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KELOLA SENDANG

A PROJECT NARRATIVE

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KELOLA Sendang (Kemitraan Pengelolaan Lanskap Sembilang – Dangku) is a breakthrough landscape approach in partnership development between the private, public and people to address natural resource management issues in South Sumatra province that include deforestation prevention and biodiversity conservation, peatland management, forest and land fire prevention, and public welfare improvement.



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KELOLA SENDANG – A PROJECT NARRATIVE.

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FOREWORD

COUNTRY DIRECTOR ZOOLOGICAL SOCIETY OF LONDON-INDONESIA PROGRAMME

Praise and gratitude to God almighty for the abundance of graces so that the KELOLA Sendang A Project Narrative book has finally been compiled and published as we hope together.

KELOLA Sendang (KS) is a collaborative project between various parties implemented in the Sembilang-Dangku landscape in South Sumatra Province between 2016-2020. The project aims to develop a green development implementation model through a government-led project management partnership. The 1.6million-hectare landscape is a complex landscape and is a mosaic consisting of various uses and uses of land, including conservation and protection areas, concession areas for oil palm plantations and plantation forests, as well as community management areas. This area also contains a variety of unique ecosystems, including peatland areas on the eastern coast of South Sumatra, as well as an important habitat for a wide variety of wildlife and rich in biodiversity, and therefore needs to be managed wisely for the benefit of the wider community, both when this and the future.

This book summarizes the various efforts and achievements of the KELOLA Sendang Project which includes the preparation of the Sembilang-Dangku Landscape Management Partnership Master Plan, project support for strengthening cross-sectoral policies and institutions, development of spatial information systems, and partnerships with the private sector that focuses on promoting management practices. land and protection of High Conservation Value areas.

Our gratitude goes to the British government through the United Kingdom of Climate Change Unit (UKCCU) who have provided support for this book to be published as well as the authors and all parties involved in contributing thoughts in improving this book.

Hopefully this book can provide good information for the community, and for those who are active in monitoring activities, sustainable management of biodiversity, and a landscape approach.

Dr. Dicky Simorangkir

The Sembilang Dangku Landscape Management Partnership (KELOLA Sendang)

As a pilot project at the landscape level, KELOLA Sendang aims to mainstream conservation values into development through green development which includes inclusive economic growth and community welfare, conservation of biodiversity, conservation of forests and peatlands, and prevention of forest and land fires, strengthening institutions that combined with policy development, all of which are expected to reduce land-based greenhouse gas emissions.

Landscape approach governance places the government as the government-led because of its holistic approach and includes policy aspects that become pillars for the implementation of activities at the site level. The government is the party that has the authority in regional spatial planning and development planning in an area. At the central level, this project is directed by the Project Steering Committee (PSC) which consists of elements from the Ministry of Environment and Forestry (KLHK), one of which is the Directorate General of KSDAE, Restoration Peat Agency (BRG), Head of BAPPEDA South Sumatra Province, District Representatives, Consortium Representatives (Zoological Society of London) and representatives of donor agencies (UKCCU).

KELOLA Sendang Project Steering Committee has the authority to: ratify the KELOLA Sendang Master Plan along with its annual project milestones; ratify the work program and annual project budget draft; ensure that project activities are coordinated with relevant government agencies, both at the provincial and national levels (BKSDA South Sumatra and Jambi and TNBS), donor agencies, and the relevant private sector during the project; and hold a meeting to evaluate the progress / progress of the project.

At the provincial level, the KELOLA Sendang Project partners with the Provincial Government of South Sumatra through the KELOLA Sendang Project Supervisory Unit and Project Implementation Unit (PSU / PIU) team. This team was formed by the Decree of the Governor of South Sumatra 332 / KPTS / BAPPEDA / 2017. Members of this team are representatives of the Regional Apparatus Organization (OPD) of South Sumatra who are directly involved with Landscape management and representatives of the Musi Banyuasin and Banyuasin regencies. This team collaborates with the project in planning, implementing as well as monitoring and evaluating programs and project activities in the Sembilang Dangku Landscape.

Government involvement is also important for the sustainability of activities at the site level by including the program in the RPJMD. Landscape governance is meant here is the existence of a “governing body” at the landscape level which becomes a space for

dialogue between central-regional governments, across sectors where all issues related to landscape can be discussed together. The plans prepared by the PSU/ PIU through multi-stakeholder discussions were outlined in the 2018-2020 KELOLA Sendang Masterplan document which was endorsed by the PSC in 2018.

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MASTER PLAN

Upon entering the Sembilang-Dangku region – and engaging in the KELOLA Sendang project – a priority target was uniting all elements and parties within the complex landscape management context into a single guiding movement. With strong planning at the foundation of good landscape governance, in 2018 the KELOLA Sendang project – led by the Project Supervisory Unit and Project Implementation Unit (PSU-PIU) under the coordination of the South Sumatra Planning Development Agency (BAPPEDA) – achieved this significant target with the completion of the Sembilang-Dangku Landscape Management Master Plan 2018-2028.

Developed to create partnership guidelines to achieve sustainable landscape management in the Sembilang-Dangku area, the extensive process that took over a year, ensured a strong focus on participatory input, bringing all community, government and private sector stakeholders together in discussions and negotiations regarding various parts of the plan. After reviewing the range of plans and documents held by various stakeholders within the region's landscape governance sector, it was determined that a new plan was not required, however, that all these other plans should be brought under the one umbrella. Through this design and collation of existing landscape management plans, the KELOLA Sendang Master Plan was born. The guidelines set out by the Master Plan aim to ensure sustainable landscape management throughout Sembilang-Dangku, with a priority to support and promote green growth development in the South Sumatra province. More specifically, the Master Plan establishes landscape management partnerships that promote greenhouse gas emission reductions and preserve biodiversity, while at the same time boosting an inclusive and sustainable local economy. Significant attention is also given to developing alternative partnership methods for landscape management that support good landscape governance, while also implementing transparent and accessible landscape management monitoring, evaluation and reporting systems.

The uniqueness of this Master Plan – and its potential to stand as an example for other regions with similar landscape diversity and socio-economic contexts – is further strengthened by its integration and balance of landscape development and conservation. Based on experiences and methods of integrated sustainable landscape approach implementation, the Master Plan sets out an array of practices to govern the Sembilang-Dangku region landscape by focusing on three specific and unique landscape types. These three 'Model Areas' are:

- **Model Area 1** – Meranti Forest and Dangku Wildlife Reserve
- **Model Area 2** – Peatland areas of the Merang and Ngirawan rivers
- **Model Area 3** – Mangrove forest buffer zones bordering the Berbak-Sembilang National Park

To support the Master Plan's implementation, BAPPEDA and other related government bodies also engaged all landscape stakeholders in the development of an action plan, which became the practical guideline for activities after the Master Plan's completion in 2018. Important initial steps included socialising and promoting the plan among all relevant stakeholders, as well as strengthening and consolidating practical partnerships across the Model Areas.

