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IKI INTERNATIONAL CLIMATE INITIATIVE

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

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IKI Newsletter Indonesia

20TH EDITION

March 2023

About the International Climate Initiative

The International Climate Initiative (IKI) is an important part of the German government's international climate finance commitment. Since 2022, the Federal Ministry for Economic Affairs and Climate Action (BMWK) has been the lead ministry for IKI. The funding programme cooperates with its founding ministry, the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV), as well as with the Federal Foreign Office (AA). Through IKI, the ministries jointly support approaches in developing and emerging countries to implement and ambitiously develop the Nationally Determined Contributions (NDCs) anchored in the Paris Agreement. This includes measures to adapt to the impacts of climate change and to conserve and rebuild natural carbon sinks, taking into account environmental, economic and social concerns. With regards to biodiversity, IKI also supports its partner countries in achieving the goals of the Convention on Biological Diversity (CBD).

Activities from IKI projects range, for example, from advising policymakers on capacity building and technology partnerships to risk hedging through innovative financial instruments. They also include studies, project preparation advice for infrastructure development, and investment instruments for climate change mitigation or biodiversity conservation.

To date, IKI has approved more than 800 climate and biodiversity projects in over 60 countries worldwide with a total funding volume of five billion euros (2008–2021).

The programme management, evaluations and technical assistance of the projects, as well as the management of IKI media and communication are supported by the IKI Office at the government owned Zukunft – Umwelt – Gesellschaft (ZUG) GmbH.

IKI finances projects run by organisations that implement measures together with developing, emerging, and transitional countries within the four IKI funding areas: mitigating greenhouse gas emissions; adapting to the impacts of climate change; conserving natural carbon sinks with a focus on reducing emissions from deforestation and forest degradation (REDD+); and conserving biological diversity. Many projects normally involve more than one funding area.

More information is available on the IKI website.

Policy Highlights

ASEAN Chairmanship

Following its successful hosting of the G20 Bali Summit in 2022, Indonesia has maintained its global standing by holding the ASEAN chairmanship in 2023. As the new ASEAN chair, Indonesia will be leading the discussions on the 2025 ASEAN targets on renewable energy (RE) and energy efficiency (EE), as reflected in the ASEAN Plan of Action for Energy Cooperation (APAEC) Phase II: 2021–2025. Other topics in the upcoming agenda, on top of G20-initiated programmes, is the Just Energy Transition Partnership (JETP), a financing scheme to retire the country's coal power plants.

Climate policy

At the end of 2022, the Government of Indonesia issued the Presidential Regulation No. 112/2022 on the Acceleration of Renewable Energy Development for Electricity Supply. The regulation aims to increase investment, accelerate the achievement of the energy mix laid out in the National Energy Policy, and reduce GHG emissions by formally banning the development of new PLTU coal-fired power plants (with certain exceptions), and mandates the Ministry to develop a roadmap for early termination of existing coal-fired power plants operated by state electricity company PLN or independent power producers (IPPs). However, there are some points in the policy that people question, such as PLTU plants still being allowed in industrial areas and if they have already been included in PLN's Electricity Supply Business Plan (RUPTL) for 2021 to 2030. People feel that if the government really wants an energy transition, then PLTU plants should no longer be granted permission under any circumstances.

Energy transition

Indonesia signed a Just Energy Transition Partnership (JETP) agreement with the International Partner Group (IPG) to accelerate Indonesia's energy transition, during the G20 Summit in November 2022. The JETP Secretariat was launched in February 2023 to be a centre for information, planning and coordination, as well as monitoring and evaluation of JETP project implementation.

The implementation of the Presidential Regulation No. 98/2021 about the economic value of carbon in the energy sector came into effect with the release of the Ministry of Energy Regulation No. 16/2022 on the carbon pricing implementation in the power plant sub-sector, targeting larger coal fired power plants (CFPPs).

On 22 February 2023, the Indonesian Ministry of Energy and Mineral Resources (MEMR) announced the launch of a mandatory, intensity-based emissions trading system (ETS) for the power generation sector. The first phase will run from 2023 to 2024 and only cover coal-fired power plants. In the second (2025-2027) and third (2028-2030) phases, the government plans to expand the coverage of the ETS to oil and gas-fired power plants and other coal-fired power plants not connected to PLN's grid.

To promote electric vehicle (EV) adoption, the Indonesian government will allocate 7 trillion rupiah ($455.88 million) in state funds to subsidise electric motorcycle sales through 2024. On 6 March 2023, Industry Minister Agus Gumiwang Kartasasmita announced the government would provide subsidies for the purchase of 200,000 new electric motorcycles and the conversion of 50,000 conventional two-wheelers to electric ones between March and December 2023. The government plans to announce incentives for electric cars in April.

Forestry

In December 2022, Indonesia's President, Joko Widodo, stressed the focus of the Environmental Fund Management Agency (BPDLH) is to fund concrete activities relating to environmental management, one of which is the rehabilitation of degraded peatlands.

The Ministry of Environment and Forestry (KLHK) has held sub-national awareness raising events on Indonesia's FOLU Net Sink 2030 in 22 provinces. The aim of FOLU Net Sink is to support efforts to reduce GHG emissions from the forestry and other land use (FOLU) sector, including reducing deforestation in peatland areas, as well as peat restoration and water management.

In early 2023, through KLHK and the Meteorology, Climatology and Geophysical Agency (BMKG), the Government of Indonesia coordinated the management of forest and land fires, including those on peatlands, which have the potential to expand in various regions in Indonesia with reduced rainfall until July 2023.

On World Wetlands Day, the Ministry of National Development Planning (Bappenas) released the National Strategy for Wetlands Management: Peat and Mangrove Ecosystems in Indonesia. It contains strategies for strengthening regulatory frameworks, data and information management, technology, community participation, funding schemes, monitoring and evaluation frameworks, and law enforcement in the management and protection of peat and mangrove ecosystems.

Biodiversity

On 11 May 2022, the Governor of Jambi approved the Essential Ecosystem Area for Elephants in Tebo District. This area includes the two concession blocks of PT ABT's Ecosystem Restoration Concession, thus creating synergies between the AHT Group Forest Programme II and the IKI project in Bukit Tiga Puluh. Under the EEA umbrella, BKSDA Jambi will play a central role in stakeholder coordination and habitat conservation outside Bukit Tiga Puluh National Park.

On 16 January 2023, the government issued Presidential Instruction No. 1/2023 on Mainstreaming Biodiversity Conservation into Sustainable Development. It instructs related ministers, heads of institutions, governors, and district heads/mayors to establish sectoral policies that prioritize the preservation of biodiversity in sustainable development; to apply the principle of fair and equitable benefit sharing for the utilization of biodiversity; and to perform law enforcement functions in the context of biodiversity protection. The mainstreaming of biodiversity conservation will be funded by ministries and institutions, the national APBN budget, regional APBD budgets, and/or other legitimate sources.

Change of personnel

In March 2023, Emma Rachmawati retired from her position as Director of Climate Mitigation under the Ministry of Environment and Forestry's Directorate General of Climate Change Control. Wahyu Marjaka, Director of Resource Mobilization, will act as interim Director of Climate Mitigation until a new director is appointed.

IKI Project Highlights

KfW and Frankfurt Zoological Society (FZS) – Nature conservation concession to protect tropical rainforest in Indonesia

The 100-hectare target set for afforestation was achieved through replanting and enrichment planting on an area of 102 ha. A total of 17,098 seedlings were planted.

A demonstration plot for sustainable agroforestry has been established with the planting of 15,551 vanilla seedlings and support trees. Local smallholders have begun adopting methods applied in the plot.

Three forest partnership agreements have been signed by PT ABT and forest farmer groups (KTH) to manage the company's ecosystem restoration concession.

DIW and the Bandung Institute of Technology Climate Change Center (CCC-ITB) – Strengthening National Climate Policy Implementation: Comparative Empirical Learning and Creating Linkages to Climate Finance (SNAPFI)

On 1 February 2023, CCC-ITB invited Tri Mumpuni, a member of the National Research and Innovation Agency (BRIN) Steering Committee, to discuss about climate change governance in Indonesia in relation to the renewable energy sector. The plan is to invite other related stakeholders to secure inputs for building an ideal renewable energy sector-related model for climate change governance in Indonesia.

UNEP – The Global Peatlands Initiative: Assessing, Measuring and Preserving Peat Carbon

On 31 October 2022, Indonesia's Ministry of Environment and Forestry held the third edition of a series of workshops on Sustainable Management in Peatlands Landscapes: A Global Overview, with support from the Global Peatlands Initiative, further advancing key principles and best practices for sustainable management and restoration of peatlands. Notably, as a result of the workshop series, peatlands were integrated into the G20 Bali Leaders' Declaration, which included explicit mention of support for the Global Peatlands Initiative.

The UNFCCC COP27 official side event "Enhancing Climate Action through Peatlands" on 14 November 2022, moderated by the Global Peatlands Initiative, included country presentations from Indonesia, the Democratic Republic of the Congo and Peru highlighting challenges, lessons learned and success stories from countries at the forefront of sustainable peatland management within the contexts of their Nationally Determined Contribution (NDC) commitments. The event also featured plans and actions for successful delivery and higher ambitions in sustainable peatland management, and saw the Food and Agriculture Organization (FAO) launch its *Peatlands and climate commitments* report, which it made as part of the Global Peatlands Initiative project.

World Agroforestry (ICRAF) Indonesia – Peat-IMPACTS Indonesia

Peat-IMPACTS Indonesia has reached the final stage of mainstreaming peat restoration and management into regional development planning, particularly spatial planning, in Ogan Komering Ilir (OKI) District in South Sumatra.

ICRAF and the Kubu Raya District Education Office in West Kalimantan have compiled local content (*mulok*) on peat and mangroves for elementary and junior high-schools across the district. A District Head Regulation (*Perbup*) has been issued on the launching and implementation of this content in schools throughout Kubu Raya.

In collaboration with the Ministry of Environment and Forestry, Peat-IMPACTS Indonesia held a COP27 side event on efforts to support the acceleration of Indonesia's FOLU Net Sink 2030.

Yayasan Konservasi Indonesia – Mitigation and Adaptation through Conservation and Sustainable Livelihoods in Indonesia's Peat and Mangrove Ecosystems (IKI-PME)

The IKI-PME project supported the Strategic Coordination Team for Wetlands Management (SCT-WM) led by the Ministry of National Development Planning (Bappenas) in finalising and launching the National Strategy for Wetlands Management: Peat and Mangrove Ecosystems in Indonesia in Jakarta on 2 February 2022.

