



Commodity, Conservation, and Community Collaboration

Siak, Riau, Jurisdictional Investment Outlook 2022



July 2022

Disclaimer:

Commodities, Conservation, and Community Collaboration: Siak, Riau, Jurisdictional Investment Outlook 2022 is prepared based on observations, discussions and analysis with related multi-stakeholders. This first edition is a living document, therefore additional content may occur in subsequent editions.

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WELCOME REMARKS

Drs. H. Alfedri M.Si.

The District Head of Siak

Bismillahirrahmaanirrahiim,

Assalamu'alaikum Warahmatullahi Wabarakatuh

The main objective of publishing this Siak, Riau, Jurisdictional Investment Outlook 2022 is to promote and to provide information on investment opportunities in all forms in the District of Siak, Riau, that will support the comprehensive and integrated jurisdictional approach in sustainably developing Siak.

Siak is launching itself to become a green district. To achieve this, in a participatory multi-stakeholder manner, we have formulated the Siak Green District Roadmap. To facilitate its implementation, we have enacted key legal instruments, namely the Head of District Regulation No. 22/2018 followed by District Regulation No. 4/2022 on Green Siak.

A Jurisdictional Approach is one that spatially harmonizes production of commodities, upstreaming of commodity and other sectors, as well as conservation so that development in the area can be carried out without degrading natural resources and the environment and is supported by sufficiently protected ecosystem services.

This harmonization is also carried out by all stakeholders collaboratively. In this matter, Siak prides itself as being facilitative to the multi-stakeholder collaborative processes in its development planning, implementation, and monitoring. The District of Siak is a very active and leading member of the Sustainable District Forum (Lingkar Temu Kabupaten Lestari, LTKL). The Government of the District of Siak also benefits from the productive engagement of the civil society through the "Sedagho Siak" mechanism, a participatory multi-stakeholder consultation approach.

This Outlook includes a list of investable jurisdictional initiatives that have been curated collaboratively among the stakeholders and represent a combination of commodity production and conservation. This is the first of such Outlooks and we intend to publish one regularly to inform of additional future initiatives and opportunities.

We thank those who have actively contributed to the development of this Outlook. We also thank potential funders and investors that engage with us. It is hoped that the information contained in this Outlook can show our serious intention to develop Siak as a green and sustainable district.

Wassalamu'alaikum Warahmatullahi Wabarakatuh.



“ The love and care of parents
Grow the children healthy and sound
You provide funding and investment
We provide a fertile and sustainable ground

Drs. H. Alfedri M.Si.
The District Head of Siak

”



Siak has geographical advantage

Siak is a part of the Singapore-Johor-Riau (Sijori) and the Indonesia-Malaysia -Thailand (IMT-GT) growth triangles.



Rp89.8 trillion (\$6.3 billion)

is Siak's Gross Domestic Regional Product (GDRP) in 2021, while growing at 2.31 percent.



Rp192 million (\$13,500)

is Siak's per capita GDRP, making it among the most prosperous districts in Indonesia.



Siak is the most prepared district not only for scaling up investment, but especially for sustainable jurisdictional investment

Head of District Regulation No. 22/2018 on Green Siak followed by District Regulation No. 4/2022 has been enacted to provide a legal basis for the Siak Green District Roadmap 2021-2024.



The Green Siak Roadmap has become a reference for the Regional Medium-Term Development Plan

In addition, the Siak Regency Government provides fiscal incentives for green villages in Siak Regency (TAKE), namely for villages that perform well in environmental protection, economic improvement, and poverty alleviation.



Siak already has a number of investable jurisdictional initiatives that will benefit from sustainable financing

The list shows sufficient combination of both production and conservation to sustainably enhance peatland management in Siak, as carried out collaboratively through multi-stakeholder collaboration platforms under the Secretariat of the Green Siak Coordination Team.



The investable jurisdictional initiatives will contribute significantly to achieving the goals and targets of the Green Siak Roadmap and the overall SDGs in Siak

All of the jurisdictional investable initiatives will contribute to the achievements of the Green Siak Roadmap, bringing Siak towards sustainable prosperity.



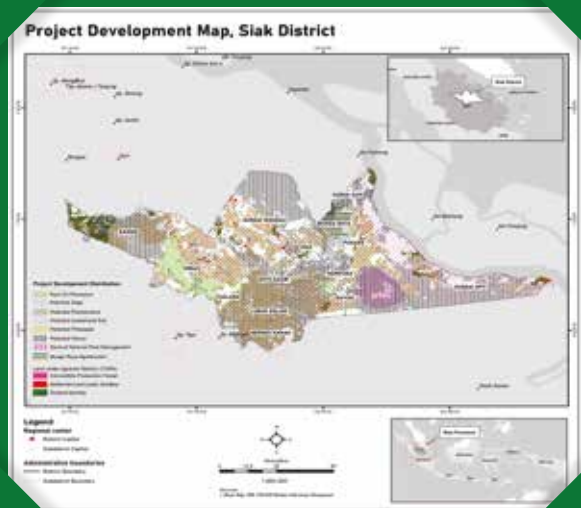
The Green Siak Goals and Objectives contribute to SDGs

Especially on Goals No.1 (No Poverty), No.8 (Decent Work and Economic Growth), No.9 (Industry, Innovation and Infrastructure), No.11 (Sustainable Cities and Communities), No.12 (Responsible Consumption and Production), No. 13 (Climate Action), No.15 (Life on Land), and No. 17 (Partnership for the Goals).



Multi-stakeholder collaboration has been a deep developmental culture in Siak

Siak is an active member and its District Head is Secretary of the Sustainable District Forum (Lingkar Temu Kabupaten Lestari) with stringent membership criteria, while Sedagho Siak, a multi-stakeholder group established by the civil society in Siak, has contributed significantly to the development of the Green Siak Roadmap.



COMMODITY, CONSERVATION, AND COMMUNITY COLLABORATION: SIAK, RIAU JURISDICTIONAL INVESTMENT OUTLOOK 2022

At present, there are eight investable initiatives in Siak. They are a combination of agriculture, paludiculture, value-adding activities from peat fisheries, sustainable commodity initiatives, and better management of peatlands.



Sustainable Palm Oil

This initiative is driven by palm oil downstream companies that outsources palm oil from Siak Districts in collaboration with civil society sector to achieve sustainable palm oil production. This includes landscape monitoring, product traceability, smallholder assistance, capacity building, certification, and audit.



Sustainable Peat Management through Peat-friendly Commodities: Pineapple

This initiative supports quality improvement of the peatland and water management through cultivation of pineapple, a peat-friendly commodity.



Sustainable Peat Management through Peat-friendly Commodities: Sago

This initiative encourages the community to cultivate sago as an endemic plant suitable for peatlands.



Sustainable Peat Management through Paludiculture in Land Under Agrarian Reform (Tanah Obyek Reforma Agraria)

This initiative encourages integrated and comprehensive management of the TORA area based on peat-friendly paludiculture system.



Sustainable Peat Management through Peat-friendly Commodities: Snakehead Fish

This initiative organizes snakehead fishery on peatlands.



Sustainable Peat Management through Peat-friendly Commodities: Bee Honey

This initiative escalated during the pandemic. Farmers cultivate honey bees in the middle of forests and palm oil plantations. This prevents deforestation as well as generates community income.



Sustainable Peat Management through Zamrud National Park

This initiative is a form of nature conservation and peatland management. Through the zoning system, the Zamrud National Park provides many social and environmental benefits, namely: research, scientific, educational, cultural, tourism and recreational purposes.



Sustainable Peat Management through Bungaraya Agrotourism

This initiative is developed and managed creatively by young people and the surrounding community who are members of the Community-based Tourism Group. The agrotourism area also functions to educate the public about environmentally friendly agricultural cultivation.

ACKNOWLEDGEMENT



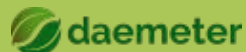
Government of
Siak District



LTKL
Lingkar Temu Kabupaten Lestari



Proforest



Daemeter



Winrock International



Sedagho Siak



PT Alam Siak Lestari



World Resources Institute



Perkumpulan Elang



Landscape Indonesia



CDP



Tropical Forest Alliance

The Zamrud Area is designated as a National Park through the Decree of the Minister of Environment and Forestry No. 350/2016

INTRODUCTION



INVESTING IN THE JURISDICTIONAL APPROACH

Indonesia Has Significantly Reduced Deforestation

Indonesia houses some of the widest and densest biodiversity areas in the world. Indonesia is known as a “mega-diversity” country, being home to the largest terrestrial and marine biodiversity in the world. Its terrestrial biodiversity, contained largely in its forested areas, is second only to Brazil. Deforestation threatens this biodiversity. Deforestation not only destroys biodiversity, disrupting life and socio-economic supporting ecosystems around the area, but it also causes emissions of climate crisis-inducing carbon dioxide and other greenhouse gases.¹

Indonesia has shown remarkable progress in reducing deforestation. From substantially more than a million ha per year before 2015 - which put Indonesia as the largest deforester in the world - the rate of deforestation has been dampened from 734,000 hectares to 339,000 hectares per year in 2021, a reduction of about 54 percent.² This is a remarkable progress.

The government’s sound forest policy may further contribute to the progress. Indonesia targets its forestry sector to be a net sink by 2030, rendering it to be the most ambitious emission-reducing sector. After ratifying the United Nations Framework Convention on Climate Change (UNFCCC) through Law No. 6/1994 in 1994, Indonesia has also signed and then ratified the Paris Agreement through Law No. 16/2016 in 2016. As the most ambitious part of its Nationally Determined Contribution (NDC), Indonesia has committed to a massive reduction of greenhouse gas emissions from its business as usual (BAU) in the forestry sector in 2030 by 60 percent with



Forest in Riau [Restorasi Ekosistem Riau]

own resources, extended to a sizable 97 percent with foreign cooperation. Indonesia’s forestry sector contributed 647 million tons of carbon dioxide-equivalent greenhouse gas emissions (MtCO₂e) out of the 1.3 billion tons (gigatons, GtCO₂e) or about half of its total emissions in 2010. Without any systemic emission reducing policy, its BAU emissions may reach 714 MtCO₂e out of the 2.8 GtCO₂e total (25.5 percent). Its NDC targets will limit it to 217 MtCO₂e out of the 2 GtCO₂e total (11 percent) with own resources, extended to only 22 MtCO₂e out of the 1.7 GtCO₂e total (1.3 percent) in 2030.³ This is in line with the commitment of the world leaders at the 26th Conference of the Parties to the UNFCCC (COP26) in Glasgow, to halt net deforestation by 2030.⁴

1 IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services), 2019. *The Global Assessment Report on Biodiversity and Ecosystem Services*. The Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Bonn.

2 Daemeter and Tropical Forest Alliance. 2021. *Decade of Progress. Reducing Commodity Driven Deforestation in Indonesia and Malaysia*. A study by Daemeter and the Tropical Forest Alliance

3 RI (The Government of the Republic of Indonesia), 2021. *Updated Nationally Determined Contribution: Republic of Indonesia* (July 21, 2021). Ministry of Environment and Forestry, Jakarta; KLHK (Kementerian Lingkungan Hidup dan Kehutanan), 2022. *Operational Plan: Indonesia’s FOLU Net Sink 2030*. Kementerian Lingkungan Hidup dan Kehutanan, Jakarta

4 Einhorn, C., and C. Buckley, 2021. “Global Leaders Pledge to End Deforestation by 2030”, *The New York Times* (November 1, 2021).

The Imperatives of Jurisdictional Approach

The Jurisdictional Approach drives sustainable development through ecosystemic balance within the jurisdictional boundary. In a jurisdictional approach, the balance between production functions of lands (agriculture, industrial, infrastructure, and settlements) and protection (conservation, and restoration) are planned, maintained, and monitored spatially and managed participatorily and consultatively by the various stakeholders, led by the jurisdictional leader. It is an expansion of the landscape approach. And as such, the jurisdictional approach may also be coined as landscape approach within a jurisdictional boundary.⁵

The Jurisdictional Approach is a strategic approach to consolidate various approaches towards sustainability in a comprehensive and integrated manner. In the context of commodity production, it is the result of an evolution of sustainability approaches at the levels of farm and factory to the supply chain, and eventually the sourcing area.⁶ In the context of conservation, the jurisdictional approach can balance the needs to carry out conservation in the most appropriate areas not only to protect the high conservation value and the high carbon stock areas (HCV and HCS), but also in areas where the ecosystem services of the conserved areas can optimally serve the production and settlement areas in their surroundings. Moreover, some risks related with project or concessional approaches, such as the risk of leakage - referring to increased deforestation in the areas adjacent to the conservation areas due precisely to such conservation efforts. Demand for deforestation-causing activities continue to exist but are merely relocated just outside of the conservation areas.⁷

5 Nepstad, D., S. Irawan, T. Bezerra, W. Boyd, C. Stickler, J. Shimada, O. Carvalho, K. MacIntyre, A. Dohong, A. Alencar, A. Azevedo, D. Tepper, and S. Lowery, 2013. "More food, more forests, fewer emissions, better livelihoods: linking REDD+, sustainable supply chains and domestic policy in Brazil, Indonesia, and Colombia", *Carbon Management* 4 (6), pp., 639-658; Buchanan, J., J. Durbin, D. McLaughlin, L. McLaughlin, K. Thomason, and M. Thomas, 2019. Exploring the Reality of Jurisdiction Approach as Tools to Achieve Sustainability Commitment for in Palm Oil and Soy Supply Chain (March 2019). Conservation International, Arlington.

