

Jurisdictional Approaches to Sustainable Landscapes

*Berau and East Kalimantan,
Indonesia*



Acknowledgements

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Executive Summary

Since 2008, the Nature Conservancy (TNC) has helped to design and implement jurisdictional programs in the district of Berau and the province of East Kalimantan. The region represents a microcosm of Indonesia's sustainable development challenge to balance the conservation of forests with economic growth while addressing underlying issues of weak land tenure rights, poor land use planning, and widespread granting of concessions that lead to rapid forest destruction.

The Berau Forest Carbon Program

The Berau Forest Carbon Program (BFCP), or the "Berau Program," was developed as a jurisdictional REDD+ demonstration program through a highly collaborative, year-long multi-stakeholder planning process. The resulting program design, launched in 2010, included site-based strategies to strengthen community-based natural resource management, improve the management of natural forest logging concessions, enhance protection management of intact forests, and reduce forest conversion for oil palm development. In parallel, the program worked to improve enabling conditions including strengthening approaches to district spatial planning, mid-term development planning, and the establishment of forest management institutions. Strategies were designed to enable the district to achieve measurable emission reductions and develop the necessary systems to enable the district to access results-based carbon finance.

Though designed initially to be an integrated, centrally financed and managed program, the Berau Program evolved into a networked program model with program strategies implemented by a range of government and non-government institutions. This approach was a better match for both distributed government authorities and donor interests in making focused investments. Two major donor-funded programs supported BFCP— The Tropical Forest Conservation Act (TFCA) Kalimantan and FORCLIME—as well as several smaller donor-funded projects. Throughout, TNC played a major role in supporting program design and development, channeling funding, and providing technical expertise, while helping to increase district government capacity for these roles. The involvement of national and provincial government agencies was critical in most strategies, many of which linked directly to national initiatives.

Even though results-based finance opportunities, the initial motivation for the program, have not yet fully developed, the program has contributed to improvements in natural resource governance, landscape management, and capacity and opportunity for local communities. As of 2018, BFCP partners helped establish the West Berau Forest Management Unit (*Kesatuan Pengelolaan Hutan/KPH Berau Barat*) covering 786,000 hectares, half of the zoned forest estate in Berau, to help oversee logging concessions, facilitate negotiation between villages and companies, and promote improved practices. TNC developed an innovative approach for village green development in Indonesia that is being implemented by TNC and other BFCP partners in 24 villages in Berau—leading to more than 45,000 hectares of strengthened community rights recognition—and has now been adopted as official policy by the district government to be scaled up to all 99 villages. BFCP partners helped 13 timber concessionaires in Berau meet Indonesia's forest legality certification, four companies managing more than 200,000 hectares to obtain FSC certification. TNC developed and demonstrated a methodology to measure the carbon benefits of reduced impact logging. An oil palm initiative is currently helping improve government spatial planning and fiscal policies on land use and supporting a public-private-people dialogue to improve oil palm sustainability. To conserve natural forests, BFCP partners supported community forestry initiatives and facilitated two large-scale multi-stakeholder collaboration to conserve unique ecoregions focused on a karst landscape and orangutan habitat.

East Kalimantan Green Growth Compact

The East Kalimantan Green program, initiated in 2009, was well positioned to scale up and take on a stronger leadership role after Indonesia's local government law changed in 2014, shifting many authorities for natural resource management to the Provincial Level. TNC subsequently increased efforts to support the East Kalimantan Government in undertaking

their roles and responsibilities, incorporating lessons learned from BCFP. In 2015, we helped design and launch the East Kalimantan Green Growth Compact (GGC) to increase stakeholders' collaboration and coordination to accelerate the provincial-scale jurisdictional program. By 2016, more than 50 sustainability leaders across government, the private sector, and civil society joined the initiative. The GGC approach reflects several important changes based on experiences with BFCP, including more balanced framing of sustainable landscapes goals, early recognition of the networked model to clarify roles and expand leadership opportunities, and increased investment in backbone institutions to support the program. There has been less reliance on detailed upfront planning and more emphasis on ongoing innovation processes including prototyping and use of common tools that different initiatives can use to enable cross-sector collaboration.

Results to date have been very encouraging. As of 2018, a total of 151 partners have signed onto the GGC, and nine prototype initiatives—cross-sector collaborations to tackle specific landscape challenges—have been formalized. The Provincial Council on Climate Change (DDPI) is taking an active role as backbone and convening organization for the overall program, building partnerships with a range of sustainability initiatives, and maintaining links to government decision-making.

Different prototype initiatives have played different roles in the innovation process. Some have helped to incubate new ideas, like the prototype focused on operationalizing a new commitment by district leaders and the governor to protect 640,000 hectares of forest inside oil palm concessions. Other prototypes raise the profile and expand participation in emerging initiatives, including the partnership to mobilize community participation in fire suppression in oil palm landscapes. Others align efforts of diverse partners, including the partnership of local government and international donors to build the capacity of 21 forest management units across the province. Operationalizing national initiatives like the Ministry of Environment's social forestry commitments that require significant customization and cooperation represent another opportunity for prototypes. All tackle important challenges with widespread relevance and have significant potential for achieving impact at scale. Most importantly they have empowered a much broader range of actors to take on the leadership of key issues that are in their core interests.

Conclusions

Jurisdictional-scale sustainability transitions are not quick or easy. When the jurisdictional program in Berau started ten years ago less than 20% of remaining forests were under formal protection status, virtually no communities had clear land tenure, forest conversion was an explicit and recognized part of the government's ambitious plans for expansion of commodity plantations, and there were no on-the-ground government management institutions overseeing the vast state forest. Addressing these challenges, among others, requires systemic changes to many aspects of natural resource governance and management. In our experience, simple-sounding ideas like putting an economic value on carbon in standing forests or eliminating deforestation from commodity supply chains become incredibly complicated when confronted with complex reality on the ground. These approaches can make a significant difference, but only if they are adapted to local realities through place-based innovation and are complementary to other approaches.

Jurisdictional programs can help leaders to develop a more comprehensive understanding of landscape dynamics and challenges, build focused cross-sector collaboration initiatives, and hold actors accountable. These core roles are not expensive and can have a very high return on investment by making other landscape initiatives more effective. Jurisdictional programs can accelerate the start-up of new initiatives in landscapes, improve implementation, and help take effective approaches to scale. They can only do this, however, if they also help to improve the rigor of innovation approaches to help actors more quickly and efficiently understand what works.

Much work remains in Berau and East Kalimantan, but experience with the BFCP and East Kalimantan GGC demonstrate the potential of jurisdictional programs to complement other approaches and accelerate progress at scale. The case study contrasts two different jurisdictional approaches that reflect our evolving thinking on how jurisdictional programs can be most effective and demonstrate the value of working at multiple jurisdictional scales. While the challenge of achieving long term landscape sustainability should not be underestimated, these programs have demonstrated that meaningful progress is possible.



1. Introduction

Tropical forests harbor some of the world's highest biodiversity and largest carbon stocks, making them essential for conservation and the mitigation of climate change. Additionally, tropical forests are essential to economic development, with high demand to harvest or convert them to produce crops, livestock, and timber. These same landscapes are often home to diverse cultures and peoples who have inhabited and used the forests for generations. The challenge of how to balance the protection of vast forested ecosystems and cultural heritage with economic development is a global problem that finds greater urgency in the face of rapid climate change and growing populations. To this end, TNC has worked around the world in tropical forest landscapes to find more effective ways to help people and nature thrive together.

The Nature Conservancy has worked for more than 25 years in Indonesia on a wide range of conservation and sustainable development strategies. For the first decade, TNC focused on supporting the creation and management of protected areas, especially the Lore Lindu National Park in Central Sulawesi. TNC has worked in the district of Berau on the island of Borneo since 2004. Initially, TNC focused on specific strategies in certain landscapes, such as supporting logging concessions in improving their logging practices and helping them to resolve conflicts with surrounding communities in the Segah and Kelay Watersheds in Berau. TNC also supported villages in protecting patches of orangutan-rich forests in Lesan (Berau District) and Wehea (East Kutai District).

For the past ten years, the Nature Conservancy has helped develop and implement jurisdictional programs in the district of Berau and the province of East Kalimantan. These jurisdictions represent microcosms of Indonesia's sustainable development challenge, particularly in balancing conservation of forests with increased economic growth. The jurisdictional program in Berau began in 2009 with the initial goal to develop a REDD+ program model that others could replicate across Indonesia. The program aimed to achieve measurable emissions reductions that could benefit from results-based finance by working across a diverse range of sectors and stakeholders.

In 2015, TNC increased support for the province's jurisdictional program, Green East Kalimantan (*Kaltim Hijau*). The provincial-level program has a broad range of goals that parallel the Indonesian government's goal of developing a model for low emissions green growth. In 2014, a change in the local government law shifted several powers to the provincial level, which motivated increased effort at the provincial scale of East Kalimantan. This created a new opportunity to replicate some approaches from Berau in other districts and adapt some approaches from the district level to the provincial level while continuing to support the sustainability transition in Berau. This case study attempts to capture key insights from these multi-year efforts that will be relevant to future work on jurisdictional and landscape approaches, and we hope this can inform other experts and jurisdictions facing similar challenges in moving toward landscape-scale sustainability.

This document aims to describe the jurisdictional approaches undertaken in the district of Berau and the province of East Kalimantan over ten years, between 2008 and 2018, including program development, major milestones, results, and lessons learned. It is one in a series of three case studies—alongside São Félix do Xingu, Brazil and the Yucatán Peninsula, Mexico—that represent a decade's worth of TNC's experience in supporting conservation and sustainable rural development in tropical forest landscapes at the jurisdictional scale. Although these programs have varied from place to place, there were strong commonalities as well.

Lessons from these case studies have been the basis for the development of TNC's updated framework approach, collective systems leadership, to guide our work at the jurisdictional scale. Captured in the document, "The Role of Jurisdictional Programs in Catalyzing Sustainability Transitions in Tropical Forest Landscapes," this approach captures our best thinking on how to enable diverse stakeholders and sectors to work together effectively in a complex environment to achieve a wide range of sustainability goals at a large scale.



Photo credit: Bridget Besaw, 2009

1.1 The role of jurisdictional programs in sustainability transitions

This case study describes how two “jurisdictional approaches” at two different levels—the Berau district level and East Kalimantan provincial level—attempted to catalyze large-scale landscape sustainability transitions. While these programs were different in many ways, they had important similarities. In our experience, a jurisdictional program functions as a network of inter-related initiatives working together to achieve wall-to-wall sustainability goals. Different initiatives often operate relatively autonomously as a result of distributed power and authority, but the jurisdictional program can perform three core roles that can help leaders collaborate more effectively and achieve shared goals:

1. **Strengthen the network** of actors involved in the sustainability by promoting cross-sector dialogue and deeper understanding of landscape dynamics, developing a shared vision and direction for the sustainability transition, and developing institutions to support this network of leaders over time.
2. **Empower widespread action** toward sustainable landscapes by supporting the types of collaboration needed to achieve systemic changes and mobilizing resources for effective initiatives.
3. **Enhance accountability** through facilitating the development of multi-stakeholder agreements, maintaining consultation and feedback mechanisms, and maintaining information flow.

The case study attempts to describe how these two programs performed these roles and the degree to which the jurisdictional programs contributed to shifts in landscape governance and management and achievement of their overall landscape goals.

The case study describes some of the key landscape initiatives that are playing critical roles in the sustainability transition. These initiatives included the development of key jurisdictional-scale enablers, working to support holistic sustainable development at village-level, efforts at the transformation of key economic sectors, promoting improved conservation management in different areas, and integrated landscape initiatives. All these approaches can be important to address different types of challenges, but none are sufficient. Jurisdictional programs need to try to strengthen individual initiatives and help leaders to advance these approaches in compatible ways. The initiatives described in this case study were linked to the jurisdictional programs but operated on a spectrum of autonomy. Some were developed and adaptively managed in close coordination with the jurisdictional program, while others operated independently toward shared objectives with high-level coordination.

- **District-level program:** The Berau Program was launched in 2010 as a jurisdictional REDD+ demonstration program that had a broad set of sustainable development goals. The program built on a range of previous initiatives and attempted to develop more systematic, scalable approaches. REDD+ results-based finance mechanisms were developed in coordination with national-level actors. District-level was chosen because district governments had a large influence on natural resource management. They have unique roles and authorities, including related to enforcement and detailed planning, and an opportunity to incubate new ideas or help customize and replicate effective approaches developed elsewhere.
- **Holistic approaches to supporting indigenous peoples and local communities:** Improving the well-being of local communities and indigenous peoples living in or near forests is one of the fundamental objectives of jurisdictional sustainability efforts. TNC developed a village-level framework approach that was developed in 2 pilot villages, tested for replication in 24 more, and is now being used throughout Berau and in other parts of East Kalimantan to support local communities to build their capacity, achieve recognition of their land use rights, pursue effective forest-compatible economic development options, and sustainably manage natural resources.
- **Sustainability transitions in key sectors:** The production systems in different economic sectors are among the most important determinants of overall sustainability in landscapes. It is necessary to understand these sectors as socio-technical systems in which regime actors—including government policy-makers, various industry actors, and other stakeholders—are closely linked by diverse regulatory and market relationships. Natural forest logging

concessions, oil palm plantations, and timber plantations together cover well over half the land area in East Kalimantan. In East Kalimantan, legality verification, voluntary certification, and zero deforestation supply chain approaches have all important in accelerating sectoral sustainability transitions in forestry and palm oil.

- **Integrated landscape initiatives:** Integrated landscape initiatives that develop specific governance and management approaches for particular landscapes can be an important complement to other approaches, especially in cases where social or ecological characteristics require particular management across a broad area or in cases where an important landscape cuts across administrative boundaries. The Sangkulirang-Mangkalihat karst area as an example that has unique ecological features and crosses jurisdictional boundaries and administrative areas and has benefited from an integrated landscape approach.
- **Active protection management in different management areas:** active forest protection is crucial in various government-managed areas—including national parks and protection forests (*hutan lindung*)—privately managed concessions, and community-managed land. In recent years, efforts in tropical forests have focused heavily on mitigation, but active conservation management is the critical complement in most cases, without which mitigation efforts fail.
- **Provincial-level program:** The Green East Kalimantan program started in 2009 and took on greater significance when the local government law (No. 23 of 2014) shifted several key authorities to the provincial level. The Green Growth Compact developed in 2016 helped to expand the leadership by a broader group of government, the private sector, and NGOs entities.
- **National level policies and programs:** National policies and programs and national level economic dynamics have enormous influence on the prospects for jurisdictional sustainability, and it is hard to imagine sustained success at sub-national level without significant action by national governments to help address binding constraints, mobilize resources, and in many cases pressure sub-national governments and private sector for change. In the case of East Kalimantan, moratoriums on new licensing, strategic REDD+ finance, the operation of the Peat Agency, the ongoing development of the One Map spatial data infrastructure, and various land tenure reforms are all nationally-led initiatives that created significant opportunities and benefited from localization and cooperation.

The case study contrasts two different jurisdictional approaches and reflects our evolving thinking on how jurisdictional programs can be most effective, but also attempts to demonstrate that working at multiple jurisdictional levels is important and highly complementary. At each jurisdictional level, there are unique opportunities and limitations as government authorities vary, the network of leaders is different, and the level of detail possible in cross-sector dialogue will be different. Horizontal alignment among government entities is important at each level.

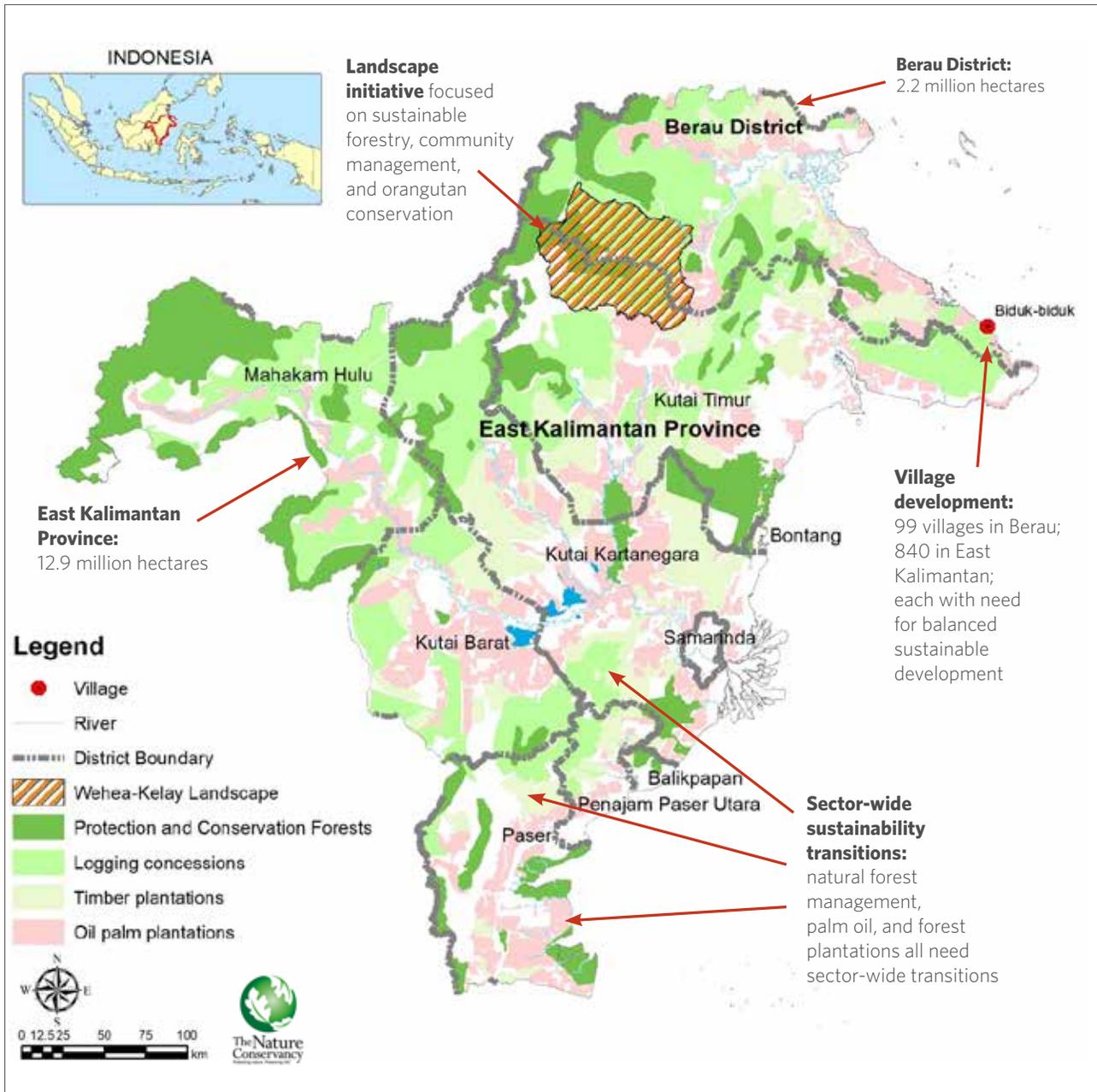


Figure 1. The Importance of Multiple Approaches for Sustainable Landscapes.