CIFOR and AIPI have finalised and published three working papers on: (i) National Strategy for Mangrove Ecosystems; (ii) Coastal Zone Rehabilitation for Climate Change Mitigation: The Role of Mangroves and Emissions Reduction at Sub-National Levels; and (iii) Coastal Zone Rehabilitation for Climate Change Adaptation: The Key Role of Mangroves in Nationally Determined Contributions. These three working papers are in line with the National Strategy for Wetlands Management: Peat and Mangrove Ecosystems in Indonesia prepared by the Bappenas-led Strategic Coordination Team. The national strategy and three working papers have potential for integration into national medium- and long-term development plans (RPJMN and RPJPN respectively) to achieve Sustainable Development Goals (SDGs) and Low Carbon Development (LCD) objectives. The papers are currently available in Indonesian, and will be translated into English to reach more readers at national and global levels.

GIZ – Sustainable Urban Transport Programme Indonesia (SUTRI NAMA) and Indonesian Bus Rapid Transit Corridor Development Project (INDOBUS)

On 22 December 2022, the Directorate of Road Transportation under the Ministry of Transportation (*Kemenhub*) held an event, in collaboration with GIZ, to promote the Sustainable Transportation (SUSTRA) microsite. SUSTRA will be a one-stop platform for sharing and exchanging information about the progress of mass public transport systems in Indonesia, allowing stakeholders to share knowledge and insights about the development of these systems in their respective regions. It is expected to be completed in 2023.

GIZ – Strategic Exploration of Economic Mitigation Potentials through Renewables (ExploRE)

GIZ is supporting the Ministry of Energy and Mineral Resources (ESDM) in conducting a study on biomethane utilisation for the formulation of an implementation strategy. On 22 December 2022, more than 100 representatives of industry and commercial operators, policy-making bodies and international organisations participated in a discussion aimed at enriching the results of the study.

GIZ – Clean, Affordable, and Secure Energy for Southeast Asia (CASE)

FGD organised jointly by CASE and the Ministry of Energy and Mineral Resources (ESDM) was held on 31 January 2023 to identify challenges, opportunities, and capacity building needs for power producing companies to ensure a well-implemented carbon trading system. A total of 105 participants from ministries and power generation companies were present.

GIZ – Climate and Biodiversity Hub Indonesia (CLARITY Component)

On 1-2 March 2022, GIZ supported the Ministry of Environment and Forestry's Directorate General for Climate Change Control (*Ditjen PPI*) in conducting the National Technical Meeting on Climate Change in NDC Implementation Synergy and Collaboration for Sub-National Governments, attended by 149 participants, as part of a capacity building drive to strengthen regional government roles, commitments and contributions to reducing GHG emissions and increasing resilience in supporting the achievement of Indonesia's NDC targets.

INTERNATIONAL CLIMATE INITIATIVE (IKI) IN

INDONESIA

49 Projects under Implementation

19 Political Partners

- Coordinating Ministry of Economic Affairs
- Ministry of National Development Planning (Bappenas)
- Ministry of Environment and Forestry (KLHK)
- Ministry of Energy and Mineral Resources (ESDM)
- Ministry of Finance
- Ministry of Industry
- Ministry of Marine Affairs and Fisheries
- Executive Office of the President of the Republic of Indonesia
- National Authority for Marine Conservation Areas (MMAF)
- Peatland and Mangrove Restoration Agency (BRGM)
- Association of Southeast Asian Nations (ASEAN)
- National Park Authority of Bukit Barisan Selatan (BBS)
- Provincial Government of Lampung
- Provincial Forestry Service of Jambi
- Provincial Marine and Fishery Service of Aceh
- Provincial Marine and Fishery Service of North Sulawesi
- Provincial Marine and Fishery Service of West Nusa Tenggara
- District Government of Pesisir Barat
- District Government of Lampung Barat

24 Implementing Organisations

- Adelphi
- Agence Française de Développement (AFD)
- Asian Development Bank (ADB)
- Berlin Governance Platform (BGP) gGmbH
- Center for International Forestry Research (CIFOR)
- Conservation International (CI)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
- Deutsches Institut für Wirtschaftsforschung e.V. (DIW)
- ICLEI - Local Governments for Sustainability
- International Council on Clean Transportation (ICCT)
- International Institute for Applied Systems Analysis (IIASA)
- Kreditbank für Wiederaufbau (KfW)
- The Organisation for Economic Co-operation and Development (OECD)
- Perkumpulan Desa Lestari
- Perspectives Climate Group GmbH
- Rare
- Renewables Academy AG (RENAC)
- Secretary of Convention on Migratory Species Office (CMS)
- United Nations Development Programme (UNDP)
- United Nations Environment Programme (UN Environment)
- United Nations Office for Project Services (UNOPS)
- World Agroforestry Centre (ICRAF)
- World Bank Group
- World Wide Fund for Nature (WWF)

CLIMATE SITUATION IN INDONESIA

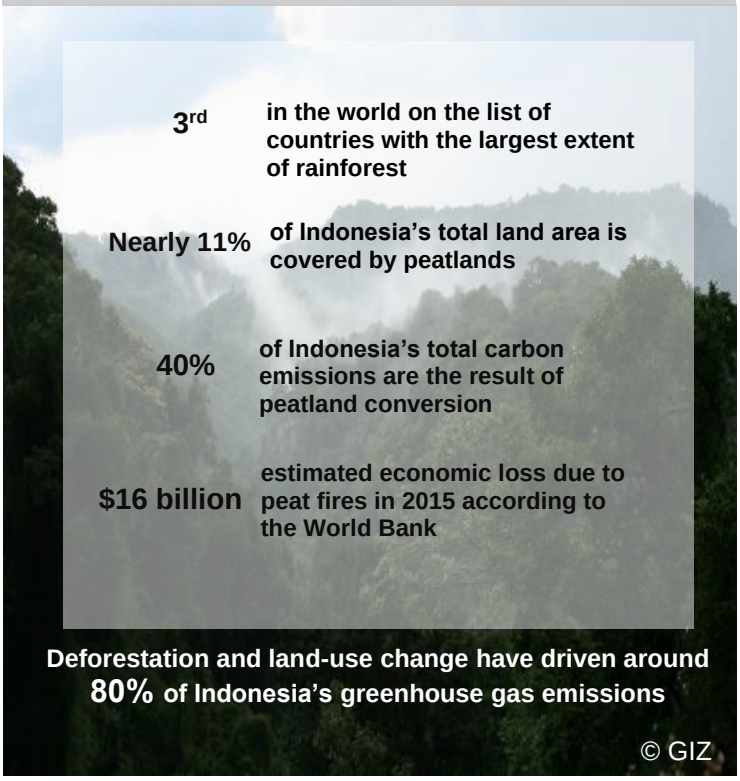
ADAPTATION

Climate Change Impacts

MITIGATION

Greenhouse Gas (GHG) Emissions

FORESTRY / REDD+



BIODIVERSITY

A member of the Wanita Sejahtera Mandiri local women's farmer group holding a vanilla seedling

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IKI Gender Updates

IKI initiated measures to integrate gender as a factor at project and programme level in 2017. Since November 2021, the IKI Gender Strategy has provided a high-level framework for supporting and fostering gender justice. This strategy aims to promote gender-transformative approaches within international climate and biodiversity cooperation while embedding gender-responsive processes as a minimum standard at project level.

This requires IKI projects to ensure the avoidance of gender-based disadvantages and discrimination. A targeted approach to accommodating context-specific gender relations will be used to improve activities in relation to climate action and biodiversity conservation.

Enhancing women's participation in village development through a VSLA

By KfW, WCS and YABI – Conserving Priority Habitats in Bukit Barisan Selatan National Park, Sumatra (Bestari)

To promote the involvement of women in national park conservation, with support from KfW and supervision from the Bukit Barisan Selatan National Park (BBSNP) office, Bestari facilitated the development of a village savings and loan association (VSLA). The VSLA is a women's group-managed microfinance model, which is expected to increase women's financial capacities, to generate alternative income, as well as becoming a platform for women to voice their aspirations.

Empowered women reflect a self-sufficient and resilient village

The Mulyo Lestari VSLA in Margo Mulyo Village, Tanggamus District, Lampung, was established in October 2018. Starting off with 21 members, the group has now 51 and manages a fund of around IDR 126 million, with a loan ceiling of IDR 25 million. Loans are used for various purposes including healthcare, education, business capital and even wedding expenses.

By 2021, the group had secured profits of IDR 19 million, some of which were allocated as social funds for distribution to non-VSLA members, including widows, villagers with medical problems and local mosques. The group also established three business units to enhance earnings. Members hope the VSLA can become a community bank to provide everyone in the village with access to finance. This women-driven initiative could be the forerunner in building village resilience into the future.

Umi points out where elephants are most likely to be seen during a discussion on land-use planning in Margo Mulyo Village in August 2020

Getting involved in designing a future for the village

Since 2019, 10 villages have signed village conservation agreements as declarations of support for sustainable development, and to promote village spatial planning. Both initiatives aim to reduce pressure on conservation areas by restoring sections where encroachment has occurred and improving land-use management. In 2020, some Mulyo Lestari VSLA members participated in a village land use meeting, sharing their collective concerns on conservation issues. Umi expressed her ideas regarding elephant-friendly land use, saying, 'As some of our productive plantations share borders with the park, and elephants frequently cross them, we will replace existing coconut, banana and papaya crops with plants that elephants dislike'. In doing so, she demonstrated that the VSLA not only has a financial impact, but also serves as a platform for women to voice their hopes and concerns, thereby enabling the creation of socially- and environmentally-friendly policies.

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VSLA: Strengthening women's resilience for better living

By KfW, WCS and YABI – Conserving Priority Habitats in Bukit Barisan Selatan National Park, Sumatra (Bestari)

Maju Lestari Bersemi, a village savings and loan association (VSLA) in Teba Liokh Village, Batu Brak Subdistrict, West Lampung District, formally became a 'producer cooperative' in December 2022. This is a significant accomplishment for the group which currently has 120 members, 114 of whom are women, compared to only 33 enrolled members when it was originally established.

Three years of the VSLA: From saving to acquiring legality

In addition to its savings and loan activities, the cooperative runs three business units producing ground coffee, organic vegetables, and tofu and tempeh. Since 2019, these businesses have provided alternative income opportunities to enhance family earnings. The BBSNP office

supports the cooperative's efforts by providing seedlings and gardening tools for the organic vegetable business.