6 Kissinger, G., A. Brasser, and L. Gross, 2013. *Reducing Risk: Landscape Approaches to Sustainable Sourcing*. EcoAgriculture Partners on behalf of the Landscapes for People, Food, and Nature Initiative, Washington, DC.

7 Nepstad, D., et al., op cit.; Buchanan, J., et al., op cit.



Launching of Green Siak Secretariat [Proforest documentation]

Indonesia has adopted a jurisdictional approach to achieve sustainable development goals (SDGs) at the jurisdictional level. In the context of sustainable commodity production, the jurisdictional approach has been adopted into the Mid-Term National Development Plan (Rencana Pembangunan Jangka Menengah Nasional, RPJMN) 2020-2024. The guideline for its implementation has also been developed by the Ministry of National Development Planning.⁸ In the context of conservation and economic valuation of carbon, Presidential Regulation No. 98/2021 allows regional governments to monetize the economic values of carbon in their jurisdictions.⁹

8 Syahrani, G., 2019. *Concept Note: Developing Food and Agriculture in RPJMN 2020-2024 with the Jurisdictional Approach for Sustainability*. Lingkar Temu Kabupaten Lestari, Jakarta; Bappenas (Ministry of National Development Planning), 2019. *Panduan Perencanaan Perkebunan Berkelanjutan Daerah Berbasis Pendekatan Yurisdiksi*. Ministry of National Development Planning, Jakarta.

9 RI, 2021. Presidential Regulation No. 98/2021 on the Realization of the Economic Value of Carbon in Achieving Indonesia's Nationally Determined Contribution under the Paris Agreement.



Giam Siak Kecil-Bukit Batu Bioserve Area [Hendra Wardhana, Kompasiana, 2016]

Investment in Jurisdictional Approach

A Jurisdictional Approach opens new possibilities for sustainable investment. Investment potential in a jurisdiction usually arises out of commodity production, infrastructure development, and conservation through realizing the economic value of ecosystem services. Investors' appetites for investing in a jurisdictional approach that combines traditional returns of economic and financial benefits with achieving sustainability goals have grown stronger even when they need to be scaled up.¹⁰

Blending financial sources will allow for better risk management. One of the ways to increase the investment scale is for the government (regulator) to provide enabling conditions to increase the perception of security and to reduce risks. A combination of public and private sources, grants

10 Credit Suisse, WWF (World Wide Fund for Nature International), and McKinsey and Company, 2014. Conservation Finance: Moving beyond donor funding toward an investor-driven approach. Credit Suisse, World Wide Fund for Nature International, and McKinsey and Company.

and philanthropies, as well as commercial investments, can be structured in a way that the risks in the portfolio can be reallocated based on the varying appetites of the sources. This structure is also known as blended financing.¹¹

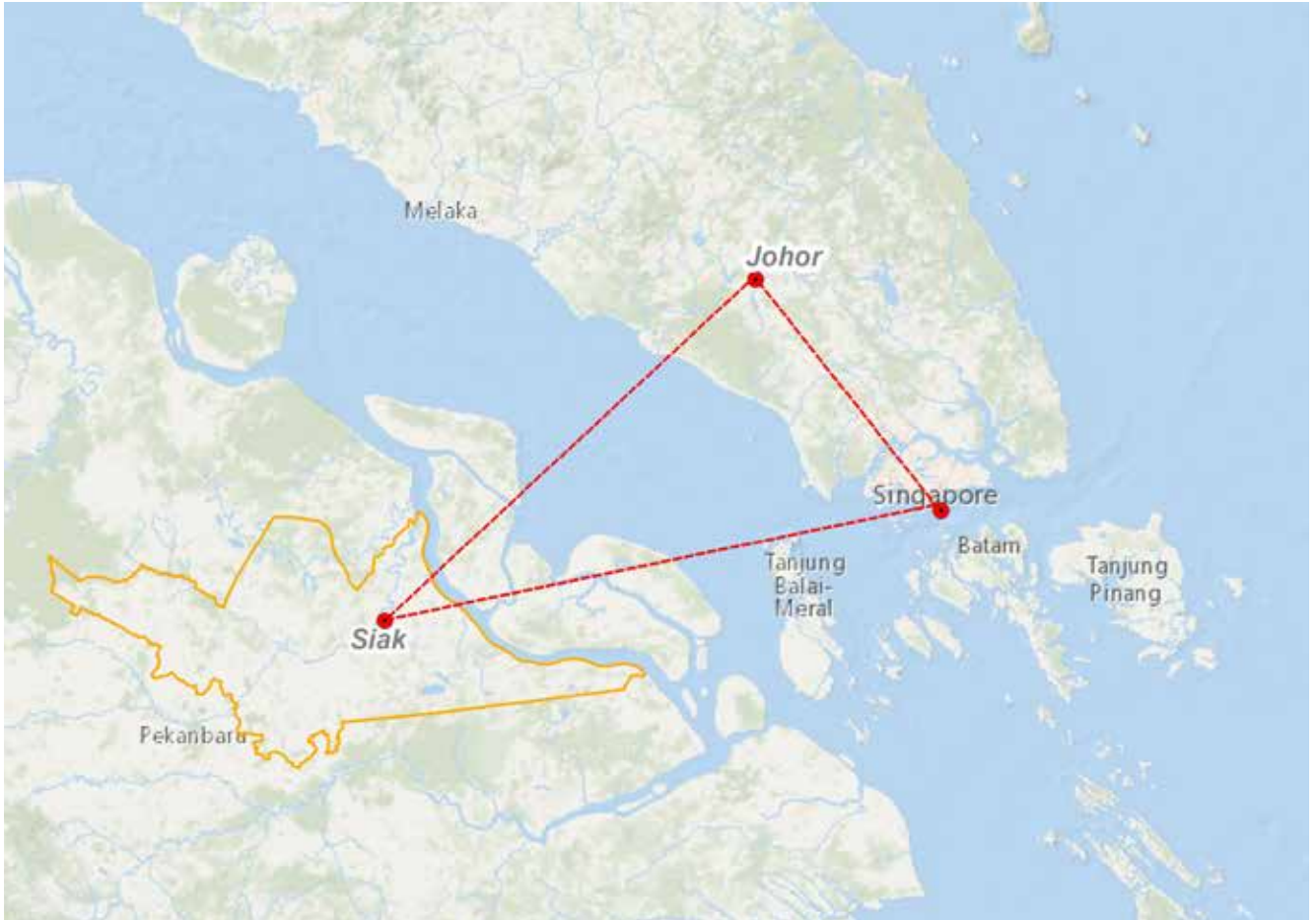
Additionally, investors gain more when they have better engagement with the stakeholders in the jurisdiction. Investment modalities that are traditionally too sectoral and siloed may face some constraints when combined with other sectors in possibly different modalities. As such, sectoral coordination to harmonize investment in a jurisdiction is crucial. This includes provision of initial investments that may be required to prepare and enable more advanced commercial investments. A strong partnership structure will be required between the financiers and the stakeholders in the jurisdictions. Finally, the investment opportunities in a such jurisdictional approach needs to be communicated to the investors.¹²

11 Blended Finance Taskforce, 2018. *Better Finance Better World: Consultation Paper of the Blended Finance Taskforce*. Business and Sustainable Development Commission and SystemIQ, London.

12 Shames, S., M.H. Clarvis, and G. Kissinger, 2014. *Financing Strategies for Integrated Landscape Investments: Synthesis Report*. EcoAgriculture Partners on behalf of the Landscapes for People, Food and Nature Initiative, Washington, DC.

SIAK IS A FERTILE GROUND FOR INVESTMENT

Geographical Advantage



Siak's geographical advantage in the Singapore-Johor-Riau (Sijori) and the Indonesia-Malaysia-Thailand Growth triangles

Siak is a district in the Province of Riau, about 2 hours driving from Pekanbaru, the capital city of Riau. It is located between 1°16'30" and 0°20'49" latitude and between 100°54'21" and 102°10'59" longitude. It covers about 8,589.92 ha, or about 9.74 percent of the total area of Riau, inhabited by about 466,680 people in 14 subdistricts, 9 villages, 114 hamlets, and 8 *adat* (customary) villages. It is dominated by low-lying areas in the East and a bit of higher altitude areas in the West.¹³ Siak is also a part of the triangular regional economic cooperation area of Singapore, Johor, and Riau (Sijori) and the Indonesia, Malaysia, and Thailand Growth Triangle (IMT-GT).

The proximity with other economically advanced countries opens opportunities for Siak to take advantage of a larger Southeast Asian market in addition to the domestic one. They include commodity markets that the district has been a part of for a while with internationally-marketed commodities such as palm oil. They also include cultural and eco-tourism which Siak could offer to neighboring countries, as well as regional ecosystem services through joint conservation initiatives that could reduce global and regional environmental risks such as transboundary haze pollution.

¹³ BPS Siak (Badan Pusat Statistik Kabupaten Siak), 2022. *Siak Dalam Angka 2022*. Badan Pusat Statistik Kabupaten Siak, Siak.

Prosperous Economy

Siak is relatively prosperous especially when compared with other districts in Riau or in Indonesia. In 2021, its Gross Regional Domestic Product (GRDP) in 2021 reached Rp89.8 trillion (\$6.3 billion) while growing at 2.31 percent per year and per capita GRDP at Rp192 million (about \$13,500) per person per year. This was higher than average for Indonesians. Economic recovery has already been felt as the GRDP in 2021 and the GRDP was higher than that in 2019 of Rp82.1 trillion, which contracted due to the prolonged pandemic to Rp77 trillion in 2020. The number of people living below the poverty line is 25,770 people or about 5.18 percent of the total Siak population, and the life expectancy was 71.13 years with Human Development Index (HDI) of 73.98.¹⁴

Siak is mandated to co-manage the Rokan oil block in the district. Since August 9, 2021, PT Pertamina (Persero), the country's state-owned oil company, has taken over the operation of the block from PT Chevron Pacific Indonesia through its subsidiary PT Pertamina Hulu Rokan (PHR). In 2021, the oil block recorded average lifting of about 160,000 barrel of oil per day (bpd).¹⁵ This is about 22 percent of the total oil lifting in the country. Meanwhile, 10 percent of the ownership of the Rokan oil block is co-owned by the Province of Riau and the five Districts according to the location and the volume of the reserves.¹⁶ The co-management of the Rokan oil block will increase the District's income.



The Tengku Agung Sultanah Latifah Bridge which connects the north side and south side of Siak District was built above the Siak River [Pesona Siak]

Infrastructure Support

The Tanjung Buton Industrial Park is being established to develop downstream and infrastructure industries in Siak. It is being developed to generate more value added from downstream industrial development and to reduce dependence on overexploitation of raw materials especially the non-renewable ones. Additionally, the industrial park is made available as other industrial areas along the Siak river are already quite full. Some of the sectors that can be potentially developed in the industrial park are as follows: downstream industries based on palm oil, coconut, forestry, pulp, rubber, and fisheries, as well as supporting industries for the oil sector. Additionally, iron and steel, fertilizers, and information technology may also be considered. Investors are being invited to develop the industrial park further by purchasing and renting land and developing the manufacturing facilities.¹⁷

An International Sea Harbor is also being established to facilitate better logistical support and mobility. International trips have already been allowed from the harbor to Malaka and other destinations. Investors are being invited to join the expansion of the harbor.¹⁷

¹⁴ BPS Siak, 2022.

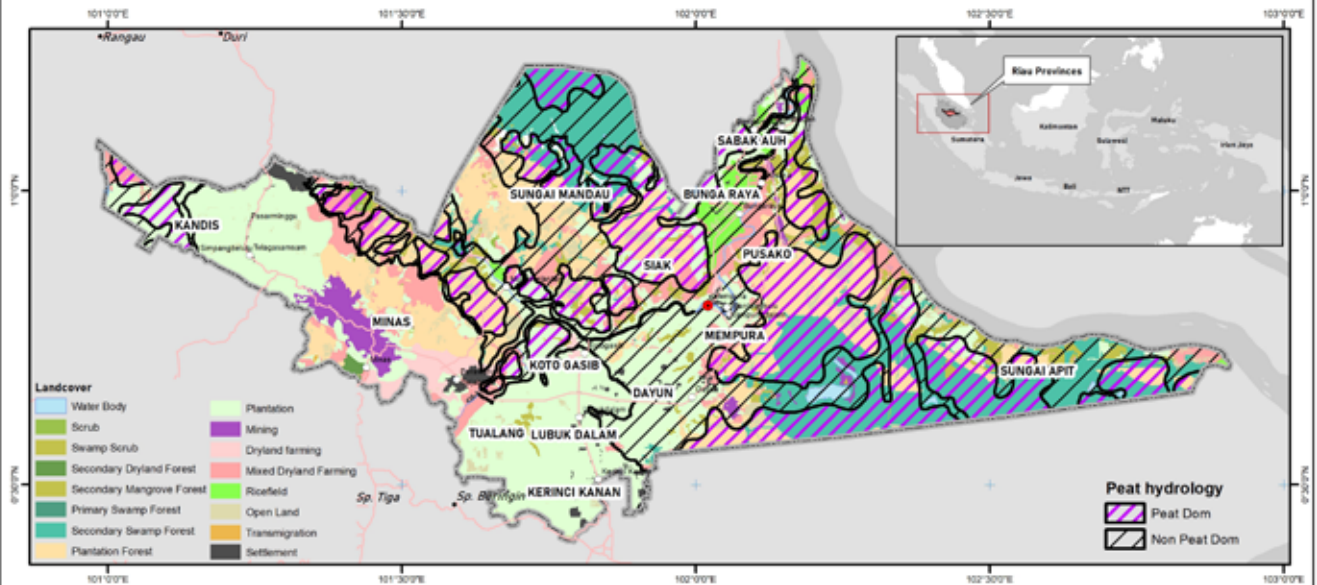
¹⁵ Hastuti, R.K., 2021. "Blok Rokan, 'Harta Karun' yang Resmi Dimiliki Pertamina Esok", CNBC Indonesia (August 8, 2021).

