

CIFOR AND INDONESIA

A partnership for forest research and science for people



CIFOR

INDONESIA'S FORESTS

A global and national treasure

In the last three years, we have managed to reduce the [annual] deforestation rate from 1.09 million hectares to 610,000 hectares, and 480,000 million hectares in 2017. ... We realize that forests are a major contributor to carbon emissions, mainly due to forest fires – especially in peatlands. Forests represent 18% of our national emissions reduction targets and are expected to contribute to over half of our [Paris Agreement] targets.

Siti Nurbaya
 Indonesian Minister of Environment and Forestry at the Asia Pacific Rainforest Summit, Yogyakarta 23-25 April 2018

60% of the world's population lives in coastal areas. And coastal areas seem a bit forgotten. It's very important to understand how these ecosystems work and how we can restore them, because if we don't do that, they're forecasting by 2040 it will cost the world USD 14 trillion.

Robert Nasi,
 CIFOR Director General at The Blue Carbon Summit, Jakarta 17-18 July 2018

Indonesia is home to thousands of the world's animal and plant species



12%
 of the world's mammals



25%
 of the world's fish



16%
 of the world's reptiles and amphibians



38,000+
 plant species



No.3
 Indonesia has the world's third-largest area of tropical forests



Indonesia has half of the world's tropical peatlands, which store more carbon than most other types of ecosystems

Forests, food and livelihoods in Indonesia

Indonesia's forest ecosystems support agriculture by regulating water quality and availability

Forests are a source of foods rich in micronutrients, such as leaves, seeds, nuts, fruits, mushrooms, honey, insects and wild animals



20%
 of forest communities' total protein dietary requirements come from hunting and fishing in forest areas



48 million
 people dependent on forests for their livelihoods



1.3 million
 people directly employed by the forestry sector

Indonesia is home to the largest bamboo forest in Southeast Asia



565
 species of non-timber forest products used for household purposes or for sale

350
 rattan species

80%
 of the world's supply of rattan comes from Indonesia



2 million
 hectares

157
 bamboo species

SUMMARY OF CIFOR'S WORK IN INDONESIA

SILVER DISTINCTION

Advancing research for forests and people

In 1993, the Center for International Forestry Research (CIFOR) was established as a global center of excellence in forestry research, with Indonesia as its headquarters. As host country, Indonesia automatically holds a seat on CIFOR's board of trustees.

CIFOR prioritized research in six thematic areas designed for maximum impact on forests, landscapes and people. With global targets in place under the Sustainable Development Goals and the Paris Agreement, CIFOR delivered cutting-edge research, built capacity on the ground and formed powerful partnerships.

In our strategy moving forward, for 2016 to 2025, we place forestry as a centerpiece to achieving the Sustainable Development Goals.

Robert Nasi
CIFOR



'No surprises' policy

CIFOR's research in Indonesia sometimes makes findings of particular relevance to the Government of Indonesia. The Government is invited to review and comment on these findings before they are released to the public to ensure constructive dialogue without limiting CIFOR's independence to publish results.

Striving for excellence



CIFOR has enabled
more than 100

Indonesian employees to pursue further study.

229 internships undertaken by Indonesian students at CIFOR



The Government of Indonesia is an official member of CGIAR

SUMMARY OF CIFOR'S WORK IN INDONESIA

SCIENCE FOR FORESTS AND PEOPLE

CIFOR prioritized research in six thematic areas designed for maximum impact on forests, landscapes and people. The thematic work areas contribute to achieving specific Sustainable Development Goals (SDGs). They define pathways for forestry research and its positive contributions to the new development agenda.

CIFOR supports Indonesia in planning the country's Nationally Determined Contributions (NDCs), which are central to the Paris Agreement and reducing emissions at the country level and adapting to the impact of climate change.

In addition to supporting Indonesia in achieving low-emissions standards, CIFOR also supports the potential for various other environmentally sound measures, including: low-carbon development; research into equal opportunities regarding gender, justice and tenure; forest management and restoration; forests and human well-being; sustainable landscapes and food; value chains, finance and investments.

For our work in Indonesia, CIFOR strives to advance research on forests, landscapes and people, and to bring positive impacts to all of the landscapes and communities.

Forests and human wellbeing [SDGs 1, 3, 11]



Tens of millions of rural households gain significant income, food, fuel and shelter from forests, which also

contribute to the local and national economy. However, the part forests play in human wellbeing and prosperity is often underappreciated or overlooked by strict conservation approaches and poverty reduction policies.

To address this, CIFOR is building evidence on how forests contribute to human wellbeing, to give policy makers the solid base they need to make effective decisions that support both forests and people.