Sembilang-Dangku Landscape Management Master Plan 2018-2028



Vision: Achieving sustainable landscape through strong and effective public-private-people partnerships in the Sembilang-Dangku landscape, to accomplish environmental and natural resource conservation as well as an inclusive economy for community livelihoods

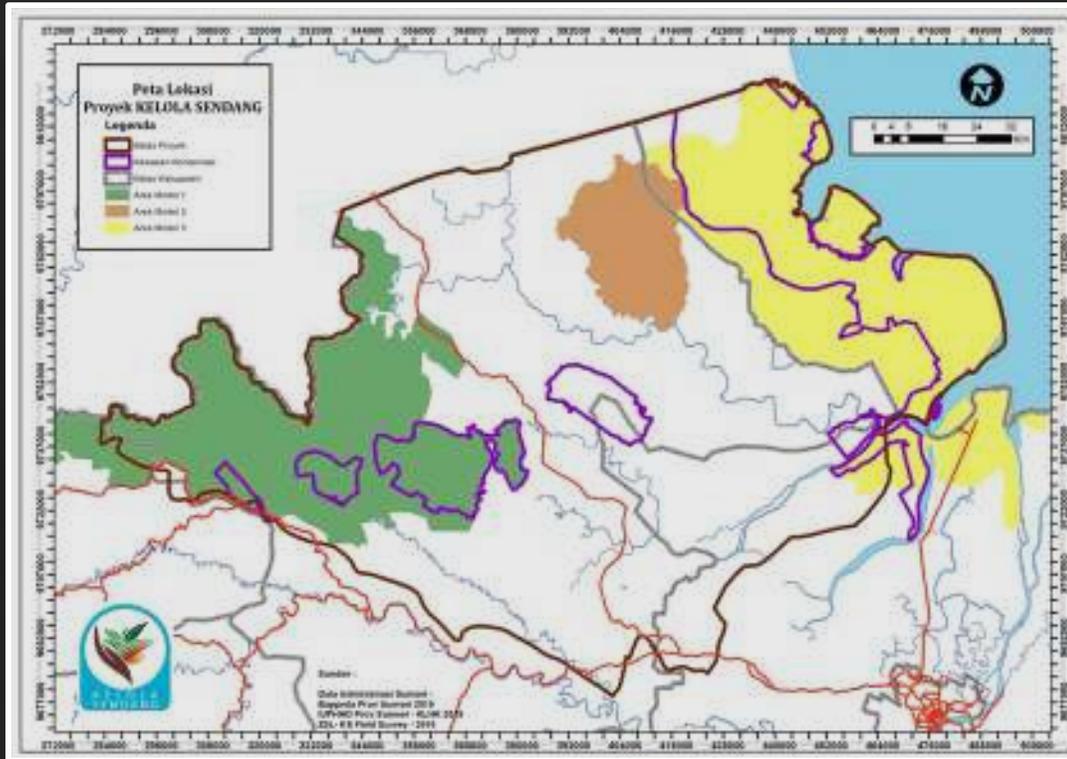
Period 1:
2018-2023

- ✓ Promote integration of collaborative and thematic frameworks
- ✓ Develop necessary policy support
- ✓ Mainstream partnership model in local development planning
- ✓ Strengthen commitment to achievable partnerships through Partnership Action Plans in each Model Area
- ✓ Strengthen information databases at all levels
- ✓ Develop multi-stakeholder forums to promote landscape partnership development
- ✓ Design collaborative evaluations based on benefit and impact analysis

Period 2:
2023-2028

- ✓ Extend areas of partnership action in Sembilang-Dangku landscape
- ✓ Analyse the contribution of landscape approach to green economic growth
- ✓ Develop policies to strengthen landscape approach implementation
- ✓ Share and adapt landscape approach lessons learnt for replication in new locations

Map and Project Model Areas for Sembilang-Dangku Landscape Management Master Plan 2018-2028





Although the Sembilang-Dangku Landscape Management Master Plan 2018-2028 is a significant outcome for KELOLA Sendang – as well as a key foundation on which to continue sustainable landscape management in the region – the complexity and cross-sectional context of landscape governance requires further policy and regulation development, adjustment and improvement across multiple governance levels. Since its establishment and through to the present day, KELOLA Sendang has prioritised to support the local governments in the development and implementation of various policies and regulations that will better guide and support the implementation of sustainable landscape management activities in the Sembilang-Dangku region – and South Sumatra Province – well into the future.

DEVELOPINGS REGULATIONS

Policy and regulations supported by the KELOLA Sendang project throughout its implementation include:

South Sumatra Provincial Level Regulations Related to Landscape Management

South Sumatra Governor Regulations

- **Regulation No. 16 of 2017** on Green Growth and Eco-Region Landscape Management Partnership Institution in the Province of South Sumatra
- **Regulation No. 21 of 2017** on South Sumatra Provincial Green Growth Master Plan
- **Regulation No. 19 of 2017** on the Acceleration of One Map Policy Implementation in the Province of South Sumatra

South Sumatra Governor Decrees

- **Decree No. 452 of 2017** on Green Growth Plan Organisational Structure and Eco-Region Landscape Management Partnership Institution in South Sumatra
- **Decree No. 332 of 2017** on the Formation of Project Supervisory Unit (PSU) and Project Implementation Unit (PIU) for Sembilang-Dangku Sustainable Landscape Management
- **Decree No. 527 of 2017** on the Formation of South Sumatra Provincial One Map Policy Acceleration Team and Implementation Team
- **Decree No. 154 of 2018** on the Formation of Social Forestry Acceleration Working Group in the Province of South Sumatra
- **Decree No. 233 of 2018** on Prevention of Conflict between Humans and Wildlife

District Level Regulations Related to Landscape Management

- Regent of Musi Banyuasin Decree No. 68 of 2018 on the Formation of Green Growth Working Group in the District of Musi Banyuasin
- Regent of Banyuasin Decree No. 105 of 2018 on the Formation of Green Growth Working Group in the District of Banyuasin



STRENGTHENING LANDSCAPE GOVERNANCE

Timely development of regulations and policy at both provincial and district levels enabled the establishment of key governance bodies to guide the implementation of sustainable landscape management practices throughout the KELOLA Sendang landscape. Roles and responsibilities of governance under Indonesia's decentralised system can create significant challenges for landscape programming, particularly when landscapes – like those within the KELOLA Sendang Model Areas – don't adhere to human-made boundaries, such as district or provincial borders. With a diverse range of natural environments extending across governance lines drawn on maps, the strengthening of governance systems and their application was a primary requirement for KELOLA Sendang's implementation.



Project Supervisory Unit and Project Implementation Unit – Provincial Level

Developed in 2017, the Project Supervisory Unit and Project Implementation Unit (PSU-PIU) represented the South Sumatran Provincial government's leadership for the KELOLA Sendang project. Rolled out by the Provincial Planning and Development Body (BAPPEDA), and formed by representatives from key landscape management governance institutions, justification for the formation of these units was provided through the related Governor's Decree, which stated:

- Sembilang-Dangku landscape is an important ecosystem in the development of the South Sumatra 'green growth vision'. The landscape includes the remaining lowland forests, peat ecosystems, and agricultural areas that are essential for economic growth, public welfare, biodiversity conservation, connectivity of endangered species populations, and reduction of greenhouse gas emissions from the land-use sector.
- Sustainable landscape management needs to be developed through an integrated landscape approach with public-private-people partnership, in order to achieve the aforementioned South Sumatra 'green growth vision'.

Green Growth Working Groups – District Level

The District Governments of Banyuasin and Musi strengthened the implementation of PSU-PIU with district level working groups (WGs) in each district. Known as the Green Growth Working Group, they were formalised through Regent Decrees from each District Regent during 2018. Supporting landscape management at both district and provincial levels, these WGs were developed to mainstream green growth and landscape management principles within local government planning and programs.

Implemented through BAPPEDA – in this instance at the district level – the Musi Banyuasin Green Growth WG was formed by a policy team, a technical team, a secretariat, and corporate representatives. The group's objectives include: (a) strengthening processes of holistic planning, utilisation, and monitoring of efforts to reduce the impact of climate change; (b) conducting long-term sustainable development, and; (c) achieving sustainable natural resource management within Musi Banyuasin. The Banyuasin District WG was formed using key sections of: (1) Organisation, Policy and Partnership; (2) Natural Resource Management and Ecosystem Protection; (3) Economic, Production and Livelihoods, and; (4) Data Assessment and Monitoring and Evaluation. They aim to ensure continuity in the implementation of landscape-based green growth programs, in order to achieve sustainable economic, social and environmental prosperity.