To achieve sustainability in landscape management, multiple approaches are often required, including jurisdictional, sectoral, site, and landscape approaches. Each can make a substantial contribution, but also require complementary approaches to be successful. The descriptions below attempt to illustrate how different approaches are contributing to sustainable landscapes in East Kalimantan Province, Indonesia.

2. Context for sustainable landscapes in East Kalimantan

Indonesia, the world's largest archipelago, possesses the world's third-largest tropical forest after Brazil and the Congo. Indonesia comprises more than 16,000 islands stretching across 5,200 kilometers in the Pacific and Indian oceans, although most of Indonesia's forests are located on four main islands: Borneo, Sumatra, Sulawesi, and New Guinea.¹ More than 3,000 animal species inhabit these forests, including pygmy elephants, clouded leopards, rhinoceros, flying squirrels, and orangutans.

Indonesia is the world's fourth most populous country with 260 million people, with astounding cultural diversity, and whose history lies at the crossroads of global trade. Indonesia has over 700 distinct languages and over 360 ethnic groups, though most people speak the national language, Bahasa Indonesia, as a first or second language.² Indonesia is the world's largest predominantly Muslim nation (with 86% of its people identifying as Muslim). Half of the country's population is rural, and competition over land is a continued source of tension.

Indonesia's economy is heavily dependent on natural resource extraction and has grown rapidly at an average of over 5% per year since 2000. The largest economic sectors include natural resource extraction (e.g., oil, gas, and mining) and land-based commodity production and harvesting (e.g., oil palm, agriculture, and forestry). With Indonesia's rapid population growth and increasing affluence, domestic demand for these resources has also increased. Given this dependence on natural resource-driven growth, the country faces a challenge of how to protect its diverse ecosystems and natural resources while achieving its ambitious development goals.

In addition to important sector-specific issues, Indonesia faces several cross-cutting challenges in transitioning toward a more sustainable development path, which include:

- Developing a transparent and efficient balance of powers between the national, provincial, district, and village governments (as land use licensing rules shifted dramatically from centralization during the Soeharto era, to mass decentralization during the *reformasi* era and move to democracy).
- Aligning spatial planning and development planning within the official government planning documents: although Indonesia has detailed spatial planning systems, decisions are carried out sector by sector, leading to competition and confusion between different agencies (for example between, forestry and mining) and misalignment of planning with public finance.
- Addressing the problems faced by local communities due to their lack of tenure security and overlap of village land with concessions granted to logging, oil palm, and mining companies. Communities have weak or non-existent formal rights to land (at least until recently); in 2013, for example, 96% of all land in Indonesia was classified as administered by the government, while only 1% of Indonesia's forest land is granted to indigenous peoples and local communities.³
- High level of political influence and concentration of economic power among few companies within the forestry, mining, agricultural (i.e., palm oil) economic sectors on land use in Indonesia, limiting the opportunity for change.

The 2007 UN Climate Conference in Bali (the COP-13) provided a prominent stage for Indonesia to make a strategic commitment to respond to climate change within its broader sustainable development agenda. Indonesia is the world's fourth-highest emitting country of greenhouse gases—with 68% caused by deforestation, forest degradation, and land use change.⁴ The COP-13 provided optimism that working to address emissions from deforestation and forest degradation would help the country drive forward its broader sustainable development agenda with international support. Prior to the COP-13, the Ministry of Forestry established the Indonesian Forest and Climate Alliance (IFCA) to develop the country's first REDD+ strategy. A main recommendation of the strategy was to develop one or more district-scale REDD+ pilot programs aimed at testing the full range of tools and approaches necessary for REDD+ in a way that would integrate and coordinate the functions of multiple sectors and government ministries. Shortly after the COP-13, the government established the National Climate Change Council (DNPI) and started to develop the necessary regulations around REDD+.

East Kalimantan—the focal region of this case study—is the fourth largest province in Indonesia and exemplifies the dynamics of Indonesia's land use and economy. Located on the island of Borneo, East Kalimantan spans 12.9 million hectares and contains some of the largest remaining intact primary forests in Indonesia. East Kalimantan is sparsely populated with just 3.5 million people, half living in rural villages. It is organized politically into seven districts (or regencies) and three municipalities. Its forests harbor 10% of the world's wild orangutan population. East Kalimantan's population includes customary communities such as the Dayak, Kutai, Banjar and other Malay ethnic groups who are originally from East Kalimantan; and more recent migrant groups that include Javanese, Chinese, and Bugis. East Kalimantan is one of Indonesia's wealthiest provinces ecologically and economically. Around 60% of the economy comes from oil, gas, and mining, while 8% comes from agriculture, forestry, and fisheries.⁵ Its rainforests cover more than half the province (6.8 million hectares), but only 1.8 million hectares of forests are officially protected. Rates of forest loss have increased from 46,000 hectares in 2000 to nearly 300,000 hectares lost in 2016.⁶ East Kalimantan has the third-highest GHG emissions in Indonesia (251 MtCO_{2e} per year), with 88% of emissions caused by agriculture, forest, and peatland loss.

Oil palm plantations are a primary cause of forest loss in East Kalimantan, increasing from 117,000 hectares planted in 2000 to 1.2 million hectares in 2016. Currently, there are 2.18 million hectares of land in the permitting and licensing process in East Kalimantan that can potentially be allocated to oil palm; forests, swamp, and peatland still cover 50% of this land. Draining the peatlands and converting all these concessions to oil palm plantations could emit 206 million tons of CO_{2e} and set back East Kalimantan's climate mitigation goals by five years.⁷ Coal mining, logging, fires, expansion of agricultural estates, and shifting cultivation are additional causes of forest loss in East Kalimantan.⁸

3. Jurisdictional program in Berau

3.1 Background and context

Berau is the third largest district in East Kalimantan, measuring 2.2 million hectares. More than 75% of Berau's land remains covered by forests that are among the highest in the world for biological diversity, carbon density, and carbon sequestration. Its population has grown at 2.84% per year, from 179,000 in 2010 to 214,828 in 2016, but remains sparsely populated at 6.29 persons per square km.⁹ Berau's economy is dominated by mining (61% of GDP); and agriculture, forestry, and fisheries (11% of GDP).¹⁰ Land use dynamics are driven both by government planning and associated industrial-scale land management and practices of local communities. Economic land concessions have a large influence on deforestation and land use change in Berau, with concessions for oil palm (189,000 hectares), logging (780,000 hectares), timber plantations (229,000 hectares), and mining (185,000 hectares) covering a vast area.¹¹ Peatlands in Berau are small in extent (less than 30,000 hectares) and limited to the Segah and Gunung Tabur Sub-districts; these lie mostly within production forests and are subject to concessions. Additional drivers of deforestation and forest degradation in Berau include illegal logging, shifting cultivation, and mangrove conversion for shrimp farming.

In 2008, a coalition of partners began developing the Berau Forest Carbon Program (BFCP) as a jurisdictional REDD+ demonstration project. This coalition included the District Government of Berau, the Provincial Government of East Kalimantan, the Ministry of Forestry, the National Planning Agency (BAPPENAS), the Nature Conservancy, local NGOs, companies, and international funders. The Berau Program was the first REDD+ activity in Indonesia designed at the landscape scale to include a representative selection of stakeholders, land use, and land tenure situations.¹³ The goal was to implement a district-scale, low-carbon development strategy to provide improved economic growth and livelihoods for the people of Berau, while also improving forest management and conservation, to help reduce emissions 50% by 2020.¹⁴ The decision to focus on the district-scale was in line with the national REDD+ strategy and IFCA recommendation in 2008.¹⁵ District governments held significant authority for licensing on land use decisions, which meant a demonstration program at the district scale would be useful for testing strategies to replicate and scale up elsewhere.

From the outset, the intention for the Berau Program was to improve “wall to wall” sustainability across the entire land area of the Berau District, including the 1.7 million-hectare forest zone and the lands designated for non-forest use. Working at the district level was important for promoting cross-sectoral collaboration because of the district's broad influence over licensing for forestry, agriculture (primarily oil palm) and mining concessions.

The program was designed and managed as a REDD+ demonstration program with the expectation that REDD+ finance—initially through donor communities and country pledge agreements, such as with Norway, and later through national payment distribution mechanisms—would serve as a major catalyst to drive improvements in natural resource management. This involved ongoing collaboration with national policy-makers to test approaches to carbon monitoring, reporting, and verification (MRV), finance mechanisms, and safeguards. The most programmatic effort, however, was built around several “no-regrets” approaches to improving natural resource management, in line with local interests and goals, and that could demonstrate intermediate progress before climate finance was expected.

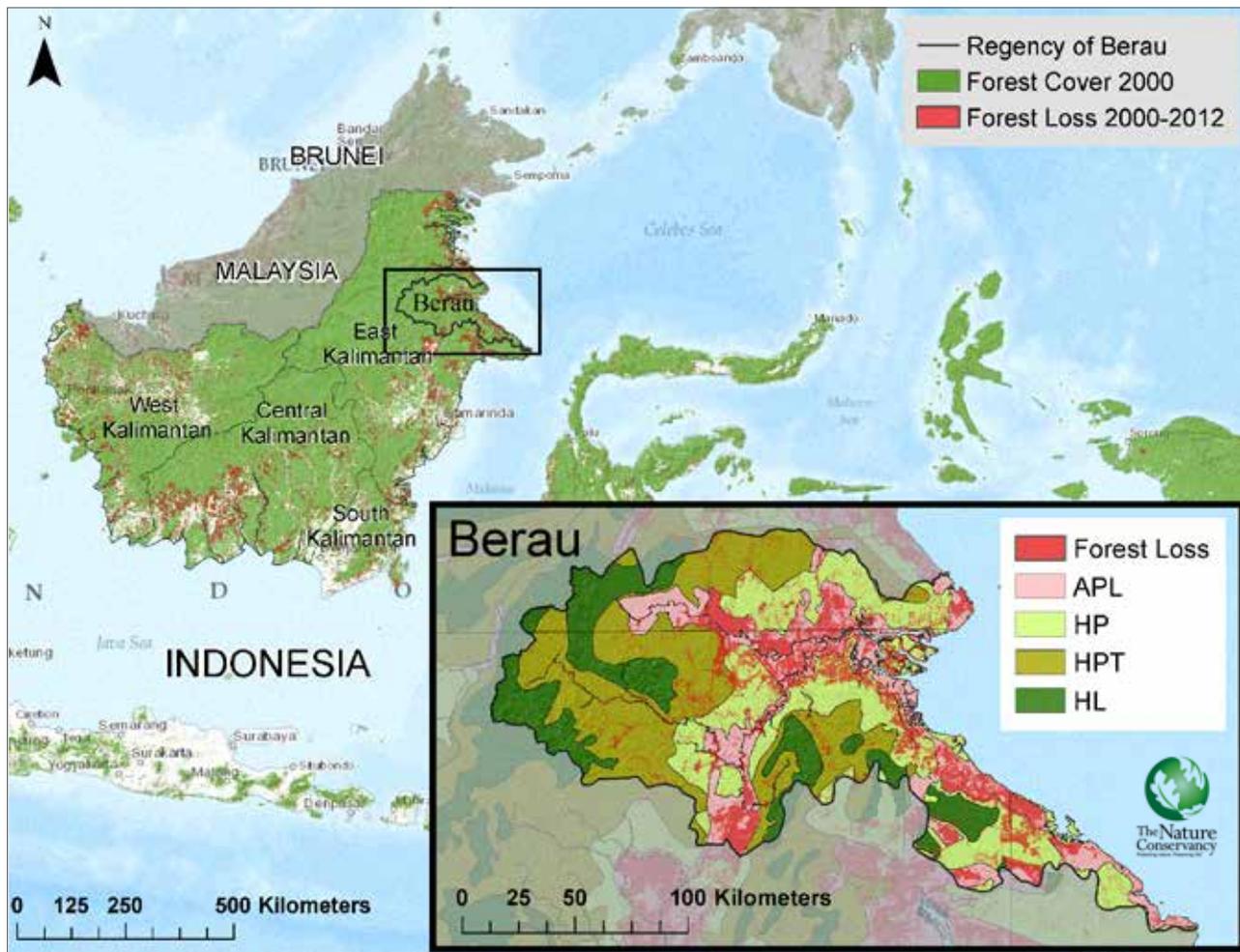


Figure 2. Location of Berau and East Kalimantan. APL = lands not designated for forest use; HP = production forest; HPL = limited production forest; HL = protection forest.¹²

Forest loss in Berau from 2000-2012 as detected by Hansen et al. (2013) is depicted in red (25% canopy cover threshold). Remaining forests are shown in green. Forest loss in Berau is associated with multiple land uses. Oil palm and other agriculture mostly occurs in zones designated for "non-forest" (APL). Fiber tree plantations occur in HP zones. Commercial selective logging concessions are located in HP and HPT zones. Small scale swidden-fallow agriculture is dispersed throughout the landscape. Large coal mining permits overlap all zones except protection forests (HL). Source for spatial plan: Global Forest Watch (www.globalforestwatch.org) accessed on February 20, 2014. doi:10.1371/journal.pone.0146357

The BCFP has been central to Indonesia's proposal (or ER-PIN) to the World Bank Carbon Fund to measure and sell forest carbon emissions reductions. Indonesia's ER program was initially conceived as a support facility for district-scale REDD+ programs, with Berau as one of the primary models; this would have involved the creation of a district-scale REDD+ fund. Later, based on negotiation between the national government and carbon fund participants, the strategy shifted to focus on a there was a decision to reorient the program toward a Provincial scale payment agreement with East Kalimantan (though with activities in Berau continuing to play a significant role in the evolving program).

At the end of the BFCP's development phase (2009-2010), the Berau District Head (*Bupati*) decided to move forward with the demonstration phase of the program.¹⁶ In this decision, the district government officially approved the creation of a Steering Committee (established in 2011) with representatives of the district, provincial, and central government, the Head of the Berau Parliament, and faculty from Mulawarman University to provide program oversight and monitoring. The multi-level Steering Committee would also ensure that the BFCP aligned with the district, province, and national-level policies and programs. The expectation was that during the five-year demonstration phase that key strategies would be developed and tested, including a results-based carbon finance system, and that full implementation could begin in 2016.



Figure 3. Berau Forest Carbon Program Implementation plan (Berau District Government 2010).

3.2 Cross-sector collaboration at district-scale

This section describes the processes and institutional arrangements put into place to establish the leadership coalition of the initiative and help coordinate, support, and finance the working groups that formed the jurisdictional program. These processes form the program “umbrella” or framework that allows multiple sectoral or independent initiatives to be effective and supported, while also helping to keep them aligned with a common vision to ensure they are not working at cross purposes.

3.2.1 Governance and institutional arrangements

The jurisdictional program operated as a network of interrelated initiatives led by separate decision makers and implementing partners. The original program concept was that the district government would oversee a highly integrated program, with support from a technical assistance unit financed through a multi-donor trust fund. This integrated management unit would work to link and coordinate programs across multiple sectors. However, this design proved unrealistic due to the realities of

distributed power, lack of interest by donors in pooling resources, and reluctance by the district government to take responsibility for a broad, highly scrutinized program. At the time the REDD+ concept was less familiar, and REDD+ finance was uncertain, so it was not a strong basis for program development. Therefore, the program functioned as a network of linked but autonomous initiatives overseen by a Steering Committee and supported by TNC as an informal backbone organization.¹⁷

The BFCP Steering Committee, established in 2011, was the high-level governance body for the program led by the district government (headed by the Vice Bupati). The steering committee had representatives of the district, provincial, and central governments as well as Mulawarman University, the national university in the provincial capital. The formal decision-making authority of the Committee was limited because the jurisdictional program had a broad scope, spanning many different legal and regulatory authorities. As a group, they met to discuss cross-cutting issues, give inputs on program direction, and crucially maintain engagement with the provincial and national decision makers. Importantly, members of the Steering Committee also worked in their individual capacities as senior government officials to support the overall program as appropriate.

The REDD+ Working Group was established in 2008 to support multi-sector coordination and serve as the backbone organization for the jurisdictional program.¹⁸ This group had representatives of the district government, private sector, non-governmental organizations, and international institutions active in Berau. The working group helped facilitate communication among stakeholders in Berau and ensure the program developed in a direction that was compatible with local goals. The working group also had a dedicated District secretariat to support operations, coordination, and meetings. The working group included representatives from District Agencies such as the Forestry Agency, Environmental Agency, Agriculture Agency, Mining Agency, Community Empowerment Agency, Planning Agency (BAPPEDA), and the Spatial Planning Agency. The East Kalimantan government also established a REDD+ Working group in 2008 to support the provincial REDD+ development process and work with the district working group.¹⁹

The Community Forum, established in 2013, included representatives from all forested villages in Berau and met once or twice per year. The objectives of the community forum were to act as a peer-to-peer learning mechanism, to complement the government-oriented steering committee, and to gather substantive inputs from village communities participating in the Berau Forest Carbon Program on program-related issues that concern them so that they can voice their concerns and aspirations. The forum itself did not have a formal link to the steering committee, but rather allowed an informal engagement and contributions from communities.

Program resources came from diverse sources. Government financing of natural resource management provided the foundation of the program funding and expanded in important ways to finance KPH development and expanded village development programs. The initial jurisdictional plan called for a multi-donor trust fund and a highly integrated program management unit, but this was judged unrealistic given the nature of distributed government authority and donor interests in supporting focused programs. TNC played a significant role in mobilizing and coordinating resources, attracting and working with other organizations to ensure different funding sources were used effectively. CIFOR, ICRAF, The Asia Foundation, USAID, DANIDA, and NORAD were several of the organizations that financed key projects that helped to deliver on the BFCP strategy.

The Tropical Forest Conservation Act (TFCA) Kalimantan program is a major donor-funded program that has supported the Berau Program. TFCA Kalimantan is a partnership between the US Government, the Government of Indonesia, TNC, and Yayasan World Wide Fund for Nature Indonesia

(WWF). The US Government agreed to forgive USD 26 million in debt (plus USD 2.5 million in interest) in exchange for a commitment by the Indonesian Government to invest the amount of USD 28.5 million into conservation programs. The money was deposited into the Indonesian Biodiversity Conservation Trust Fund (KEHATI). TNC and WWF each donated USD 2 million to the program. The oversight committee consists of TNC, WWF, the Indonesian Government (represented by the Ministry of Forestry), and the US Government (represented by USAID and the US Embassy). The committee made grant decisions to support BFCP and the Heart of Borneo Program in four districts in Kalimantan, including Berau.²⁰ In the case of Berau, grant-making followed the BFCP strategy with the district government sending funding priorities before each grant cycle.