Research priorities:

1. Effects of migration, urbanization and remittances, gender and forest dependence
2. Enhancing income and livelihoods from forests
3. Quantifying forest benefits using large data sets
4. Coping with risk in smallholder landscapes

Sustainable landscapes and food [SDGs 2, 6]



Approximately one billion people worldwide rely on forests for food and income in some way. With concerns surrounding food security

high on the international agenda, countries are working towards meeting a wide range of commitments under the SDGs, including targets on food and nutrition.

Global role

CIFOR recognizes that Indonesia, like all countries, needs strategies to alleviate poverty while building environmental resilience. For example, landscape approaches, which integrate a wide range of policies and practices aimed at resolving competition for land, have the potential to address local challenges and help Indonesia meet its national and international commitments to achieve targets under the SDGs.

Research priorities

1. Integrating diverse viewpoints into the sustainable landscapes debate
2. Making the case for policies that integrate forestry and agriculture

- Increasing the availability of diverse nutrient-rich foods and enabling vulnerable populations to access them

Equal opportunities, gender, justice and tenure [SDGs 4, 5, 10, 16]



Forest communities have an intimate understanding of their natural

resources and are more likely to manage them effectively when they have clear rights to their land. Women hold much of this knowledge and, when they are free to make key decisions, can help bring positive changes to the physical and cultural landscape. Furthermore, when land and forest tenure laws are clear and rights are honored in practice, it creates an investor environment that will help sustainable forest-based enterprises grow.

CIFOR is committed to addressing the inequalities between the women and men who depend on forests for their homes and livelihoods.

Research priorities

- Understanding obstacles to the return of local forest rights
- Integrating gender across all of CIFOR's work

Climate change, energy and low-carbon development [SDGs 7, 13]



Countries are exploring different ways to realize their Nationally Determined Contributions (NDCs) to the U.N. Climate

Convention under the Paris Agreement. CIFOR is supplying policymakers and practitioners with the information, analysis and tools they need to design and implement sensible climate policies and practices.

Researchers at CIFOR are looking at the nexus between climate change mitigation and adaptation, bioenergy and low-carbon development.

Research priorities

- Climate change mitigation
- Climate change adaptation
- Bioenergy
- Performance assessment
- Underlying forest and climate science

Value chains, finance and investments [SDGs 8, 9, 12]



The way timber, palm oil, soy, sugar, beef and other commodities are produced is being transformed. Private

companies, governments and financial services providers are driving this transformation by investing in sustainable activities that reduce pressure on forests.

CIFOR contributes to these efforts through its research on public policy, business models, private investments and finance.

Research priorities

- New governance arrangements for sustainable supply
- Inclusive business models in global value chains
- Responsible and innovative finance and investment

Forest management and restoration [SDGs 14, 15]



A number of ambitious global plans are asking countries to restore millions of hectares of forest by

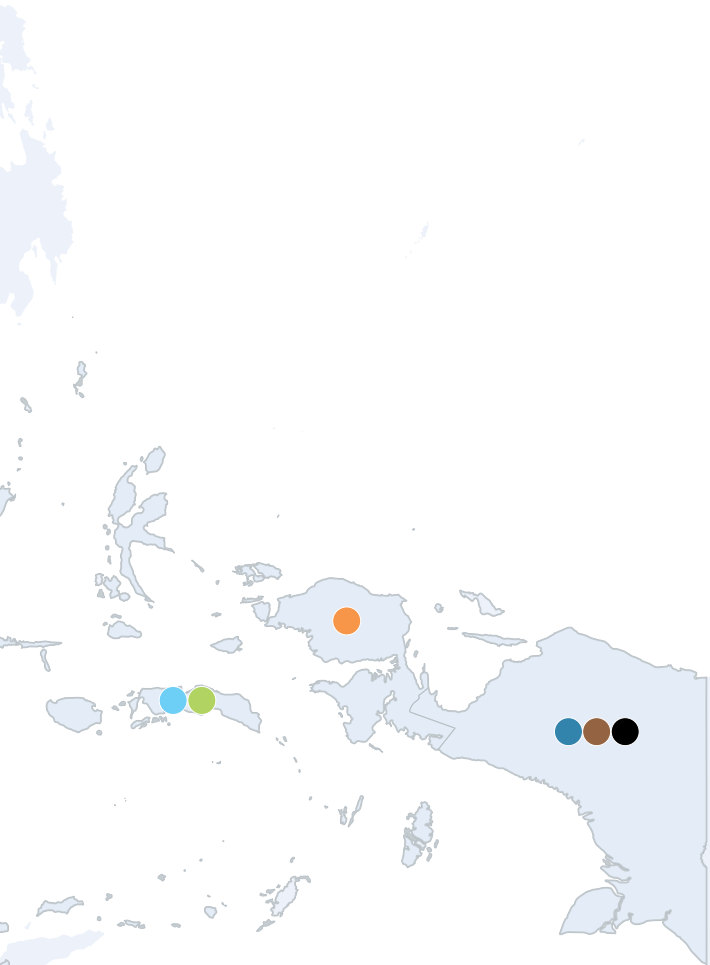
2020, including the African Forest Landscape Restoration Initiative (AFR100), the Bonn Challenge, the Convention on Biological Diversity Aichi Targets and Initiative 20x20.