In 2019, the VSLA's total revenue was IDR 6 million, but it had earned nearly IDR 127 million by 2022. This accomplishment is inextricable from the shifting perspectives of its female members. Prior to its establishment, they viewed money as something to be spent, not saved. Now, saving is not difficult for members, whose changing paradigm has contributed to improving standards of living for their families. In August 2022, the VSLA expanded its impact at the village level by using its social fund to donate two refuse receptacles and fund the planting of 200 trees inside the national park.

Rural women's improved capacity for problem solving

With their improved capacity, group members have the confidence to tackle challenges encountered in their activities, including technology issues. In September 2022, the VSLA submitted a proposal to Bestari to procure a laptop to support its work. For its members, the VSLA is more than a place for finding other sources of income, it is a forum and space for village women to organise and discuss issues such as economics, education and the environment. It has afforded the opportunity for women to play a more significant role in village development and incorporate women-related issues into village planning. Increased understanding of, and participation by women in environmental issues and forest conservation are expected to reduce pressures on Bukit Barisan Selatan National Park.

Members of the Maju Lestari Bersemi VSLA planting vegetables in their plot

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Women farmer groups learn environmentally friendly farming methods

By KfW and Frankfurt Zoological Society (FZS) – Nature Conservation Concession to Protect Tropical Rainforest in Indonesia

A member of the Wanita Sejahtera Mandiri local women's farmer group holding a vanilla seedling

The project team includes a gender specialist who runs women's farmer groups in Muara Sekalo and, since this year, also in Delima Village. Group activities include the creation and registration of a cooperative, the creation of a highly successful savings and loan association for women farmers, and training in environmentally-friendly farming. The aim of the training is to promote the cultivation of spice crops in home gardens to provide an additional source of income. For this purpose, the project is promoting the cultivation of vegetables in the short term in order to generate income within two months, since spices usually need three years before the first harvest. This measure forms the bridge to our forest farming programmes, especially the cultivation of vanilla as a valuable source of income.

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Updates from ongoing IKI projects in Indonesia

A seedling house in Pungut Hilir Village, Jambi

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A climate energy governance model for Indonesia

By DIW and the Bandung Institute of Technology Climate Change Center (CCC-ITB) – Strengthening National Climate Policy Implementation: Comparative Empirical Learning and Creating Linkages to Climate Finance (SNAPFI)

Meeting with a member of the BRIN Steering Committee on 1 February 2023

In January-February 2023, CCC-ITB held meetings with the World Research Institute (WRI) and the National Research and Innovation Agency (BRIN). The aim of these meetings was to develop an ideal model for climate change governance in Indonesia relating to the renewable energy sector, policy instruments for the renewable energy sector in Indonesia, and finance needed to support the integration of a just energy transition into the country's Nationally Determined Contribution (NDC).

In a discussion with BRIN Steering Committee member Tri Mumpuni on 1 February 2023, CCC-ITB relayed findings from year 1 to year 3 of its study, including analyses of stakeholders in climate change management in Indonesia, informality in climate and energy governance, and the role of the private sector in Indonesia's energy sector. CCC-ITB also provided a brief overview of plans for year 4 of its study on a climate governance model for the Indonesian energy sector.

During the ensuing discussion, in regard to climate and energy governance, Tri stated that energy development should focus on energy sovereignty and Indonesia meeting its own energy needs. She stressed that energy equity should form the backbone of economic development and increase wellbeing in a proportional manner. In relation to informality in governance, she highlighted the need for strong leadership in aligning climate energy governance with prosperity for the people.

In a discussion with members of WRI on 31 January 2023, in regard to private sector roles, WRI felt that as the private sector has funding resources and tools, it should play an important role in helping Indonesia achieve its NDC targets. Currently, the private sector's contribution remains limited and constrained by unclear policies in the energy sector. Until now, no policy has regulated the extent to which the private sector should contribute to achieving Indonesia's NDC targets. Regarding climate energy governance in Indonesia, WRI also mentioned the importance of transparency in formulating and planning climate policies.

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Renewable energy and energy efficiency within a green economy for Indonesian policymakers

By GIZ – Climate and Biodiversity Hub Indonesia (ClimB Component) and Strategic Environmental Dialogues (SUD)

One of the key insights from the Green Recovery Roadmap elaborated in cooperation with the Ministry of National Development Planning (Bappenas) in 2021, was that a Green Economy should be one that is based on renewable energy. This makes the energy transition a decisive enabler of Indonesia's transformation towards a Green Economy.

Following up on this successful collaboration, the Directorate of Environmental Affairs under Bappenas, and the IKI-projects SUD and ClimB developed a series of capacity building formats for Indonesian policymakers, all implemented by

the Renewables Academy (RENAC). After five days of interactive training in Bogor in September 2022 (see the 19th IKI Newsletter Indonesia), the cooperation concluded with the training and site visits on Renewable Energy and Energy Efficiency within a Green Economy for Indonesian Policymakers in Berlin, Germany, from 13–17 February 2023.

The program for the Indonesian delegation was designed to enable a deep understanding of the role of renewable energy in the transition to a Green Economy in Germany. Technical input sessions were held in the mornings. In the afternoons, they were complemented by site visits in Berlin and surrounding areas, showcasing practical implementation examples of renewable energies, energy transformation and circular economy.

The delegation visits the German Parliament

The goals were to foster connections with partners in the renewable energy and circular economy fields in Germany, and to explore the role of the energy transition in accelerating the transformation towards a Green and Circular Economy.

Five participants from Bappenas and two participants from Commission VII of the Indonesian Parliament formed the technical delegation. They were accompanied by a high-level delegation from Bappenas, consisting of Acting Deputy Minister for Maritime Affairs and Natural Resources, Dr Vivi Yulaswati and Director for Environmental Affairs, Dr Medrilzam. High-level talks were held between Bappenas and BMUV, Bappenas and the Indonesian Embassy, and Bappenas, KfW and GIZ.

All participants were highly engaged with experts, both during training and site visits, as well as with each other. This allowed fruitful discussions, networking opportunities, and in-depth questions.

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National Technical Meeting on Climate Change in NDC Implementation Synergy and Collaboration for Sub-National Governments

By GIZ – Climate and Biodiversity Hub Indonesia (CLARITY Component)

Participants in the National Technical Meeting on Climate Change in NDC Implementation Synergy and Collaboration for Sub-National Governments on 1-2 March 2023

GIZ supported the Ministry of Environment and Forestry's Directorate General for Climate Change Control (*Ditjen PPI*) in conducting the National Technical Meeting on Climate Change in NDC Implementation Synergy and Collaboration for Sub-National Governments as part of a capacity building drive to strengthen regional government roles, commitments, and contributions to reducing GHG emissions and increasing resilience in supporting the achievement of Indonesia's NDC targets. The event involved 149 participants from the Ministry of Environment and Forestry, other related ministries and institutions, provincial government agencies responsible for forestry and environmental affairs, and regional

development planning agencies (Bappeda) from across Indonesia.

The event was opened by Minister of Environment and Forestry, Dr Ir. Siti Nurbaya MSc. Sessions were led by the Ministry of Environment and Forestry's Directorate of Sectoral and Regional Resource Mobilization; Directorate of Greenhouse Gas Inventory and Monitoring, Reporting and Verification; Directorate of Climate Change Mitigation; and Directorate of Climate Change Adaptation; as well as the Climate Change Information Centre; the Meteorology, Climatology and Geophysical Agency (BMKG); and the Ministry of Finance's Centre for Fiscal Policy, before the event was closed by Deputy Minister of Environment and Forestry, Drs Alue Dohong MSc, PhD.

Topics covered in each of the event's different sessions were Indonesia's NDC Strategy and Implementation; Supporting Modalities and Instruments in NDC Implementation; Strengthening Climate Change Mitigation and Adaptation Actions; and Synchronization of the Climate Change Agenda and the National Development Plan. Coaching clinics on the National Registry System; Climate Village Programme (ProKlim); Carbon Economic Value (NEK); and Results-Based Payments were conducted in parallel with the meeting to help sub-national governments optimize their utilization of tools in supporting the achievement of Indonesia's NDC targets.

Opening ceremony with the Minister of Environment and Forestry

A feedback survey filled out by participants after the event concluded they agreed that almost all topics covered were relevant to their main tasks and functions, and the knowledge they secured was useful and could help them in carrying out their duties.

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Indonesian cities exchange knowledge on best practices for public mass transport systems

By GIZ – Sustainable Urban Transport Programme Indonesia (SUTRI NAMA) and Indonesian Bus Rapid Transit Corridor Development Project (INDOBUS)

On 22 December 2022, with support from SUTRI NAMA and INDOBUS, the Directorate of Road Transportation under the Ministry of Transportation (*Kemenhub*) held an event to promote the Sustainable Transportation (SUSTRA) microsite. SUSTRA was developed under the ministry's official website to support the promotion of and knowledge-sharing on Sustainable Urban Transport (SUT) and Bus Rapid Transit (BRT) development in Indonesian cities. It is aimed at stakeholders, and especially at sub-national governments developing and implementing BRT systems in their respective areas.

The official launch of SUSTRA with representatives from the Ministry of Transportation and SECO

The promotion provided both online and on-site participants with a preview of SUSTRA. The microsite provides information – mainly to provide an understanding of SUT – including policies and designs, capacity development modules, emissions reduction frameworks, and regulations. It also includes a framework and guidelines for the development of BRT, with studies from SUTRI NAMA and INDOBUS's pilot cities. Lastly, it provides visitors with a funding mechanism guideline, which provides cities looking to attain funding for their SUT and BRT systems with the information necessary to do so.

As the microsite is currently undergoing development, the promotion event served as a platform for disseminating the concept of SUSTRA to the transport sector and for gathering input and feedback from participants at the national and sub-national levels to further improve the microsite. Input included feedback from Siti Nurfadillah from the Transportation Policy Agency, who suggested SUSTRA could include guidance on public transport development with references for regions preparing to develop sustainable transport systems and related institutions, as well as guidelines on preparing funding, strategies and promotion plans.

SUSTRA will be a one-stop platform for sharing and exchanging information about the progress of mass public transport systems in Indonesia, allowing stakeholders to share knowledge and insights about the development of these systems in their respective regions. It is expected to be completed in 2023.