DEVELOP INFORMATION MANAGEMENT SYSTEM

A unique element of the KELOLA Sendang project is its determination of a landscape 'corridor' – a large swathe of land extending from the coastline to the central forests. As is the case with any strong land management project, understanding, mapping and developing information about this corridor was essential. To develop strong spatial planning and analysis across the variety of landscapes and boundaries, the project created and implemented the Spatial Planning Information System, known as SITARUNG. It was adopted by the Provincial government with the aim to broaden access and public participation in land management, as well as to improve information efficiency and effectiveness.

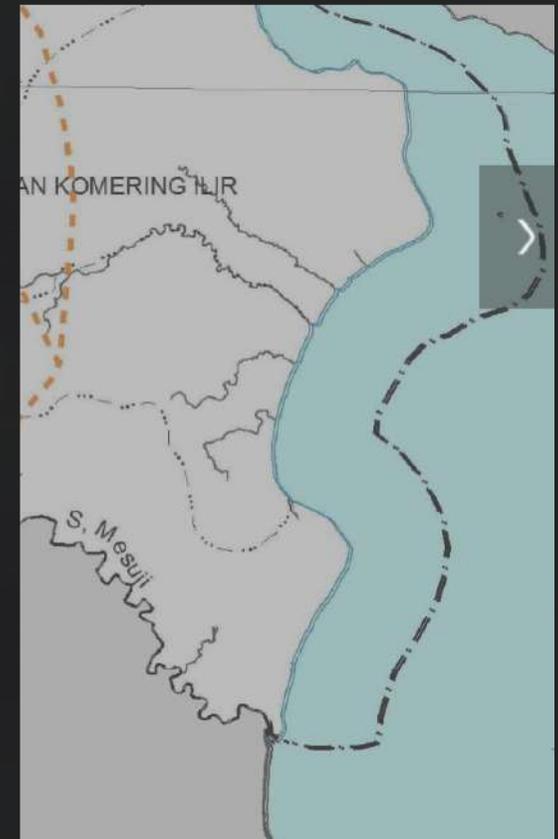
SITARUNG is a unique and innovative tool that supports stakeholders with spatial planning management and decision making, alongside providing information for sustainable landscape management monitoring and evaluation practices. The system itself is open to – and covers the requirements of – all government, private and community stakeholders within the land management and utilisation sphere. The platform stores general geo-spatial data and information for access and use in spatial planning, as well as geo-spatial data and information relating to permit issuance within land utilisation. Users can access information and monitor spatial planning implementation from their smart phones, by entering permit locations or coordinates into the SITARUNG website. The website also contains a public reporting feature, enabling users to provide input on topics including indigenous and traditional land ownership and large-scale participatory mapping.





SITARUNG's development was conducted transparently and through significant collaboration with key stakeholders, including related government institutions (such as district governments as data owners), the private sector, and other development partners from across South Sumatra. The platform's management and maintenance is performed by the province's Public Works and Spatial Planning Services, which also conducts training and upskilling for SITARUNG end users. After its launch in 2017, BAPPEDA South Sumatra was recognised as a leading province in planning and development through the Pangripta Nusantara Award from the Ministry for Planning and Development (BAPPENAS), with SITARUNG considered a significant spatial planning innovation.

After ongoing improvement and integrations with other key platforms during 2018, in 2019 SITARUNG was replicated by both Musi Banyuasin and Banyuasin districts to enable increased use at the local level. Based on each district's specific requirements and wishes, KELOLA Sendang supported the development of SITARUM (in Musi Banyuasin) and BETUAH (in Banyuasin), which both now stand as district-level spatial planning innovations in their own right. During the same period, the project also worked with South Sumatra's Public Works and Spatial Planning Services department to develop Standard Operating Procedures for SITARUNG, which aim to facilitate the rollouts of similar district-level systems, and guide its overall utilisation well into the future.



PRIVATE SECTOR ROLES

KELOLA Sendang



The private sector plays a key role within the KELOLA Sendang project. Historically, a significant proportion of the region's land destruction and degradation has resulted from industrial land use and use by other private sector parties – particularly those in forestry and palm oil production – along with other large-scale commercial land users. As one of the significant contributors to land destruction, it is reasonable that the private sector becomes an important leader in sustainable land management and conservation. This is the KELOLA Sendang project's position when engaging key parties in regional sustainable land management. Throughout the preceding years there have been many successful private sector relationships resulting in better outcomes for the landscape and regional communities, as well as the businesses which profit from the land's natural resources.

The private sector was approached and engaged through a wide array of methods, with each partnership depending on the specific context and surroundings of the parties' working areas. Engagement in land management systems, such as the Integrated Water Management System (IWMS) for peatland, united businesses, government and communities for improved land utilisation practices for all. Concurrently, working with buyers on sustainable sourcing from smallholders engaged community suppliers with external markets for responsible products. The project also provided training and support to ensure coordination and fluidity between government and business policies and regulations, while businesses utilising large areas of landscape were also invited to participate in regeneration and revegetation of surrounding habitats. Overall, regardless of the approach and engagement technique, the private sector's role – and the proven positive engagement – stands as one of the key results of the complex and multidimensional KELOLA Sendang project.

Monitoring, Mapping and Conserving

Engaging private companies working in the palm oil industry, such as PT Hindoli and PT Pinago, was a key success for improved wildlife mapping and monitoring in the KELOLA Sendang region.

The project trained over 50 employees from 11 different companies on the utilisation of its Spatial Monitoring and Reporting Tool (SMART). The tool has been utilised by these companies – within the overall KELOLA Sendang project – to monitor and map protected areas, High Carbon Value and High Carbon Stock areas and riverbanks, as well as other features of the wider landscape that fall within their working areas. Business also demonstrated commitment by allotting their own funding towards the expansion of such activities.

The Rubber Market

The KELOLA Sendang project achieved success by uniting the private sector with smallholder farmers to strengthen overall market conditions and price guarantees. Benefits for engaged businesses were also evident, as the project helped guarantee smallholder product quality, as well as responsible and sustainable sourcing based on ethical market principles, such as land ownership, anti-deforestation, and labour rights. For example, PT DW set rubber prices based on the level of Dry Rubber Content (DRC) in rubber products, with random sampling encouraging quality consistency. As a result, the business then purchased rubber from local villages with a gross value of more than 3 billion Indonesian Rupiah, with prices offered significantly above the market figure prior to the implementation of DRC testing.

F M U S U P P O R T

Forest Management Units (FMUs) are one of the KELOLA Sendang project's key stakeholders – forming the primary link for landscape governance in the field. Working directly with KELOLA Sendang and engaging with various sustainable landscape management forums, FMUs were supported and developed to play a larger leadership role within all aspects of KELOLA Sendang's landscape management efforts. The project engaged FMU Meranti, covering 244,162 hectares of Model Area 1's forest landscape, and FMU Lalan-Mendis, covering 320,939 hectares of Model Area 2's peat landscape. In total these FMUs manage over 35% of the Sembilang-Dangku landscape. Both units became key partners for all stakeholders within the integrated partnership approach of KELOLA Sendang's implementation. As the primary governance party based within the landscape itself, FMUs were key benefactors and utilisers of monitoring and reporting technology introduced through KELOLA Sendang. Initially, FMU staff were trained in the use of the Spatial Monitoring and Reporting Tool (SMART) within their landscape areas, and increasingly utilised the technology as the project continued.



Mainstreaming SMART within overall FMU monitoring activities aimed to boost their capacity to protect their landscape, as well as more clearly and directly mitigate threats to flora and fauna. After experiencing SMART and other monitoring technology's benefits and strengths, FMUs developed their own policies and regulations to implement and improve SMART patrols as part of their future operating procedure.

Another primary aspect of KELOLA Sendang is social forestry, and FMUs are also a key partner within such community-based efforts. The partnership saw FMUs working with KELOLA Sendang and other key agencies throughout all aspects of social forestry development, including planning, identification of program participants, land verification, preparation of community groups, and formulation of social forestry recommendations for the Ministry of Environment and Forestry. As a result, a range of communities and groups have received permits from national government to utilise and manage the landscape through social forestry mechanisms. FMUs were supported to conduct socialisation regarding social forestry, to increase community awareness of rights and obligations related to land management access, and therefore supporting more sustainable and productive forest management.