¹⁶ "Wabup Siak Teken MoU dengan Pemda Riau Terkait Pengelolaan Participating Interest Pada Blok Rokan", Detik (September 9, 2021).

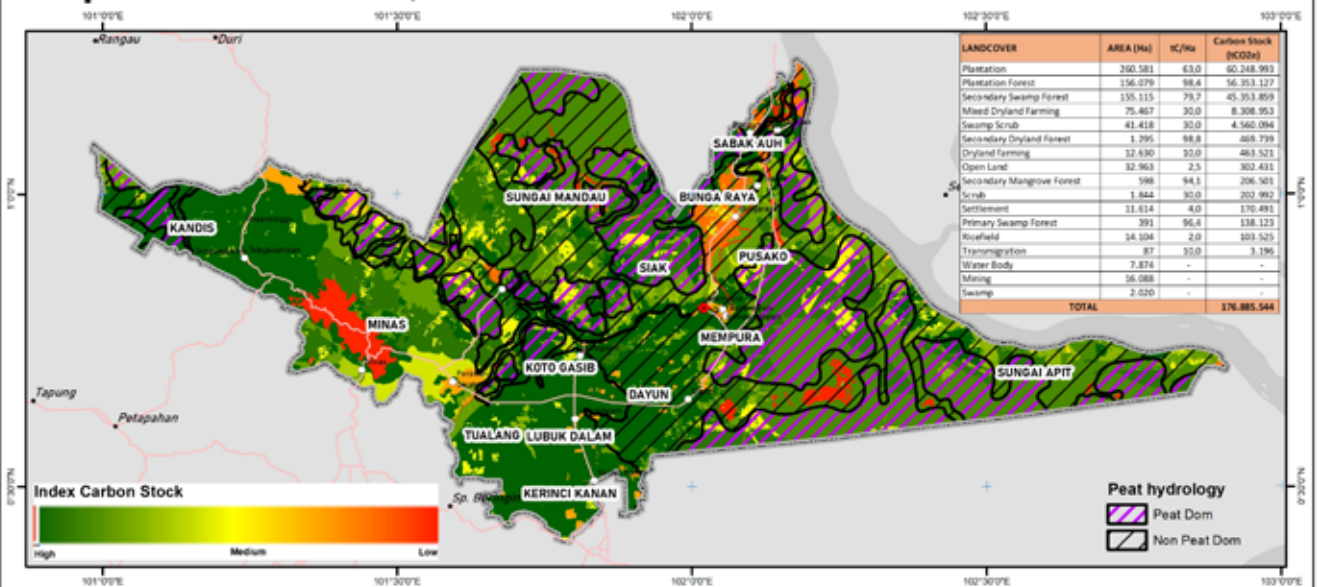
¹⁷ The District Government of Siak, Investment Opportunities (<https://web.siakkab.go.id/pejuang-investasi/>), visited on May 9, 2022).

A Green District

Map of Landcover, Siak District



Map of Carbon Stock, Siak District



Map of carbon stock in the district, a combination of vegetative cover and peatland areas

The major forest and peatland fires in 2015 were a turning point for Siak to commit to becoming a “Green District”. The 2015 fires were one of if not the largest forest and peatland fire incidents in Indonesia, possibly in the world. It burned at least 2.6 million ha of forest and peatlands and cost the economy at least \$16 billion.¹⁹ At the time, Siak housed among the most severe fires, most likely because most of Siak is

peatlands. Ever since the disaster, Siak has turned itself to seriously consolidate economic development with sound environmental management and protection, supported by strengthened social capital.

About 52 percent of Siak is peatlands with various depths. Peatlands are a natural carbon storage, and with a total of more than 15 million ha, Indonesia may well house the largest expanse of peatlands in

18 World Bank, 2016. The Cost of Fire: An Economic Analysis of Indonesia’s 2015 Fire Crisis (Februari 2016). The World Bank, Jakarta.



Rembuk Tatakelola TORA di Gambut Siak Libatkan Banyak Pihak [riaustrust.com, 2019]

the world.¹⁹ As such, degradation — if not burning — of peatlands will release a significant amount carbon dioxide and other greenhouse gases. In many cases, in addition to conserving, there is a significant need to restore degraded peatlands in Siak.

Siak has been considered as one of the districts with the most progressive commitment to sustainability, if not the top most one. On July 22, the Ministry of Environment and Forestry declared Siak as a “green district”.²⁰ As a recognition, for the first time the World Environmental Day was commemorated outside of the Presidential Palace, and instead took place in Siak, in July 2016.²¹

19 Wahyunto, N.K., and F. Agus, 2016, “Perkembangan Pemetaan dan Distribusi Lahan Gambut di Indonesia”, in Agus, F., M. Anda, L. Jamil, and Masganti (Eds), *Lahan Gambut Indonesia: Pembentukan, Karakteristik, dan Potensi Mendukung Ketahanan Pangan*. Indonesian Agency for Agricultural Research and Development, Ministry of Agriculture of the Republic Indonesia, Jakarta; Dohong, A., L. Cassiophea, S. Sutikno, B.L. Triadi, F. Wirada, P. Rengganis, and L. Sigalingging, 2017. “Modul Pelatihan: Pembangunan Infrastruktur Pembasahan Gambut Sekat Kanal Berbasis Masyarakat”. Peatland Restoration Agency of the Republic of Indonesia, Jakarta.

20 “Menteri Siti Nurbaya Canangkan Kabupaten Siak Hijau”, Ministry of Environment and Forestry, Information and Documentation Management Office (July 23, 2016) (<http://ppid.menlhk.go.id/berita/siaran-pers/3356/menteri-siti-nurbaya-canangkan-kabupaten-siak-hijau>, visited on May 9, 2022).

21 Tanjung, C.A., 2016. “Peringatan Hari Lingkungan Hidup di Luar Istana”, *Detik News* (July 21, 2016).

Siak has issued regulatory instruments to strengthen its ambition to become a green district. Following the issuance of the District Head Regulation (Peraturan Bupati) No. 22/2018, the District Regulation No. 4/2022 was eventually enacted to provide strong legal basis for the implementation of the green Siak ambition. Throughout the country, this may be the only such regional regulation.

Community consultation is already an ongoing developmental tradition in Siak. Siak is an active member of the Indonesian Sustainable District Forum (Lingkar Temu Kabupaten Lestari, LTKL). Membership in LTKL is voluntary, based on application by the district and follows a robust checklist that indicates each district’s commitment to sustainability. Sedagho Siak has been established by and for the civil society groups to contribute to the multi-stakeholder consultative process in the jurisdictional approach in Siak.

Box 1

The Green Siak Roadmap

Being a green district for Siak means that it “drives the principles of sustainability in the utilization of natural resources and in the development of the economy of the population”. There are three goals in the Green Siak Roadmap, namely (1) managing natural resources to the fullest extent in the interest of the people with the principle of sustainability; (2) supporting the people’s interest in the utilization of the natural resources to develop the economy of the people and genuine regional income; and (3) determining the pattern of the utilization of regional natural resources through conservation, development of downstream sectors, and intensification. Meanwhile, the objectives of the Green Siak Roadmap are (1) reducing the rate of degradation of natural resources, especially peatlands and watersheds in Siak; (2) creating economic growth that is in line with the principles of sustainability; (3) utilizing natural resources while reducing the impacts on the functions and sustainability of the resources; (4) harmonizing conservation and economic policies; and (5) alleviating poverty through community and rural economic empowerment, development of human resources, equitable distribution, and population control.²²

22 Sedagho Siak and the District Government of Siak, 2019. *Peta Jalan Siak Menuju Kabupaten Hijau: Pedoman untuk Mendorong Prinsip-Prinsip Kelestarian dan Berkelanjutan dalam Pemanfaatan Sumberdaya Alam dan Peningkatan Ekonomi Masyarakat*. Sedagho Siak and the District Government of Siak, Siak, also known as “Peta Jalan Siak Hijau” or “Green Siak Roadmap”.



Zamrud National Park - Siak [RimbaKita.com]

The Green Siak Goals and Objectives are consistent with Sustainable Development Goals (SDGs). Indonesia has adopted the Sustainable Development Goals (SDGs) through Presidential Regulation No. 59/2017 on the Implementation of the Sustainable Development Goals. Ever since, development plans at all levels, national or any subnational levels, need to refer to the SDGs. The Green Siak Goals and Objectives contribute to SDGs Goals No.1 (No Poverty), No.8 (Decent Work and Economic Growth), No.9 (Industry, Innovation and Infrastructure), No.11 (Sustainable Cities and Communities), No.12 (Responsible Consumption and Production), No. 13 (Climate Action), No.15 (Life on Land), and No. 17 (Partnership for the Goals).

The establishment of the Zamrud National Park in 2016 confirmed Siak's commitment to become a green district. The national park covers 31,480 ha, expanding from the previous Danau Pulau Besar Danau Bawah Wildlife Sanctuary, as proposed by the district government of Siak in 2005. Upon the establishment of the youngest national park, the habitats of the endemic plants and wildlife animals in the area, including of the Sumatran tigers (*Pantera tigris sumatrae*) and the pangolins (*Manis javanica*) are permanently protected. The new national park added protected natural resources in Siak after the adoption of the 705,271 ha Giam Siak Kecil-Bukit Batu Biospheric Reserve.²³

Siak is also the center of the Malay culture, the harmonious intertwining of customs and Islamic religion. After a long pandemic hiatus, cultural tourism in Siak has reemerged with tens of thousands of visitors visiting the Siak Palace recently in the Eid holidays in 2022.²⁴ The adherence with the Malay culture in Siak is strongly felt. As a part of the vision to strengthen its position as the Malay cultural center by 2025, the government of Siak also plans to strengthen public participation to develop the villages of the old Malay and the indigenous communities of Sakai and Akit. Siak was already prosperous when Sultan Abdul Jalil Rahmat Syah became the first ruler of the Sultanate of Siak Sri Indrapura in 1723. The splendor of the Siak Palace with a combination of European, Islamic, and Chinese architectures still shows the glorious history of the sultanate. The last Sultan, Sultan Syarif Khasim II, handed the palace and the governance of the sultanate to the government of Indonesia upon the country's independence. Until today, the Siak Palace has become a great representation of the grandness of the Malay culture. The strong cultural heritage is an asset to develop cultural tourism.

23 Siak (the District Government of Siak), 2020. Profil Kabupaten Siak 2020. District Government of Siak, Siak.

24 "Ribuan Wisatawan Sambangi Destinasi Wisata di Riau pada Libur Lebaran", Riau Editor (May 5, 2022).

Box 2

Building a Sustainable District through Collaboration

The culture of “*gotong royong*” (collaboration) is deeply rooted as evidenced by the various multi-stakeholder collaboration initiatives in Siak. They involve not only between government and civil society but also the private sector and the academic community. This culture of “*gotong royong*” is the main social capital to achieve the development goals in the Green Siak Roadmap.

The Siak Hijau Secretariat is established by the District Government of Siak to facilitate stakeholders from various sectors to be able to discuss, coordinate, and collaborate to achieve the regional development goals set in the Siak Hijau vision.

Civil society has also been actively contributing ideas and programs to the success of the Siak District’s vision to become a green district. They established a forum called “*Sedhago Siak*”. The forum aims to support district government in applying the principles of sustainability in the utilization of natural resources and in local economic development. One major contribution of the *Sedhago Siak* is the Green Siak Roadmap.

The private sector has also been actively involved through a forum called the Private Sector Coalition for Green Siak that consists of six companies namely Astra Agro Lestari, Wilmar, Musim Mas, APRIL, APP, and EcoNusantara. The coalition is committed to supporting the achievement of the development goals in the Green Siak Roadmap.

In addition, there is also the “*Siak-Pelalawan Landscape Program*” initiative which synergizes the private sector with civil society in building a sustainable oil palm plantation. The Coalition believes that achieving positive palm oil production for forests and communities will be more effective through collaboration with local governments and other stakeholders than doing so partially or only through the company’s supply chain. The companies that are active members of this coalition include Cargill, L’Oreal, Musim Mas, Neste, PepsiCo, Unilever, while Danone, Sinar Mas, and the Consumer Goods Forum serve as supporters.