The German FORCLIME (Forest and Climate Change) Program was a major implementation mechanism, implemented by GIZ and KfW. FORCLIME has operated in 3 districts in East Kalimantan, with estimated expenditures of USD 7 million from 2011 to 2016. The program consists of a Technical Cooperation component led by GIZ and a Financial Cooperation component led by KfW. The technical component focuses on three broad themes: Policy advice, strategy, and institutions; Sustainable Forest Management; and Conservation and Sustainable Development in the Heart of Borneo. The financial component aims to demonstrate the viability of a pro-poor REDD+ mechanism in Kalimantan to decision-makers and stakeholders to enrich the national and international debate on REDD+ with practical experience of its implementation. FORCLIME coordinated work with the District Forest Agency and shifted to the District Planning Agency (BAPPEDA) after a change of authority in 2016, focusing on key areas such as helping to establish KPH Berau Barat and its Demonstration Activities.

TNC helped to conceptualize and design the overall program and led on the implementation of several strategies. The initial plan was for TNC to support the design and fundraising for the program and focus on advising and harvesting lessons learned during implementation. The role expanded, however, as it became clear that more would be needed to create momentum in the program. The role eventually included providing informal backbone support to the network of actors in BFCP and playing a significant role in designing and testing models and programs related to village development, sustainable forest management, and sustainable palm oil. Since 2016, the District Planning Agency (BAPPEDA) has been able to increasingly assume the responsibility as a backbone organization, allowing TNC to withdraw to a more technical advisory role. The Vice Bupati has taken on a strong leadership role in the steering committee and helps to coordinate between BAPPEDA and the other NGOs.

District-level planning and cross-sectoral planning was carried out through existing mechanisms and policy frameworks. For example, the BFCP programs were included in the official District Level Mid-Term Development Plan (RPJMD), and the Strategic Environmental Assessment (SEA), which are required by Indonesian law to be carried out at all jurisdictional government levels. The SEA needs to contain all essential biophysical, ecological, social and economic analyses of the landscape as well as how the program will interact with these elements. The RPJMD is the official district plan, and integration of the BFCP strategies into the RPJMD helps ensure they receive allocations of staff and resources.

Communications channels among the program principals in the Berau Program were maintained through the regular working group meetings and a newsletter that provided regular updates to the primary program stakeholders. Coordinated by TNC, these communications channels also ensured that major decision makers were kept apprised of important international and national developments with on REDD+ and forests.



Photo credit: Mark Godfrey, 2008

3.2.2 Program strategy

The Berau Program strategy was developed through a year-long multi-stakeholder planning process and was a key approach to developing and maintaining cross-sector collaboration. The strategy included approaches for strengthening the enabling conditions for natural resource management, including: 1) developing REDD+ systems including a system for Monitoring, Reporting, and Verification (MRV) of carbon, social, environmental, and financial indicators, a system for equitable benefit sharing mechanisms, 2) supporting government spatial planning and development planning capacity; and 3) establishing forest management units to provide direct supervision of the extensive public forest areas in the district. The BFCP strategy also included strategies to transform site-level management by local communities, natural forest logging companies, oil palm growers, and protection area managers. The sections below describe the program strategies, activities, and results in detail.

The BFCP strategy served as a high-level guide for program implementers. The networked implementation model meant that different actors were involved in developing more detailed approaches based on their goals, perspectives, and capacities. Numerous changes in the external context necessitated changes in approaches, including the creation of a National REDD+ Agency and related shifts. There was also significant learning by doing that led to changes in the approach. The overall result is that different program components evolved somewhat independently, but the overall strategy continued to help provide an overall understanding of the interrelatedness of different efforts and help BFCP institutions working to maintain effective collaboration among the network of actors.

Key site-based investment strategies (pilot sites within the district)	
1.	Communities: focusing on villages in the Kelay and Segah watersheds to support improved livelihood opportunities, forest monitoring, sustainable timber, and REDD benefit sharing plans
2.	Production forest: work with 13 timber concessions in Berau to improve legal, sustainable, and low-carbon timber management, achieving certification (SVLK or FSC), and piloting of the forest management unit system
3.	Forest protection and conservation: prioritize protection forests for biodiversity or watershed conservation (including mangrove areas), and test improved management approaches across 100,000 hectares
4.	Oil palm: develop a framework for improved siting of oil palm on degraded lands, improve oil palm productivity (on at least 20,000 hectares), and reduce impacts on biodiversity/environmental services

Table 1. BFCP strategies during the demonstration period focused on site-level management.

3.3 Key jurisdictional enablers

3.3.1 REDD+ related systems

The BFCP began with a major focus on developing a district-level REDD+ program that would be linked to the national program. The national program, however, is still developing, and has gone through several phases with different priorities and orientations, making alignment at sub-national level challenging. The Berau Program has served as a testing ground for various REDD+ policies and systems but does not yet have a functioning REDD+ system in place.

The program aimed to develop a jurisdictional-scale Monitoring, Reporting, and Verification (MRV) system that could nest within the national REDD+ MRV system. TNC and FORCLIME each developed an approach to MRV which enabled comparison of different approaches. The TNC-led model used a gain-loss methodology that integrated global satellite datasets on forest loss/gain and biomass with

field-based estimates of degradation to estimate historical emissions.²¹ FORCLIME used a stock-difference methodology using national forest inventory data, remote sensing, and field verification.²² These two approaches represented substantial technical innovation and allowed comparison of carbon accounting methods. Currently, the Berau District Environmental Agency is developing a District level MRV System, supported by GIZ and TNC, and using data from the Ministry of Environment and Forestry. The Berau Government has established an emission reduction target that is monitored annually. The district-level system links with the provincial and national carbon accounting systems.

Indonesia explored three parallel approaches to implementing and monitoring REDD+ safeguards.²³ These included the Safeguard Information System REDD+ (SIS-REDD+) led by the Ministry of Forestry; PRISAI, developed by the Indonesian REDD+ Agency; and the REDD+ Social and Environmental Safeguards, developed by the Climate, Community, and Biodiversity Alliance (CCBA), an international NGO initiative. The national registry system for safeguards is still under development. In Berau, TNC supported refinement and field testing of PRISAI in a rural village participating in the Berau Program and supported consultations on the other approaches at district and provincial levels.

The development of finance mechanisms for REDD+ also involved multiple approaches. Indonesia's initial proposal to the World Bank's FCPF was to develop district-scale jurisdictional REDD+ payment agreements, which would have involved the creation of a district-scale REDD+ fund. However, the strategy shifted to focus on a provincial scale payment agreement with the FCPF, partly because of the shift in authority over natural resources to the Provincial Government that resulted from Law 23 of 2014. The finance mechanism is still in development, including any arrangements for revenue sharing with the district level. The REDD+ finance mechanism planned under the Indonesia-Norway Partnership is likewise still in development.

BOX 1. National context for REDD+, NAMAs, and NDCs.

The National leadership of the REDD+ program evolved. It began with the Ministry of Forestry, but in 2011 Indonesia signed a USD 1 billion cooperative agreement with Norway to support REDD+ efforts and to develop a province-wide REDD+ pilot project.²⁴ The same year, the president established a REDD+ Task Force to develop the REDD+ Agency, the national REDD+ strategy, and coordinate between government and local ministries.²⁵ The Ministry of Forestry continued to lead Indonesia's partnership with the FCPF and on some other issues.

Indonesia has experimented with national level REDD+ payment agreement, sub-national REDD+ agreements (e.g., with FCPF) and enabled numerous voluntary carbon market projects. Since 2011, over 46 REDD demonstration projects around the country have been established, with varying degrees of government engagement.²⁶ Indonesia has also explored district-scale and provincial-scale jurisdictional approaches for REDD+, which aims to coordinate and implement emissions reduction strategies at the scale of entire districts or provinces.

After 2010, Indonesia started working to integrate land use mitigation with energy and other sectors through a Nationally Appropriate Mitigation Actions (NAMAs) framework. The NAMAs process was largely coordinated by the National Planning Agency (BAPPENAS) and the National Climate Change Council. A major milestone in this process was the *National Action Plan for Reducing Greenhouse Gas Emissions (RAN-GRK) in 2011 to meet its 2020 goal*. The RAN-GRK also provides guidelines for provinces to create their provincial mitigation plans (RAD-GRK).²⁷ The RAN-GRK was a key input into Indonesia's Nationally Determined Contribution (NDC), which describes Indonesia's mitigation and adaptation plans within the global Paris Agreement and aims to achieve 50-60% of emission reductions from the land use and forestry sectors.²⁸

These alternative frameworks for tackling overlapping climate policy and finance issues reflect the global dialogue and had implications for sub-national progress. Indonesia has been an active and committed participant in REDD+ policy dialogue within the UNFCCC and worked hard to advance its national climate policy in line with international agreements. Unfortunately, this has also meant that the separation of the policy dialogue on NAMAs and REDD+, as well as unresolved issues relating to market and non-market approaches, played out at the national level as well as sub-national level.

National level REDD+ efforts have produced several important innovations, many of which continue to drive important reform processes. From 2011 to the present, the Indonesian government has maintained a moratorium on clearing primary forests and conversion of peatlands to allow time for improved forest regulations and governance to be developed.^{29,30,31} This has continued and expanded to include substantial areas of peatland not previously included. The One Map policy, issued in 2013, requires the government to harmonize spatial data across ministries so that land use planning can be applied consistently across the country.³² This continues to build momentum and serve as critical infrastructure for sustainable landscapes efforts.



Photo credit: Nick Hall, 2013

3.3.2 District spatial and development planning

Planning has been a crucial element of the Berau Program. The district was at an early stage of development at the start of the program, due to a smaller population and greater distance from the provincial capital, meaning it faced less pressure on its natural resources until recently. Most of the land area has been allocated to forest land use, and most forests are allocated to timber companies, who operate through selective logging. In other districts, many natural forests had already been converted to higher intensity land uses (e.g., forest or oil palm plantations). In Berau, about 300,000 hectares of land not designated as forest (i.e., APL = other land use) has been allocated as estate crop plantation, of which 100,000 hectares have been cleared to date.

While improving spatial and development planning can be an important lever for change, it is complicated and requires working across jurisdictional levels to achieve good results and influence the decisions of a wide range of actors. If implemented properly, spatial planning can provide a solid context for developing agreement on land use that operates beyond the scale of individual management units or projects. Most of the land in Indonesia is public land, with limited official recognition of community rights (very little private land is found outside of urban areas) despite their de facto long-term presence throughout the country. Improper land use planning processes have led to a high degree of disagreement and conflicts between the government, private sector, and local people for decades.

Indonesia uses a nested system of spatial and development planning to guide development at the district, provincial, and national levels. Planning also has nested time horizons, with long-term, medium-term, and annual plans used to align government efforts for both sectoral and cross-sectoral plans. At the macro-scale, spatial planning determines land designation boundaries, such as the extent of the forest zone and available land for agriculture. The mesoscale involves sectoral licensing decisions to site large-scale plantations and other development and needs to follow a legally-mandated impact assessment process. Companies make micro-scale planning decisions, sometimes in coordination with local communities, to delineate areas within their license boundaries that may not be developed due to legal restrictions (e.g., riparian zones, deep peat >3 meters, or steep slopes), desires of local community members (e.g., land that communities plan to retain for non-oil palm uses), or voluntary certification standards (e.g. HCV areas under the RSPO).

Village planning has long been neglected in government planning processes, and often village boundaries are not included in the official district, provincial, or national government maps. Villages have also typically been left out of licensing decisions occurring on their lands. In this gap, NGOs have often played a major role in supporting village planning processes and helped influence the passage of a landmark 2014 law signed by the president, which provides direct funding from the national and district governments to the nation's 74,000 villages.³³ The law requires that planning and budgeting require inputs of a diverse selection of stakeholders, and support Indonesia's long-standing efforts to decentralize governance. In recent years, many district governments have aimed to clearly define the boundaries of all villages, as the total village area is an important factor that determines the size of the village budget.³⁴

The initial BFCP strategy to improve spatial planning had modest goals, considering that jurisdictional planning is highly politicized, bureaucratic, and hard to influence. Although important, district-scale planning is constrained at other levels. The strategy mostly focused on strengthening capacity for spatial and development planning, improving the quality and accessibility of data, and strengthening the integration of planning approaches. The BFCP leaders expected to adapt initial plans once the REDD+ opportunity became clearer as it was hard to justify or expect major changes in district-wide policy in the piloting phase of a new program.

Several aspects of this strategy demonstrated moderate progress, some that were initiated in Berau, and others that were led by national and provincial initiatives.

- The Geographic Information Agency (BIG) developed the One Map program at the national level to provide an integrated spatial data infrastructure and align disparate maps and data sets across national agencies. This holds strong promise and will eventually help address the problem of different agencies granting overlapping permits.
- TNC supported a district-level Geographic Information System (GIS) learning network for several years and helped improving the understanding and skills of around 25 government officials from different departments in using GIS.
- A national moratorium on new licensing in primary forests and peatlands had little impact in Berau because of the narrow definition of primary forest that was used. However, it did draw attention to the importance of considering forest cover and carbon stocks in such regulations.
- The Ministry of Environment issued a regulation in 2009 requiring Strategic Environmental Assessments (SEA) for all major policies and programs. With support from DANIDA, TNC, and Sawit Watch, the Berau District carried out its SEA for its mid-term development plan and district spatial plan from 2015 to 2016.
- TNC and GIZ supported a 10-year planning process for the Forest Management Unit (KPH) Berau Barat to strengthen forest sector planning.
- TNC and partners facilitated village land-use planning processes in key villages as a part of the implementation of TNC-developed community empowerment approach, called SIGAP (see Section 3.4 below). In 2018, the East Kalimantan and Berau Governments adopted SIGAP through a governor's and bupati's decree.

There are several opportunities to support improved spatial planning moving forward and achieve additional incremental progress. The One Map should be enhanced by including more licensing data as additional government agencies are willing to participate. Results of the SEA should be refined and increasingly integrated with other planning and licensing systems. Strengthening of village development and recognition of land boundaries is also a priority of the current Bupati of Berau and should continue to be strengthened.

3.3.3 Forest Management Units

One of the major binding constraints for sustainable landscapes in Indonesia has been the lack of on the ground institutional capacity. Development of provincial Forest Management Units (*Kesatuan Pengelolaan Hutan*, or KPH) has been promoted by the Ministry of Forestry to improve management of the forest estate throughout Indonesia. The KPHs are the institutions responsible for managing these complex mosaics of forests, integrating the various uses—including production forest, protection forest, conservation areas, and village areas—into a cohesive management plan that balances stakeholder interests and reduces conflicts.

Establishment of KPH Berau Barat was a major priority of the BFCP and one of the main areas of investment of the FORCLIME program. KPH Berau Barat was established in 2012, the first of four delineated KPHs planned for Berau District to be officially established. KPH Berau Barat covers

786,000 hectares or around 50% of the total forest estate in Berau. The process of establishment involved elaborating a forest inventory, negotiating with villages, and developing a 10-year management plan. This support also helped clarify and streamline the roles of government and private actors in regulation of the forest sector. To date, the Berau Program has also supported and involved KPH Berau Barat in several targeted strategies. These include working with forest concessions to improve harvesting practices and achieve certification and facilitating conflict resolution and social forestry activities with communities and logging companies that may overlap. The program is also supporting the KPH in promoting forest and land rehabilitation and conservation in areas outside of concessions or inactive areas.

While the establishment of the KPH is a positive step, achieving these goals will require sustained progress and funding over the coming decades to build the necessary institutional and human capacity. For example, the specific role of the KPH in helping management of the forest concessions and village planning is still unclear, and KPH implementation varies widely even though the regulations are in place. Low budgets and staffing capacity are problems, particularly in the context of declining government budget allocations. Beyond technical aspects of forest management, KPH regulations and staff capacity must be developed to address the challenges of community engagement, conflict resolution, and cross-sector partnership development. The recent shift to provincial government oversight of the forestry sector created some opportunities for efficiencies but has also required significant adjustment by the existing bureaucracy.³⁵

3.4 Village green development

Local communities in Berau, as elsewhere in Indonesia, make substantial contributions to sustainable natural resource management but often lack secure land tenure. Most forest land is owned and controlled by the state or by private actors. Land use laws greatly privilege forest, mining, or agriculture companies over villages that are commonly found within them. Villages and local communities face numerous challenges that limit their ability to maintain access to and control over their lands and to influence district land use planning, forest, and natural resource management. High market demand for forest products and changing state policy make it challenging for villages to improve their well-being while also protecting and managing their surrounding forests.

To understand the situation, in 2009, the BFCP undertook a scoping process of 20 villages in five zones in Berau to understand better the challenges and opportunities of promoting sustainable village development. The study found that many communities had two governance systems present: a traditional *adat* system superimposed with the official village government system, which created challenges in village management. Villages in Berau are culturally diverse and include traditional Dayak communities mostly practicing shifting cultivation and traditional hunting, as well as more recent migrants who practice conventional mechanized agriculture. In most places, village land use plans did not exist, and very little funding was available to fund those that did. Many villages co-exist on company concession lands but typically benefit very little from company operations due to a weak negotiating position, which can increase potential for conflict.³⁶

Informed by this scoping process, TNC developed and tested a comprehensive community empowerment approach in two pilot villages from 2012 to 2014 as a part of the BFCP community engagement strategy. SIGAP (*Aksi Inspiratif Warga untuk Perubahan*, or Communities Inspiring Action for Change),³⁷ adopts an “asset-based community development approach” that builds upon local knowledge, capacities, institutions, and experience to support sustainable community development. The process enables villages to develop a long-term vision for the future and a village land use plan that determines which areas are used for crop production, forest protection, construction, or other uses. SIGAP facilitators helped villages develop their five-year and annual development plans to submit to the district government, including funding proposals for natural resource management and alternative livelihood activities. TNC also tested results-based incentives through agreements with villages to limit deforestation for shifting cultivation to

receive a conservation payment. The SIGAP facilitation process also helped to strengthen the ability of communities to negotiate with logging, mining, or palm oil companies to reduce conflicts and ensure economic benefits are shared equitably with the community.