KELOLA Sendang also supported partner FMUs in the development of strong business plans for their areas, with a particular focus on green investment within local economic activities. Such business plans' overall aim is to decrease FMU reliance on external government funding, promote financial independence, and ensure FMUs can continue and expand their landscape management activities for the benefit of all stakeholders in their landscape areas. Business plans for the two FMUs focus on sustainable utilisation and forest conservation, promoting such elements as the utilisation of non-wood forest products, agro-forestry, and related environmental services. Commodities within the plans include products such as rubber, pineapple, and corn for FMU Lalan-Mendis, as well as honey and rattan for FMU Meranti.

Finally, FMUs have also been engaged as leaders and key managers within the KELOLA Sendang project's governance aspects. Representatives have been engaged for a wide array of studies and research, and also provide direct and specific input to higher-level forums and PSU/PIU. As key voices within the district level green growth working groups, they are the primary drivers of the Sembilang-Dangku Landscape Management Master Plan 2018-2028 in the field.

LANDSCAPE SURVEYS & ASSESSMENTS

KELOLA Sendang

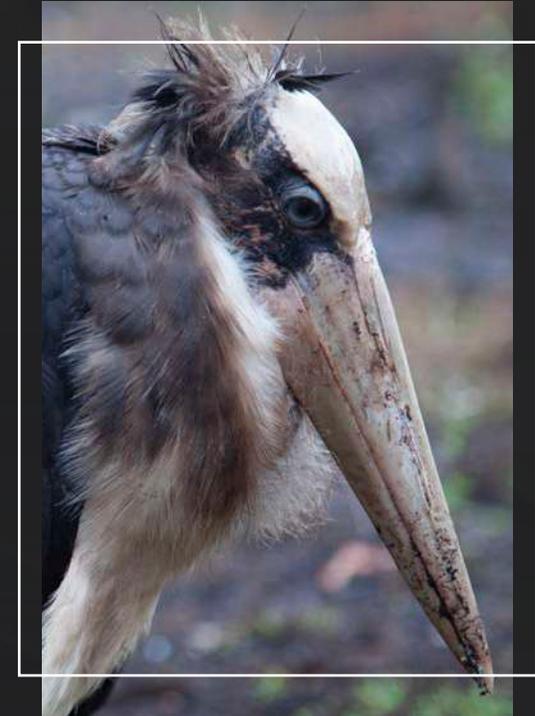
With the range of types, uses, and historical occurrences of KELOLA Sendang's landscape, the implementation and utilisation of surveys, assessments, and other scientific testing or monitoring has been a key activity throughout the project's timeline. Guiding this – and activities within the KELOLA Sendang landscape – are the regional and district versions of the Strategic Environmental Assessment (KLHS) document. The project supported KLHS development and strengthening at the provincial level, as well as at the district levels of Banyuasin in 2018, and Musi Banyuasin in 2019. These guiding documents compliment environmental assessments for various government levels across the KELOLA Sendang landscape.

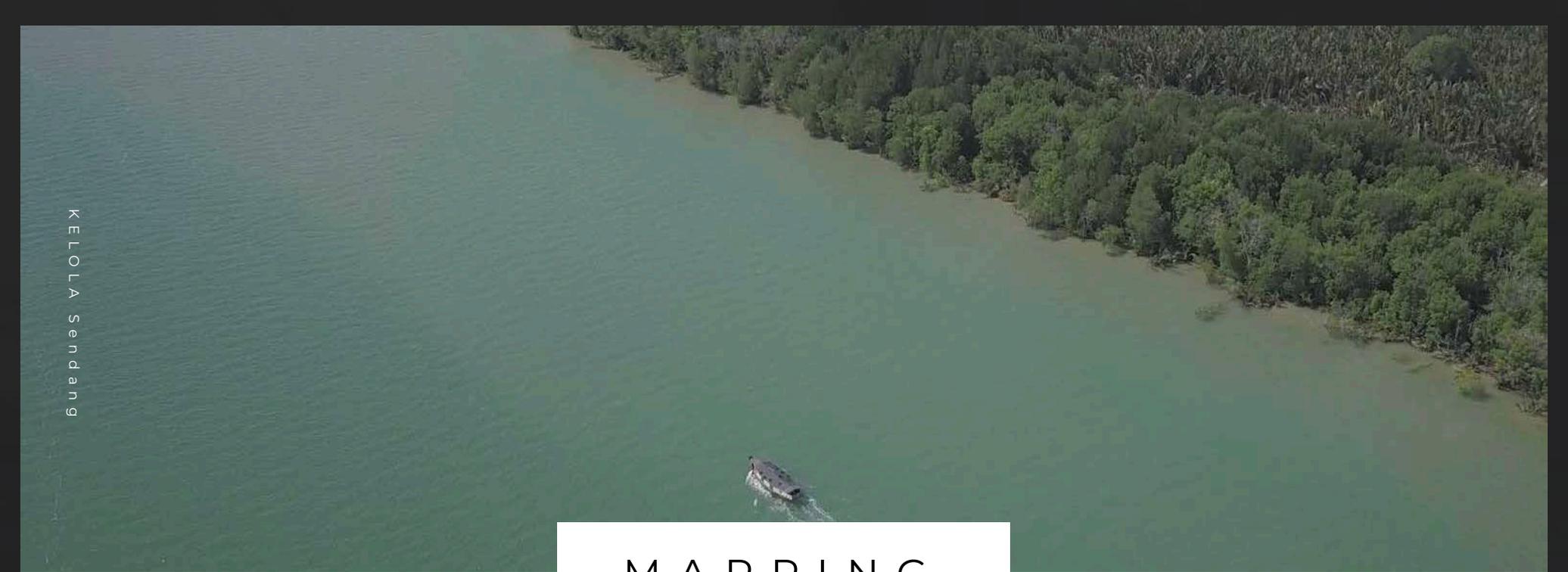
Surveys and assessments were also an integral tool for land utilisation planning and allocation, as part of the project's overall sustainable land management goal. Ground surveys were a primary tool used to determine specific areas' potential to become wildlife corridors, with an array of mapping and testing implemented. Similar activities were also conducted with a specific focus on the movement of Sumatran tigers, with the survey process engaging private sector partners working in the identified forest areas. The development of the project's Integrated Water Management System in the region's peatland areas required extensive surveying, testing and assessing, and utilised topographic mapping, and water-specific measurements and mapping, alongside various other data collation activities in the development of this innovative landscape management process.



Surveys and assessments were also often utilised to support production and community land-use developments throughout the KELOLA Sendang project, with land suitability assessments conducted based on the provincial KLHS. These activities evaluated the land's suitability and/or risk for various commodities in peatland and flood-prone areas, before recommending *Nypa* palm as the most sustainable and supportive plantation. Such outcomes are positioned to protect the land – as well as those who utilise it – from long-term risks of flooding and land degradation in the wetland areas. The project also surveyed and assessed other areas with specific landscape destruction – such as peatland destroyed by fire – with the results supporting peatland and mangrove restoration activities with the private sector and communities in the related areas.

Surveys utilising camera traps and other methods within the KELOLA Sendang landscape also inform wider knowledge and understanding of some of the region's most fascinating and mysterious species. Conducted throughout the Meranti watershed's riparian area, the Meranti Protected Forest, and the western sections of Dangku Wildlife Reserve, these activities produced significant findings. They include the identification of 27 animal species – 24 mammals, 2 birds, and 1 reptile – with 48% of the species identified listed as protected by the Indonesian Government. A further three identified species are categorised as endangered in the International Union for Conservation of Nature (IUCN) Red List – namely the Malayan tapir, Sumatran Surilli monkey, and the Dhole. Similar activities were also conducted for the Sumatran tiger, and also had significant success in identifying the movement of a number of Sumatran elephant families.