Siak Forest and Peatland Area [Green Siak Initiative, ICAF, 2022]

BLENDED FINANCING STRUCTURE

Financing within a Jurisdictional Approach is best when structured as a blended financing.

Blended finance is “the strategic use of public or philanthropic development capital for the mobilization of additional external private commercial finance for SDG-related investments”.²⁶ In blended financing, sources of financing — public sources by governments, bilateral and multilateral financial assistance and discounted loans, and commercial private investors — are combined in a way that allows for reallocation of risks. For a portfolio that provides significant public benefits, public and certain philanthropic entities may be interested in financing it. The return on their investments are largely in the forms of (positive) impacts on the public benefits instead of financial benefits. They could be in the forms of grants (in the case of most philanthropic funds) or heavily subsidized loans (in most cases of public, bilateral, or multilateral financial entities).

Jurisdictional investment financing needs to accommodate public, philanthropy, as well as high- and low-risk commercial financing. When combined in the right way, the different sources of financing will allow for appropriate development of

enabling condition and reallocation of risks. In the right combination, the already fertile ground in Siak will attract even more opportunities for initiatives that will foster sustainability.

Public and philanthropic financing is best utilized in the early stages, especially in developing enabling conditions. Usually the early stages of investments to build preparedness and enabling conditions, public and philanthropic financing entities are more willing to invest than private commercial financiers. Afterwards, private commercial financiers that are more risk averse may come in.

Sustainable jurisdictional investment is a major element of the investment plan in Siak. Meanwhile, compared with similar offices, the investment office under the District Government of Siak has been known for its efficiency and effectiveness delivering superior service quality. As a result, investment in Siak has grown continuously, reaching Rp3.7 trillion (about \$250 million) in 2020.²⁷ The Secretariat Office of the Green Siak is currently establishing an investment office that will provide additional services specifically for sustainable jurisdictional investment.

26 Blended Finance Task Force, 2018, op cit.

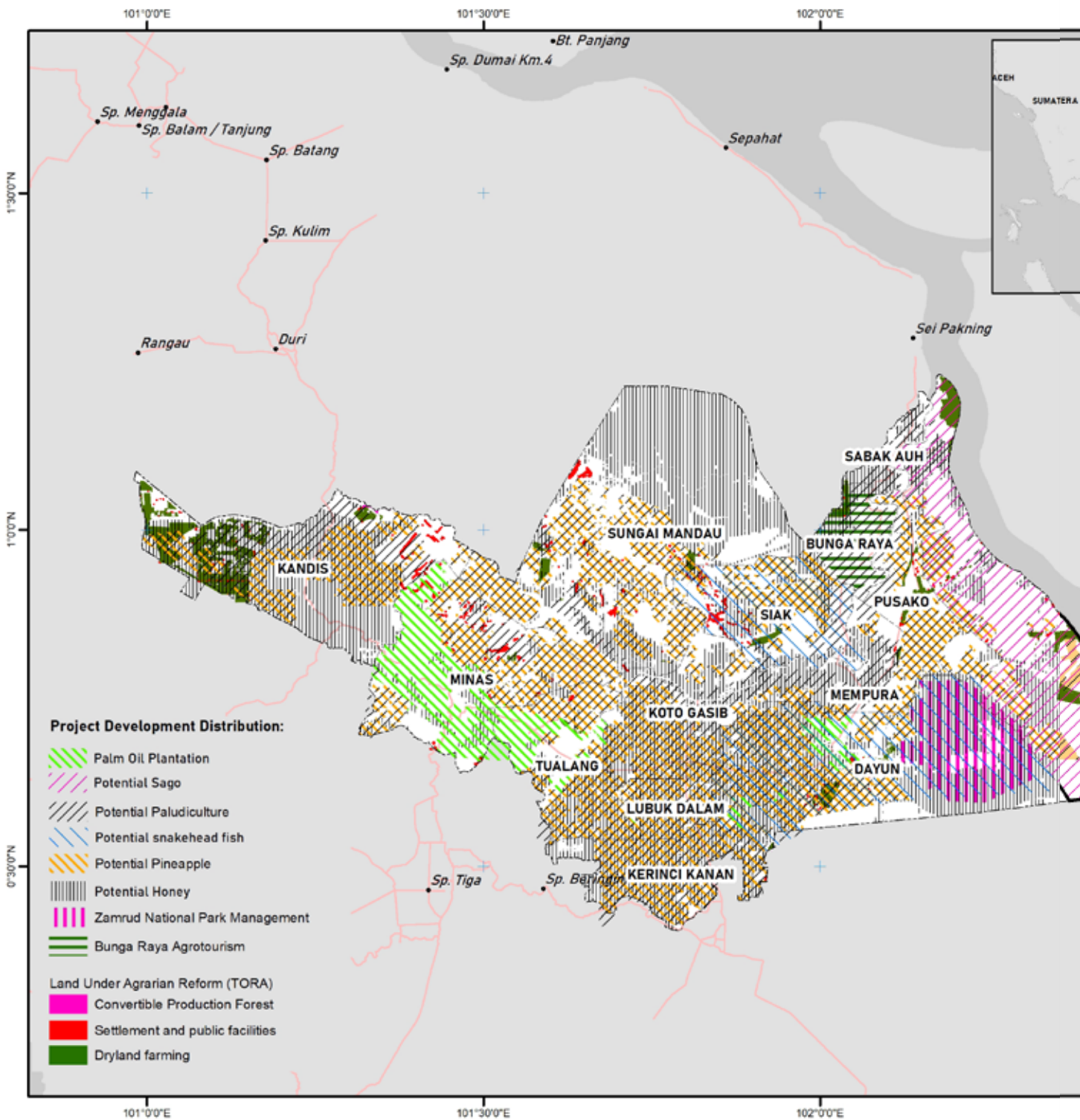
27 Sahril, 2021. “Relasi Investasi Siak Tahun 2020 Tembus Rp3,7 Triliun”, Gatra (July 1, 2021).



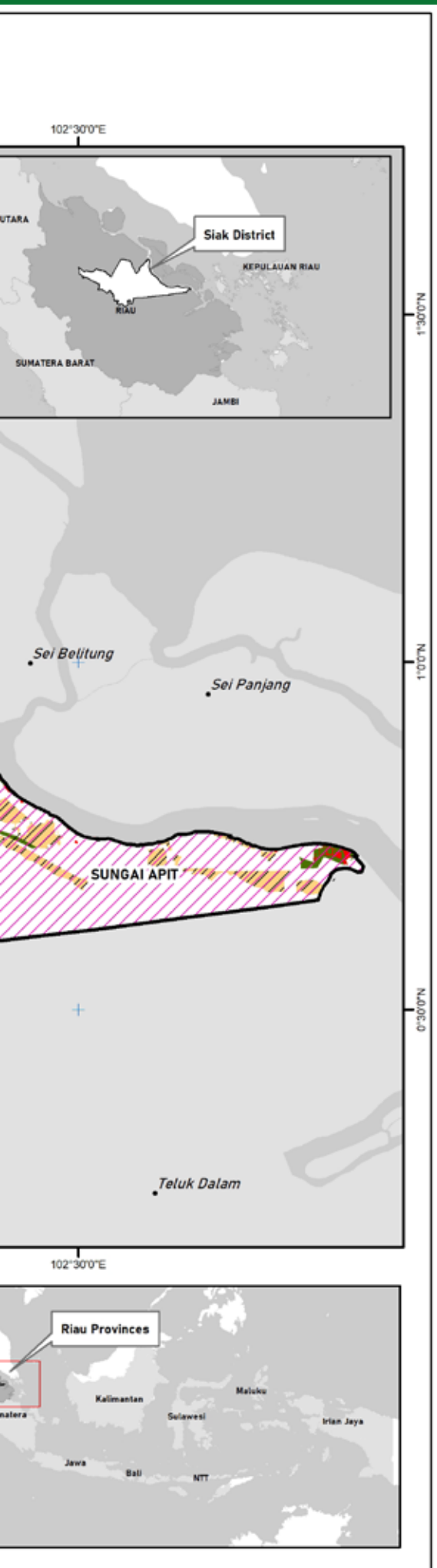


INVESTMENT OPPORTUNITIES

Project Development Map, Siak District



Sources:
1. Base Map, RBI 1:50.000 Badan Informasi Geospasial



At present, there are eight investable initiatives in Siak. They are a combination of agriculture, paludiculture, peat fisheries, value-adding activities from peat fisheries, sustainable commodity initiatives, and better management of peatlands.

As more than half of Siak is peatland, better management of peatlands is strategic. The list of initiatives includes a number of endeavors that combine peatland-friendly commodity production and protection and monitoring of peat landscapes.

Oil palm plantation is a major commodity producing sector in Siak. As such ensuring that it is conducted in the most productive and sustainable manner is crucial, and so is the positive participation of smallholder growers. The list of initiatives features an endeavor to ensure that the smallholders comply with and obtain sustainability certification. This, combined with the development of downstream processing of oil palm plantation products, will increase the value added while reducing pressures on land use.

Complete information on various jurisdictional investable initiatives in Siak can be obtained through the Promotion Unit of the Investment Planning Board – DPMPTSP Siak District.

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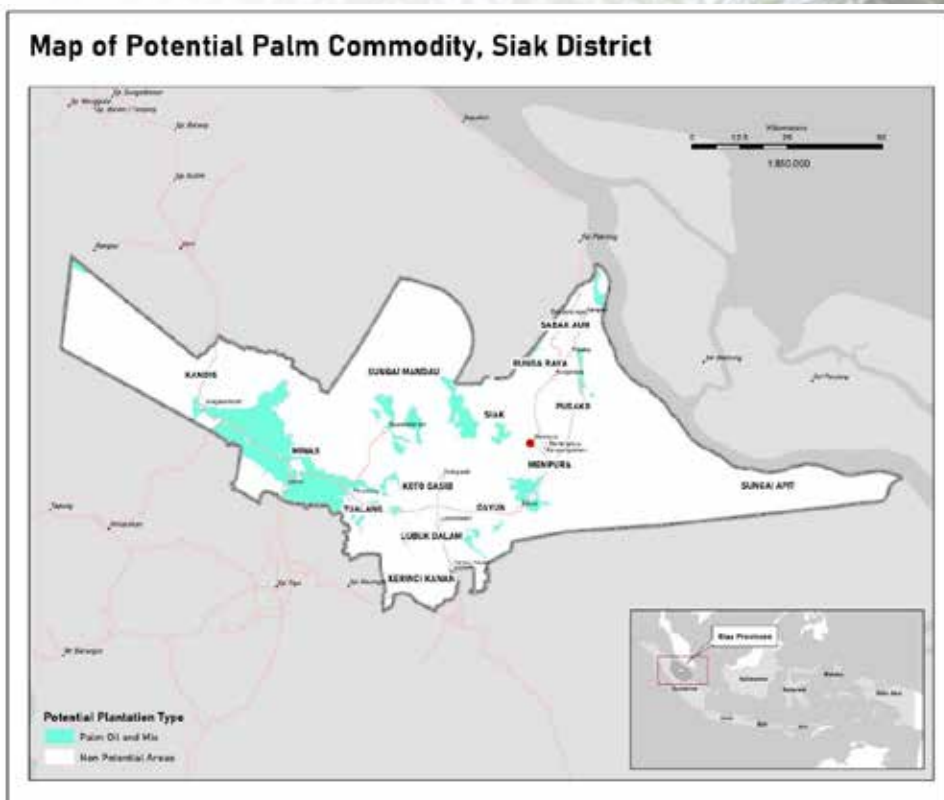
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SUSTAINABLE PALM OIL

OVERVIEW

This initiative is driven by downstream palm oil companies that are sourcing palm oil from Siak in collaboration with the government sector and civil society to achieve more effective sustainable palm oil production through multi-stakeholder collaboration.

The main activities of this initiative are capacity building, participatory mapping, and strengthening of farmer groups; educating oil palm mills, local governments, and priority villages to develop traceability policies and systems; strengthening the multi-stakeholder platform through the Secretariat of the Green Siak Implementation Coordination Team; implement conservation and rehabilitation initiatives; improve the quality of social dialogue between companies and workers; undertake landscape monitoring; and facilitate independent smallholders certification.





Program Information

- Registering 1,017 independent smallholders for Plantation Business Registration for Cultivation (STDB).
- Conducting participatory mapping in 8 out of 25 target villages.
- Providing training on sustainable land management for 456 independent smallholders.
- Utilizing Global Analysis and Discovery (GLAD) Alert data from Global Forest Watch to monitor deforestation events and developing screening method and verification protocols to check actual conditions on the ground.
- Forming a coalition of 10 palm oil companies to develop monitoring methods using radar data.
- Capacity building for department of agriculture officers to become field officers and conduct pilot monitoring of an area of 294,000 hectares.
- Implementing the RSPO certification program on 612 ha with 309 independent smallholders (WRI Indonesia in collaboration with Unilever, PT Persi, and RSPO).
- Implementing ISPO certification on 1,100 ha with 500 independent smallholders (Wilmar in collaboration with PT Persi).