To help nations meet their restoration targets, CIFOR is working on two main areas: forest landscape restoration and building national and local capacity in forest management.

Research priority

- Putting forest landscape restoration into practice

CIFOR has research projects underway in 19 provinces across the Indonesian archipelago



- **Haze crisis:** Mapping peat fires to uncover socioeconomic drivers of recurrent fires, finding solutions to prevent future fire and haze crises
- **Climate change:** Strengthening mitigation and adaptation efforts, supporting REDD+ implementation for efficient, effective and equitable outcomes
- **Rural livelihoods:** Improving production of timber and non-timber forest products for smallholders and strengthening marketing strategies and access
- **Trade and investment:** Harmonizing large-scale land investments in oil palm, timber and mining with climate change mitigation, conservation, food and energy security, and poverty reduction goals
- **Tenure:** Strengthening tenure security for the well-being of forest-dependent communities
- **Food and nutrition:** Understanding the contribution of forests and trees to food and nutritional security
- **Sustainability:** Improving sustainable forest management by incorporating ecosystem services into Forest Stewardship Council (FSC) certification
- **Governance:** Integrating law enforcement approaches and tracking money flows to curtail forest-related crimes
- **Gender:** Integrating law enforcement approaches and tracking money flows to curtail forest-related crimes

INVESTING IN INDONESIA

Although CIFOR's mandate is global, Indonesia has always enjoyed a significant share of the institute's investments in research and personnel.

\$101.93 million



**CIFOR research investments
in Indonesia 2003-2017**

120+

forestry-related research projects
in Indonesia since 1993

Assessing the contribution of CIFOR's research in Indonesia

CIFOR's work seeks to influence complex social, economic, ecological systems in ways that lead to a more equitable and sustainable future.

The solutions to the challenges the world faces are not purely technical; they involve multiple stakeholders and multiple levels of governance.

To be effective, research-for-development needs to involve stakeholders beyond the research world, cross the boundaries that has separated research disciplines in the past and build the capacity of the producers and users of research.

By studying how scientific research is equipping decision makers to make informed choices, CIFOR is able to learn from experience and adapt our research designs, outreach and capacity building strategies.

To enable CIFOR to learn effectively from its work, research teams:

- develop specific, testable hypotheses at the project level that explains how they expect research to influence knowledge, behavior, decision making processes, practices and ultimately influences social and environmental outcomes
- apply a suite of practical tools and approaches to monitor tangible and intangible outcomes and impacts

- empirically assess how CIFOR contributed to these outcomes and whether our hypotheses were correct
- use these lessons to inform organizational strategies

In Indonesia this approach has been used to design and monitor over 25 individual projects and systematically assess the influence of six research programs since 2012.

These studies have found that CIFOR's work has provided the scientific basis and conceptual framing for national and sub-national fire prevention policies, equipped small-scale furniture producers with skills and information to foster small business growth, enhanced national policy actors, strengthened local communities and industrial players understanding of sustainable wetlands management and nurtured more sophisticated understandings of complex socio-economic interactions around gender roles, rights and tenure from local to national levels.



A JOURNEY

MAY
CIFOR was established as a global center of excellence in forestry research.

DECEMBER
U.N. Framework Convention on Climate Change Conference (UNFCCC) of the Parties (COP) 13, Bali: "REDD" is launched; CIFOR holds Forest Day 1.

SEPTEMBER
Indonesia pledges to reduce emissions by 26% by 2020 (41% with global assistance).

CIFOR and FORDA launch REDD+ Indonesia website, monthly e-newsletter and four-year capacity-development initiative

MAY
Indonesia imposes two-year moratorium on new forest concessions. CIFOR calls for the protection of 46.7 million ha of secondary forests.

SEPTEMBER
CIFOR holds Forests Indonesia conference.