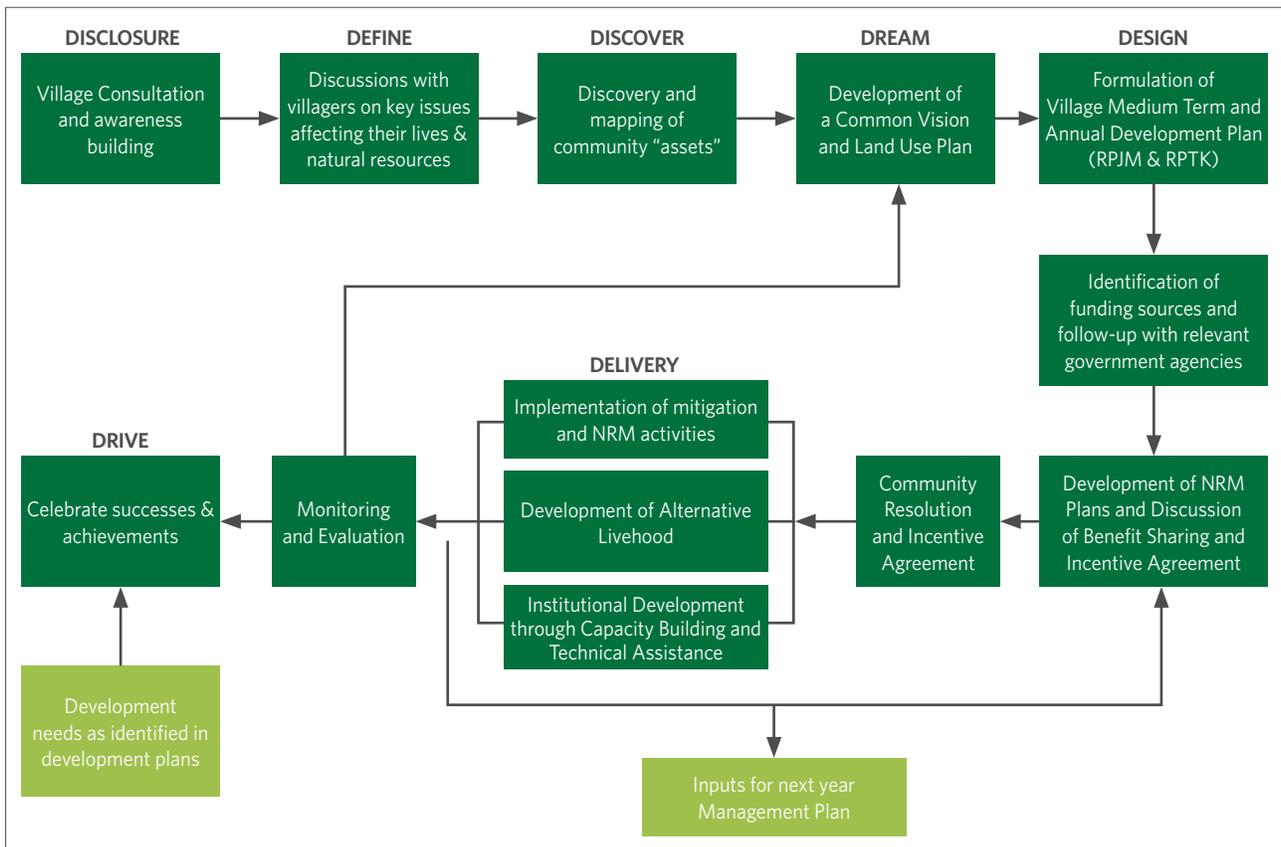


Figure 4. SIGAP framework for community engagement.³⁸

Residents of the two pilot villages, Merabu and Long Duhung, became powerful advocates for forest-compatible sustainable development. The village planning processes improved their internal clarity and agreement on the development path they wanted and helped them to engage more effectively with local government and the private sector. They were able to strengthen their land security by getting formal rights from the Ministry of Forestry (Merabu) and negotiating clearer agreements with neighboring concessions (both villages). The village of Merabu succeeded in getting 35-year management rights to manage and sustainably use an 8245-hectare forest area. They were able to increase the scale of development finance from government and get support for their priorities, which included the development of more diverse livelihood options (e.g., in rubber, agriculture, and ecotourism) and improved management plans and monitoring of protection forest. Their testimonials and the evidence visible during site visits had a significant impact in shifting the perception of key government officials.

SIGAP was expanded to 24 additional villages with support from TNC in providing capacity building and supporting six NGO partners and five community groups to tap financial support from TFCA to facilitate SIGAP in those villages. TNC produced guidebooks, posters, and a short film on the approach, distributed, and used them to train local NGOs, community groups, and key district government agencies in Berau. As the results, in addition to Merabu, the villages of Dumaring, Biatan Ilir, Long Ayap, and Punan Segah have obtained Village Forest management rights, and the community of Semurut has obtained community timber plantation rights.

To enable effective implementation of SIGAP in a larger number of villages, TNC developed an Android-based application.³⁹ As of 2018, the platform linked more than 100,000 villagers across 150 villages covering more than 3.5 million hectares. Villages received a total of 1000 smartphones and extensive training on SIGAP and android application. Conducted in 2017, the training brought together around 1,700 participants. Around 1,500 participants were from 150 villages in Berau District and three other districts in East Kalimantan, and the rest were participants from local NGOs and government agencies. The villagers can use the application to share information and experience with other villages facing similar circumstances or pursuing similar development strategies. Soon they should also be able to directly upload land use plans and development plans that can be viewed by government decision makers.

The core approach of SIGAP has been consistent, but its application has evolved as opportunities have shifted. Initially, TNC focused on promoting forest-compatible livelihood programs and good conservation management through incentive agreements with villages to test REDD+ performance-based finance at the village level. While there has not been an opportunity to scale up the use of these incentive agreements using REDD+ finance, in recent years both the district and national governments have substantially increased public funding for village development plans. This has created larger and more predictable financing opportunities as well as greater opportunity for uptake of village development plans in formal government processes. The Ministry of Environment and Forestry has also increased efforts to issue social forestry licenses, creating opportunities for securing village rights to natural resources. Interest on the part of progressive oil palm companies in better village partnerships has led to the development of additional modules for SIGAP to support villages located near oil palm concessions (see Section 3.5.2).

SIGAP has been adopted as a village development planning approach by the Berau District and East Kalimantan Government. TNC helped both the provincial governor and the district Bupati to formulate a regulation on SIGAP. In 2018, the Berau District Government initiated a district-wide program called SIGAP Sejahtera which put one facilitator in each of the 99 villages in Berau to facilitate SIGAP processes. The provincial government is also exploring how to also test SIGAP in 100 additional villages in East Kalimantan, outside of Berau, in hopes of eventually scaling up to all its 841 villages in the province. To make this strategy work requires trained local facilitators, maintaining a strong commitment to balancing conservation with local economic development opportunities, and managing uncertainty in the process, but the support for scaling this innovation is promising.

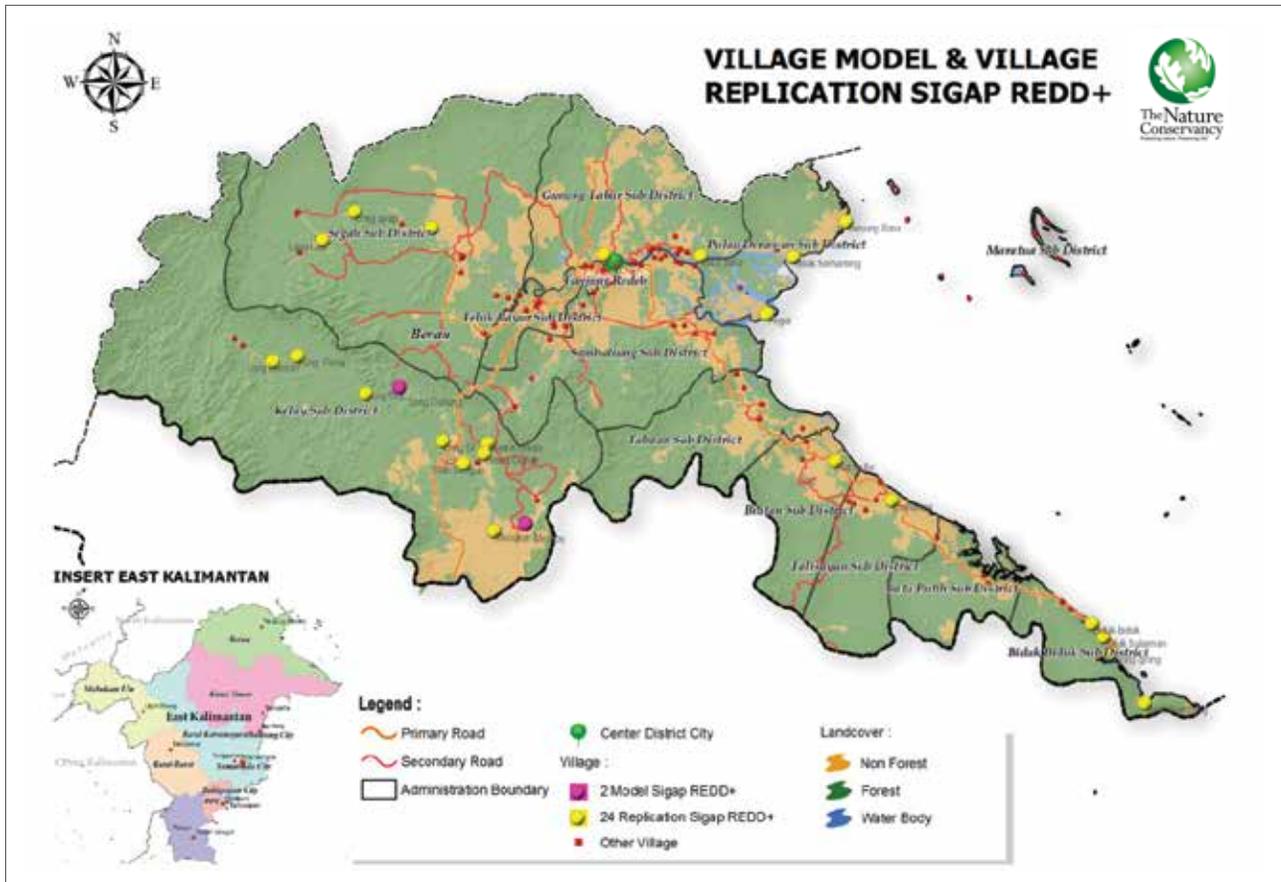


Figure 5. SIGAP development and replication in Berau with TFCA funding support.

3.5 Major sectoral work

Catalyzing sustainability transitions in high-impact economic sectors is a critical goal for jurisdictional programs. Impacts tend to be concentrated within a few sectors. In the case of East Kalimantan this included palm oil, forestry, and mining. Approaching sectors as holistic systems and engaging the full range of regime actors is important for revealing challenges and opportunities that must be considered in developing potential solutions. Regime actors include direct supply chain companies and outgrowers, sectoral regulators, financial institutions, and others. Among the main advantages of jurisdictional programs is the ability to engage with this broad cross-section of actors and look at the ways that direct industry actors operate, relevant regulatory frameworks, relationships and inter-dependencies between sectors, and identified key leverage points for change. Another value of jurisdictional programs is to bring a mindset of creating wall to wall change, which helps to ensure that solutions are relevant to the full range of contexts and not only leading companies.

3.5.1 Sustainable forest management in natural forest concessions

As of 2013, natural forest concessions covered 974,000 hectares of land in Berau (44% of its land area) and were allocated to 13 different companies. This is comparable to East Kalimantan as a whole, which has 42% of its land area (4.5 million hectares) allocated to forest concessions. However, some forest concessions in

Berau remain unallocated, unmanaged, or simply inactive due to their inaccessibility or steep slopes. Given the social and environmental impacts of mining or oil palm, natural forest management for logging can be a more desirable land use that provides an appealing mix of economic, social, and ecological benefits. However, across Indonesia, natural forest concessions are declining. Poor economic factors have constrained natural logging concessions, including low domestic log prices, high taxes and regulations, and competition from more profitable land uses such as palm oil and mining. Several logging concessions also carried out unsustainable logging practices that have left the forests degraded and created social conflicts with adjacent villages. Unmanaged natural production forests are at risks of being encroached or converted to other land uses. It is essential to work with the logging companies to sustainably manage the forests and prevent their conversion to more destructive land uses.

BFCP implemented three complementary strategies to promote sustainable management of production forests. These consisted of: (1) improving legality compliance and mandatory certification under Indonesian standards; (2) supporting companies in obtaining voluntary certification under the Forest Stewardship Council (FSC) standards; and (3) developing a Reduced Impact Logging for Carbon (RIL-C) methodology to measure emission reductions resulting from improved logging practices and incentivize participating companies through political processes.

The program achieved significant progress in all three strategies. It worked with both the government and the 13 timber concessionaires in Berau to help them meet requirements for Indonesia's national Timber Legality Assurance System (*Sistem Verifikasi Legalitas Kayu, SVLK*) and mandatory Sustainable Production Forest Management Certification (*Sertifikasi Pengelolaan Hutan Produksi Lestari, PHPL*). SVLK was developed under a multi-stakeholder process, requires third-party auditing, and is mandatory for all licensed timber concessionaires and companies in Indonesia.⁴⁰ To date, more than 660,000 hectares of logging concessions have been certified under SVLK in Berau. The Berau Program also supported many of these companies in achieving FSC certification, which is the most widespread international forestry certification scheme used in Indonesia. FSC includes criteria for reduced impact logging, respecting community and indigenous rights, and maintenance of high conservation value forests. To date, the Berau Program has supported four concessions in Berau, covering 223,223 hectares, to obtain FSC certification: three companies have already obtained certification, and the fourth is in the process.⁴¹

In addition, TNC developed a Reduced Impact Logging for Carbon (RIL-C) methodology for measuring the carbon impacts of improved practices (currently registered as a VCS methodology).⁴² The methodology was intended to enable logging concessions implementing RIL-C to access results-based carbon finance as an additional incentive to support best practices, as well as potentially improved market and economic incentives. Based on this methodology, companies implementing RIL practices have succeeded in reducing carbon emissions from logging by nearly 50% through improving cutting practices, better skid trail management, and improved road construction techniques. There is major potential at the national level: if half of the 270 Natural Forest Logging Concessions (HPH) in Indonesia—logging 270,000 hectares per year—were to implement RIL-C, it would reduce Indonesia's national emissions by 10 million tons of carbon per year.

Unfortunately, FSC certification and RIL-C have not been able to significantly improve the timber price and overall economics of forest management, which remains a threat to the sector's long-term viability. Natural forest logging continues to be only marginally profitable due to weak market signals and government policies that reduce profitability. Even though potential log sales prices would be higher through export, a roundwood log export ban in place since 2001 prevents logging companies from selling logs abroad. This export ban is in place to protect the Indonesian wood processing industry but keeps log prices artificially low and hurts

companies without downstream processing operations. In addition, high taxes, corruption, and high transport costs make logging marginally profitable in many cases. FSC certified companies often sell logs to mainstream markets or with only modest premiums. Even if carbon finance mechanisms develop, carbon prices will probably remain too low to affect the sector greatly. Altogether, these factors make the economics of natural forest management unfavorable. However, there are opportunities for logging concessions to improve their financial viability to sustain logging over a much longer time frame while maintaining the health of the forest.⁴³

Changes in the governance context for sustainable forest management have also been mixed. The development and establishment of KPHs are in progress but slow due to low capacity and uncertain financing. In addition, some key regulations are weakening, allowing unsustainable management of enrichment planting and reductions in diameter limits that harm regeneration.

While the national government has shown interest in the potential for sustainable forest management as a climate mitigation strategy, it will be important to align various sectoral policies with this goal. This could include policy changes that improve the business context (e.g., diversity of products that can be sold), support improvements in the efficiency of downstream processing, and lifting the log export ban in certain cases where companies can meet high environmental and social standards, and thus allow access to more profitable markets abroad.

3.5.2 Oil palm

Palm oil production is an integral part of the development strategy in East Kalimantan and Berau and is expected to make a substantial and growing contribution to GDP. Indonesia is already the world's largest producer and exporter of crude palm oil, and steadily increasing world demand on palm oil and attractive financial returns make the palm oil sector one of the fastest growing sectors in Indonesia. As of 2013, around 1.1 million hectares of land was allocated for palm oil in East Kalimantan, and 456,000 hectares were already planted while in Berau 291,533 hectares of land was allocated to oil palm permits for 46 companies.⁴⁴

As with the forestry sector, there is no silver bullet for transforming the palm oil sector toward sustainability. The balance of economic, social, and environmental costs and benefits from palm oil production depends on a wide range of government policies and decisions that are made across the value chain. While many of the strategies to improve the sustainability of the sector have focused on voluntary action by the private sector, government planning and oversight and community partnerships are necessary complements. Several companies operating in Berau are members of the Roundtable on Sustainable Palm Oil (RSPO), but few plantations have been certified, and most companies were not involved with RSPO or "no deforestation" commitments.

Given the extraordinary profitability of palm oil and its importance as a government development strategy, the initial BFCP strategy had modest expectations for shifting the sector without substantial incentives and proven solutions. The original oil palm strategy in the BFCP was focused on improving the management and siting of oil palm concessions within the district by working with companies, improving spatial planning, and directing new plantations to degraded lands. The target was to relocate at least 20,000 hectares of existing oil palm permits on forested land to these low-carbon areas. Additional programs were planned to improve the efficiency of oil palm production, reduce the impact on biodiversity and environmental services, and increase benefits to communities. However, difficulty securing funding led this original plan to be delayed.

In 2015, some parts of the BFCP oil palm strategy were started by TNC and the Climate Policy Initiative with funding from the German Federal Ministry of Environment, Nature Conservation, Building and Nuclear Safety – International Climate Initiative under the “Low Emissions Oil Palm Development in Berau District – East Kalimantan” project. The other project partner, GIZ, started implementing other project strategies in mid-2017. The project’s objective is to build an effective coalition for sustainable palm oil in Berau and East Kalimantan. The project consists of four components:

1. Improving the district and provincial government policies and planning systems for siting and licensing palm oil production to help ensure that new oil palm is directed toward degraded lands as much as possible.
2. Developing and piloting decision-support tools for companies to use in mitigation and compensation planning.
3. Supporting village planning processes to enable communities located near current or planned oil palm concessions to proactively engage in palm oil development planning and management so that land use decisions and partnership arrangements are in line with their overall development visions.
4. Developing province and district-level multi-stakeholder fora to bring together companies, government actors, communities, and NGOs to discuss strategic issues and to co-create a shared vision of the sustainability transition in the sector.

As of 2018, the program has achieved several important intermediate results:⁴⁵

- Establishment of the multi-stakeholder fora on Sustainable Estate Crops at the provincial and district level to support dialogue and joint problem-solving related to sustainable palm oil.
- Development of detailed spatial datasets (which include land cover, HCV areas, plantation permits, land suitability maps, and spatial plan) by the East Kalimantan government and being made available through the Provincial Estate Crops Agency’s website.
- The Governor of East Kalimantan and heads of the district governments signed the Sustainable Plantation Declaration in 2017 to protect 640,000 hectares of natural forest and 50,000 hectares of peat areas in lands designated for oil palm development.
- The Provincial Regulation on sustainable plantation development, issued in August 2018 which stipulates the obligation for growers to protect and manage conservation areas (including oil palm areas), apply FPIC approaches and resolve conflicts.
- Efforts to increase the capacity of villages located in oil palm landscapes to undertake visioning, land use and development planning, diversify their livelihoods, protect forest and secure forest management rights, and negotiate with oil palm companies, using SIGAP approach, has begun in two villages.
- A preliminary map of the oil palm supply chain and actors in Berau, as well as recommendations on making the supply chain more efficient to support sustainable land use.
- A diagnosis of fiscal conditions and feasible policy options to adjust fiscal flows and create better incentives for sustainable palm oil.

Continued progress is needed on multiple fronts. The private sector can have a major role in shifting their operations and pressuring others in their supply chain to implement strong mitigation, conservation, and compensation policies. But arguably the indispensable shifts need to come from government actors, especially local governments that give out licenses and the Ministry of Finance which creates many of the most influential incentives.



Photo credit: Bridget Besaw, 2009

3.6 Strengthening conservation management

Around 16% of Berau's land area—around 360,000 hectares—is classified as protection forest (*hutan lindung*), but virtually none of these areas were actively managed at the start of the program. Protection forests are designated for watershed protection and are therefore found mostly in remote areas with steeper slopes. Although they receive virtually no public finance for their management, they are typically not at the highest risk of deforestation due to their remoteness. Nonetheless, they do remain vulnerable to encroachment without active management. Certain protection forests in Berau, such as Hutan Lindung Dumaring and Hutan Lindung Sungai Lesan, are located on flatter and more accessible areas, and thus, cannot be protected against conversion and encroachment without active management.