Participants in the SUSTRA microsite promotion session

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100% RE Webinar Series discusses co-firing potential for West Nusa Tenggara energy transition

By ICLEI-Local Governments for Sustainability Indonesia Office – 100% Renewable Energy Project

Accelerating the deployment of renewable energy is crucial for Indonesia to achieve its net zero emission (NZE) target, considering that in 2019, according to a 2020 report of the Indonesian Ministry of Energy and Mineral Resources (ESDM), the energy sector and particularly traditional power plants, contributed 43.83% of the country's emissions, or 638,452 gigagrams (Gg) CO_2e.

Since declaring its ambitious target at COP26 in Glasgow to achieve net-zero by 2050, the Government of West Nusa Tenggara (NTB) has remained committed to exploring collaboration with partners and stakeholders and building its capacity building to develop renewable energy in the province.

To facilitate knowledge sharing, ICLEI Indonesia and the NTB ESDM Office kicked off the 100% Renewable Energy (RE) Webinar Series on 8 December 2022. The inaugural webinar, entitled Co-firing Potential as a Strategy towards Energy Transition and West Nusa Tenggara Net Zero Emissions 2050, aimed to share and discuss lessons learned and best practices in NTB's implementation of biomass co-firing in its coal-fired power plants (PLTUs).

Participants and strategic stakeholders during one of the webinar discussion sessions

West Nusa Tenggara Provincial Secretary, Nurhandini Eka Dewi said one of the ESDM-initiated co-firing trials is being implemented in NTB. The province's 35 MW Jeranjang PLTU currently uses municipal organic and inorganic waste as a coal substitute.

'We are targeting 100% biomass utilisation in one of NTB's PLTUs. With the energy share recorded at 19%, we are keen to carry on with the target in order to achieve NZE by 2050 in NTB', said Nurhandini.

Highlighting the national target, ESDM Director of Bioenergy, Edi Wibowo shared some of Indonesia's co-firing implementation target achievements. As of October 2022, 33 power plants had implemented biomass co-firing, mitigating 461,000 tons of CO_2, and producing 465 GWh of green energy from 455,000 tons of biomass.

'We need penta-helix collaboration for the deployment of biomass in the energy sector. We hope that every collaboration can be synchronised between each party,' said Edi.

The Provincial Government of West Nusa Tenggara supports the co-firing programme initiated by state electricity company PT PLN, and sees it as an opportunity for the region to transition to a clean energy system and realise its NZE ambitions.

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ExploRE Planning Workshop 2023

By GIZ – Strategic Exploration of Economic Mitigation Potentials through Renewables (ExploRE)

Strategic Exploration of Economic Mitigation Potentials through Renewables (ExploRE) is a jointly implemented project involving the Indonesian Ministry of Energy and Mineral Resources (ESDM), the German Federal Ministry for Economic Affairs and Climate Action (BMWK), the International Climate Initiative (IKI), and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

On 26 January 2023, ExploRE organised the 2023 Planning Workshop for participants representing key project stakeholders, including the ESDM Directorate General of New Renewable Energy and Energy Conservation (*Ditjen EBTKE*), the Ministry of National Development Planning (Bappenas), state electricity company PT PLN, and state oil company PT Pertamina.

The workshop began with an opening address from Director of Bioenergy, Edi Wibowo, and continued with a brief overview of the project and way forwards delivered by ExploRE Principal Advisor, Dody Setiawan.

Group photo of all participants in the ExploRE 2023 Planning Workshop on 26 January 2023

During the workshop, key project stakeholders had the opportunity to share their programme priorities and identify potential for support from ExploRE. There were presentations from the Directorate of Bioenergy, Directorate of New Renewable Energy, and PT PLN. In the workshop's final session, participants were grouped into two break-out rooms to discuss bioenergy and the various forms of renewable energy.

The workshop resulted in a project work plan document, which has since been circulated to all workshop attendees. The work plan comprises 21 project activities that will be carried out throughout 2023. The activities are diverse in topic and format, and range from development of renewables utilisation strategies, support for innovative technology development, capacity building activities, and other essential topics to support wider renewable energy utilisation in Indonesia.

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Biomethane: The next level of biogas

By GIZ – Strategic Exploration of Economic Mitigation Potentials through Renewables (ExploRE)

With three years left in the timeline to 2025, Indonesia continues to work on renewable energy development and achieving its energy mix target. Bioenergy is one of the main vehicles to achieve its goals. Bioenergy's unique characteristics enable it to be utilised in various sectors, including transportation and industry. One form of bioenergy where development is currently underway is biomethane.

Called the 'next level of biogas', biomethane is a derivative product that can be produced through advanced processing of biogas. Biogas is purified by separating out carbon dioxide (CO_2) and other unwanted gaseous components, to produce a gas with a CH_4 purity level of ≥ 91%, and calorific value of 900–1,014 BTU/SCF, known as biomethane.

The Strategic Exploration of Economic Mitigation Potential through Renewables (ExploRE) project is currently working on a study related to an implementation strategy for biomethane utilisation. To enrich the results of the study, on 22 December 2022, a discussion was held involving more than 100 representatives of industry and commercial operators, policy-making bodies and international organisations.

Biomethane has similar characteristics to natural gas, making it the right substitute for natural gas derivative products, such as liquefied petroleum gas (LPG) and compressed natural gas (CNG), and an appropriate substitute for diesel fuel and natural gas in diesel and gas engines. In addition, its characteristics also allow biomethane to produce heat with a maximum temperature of up to 1,000^{o}C, making it the only renewable gas other than green hydrogen that can be applied for utilisation at low, medium and high temperatures. Therefore, biomethane is essential for the energy transition and for supporting sustainable energy reserves through gas pipeline injection.

Discussion panellists with ESDM Director of Bioenergy, Edi Wibowo on 22 December 2022

Based on current study results, Indonesia has total biomethane production potential equivalent to 536,413 m³ of gas per hour (or 400 BBTUD), 9 kilo tons of LPG per day, or 10,000,000 litres of diesel per day. Once utilised optimally, this biomethane potential can be a strong driver for Indonesia to achieve its energy mix target of 23 per cent renewables by 2025. In addition, the use of biomethane will also contribute significantly to the achievement of its 2060 net-zero carbon emissions target. 'Time is short, but with the collaboration of all stakeholders, I believe our targets can be met', said ESDM Director of Bioenergy, Edi Wibowo.

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Developing an investment monitoring platform for the bioenergy sector

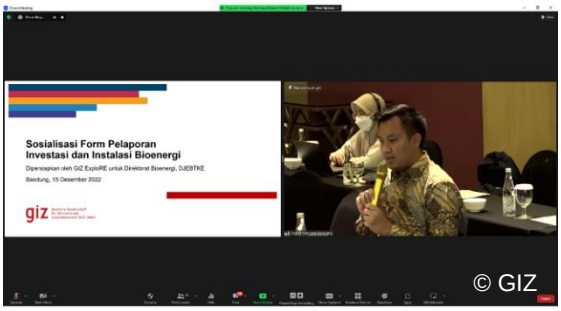
By GIZ – Strategic Exploration of Economic Mitigation Potentials through Renewables (ExploRE)

Finance holds a key role in the development of renewable energy and boosting the energy transition process. According to data released by the government, Indonesia needs USD 30 billion to achieve its various energy transition targets. Total investment in the country's bioenergy sector reached USD 5.7 billion in 2021, comprising USD 1.8 billion in the biofuel sector and USD 3.9 billion in the development of bioenergy power plants. A total of USD 173 million investment in the bioenergy sector was set for 2022.

As with other aspects of development, this huge investment in the bioenergy sector also requires continuous monitoring to ensure synchronous commitments and achievements. President Joko Widodo specifically mentioned the need to maintain and monitor investment commitments in the various development sectors during a plenary cabinet meeting in 2021. Monitoring is essential to maintain and improve investment confidence.

To support efficient implementation of investment monitoring in the bioenergy sector, ExploRE is facilitating the development of a web-based application aimed at the systematic collection and tracking of the commitments and achievements of various bioenergy industries. The web-based application is also being designed to compile reports automatically for public use.

The web-based application development is also aimed at providing a factual database as the basis for key policy-making processes, such as evaluating electricity purchase prices, fiscal incentives, and so on. The application will also provide room to pinpoint various challenges in bioenergy project implementation, thereby enabling the identification of potential solutions.



A screenshot from the FGD on bioenergy sector investment monitoring on 15 December 2022

To encourage active involvement from various stakeholders in the investment monitoring and reporting process, GIZ and the ESDM Directorate of Bioenergy held a focus group discussion (FGD) on 15 December 2022. Taking a hybrid format, the FGD aimed to provide information relating to the web-based bioenergy investment reporting system, fiscal and non-fiscal incentives for bioenergy projects, and bioenergy project developers' responsibility to carry out reporting. FGD

participants also identified opportunities and challenges for and provided input on the reporting mechanism. The FGD involved more than 30 participants, including bioenergy project developers.

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FGD on energy sector carbon pricing

By GIZ – Clean, Affordable, and Secure Energy for Southeast Asia (CASE)

Following Presidential Regulation No. 98/2001 on Carbon Economic Value, two ministerial regulations were stipulated: Minister of Environment and Forestry Regulation No. 21/2022 and Minister of Energy and Mineral Resources Regulation No. 16/2022. These regulations were promulgated to govern the implementation of carbon pricing, with the latter specifically addressing the power generation subsector. An FGD organised jointly by CASE and the Ministry of Energy and Mineral Resources (ESDM) was held on 31 January 2023 to identify challenges, opportunities, and capacity building needs for power producing companies to ensure a well-implemented carbon trading system. A total of 105 participants from ministries and power generation companies were present.

Several ministerial representatives spoke at the FGD, including from the Ministry of National Development Planning (Bappenas), ESDM, the Ministry of Environment and Forestry (KLHK), and the Indonesian Environment Fund. Key highlights included how carbon pricing may drive the energy transformation and push for Indonesia's NDC and national development targets, how the carbon trading infrastructure is being developed, and the roles of different institutions in the first phase of implementation. PT PLN also outlined the company's generation of approximately 8 million tCO_2e worth of carbon credits from renewable energy power plants, half of which were sold through the voluntary carbon market. Previously, 26 of PT PLN's coal-fired power plants participated in the ETS trial in 2021, which provided valuable lessons for implementation in 2023. These include evaluating PT PLN's existing internal policies, integrating the greenhouse gas monitoring and reporting system with the carbon trading system, and improving PT PLN's human resource capacity to conduct carbon trading. Meanwhile, PT Jawa Power, which operates Paiton coal-fired power plants, will prepare documentation needed for carbon trading, such as an emissions report, greenhouse gas monitoring plan, and mitigation plan.