An aerial photograph of a wide, greenish-brown river. A small boat is visible in the middle of the river, moving towards the right. The right bank is covered in dense, lush green forest. The sky is not visible, and the overall tone is natural and serene.

MAPPING

*PARTICIPATORY AND
COMMUNITY-BASED*

One of the primary catchphrases of the KELOLA Sendang project is 'conservation beyond boundaries' – an acknowledgment that many issues can arise from, or otherwise transgress, the concept of human-made borders. Whereas many interventions within landscape management and conservation continue to start and stop at these lines drawn on maps, the KELOLA Sendang project aimed to engage all stakeholders across – and regardless of – such lines, for better environmental and sustainability outcomes for all land users. As primary land users, and also as a key party regarding land encroachment, communities across the KELOLA Sendang landscape were prioritised for engagement in participatory mapping of existing boundaries, as well as the scale and impact of their land use within the wider landscape context.

Participatory mapping processes supported numerous communities to better understand and engage with their surrounding landscape. In some regions, the process was utilised to highlight potential human/wildlife conflicts – such as in Tabala Jaya village in Musi Banyuasin District – where local farmers highlighted potential conflict with wild boars, and potential solutions to overcome and avoid crop damage. This type of mapping also supported communities to better understand their region’s ecology, and better comprehend the location of prime areas for utilisation, and the location of areas requiring stronger protection. The mapping processes were often conducted through activities focused on field surveys, mapping tools, sketch and village map development, and map verification. The project often developed a Village Mapping Team that comprised village officials, community leaders, women and youths, and any other related party with an interest in the specific land area.

The theme of resolving conflicts through participatory land-use and boundary mapping was central to the KELOLA Sendang project, and took place against a backdrop of multiple land conflict issues. By engaging across villages within the mapping process, some communities were able to overcome boundary disputes. This enabled negotiation, clarification, and agreements related to inter-village boundaries and landscape utilisation by village residents. Positive outcomes were also reached between communities and government institutions such as the National Parks authority. Participatory mapping became a great tool for communities living in and utilising the Sembilang National Park buffer zones to better understand, observe and protect the National Park, while continuing to develop their livelihoods around the borders. Conflicts between the private sector and communities were also overcome through engagement in mapping processes, as concession areas, conservation land, and village spaces were identified and agreed upon throughout a range of integrated sessions. These sessions weren’t only conducted to resolve conflicts between parties, but also to engage them in a united manner towards the sustainable land management targets within the KELOLA Sendang project’s overall partnership approach.



S O C I A L F O R E S T R Y D E V E L O P M E N T

Another key step towards overcoming the issues related to land conflict and ecosystem degradation was through the implementation and expansion of social forestry. On the national radar for some time, social forestry programs broke new ground to deliver – previously only afforded to industries – to communities living within various landscapes across Indonesia. Such permits were released for South Sumatra during 2018, with the aim to not only increase livelihoods for communities utilising the land, but also as a method to resolve land conflicts, by ensuring land management partnerships that focus on economic, social and ecological elements.



After significant assessment and participatory mapping, three villages were identified for KELOLA Sendang's social forestry efforts, to be developed alongside FMU Lalan Mendis and FMU Meranti. The villages of Muara Medak, Lubuk Bintialo, and Karang Makmur are home to over 2,500 households, with a total land area of more than 13,000 hectares. All villages and their surrounding landscapes have experienced significant land management issues in previous years, and were identified as strong candidates for engaging in multi-stakeholder social forestry activities.

Muara Medak Village

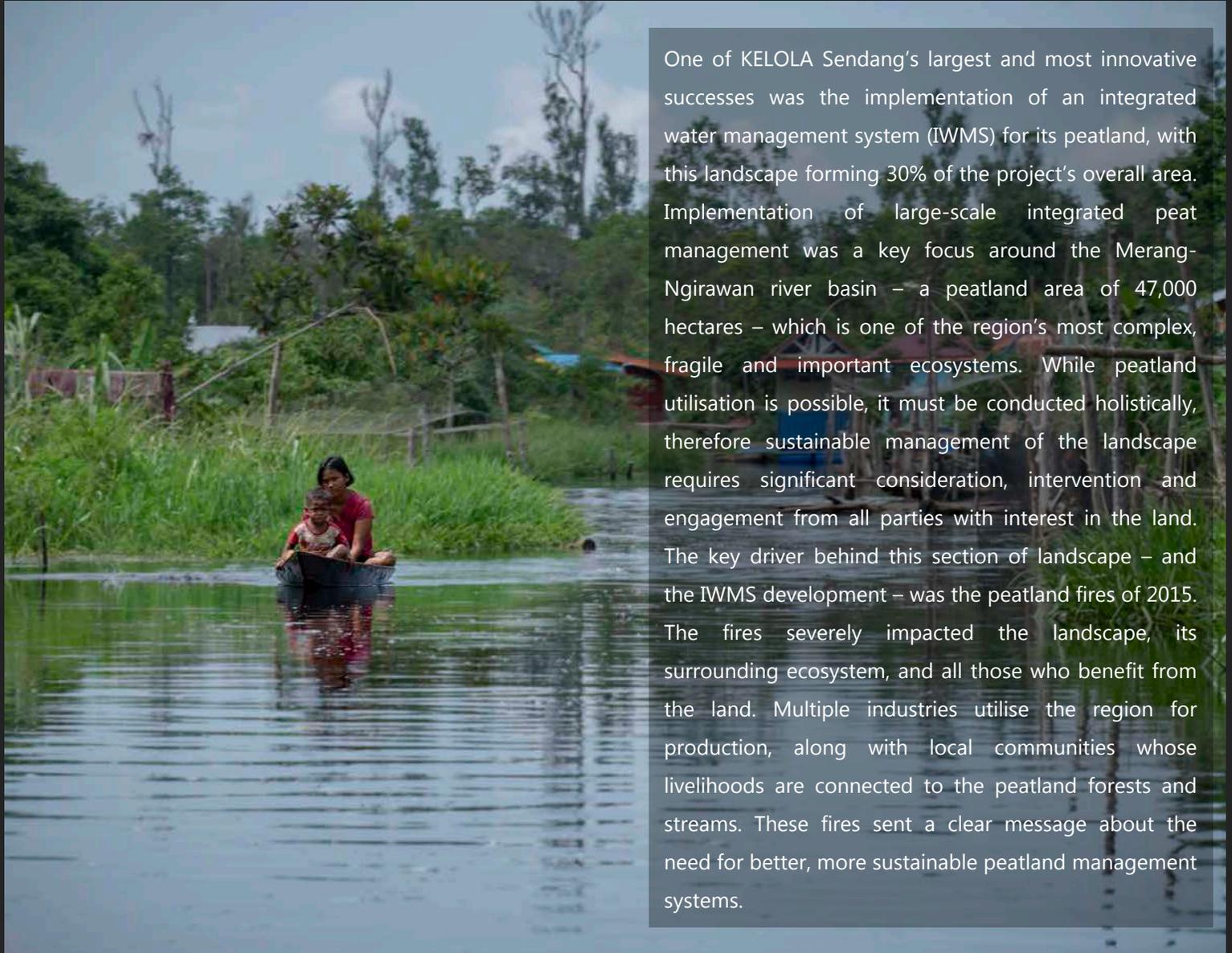
Located in an extensive peatland area, the region experienced the highest concentration of hotspots during the widespread forest and land fires of 2015. The land's vulnerability to fires meant that social forestry based on long-term fire prevention – alongside socio-economic sustainability – was identified as highly necessary. Alongside FMU Lalan Mendis and other integral stakeholders, the communities in the surrounding region now manage fire prevention efforts while improving yields from land utilisation.