1993

1997

2007

2008

2009

2010

2011

FEBRUARY
CIFOR moved to 10 hectares of forestland in Bogor donated by the government of Indonesia.

JULY
CIFOR launches Global Comparative Study on REDD+

NOVEMBER
CIFOR publishes Moving ahead with REDD: Issues, Options and Implications.

JANUARY
Conducted in partnership with Indonesia's ministries of forestry and finance, CIFOR's analysis provided valuable lessons for the financial governance of potential REDD+ funds.

MAY
Indonesia signs Letter of Intent with Norway and establishes the REDD+ Task Force. When officials in Jakarta and Oslo were negotiating an agreement in which Norway would provide up to US\$1 billion to help Indonesia protect its forests, both sides came to CIFOR for research and advice.

CIFOR was established with a mission to bring scientific knowledge to bear on major decisions affecting the world's tropical forests and the people who depend on them and become a global center of excellence in forestry research.

REDD+ Task Force releases REDD+ National Strategy

DECEMBER: UNFCCC COP17: CIFOR launches interactive online map showing data on over 340 REDD+ and forest carbon projects in 52 countries (44 in Indonesia).

MAY

CIFOR joins technical committee to inform policy makers in the preparation of Indonesia's Forest Reference Emissions Level report - to be submitted at UNFCCC COP 20

OCTOBER

REDD+ Agency seeks CIFOR's assistance on a policy paper for its 'Blue Carbon' initiative.

APRIL

CIFOR and MoEF's Research, Development and Innovation Agency (FOERDIA) extend their partnership, in the form of a Brown Bag discussion.

The 3rd Asia-Pacific Rainforest Summit (APRS), hosted by the Indonesian government with the support of the Australian government and in partnership with CIFOR. More than 1,200 participants from over 40 countries participated in the event that took place in Yogyakarta, Indonesia.

2012

2013

2014

2017

2018

SEPTEMBER

Indonesian REDD+ Agency is established.

CIFOR contributed to strengthening the ISPO standards. CIFOR helped develop the 'Grand Design for Fire Prevention 2017-2019' initiated and led by Indonesia's National Development Planning Agency (BAPPENAS), as well as the "Standard for Fire Prevention" initiated and led by the Coordinating Ministry for Economic Affairs (CMEA).

DECEMBER

CIFOR publishes Transforming REDD+: Lessons and new directions

MANGROVE AND PEATLANDS

MORE THAN MEETS THE EYE

Why some of the most carbon-rich ecosystems are underappreciated

Wetlands, including peatlands and mangroves play a critical role in climate change mitigation and adaptation. They are an essential resource for livelihoods and home to many of the world's threatened species, including the Sumatran tiger.

However, draining, clearing and burning of Indonesian peatlands for agriculture and other purposes are ongoing at an alarming rate.

- CIFOR found that over the past three decades, peat decomposition and peat fires have contributed to over 50% of Indonesia's emissions.
- Big fires in the months of September and October during El-Nino year in 2015 caused huge daily emissions of 11.3 Tg CO₂-eq., larger than the emissions from fossil fuels of 28 European Union countries combined of 8.9 Tg CO₂-eq.
- Due to more frequent and intense El Nino events, CIFOR suggests including fire emissions in the development of future forest reference emission levels (FREL).

Indonesia is home of almost a quarter of the world's mangroves. CIFOR scientists have long ventured into the remote mangrove forests along Indonesia's coasts. Pivotal findings from these research activities have major implications for national and global climate change policies.

- Mangroves – one of the most carbon-rich ecosystems in the world, store more than 1,000 metric tons of carbon or three to five times as much carbon per hectare in compared to upland tropical forests. Most of it (80%) is stored in the soil.
- Indonesia is experiencing a very high rate of mangrove destruction due to aquaculture development. The rate of mangrove loss is 6% of the national deforestation but contributes 30% of the national land-based emissions.
- At the Blue Carbon Summit in July 2018, CIFOR and partners suggested to the government that they include mangroves, known as coastal blue carbon, in the revised nationally determined contributions (NDCs) stipulated under the Paris Agreement.



Mangroves protect Indonesia's coastlines from storm surges, sea-level rise and tsunamis. They support coastal fisheries and enhance tourism.



One quarter of the world's mangroves line Indonesia's coastlines



Potential reduction of Indonesia's carbon emissions through mangrove conservation



Indonesia's mangrove forests lost per year



FOR PEAT'S SAKE: THE FACTS

WHAT IS PEAT?
Peat is made up of partly decomposed vegetation and is formed over centuries in anaerobic, waterlogged conditions.