The BFCP had two initial strategies to improve management of protection forests. The first was to support the development of forest management units (KPHs) and the second was to help villages living near protection forests to

engage in sustainable forest management and protection, which includes green village development and tenure security. Directly, the Berau Program worked to strengthen the management capacity of KPH Berau Barat, which holds around 200,000 hectares of protection forest. In line with the increasing commitment of Government Indonesia to social forestry, the program worked with villages around protected forests to help increase the number of village forest (*hutan desa*) licenses as well as supporting the village green development through SIGAP implementation (See Section 3.4).

Over time, opportunities emerged to work across land use boundaries to protect more broadly-connected ecosystems, particularly surrounding charismatic and unique endangered species and ecosystems. A prime example is the Sangkulirang-Mangkalihat Karst Landscape, a special ecosystem that covers multiple districts, villages, KPH areas, and company concessions, and emerged as an important opportunity to promote multi-stakeholder management.

To date, the Berau Program has achieved some important results. Over 150,000 hectares of protection forest have improved management because of the establishment and operation of KPH Berau Barat, and an additional 38,000 hectares of forests have been placed under community management. These included an 11,000-hectare forest area in Berau Barat and a 2000-hectare karst area that was originally designated for oil palm planting. The Berau Program intends to continue supporting efforts for conservation management by strengthening KPHs, increasing the reach of village forests, and supporting the karst landscape management as a model for multi-stakeholder and multi-land use management for conservation, as well as working to increase public finance going to the management of conservation areas.

3.7 Key results

The Berau Program attempted to accelerate a district-scale sustainability transition. The logic of the approach was that by taking a broad perspective on sustainable landscapes and establishing collaboration across sectors and scales, the strategies and programs designed would meet the needs of diverse stakeholders and achieve multiple objectives. If influential stakeholders support the program, resources from domestic and international sources could be mobilized and aligned for program implementation across the full portfolio of priorities and projects. If implemented well, it would be possible to achieve broad and sustained improvements in natural resource governance and management. Over time, the national and international REDD+ policy and finance mechanisms would develop in a timely way and finance for performance in reducing emissions would reinforce early success and allow for reinvestment and scaling up effective approaches.

The year-long planning process did produce a strategy that stakeholders endorsed, and which reflected a combination of local, national, and global priorities. Domestic and international support was mobilized for all major aspects of the strategy, though funding was significantly delayed in several cases.

More than a half million hectares of production forest concessions in Berau have demonstrated improved forest management due to BFCP strategies. The Berau Program helped certify nine natural logging concessions in Berau covering 529,000 hectares under the mandatory SVLK certification and three concessions covering over 200,000 hectares have achieved Forest Stewardship Council (FSC) certification as of 2016. Furthermore, 37,520 hectares of culturally and environmentally important forest areas have been taken out of production and are now managed as community-based protection forests. RIL-C is also being considered closely as a national-level regulation for all-natural forest concessions.

KPH Berau Barat, covering 786,000 hectares, was established in 2012 and serves as a demonstration model for forest governance reform for Indonesia. The KPH was set up to manage key upland watershed areas and will help serve as a model for East Kalimantan in carrying out its plan to establish a total of 20 KPHs. The KPH of Berau Barat also will play a major role in the Emission Reduction plan being developed for the FCPF Carbon Fund.

The SIGAP framework for empowering communities and improving sustainable livelihoods is increasingly being adopted and scaled up with the support of government decision makers at the district and provincial levels. SIGAP is

being increasingly recognized and adopted as official policy by district, provincial, and national government institutions in Indonesia. Major milestones include:

- Village mid-term development plans using SIGAP are increasingly integrating natural resource management conservation into economic development. In addition, each village receives Village Allocation Budgets every year—totaling USD 140,000 per year from the district government and USD 70,000 per year from the national government—which are used to fund their mid-term development plans. This allows sustainable development to be officially recognized and funded, helping ensure the longevity and success of these activities.
- In 2014, the Ministry of Forestry designated an 8,245-hectare forest area to be managed by the village of Merabu (one of SIGAP two pilot villages). Merabu also serves as a prominent national model for community-based natural resource management, as it was awarded runner-up of a national Village Forest competition in 2016 (after West Sumatra's village forest). In addition to Merabu, the villages of Dumaring, Biatan Ilir, Long Ayap, and Punan Segah have obtained Village Forest management rights, and the community of Semurut has obtained community timber plantation rights.
- The Berau District Government is also developing an official program called SIGAP Sejahtera that put one facilitator to facilitate SIGAP processes in each of its 99 villages.⁴⁶ In parallel, the provincial government is also exploring how to implement SIGAP in all its 841 villages of East Kalimantan. This means strengthened spatial and development planning is now being implemented in all villages in Berau.



Photo credit: Nick Hall, 2013

Tangible improvements have been observed in Berau regarding the management of protection forests and conservation forests. A total of 37,520 hectares of culturally and environmentally important forest areas are now managed as community protection forests. These include:

- The Ministry of Forestry approved the change of status of an 11,000-hectare site in Berau from “non-forest” status into a protection area, allowing the community to manage the forest fully. The area has been designated as an Orangutan protection area by KPH Berau Barat, and the KPH has been working with NGOs and the community to develop ecotourism in the area.
- The Berau Government has protected 2,000 ha of Biduk-biduk karst area to exclude the area from oil palm plantation in 2013. TNC helped the community in developing community-based ecotourism as an income generating alternative after the community rejected an oil palm plantation in Biduk-biduk. In addition, the Berau Government has protected 1327 ha of mangrove forest in Sigending area for eco-tourism development in 2016.
- The management of protected forests in Berau has been strengthened due to NGO support with funding from TFCA. Two NGOs, Operation Wallacea Trust (OWT) and MENAPAK, have actively supported villages adjacent to Hutan Lindung Sungai Lesan and Hutan Lindung Dumaring, respectively in livelihood and protection activities and worked closely with KPHs in the process. Biatan Ilir Village obtained forest management rights for 35 years with the support of MENAPAK. A total of nine communities are in the process to obtain management rights over forests.

Results-based climate finance was a major driver of the BFCP design but has yet to materialize. The potential incentive of climate finance—specifically results-based finance—was a major driver of the development of the Berau Program, but thus far key mechanisms have not been established at the national level. This has slowed down the progress of the disbursement of Norway fund (part of Indonesia’s bilateral agreement with Norway), which could potentially provide sub-national finance. The focus of results-based finance discussions has also shifted to the Provincial Government, creating an extra challenge to delivering incentives at district-level and delaying refinement of district-scale mechanisms.

According to satellite data, deforestation rates appear to be increasing modestly in Berau. There are a number of possible contributing factors. As described in previous sections, interventions took time to develop and scale, and expectations to achieve district-wide impacts in five years were unrealistic. In addition, a significant proportion of deforestation was associated with oil palm concessions that were the planned and approved before the start of the Berau Program and where the concessions undertook land clearing during the implementation of the program’s demonstration phase. Canceling these would have been legally difficult or impossible and would have incurred very substantial costs. The failure to mobilize a strong incentive, either through climate finance or other means, for local government to fully commit to a low-carbon development pathway, was also a factor. As a “high forest, low deforestation” district, deforestation was expected to rise significantly.⁴⁷ Nonetheless, the big question is whether these rates will come down significantly in the next five to ten years as the jurisdictional program continue implementation, or whether the impacts will be insufficient.

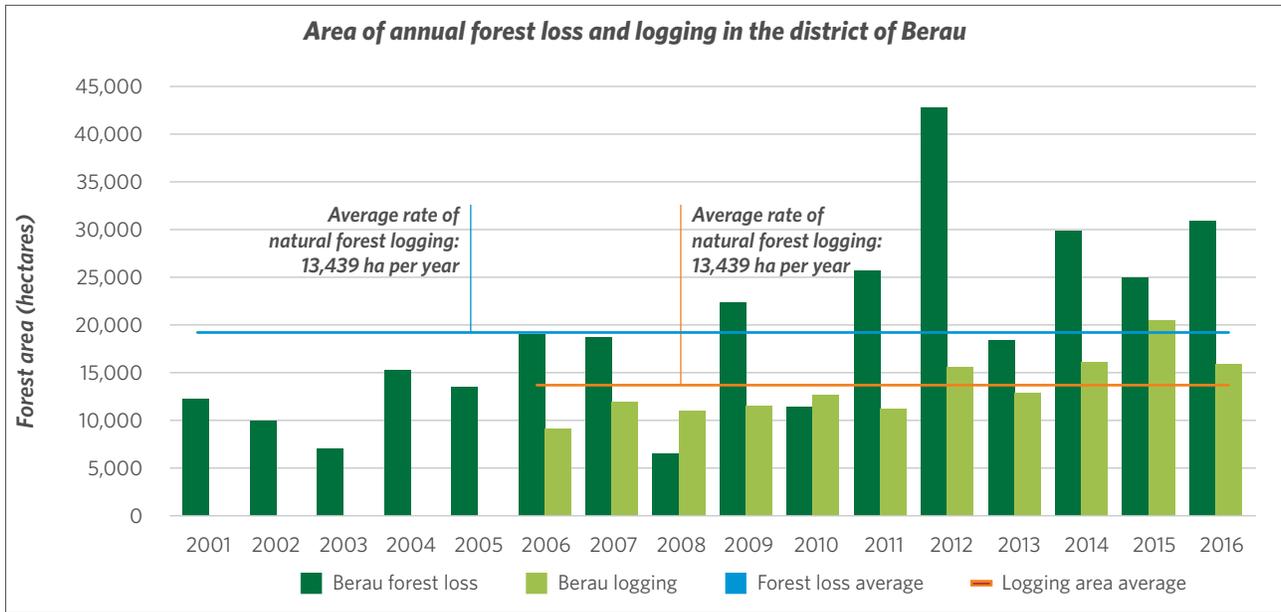


Figure 6. Rates of forest loss and active logging in Berau District (using methods presented in Griscom et al., 2016).

Neither district-wide government statistics nor project-level monitoring systems are currently sufficient to characterize socio-economic impacts of the program. Human well-being indicators have not been collected at a large scale in Berau; however, there are interesting anecdotal reports from villages, such as Long Duhung and Merabu where SIGAP began. In Long Duhung, the community is developing several hectares of rubber and managed to mobilize an additional USD 150,000 for a three-year period (from 2012 to 2015) from different sources to support their development plans. In Merabu, villagers have been diversifying their agricultural production (including with animals, agroforestry, and rubber cultivation), and have an ecotourism lodge attracting more visitors every year. They have mobilized a total of USD 230,000 from 2012 to 2015 from outside sources to support their development plans.

Economic impacts at the scale of multiple forest concessions still need to be collected, but anecdotal evidence exists for the forest concession PT. UDIT (Utama Damai Indah Timber), which TNC has supported since early in the Berau Program. The 49,520-hectare concession has 35,720 hectares under active timber management under a 30-year rotation and sells 30,000 cubic meters of wood per year. At USD 78 per cubic meter net revenue, the company earns USD 2,340,000 per year. They achieved FSC certification in 2017 and have the license until 2050.

The Berau Forest Carbon Program demonstrates how a jurisdictional program can support alignment of a wide range of program elements and advance a locally driven sustainable development agenda, but also some of the challenges in achieving measurable district-wide improvements in a short time. At the beginning of the program, Berau had more than 75% forest cover, only 16% of land zoned for protection, and a substantial portion of the Province’s unallocated land suitable for conversion for industrial agriculture and mining. While ongoing forest loss was inevitable in the short-term, the overall goal of increasing long-term forest cover is still viable. The program mobilized substantial resources to support needed long-term investments in land tenure reform, village development, and institutional capacity for sustainable management of forests. By focusing mainly on locally defined priorities for sustainable development and avoiding high expectations for carbon finance, the program was able to maintain momentum despite the delays in climate finance that provided the main impetus for the program.

3.8 Berau Program going forward

The district-level election that coincided with the increasingly tangible results from the BFCP demonstration phase gave a significant boost to the momentum of the program. The previous administration favored the natural resource-based development model that has been promoted and used in most parts of Indonesia and was cautious in exploring opportunities for green development under the Berau Program. As evidence began to grow—notably from local villagers, but also from forestry companies and various government agencies—that lower-impact development could work, senior decision makers started to shift perspective. The new government is taking a more proactive and comprehensive leadership role of the Berau Program. This has led to increased levels of funding and institutional support from the district government. The district planning agency (BAPPEDA) is taking an increasingly important role as the backbone organization for the Berau Program. The Vice-Bupati has also taken a stronger leadership role as chairman of the BFCP Steering Committee.

Various elements of the Berau Program are moving forward and being mainstreamed in district and provincial policies and programs. The Berau District government has recently integrated the strategies of the BFCP into its latest mid-term development plan (RPJMD 2016-2021), which increases continuity, public funding, and political support. SIGAP is being mainstreamed into a district-scale policy for village development planning through the new SIGAP Sejahtera program and is being considered by the East Kalimantan government to also be mainstreamed at the provincial scale. TNC and the district government have also proposed to the Ministry of Forestry and Environment to adopt RIL-C as a national policy. Berau also continues to play a leadership role in provincial-level processes. These include work with the East Kalimantan Green Growth Compact, FCPF emission reduction program, among others.



Photo credit: Bridget Besaw, 2009

4. East Kalimantan Green Growth Compact

4.1 Lead up and overview of process

In 2009, Governor Awang Faroek Ishak of East Kalimantan announced his plan to make East Kalimantan a “green province” and established the Green East Kalimantan (*Kaltim Hijau*) program. The vision of the program was to achieve economic development while reducing greenhouse gas emissions (19% percent reduction by 2020 with 70% reductions achieved through the land sector) and improving environmental sustainability. In support of these efforts, the province established the Provincial Council on Climate Change (DDPI) in 2011. DDPI is mandated to coordinate and mobilize resources related to climate change from various actors, including different levels of government, the private sector, and donors. The membership of the council originally included only government leaders and university professors but was revised by the Governor in 2017 to include NGOs and other development partners. The Green East Kalimantan program included the development of regional action plans for Reducing Greenhouse Gas Emissions (RAD-GRK), for REDD+ (SRAP-REDD+)⁴⁸ and a Low Carbon Growth Strategy.⁴⁹ In 2013, the Governor issued a moratorium on new licenses for oil palm, mining, and forestry to ensure existing district licenses were properly audited.⁵⁰ In addition, the province had maintained an active multi-stakeholder dialogue through the Provincial Council on Climate Change (DDPI) and had taken some key actions—including the moratorium and a One Man Five Trees campaign to promote reforestation—to start moving the needle on these goals, generate enthusiasm, and mobilize resources.

An important development in 2014 was the passage of Law No. 23, which shifted authority over many natural resource management issues from district governments to the provincial governments. This law also requires the provincial government to be more involved in providing regulatory guidance and technical support to the district governments. This law placed timber and mining concessions under the authority of the provincial government but kept oil palm licensing under the district government. The passage of this law gave additional energy to the on-going commitment from the governor’s Green East Kalimantan Program and related strategies and provided a new pathway for scaling up the work in Berau.

Building upon the progress of the Green East Kalimantan Program, TNC and the provincial government began working together in 2015 to develop a new collective approach to help tackle the province’s inter-related issues on land use, commodities, and landscape sustainability. The provincial government saw this initiative as an opportunity to strengthen engagement and regulatory compliance of private sector and gradually became more aware of the potential of this initiative to draw new investment into the region from companies with larger international reputations and interest in supporting sustainability that could also help raise the sustainability profile of the province. On the 29 May 2016, Governor Faroek announced the official signing of a Green Growth Compact (GGC) for East Kalimantan. The GGC is a multi-stakeholder agreement to work together toward sustainability in the province.

The following sections provide an overview of this process and approach, including strengthening of the leadership network in the province, empowering innovation and the development of specific prototype initiatives to push the province toward its goals for green development, and improving accountability among leaders.

4.2 Leadership network and program governance

One of the main goals of the East Kalimantan GGC is to strengthen the network of senior leaders and decision makers who have the capacity to influence landscape dynamics in the region meaningfully. This is being done through the development and ongoing activities of a multi-stakeholder leadership group, coordination and support by a backbone organization, a jurisdictional compact that creates more accountability for sustainability commitments, and communications and transparency.

4.2.1 Leadership group and roadmap

DDPI worked with the Governor of East Kalimantan and the Ministry of Forestry and Environment to convene a group of fifteen representatives that included the district and provincial government, civil society and NGOs, the corporate sector (palm oil and forestry companies), local communities, the academic community, and donor agencies and established a Design Team. A key step for the Design Team was to develop the overall Roadmap for the GGC. This Design Team continues to evolve and provide strategic direction as a leadership group for the provincial program while official leadership of the GGC is held by the Governor of East Kalimantan, which ensures its political acceptance and legitimacy.

4.2.2 Backbone organization

To convene and support the network of leaders represented in the Design Team as well as the prototype initiatives (described below), the Provincial Council on Climate Change (DDPI) serves as the backbone organization to facilitate multi-stakeholder jurisdictional dialogue, provides guidance and direction to different initiatives, and helps maintain transparency of the overall program. The DDPI is led by a university professor, whose long-held trust with the provincial government, academic background, and relationships with funders, TNC, and other organizations have helped streamline the acceptance of the GGC by relevant stakeholders. The DDPI works to promote information sharing, coordination, and channeling of financing directly to the GGC's prototype initiatives.

4.2.3 Jurisdictional compact

A formal jurisdictional compact, or high-level agreement, can be an important tool for clarifying, documenting, and reinforcing the commitment to a shared vision. In East Kalimantan, the term “Green Growth Compact” is often used to refer to the written agreement as well as the broader partnership and program infrastructure to implement the agreement. The initial partnership agreement had nineteen signatories—including the five district governments, the private sector (including oil palm, forestry, and oil and gas companies), universities, communities, international supporters, and NGOs—who signed a joint declaration of intent to work together to address a wide range of sustainability goals. Specifically, the declaration identifies deforestation and forest degradation, declining biodiversity, threats of climate change, and the importance of natural resources to economic development in the province. This first declaration commits the signatories to work together to catalyze progress on existing sustainability initiatives already launched in the province, including BFCP, Heart of Borneo Program, Wehea-Kelay, the Emissions Reduction Program with the Carbon Fund, and Green East Kalimantan Program.⁵¹

The Compact is seen as a living document and an evolving initiative. Follow up events to consolidate support occurred quickly after that. At a national event in Jakarta on 26 September 2016, the Minister

of the Environment and Forestry officially recognized and endorsed the East Kalimantan GGC. At a side event during the Governors Climate and Forests Task Force meeting in Balikpapan in September 2017, the stakeholders who formed the first seven prototype initiatives that were selected to join the GGC signed agreements that committed them to work together to strengthen and continue their efforts. This event officially added these prototype initiatives to the GGC framework agreement.⁵² Four additional prototype initiatives were added subsequently in 2018, and the portfolio of initiatives will continue to be reflected in the overall jurisdictional compact and related management system.