Lubuk Bintialo

Meranti forms a protected forest, therefore FMU Meranti identified potential for agroforestry as its key social forestry activity. Efforts focused on the cultivation of valuable commodities that do not deplete or degrade the land, including rubber, jengkol, jackfruit and petai. This social forestry effort is aligned with the community's overall plan to develop Lubuk Bintialo into a centre for fruit farming. The designation of land for social forestry now provides a legal basis for community-based management, as well as promoting the community's role in conservation and illegal logging-related rehabilitation, while also acting as a buffer zone to the Dangku Wildlife Reserve.

Karang Makmur

The establishment of a community production forest to develop agroforestry products is the primary outcome for Karang Makmur community members. Many residents are actively engaged in the Sari Usaha Cooperative, and consequently the area's development as a Community Production Forest (HTR) engages both residents and the private sector in the improvement of market access and product development. The area is adjacent to an FMU Lalan Mendis protected area and serves as a buffer zone to Berbak Sembilang National Park. Future plans will focus on increasing restoration of damaged land, and on the potential for a carbon trading scheme.

MANAGING
WATER

One of KELOLA Sendang's largest and most innovative successes was the implementation of an integrated water management system (IWMS) for its peatland, with this landscape forming 30% of the project's overall area. Implementation of large-scale integrated peat management was a key focus around the Merang-Ngirawan river basin – a peatland area of 47,000 hectares – which is one of the region's most complex, fragile and important ecosystems. While peatland utilisation is possible, it must be conducted holistically, therefore sustainable management of the landscape requires significant consideration, intervention and engagement from all parties with interest in the land. The key driver behind this section of landscape – and the IWMS development – was the peatland fires of 2015. The fires severely impacted the landscape, its surrounding ecosystem, and all those who benefit from the land. Multiple industries utilise the region for production, along with local communities whose livelihoods are connected to the peatland forests and streams. These fires sent a clear message about the need for better, more sustainable peatland management systems.



It was this premise that encouraged collaboration between the private sector, communities and government institutions on the development and implementation of the IWMS, ensuring all parties were responsible and acted for the future of the landscape they rely on.

The IWMS recognised that due to the area's size, scale and various uses, integration of communications, data and interventions was required to ensure a regulated water flow – thereby decreasing the risk of land fires across the area. This included reversing a history of destructive peatland management, which saw the development of irregular canals to suit singular business needs, and drainage of wet areas turning them into a tinderbox for peatland fire. By implementing sustainable and integrated peatland utilisation, no singular interest outweighs another, with the health and sustainability of the entire peatland area emerging as the priority for all engaged stakeholders.

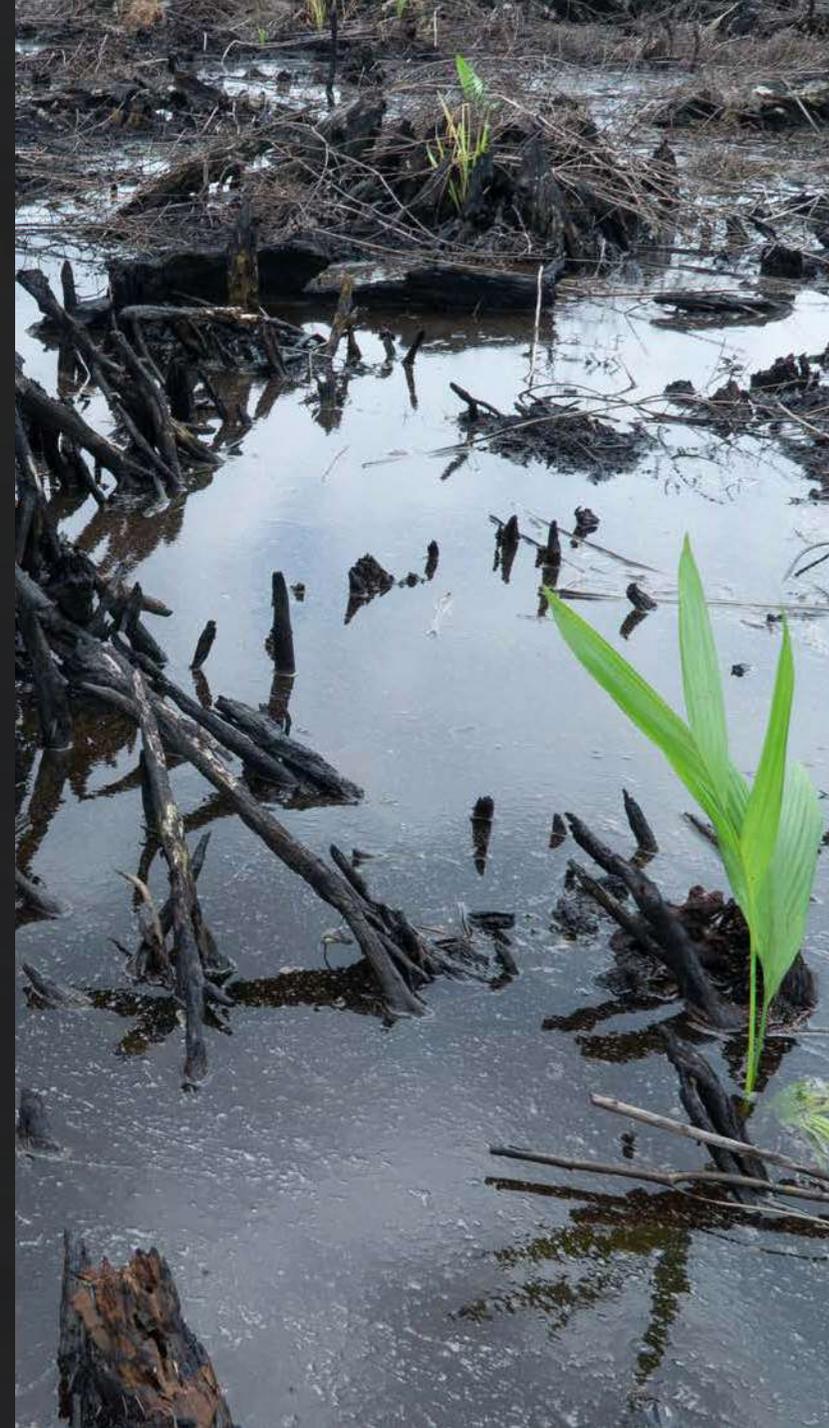
To achieve this, the IWMS is designed to manage water usage based on the needs of all parties within the landscape, ensuring water excess and shortage can be shared throughout the basin. To achieve such a state, a common understanding and agreement is imperative, as is sharing, openness and transparency regarding each party's individual land use. Mapping, monitoring and managing the water flow and land layout becomes an integrated task, as does preparing, monitoring and responding to any fire risks that may arise.

As with all sustainable land management efforts however, there is still a long road ahead with many further potential improvements and challenges, particularly within an ever-evolving landscape and business environment. Potential to improve outcomes for community livelihoods, as well as diversify business targets, remain continuously apparent, as does the need to sustain the IWMS in conjunction with the protection of this vast and unique carbon-storing peatland ecosystem.

FIRE PREVENTION & PEAT RESTORATION

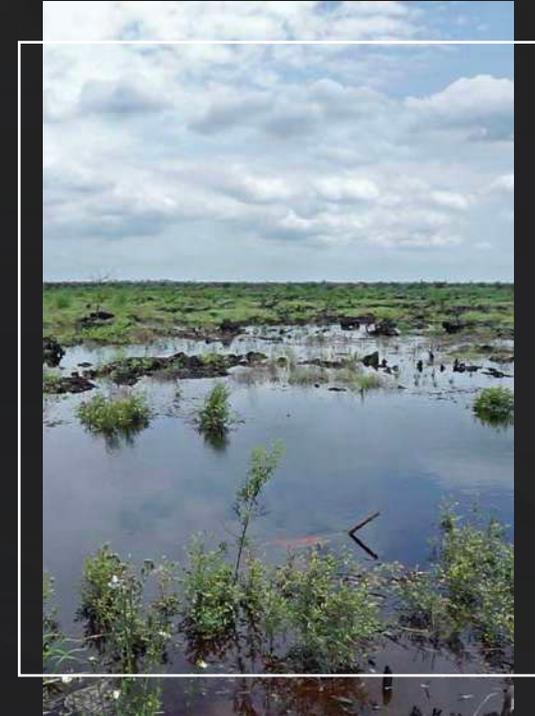
In 2015 the Province of South Sumatra made global headlines for all the wrong reasons. While the peatland forest fires may have devastated many parts of the KELOLA Sendang landscape, they also stood as a key moment from which the sustainable landmanagement project was formed. The large-scale fires resulted from landby no single party alone, highlighting the need for strong consideration, intervention and partnerships between government, the private sector and the landscape's local communities.