PEAT HAS BEEN ON OUR PLANET FOR AROUND 360 MILLION YEARS.



WHERE IS IT FOUND? Peat exists in a variety of climates around the world.



from tropical rainforests;



to coastal areas;



to high altitudes;



to permafrost regions towards the poles, where soil has been frozen year-round for at least two years.

68% of tropical peatlands are found in Southeast Asia

Countries with large stores of peat include...



Indonesia, Peru, Democratic Republic of the Congo

WHY ARE PEATLANDS IMPORTANT?

Peatlands are disproportionately important to the world's climate. They cover around **3-5%** of the earth's surface, but are home to more than **30%** of carbon stored in soil worldwide.


Estimates suggest peatlands contain twice as much carbon as is found in all the world's forests...

Carbon 2x

...and four times as much as the atmosphere. Peatlands in tropical regions store the most carbon.

People around the world also depend on peatlands for their livelihoods and they are important sources of food, water, and biodiversity, including hosting endangered species like orangutans and the Sumatran tiger. Healthy peatlands can help prevent droughts, floods and intrusion of salt water into agricultural areas.

FUN FACT
Peat is used to dry malt barley for whiskey distilling. It gives whiskey its distinct smoky flavor.




FUN FACT
The **Tollund Man**, a mummified corpse from the 4th century BC, was discovered buried in a peat bog in Denmark. His remains were so well-preserved that he was mistaken for a recent murder victim.



WHY ARE PEATLANDS UNDER THREAT?

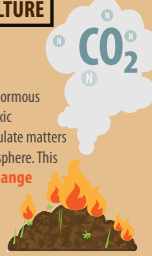
In the northern hemisphere, permafrost is thawing and causing peat to dry out. In tropical areas, peatlands are being drained, cleared and set alight to make way for agricultural plantations that produce palm oil and wood pulp.

In the peatlands of Malaysia, Sumatra and Borneo alone, forest cover fell by more than half between **1990 and 2010**: from **77%** to **36%**.




PEAT FIRES: MAKING WAY FOR AGRICULTURE

When peat is set alight, enormous levels of carbon dioxide toxic compound and fine particulate matters are emitted into the atmosphere. This contributes to **climate change** and raises serious **public health concerns**.



ESSENTIAL FACT

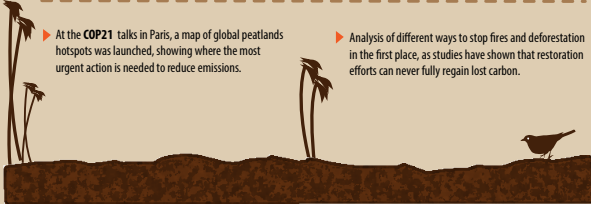
As peatlands are such incredible carbon stocks, they pose a great risk for contributing to climate change: the **15%** of peatlands that have been drained contributed **5%** of total anthropogenic CO₂ emissions.



WHAT IS BEING DONE TO TURN THIS AROUND?

Cutting carbon emissions from peatlands is an essential part of meeting vital environmental targets like the **Sustainable Development Goals** and the **Paris Agreement**. Several international, regional and country-level efforts are underway to protect and restore peatlands, including

- ▶ The **Global Peatlands Initiative** is led by top experts and institutions to save peatlands and to prevent carbon from being emitted into the atmosphere.
- ▶ In Indonesia, the Government has set up the **Restoration Agency** and has pledged to restore two million hectares of peatlands by 2020.
- ▶ At the **COP21** talks in Paris, a map of global peatlands hotspots was launched, showing where the most urgent action is needed to reduce emissions.
- ▶ Analysis of different ways to stop fires and deforestation in the first place, as studies have shown that restoration efforts can never fully regain lost carbon.



FOREST FIRES

UNDERSTANDING THE COMPLEXITY

Preventing future destructive fires

For more than 20 years, Indonesia has borne the brunt of recurring forest and land fires, leading to economic and health losses that affect millions of people in the region.

A big fire event that caught global attention occurred in 1997, releasing **more than 4 Gt of CO₂** to the atmosphere. Damages suffered were conservatively estimated at around **US\$3.5 billion**.

As recently as 2015, another large fire event spread over an area of around 2.6 million hectares and choked the region for six months from June to December. The World Bank estimated damages related to various aspects of social, health and economic losses to have reached **US\$16.1 billion**.

An understanding of the on-the-ground dynamics that cause fires in Indonesia is crucial in preventing future detrimental fire events. CIFOR's research and activities have encouraged the Indonesian government to place fire prevention strategies into their agenda.

