding and evaluating the implementation of green growth policies.

Central Kalimantan's long-term development plan, or RPJPD, for the period 2005 to 2025 envisions a province that is advanced, independent, and equitable. Specific 2025 targets include annual provincial Regional GDP growth of 7.5%, a reduction in poverty

**Table 1:**  
Green Growth Contributions from Central Kalimantan's Development Planning

Green Growth Outcomes	Contribution from Development Planning
 <b>Sustained Growth</b>	The province's RPJMD targets annual Regional GDP growth of 7.5%. The last two RPJMDs recognize the importance of infrastructure in achieving sustained economic growth, especially the expansion of road networks and harbours.
 <b>Ecosystems</b>	The Governor's Green Government Policy focuses on the restoration of degraded land, management of water resources and improved air quality.
 <b>Inclusivity &amp; Equity</b>	Central Kalimantan's RPJMD aims to reduce poverty and unemployment to 2%. The RPJMD promotes more equitable partnerships between farmers and companies, which will both promote inclusive social development.
 <b>Resilience</b>	The RPJMD includes development objectives to strengthen health, education and irrigation systems, which will each increase the resilience of rural communities to future shocks.
 <b>GHG Emissions</b>	Central Kalimantan's RPJPD (2005 – 2025) includes an emission reduction target in line with the national commitment. Within the framework of the RPJMD the Governor's Green Government Policy focuses on preventing forest fires, which are a major source of emissions.

and unemployment levels, both to meet a target of 2% and a reduction in GHG emissions—as compared with a business-as-usual (BAU) baseline—by 26% through local effort and by up to 41% with international assistance.

The goal of the province's first medium-term plan (RJPMD 2005-10) was to increase access to knowledge, financing and markets across the province. The current RJPMD (2010-15) continues to focus on inclusive growth across Central Kalimantan, with a specific target of ensuring that approximately 600 remote villages achieve an increased level of prosperity and independence. The plan aims to build an independent and resilient provincial economy through better use of natural resources and increased human resource capacity.

The current RPJMD contains 14 strategies to attain the above goals, including priority actions that directly address the legal requirement to incorporate environmental protection into spatial plans and economic development.

## Green Growth Opportunities For The 2015-20 Plan

*Green growth thinking needs to be central to the vision of the province's next RPJMD for 2015-2020. As shown above, Central Kalimantan's current development plans already have a strong commitment to sustainable development. This commitment needs to be turned into stronger action in order to transform targets into positive outcomes for the province's population, economy and environment. There are a number of opportunities for Central Kalimantan to strengthen both its commitment to, and its delivery of, green growth under the upcoming RPJMD.*

*This section highlights six key green growth approaches that should be integrated into Central Kalimantan's next RPJMD.*

It emphasises social development, distribution of benefits, and enhanced welfare for society through the following actions:

- Infrastructure development dedicated to enhancing the welfare and access to services for the rural public;
- Mapping of customary land and land certification;
- Increased local rubber processing capacity to support smallholders;
- Productive use of peat lands based on new technology and innovation;
- More equitable partnerships between smallholder farmers and plantation companies;
- Expanded electrification of rural areas, and;
- Improved security of forest boundaries, assessing the impacts of permits issued on them, promoting their sustainable management and protection, and ensuring accessibility and equitable use by local communities.

2015



### Optimization of Land Resources Through Coordinated Planning

Central Kalimantan's next RPJMD should be developed in coordination with the spatial planning process to ensure that the "holding zone" is optimized to deliver multiple economic, social and environmental benefits to the province. Land designated within this zone is under dispute between national and sub-national governments, so this opportunity will only be realized if existing conflicts can be resolved. Further efforts to harmonize and improve the transparency of licensing mechanisms, building on a finalized spatial plan, can direct economic development to low-carbon degraded lands, while conserving high conservation value ecosystems such as watersheds and peatlands.

### Integration of GHG Mitigation and REDD+ Activities Into Planning Documents

Central Kalimantan's RAD-GRK and REDD+ STRADA both include clear strategies to achieve low-carbon development. However, this goal will only be achieved if the priority programs and activities from these strategies are integrated into the province's next RPJMD. A number of districts in Central Kalimantan have started to mainstream the priority actions from the RAD-GRK and REDD+ STRADA into their development plans; it is critical that a similar process takes place at provincial level.