Representatives from GIZ CASE, Bappenas, ESDM, PT PLN, PT Jawa Power, IESR, and Agora Energiewende at the FGD

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Talk show on business initiatives and sustainable financing to support Indonesia's NZE efforts

By GIZ – Clean, Affordable, and Secure Energy for Southeast Asia (CASE)

In collaboration with Tempo Media, CASE Indonesia held an online talk show on 13 December 2022 discussing sustainable business and financial practices that have been implemented in support of net-zero emissions (NZE) efforts. The show, which featured six panellists from several of Indonesia's most reputable companies, was viewed by more than 2,000 individuals with various backgrounds in energy and non-related sectors.

President Director of PT Sarana Multi Infrastruktur, Edwin Syahruzad, whose

company engages in the financial sector, said the company's climate statement supports the government in achieving its NZE target by implementing a moratorium on power plants emitting high levels of greenhouse gases. In addition, PT SMI is currently responsible for being a national platform for energy transition mechanisms, and for issuing energy transition financial products with foreign partners.

Arief Budiman, Commissioner of PT AGRINDO Prakarsa Group, the largest agricultural equipment manufacturer in Indonesia, said the company is committed to supporting NZE in Indonesia and has made efforts to do so in its production by using biomass in its heating and drying processes, which have already adopted environmentally friendly principles. Arief invited non-energy business players to support NZE by educating them on principles concerning financial assistance, such as grants, blended finance, and de-risking mechanisms.

Antony Harsono, Director of Energy and EPC with PT Samator Group, the largest and leading industrial gas producing company in Indonesia, expressed his company's desire to switch to green hydrogen. During the energy transition, the company is in the process of switching from liquefied natural gas (LNG) to green hydrogen. Green hydrogen is similar to LNG, in that it is easy to transport and distribute between islands in Indonesia. In addition, PT Samator has reduced its CO_2 emissions by turning them into dry ice, increasing the capacity of its solar panels to generate electricity and using production machinery with higher energy efficiency ratings.

CEO of PT Semesta Energi Services and CGEI, Herman Huang, said that Indonesia must be able to assess available local wisdom for alternative energy resources, such as water, biomass, biogas, low-speed wind, and geothermal. He suggested providing incentives to support companies that want to develop clean energy, and welcomed the Just Energy Transition Partnership (JETP) platform.

Finance Director for PT Pertamina Geothermal Energy, Nelwin Aldriansyah, said the biggest challenge in operating a geothermal power plant is the extended exploration, exploitation and production cycle (5–7 years), which requires long-term investment. Exploration risks can be mitigated by government drilling or grant products that assure new geothermal potential and encourage interested developers. Nelwin agrees with using green hydrogen. He also said that geothermal power plants receive significant financial assistance, such as equity participation, local and international bank cooperation and long-term green bond issuance, and many types of geothermal project financing can be explored.

Senior Vice President of Finance and Portfolio Management for PT Industri Baterai Indonesia, Yunan Fajar Ariyanto noted that the two sectors producing most greenhouse gases are electricity generation and transportation. With the shift to green energy, these sectors need batteries to store power, specifically for power generation (wind, solar) and electric vehicles (EVs). It is vital for Indonesia to develop battery recycling facilities in addition to growing the domestic battery and EV production ecosystems.

Tempo talk show panellists on 13 December 2022

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SUPA/REPEAT Component 1 and Forestry Department of Peninsular Malaysia organise workshop to share best practices on peatland water management

By GIZ – Sustainable Use of Peatland and Haze Mitigation in ASEAN (SUPA)/REPEAT Component 1

SUPA/REPEAT Component 1 and the Forestry Department of Peninsular Malaysia co-held the first of three workshops entitled Sub-Regional Knowledge Exchange – Promotion of a Knowledge Sharing Mechanism on Peatland Restoration and Rehabilitation in Southern ASEAN Member States (AMS) from 6-10 February 2023 in Putrajaya, Malaysia.

Appointed officers from Brunei Darussalam, Indonesia, Malaysia and Thailand participated in the workshop, which showcased examples of best practices from actual sites in Malaysia as case studies. The workshop started with a visit to the Raja Musa Forest Reserve in North Selangor Peat Swamp. Participants learned how the Selangor State Forestry Department implements an Integrated Management Plan (2014–2023) to sustain, rehabilitate and re-establish the hydrological functions and natural water balance in the area.

Workshop participants during their visit to Kuala Langat North Forest Reserve

The next day, participants visited the Kuala Langat North Forest Reserve and learned about the successful rehabilitation activities carried out in the area, which affected by fires prior to 2012. Collaboration and cooperation are indeed a key component for successful peatland management and rehabilitation. The Fire and Rescue Department of Malaysia showed how they came up with a new tool to extinguish forest fires, while the Minerals and Geoscience Department of Malaysia demonstrated how they do peat profiling in Kuala Langat North Forest Reserve. Participants were also informed about the collaborative initiative established with the local community on conservation and fire prevention in the reserve.

On 9 and 10 February 2023, the participants discussed what they had seen in the field visits, shared their experiences on restoring waterlogged peatland, presented best practices on water management from their national context, and exchanged ideas on the promotion of a knowledge sharing mechanism.

This Sub-Regional Knowledge Exchange on peatland restoration and rehabilitation consists of three workshops. The second is scheduled for 6–11 March 2023 in Pontianak, Indonesia.

The Fire and Rescue Department of Malaysia demonstrating its innovation to extinguish forest fires

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Fulfilling seed needs: Indigenous forest management institution and village government build a seedling house

By Perkumpulan Desa Lestari – Reducing Deforestation by Strengthening Forest Communities in Kerinci

On Friday 24 February, twenty-six people were involved in the establishment of a seedling house in Pungut Hilir Village, Kerinci District, Jambi. Its development was the result of a cooperative effort involving the local indigenous forest management institution, customary community institution, village consultative body, village government, members of the Pungut Hilir community, and the Perkumpulan Desa Lestari team.

'Developing the seedling house in cooperation was our way of choosing members to manage the house. Anyone participating in the development process would automatically become a member', said Amran, chair of the Pungut Hilir indigenous forest management institution.

The seedling house will have a capacity of 15,000 seedlings for plants including cinnamon, coffee, and several multi-purpose tree species. The aim of producing cinnamon and coffee seedlings is to meet needs in Pungut Hilir, where most people work as cinnamon and coffee farmers who, until now, have had to buy high priced seeds from outside the village.

Once the seedling house is fully established, the Perkumpulan Desa Lestari team will assist in making seedbeds, providing planting media and filling polybags, planting seedlings, preparing business and marketing plans, and facilitating deliberations on sharing the proceeds of seedling sales.

The Pungut Hilir community welcomed the seedling house development with enthusiasm. Having village government support is valuable capital for the Perkumpulan Desa Lestari team in assisting with seedbed establishment and other activities relating to land management, as well as business development for processed coffee and cinnamon products.

'We will continue to support them for as long as their activities can benefit the people of Pungut Hilir Village. We hope these activities can be sustainable so the community can enjoy long-term benefits', said Zamzari, the Pungut Hilir Village Head.

The seedling house in Pungut Hilir Village, Jambi

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Launching the National Strategy for Wetlands Management: Peat and Mangrove Ecosystems

By Yayasan Konservasi Indonesia – Mitigation and Adaptation through Conservation and Sustainable Livelihoods in Indonesia's Peat and Mangrove Ecosystems

The National Strategy for Wetlands Management: Peat and Mangrove Ecosystems was launched on 2 February 2023 to coincide with World Wetlands Day. The event was attended by 801 people who participated either in person or online.

During his opening address, Head of the International Finance Division and IKI at the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety, and Consumer Protection, Nicolas Schaefstoss, stated that Indonesia is a partner for Germany in bilateral environmental cooperation to address climate change mitigation and adaptation, and biodiversity protection. He said the strategy would become a vital instrument for providing policy guidelines to reduce GHG emissions, but also stressed that strengthening institutions, empowering communities, and creating suitable frameworks for local actors are all important for ensuring the strategy can generate transformative impacts.

A welcoming address was delivered by Acting Deputy for Maritime Affairs and Natural Resources under the Ministry of National Development Planning (Bappenas), Vivi Yulaswati. She added that policy synchronisation and stakeholder collaboration in peat and mangrove ecosystem management are vital for ensuring holistic, integrated and sustainable management.

Nicolas Schaefstoss during his opening address at the launch of the National Strategy for Wetlands Management

Bappenas Director of Environment, Medrilzam, who led the Strategic Coordination Team for Wetlands Management (SCT-WM) in developing the strategy, also highlighted that it will become part of the 2025–2045 National Long-Term Development Plan (RPJPN), the 2025–2029 National Medium Term Development Plan (RPJMN), and annual government work plans (RKPs).

The launch was followed with a talk show featuring four speakers: Peat and Mangrove Restoration Agency (BRGM) Secretary, Ayu Dewi Utari; IPB University Professor and CIFOR Principal Scientist, Daniel Murdiyarso; CEO of PT Solusi Alam, Fairus Mulia; and President and Executive Chair of Yayasan Konservasi Indonesia, Meizani Irmadhiany.

Sectoral and local government representatives receiving copies of the National Strategy for Wetlands Management

Each speaker shared their vision for and commitment to collaborating in implementing, monitoring and evaluating the national strategy.

Speakers during the IKI-PME talk show session

The National Strategy is expected to improve and strengthen peatland and mangrove ecosystem management to help Indonesia achieve its Vision 2045, sustainable development and low carbon development targets, and synergise all sustainable wetlands management initiatives. The strategy document is available here.

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Market meeting event in Muara Batang Toru

By Yayasan Konservasi Indonesia – Mitigation and Adaptation through Conservation and Sustainable Livelihoods in Indonesia's Peat and Mangrove Ecosystems

Market meeting in Muara Batang Toru Subdistrict

As part of the IKI-PME project, to support the development of sustainable livelihood activities, the project team collaborated with the District Government of South Tapanuli in organising a market meeting in Muara Batang Toru Subdistrict, South Tapanuli District, North Sumatra Province. The event was designed as a matchmaking process to facilitate community groups and potential buyers.

Held from 7–11 November 2022 at the Muara Batang Toru Subdistrict Office, the event was attended by the Muara Batang Toru Subdistrict Head, the heads of the South Tapanuli agriculture, environment and industry offices, community business groups from Muara Manompas and Muara Ampolu wards, and Yayasan Konservasi Indonesia.