To gain a strong insight into the physical layout of the peatland areas, the project initially conducted an array of assessments using new and innovative technology. Hotspot assessments using MODIS Aqua satellite, alongside the Terra and Tropical Rainfall Measurement Mission (TRMM), revealed the fire's impact, as well as the probability of further events in the KELOLA Sendang landscape. The data gathered through these technological platforms proved valuable for project location determination, helping to determine areas requiring significant fire prevention attention, as well as areas in need of restoration due to previous fire events.



The private sector – the practices of which were identified as contributing significantly to the 2015 fires – was to also become a key stakeholder within fire prevention and peat restoration activities. The KELOLA Sendang project worked alongside several businesses utilising the peatland area on both fire prevention and restoration activities, providing technical support for the development of permanent measurement plots to monitor the area’s restoration and biodiversity. Recognising the importance of prevention and restoration, many businesses also allocated resources to the project interventions, with the aim to develop their own internal business capacity concerning fire prevention, peat restoration, and overall landscape conservation. Businesses were also key stakeholders within the Integrated Water Management System (IWMS) across many peatland canals, and were also engaged in developing partnerships with communities for restoring many fire-damaged peatland sites.

Communities living on and utilising the peatland areas also became key partners in fire prevention and restoration activities, with a strong foundation of community-based groups developed throughout the project’s implementation phase. These Community Based Fire Prevention Groups (KMPA), hand-in-hand with social forestry interventions, demonstrated a significantly positive impact within the peatland region. Five specific target villages were engaged through KELOLA Sendang, with the project then facilitating hotspot and burnt area identification, developing community patrol monitoring routes, and delivering firefighting infrastructure and equipment support. Furthermore, the project also began strengthening mechanisms – alongside government counterparts – to improve anticipation and management methods aimed at stronger fire prevention in the future. As the project continued, these interventions and outcomes began to expand independently, with improved consideration of fire prevention demonstrated through inclusion of fire prevention activities in local budget allocation, and better cooperation with external institutions such as the Peatland Restoration Body (BRG).



A woman wearing a pink long-sleeved shirt and a dark headscarf with a floral pattern is working in a tea plantation. She is surrounded by lush green tea bushes. The background shows more tea plants and a wooden post. The overall scene is a close-up of the woman amidst the tea plants.

CONFLICT RESOLUTION

Sustainable landscape management presents constant challenges arising from competing needs between humans and wildlife. Overcoming these competing needs and uses between parties and the landscape itself forms a key target of implementation success. Conflicts between humans and wildlife, conservation and utilisation, and among different societal groups were a key obstacle for KELOLA Sendang to overcome. The project therefore engaged an array of interventions, activities, and ultimately partnerships that saw conflict resolution form a primary foundation for the improved management of the diverse landscapes.

Land disputes between communities and government bodies were common during the project's implementation, as communities utilising the landscape extended into national park and conservation areas. The project worked with communities and government institutions to develop long-term outcomes for land tenure and encroachment issues within the Berbak-Sembilang National Park and Dangku Wildlife Reserve, with social forestry development forming key approaches for conflict resolution. Communities in these protected areas and buffer zones were also engaged in awareness raising and skill development, as their existence within the landscape areas has potential to be positively utilised. Activities such as environmental awareness and education aimed to further engage youth on relevant environmental issues, including waste management and human-wildlife conflict mitigation.

Land conflicts between the private sector and local communities also emerged consistently, as land concessions, which historically neglected to engage communities living across the land, opened to businesses. The South Sumatran province is also a unique context, as it is home to numerous transitory community groups which had previously settled on the land with no legal ownership, resulting in an array of challenges and clashes between the private sector and these groups living in the forests.

Again, the crucial nature of a partnership approach became apparent, with businesses and communities working together to develop agreements and arrangements suiting all parties. In the case of Pulai Gading village and the forestry company PT BPP, an assistance package of 10 cattle was delivered alongside a land-swap agreement to settle the ongoing land conflict.

Conflicts between humans and wildlife itself also remain an ongoing issue, as KELOLA Sendang works with communities, businesses and other key groups to increase awareness and engagement on how to live harmoniously with the region's wildlife. Communities and businesses are being developed as protectors and monitoring parties for the endangered species still roaming the landscape, with the hope that interaction between people and wildlife can become increasingly positive. Initiatives such as developing a honey cooperation aimed at achieving higher profits from selling to a wider market, mean that some trees can be set aside for Sun Bears to enjoy the honey, removing the need for communities to hunt this endangered bear species.

Formed in 2018, the provincial Land and Traditional Forest Conflict Resolution Working Group is one body that can further support and strengthen land conflict resolution into the future, as part of the wider partnership model for sustainable land management in the KELOLA Sendang landscape.

SMALLHOLDERS

Palm oil and rubber plantations are a primary income source for many smallholders dotted throughout the KELOLA Sendang landscape, causing multiple issues concerning sustainable practices and market buy-in related to these products. The KELOLA Sendang project trained over 1,500 smallholders in the areas of environmentally friendly best practices for rubber and palm oil agriculture, and established business plans and quality systems directly with farming cooperatives across the landscape. Market access for smallholders was also a key target, with many of the project's smallholder partners engaged in linking activities between local producers and larger manufacturers. One such example is rubber company PT Kirana Megantara facilitating discussions between local rubber farmers and buyers (such as Goodyear), in an effort to develop a rubber replanting investment scheme to further support partnership potential between smallholders and larger businesses. Further ideas included the potential establishment of an agricultural training centre for improving capacity among rubber smallholders, with this and other concepts to be replicated by other cooperatives throughout the KELOLA Sendang landscape.





The improvement of current business and smallholder practices also requires a focus on sustainable and responsible business models across the KELOLA Sendang landscape. Interventions such as Responsible Sourcing from Smallholders (RSS) and Traceability aim to ensure that market requirements dictate responsible business practices – both for the producers and businesses engaged in the supply process. Through RSS, the resulting implementation of sustainability principles within these processes also covers aspects including land ownership, anti-deforestation, and labour rights. Traceability supports efforts to assess and track the origin of palm oil production which is supplied to mills in South Sumatra, and then processed for large buyers from across the country and the wider global market.

As market demand for sustainable and responsible products increases, such activities are imperative for long-term business sustainability – both for smallholder farmers and palm oil processors in the palm oil industry. With support from KELOLA Sendang to open access, increase skills, and promote new and sustainable ideas, South Sumatra's communities have significant potential for improved livelihoods, along with improved conservation and sustainable management of the surrounding landscape. Partnerships between smallholders and business also work to ensure price guarantees from wider markets, making partnership engagement an attractive option for smallholder farmers. These partnerships also work towards improving and guaranteeing product quality, as all parties stand to benefit from being proactively involved in such a design.

BUSINESS DEVELOPMENT

KELOLA Sendang



Communities living on and utilising the KELOLA Sendang landscape face many of the livelihood development obstacles found across Indonesia – particularly those related to the distance and access to villages – as well as local residents’ capacity to develop and improve local products. A key approach adopted by the KELOLA Sendang project was focusing on community livelihood activities that utilise and rely on the landscape for economic benefit. By safeguarding sustainable and beneficial economic activities for communities, the results will also be sustainable and beneficial for the natural environment, ensuring that conservation and sustainability will be inherently interrelated with economic activity into the future.