In addition, regulatory frameworks need to be created that will support low-carbon development by providing clear incentives to invest in sustainable business models, while overcoming existing implementation barriers. The provincial government needs to work with the Ministry of Finance and other central government agencies to explore options for designing incentive structures that correct for externalities while raising revenue for the public purse.



### Establishment of an Attractive Investment Climate for Green Growth

Green growth in Central Kalimantan will not happen without close collaboration between the public and private sectors. The provincial government must continue to implement reforms that improve the business environment and encourage investment in sustainable activities, specifically in the key land use sectors.

Finalizing the provincial spatial plan and supporting ongoing improvements to land licensing processes are fundamental steps in reducing conflict between business and communities. Ensuring that local communities are actively engaged in these reform processes will help to reduce social conflict—a major investment risk for the private sector.





### Expansion of Local Communities' Role in Natural Resource Management and Agriculture

Central Kalimantan's next RPJMD needs to build on the province's ongoing efforts to support the development of community and smallholder enterprises. For example, in the forestry sector, KPHs have the potential to generate revenue for local governments and create employment opportunities through a system that allows greater participation of local communities in management decisions. Likewise, in the agricultural sector, closer cooperation between communities and rubber processors or palm oil companies can support inclusive rural development. Central Kalimantan's efforts to encourage such partnerships, which enhance smallholder opportunities, should be a central part of the next RPJMD.

In addition to greater community involvement, the next RPJMD should support reforms that promote greater efficiency in land-use sectors, thus increasing productivity and minimizing further expansion into natural forest. For example, wider adoption of best management practices in the palm oil sector will help to ensure sustained growth through greater per hectare yields.

2020



### Diversification of the Economy and Energy Mix

In order to boost the province's ability to deal with future shocks, Central Kalimantan's next RPJMD should aim to diversify its economy and, in particular, its energy sector. The province's ambition of moving away from fossil fuel use should focus on increasing the share of energy derived from local sources and especially those that utilize waste products derived from Central Kalimantan's key land use sectors. A prime example of this is the methane gas released by decomposition of palm oil mill effluent (POME), which can be used to produce electricity. As the oil palm industry grows in Central Kalimantan, POME-based biogas generators, along with micro-hydro and other appropriate renewable technologies, could become an important part of an increasingly diversified and localised energy generation mix.

Along with the energy sector, local rural economies can also become more resilient through diversification. One way to achieve this is through the revitalisation of non-timber forest product (NTFP)-based enterprises, including agarwood (*gaharu*), resins (*damar*), rattan, fruits, honey, and a wide range of medicinal herbs and plant extracts. The next RPJMD should aim to maximise the economic contribution of NTFPs as a central tool for strengthening Central Kalimantan's rural economy.



### Application of Green Growth Approach to the Mining Sector and Infrastructure Development

As the fast growing sector in Central Kalimantan, mining will play an important role in driving economic growth in the province over the next five years. However, the significant environmental degradation and social impacts caused by the mining sector will need to be addressed if Central Kalimantan is to achieve Green Growth. The next RMJPD will need to promote responsible mining with suitable environmental and social safeguards that limit the expansion of the mining industry to the most appropriate locations.

The expansion of Central Kalimantan's infrastructure will also be vital to stimulating economic growth. While the province's last two medium-term development plans have supported the expansion of infrastructure, it is critical that the next RPJMD only supports new road networks and rail linkages that avoid ecologically sensitive areas and minimize secondary environmental impacts such as increased deforestation along the new roads.



## 6. Conclusions

*Smart policies, effective planning, alongside efficient financial and institutional frameworks will drive increased green investment flow into the province*