Social and Environmental Impact to be Achieved

- Practicing sustainable agriculture and improving productivity for 10,000 farmers.
- Implementing Good Agricultural Practices in 5,000 hectares.
- Reducing deforestation rate by 6.6 percent.
- Ensuring that the average water level in peatlands is 40 centimeters (cm).
- Protecting + 310,000 hectares of remaining forest area (including on peatlands) both inside and outside concession.
- Protecting 20,000 hectares of peatland in community plantations from the risk of fire and peatland damage.



Governance

This multistakeholder collaboration involves private sector, government (Agriculture Office of Siak District), and civil society (i.e: WRI Indonesia, Winrock, CNV International, High Conservation Values-Network, Prah, Asosiasi Pendamping Perempuan Usaha Skala Kecil Mikro, Asosiasi Petani Karya Serumpun, PT Kualitas Sertifikasi Indonesia, and Association of Regional Facilitators).



Development Opportunities

- Establishing a verification system, monitoring dashboard, and control facilities to ensure all palm oil extracted from and produced in Siak is deforestation-free and peat-free by 2025.
- Scaling up support to other priority villages in Siak to ensure the welfare of independent smallholders and their communities covering FPIC, best management practices, farmer fields, schools and others.
- Promoting the establishment of multi-stakeholder partnership forums with good governance and transparent reporting on sustainable palm oil by 2025.
- Increasing and strengthening the capacity of 100 field verifiers from various cross-sectoral government agencies and concessionaire companies, particularly oil palm and pulp and paper, by 2025.
- Increasing the number of smallholders to be assisted for RSPO certification program to 10,000 planters in an area of 30,000 hectares.
- Capacity building of 50 community facilitators from the Agriculture Service and Asofa to assist in strengthening and assisting farmers throughout Siak District.
- Provisioning of basic facilities and infrastructure for palm oil management on 30,000 hectares of peatland for smallholders.
- Establishing of a learning center for 70,000 smallholders to obtain sustainable palm oil certification.



Investment Opportunity

USD 9,300,000 for 5 Years

Source: Harga Sawit Di Siak Naik Lagi, Sekilo Rp2.508,67 [riaonline.co.id, 2021]

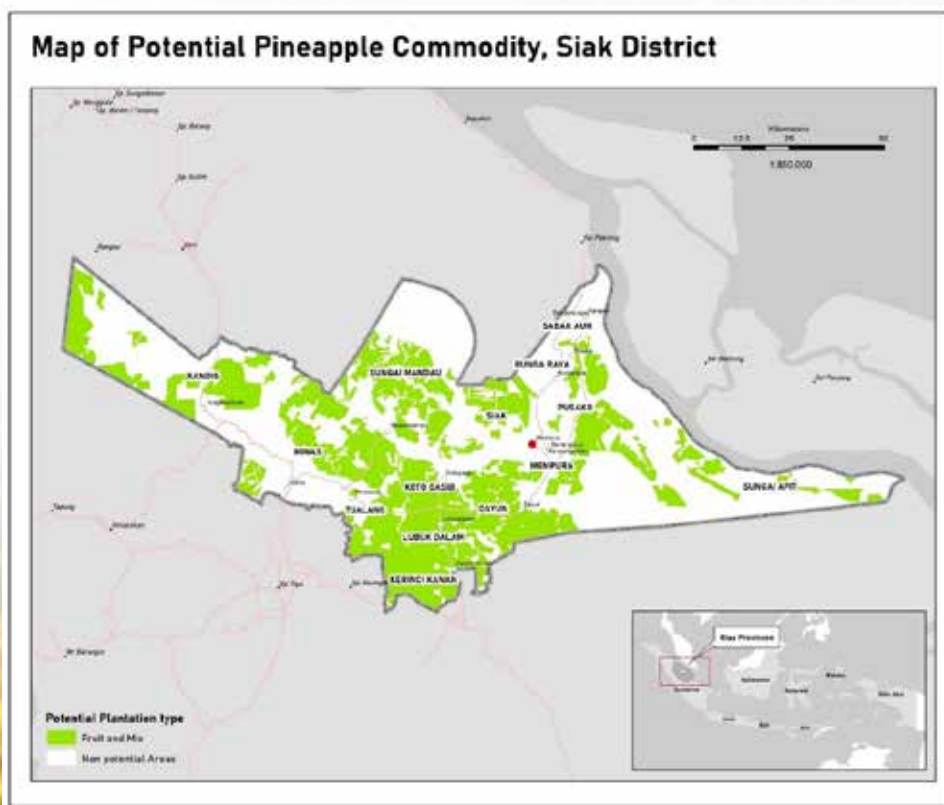
SUSTAINABLE PEAT MANAGEMENT THROUGH PEAT-FRIENDLY COMMODITIES: PINEAPPLE

OVERVIEW

The local commodity that many people in Siak grow on peatlands is pineapple. Improving peatland management and water management in pineapple cultivation will support improving the quality of peatlands and reduce the potential for land fires that often occur during the dry season.

An upstream-downstream approach is used in the implementation of this initiative. In upstream areas, assistance is provided for agricultural cultivation practices, water management improvements, and capacity building for farmers and Village-Owned Enterprises (BUMKam) which will become the village's economic center and partner with external parties. In the downstream area, new market access is opened by producing and marketing pineapple derivative products.

The main activities are assisting and developing centers of excellence within the project area in collaboration with relevant government agencies; facilitating collaboration between BUMKam and the private sector in the production and marketing of peat-friendly local commodity products; and developing alternative peat-friendly commodities as community livelihoods by encouraging paludiculture and hydrological practices.





Program Information

- Cultivated area: 1,400 hectares.
- Productivity: 2,300 tons/year.
- Number of cultivators: 100 farmers.



Social and Environmental Impact to be Achieved

- Providing jobs for 100 farmers.
- Reducing deforestation rate of 2.5 percent.
- Ensuring average water level on peatlands 40 cm.



Governance

Winrock International in collaboration with Village-Owned Enterprises (BUMKam), Badan Restorasi Gambut dan Mangrove (BRGM), related government agencies, and universities.



Development Opportunities

- Increasing diversification of business units under the center of excellence to a minimum of 2 types of businesses by 2024.
- Increasing community capacity for the cultivation of alternative peat-friendly commodities and water management in a minimum land area of 1,300 hectares by 2024.
- Increasing the number of villages that practice peat-friendly commodity cultivation supported by market research to 10 villages by 2024.



Investment Opportunity USD 1,000,000 for 5 Years

Source: Petani nanas Siak kebanjiran pesanan saat pandemi [riau.antaranews.com, 2020]

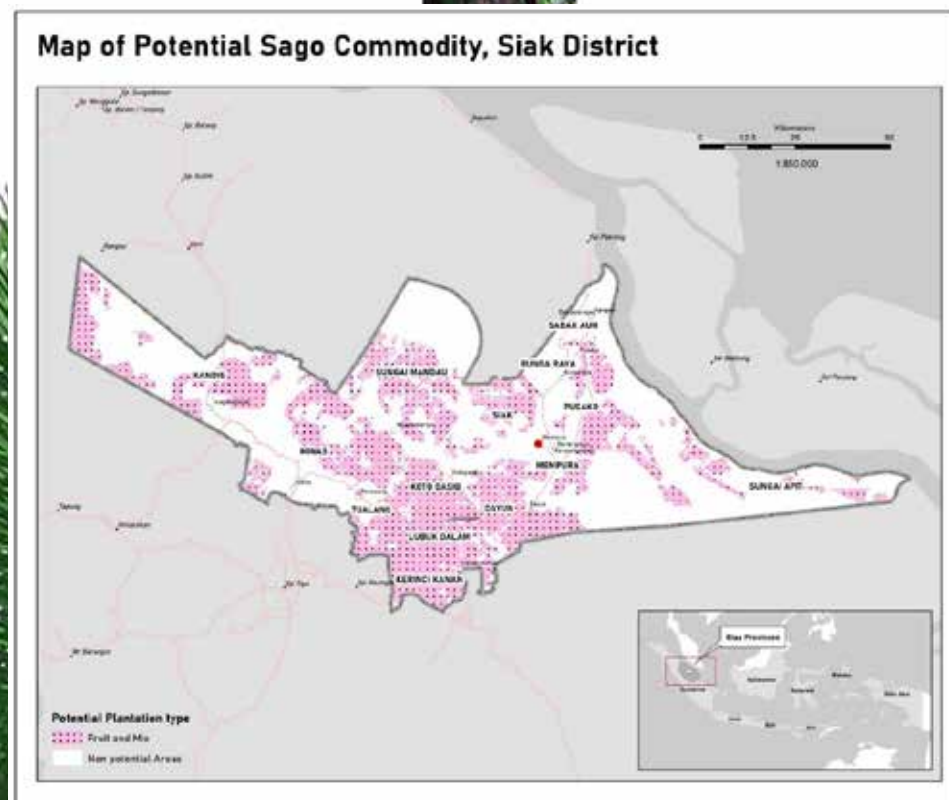
SUSTAINABLE PEAT MANAGEMENT THROUGH PEAT-FRIENDLY COMMODITIES: SAGO

OVERVIEW

Apart from being a commercial commodity, sago is also one of the staple foods of the Siak community. Sago is an endemic plant suitable for cultivation on wet peatlands. Improving peatland management and water management in sago cultivation will support improving the quality of peatlands and can reduce the potential for land fires that often occur during the dry season.

Farmers in Siak have difficulty in marketing their sago products due to the absence of adequate sago processing facilities in the Siak area. Winrock International carried out this activity in the sago sector as part of a series of program activities for restoration and improvement of peatland management in Siak District.

An upstream-downstream approach is used in the implementation of this initiative. In upstream areas, assistance is provided for agricultural cultivation practices, water management improvements, and capacity building for farmers and BUMKam which will become the village's economic center and partner with external parties. In the downstream area, new market access is opened by producing and marketing sago derivative products.





Program Information

- Cultivated area: 490 hectares.
- Productivity: 1,000 tons dry flour/year.
- Number of cultivators: 100 farmers.



Social and Environmental Impact to be Achieved

- Providing jobs for 100 farmers.
- Reducing deforestation rate of 3 percent.
- Ensuring average water level on peatlands 40cm.



Governance

Winrock International in collaboration with Village-Owned Enterprises (BUMKam), Badan Restorasi Gambut dan Mangrove (BRGM), related government agencies, and universities.



Development Opportunities

- Increasing diversification of business units under the center of excellence to a minimum of 2 types of businesses by 2024.
- Increasing community capacity for the cultivation of alternative peat-friendly commodities and water management in a minimum land area of 1,000 hectares by 2024.
- Increasing the number of villages that practice peat-friendly commodity cultivation supported by market research to 10 villages by 2024.



Investment Opportunity

USD 1,000,000 for 5 years

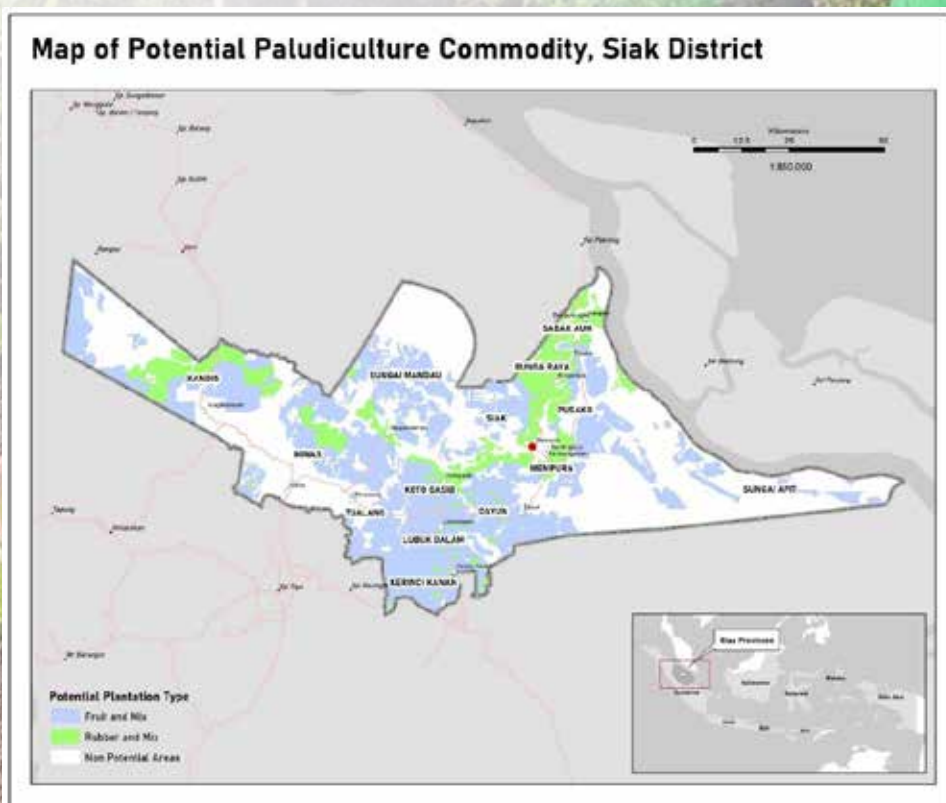
Source: Pekan Ini Harga Kelapa Butiran di Riau Turun, Sagu Basah Naik Jadi Rp 100/Kg [riaui.com, 2021]

SUSTAINABLE PEAT MANAGEMENT THROUGH PALUDICULTURE IN LAND UNDER OF AGRARIAN REFORM (TANAH OBYEK REFORMA AGRARIA, TORA)

OVERVIEW

TORA is an area or land controlled by the state and/or owned by the community to be redistributed or legalized. In Siak, approximately 10,000 hectares of TORA have been redistributed to the community. The local government aims for this peatland to be managed with sustainable principles considering most of TORA's is deep peatland that requires careful management. Apart from having economic value, the use of this land can also restore degraded peatlands.