Community business groups from Muara Manompas and Muara Ampolu introducing their products

Numerous products were displayed during the event, including brooms, handicrafts, salted duck eggs, boba straws, compost blocks, citronella oil, processed catfish products, and rattan. The event resulted in the following agreements:

1. Community group members would participate in a product exhibition during South Tapanuli's anniversary events.
2. District agencies would facilitate community business groups in registering to secure business identification numbers.
3. Existing cooperatives would coordinate with business/community groups in managing and marketing their products.
4. PT Agricourt Resources agreed to purchase compost blocks from community business groups and submitted a purchasing order.

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A new mangrove ecosystem management paradigm for Indonesia to achieve sustainable development goals and low carbon development

By Yayasan Konservasi Indonesia and the Center for International Forestry Research (CIFOR) – Mitigation and Adaptation through Conservation and Sustainable Livelihoods in Indonesia's Peat and Mangrove Ecosystems

Sustainable development goals (SDGs) and low carbon development (LCD) are two national and global development agendas currently being adopted by the Government of Indonesia. When mangrove ecosystems are involved, to achieve those goals, a well-planned and well-coordinated strategy is crucial.

Realising this urgent need, CIFOR, in collaboration with the Indonesian Academy of Sciences (AIPI) and the Indonesian Academy of Young Scientists (ALMI) published the following three working papers: National Strategy for Management of Mangrove Ecosystems; Coastal Zone Rehabilitation for Climate Change Mitigation: The Role of Mangroves and Sub-National Emissions Reduction; and Coastal Zone Rehabilitation for Climate Change Adaptation: The Key Role of Mangroves in Nationally Determined Contributions.

As an introduction to these three working papers, CIFOR and AIPI published an Infobrief on Coastal Zone Rehabilitation for Low Carbon Development in 2022.

Three working papers published on the CIFOR-ICRAF website

The first working paper, **National Strategy for Management of Mangrove Ecosystems** highlights important aspects that need to be considered in the national strategy for mangrove management in Indonesia to support the achievement of SDG 13 and 14, and LCD. This paper not only focuses on mangrove rehabilitation and restoration, but also provides a comprehensive explanation of the importance of conservation efforts.

Meanwhile, the second working paper, **Coastal Zone Rehabilitation for Climate Change Mitigation: The Role of Mangroves and Sub-National Emissions Reduction** discusses and explores challenges and opportunities for mangrove rehabilitation, restoration and conservation from an ecological perspective, and governance aspects for climate change mitigation.

As adaptation is just as important as mitigation in climate action, authors of the third working paper, **Coastal Zone Rehabilitation for Climate Change Adaptation: The Key Role of Mangroves in Nationally Determined Contributions**, highlight the importance of adopting a responsive adaptation strategy. In this regard, several emissions mitigation scenarios linked to adaptation actions can be considered to facilitate the achievement of Nationally Determined Contribution (NDC) targets, LCD and the 2030 SDG goals.

These three working papers are in line with the National Strategy for Wetlands Management: Peat and Mangrove Ecosystems published by the Strategic Coordination Team led by Bappenas.

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Good management guarantees higher yields

By World Agroforestry (ICRAF) Indonesia – Peat-IMPACTS Indonesia

The agrosilvofishery demonstration plot in Baru Village, Banyuasin District, South Sumatra is one of a number of demonstration plots established by ICRAF and the Baru Village Work Team under the Peat-IMPACTS project. The plot – built on land that had not been cultivated for more than ten years – has produced highly encouraging rice yields from its first growing season.

Rice in the plot is planted using a land management system without burning, that involves ploughing, using balanced organic and chemical fertilisers, sprinkling dolomite chalk to reduce soil acidity, using a greater planting distance, setting planting times according to water level requirements, and maintaining the plants. This system can produce twice the yield of the usual practice applied by farmers in Baru Village, who generally plant rice without tillage, fertilisation, or maintenance.

Suhaidi, head of the Baru Village joint working group team expressed his gratitude for the successful harvest, and hoped villagers can continue to adopt techniques applied in the demo plot.

Farmers led by Suhaidi are proud of their rice crop

ICRAF researcher, Dr Subekti Rahayu concluded that, 'From experiments conducted on demonstration plots using the 1 m x 1 m sampling method, the yields obtained were six tons of dry milled grain for the Arumba 2 rice variety using the *jajar legowo* spacing system, and seven tons for Inpari 32 variety through a tiling system. Meanwhile, for the Impara 8 variety, five tons per hectare were obtained from both *jajar legowo* and tiling.'

Baru Village farmers calculating rice yields

This statement made the farmers who took part in the one-day Post-Harvest Handling Training and Strengthening Farmer Groups in New Villages on 10 October 2022 smile happily.

The training, presented by Didik Supriyanto from the Banyuasin District Agriculture, Food Crops and Horticulture Office, covered proper drying methods, testing the moisture content of rice and packing rice to meet market standards.

Baru Village farmers and women participating in one-day training on post-harvest handling of rice

Meanwhile, Sawalina from the Banyuasin District Fisheries and Maritime Affairs Office provided materials on fish processing and marketing of fish-derived products, as the applied agrosilvofishery model also yields fish.

This training opened trainees' minds to various innovations for making fish derivative products and packaging similar to products sold in supermarkets. The village community will continue to adopt and expand upon lessons learned and results achieved from the agrosilvofishery demonstration plot, and feel encouraged to restore the environmental functions of their surrounding peatlands to create livelihood options with economic value.

Enthusiasm and excitement shows on the faces participants gaining knowledge from the training

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RAD-KSB: South Sumatra's opportunity to realise sustainable palm oil governance

By World Agroforestry (ICRAF) Indonesia – Peat-IMPACTS Indonesia

As a form of commitment to the development of sustainable oil palm plantations, through its provincial plantations' office, the Provincial Government of South Sumatra is developing the South Sumatra Regional Action Plan for Sustainable Palm Oil (RAD-KSB).

On 17 November 2022, a focus group discussion (FGD) and public consultation was held to present the draft South Sumatra Province Regional Action Plan for Sustainable Palm Oil (RAD-KSB) and secure input from stakeholders in the province on improving the draft.

The FGD with facilitators from ICRAF Indonesia

Head of the South Sumatra Provincial Plantations Office, Ir. Agus Darwa MSi, expressed his appreciation for the ICRAF Indonesia Peat-IMPACTS project, which has continuously facilitated and supported the preparation of the South Sumatra RAD-KSB. In his address he said, 'This public consultation is directed at perfecting the RAD-KSB document, which on completion will be submitted for a gubernatorial regulation (*Pergub*) and become the reference for sustainable palm oil in South Sumatra.'

He added that the RAD-KSB was prepared not only for the plantations office or partners, but also for private sector plantation companies, and as 276 plantation companies are currently operating in South Sumatra, they are expected to participate in planning, take ownership of, and be responsible for producing sustainable oil palm.

Agriculture and estate crops have become major livelihood sources for the people of South Sumatra. With more than one million hectares of oil palm plantations, a comprehensive plan is needed to manage sustainable oil palm plantations for economic growth in line with the government's emissions reduction commitments. Therefore, the mandate to prepare the RAD-KSB provides an opportunity for stakeholders in South Sumatra to realise future commitments and plans to improve sustainable palm oil management.

A Palm Oil Association representative speaking during an expert speaker discussion session

By involving all parties in considering economic, ecological and socio-cultural aspects, the RAD-KSB will provide direction for the development of sustainable oil palm plantations in the province.

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Opportunities for peatlands from Indonesia-led G20 processes

By FAO – The Global Peatlands Initiative: Assessing, Measuring and Preserving Peat Carbon

The G20 side event, Sustainable Management in Peatland Landscapes: A Global Overview, took place under the Environment Deputies and Climate Sustainability Working Group (EDM-CSWG) on 31 October 2022, and was opened by the Deputy Minister of Environment and Forestry, Alue Dohong.

Maria Nuutinen, FAO, set the scene by outlining the key concepts for improved peatland management as a means for climate action and green recovery. Hans Joosten, from the Greifswald Mire Centre discussed promising new markets, such as the carbon market with high-quality carbon credits from peatland rewetting, and biomass production in wet and rewetted peatlands (also called 'paludiculture') for building and insulation materials, food and medicine, among others.

G20 delegates were able to learn from two country cases. First, Director of the Peatland Degradation Control Unit, Ir. Sri Parwati Muwarni Budisusanti MSc, highlighted work done with local communities in Indonesia in rewetting peatlands to reduce greenhouse gas emissions and fires. Then, Cheryl Case, Head of International Biodiversity and Environment at the United Kingdom Department for Environment, Food and Rural Affairs, presented the national ambition to rewet peatlands for securing biodiversity and water resources.

Faizal Parish, from the Global Environment Centre presented an overview of value chains and markets, and Dianna Kopansky, from UNEP shared experiences gathered through the South–South and expert exchanges facilitated by the Global Peatlands Initiative.

During the ensuing panel discussion, panellists stressed the importance of engaging meaningfully with small-scale producers, as well as the need for a just transition and scaling up of currently available alternatives.

The session closed with remarks on G20 countries' key roles in leading the way by example and supporting the countries most affected by climate change. Presentations from the session can be found here.

Examples of new markets for products from rewetted peatlands. Professor Hans Joosten, G20 side event in October 2022

The G20 side event was built on two previous online events on Peatland Management and Wet Livelihood Opportunities in Indonesia, organised by FAO and partners in March 2021. Over 320 participants from key stakeholder groups had demonstrated high levels of interest in these two sessions, which involved a high percentage of female participants (46%) from 32 different countries; 56% of whom were from Indonesia. A total of 126 organisations were represented from the public, private and civil society sectors, as well as research and academic institutions.

The sessions presented and discussed the arguments to invest in wet management practices on peatlands, and showcased a wealth of examples and knowledge on the topic. A summary and presentations from the events are available here, and recordings of the two events are available here and here.

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Basic training for monitoring scouts at Camp Granit, Bukit Tiga Puluh National Park

By KfW and Frankfurt Zoological Society (FZS) – Nature conservation concession to protect tropical rainforest in Indonesia

From 11–28 October 2022, FZS conducted basic training for wildlife and habitat monitoring scouts at Camp Granit in Bukit Tiga Puluh National Park. The training was used as an opportunity to assign six members of the joint patrol team as assistant trainers in order to give them the opportunity to instruct inexperienced scouts in the basics of patrolling under the guidance of experienced trainers. The emphasis was on professional planning, preparation and execution of monitoring patrols.