CIFOR and the University of Riau examined how landscape transformation has taken place, and the role of fire in its transformation. The study also analyzed the costs and benefits of fires and how these are distributed among the actors involved.

One of the most influential contributing factors was public pressure for clear solutions and punishment for those responsible for the fires, especially corporate actors.

In response to demands and pressure from the public, the government established the Peat Restoration Agency (BRG), tasked to restore approximately 2 million hectares of peatland and to protect them from further burning.

Results of the study were disseminated through various seminars and attracted the attention of other stakeholders and the mainstream national and international media as fire continued to occur during 2015, and less in 2016, 2017 and 2018.

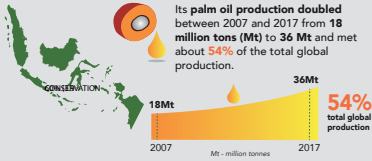
However, the study was highlighted in the media again as concern about forest fires made it to the headlines during the Asian Games in September 2018 in Indonesia.

CIFOR continues to work in fire prevention and peatland restoration, covering aspects of policy, economy and livelihoods of local communities to ensure fire and haze will be less and less in the future.



OIL PALM AND ECOSYSTEM SERVICES UNDER DIFFERENT LANDSCAPE MANAGEMENT SCENARIOS

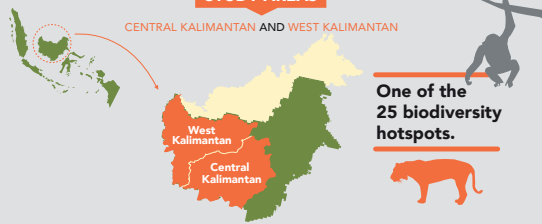
Indonesia is the principal producer and exporter of palm oil to global markets.



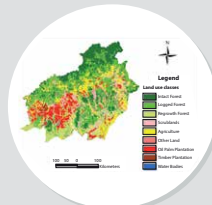
In 2015, oil palm plantations accounted 6% of Indonesia's total area.



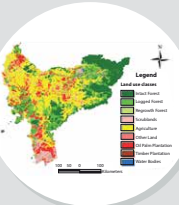
STUDY AREAS



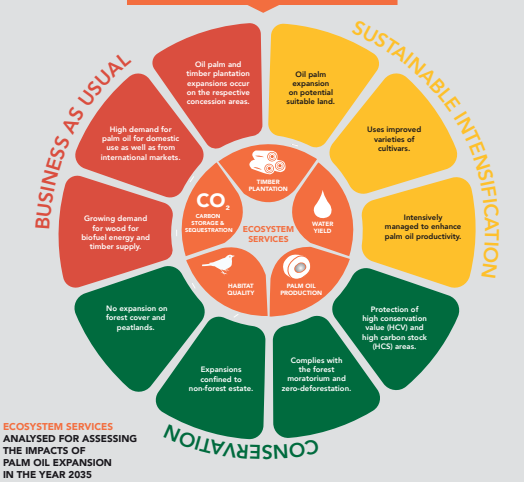
CENTRAL KALIMANTAN



WEST KALIMANTAN



FUTURE OIL PALM SCENARIOS



BUSINESS AS USUAL

CENTRAL KALIMANTAN



Oil palm plantations expand by 2.10 Mha to 3.58 Mha, enveloping over 23% of the province.



WEST KALIMANTAN



Oil palm plantations increase by 3.3 Mha to a total area of 4.8 Mha, covering over 32% of the province.



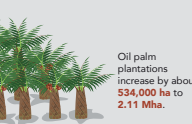
CONSERVATION

CENTRAL KALIMANTAN



Over 13.7 Mha of land is excluded from the future expansion of oil palm and timber plantations.

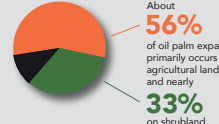
WEST KALIMANTAN



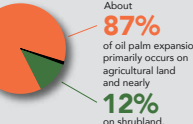
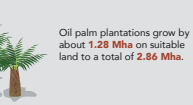
Over 9.63 Mha of land is excluded from the future expansion of oil palm and timber plantations.