To achieve this, the project focused on creating sustainability within current economic activities, as well as identifying and engaging new and innovative opportunities. It also focused on ensuring increased production capacity within communities, along with improved access to external markets for trade partnerships.

Better utilisation of natural products from the KELOLA Sendang landscape was also a key target, with communities identified and then supported to open new small businesses and markets. In Musi Banyuasin's peatland areas, a business developing containers and plates made from pelepah pinang (a palm plant) is growing, effectively replacing plastic and styrofoam use. The project supported this business' development and continues to support its improvement and expansion into a wider marketplace. The KELOLA Sendang project also worked with local women's groups – such as in the village of Mendis, Musi Banyuasin – to develop pilot agroecology projects that utilise and manage vacant land for sustainable agriculture. The initiative equips women with knowledge and tools to undertake agroecology, as well as providing education about organic farming, managing finances, and nutrition. Its aim is to not only benefit the women's households, but also facilitate income increases through the sale of surplus vegetables.

Conservation efforts towards endangered species such as the Sumatran Sun Bear were conducted through livelihoods approaches, as it was identified that ongoing destruction of the bear was occurring due to its consumption of honey. The bear's desire for honey results in reduced amounts for harvest and sale by local honey farmers, creating a conflict that pushed the bear closer towards extinction. By supporting communities with more direct access to markets, it is expected that overall profit will increase, in turn enabling more flexibility to coexist with the Sun Bear. The project supported such market access improvement, and worked with honey farmers to manage and protect the honey trees in a manner that ensured enough honey for both humans and bears within the KELOLA Sendang landscape.



EDUCATION & AWARENESS

Inter-generational uptake of green and sustainable activities is a priority for any environmental or sustainability-focused project – a context that was continuously considered throughout KELOLA Sendang’s implementation period. Communities, institutions, and businesses were engaged in various education and awareness-raising activities, which supported them to gain further knowledge and increase their care towards the landscape within which they reside. While youth formed a primary focus of such activities – due to their long-term future within the KELOLA Sendang region – there were also plenty of opportunities for older generations to be involved in the green generation movement, to ensure they play their part in protecting the longevity of the broad and diverse ecosystems.

Schools were a key venue for education and awareness activities with a range of activities implemented in partnership with local schools that focused on many areas, from tree planting to waste management to wildlife conflict mitigation. For example, the KELOLA Sendang Environmental Knowledge and Awareness campaign rolled out during 2018, was specifically aimed at increasing student knowledge, strengthening their roles as environmental protectors, and developing communication forums to promote and develop student-led action in the future. As part of the key intervention, a ‘cadre’ system resulted in 940 students becoming conservation cadres, who will focus on protection of life support systems, preservation of plant and animal biodiversity, and sustainable utilisation of natural resources and ecosystems into the future.



Waste awareness campaigns were also developed with schools and youth throughout the region, and in some areas social platform became a key medium for the engaged students to strengthen their cause. Schools in Tungal Jaya village developed a large carnival specifically for garbage and waste reduction, during which they marched through the streets wearing clothing made from discarded items. A local dance performance was part of the festivities, with the "Environmental Gala" dancers symbolising cultural elements of the wider environmental conservation campaign. Alongside schools, scout organisations were also a target for activities and campaigns, with 2,500 scouts attending a large event in 2018 that focused on improving knowledge and understanding of forest concepts, developing environmental leadership, increasing engagement in environmental awareness activities, and facilitating information and discussions regarding environmental issues and conservation in South Sumatra.

Businesses were also engaged in awareness raising and education activities, which included tree planting and other regeneration activities that – in addition to raising awareness – also had a positive physical impact on the landscape. Events and campaigns for sustainable landscape management were held constantly throughout the development of the partnership model, with the aim to form a core understanding of and attention towards the natural environment upon which to develop the project. These efforts, alongside the green generation scheme with the region's youth, has encouraged children and young adults to take an active interest in conservation and environmental issues that are occurring all around them.





ECOSYSTEM RESTORATION

With large areas of the KELOLA Sendang landscape historically experiencing destruction and degradation, restoration of these vulnerable and important ecosystems has been a primary focus of the program. Ecosystem restoration activities have been conducted across the various forests, peatland and mangrove areas, not only directly impacting the landscape itself, but also forming a strong platform on which partnerships and other project interventions could be developed.

Human encroachment into the buffer zones towards Berbak Sembilang National Park presents an ongoing risk for the area's diverse mangrove forest ecosystem. As many communities rely heavily on healthy mangroves for their livelihoods, a social forestry approach was taken, with conservation partnerships between the BKSDA, National Park Authority, and local community members. This approach was developed in the villages of Alang Gantang and Solok Buntu, and focused on mangrove restoration and rehabilitation activities that have succeeded in restoring large areas (over 100 hectares to this point) of previously destroyed mangrove forest. Other activities such as tree adoption schemes were promoted to corporate stakeholders looking to utilise their corporate social responsibility budgets within the area, with such engagements providing further resources for local communities to restore their neighbouring mangrove areas.

Social forestry efforts also played a primary role in the restoration activities within Dangku Wildlife Reserve, as conservation partnerships became a key approach of BKSDA South Sumatra in its management of the forest area.

Activities implemented by KELOLA Sendang included technical ecosystem restoration support, provision of seeds and fertilisers, and support for the establishment of semi-permanent nurseries. As a result of 2015's peatland fires, the Indonesian Government established the Peat Restoration Agency (BRG), which was tasked with restoring 2.6 million hectares of degraded peatland. An impossible task to achieve independently, the BRG works with all stakeholders with the aim to restore Indonesia's vast peatland regions by the end of 2020. Within the KELOLA Sendang project, the BRG is partnering with local government, the private sector and communities to restore and protect the region's peatland. Through engagements such as water care community groups (REPAIR) and the integrated water management system (IWMS), replanting and restoration of South Sumatra's peatland has been an ongoing success. Into the future, new and innovative approaches are slated to include carbon sequestration licenses, community-based carbon trade, restoration using kenaf-based agroforestry approaches, and the extension of the IWMS.

BIODIVERSITY IN THE LANDSCAPE

Biodiversity – or the variety of flora and fauna within an environment – is the key to landscape sustainability. An array of ecosystems with a wide variety of plant and animal life acts as an indicator of the overall health of the South Sumatran landscape. One of KELOLA Sendang’s defining goals is not just conserving and improving this biodiversity, but also measuring its current state. The project engaged professionals and researchers with backgrounds in a wide range of biodiversity-related fields to experience and test the region’s biodiversity, with studies of various flora and fauna including dragonflies, birds, mangroves and fish conducted.





The project demonstrated impressive findings during its implementation phase, which included the recording of at least eight dragonfly species that had never been observed before. Overall, at least 89 dragonfly species were monitored within the KELOLA Sendang landscape alone, resulting in the project publishing a detailed book on the subject. Up to 27 species of fish from 20 families were also recorded in the Berbak Sembilang National Park and its surrounds, with activities also analysing water quality readings and developing fish number comparisons in the areas. Similar water quality and species monitoring was also conducted within the Dangku Wildlife Reserve, with results often presented to a range of forums and events throughout Indonesia and abroad. A total of 20 species of butterflies from three larger butterfly families were also successfully recorded.

During 2019, KELOLA Sendang also engaged in monitoring efforts to identify elephant populations and routes in and around the buffer zones of Berbak Sembilang National Park. The surveys were implemented through partnerships between the KELOLA Sendang project, community members, and private sector representatives with business activities in the region. Using a total of eight camera traps in several previously identified locations, various elephant-related activities were captured. Use of drone technology also pinpointed elephant activity, with results supporting the wide range of elephant-related findings gathered throughout the project's implementation.





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