For unqualified scouts, the course was divided into different sections with different emphases. The initial part of the training emphasised discipline and formal service. Thus, the course began with a long march and daily sports to promote team spirit among the participants. The purpose of this part of the training was to learn how to simplify and streamline patrols.

From 14–16 October 2022, the second segment of the course involved training in First Aid for Outdoor Activities, and was conducted by the Atlas Medical Pioneer Foundation (AMP). The material was taught by a master trainer and two assistant trainers.

Land navigation was another important component of this training, as good navigation skills are the most important asset for scouts when conducting patrols. This component, conducted from 17–21 October 2022, used instructional methods and simulations. The material covered map reading; calculating coordinates, contours and elevations; using a compass; finding your way in the field; interpreting maps and current terrain; and simulating movement using a compass and maps.

On 22 October 2022, participants were taught about edible plants that can be eaten under survival conditions. The aim was to determine which plants are edible and which are not, and to know which plants contain poison.

Monitoring scouts during training at Camp Granit, Bukit Tiga Puluh National Park, October 2022

The final phase of training involved a patrol simulation, in which all members practiced the materials taught during the course. The simulation was conducted from 23–27 October 2022. One participant retired from the course voluntarily, but all other participants mastered the course and passed the final examination.

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Biodiversity and socio-economic surveys on peatland restoration in oil palm concession areas

By Yayasan Konservasi Indonesia – Mitigation and Adaptation through Conservation and Sustainable Livelihoods in Indonesia's Peat and Mangrove Ecosystems

The private sector has a strategic role in creating green development pathways. As part of the IKI-PME project, Yayasan Konservasi Indonesia took the initiative to collaborate with PT Samukti Karya Lestari (SKL) in jointly developing a peatland restoration demonstration plot in the company's concession area. An MoU was signed in September 2022 to target the restoration, conservation and sustainable management of approximately 250 ha of peat ecosystems inside the company concession.

As the first step, Yayasan Konservasi Indonesia conducted biodiversity and socio-economic surveys from 27 November to 4 December

2022. The joint survey team comprised 36 members from Yayasan Konservasi Indonesia, Forester Indonesia, Huta Hita Nadenggan, Semak, PT SKL and KPH X forest management unit. The aims of the surveys were to identify peatland vegetation and biodiversity conditions, and assess the socio-economic situation in and around the PT SKL concession area. The surveys were expected to provide PT SKL with clear insight on the need for peatland restoration and a framework for restoration.

Survey team members in the PT SKL conservation area, South Tapanuli District, North Sumatra

The surveys resulted in recommendations on three main courses of action: biodiversity conservation, peat ecosystem restoration, and sustainable utilization. All three are important as protected fauna were identified in the area and their habitat must be improved.

In addition, the area plays a significant role in influencing the quality of water in the river, which is a water source for several settlements further downstream. The peatland area is also a reservoir that can regulate water flow and mitigate hydrometeorological disasters in surrounding areas.

In order for the area to support biodiversity and provide environmental services in the long term, it is essential to preserve intact parts and restore degraded parts immediately. Stakeholder collaboration is also necessary to ensure utilization of the area is restricted and sustainable in order to guarantee ecosystem balance.

Surveying avifauna in the PT SKL conservation area

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Progress update on IBSAP development post COP15 CBD

By GIZ – Climate and Biodiversity Hub Indonesia (ClimB Component)

Two months after the adoption of the Global Biodiversity Framework (GBF) at COP15 CBD in Montreal, under the coordination of the Ministry of National Development Planning (Bappenas), the Government of Indonesia continues to track the progress of IBSAP development.

On 21 February 2023, with the collaboration of a cross-ministerial technical committee, Bappenas shared an outline of the new Indonesian Biodiversity Strategy and Action Plan (IBSAP) draft and biodiversity management indicators, which represent the government's intervention in halting and reversing biodiversity loss and ensuring sustainable use natural resources.

During the discussion, the draft received constructive feedback from related ministries and institutions, such as the National Research and Innovation Agency (BRIN), Ministry of Marine Affairs and Fisheries (KKP), Ministry of Agriculture (*Kementan*) and Ministry of Environment and Forestry (KLHK), as well as from NGOs.

Biodiversity

The new IBSAP is expected to reflect the Global Biodiversity Framework (GBF) by considering national circumstances, and guide not only central and sub-national governments, but also non-state actors including private sector practitioners, NGOs, academics, youth, IPLCs, etc.

Together with the draft, the biodiversity management indicators also need to be stated clearly in the IBSAP as they will form part of the national long-term development plan (RPJPN) for 2025–2045, and constitute national targets to be gauged against headline indicators in the GBF, where the relationships between variables will mark Indonesia's contributions to biodiversity management.

Discussion during IBSAP development with related ministries and institutions

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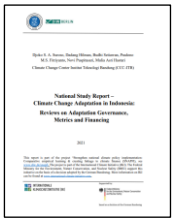
Knowledge Products

By GIZ – TRANSfer III: Facilitating the development of ambitious transport mitigation actions

Concept and roadmap for an infrastructure investment programme for rail connections to Javanese ports	The island of Java in Indonesia is an example of how seaport rail connectivity can have huge economic and environmental benefits. To mobilise the necessary political and financial support for rail port connectivity projects, a clear and compelling case is essential. This report, available in English and Indonesian, argues that rather than managing the delivery of connectivity through individual 'projects', a 'programme' approach comprising a series of projects to connect the rail network to the ports on Java has greater potential to deliver overall benefits. This report is from the Indonesia component of GIZ TRANSfer III. https://changing-transport.org/publications/infrastructure-investment-programme-for-rail-connections-to-javanese-ports/ Contact: Friedel Sehlleier (friedel.sehlleier@giz.de)	
From trucks to tracks: Promoting rail freight in emerging economies	Freight rail is one of the most energy efficient and least carbon intensive ways of transporting goods. This article looks at the trends, targets, barriers and actions of selected emerging economies (India, China, Indonesia, Mexico) in this area. Are there government ambitions and progress in a modal shift from roads? What is the role of climate change and other policy objectives? Are barriers being overcome through innovative approaches? What is the role of international technical cooperation? And what common themes, patterns or solutions emerge when comparing the country cases? https://changing-transport.org/wp-content/uploads/2022_From-trucks-to-tracks-1.pdf Contact: Friedel Sehlleier (friedel.sehlleier@giz.de)	
Analysis of the truck market in Indonesia	A good understanding of the local vehicle market is fundamental to fleet modernisation. What types of trucks are popular? Where do they come from? How efficient are they? etc. This set of slides presents insights into the type, brand and other technical details of new trucks sold in Indonesia, where the TRANSfer III project has provided technical assistance for truck fleet modernisation. https://changing-transport.org/wp-content/uploads/2022_GIZ-Truck-Sales-Analysis-Indo-1-1.pdf Contact: Friedel Sehlleier (friedel.sehlleier@giz.de)	

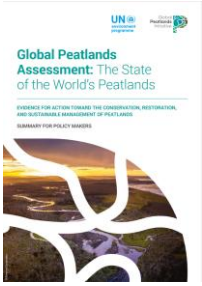
Knowledge Products

By the Bandung Institute of Technology Climate Change Center (CCC-ITB) collaborative research project – Strengthening National Climate Policy Implementation: Comparative Empirical Learning and Creating Linkages to Climate Finance (SNAPFI), led by DIW Berlin with country-partners from India, South Africa, Brazil and the European Union

Towards a climate governance model for the Indonesian energy sector: Mapping on actor interaction	This report focuses on the current climate-energy governance model in Indonesia and the interactions between prominent stakeholders involved in the Indonesian renewable energy sector. https://www.diw.de/documents/dokumentenarchiv/17/diw_01.c.821387.de/snapfi_climate_governance_indonesian_09072021.pdf	
Climate change adaptation in Indonesia: Reviews on adaptation governance, metrics and financing	This report focuses on reviewing prevailing conditions in adaptation governance, metrics and financing in Indonesia. https://www.diw.de/documents/dokumentenarchiv/17/diw_01.c.821780.de/snapfi_cca_report%20ccc-itb_12072021%20final.pdf	
International climate finance and support to national climate policy processes in emerging markets	This year's international study analyses how international partners can contribute to climate policy processes in emerging markets, thereby facilitating the channelling of financial flows to low-GHG-emission and climate-resilient development, as described in Article 2.1.c of the Paris Agreement. Indonesia contributed to Chapter 5 of this report. https://www.diw.de/documents/dokumentenarchiv/17/diw_01.c.821395.de/snapfi_intl_climate_finance_2021.594220.pdf	

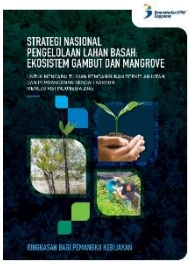
Knowledge Products

By UNEP – The Global Peatlands Initiative: Assessing, Measuring and Preserving Peat Carbon

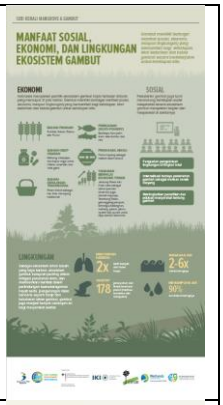
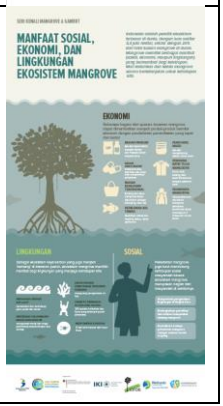
Global Peatlands Assessment – Summary for policy-makers	The Summary for Policy Makers to the Global Peatlands Assessment was launched at the State of the Worlds Peatlands – Global Peatlands Assessment: Evidence for Peatlands Action official side event to the UNFCCC COP27 on 17 November 2022. In this document, the Global Peatlands Initiative has brought together the latest science to inform policies, decisions, research and actions and build the evidence base to determine the state of the world's peatlands. It answers questions on peatland distribution, trends and pressures, closes many knowledge gaps, compiles relevant data and presents the best available science for strategic decision-making for the conservation, restoration and sustainable management of peatlands. https://wedocs.unep.org/bitstream/handle/20.500.11822/41236/peatland_assessment_SPM.pdf?sequence=3	
Global Peatlands Assessment – Global Peatland Map 2.0	The Global Peatland Map 2.0 (GPM2.0) was produced as part of the Global Peatlands Assessment to provide the most up to date data on peatland location and extent globally. Supported by hotspot maps and global case studies, it covers all regions of the world and allows decision-makers to identify priority areas for conservation, restoration and sustainable management. It also presents 'probable' peatland areas, i.e. areas where, on the basis of their physical constitution and remote sensing signal, peatlands can be expected, but whose presence has yet to be confirmed by 'ground truthing'. The map and the assessment reveal that peatlands are more extensive than previously estimated – covering about 500 million hectares globally, and are found across all continents. https://wedocs.unep.org/bitstream/handle/20.500.11822/37571/GloPeMap.png?sequence=3&isAllowed=y	
New website of the Global Peatlands Initiative	To increase member engagement as per their request, the Global Peatlands Initiative launched its new website as a platform to ensure that events, information, literature and communications are systematically available to all peatland enthusiasts around the world. It includes news on peatland activities across the globe, a resource library, information on ongoing projects and current events, and a space for the initiative's Research Working Group. www.globalpeatlands.org	Global Peatlands Initiative