SUSTAINABLE INTENSIFICATION

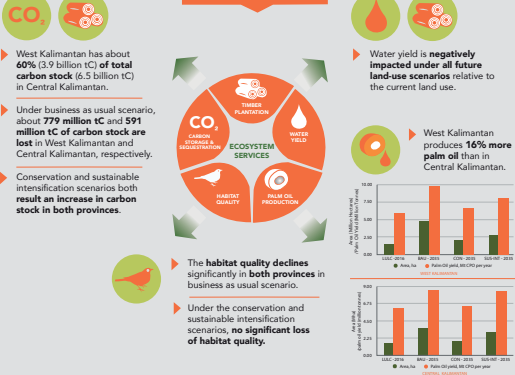
CENTRAL KALIMANTAN



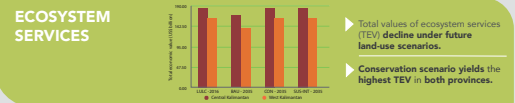
WEST KALIMANTAN



KEY FINDINGS



ECOSYSTEM SERVICES



PAVING THE ROAD TO TENURE SECURITY

In the effort to bring justice to forest resources utilization, the Indonesian government through the Nawacita or nine priority agenda, launched an ambitious plan to distribute access to 12.7 million hectares of state forests to forest dependent communities by 2019.

The reform agenda, targeted to provide better livelihood options and economic benefits to forest farmers without permits to work in forests, is implemented by giving partial or full rights to the community to manage the forest under social forestry schemes.

CIFOR led a Global Comparative Study on Forest Tenure Reform (GCS-Tenure) in Indonesia, Peru and Uganda, to investigate how forest tenure reforms are implemented, and what the outcomes are for tenure security. In Indonesia, research is ongoing in Lampung, Kalimantan and Maluku. The study found that granting communities the right to manage state forests through social forestry programs could have positive outcomes for tenure security which improves the the community livelihood, better forest condition and sustainability while reducing land conflicts.

Currently, a number of constraining factors keep the social forestry reform process progress slower than planned. These factors include lack of budget to implement reform for the community and assistance provider groups. Insufficient information on social forestry and the dissonance with existing local practices caused misperception at the community level. The direct clash between limited recognition of indigenous people's rights to their ancestral land and overlapping claims to forest resources further complicate matters and contribute to the slow reform process.

The GCS-Tenure study provided evidence to decision makers that successful implementation of the forest reform has given tenure certainty for forest-dependent communities. It also has increased their income and improved forest condition. However, these positive impacts were only found in areas where local government or assistant groups provided support to the community.

Lampung is a pioneer of social forestry in Indonesia, having implemented versions of the scheme for almost two decades. Since the launch of the program in 2014, only a few locations readily show successes, including the leading case of Lampung.

As of mid-2018, social forestry permit distribution had only reached 1.75 million hectares or 15% of the overall target.



LANDSCAPE APPROACH

OPERATIONALIZING THE LANDSCAPE APPROACH IN INDONESIA

Facilitating integrated and sustainable landscape-based forest management from a socio-economic and policy framework perspective

To address the global challenge in operationalizing the landscape approach, CIFOR has implemented two complementary research projects that foster stakeholders involvement in developing an integrated management approach at the landscape level. Using the Participatory Action Research Approach emphasizing on evidence-based policy advocacy, watersheds are used as the workable landscape unit of the analysis for green development.

A lack of integrated planning at the landscape level based on a workable unit of an ecosystem function has posed challenges in moving toward operationalising an integrated landscape management approach. Kanoppi, a research project collaboratively coordinated by CIFOR and ICRAF, acknowledges that an understanding and analysing how to implement complementary management of timber and non-timber forest products (NTFPs) at the landscape level is particularly important for poorer households.

The study reveals that there has been a lack of coordination and interconnectivity, both at the farm and landscape levels, between local government institutions, as well as with the private sector and community groups in developing the potentials of timber and NTFPs. The Grand Strategy Document (GSD) aimed to define clear role and responsibilities of different stakeholders (at the district, provincial, and national level); manage different forestry-based land uses; and ensure synergy of the various forestry and non-forestry land use programs.

The Integrated Watershed Management Approach (IWMA) Project identified watersheds representing the three major ecoregions of Indonesia (Western and Eastern Indonesia, and Wallacea), while focusing on building the capacity of local project partners. In Kapuas Hulu, West Kalimantan partnered with 'Yayasan Riak Bumi'; with 'Biangloe' and 'Tangga' in Bantaeng, 'Raowa' in Bulukumba in South Sulawesi. 'Balang Institute/OASE' has coordinated activities at the districts of Bulukumba and Bantaeng, South Sulawesi, and 'Teras' in Nipa-nipa forest in Southeast Sulawesi; and 'Samawa Center' in the Batulanteh watershed on Sumbawa Island, West Nusa Tenggara.

I welcome the development of this grand strategy to be implemented immediately. It may not be a legal product, but its substance is important to establish the legal regulatory framework.