Through this initiative, Winrock International is encouraging integrated and comprehensive management of the TORA area based on a peat-friendly paludiculture system that focuses on alternative commodities of economic and ecological value. It is also facilitating the FPIC process, preparing technical field surveys as the basis for the master plan, as well as formulating and implementing activity plans with the community and related parties.





Program Information

- Cultivated area: 500 hectares.
- Types of commodities cultivated: 9 main types of peat-friendly crops for the short, medium and long term.



Social and Environmental Impact to be Achieved

- Providing jobs for 500 farmers.
- Reducing deforestation rate of 4.9 percent.
- Ensuring average water level on peatlands 40cm.



Governance

Winrock International in collaboration with Village-Owned Enterprises (BUMKam), Badan Restorasi Gambut dan Mangrove (BRGM), related government agencies, and universities.



Development Opportunities

- Expanding field survey activities to 6,000 hectares of land.
- Expanding the work area coverage with an estimated TORA area available to be managed of 4,000 hectares.
- Strengthening and implementing TORA Area Management Action Plan (*Masterplan*).



Investment Opportunity

USD 1,900,000 for 5 Years

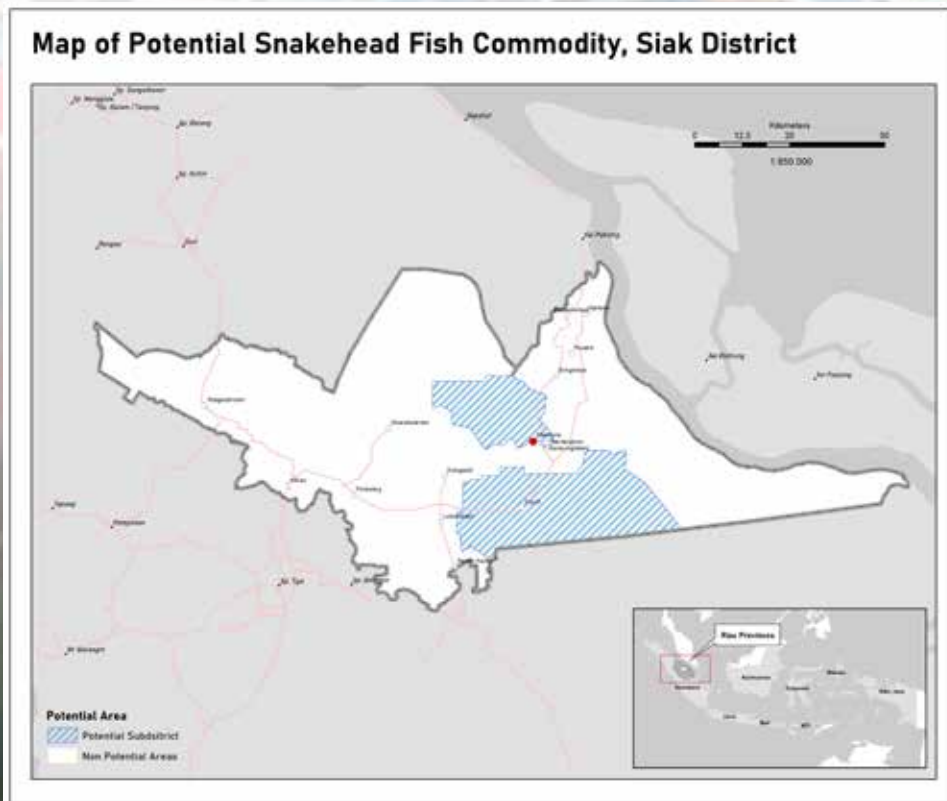
Source: 6 Ribu Hektare Lahan TORA di Kabupaten Siak Akan Dibagikan [pekanbaru.tribunnews.com, 2019]

SUSTAINABLE PEAT MANAGEMENT THROUGH PEAT-FRIENDLY COMMODITIES: **SNAKEHEAD FISH**

OVERVIEW

Cultivation of snakehead fish on peatlands is the right choice to keep peatlands wet. This type of fish lives in peat waters and has a high survival rate. In local tradition, snakehead fish is processed into food that can be useful for wound healing and contains high albumin and protein which can overcome various diseases in the human body.

The main activities of the program are researching and creating products made from natural raw materials that directly improve the community's economy by considering the principles of environmental protection; mapping areas to regulate cultivation patterns and expand cultivation areas so that snakehead fish stocks can be managed properly according to the specified schedule for production; and organizing a field school for corm fish cultivation.





Program Information

- Cultivated area: 5 hectares.
- Productivity: 12 tons/year.
- Number of cultivators: 35 farmers.



Social and Environmental Impact to be Achieved

- Providing jobs for 350 farmers.
- Reducing deforestation rate of 6.2 percent.
- Ensuring average water level on peatlands 40 cm.



Governance

PT Alam Siak Lestari conducts research and production, PT Agrapana Damayanti Biotek assists the technical laboratory and PT Tanah Air Lestari provides capital. Meanwhile, the Siak Regency Government support this program by providing fish cages and fry through the One Village One Product (OVOP) development program and Ecology-Based Regional Budget Transfer (TAKE).



Development Opportunities

Developing market research for new product opportunities and other derivatives (excluding snakehead fish) which will provide 500 jobs for employees and farmers by the end of 2027.



Investment Opportunity

USD 2,000,000 for 5 Years

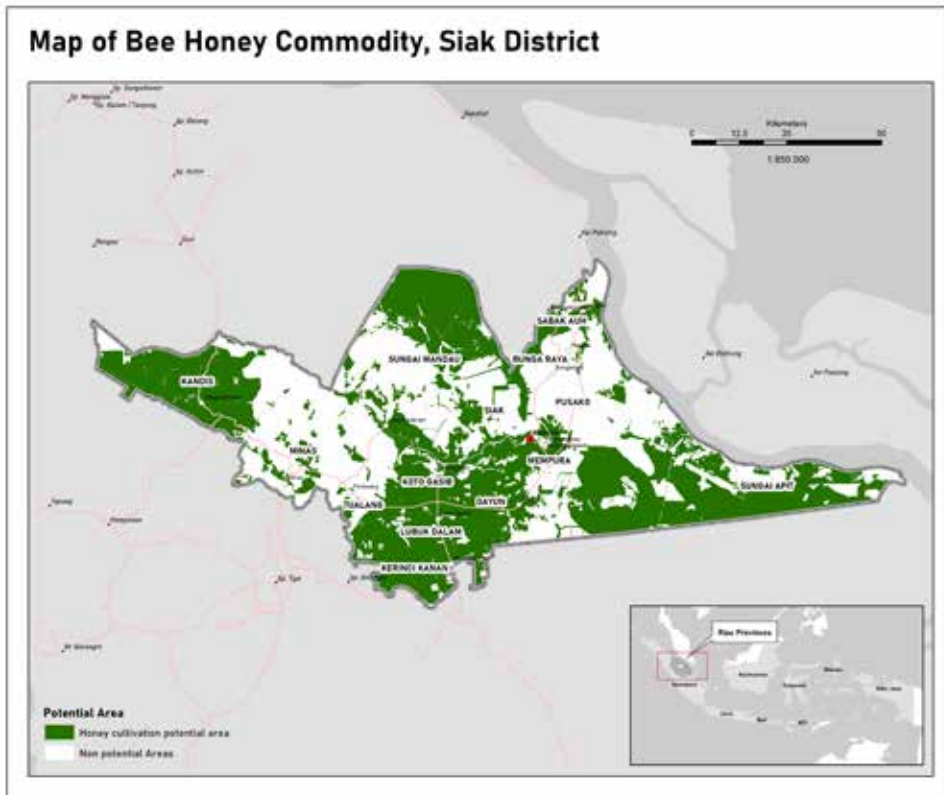
Source: Budidaya Ikan Gabus Siak, Sulap Lahan Gambut Jadi Produktif [liputan6.com, 2021]

SUSTAINABLE PEAT MANAGEMENT THROUGH PEAT-FRIENDLY COMMODITIES: BEE HONEY

OVERVIEW

The honey business is very prospective during the pandemic. In recent years, Siak District has experienced an increase in the number of honey bee keepers. Several types of honey bees that are cultivated in Siak are *Apis mellifera*, *Apis dorsata* and of the *Trigona* genus. For *Apis Mellifera* honey bees, some people cultivate them in oil palm plantations.

Management and cultivation are carried out independently by farmer groups. Although competition for honey production is quite tight, this commodity has export opportunities to Malaysia. What honey bee keepers really need is market access.





Program Information

- Productivity: 800 ton/years.
- Number of honey beekeepers: 100.



Social and Environmental Impact to be Achieved

- Providing job opportunities to 10 people/farm
- Inhibiting the rate of deforestation because honey bees can breed in areas where there are still a lot of forest plants.



Governance

The program is managed by the Fishery and Livestock unit of Siak District.



Development Opportunities

- Increasing financial investment to honey bee keeping.
- Providing physical infrastructure and production facilities.
- Obtaining licenses, certifications, and market access.



Investment Opportunity

USD 1,000,000 for 5 Years

Source: Temui Peternak Lebah Madu, Bupati Alfredri Cari Solusi Pemasaran [web.siakkab.go.id]

SUSTAINABLE PEAT MANAGEMENT THROUGH ZAMRUD NATIONAL PARK

OVERVIEW

Zamrud National Park is a conservation area that is part of the Pulau Besar Wildlife Reserve in Siak District. It covers an area of ± 31,480 hectares and is designated as one of 52 national parks in Indonesia. The landscape consists of lakes and islands. The lakes included in the area are Pulau Besar Lake (2,416 hectares) and Lake of Bawah (360 hectares). Pulau Besar Lake has four islands, namely Pulau Besar, Pulau Tengah, Pulau Bungsu, and Pulau Beruk. Zamrud National Park is inhabited by 38 species of birds, 12 of which are protected.

Activities that have been carried out include aquaculture programs and the provision of transportation facilities (canoes) to explore the Lakes.





Program Information

- Carrying out construction work for gates, offices, and parking area.
- Providing patrol boat to monitor the environmental conditions.



Social and Environmental Impact to be Achieved

- Providing job opportunities for local people.
- Increasing regional income.



Governance

Zamrud National Park is managed by the Natural Resources Conservation Center (BKSDA) of Riau Province in collaboration with the Joint Operations Agency (BOB) PT. Bumi Siak Pusako and Pertamina Hulu.



Development Opportunities

Completing supporting physical facilities: gazebos, piers, suspension bridges, jogging tracks, lodging, and more.



Investment Opportunity

USD 1,000,000 for 5 Years

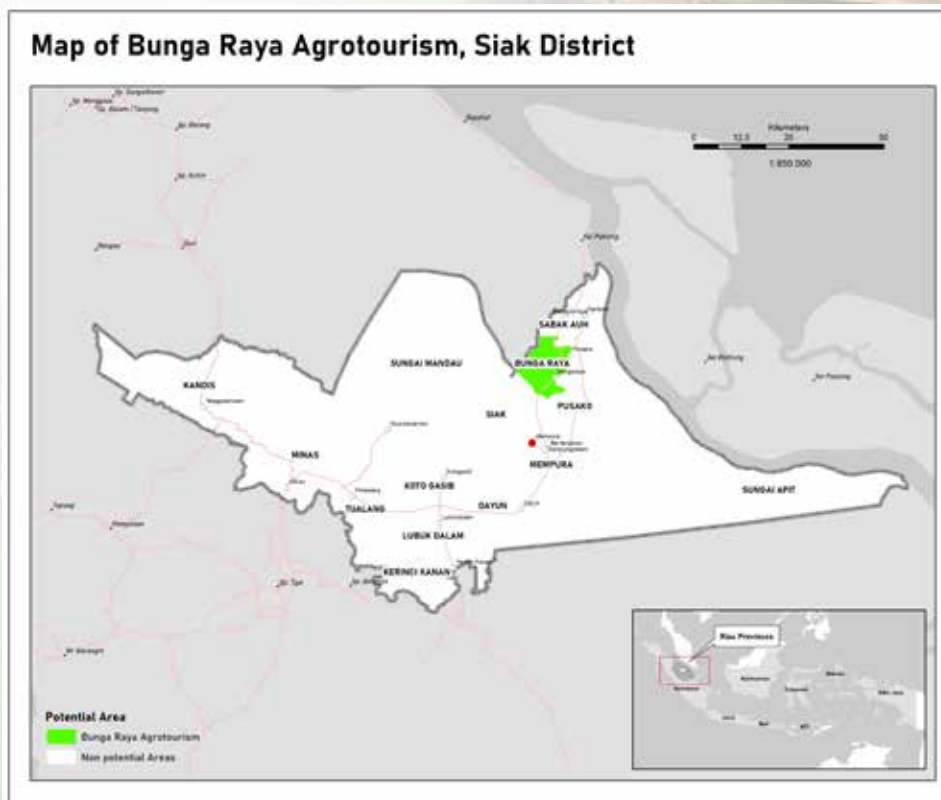
Source: Zamrud National Park - Siak [RimbaKita.com]

SUSTAINABLE PEAT MANAGEMENT THROUGH BUNGARAYA AGROTOURISM

OVERVIEW

The Bungaraya area is an integrated agro-tourism center that is being developed and managed creatively by young people and the surrounding community who are member of the Community-based Tourism Group (Kelompok Sadar Wisata/ Pokdarwis). They are intensively assisted by the government and civil society organizations. Several of the interesting tourism destinations including flower gardens, biodiversity parks, and viewing posts.