Knowledge Products

By Yayasan Konservasi Indonesia – Mitigation and Adaptation through Conservation and Sustainable Livelihoods in Indonesia's Peat and Mangrove Ecosystems

National Strategy for Wetlands Management: Peat and Mangrove Ecosystems document	This document was developed by the Strategic Coordination Team for Wetlands Management (SCT-WM) led by the Ministry of National Development Planning (Bappenas). It was launched on 2 February 2022 to coincide with World Wetlands Day. https://lcdi-indonesia.id/wp-content/uploads/2023/02/Strategi-Nasional-Pengelolaan-Lahan-Basah.pdf Contact: Susan Lusiana (slusiana@konservasi-id.org)	
National Strategy for Wetlands Management: Peat and Mangrove Ecosystems summary document	This summary document was developed by the Strategic Coordination Team for Wetlands Management (SCT-WM) led by the Ministry of National Development Planning (Bappenas). It was launched on 2 February 2022 to coincide with World Wetlands Day. Contact: Susan Lusiana (slusiana@konservasi-id.org)	
National Strategy for Wetlands Management: Peat and Mangrove Ecosystems document factsheet	This factsheet on the National Strategy for Wetlands Management: Peat and Mangrove Ecosystems covers four aspects of peat and mangrove ecosystem management, as well as strategies and recommendations for wetland management. Contact: Susan Lusiana (slusiana@konservasi-id.org)	
A short video on IKI-PME impacts on the ground	This two-minute video showcases the IKI-PME project, explains its impacts in project sites in Indonesia's North Sumatra and West Papua provinces, and outlines its benefits for local communities. Contact: Susan Lusiana (slusiana@konservasi-id.org)	

Knowledge Products

Poster on the social, economic and environmental benefits of peat ecosystems	This poster provides information on the social, economic and environmental benefits of peat ecosystems, and stresses the need to preserve them and manage them in a sustainable manner. Contact: Susan Lusiana (slusiana@konservasi-id.org)	
Poster on the social, economic and environmental benefits of mangrove ecosystems	This poster provides information on the social, economic and environmental benefits of mangrove ecosystems, and stresses the need to preserve them and manage them in a sustainable manner. Indonesia has the largest area of mangroves in the world at 3.4 million hectares, which is equal to 20% of the world's mangroves. Contact: Susan Lusiana (slusiana@konservasi-id.org)	

By the Center for International Forestry Research (CIFOR) – Mitigation and Adaptation through Conservation and Sustainable Livelihoods in Indonesia's Peat and Mangrove Ecosystems

National Strategy for Management of Mangrove Ecosystems	SDGs and low-carbon development are global and national development agendas implemented by the Government of Indonesia. With similar timeframes and achievement targets, especially where mangroves are concerned, a coordinated strategy with integrated planning is needed. The National Strategy for Management of Mangrove Ecosystems separates coastal areas into conservation and rehabilitation/restoration zones. https://www.cifor-icraf.org/knowledge/publication/8790/ Contact: Daniel Murdiyarso (D.Murdiyarso@cifor-icraf.org)	
Coastal Zone Rehabilitation for Climate Change Mitigation: The Role of Mangroves and Sub-National Emissions Reduction	Rehabilitation/restoration of coastal zones and mangrove ecosystems for climate change mitigation is a long, risk-filled journey. It requires resilience, good governance and comprehensive policies that involve stakeholders from the national to sub-national levels. Therefore, emissions mitigation efforts should focus more on the conservation of intact mangroves, as doing so has a high benefit-cost ratio and can guarantee better emissions reduction outcomes. https://www.cifor-icraf.org/knowledge/publication/8791/ Contact: Daniel Murdiyarso (D.Murdiyarso@cifor-icraf.org)	

Knowledge Products

Coastal Zone Rehabilitation for Climate Change Adaptation: The Key Role of Mangroves in Nationally Determined Contributions	The coastal zone rehabilitation/restoration agenda for climate change adaptation must be able to increase areas' capacity to deal with rising sea levels, waves, coastal erosion, flooding and inundation, so communities, especially fishing communities living in the coastal zones can become more resilient. As recommended in the Paris Agreement, efforts to bundle adaptation and mitigation are demonstrated in this document to ensure maximum results in the rehabilitation/restoration of coastal areas. https://www.cifor-icraf.org/knowledge/publication/8792/ Contact: Daniel Murdiyarso (D.Murdiyarso@cifor-icraf.org)	

By World Agroforestry (ICRAF) Indonesia – Peat-IMPACTS Indonesia

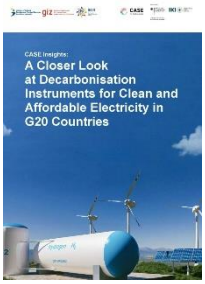
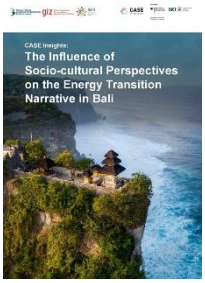
Local content on peatlands and mangroves for integration with junior high school natural science classes in West Kalimantan	This book for integration with the junior high school natural science curriculum contains learning materials for Grade VII, VIII and IX. It includes descriptions of basic concepts surrounding peatlands and mangroves to increase students' awareness of the necessity to protect peat and mangrove ecosystems from an early age. ISBN: 978-623-09-2198-8 https://dikbud.kuburayakab.go.id/index.php/2023/01/30/pendidikan-lingkungan-muatan-lokal-gambut-dan-mangrove-ipa/	
Local content on peatlands and mangroves for integration with junior high school social science classes in West Kalimantan	This book for integration with the junior high school social science curriculum contains learning materials for Grade VII, VIII and IX. It includes descriptions of basic concepts surrounding peatlands and mangroves to increase students' awareness of the necessity to protect peat and mangrove ecosystems from an early age. ISBN: 978-623-09-2199-5 https://dikbud.kuburayakab.go.id/pendidikan-lingkungan-muatan-lokal-gambut-dan-mangrove-ips/	

Knowledge Products

Local content on peatlands and mangroves for integration with junior high school Indonesian language classes in West Kalimantan	This book for integration with the Indonesian language curricula for Grade VII, VIII and IX, which have adopted and accommodate the principle of implementing an independent curriculum. The book aims to guide educators by providing local content on peatlands and mangroves for integration with regular subject matter. It helps educators by providing teaching guides and assessment materials using easy-to-understand language for implementation in the classroom. ISBN: 978-623-09-2144-5 https://dikbud.kuburayakab.go.id/index.php/2023/01/30/pendidikan-lingkungan-muatan-lokal-gambut-dan-mangrove-bahasa-indonesia/	
Local content on peatlands and mangroves for integration with fifth grade elementary school natural science, social science and Indonesian language classes in West Kalimantan	This book provides material for integration with Indonesian language, natural and social science lessons in Class V of elementary school. Its material focuses on peatland and mangrove ecosystems and their biodiversity. The expectation is that this book will become a handbook for educators in increasing students' understanding and recognition of the need to preserve the surrounding environment, including peatland and mangrove ecosystems. https://dikbud.kuburayakab.go.id/index.php/2023/01/30/pendidikan-lingkungan-muatan-lokal-gambut-dan-mangrove-bi-ipas-v/	
Local content on peatlands and mangroves for integration with sixth grade elementary school natural science, social science and Indonesian language classes in West Kalimantan	This book provides material for integration with Indonesian language, natural and social science lessons in Class VI of elementary school. It contains material on the functions and of peatland and mangrove ecosystems, their utilisation, and causes of their degradation. The aims of the book are to make it easier for students to obtain information on and understand peatlands and mangroves, and increase their awareness of the importance of protecting them. https://dikbud.kuburayakab.go.id/index.php/2023/01/30/pendidikan-lingkungan-muatan-lokal-gambut-dan-mangrove-bi-ipas/	

Knowledge Products

By GIZ – Clean, Affordable and Secure Energy for Southeast Asia (CASE)

CASE Insights: A Closer Look at Decarbonisation Instruments for Clean and Affordable Electricity in G20 Countries	Building on the discussion jointly hosted by Bappenas and CASE in the G20 Development Working Group, this publication presents further evidence on how decarbonisation instruments are implemented in Indonesia, South Korea, South Africa and Germany. It is evident that sustained assistance from governments is needed to encourage renewable energy innovation and phase out fossil fuels. Examples showcased in this CASE Insights publication include Germany's hard-coal exit reverse-auctioning mechanism and South Africa's carbon tax. Decarbonisation instruments should help shift investments toward a low-carbon economy, generating revenues to finance green infrastructure and enable a just and affordable energy transition. https://caseforsea.org/post_knowledge/case-insights-a-closer-look-at-decarbonisation-instruments-for-clean-affordable-electricity-in-g20-countries/	
CASE Insights: The Influence of Socio-cultural Perspectives on the Energy Transition Narrative in Bali	The Covid-19 pandemic has provided momentum for sustainable economic recovery initiatives to accelerate the energy transition. As one of Indonesia's most impacted regions, Bali has the potential to support sustainable economic recovery by prioritising energy transition, in particular through solar PV development. It is imperative to consider not just technological innovation, but also the accompanying socio-cultural adjustments. This will facilitate community involvement, promote a sense of belonging in communities, and ensure a just and inclusive energy transition. https://caseforsea.org/post_knowledge/case-insights-the-influence-of-socio-cultural-perspective-on-the-energy-narrative-in-bali/	

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