4.2.4 Ongoing communications and accountability

One of the key mechanisms for the GGC to create progress is through ongoing communication among the leadership network and with the broader public. This helps improve visibility and encourage stronger public commitments by stakeholders, increases transparency of action through improved monitoring, and improves accountability. DDPI developed a registry of prototype initiatives and other commitments that is updated regularly and aligned with the national registry of climate-related initiatives. DDPI also developed a public dashboard to provide up to date information about provincial sustainable development indicators as well as progress on different GGC initiatives. In addition, DDPI facilitates numerous focus group discussions to maintain an open dialogue among NGOs, universities, bilateral organizations, and government. DDPI, Provincial Government, and TNC also have collaborated on outreach through radio, roadshows to different districts in East Kalimantan, public discussion sessions, and press releases. DDPI is also making use of the TNC-supported provincial-level community forum, to inform communities about GGC and seek their views on key issues.

4.3 Empowering innovation and cross-sector collaboration

Improved collaboration and structured innovation are at the heart of the GGC, and an evolving portfolio of “prototype initiatives” will be a major focus to drive the GGC forward. Apart from the broad goals to reduce deforestation and carbon intensity, the GGC framework agreement of May 2016 does not set specific landscape targets (i.e., how many hectares to conserve or tons of emissions to reduce). Rather, as the prototype initiatives are gradually added into the GGC—each bringing its leadership coalition and steered by a backbone organization—their objectives are integrated as targets of the GGC from the ground up. To date, several prototype initiatives have been developed to respond to various sustainable development and natural resource management challenges that require cross-sectoral collaboration and where structured innovation is particularly important.

4.3.1 Understanding landscape dynamics

Understanding the complexity of landscape dynamics is fundamental to developing effective management approaches. While significant analysis of landscape dynamics was done in the early years of the East Kalimantan Green program, notably in developing the provincial green growth strategy, REDD+ plan, and government emission reduction strategy, there were important opportunities to update and integrate understanding to enable GGC initiatives.

To determine the costs, benefits, and impacts of various development scenarios, the GGC team completed a system dynamics modeling analysis in 2016, which included both spatial and economic components. The spatial portion considered land tenure conditions, existing district and provincial development plans, analysis of existing natural capital, and mapping of high conservation value (HCV) and high carbon stock (HCS) forest areas to inform how to mitigate development impacts and

avoid potential conflicts between development of three major sectors (oil palm, timber, and pulp and paper). The analysis also used the InVEST methodology to quantify and map environmental services to guide land use to optimize a balance of human, environmental, and economic land use goals, as well as quantifying watershed and ecosystem services and climate adaptation scenarios.

4.3.2 Prototype initiatives

Prototype initiatives are multi-stakeholder collaborations to tackle complex landscape challenges that require innovation to develop scalable solutions. The prototype initiatives can be roughly placed into two categories: those that focus on specific socio-technical systems (i.e., economic sectors; policy systems) and those that target multifunctional landscapes. The prototype initiatives have several features in common. They all acknowledge that solving a complex sustainability problem requires a diverse and dedicated group of stakeholders who are involved with the problem in different ways. They have all carried through an analytical process to understand the problem and plan potential solutions.

All prototype initiatives use a similar operational approach, including negotiation of a framework agreement to guide collaboration and appointment of a backbone organization to convene stakeholders, coordinate funding and activities, and keep the initiative on track. The template framework agreement and the role of the backbone organization were developed collaboratively by partners leading different prototype initiatives with the goal of simplifying establishment, management, and monitoring of prototype initiatives. While backbone organizations have important roles, responsibilities for active development of the prototype are distributed among most or all participants in the initiative. Backbone organizations can be national or provincial government institutions, national or local NGOs, or potentially private sector.

As the backbone organization for the overall GGC initiative at the provincial level, DDPI oversees the portfolio of prototype initiatives to contribute to the overall objectives and strategies of Green East Kalimantan. DDPI leads the prioritization of initiatives, supports the operation of prototypes by the relevant parties, and helps to link prototype initiatives with relevant decision makers to develop solutions or take them to scale. The first eleven identified initiatives (see Table 2) are high priority opportunities for accelerating Green East Kalimantan. DDPI will also create a platform for the prototype initiative partners to share their experience and lessons.



Photo credit: Nick Hall, 2013

Initiative	Leadership and participation	Innovation and scaling of initiative
<p>The management of Essential Ecosystem Area for orangutan corridor in Wehea-Kelay Landscape: A multi-stakeholder coalition to protect and manage a 368,249-hectare area of biodiverse forests for orangutan conservation, preventing wildlife conflict, and enabling positive benefits for orangutans, communities, and companies.</p>	<p>Includes national, provincial, and district government, conservation NGOs, local Wehea forest management councils, several oil palm and timber companies, and TNC.</p>	<p>The PI aims to provide lessons on scaling-up multi-stakeholder landscape management elsewhere in Indonesia, inform policies for Essential Ecosystem Areas (KEE), and help mainstream best practices for endangered species management into international standards.</p>
<p>Development of a partnership to manage the Mahakam River Delta: management of coastal mangrove ecosystems facing loss and degradation from aquaculture—with roughly half lost in 20 years—and with weak forest management unit (KPH) capacity.</p>	<p>Government leadership includes the provincial forestry agency and the Delta Mahakam KPH. Partners include timber companies with concessions and local conservation NGOs.</p>	<p>PI aims to create a mangrove information center for knowledge sharing and develop a strategic plan and lessons to guide other multi-stakeholder partnerships for coastal mangrove conservation elsewhere in Indonesia.</p>
<p>Carbon emission reduction program in East Kalimantan: the program represents Indonesia’s submission to the FCPF Carbon to achieve emission reductions during the implementation period (2018 - 2024) and receive payments for performance.</p>	<p>Leadership includes the national, provincial, and district governments, and several NGOs, including TNC, WWF, BIOMA and Bumi Foundations.</p>	<p>PI will disseminate lessons to support replication of policies, emission reduction strategies, MRV system, and mechanisms for payment distribution and benefit sharing.</p>
<p>Strengthening institutional capacity of 21 Forest Management Units in East Kalimantan Province: The Provincial Forest Agency has created the KPH Center to provide KPHs with technical, financial, and management capacity.</p>	<p>PI is led by the Provincial Forestry Agency working with all KPHs in the province; support provided by GIZ FORCLIME, WWF, GGGI, and TNC.</p>	<p>It is critical for the KPH Center to act as a strong and sustainable institution to support the development of KPHs in EK and across the country and serving as a learning hub for documentation and dissemination of lessons learned.</p>
<p>Strengthening implementation of Social Forestry: East Kalimantan developed a working group to support communities in obtaining forest management rights, with a target of 660,782 hectares under social forestry by 2019.</p>	<p>This initiative involves collaboration among a broad cross-section of provincial agencies, including on forestry, environment, planning, village development, watershed, management, the KPHs, and support of both international and local environmental NGOs.</p>	<p>The working group aims to develop a more effective platform to mobilize and coordinate financial resources and technical support, scale up SIGAP, and improve outreach, dissemination, and learning across East Kalimantan.</p>
<p>Berau Forest Carbon Program: The continuation of the BFCP continues to focus on strengthening development planning, environmental governance, emission reductions, and community welfare in Berau District, building on existing strategies, including Village Planning, KPH capacity building, and improving natural forest concession management.</p>	<p>Led by Berau District government with support from the Ministry of Forestry, Provincial government, NGO and community forums, KPH Berau Barat, and international support (GIZ FORCLIME, USAID, TNC, and DANIDA)</p>	<p>BFCP will work to expand the reach of existing strategies to promote uptake and replication of successful models, as well as disseminate lessons learned, successful approaches, and tools to inform decision makers elsewhere in East Kalimantan and Indonesia.</p>
<p>Sustainable Agriculture Development in East Kalimantan Province: PI will strengthen collaborative network among district governments in East Kalimantan to rapidly build the policy frameworks, tools, and practices to balance economic, social, and environmental aspects of sustainable agriculture.</p>	<p>Shared leadership between the Provincial Government and the seven district governments of East Kalimantan</p>	<p>Develop and mainstream guidance on sustainable agriculture principles (for companies and smallholders); drive improvements in local and regional policy development and planning for agriculture with improved cohesion among provincial and district scale.</p>

<p>Community-based fire control in oil palm concession areas: developing and testing approaches for communities to support fire suppression in oil palm landscapes.</p>	<p>East Kalimantan Estate Crops Agency is the backbone organization; development of 12 community brigades in 4 districts; more than 100 signatories, including companies, government agencies, and community groups</p>	<p>Potential for application throughout the province and potential for scaling up through both policy changes—including regulation of practices and financing for fire suppression—as well as voluntary corporate action.</p>
<p>Climate villages initiative: supporting village governments to integrate emission reduction strategies, including those that are part of the Province’s Emission Reduction Program linked to the World Bank Forest Carbon Partnership Facility.</p>	<p>East Kalimantan Environmental Agency as the backbone organization; 13 signatories to support implementation in 200 climate villages.</p>	<p>Developing tools and approaches to embedding climate change planning within village-level planning mechanisms (annual plans; mid-term development plans; land use plans).</p>
<p>SIGAP Sejahtera: supporting all villages in Berau District to improve village governance, natural resource management, and economic development.</p>	<p>The Nature Conservancy (Konservasi Alam Nusantara Foundation) as the backbone organization. Other signatories included the Berau District Government, Dharma Bhakti Berau Coal Foundation, Gajah Mada University, several local NGOs, and all village heads in Berau. The Berau Government, Yayasan Dharma Bhakti Berau Coal, and TNC provided funds. Gajah Mada University and TNC provided technical support in program design and implementation.</p>	<p>Provide capacity and institutional strengthening to improve village governance, natural resource management, and economic development in 99 villages in Berau by assigning one facilitator in each village who use SIGAP framework to facilitate village land use planning and development processes.</p>

Table 2. First eleven prototype initiatives (PIs) under the East Kalimantan GGC.



Photo credit: Studio in the Wild, 2011

4.3.3 Learning network

The leadership group, backbone organizations for different prototypes, and participants in prototype initiatives are all active in a Provincial Learning Network, supported by DDPI. The focus of the learning network is on building understanding and capacity for implementation of prototype initiatives. Activities have included sharing experiences and effective practices related to developing and managing prototypes as well as training on key skills such as facilitating cross-sector dialogue and negotiation.

BOX 2. Multi-functional landscape initiatives.

The “landscape approach” is a “conceptual framework whereby stakeholders in a landscape aim to reconcile competing social, economic and environmental objectives.”⁵³ A “jurisdictional approach” is a “type of landscape approach that uses government administrative boundaries, primarily sub-national, to define the scope of action and involvement of stakeholders.”⁵⁴ There are challenges within jurisdictional programs that involve unique sustainability issues that cut across major land use types and policy regimes, but which are not relevant or priority issues across the whole jurisdiction. Multi-functional landscape initiatives can enable a customized approach to cross-sectoral and multi-stakeholder coordination to tackle these challenges within the appropriate boundaries necessary to balance diverse sets of interests and approaches. This can be appropriate if there are special ecosystems that contain unique cultural heritage, biodiversity, or ecological resources that can serve as a rallying point for diverse stakeholders to work together toward a common goal.

Sangkulirang-Mangkalihat Karst Landscape

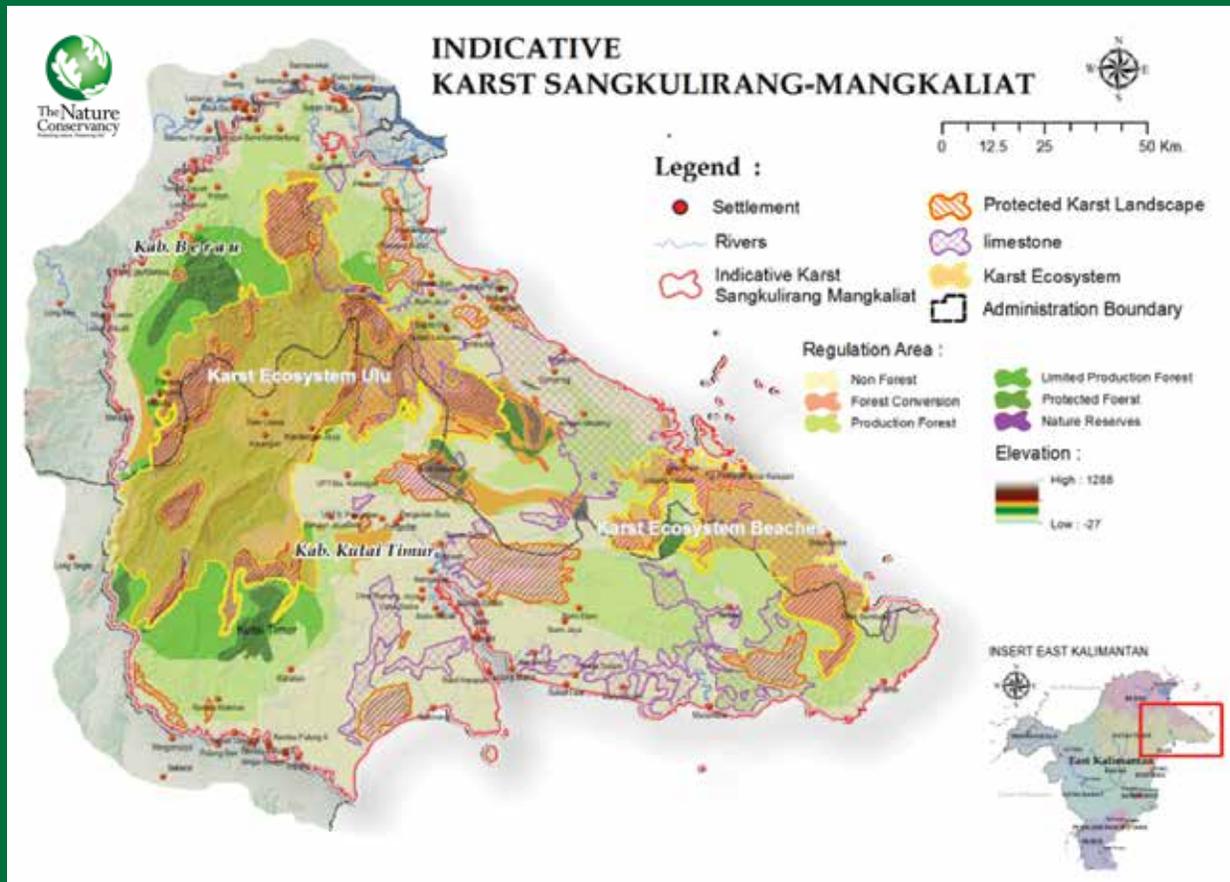


Figure 7. Sangkulirang-Mangkalihat Karst natural area.

The Sangkulirang-Mangkalihat Karst Landscape is a special ecosystem found in the eastern part of Borneo that stretches over 1.8 million hectares of land in the districts of Berau and East Kutai. This area is relatively inaccessible and is known for its unique and striking limestone karst topography and high biodiversity of flora and fauna, with many species found nowhere else on earth.⁵⁵ The area holds forests that are important habitat for orangutans, and the porous karst landscape is important for water filtration and hydrological services. In addition, cave paintings of more than ten thousand years old have made the region a candidate to be a UNESCO world heritage site.

Cutting across two districts, the region requires more careful and integrated landscape management given the uniqueness of its natural resources. Major threats to the region include forest fire, illegal logging, conversion to large scale oil palm plantations and development of cement industries farms (particularly large-scale oil palm plantations), timber plantations, or mines. The Governor of East Kalimantan and the heads of the districts of Berau and East Kutai designated this as a 1.8 million-hectare special management area to improve protection of the landscape. The East Kalimantan governor also issued a decree in 2012 to protect and manage a 307,000-hectare subset of the area⁵⁶ and established a multi-stakeholder forum in 2015 for strategic partners to communicate on improving the management of the ecosystem.⁵⁷ In addition, the Indonesian Karst Study Center is leading the effort to develop a final Management Plan in 2018 with funding from TFCA Kalimantan.²

Wehea-Kelay Essential Ecosystem Orangutan Landscape

Of the 4800 remaining orangutans (*Pongo pygmaeus morio*) estimated to be living in East Kalimantan, only one-fourth estimated to live in protected forests and conservation areas. The majority are found in production forests or move across production and agricultural areas that cut through their habitat. To protect orangutans and reduce the risk of human-wildlife conflict, the national Ministry of Forestry has instituted the management of “Essential Ecosystem Areas (*Kawasan Ekosistem Esensial*, or KEE) to support biodiversity conservation by protecting critical habitat corridors (see map in Figure 1).

Using surveys of orangutan habitat throughout Kalimantan, the Wehea-Kelay Essential Ecosystem Area was delineated as a 532,000-hectare region on the southern border of Berau and northern border of East Kutai. This area in Wehea-Kelay landscape supports ~2500 orangutans and covers a variety of habitats that include highland and lowland forests that overlap with protection forests, production forests, oil palm plantations, community settlements, and farming areas. The area retains 87% of its area as forest and includes community-managed areas. The goal of the initiative is to create a cohesive and contiguous multi-functional landscape that can be managed toward a common purpose using best practices for orangutan management, even within a matrix of many types of land uses and purposes.

On 15 April 2015, a multi-stakeholder coalition signed a cooperative agreement to manage the KEE for biodiversity conservation. The partners included the Environmental Agency of East Kalimantan (*Dinas Lingkungan Hidup*), the Wehea Protection Forest Management Agency, the Wehea customary council, the district environmental offices of East Kutai and Berau, TNC, four natural forest license holders, one timber plantation license holder, and one oil palm plantation license-holder. Membership is voluntary and has been growing every year. A working group was formed, and a collaborative action plan was developed in 2016 (for the period from 2016 to 2018) that can be carried out alongside other sustainability initiatives in the province. This initiative is also being included as one of the early prototype initiatives in the East Kalimantan Green Growth Compact.



Figure 8. The Wehea-Kelay stakeholder coalition after signing their collaborative agreement in 2015.

4.4 Next steps

The Green Growth Compact was developed three years ago, and the program continues to grow in influence and scope. New prototype initiatives are being developed and approved on a rolling basis based on their contribution to the goals of Green East Kalimantan. As the context and priorities change, there will be an ongoing need to develop new initiatives and wind down others. The flexible framework of the GGC encourages this sort of adaptation. There is ongoing effort to strengthen DDPI's legal basis and its capacity to carry out its coordination role. TNC will continue to play a technical advisory role as needed, continue to help raise funds for the backbone functions, and will remain involved as a backbone organization in several ongoing prototype initiatives.

The program passed one major test when the newly-elected Governor decided to maintain and strengthen the program. Political transitions are very challenging for jurisdictional programs. The broad network of actors involved in the program and the base of support helped maintain program momentum. DDPI continues to work to ensure climate change mitigation and adaptation issues remain the priorities of East Kalimantan Government under new provincial leadership. One pathway is to incorporate them into the new provincial Mid-term Development Plans (RPJMD). Another pathway is through the formulation of the Climate Change Master Plan, legalized by a provincial regulation. The Green East Kalimantan program is well-positioned to engage national government, international development partners, as well as the private sector. Indonesia continues to develop its approach to delivering on its Nationally Determined Contribution for climate mitigation, and companies continue working to meet targets for eliminating deforestation from their supply chains. The Green East Kalimantan Program provides a way to invest in those agendas while leveraging other compatible and complementary efforts underway.