The Bungaraya agro-tourism area with its agricultural potential also functions as an educational area for the public about environmentally friendly agricultural cultivation.





Program Information

Several tourist destinations include Menara Lestari Flower Park, Harmoni Raya Park, Mina Padi Sakabura Park, and Berembang Ecotourism Park.



Social and Environmental Impact to be Achieved

- Providing job opportunities for local communities.
 - Increasing regional income.
-



Governance

The Agro-tourism program is managed by Community-based Tourism Groups in each village.



Development Opportunities

- Developing supporting facilities at village-scale such as bridges, tourist gates, homestays, museums, viewing posts, cafes, and flower gardens.
 - Developing supporting facilities at sub-district scale such as tourist gates, tourist terminals, culinary centers, information centers, tourist markets, agricultural education centers, agricultural auction centers, cattle markets, and fruit markets.
-



Investment Opportunity

USD 1,000,000 for 5 Years

Source: Taman Bunga Menara Lestari Bungaraya [Kabarsiana]



OPPORTUNITIES FOR UPSCALING INITIATIVES

Based on the project description above, there are some important notes to consider for future investment:

- The commodity-based projects have paid attention to the supply chain aspect of products by empowering farmers, planters, and fish farmers to cultivate environmentally friendly aquaculture on peatlands, such as cultivation of pineapple, sago, and snakehead fish.
- These projects still require support for capacity building for human resources for farmers/planters/business entity managers (such as PT Alam Siak Lestari) to be able to transform their projects to become sustainable initiatives.
- Strengthening market access needs to be a concern for products such as pineapple in order to have a greater impact on the economic value of the community.



CONTRIBUTION TO THE GOALS AND OBJECTIVES OF GREEN SIAK

Box 3

The Goals of Green Siak are:

1. Managing natural resources to the fullest extent in the interest of the people with the principle of sustainability;
2. Supporting the people's interest in the utilization of the natural resources to develop the economy of the people and genuine regional income;
3. Determining the pattern of the utilization of regional natural resources is through conservation, development of downstream sectors, and intensification.

The Objectives of Green Siak are:

1. Reducing the rate of degradation of natural resources, especially peatlands and watersheds;
2. Creating economic growth that is in line with the principles of sustainability;
3. Utilizing natural resources while reducing the impacts on the functions and sustainability of the resources;
4. Harmonizing conservation and economic policies;
5. Alleviating poverty through community and rural economic empowerment, development of human resources, equitable distribution, and population control.

Various initiatives have been and will continue to be carried out to develop the capacity of independent smallholders to be able to apply good agricultural practices in developing commodities that are effectively developed on peatlands. Furthermore, commodity management is carried out in an integrated manner in a business model managed by village-owned enterprises.

Thus, these initiatives are expected to make a significant contribution in improving the welfare of farmers while conserving peatlands in accordance with the goals and targets set out in Green Siak.

The matrix below examines the extent to which investment-ready desirability (investable jurisdictional initiatives) will contribute to the goals and objectives of the Green Siak.

TABLE 1. CONTRIBUTION OF INVESTMENT-READY JURISDICTIONAL INITIATIVES TO THE GREEN SIAK GOALS

	Sustainable Palm Oil	Sustainable Peat Management through Peat-Friendly Commodities: Pineapple	Sustainable Peat Management through Peat-Friendly Commodities: Sago
Managing natural resources to the fullest extent in the interest of the people with the principle of sustainability	<p>Integrating all palm oil cultivated and produced in Siak in the monitoring, verification and response system for deforestation and peat by 2025.</p> <p>Supporting palm oil in Siak with a system that respects the human rights of workers and surrounding communities by 2025.</p> <p>Reducing the risk of fires, greenhouse gas emissions from 8.000 ha of independent plantations on peat due to peat drainage by 2025.</p> <p>Protecting endangered plants and animals from hunting and exploitation, as well as protecting water bodies from pollution due to excessive use of chemicals in a minimum of 8.000 ha of independent plantations by 2025.</p>	<p>Supporting the development of peat-friendly alternative commodities with economic and ecological value that can provide alternative income for around 100 farmers by 2024.</p> <p>Improving agricultural practices, land management, and water management in accordance with peatlands to improve environmental quality in an area of 100 ha by 2024.</p> <p>Reducing 10.000 tons of CO₂e carbon emissions from project activities by 2024.</p> <p>Reducing the risk of peatland fires through sustainable paludiculture practices in the approximately 1.000 ha of project area by 2024.</p>	<p>Supporting the development of peat-friendly alternative commodities with economic and ecological value that can provide alternative income for around 100 farmers by 2024.</p> <p>Improving agricultural practices and land management (including water management) in accordance with peatlands to improve environmental quality in an area of 100 ha by 2024.</p> <p>Reducing 10.000 tons of CO₂e carbon emissions from project activities by 2024.</p> <p>Reducing the risk of peatland fires through sustainable paludiculture practices in the approximately 1.000 ha of project area by 2024.</p>
Supporting the people's interest in the utilization of the natural resources to develop the economy of the people and genuine regional income	<p>Improving the livelihoods of farmers and communities in 25 priority villages by 2025.</p> <p>Increasing plantation productivity of 4.000 independent smallholders in Siak and reducing the potential for land and social conflicts between communities by 2025.</p>	<p>Strengthening the role of Village-Owned Enterprises in managing commodities with the community in 10 villages by 2024.</p> <p>Providing better market access for alternative commodities that have direct impacts on farmers and communities by 2024.</p> <p>Participatory planning for commodity development programs under Village-Owned Enterprises in 3 villages has been carried out in 2024.</p>	<p>Strengthening the role of Village-Owned Enterprises in managing commodities with the community in 10 villages by 2024.</p> <p>Providing better market access for alternative commodities that have direct impacts on farmers and communities by 2024.</p> <p>Participatory planning for commodity development programs under Village-Owned Enterprises in 3 villages has been carried out in 2024.</p>

Sustainable Peat Management through Paludiculture in Land Under Agrarian Reform (TORA)	Sustainable Peat Management through Peat-Friendly Commodities: Snakehead Fish	Sustainable Peat Management through Peat-Friendly Commodities: Bee Honey	Sustainable Peat Management through Zamrud National Park	Sustainable Peat Management through Bungaraya Agrotourism
<p>Supporting the development of peat-friendly alternative commodities with economic and ecological value that can provide alternative income for around 100 farmers by 2024.</p> <p>Improving agricultural practices and land management (including water management) in accordance with peatlands to improve environmental quality in an area of 500 ha by 2024.</p> <p>Reducing 10.000 tons of CO₂e carbon emissions from project activities by 2024.</p> <p>Reducing the risk of peatland fires through sustainable paludiculture practices in the approximately 1.000 ha of project area by 2024.</p>	<p>Expanding the peatland area to be protected through snakehead fish farming practices in 10 villages by 2027.</p>	<p>Maintaining and protecting peatland areas for the risk of fire through honey bee keeping.</p>	<p>Become a biodiversity protection area, center for education and recreation as well as water resource protection, disaster mitigation function, livelihood, and ecological preservation.</p>	<p>Promoting the awareness and educating public on environmentally friendly agricultural cultivation.</p>
<p>Strengthening the role of Village-Owned Enterprises in managing commodities with the community in villages within the TORA project area by 2024.</p> <p>Providing better market access for alternative commodities that have direct impacts on farmers and communities by 2024.</p>	<p>Providing 500 jobs based on new product opportunities and the development of other derivative products other than snakehead fish by 2027.</p>	<p>Improving the livelihoods of farmers and communities in peatland areas.</p>	<p>Become a biodiversity protection area, center for education and recreation as well as water resource protection, disaster mitigation function, livelihood, and ecological preservation.</p>	<p>Providing livelihood sources for farmers and communities in agrotourism area.</p>

	Sustainable Palm Oil	Sustainable Peat Management through Peat-Friendly Commodities: Pineapple	Sustainable Peat Management through Peat-Friendly Commodities: Sagó
<p>Determining the pattern of the utilization of regional natural resources through conservation, development of downstream sectors, and intensification</p>	<p>Integrating all palm oil cultivated and produced in Siak in the monitoring, verification and response system for deforestation and peat by 2025.</p> <p>Establishing a multistakeholder platform with clear governance and reporting on sustainable palm oil by 2025.</p> <p>Developing a production and protection models as well as funding for rehabilitation and conservation in priority villages by 2025.</p>	<p>Integrating project planning from upstream to downstream has been carried out in 3 villages by 2024.</p> <p>Conducting multi-stakeholder collaboration approach in sustainable peatland management by 2024.</p> <p>Combining production and conservation crops for economic purposes and peatland restoration through paludiculture by 2024.</p>	<p>Integrating project planning from upstream to downstream has been carried out in 3 villages by 2024.</p> <p>Conducting multi-stakeholder collaboration approach in sustainable peatland management by 2024.</p> <p>Combining production and conservation crops for economic purposes and peatland restoration through paludiculture by 2024.</p>

Sustainable Peat Management through Paludiculture in Land Under Agrarian Reform (TORA)	Sustainable Peat Management through Peat-Friendly Commodities: Snakehead Fish	Sustainable Peat Management through Peat-Friendly Commodities: Bee Honey	Sustainable Peat Management through Zamrud National Park	Sustainable Peat Management through Bungaraya Agrotourism
<p>Integrating project planning from upstream to downstream has been carried out in TORA-based villages by 2024.</p> <p>Conducting multi-stakeholder collaboration approach in sustainable peatland management by 2024.</p> <p>Combining production and conservation crops for economic purposes and peatland restoration through paludiculture by 2024.</p>	<p>Developing market research for new product opportunities and the development of other derivative products (excluding snakehead fish) that will provide 500 jobs by 2027.</p>	<p>Organizing and facilitating honey bee farmers to improve their productivity as well as preserving the peatland areas</p>	<p>Become a biodiversity protection area, center for education and recreation as well as water resource protection, disaster mitigation function, livelihood, and ecological preservation</p>	<p>Promoting the awareness and educating public on environmentally friendly agricultural cultivation</p>

TABLE 2. CONTRIBUTION OF INVESTMENT-READY JURISDICTIONAL INITIATIVES TO THE GREEN SIAK OBJECTIVES

	Sustainable Palm Oil	Sustainable Peat Management through Peat-Friendly Commodities: Pineapple	Sustainable Peat Management through Peat-Friendly Commodities: Sago
Reducing the rate of degradation of natural resources especially peatlands and watersheds in Siak	<p>Integrating all palm oil cultivated and produced in Siak in the monitoring, verification and response system for deforestation and peat by 2025.</p> <p>Ensuring 2.500 farmers implement Good Agricultural Practice by 2025.</p> <p>Strengthening High Conservation Value planning, implementation and monitoring practices in 8.000 ha of independent palm oil plantations by 2025.</p>	<p>Reducing 10.000 tons of CO2e carbon emissions from project activities by 2024.</p> <p>Improving peat management and water management in the project area which can have a positive impact on 1.000 ha area by 2024.</p> <p>Implementing better land management using the paludiculture system through reducing the use of chemical fertilizers in 100 ha of the project area by 2024.</p>	<p>Reducing 10.000 tons of CO2e carbon emissions from project activities by 2024.</p> <p>Improving peat management and water management in the project area which can have a positive impact on 1.000 ha area by 2024.</p> <p>Implementing better land management using the paludiculture system through reducing the use of chemical fertilizers in 100 ha of the project area by 2024.</p>
Creating economic growth that is in line with the principles of sustainability	<p>Supporting palm oil in Siak with a system that respects the human rights of workers and surrounding communities by 2025.</p> <p>Increasing capacity of 4.000 cooperative members/farmer groups related to sustainable palm oil cultivation and implementing RSPO/ISPO principles and criteria by 2025.</p> <p>Increasing number of RSPO/ISPO certified smallholders by 2025.</p>	<p>Increasing income and other benefits for 100 farmers by 2024.</p> <p>Increasing Village Owned Enterprises income in 3 village by 2024.</p> <p>Creating a minimum of 100 new jobs for the community by 2024.</p> <p>Reducing 10.000 tons of CO2e carbon emissions from project activities by 2024.</p> <p>Unlocking new investment potential through partnership with the private and public sectors by 2024.</p>	<p>Increasing income and other benefits for 100 farmers by 2024.</p> <p>Increasing Village Owned Enterprises income in 3 village by 2024.</p> <p>Creating a minimum of 100 new jobs for the community by 2024.</p> <p>Reducing 10.000 tons of CO2e carbon emissions from project activities by 2024.</p> <p>Unlocking new investment potential through partnership with the private and public sectors by 2024.</p>
Utilizing natural resources while reducing the impacts on the functions and sustainability of the resources	<p>Integrating all palm oil cultivated and produced in Siak in the monitoring, verification and response system for deforestation and peat by 2025.</p> <p>Strengthening the planning, implementation, and monitoring practices for High Conservation Value areas by 2025.</p>	<p>Improving the quality of natural resources, especially the quality of land and water management on 100 ha land by 2024.</p> <p>Reducing the opportunity of peat forest fires through alternative peat-friendly commodities on 100 ha land by 2024.</p> <p>Developing paludiculture cultivation with the concept of minimal tillage and minimal use of chemical fertilizers and pesticides on 100 ha area by 2024.</p>	<p>Improving the quality of natural resources, especially the quality of land and water management on 100 ha land by 2024.</p> <p>Reducing the opportunity of peat forest fires through alternative peat-friendly commodities on 100 ha land by 2024.</p> <p>Developing paludiculture cultivation with the concept of minimal tillage and minimal use of chemical fertilizers and pesticides on 100 ha area by 2024.</p>