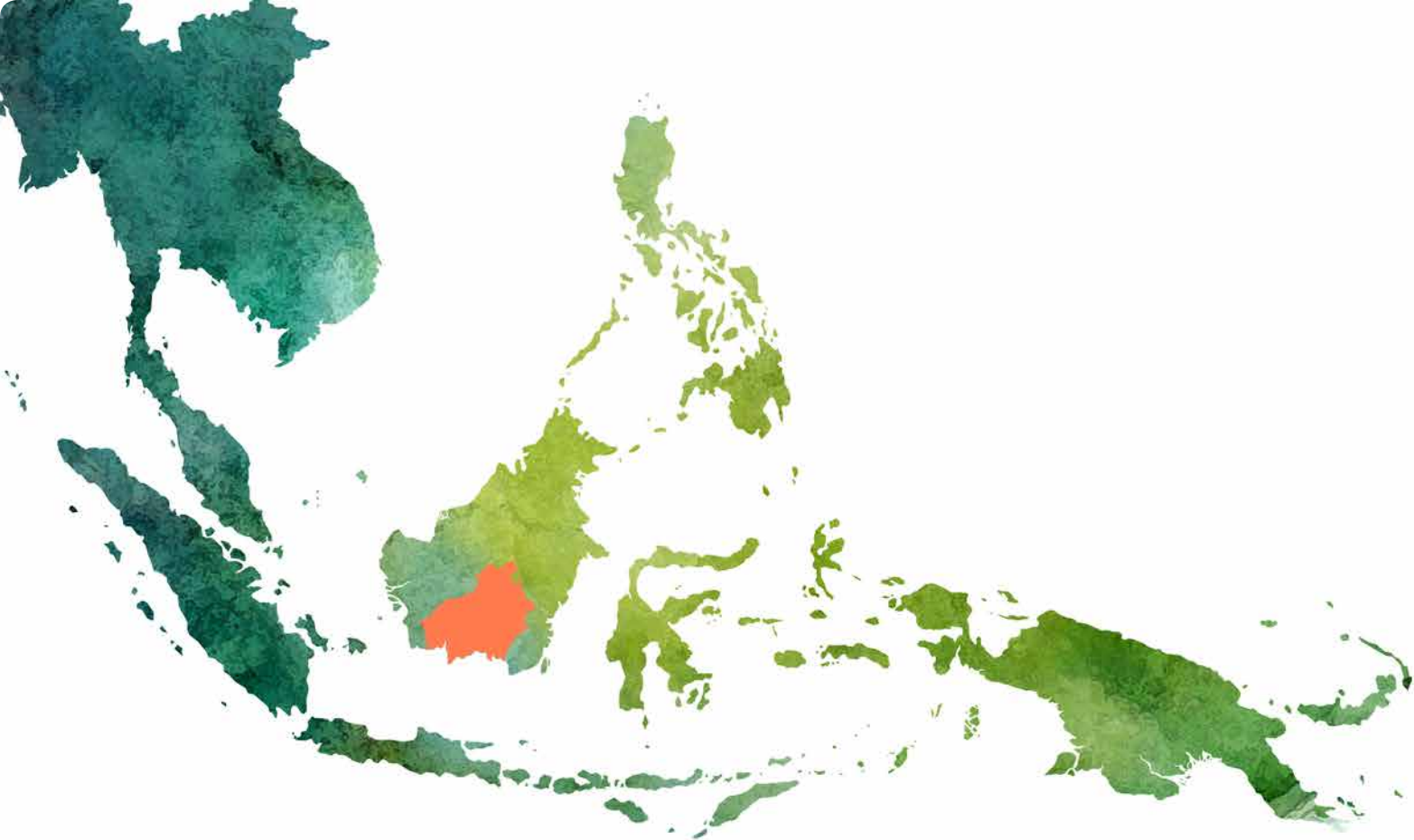
This report has highlighted the considerable progress made by Central Kalimantan during the past decade in mainstreaming Green Growth concerns into key sectoral and cross-cutting initiatives and processes. An examination of the contributions of the nine initiatives and processes towards the five desired outcomes of Green Growth has demonstrated the substantial progress made by the Central Kalimantan government towards achieving sustainable development.

Nevertheless, much work remains to build on the solid foundation thus created. For example, there needs to be greater integration among all of the province's plans, policies and programs. Green Growth can only be a success if all plans and sectors are aligned through an integrated approach that knits each initiative together. The Green Growth Framework presented in the previous chapter to assess the multiple benefits of a project, policy or sector can highlight opportunities to use resources and land more efficiently while promoting economic development that is both inclusive and environmentally sustainable.

The principles of Green Growth are already apparent in Central Kalimantan's development approach. Further efforts by the provincial government, working in an integrated manner with key stakeholders, are essential elements in an ongoing transition towards a prosperous, equitable and sustainable future.







**For more information, contact:**

Joint Secretariat GoI-GGGI Green Growth Program  
Ministry of National Development Planning/BAPPENAS  
Jl. Taman Suropati No. 2, Jakarta Pusat  
Indonesia 10310