5. Lessons and insights

Importance of orienting jurisdictional programs around locally defined sustainable development

- 1. A sustainable development orientation based on local needs and context was critical to making progress.** While the Berau Program began as a REDD+ program, from the earliest engagement with stakeholders, it was clear that it needed to be framed in the context of sustainable development. The goals, strategies, and activities of the Berau Program all reflect this. The program has worked to emphasize the local benefits of sustainability rather than depending on externally-generated incentives or disincentives. The GGC experience continued with this approach and experiences at provincial level reinforced experience from Berau.
- 2. Local people are crucial for making the political case for the sustainability transition.** A major turning point in Berau came through SIGAP, when villagers became the spokespeople for a more balanced approach to development and conservation, and the program came to be seen as pro-green development. One goal of SIGAP was to develop incentive agreements with communities that would improve conservation outcomes in line with communities' aspirations. The hope was this would also prepare them for future participation in REDD+. However, the more important benefit was developing the capacity of villages to articulate a clear development vision to guide their efforts and present to the government and to companies to negotiate land use and benefit sharing arrangements. Since 2016, the Bupati of Berau has demonstrated full support for the program and is helping develop the district-wide SIGAP Sejahtera Program that scaled SIGAP all 99 villages in Berau. It also increased the overall level of support for the jurisdictional program.

The vital importance of strong leadership and institutional capacity

- 3. The strong commitment of jurisdictional leaders is a major determinant of success.** In Berau, the Bupati's commitment to the program was mixed until seeing clear evidence of the benefits, and the change in commitment level had important implications for the program. In East Kalimantan, the Governor's consistent engagement and leadership over a long period sent an important message to various government officials.
- 4. Institutional capacity needs to back up top-level leadership, but building it takes persistent effort.** It is necessary to continually invest in building staff capacity, including investing in key champions. This includes negotiation capacity and collaborative capacity more generally, to improve cross-sector effectiveness. A backbone organization can be a crucial partner in building capacity of a range of different institutions within the jurisdictional program.

Sustainable landscapes strategies

- 5. Invest heavily in addressing binding constraints.** Unclear land tenure is a challenge that undermines most sustainability initiatives in Indonesia, from community development to corporate sustainability to government institutional development. It is also far beyond the power of any one actor or institution to tackle that the natural response is to avoid it or tackle it only indirectly, as with corporate FPIC approaches. SIGAP aimed to address this binding constraint through community empowerment. It was the biggest initiative within BFCP and the one with the most opportunity for transformational change in the long-term, with benefits for many aspects of the program. In tackling this type of challenge, it was especially important to work inclusively, emphasizing frameworks for action over simple solutions, and demonstrating persistence to solve decades-old problems. While much work remains, addressing the issue of land tenure ambitiously yielded significant benefits for the program.

6. **Structured innovation can lead to impact at scale although it requires persistence and flexibility.** Examples are seen from investments in developing and testing methods for village green development and reduced impact logging for carbon.
- a. **SIGAP is an example of a deliberate, focused innovation that also benefited from emergent opportunities.** Structured innovation and prototyping of solutions can produce effective results but require patience and persistence and should be designed with a clear vision of its potential in mind. SIGAP was designed carefully to be applicable and replicable across the district and province. SIGAP followed an initially slow period of testing in two pilots and then 24 other villages. The early slow development and expansion required extra effort to maintain on-going investment, but this incubation period was critical to strengthen approaches, change perceptions, and create a local constituency for the changes desired. SIGAP benefited substantially from changes in policy which increased public funding for village development and increased funding and public support for social forestry, opening new opportunities for village development. The adaptability of SIGAP framework to fit local village context was critical to seizing these opportunities.
 - b. **RIL-C was developed originally as a carbon finance tool but found uptake as a governance tool to strengthen sector-wide monitoring and performance.** We initially hoped that RIL-C would enable logging concessions that lowered their environmental impacts to be able to access carbon finance. However, carbon finance mechanisms have been slow to develop, and the potential economic benefits would translate into a very modest economic incentive at current carbon prices anyway. But the cost-effective approach developed to analyze real impacts on the ground is now being considered by national forestry regulators and FSC for potential incorporation. The potential for quantifiable carbon benefits from improved management could motivate policy-makers to address the more substantial economic levers related to distortions in the log markets and fiscal policies that could provide significant incentives for sustainability.
7. **Sector-wide transformation is necessary and most likely requires multiple approaches.** Jurisdictional programs need to be concerned with shifting whole economic sectors, not just practices of leading companies, but even a cursory glance will show that the wide range of actors requires different pathways. Our work with the forestry sector and palm oil sectors convinced us that there was important progress to be made in supporting improvements in legality systems and legal compliance, sustainability certification systems (RSPO and FSC), and company efforts to go beyond certification. These, in fact, are needed to reinforce each other.
8. **Jurisdictional programs can help matchmake among complementary approaches and investments.** Sustainable landscapes are rarely achieved through stand-alone solutions. For example, securing land tenure for communities will only improve their well-being if there are also real economic opportunities. When a palm oil company avoids clearing a forest, the forest must then be actively managed to ensure long-term protection. The major strategies we see in landscapes are all necessary but are all individually insufficient. A key role of jurisdictional programs is to enable experts and initiatives to work in their domain more effectively while also working together.

Jurisdictional program management

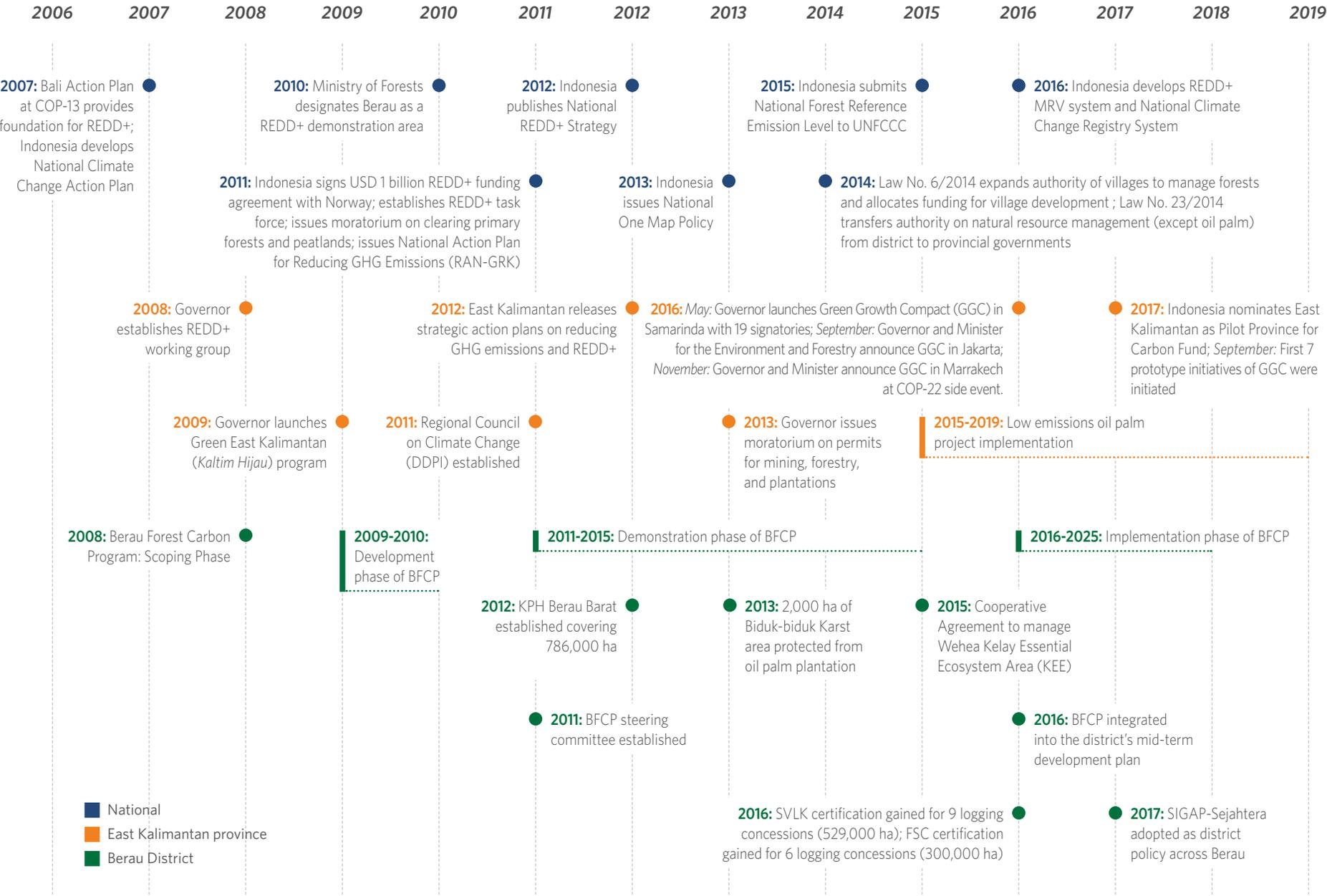
9. **Jurisdictional programs are networks of leaders and implementers.** While the Berau Program started with a mental model of a highly integrated program, this was not realistic given the many different legal and regulatory authorities, private sector dynamics, and the importance of informal community power. Over time, the program operated as a network of different leaders and implementers. The Steering Committee guided the programs and the REDD+ Working Group served as a backbone organization, both with substantial support from TNC. Over time, the district government has increased its coordination of the program, and now serves as the primary coordinator and backbone institutions in the form of the BAPPEDA, the district planning agency, but it is still a network of actors.

- 10. This reality of networked leadership creates some challenges but also enables the programs to adapt.** The Berau Program was initially planned as a multi-donor fund, but this would have taken more time and involved greater transaction costs. The approach of developing and designing the program first, with the government and partner NGOs, and then fundraising from multiple international sources, made for a program with a relatively strong shared vision among domestic government, donors, and other stakeholders. As individual initiatives were built out over the course of the program, they maintained general alignment but also brought new ideas and updated thinking. While the resulting structure was challenging from a coordination point of view, it is ultimately more resilient due to being more diverse and flexible, and not overly bound up in a single government decision maker or donor. The GGC was designed as a networked model from the start and has benefited from increased clarity and diverse leadership.
- 11. Jurisdictional programs can make “unexpected” breakthroughs more likely.** Jurisdictional programs that can build flexible frameworks for action, strengthen relationships and trust, and provide strategic agility (e.g., by accessing diverse resources), can increase the chance of unplanned opportunities arising. In one case, the visibility and appeal of being part of the GGC encouraged an ambitious and unexpected commitment by several district governments to redirecting sustainable agriculture toward existing degraded lands—a shift that could save around 640,000 hectares of forested land from conversion. The profile of the commitment and the ongoing monitoring of commitments also increases accountability for follow-through. In another example, trust built up among actors working on palm oil led to a decision by the Provincial Government to create a publicly accessible WebGIS system to dramatically improve transparency in the palm oil industry—something no other province had done to date.
- 12. Having hard to please stakeholders obligated the Berau program to develop more effective relationships, strategies, and coordination processes, making it stronger overall.** The Berau Program had lukewarm support of the district government in the early years. In retrospect, this was a blessing, as it forced TNC and its partners to work harder at making the case for a jurisdictional program and to develop and test the focused strategies over several years. It also allowed a period of understanding the relationships and context in which the program needed to work to be effective. Once the solutions had demonstrated their potential for effectiveness, they could be scaled up effectively with new leadership that is more supportive, while avoiding the risk of having the program strategies being too closely tied to a political administration.
- 13. Jurisdictional programs work to catalyze sustainability transitions related to many issues that have inherently different time frames.** REDD+ finance, a major motivator for many jurisdictional programs, pays after performance, which creates an urgency to “perform” quickly. However, major sources of emissions are often locked-in: for example, a palm oil plantation may cause emissions for 10 or more years from when it is authorized to when it is fully developed. Many of the most successful innovations have the potential to follow an exponential growth trajectory, where progress may seem trivial for a very long time despite being on track. Many of the most fundamental solutions involve building human and institutional capacity, which can take decades. While these issues are often obvious, they are still hard to manage, especially when there are important inter-dependencies.
- 14. TNC’s role in supporting the backbone infrastructure and program implementation evolved.** Although not the initial intention, TNC wound up providing substantial support for backbone functions as well as implementing major programs in the Berau Program. This happened due to the perceived time pressure for demonstrating REDD+, the failure to align expectations of stakeholders around the originally intended role, and the challenge of building the capacity of potential local implementers and mobilizing capable partners to take these leadership roles. This delayed the full participation of others. When working with the East Kalimantan Provincial Government to develop the GGC, stronger government leadership and capable partners were available, and there was less externally created time pressure. TNC also took a more disciplined approach to supporting the backbone organization (the Provincial Climate Change Council), maintaining a focused role in program implementation, and actively recruiting other leadership. The expectation from the beginning of a networked leadership model was also important. The result was that by intentionally making space for others, far greater and more active leadership emerged from government actors and other development partners.

15. Organizations supporting the backbone infrastructure need the trust of diverse stakeholders. Organizations serving as backbone organization or supporting the backbone organization (as TNC did) in sustainable landscape programs require a high degree of trust from the government, civil society, local communities, and the private sector. They must be seen to be “honest brokers” who do not manipulate the process. TNC had some advantages because we had significant experience working with the full range of landscape actors in East Kalimantan and because individuals in key positions in TNC had the personal trust of different stakeholders. If organizational history is not a resource for building trust, even more time must be spent upfront to achieve sufficient license to operate.



Project Timeline at District, Provincial, and National levels



6. Conclusions

The initial conditions and challenges in Berau and East Kalimantan were daunting: high deforestation rates, an incredibly complex land tenure regime, lack of transparency in decision-making, and an abundance of highly profitable opportunities for natural forest conversion. There were also many shocks to the broader socio-economic context for BFCP and the East Kalimantan Green Program: East Kalimantan Province was split in two; the local government law shifted many responsibilities from district to province; the National REDD+ Agency was created and dissolved; the Indonesian Palm Oil Pledge was created and dissolved, and elections and government staff changes happened regularly. Despite these things, a basic continuity of opportunities and challenges existed. The programs maintained flexibility of strategy and resources and were able to make progress in strengthening forest governance and improving natural resource management practices. Building strategies around local or national constituencies and their goals, which tend to be relatively stable over time, was another important approach.

The jurisdictional programs at multiple levels can be important parts of an overall sustainability transition, but they are better thought of as networks of actors and initiatives than integrated programs. Jurisdictional programs can only succeed by catalyzing genuine leadership and commitment by a wide range of actors, and this is more likely with an adaptive, networked approach.

Results to date illustrate both opportunities and challenges that face East Kalimantan in pursuing its sustainable development goals. The rate of deforestation remains high as actors continue to pursue highly profitable and proven development strategies based on the development of gas, mining, and oil palm opportunities. Green East Kalimantan is gaining traction and represents a growing recognition by government officials, corporate leaders, and the public that a high-carbon economy based on natural resource extraction is not what anybody wants—at least in the long term. Whether efforts to accelerate the sustainability transition through work in different sectors, concessions, protected forests, and communities of East Kalimantan and Berau will be able to grow, thrive, and become the dominant norm, will depend on the leadership, creativity, and collaboration of people of the region.

7. Annex: Annotated Bibliography

Government policy and REDD+ documents

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This policy brief by the national REDD+ agency explains the logic behind Indonesia's focus on jurisdictional (i.e. provincial and district-scale) REDD+, and key considerations and challenges, including governance, balance with sustainable development goals, implementation, and funding.

2. Bappeda Berau (Berau District Planning Agency). 2016. Berau Medium-term Development Plan: 2016-2021. (in Indonesian). Available at: <http://bappedaberau.com/wp-content/uploads/2017/11/RPJMD-Kabupaten-Berau-Tahun-2016-2021-Perda-No-3-Tahun-2016-16-Agustus-2016-Publish.pdf>.

This document provides the full mid-term development plan for the district of Berau, including scenarios for economic development, greenhouse gas emission reductions, and integration of the Berau Forest Carbon Program activities into the district's development plan.

3. Berau REDD Working Group Secretariat. 2011. Berau Forest Carbon Program 2011-2015. Available at: [https://issuu.com/httsan/docs/bfcp - berau forest carbon program](https://issuu.com/httsan/docs/bfcp_-_berau_forest_carbon_program).

This document provides a detailed overview of the Berau Forest Carbon Program, including context, strategies, implementation plan, governance, financing, and indicators.

4. Berau Green Economy Task Force. 2017. Land Use Plan to Implement Low Emission Development in Berau (*Rencana Tata Guna Lahan Untuk Mendukung Pembangunan Rendah Emisi Karbon Kabupaten Berau*). 144 pp. Government of Berau. Available at: <http://www.gelamai.org/files/MediaPublication/1.4-Berau.pdf>.

This document provides the up-to-date strategy by the District Government of Berau on implementing low emissions development, focused on activities in the land use sector, including a description and status to date of various internationally-supported efforts in the district, such as BFCP and FORCLIME.

5. DDPI (Provincial Climate Change Council). 2018. Master Plan Perubahan Iklim Kalimantan Timur (Master Plan of Climate Change on East Kalimantan) January. Available at: <https://doi.org/10.13140/RG.2.2.23487.00165>.

The Climate Change Master Plan for East Kalimantan is important as the vehicle by which the commitments and programs created within the Green Growth Compact Framework become established in law and therefore will continue to be supported in the government budgets, and thus more resistant to short-term political changes. This plan is currently under consideration by the East Kalimantan legislature with expectation that it will be approved this year.

6. Indonesia National Climate Change Council (DNPI) and Government of East Kalimantan. 2011. East Kalimantan Environmentally Sustainable Development Strategy. Available at: <https://www.yumpu.com/en/document/view/30489197/east-kalimantan-environmentally-sustainable-development-strategy>.

This detailed official government strategy document for East Kalimantan was written shortly after the declaration of the Green East Kalimantan program. It sets out the province's broad goals for sectoral and provincial economic growth, evaluates the potential for environmentally sustainable development that reduces greenhouse gas emissions across all sectors, and helps contribute to the national climate mitigation goals.

7. East Kalimantan Climate Change Council. 2016. Uniting Commitments and Efforts Towards Green East Kalimantan. Available at: <https://tnc.box.com/s/c8dhinhtfgf9laobymaukdhq1hfn7ewg>.

This booklet provides a concise overview of the East Kalimantan Green Growth Compact, including regional context, goals, and description of the broad governance structure of the compact.

8. Ministry of Forestry. 2010. Berau Forest Carbon Program: Delivering Practical Solutions to Support Development of a National-level REDD Framework in Indonesia. Available at: https://theredddesk.org/sites/default/files/resources/pdf/2010/Berau_Forest_Carbon_Program.pdf.