Sustainable Peat Management through Paludiculture in Land Under Agrarian Reform (TORA)	Sustainable Peat Management through Peat-Friendly Commodities: Snakehead Fish	Sustainable Peat Management through Peat-Friendly Commodities: Bee Honey	Sustainable Peat Management through Zamrud National Park	Sustainable Peat Management through Bungaraya Agrotourism
<p>Reducing 10.000 tons of CO2e carbon emissions from project activities by 2024.</p> <p>Improving peat management and water management in the project area which can have a positive impact on 3,500 ha area by 2024.</p> <p>Implementing better land management using the paludiculture system through reducing the use of chemical fertilizers in 500 ha of the project area by 2024.</p>	<p>Expanding the peatland area to be protected through snakehead fish farming practices in 10 villages by 2027.</p>	<p>Maintaining and protecting peatland areas for the risk of fire through honey bee keeping.</p>	<p>Preserving the peatlands area through protection and regular monitoring activities as well as zoning system.</p>	<p>Promoting the awareness and educating public on environmentally friendly agricultural cultivation system.</p>
<p>Increasing income and other benefits for 500 farmers by 2024.</p> <p>Increasing Village Owned Enterprises income in TORA-based village by 2024.</p> <p>Creating a minimum of 500 new jobs for the community by 2024.</p> <p>Reducing 10.000 tons of CO2e carbon emissions from project activities by 2024.</p> <p>Unlocking new investment potential through partnership with the private and public sectors by 2024.</p>	<p>Expanding peatland areas to be protected through snakehead fish farming practices in 10 villages by 2027.</p>	<p>Organizing and facilitating honey bee farmers to improve their productivity as well as preserving the peatland areas.</p>	<p>Strengthening community capacity to practice environmental-friendly agricultural cultivation in forest areas.</p>	<p>Providing livelihood sources for farmers and communities as well as improving their awareness and capabilities on protecting and preserving the surrounding environment.</p>
<p>Improving the quality of natural resources, especially the quality of land and water management on 500 ha land by 2024.</p> <p>Reducing the opportunity of peat forest fires through alternative peat-friendly commodities on 500 ha land by 2024.</p> <p>Developing paludiculture cultivation with the concept of minimal tillage and minimal use of chemical fertilizers and pesticides on 500 ha area by 2024.</p>	<p>Enlarging the area of snakehead fish farming practice to an area of 250 ha by 2027.</p>	<p>Maintaining and protecting peatland areas for the risk of fire through honey bee keeping.</p>	<p>Strengthening community capacity to practice environmental-friendly agricultural cultivation in forest areas.</p>	<p>Encouraging sustainable agricultural practices to farmers and communities.</p>

	Sustainable Palm Oil	Sustainable Peat Management through Peat-Friendly Commodities: Pineapple	Sustainable Peat Management through Peat-Friendly Commodities: Sago
Harmonizing conservation and economic policies	<p>Establishing a multistakeholder collaboration platform with clear governance and transparent reporting on sustainable palm oil by 2025.</p> <p>Strengthening the planning, implementation, and monitoring practices of High Conservation Value areas in 8.000 ha of smallholder plantation by 2025.</p>	<p>Conducting participatory planning for commodity development programs under Village-Owned Enterprises in 3 villages by 2024.</p> <p>Integrating project planning from upstream to downstream has been carried out in 3 villages by 2024.</p> <p>Implementing multi-stakeholder collaboration approach in sustainable peatland management in by 2024.</p>	<p>Conducting participatory planning for commodity development programs under Village-Owned Enterprises in 3 villages by 2024.</p> <p>Integrating project planning from upstream to downstream has been carried out in 3 villages by 2024.</p> <p>Implementing multi-stakeholder collaboration approach in sustainable peatland management in by 2024.</p>
Alleviating poverty through community and rural economic empowerment, development of human resources, equitable distribution, and population control	<p>Improving the livelihoods of farmers and communities in 25 priority villages by 2025.</p> <p>Supporting 2.500 smallholders to be certified by 2025.</p> <p>Strengthening business planning, implementation, and monitoring on smallholder cooperatives in 8.000 ha of independent smallholder plantations by 2025.</p>	<p>Strengthening the role of Village-Owned Enterprises in managing commodities with the community in 10 villages by 2024.</p> <p>Increasing job opportunities for 100 local workers including woman groups in promoting the alternative commodities by 2024.</p>	<p>Strengthening the role of Village-Owned Enterprises in managing commodities with the community in 10 villages by 2024.</p> <p>Increasing job opportunities for 100 local workers including woman groups in promoting alternative commodities by 2024.</p>

Sustainable Peat Management through Paludiculture in Land Under Agrarian Reform (TORA)

Sustainable Peat Management through Peat-Friendly Commodities: Snakehead Fish

Sustainable Peat Management through Peat-Friendly Commodities: Bee Honey

Sustainable Peat Management through Zamrud National Park

Sustainable Peat Management through Bungaraya Agrotourism

Conducting participatory planning for commodity development programs under Village-Owned Enterprises in TORA-based villages by 2024.

Integrating project planning from upstream to downstream has been carried out in TORA-based villages by 2024.

Implementing multi-stakeholder collaboration approach in sustainable peatland management in by 2024.

Encouraging Village-Owned Enterprises in 10 villages to provide budget allocations for pond procurement until 2027.

Organizing and facilitating honey bee farmers to improve their productivity as well as preserving the peatland areas.

Organizing and facilitating the community to implement community-based forest management.

Improving farmer and community awareness and capabilities on protecting and preserving the surrounding environment.

Strengthening the role of Village-Owned Enterprises in managing commodities with the community in TORA-based villages by 2024.

Increasing job opportunities for 500 local workers including woman groups in promoting the alternative commodities by 2024.

Developing market research for new product opportunities and the development of other derivative products (excluding snakehead fish) that will provide 500 jobs by 2027.

Improving the livelihoods of farmers and communities in peatland areas.

Organizing and facilitating the community to implement community-based forest management.

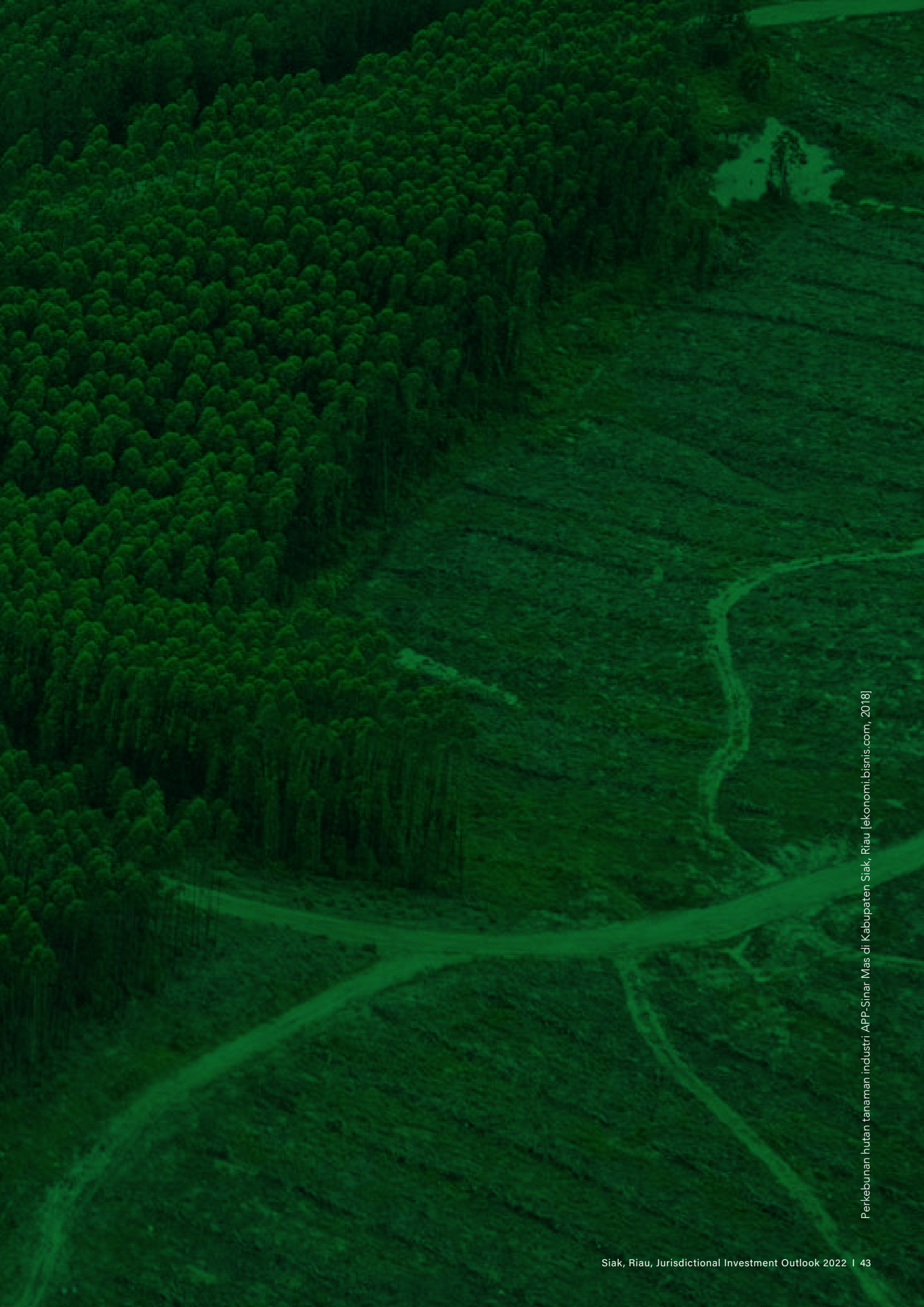
Providing livelihood sources for farmers and communities as well as improving their awareness and capabilities on protecting and preserving the surrounding environment.

CONCLUSION

Siak District is especially prepared not only for scaling up investment, but also as an existing and ready fertile ground for sustainable jurisdictional investment. There are many factors demonstrating Siak as this fertile ground for opportunity. Most importantly, Siak is ready for sustainable jurisdictional investment. Siak has been declared a “green district”. The Green Siak Roadmap has been enacted in District Head’s Regulation (Peraturan Bupati) and in District Regulation (Peraturan Daerah) not only to balance the space allocated for both production and conservation activities, but also to carry out activities with the participation of all the stakeholders, led by the District Head. Siak is an active member of the Sustainable District Forum (Lingkar Temu Kabupaten Lestari) and the District Head serves as the forum’s Secretary. Additionally, Sedagho Siak, a forum established by and for civil society in Siak, has been active in coordinating multi-stakeholder participation in developing, implementing, and monitoring the Green Siak Roadmap together with The Government of Siak. The Secretariat of the Green Siak, in the office of the district government, has established a special office that serves to coordinate all of the sustainable jurisdictional investment in the district.

There are already a number of investable jurisdictional initiatives that will benefit from sustainable financing. Peatland ecosystem covers more than half of the district. As such, options to carry out better and more sustainable peatland management need to be fostered. Also, as palm oil plantation is a major commodity produced in Siak, its compliance to sustainability standards especially among the smallholder growers is imperative. The current list of investable jurisdictional initiatives shows sufficient combination of both production and conservation to improve peatland management in Siak sustainably.

The investable jurisdictional initiatives will contribute significantly to achieve the goals and targets of the Green Siak Roadmap and the overall SDGs in Siak. All of the jurisdictional investable initiatives will contribute to the achievements of the five targets and three objectives of the Green Siak Roadmap in various ways. When these initiatives are fully financed and implemented, they will allow Siak to become more prosperous sustainably while keeping its natural resources and ecosystem services well-managed, with sufficient returns on investments, financially as well as socially and environmentally.



Perkebunan hutan tanaman industri APP-Sinar Mas di Kabupaten Siak, Riau [ekonomi.bisnis.com, 2018]

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