This document provides a description and overview of the BFCP, including the context and rationale for working in Berau, why it represents a substantially different type of program (working across all sectors), the major sectoral strategies to be carried out under the BFCP, description of the carbon accounting and governance framework, and the contribution of the BFCP to the national REDD+ program.

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10. Indonesia ER-PIN Presentation. June 2016. Toward a Greener and More Prosperous East Kalimantan. Presented at 14th CF Meeting, Paris, 20-22 June 2016. Available at: https://www.forestcarbonpartnership.org/sites/fcp/files/2016/May/Indonesian_ERPIN_Presentation_Paris_2016_Final.pdf.

This provides the full Emission Reduction Program Idea Note (ER-PIN) for Indonesia, focused on developing REDD+ in East Kalimantan. The document describes the forest estate and land use conditions of East Kalimantan, overview of proposed activities, and other required sections, including institutional arrangements, carbon accounting, financing, and safeguards assessment. The presentation provides a concise and accessible overview of the ER-PIN.

TNC Program Documents, Reports, and Studies

11. Impact Evaluation Report of Berau Forest Carbon Program (Laporan Evaluasi Dampak Program Karbon Hutan Berau). 6 October 2016. (not public). The Nature Conservancy, Berau, Indonesia.

This report (in Indonesian) provides an updated assessment of the Berau Forest Carbon Program's progress on major strategies, indicators, the principal challenges, and next steps in including progress to date on major strategies and indicators, timeline, stakeholder involvement, and next steps.

12. Ekadinata, A., A. Rahmanulloh, F. Pambudhi, I. Ibrahim, M. van Noordwijk, M. Sofiyuddin, M. Agung Sardjono, S. Rahayu, S. Dewi, S. Budidarsono, and Z. Said. August 2010. Carbon Emissions from Land Use, Land Use Change and Forestry (LULUCF) in Berau District, East Kalimantan. World Agroforestry Centre. Available at: <http://www.worldagroforestry.org/region/sea/publications/detail?pubID=2518>.

This report estimates carbon emissions in the Berau district from Land Use, Land Use Change, and Forestry (LULUCF) as an early assessment of REDD+ potential for the Berau Forest Carbon Program and assesses carbon reduction potential from a range of activities that include forest management, logging, plantation forestry, and agriculture.

13. Fishbein, Greg, and Donna Lee. 2015. Early Lessons from Jurisdictional REDD+ and Low Emissions Development Programs. The Nature Conservancy, Arlington, VA, USA. Available at: https://www.forestcarbonpartnership.org/sites/fcp/files/2015/January/REDD%2B_LED_web_high_res.pdf.

In recent years there has been increasing support for REDD+ and low emissions development (LED) at a jurisdictional scale. Jurisdictional efforts were designed to overcome the shortcomings of project-based approaches by working across land-use types and with multiple stakeholders to create models for national implementation. This study analyzes eight of the most advanced REDD+/LED initiatives worldwide—including a critical look at the success and challenges to date—to understand what is needed to succeed going forward. Jurisdictions studies include: Acre, Brazil; Berau, Indonesia; Ghana’s cocoa ecoregion; Mai Ndombe, Democratic Republic of the Congo (DRC); San Martín, Peru; São Félix do Xingu, Brazil; the Terai Arc, Nepal; and the Yucatan Peninsula, Mexico.

14. Griscom, B. W., Ellis, P. W., Baccini, A., Marthinus, D., Evans, J. S., & Ruslandi. 2016. Synthesizing Global and Local Datasets to Estimate Jurisdictional Forest Carbon Fluxes in Berau, Indonesia. *PLOS ONE*, 11(1), e0146357. Available at: <https://doi.org/10.1371/journal.pone.0146357>.

This report by TNC scientists provides an up-to-date and robust estimate of historic forest carbon emissions for the district of Berau, using a synthesis of the existing best available global and local datasets, and a comprehensive analysis of uncertainty at the district scale.

15. Hartanto, H. 2013. “REDD+ Benefits for Communities in Berau: Designs, Lessons, Challenges.” Presentation. Available at: http://www.conservationgateway.org/Documents/Berau_Case_Study_Herlina_Hartanto.pdf.

This presentation provides essential background and a concise overview of the community engagement and development work—specifically the implementation of the SIGAP framework—in the context of the Berau Forest Carbon Program. It focuses on the experience and results from the first two model villages where SIGAP was piloted: Long Duhung and Merabu.

16. Hartanto, H., L. Hayden, E. Myers Madeira, T.S. Yulianto, and T. Hidayat. 2013. Envisioning a Green & Prosperous Future with the Berau Forest Carbon Program. Case Studies in Community Green Development. 20 pp. The Nature Conservancy, Arlington, VA. Available at: <https://www.nature.or.id/en/publication/annual-report-and-general-conservation-issues/envisioning-a-green-prosperous-future-with-the-berau-forest-carbon-program-i.pdf>.

This case study provides a detailed yet accessible overview of the SIGAP community work, how the Nature Conservancy in the context of the Berau Forest Carbon Program is engaging communities in the program to help contribute to the well-being of people living in or near Berau’s forests. The document examines the program’s major approaches, challenges and promising results to date, as well as lessons relevant to the broader REDD+ community.

17. Hartanto, H., and Yulianto, T.S. 2014. *Aksi inspiratif warga untuk perubahan dalam REDD+ (Communities inspiring action for change in REDD+) (SIGAP-REDD+)*. 180 pp. The Nature Conservancy, Jakarta, Indonesia. Available at: <https://www.nature.org/media/indonesia/sigap-redd.pdf>.
- This document is the detailed manual for the implementation of SIGAP-REDD+. The methodology goes far beyond REDD+, and covers the detailed step-by-step process for participatory community mapping, creating the village development plan, and developing cooperative agreements for providing conservation incentives.
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- Brief presentation that describes the rationale for development of a jurisdictional program in Berau, an overview of the objectives and strategies in the Berau Forest Carbon Program, intermediate progress, and lessons learned.
19. Lapeyre, R., H. Hartanto, and R. Pirard. 2015. Designing Incentive Agreements for Conservation: An Innovative Approach. The Nature Conservancy, Jakarta, Indonesia. Available at: http://www.cifor.org/publications/pdf_files/Books/BPirard1501.pdf.
- This document proposes a conceptual approach to designing effective incentive agreements for community development and conservation to address issues that have arisen in previous efforts. Dubbed BLACSI, this approach defines and structures data to be collected at the community and household levels about Baseline scenarios, Acceptable Changes, and Support and Incentives. The document details how this method was tested in Long Duhung and Merabu villages in Berau.
20. Paoli G.D., P. Gillespie, P.L. Wells, L. Hovani, A.E. Sileuw, N. Franklin, and J. Schweithelm. 2013. Oil Palm in Indonesia: Governance, Decision Making and Implications for Sustainable Development. The Nature Conservancy, Jakarta, Indonesia. 70 pp. Available at: <https://www.nature.or.id/en/publication/forestry-reports-and-guidelines/oil-palm-in-indonesia-eng.pdf>.
- This study describes the Indonesian oil palm decision-making processes for a broad audience, including government, the private sector, civil society, international consumers, and donors. The report aims to (a) provide a balanced perspective to help bridge between proponents and critics of oil palm, and (b) highlight opportunities to align decision-making more closely with Indonesia's Green Growth objectives. The report provides key recommendations for strengthening palm oil governance, practices and development outcomes.
21. Rahman, Saipul, and Berau REDD Working Group. 2014. Linking Berau REDD+ Initiatives with National Strategies. Presentation given at World Bank Asia Regional Workshop, Jakarta, June 2-4, 2014. Available at: https://www.forestcarbonpartnership.org/sites/fcp/files/2014/June/Linking%20Local%20REDD+%20Initiatives_Berau_WB_06022014.pdf.
- This presentation provides a helpful, concise overview of the Berau Forest Carbon Program, including the major strategies and links to national programs.
22. The Nature Conservancy. 2006. Ecoregional assessment of biological diversity conservation in East Kalimantan, Indonesia (Vol. I). The Nature Conservancy, Jakarta, Indonesia. Available at: <https://www.conservationgateway.org/ConservationPlanning/SettingPriorities/EcoregionalReports/Documents/EcoRegional%20Assessment%20Kalimantan%20Vol%20I.pdf>.
- This ecoregional assessment by TNC systematically catalogues and assesses the biodiversity, ecosystems, and conservation status of East Kalimantan. This report helped provide the scientific understanding and justification for prioritizing TNC's work in the province as well as informing potential conservation strategies.

23. The Nature Conservancy. 2017. Forest Management Unit: Current Issues and Policy Recommendations. Policy Paper Series. Jakarta, Indonesia. Available at: <https://www.nature.or.id/en/publication/forestry-reports-and-guidelines/policy-paper-fmu-eng.pdf>.

This policy paper reviews the status of Forest Management Units in Indonesia and the principal challenges they face in carrying out effective forest management, including conflicts with communities over rights to use and access; friction in cooperation between FMUs and the district, provincial, and national forest agencies; and insufficient financial resources and incentives, among others. The paper provides recommendations to the Ministry of Environment and Forestry on governance and planning reforms that can be taken to address these systemic challenges.

24. Griscom B., Ellis P. and Putz F.E. 2014. Carbon emissions performance of commercial logging in East Kalimantan, Indonesia. *Global Change Biology*, 20(3):923-937. Available at: <https://doi.org/10.1111/gcb.12386>.

This research finds that Reduced Impact Logging (RIL) methods can reduce CO₂ emissions by 30-50% across at least 20% of remaining forests in East Kalimantan. FSC Certification was not found to reduce overall emissions but was associated with lower emissions from skidding and several other improved practices.

25. Ellis, P., Griscom, B., Walker, W., Gonçalves, F., & Cormier, T. 2016. Mapping selective logging impacts in Borneo with GPS and airborne lidar. *Forest Ecology and Management*, 365, 184-196. Available at: <https://doi.org/10.1016/j.foreco.2016.01.020>

This research assesses improved methods for monitoring the impacts of reduced-impact logging using aerial LIDAR as a more effective tool for remotely quantifying the extent of logging impacts in tropical forests.

26. Miteva, D. A., Loucks, C. J., and Pattanayak, S. K. 2015. Social and environmental impacts of forest management certification in Indonesia. *PLOS ONE*, 10(7), 1-18. Available at: <https://doi.org/10.1371/journal.pone.0129675>.

This paper uses temporally and spatially-explicit village level data on socio-economic indicators in Kalimantan, Indonesia to evaluate the performance of FSC-certified timber concessions compared to non-certified logging concessions. It finds that FSC reduced deforestation by 5%, incidence of air pollution by 31%, and also led to measurable reductions in firewood dependence, respiratory infections, and malnutrition.

27. Putz, F. E., Zuidema, P. A., Synnott, T., Peña-Claros, M., Pinard, M. A., Sheil, D., Zagt, R. 2012. Sustaining conservation values in selectively logged tropical forests: The attained and the attainable. *Conservation Letters*, 5(4), 296-303. Available at: <https://doi.org/10.1111/j.1755-263X.2012.00242.x>.

Recommended third-party reading

28. Anderson, Z. R., Kusters, K., and Obidzinski, K. 2015. Reducing greenhouse gas emissions from oil palm in Indonesia: Lessons from East Kalimantan. CIFOR Infobrief 125. Available at: http://www.cifor.org/publications/pdf_files/infobrief/5749-infobrief.pdf.

29. Anderson, Z. R., Kusters, K., Obidzinski, K., and McCarthy, J. 2015. Growing the Economy: Oil palm and green growth in East Kalimantan, Indonesia. *Land Grabbing, Conflict and Agrarian-Environmental Transformations: Perspectives from East and Southeast Asia*, (20). Available at: https://www.iss.nl/sites/corporate/files/CMCP_20-Anderson_et_al.pdf.

This Infobrief and conference paper provide helpful analysis of East Kalimantan's land-based development goals, status of palm oil development, and current green growth programs in the province. The papers assess the challenges of achieving desired climate change mitigation and social and economic development in line with

further plantation expansion. The longer paper considers several policy instruments and discusses the political, economic, and social issues associated with their implementation, including REDD+ strategies, mandatory sustainability compliance, or improved legal frameworks.

30. Anderson, Z. R., Kusters, K., McCarthy, J., and Obidzinski, K. 2016. Green growth rhetoric versus reality: Insights from Indonesia. *Global Environmental Change*, 38, 30–40. Available at: <https://doi.org/10.1016/j.gloenvcha.2016.02.008>.

This paper assesses Indonesia's 2030 climate mitigation goals to achieve a green economy (29% reduction in CO₂ emissions alongside 7% annual GDP growth), focusing on the green growth ambitions at the level of the province of East Kalimantan. The paper finds that existing plans to expand oil palm plantations conflict with provincial efforts to reduce emissions, highlighting a paradox in the green economy concept in Indonesia, and the contradiction between a development trajectory based on resource extraction and agro-industrial development and green goals linked to environmental protection and climate mitigation.

31. Cut Augusta Mindry Anandi, Ida Aju Pradnja Resosudarmo, Mella Komalasari, A. D. E. and D. Y. I. (2014). TNC's initiative within the Berau Forest Carbon Program, East Kalimantan, Indonesia. *REDD+ on the ground - CIFOR*. <https://www.cifor.org/redd-case-book/case-reports/indonesia/tncs-initiative-within-berau-forest-carbon-program-east-kalimantan-indonesia>.

This article assesses TNC's role in the Berau Forest Carbon Program with a focus on strategies to promote community development. The authors research the socioeconomic characteristics and livelihoods of residents of five villages engaged with the BFCP to assess initial impacts on their practices and well-being.

32. Casson, Anne, Yohanes I Ketut Deddy Muliastira SEKALA, and Krystof Obidzinski. 2015. "Land-Based Investment and Green Development in Indonesia: Lessons from Berau District, East Kalimantan." http://www.cifor.org/publications/pdf_files/WPapers/WP180Obidzinski.pdf.

This paper provides a comprehensive overview of the state of land-based investment in Indonesia, with a focus on the situation in Berau. The paper reviews investment and activities in forestry, oil palm, mining, and forest plantations, and reviews existing and developing REDD+ and green economic policies being developed to balance development and forest conservation.

33. Gaveau, D. L. A., Kshatriya, M., Sheil, D., Sloan, S., Molidena, E., Wijaya, A., and Meijaard, E. 2013. Reconciling Forest Conservation and Logging in Indonesian Borneo. *PLOS ONE*, 8(8). Available at: <https://doi.org/10.1371/journal.pone.0069887>.

This study examines the differences in deforestation rates observed on oil palm concessions, natural forest concessions, and protected forests in Kalimantan, Indonesia, showing that natural forest concessions were able to maintain forest cover nearly as well as protected areas as long as they were not converted to industrial timber concessions.

34. Harris, N. L., Petrova, S., Stolle, F., and Brown, S. 2008. Identifying optimal areas for REDD intervention: East Kalimantan, Indonesia as a case study. *Environmental Research Letters*, 3(3). Available at: <https://doi.org/10.1088/1748-9326/3/3/035006>.

This research illustrates a method for creating deforestation threat maps and estimating potential reductions in greenhouse gases from eighteen protected areas in East Kalimantan, Indonesia, which would occur if protection of these areas was well-enforced. The paper estimates that 230,720 ha of East Kalimantan's forest area would be lost and approximately 305 million tCO₂e would be emitted from existing protected areas between 2003 and 2013 if the historical rate of deforestation continued unabated.

35. Murdiyarso, D., Dewi, S., Lawrence, D., and Seymour, F. 2011. Indonesia's forest moratorium: A stepping stone to better forest governance? 13 pp. CIFOR Working Paper no. 76. Bogor, Indonesia: CIFOR. Available at: <https://doi.org/10.17528/cifor/003561>.

This paper examines the context and impact of Indonesia's Forest Moratorium, which is an important step in meeting its voluntary commitments to reduce emissions. However, several issues are unresolved concerning the area and status of land covered by the moratorium, and hence the amount of carbon stored in the affected forests and peatlands. The paper provides recommendations for public agencies to build on the moratorium's positive impacts to-date.

36. Myers R., Sanders A.J.P., Larson A.M., Prasti H.R.D. and Ravikumar A. 2016. Analyzing multilevel governance in Indonesia: Lessons for REDD+ from the study of land-use change in Central and West Kalimantan. Working Paper 202. Bogor, Indonesia: CIFOR. <http://dx.doi.org/10.17528/cifor/006058>.

This recent paper provides a helpful analysis of recent changes in forest governance, law, and policy in Indonesia and their impacts on land use decision-making processes. The focus on Central and West Kalimantan provides a useful comparison with the experience in East Kalimantan.

37. Obidzinski, K. and Barr, C. 2003. The effects of decentralization on forests and forest industries in Berau District, East Kalimantan. Case study on decentralisation and forests in Indonesia. Bogor, Indonesia: CIFOR. Case study 9. https://www.cifor.org/publications/pdf_files/Books/Decentralisation-Case9.pdf.

This earlier study provides useful historical background on the impacts of initial decentralization policies on forest governance, forests, and forest industries in East Kalimantan, especially following the *reformasi* period after 1998. This study examines both the positive and negative unintended consequences observed in the rapid rate of decentralization of decision making authority on land use to the provincial and state levels.

38. Pohnan, E., Stone, M. W., and Cashore, B. 2014. Global forest governance to address illegal logging: The rise of timber legality verification to rescue Indonesia's forests. pp. 241-254 in: Pia Katila, Glenn Galloway, Wil de Jong, Pablo Pacheco, Gerardo Mery (eds.). 2014. *Forests under pressure: Local responses to global issues*. IUFRO World Series Volume 32. Vienna. 561 p. Available at: http://www.iufro.org/download/file/20182/153/ws32_pdf.

This article examines efforts to address high rates of illegal logging in Indonesia, particularly through a timber legality verification mechanism. The authors "argue that the development of Indonesia's timber legality assurance system (SVLK) and the signing of the EU FLEGT Voluntary Partnership Agreement hold potential for development of durable and effective institutions for reducing illegal logging in Indonesia. If these developments are managed strategically, they can represent a positive development for improved forest governance in Indonesia."

39. Venter, O., Possingham, H. P., Hovani, L., Dewi, S., Griscom, B., Paoli, G., Wilson, K. A. 2013. Using systematic conservation planning to minimize REDD+ conflict with agriculture and logging in the tropics. *Conservation Letters*, 6(2), 116-124. Available at: <https://doi.org/10.1111/j.1755-263X.2012.00287.x>.

This paper's objective is to "critically assess...the expected outcomes of five contrasting scenarios of engagement between a biodiversity actor and REDD+. We discover that in the Berau regency, Indonesia, it is usually beneficial for a biodiversity actor to react in some way to REDD+, but the preferred reaction depends on whether a REDD+ project is already developing in the region, and the scale and type of conservation objectives. In general, from a strict biodiversity perspective, the most cost-effective reaction to the presence of REDD+ is to use biodiversity funds to protect areas neglected by REDD+. Our results demonstrate that if biodiversity actors fail to adapt the way they pursue conservation in the tropics, REDD+ opportunities could go largely untapped."

Endnotes

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