The project aims to improve smallholders' livelihoods through landscape-scale management of the farm–forest interface with a focus on scaling up the adoption of improved production practices and value chains for timber and NTFPs. Landscape characteristics in three project sites to include:

- (1) East Nusa Tenggara: Mutis Timau forest landscape with three main watersheds located in three districts of Timor Tengah Selatan, Timor Tengah Utara, and Kupang in West Timor: Benain, Noelmina, and Noelfail.
- (2) West Nusa Tenggara: Watershed-based landscape, including six watershed priorities: Utan–synergy with Province, Moyo Hulu, Sumbawa, Panas, Nangagali, and Boal.
- (3) Yogyakarta and Gunungkidul: Mosaic forest landscape with intensive interface between community forest (*hutan rakyat*) and agriculture area in Gunungkidul District and surrounding areas.

Ir. Wiratno M.Sc,

Director of Social Forestry and Environmental Partnership, the Ministry of Environment and Forestry.

GENDER EQUALITY IN THE FORESTRY SECTOR

The forestry sector has much to contribute toward combating gender inequalities and enhancing the full enjoyment of human rights by women and girls.

Gender equality and social inclusion are interwoven into each of the main areas of CIFOR's research and engagement activities. We continue to focus on how gender equality and social inclusion affect or are affected by drivers of change in tree-based and forested landscape.

We have been furthering gender integration and gender-responsive research at CIFOR by deepening conceptual and methodological capabilities to undertake more nuanced and relevant gender analyses; and by synthesizing and disseminating current gender research, distilling lessons and disseminating them to a carefully targeted group of policy actors at national, regional and global policy levels.

CIFOR's researchers have contributed to global publications on sustainable development, such as through the 2016 UN Environment's Global Gender and Environment Outlook; and the 2015 IUCN and GGCA publication "Roots for the Future: the Landscape and Way Forward on Gender and Climate Change."

As one of the countries leading the way in the design and implementation of REDD+, Indonesia will now be fully implementing REDD+ policies and activities. However, there is a growing concern globally that if REDD+ is not implemented in a socially sensitive manner, it may risk reinforcing the societal and institutional structures that are already marginalizing women.

CIFOR and the Ministry of Women Empowerment and Child Protection prepared a joint policy brief to provide considerations for mainstreaming gender concerns into REDD+ and the forestry sector in Indonesia.



FOOD SECURITY

FORESTS VITAL FOR FOOD SECURITY

Forests, trees, and agroforestry play important roles in food security and nutrition. However, this is still not commonly reflected in national development and food security strategies. Much of the current discourse on food security is focused on increasing and expanding agricultural production mainly of staple crops. The emphasis on production alone is not sufficient to guarantee future food security and can even be damaging to nutrition if forests and complex landscapes are replaced with monocultures of staple crops. Healthy diets consist of more than just calories: micronutrient-rich foods like fruits, vegetables, meat, fish, and legumes are essential for living long healthy lives and for child growth and development.

The U.N. Food and Agriculture Organization estimates that between 60 to 80% of food in the tropics is grown by smallholder farmers. Growing a diversity of crops in diverse landscapes buffers households against economic and environmental shocks and also results in more diverse diets. Dietary diversity is an important indicator of good nutrition.

Natural forests, which support vital ecosystem services such as pollination services, soil nutrient cycling, and water retention can make agriculture more productive and more sustainable. Thus forests are important both for direct access to wild foods in some landscapes like game meat, fish, and wild fruits, but also indirectly through ecosystem services for food production.

CIFOR scientists have been investigating the links between forests, food and nutrition since 2006. In 2011, CIFOR scientists, led by Terry Sunderland edited a special review of International Forestry Review entitled "Forests, Biodiversity, and Food Security". CIFOR scientists have since published several papers exploring these connections using empirical data, which focuses on linking diets to forests in Indonesia. CIFOR scientists have also been involved in high level expert panels which link research on forests and food security to policy.

In 2016 they began a research project in Indonesia which investigates the impacts of conversion to oil palm on children's diets in West Kalimantan and Papua.

More evidence is required on the contribution of forest-based ecosystem services to ensure that forests and multifunctional landscapes remain on the agenda of policymakers and practitioners in conservation, agriculture and nutrition. CIFOR scientists, along with partners and other researchers are building up this evidence base while engaging with global and national policymakers to help formulate evidence-based policies that are good for diets and good for the planet.

Q We need to provide evidence that shows how forests and multifunctional landscapes are important for diverse diets before they are replaced with monocultures of rice, maize, and oil palm in the name of food security **Q**

Amy Ickowitz
CIFOR scientist

Q We need to change our global food system, make it more sustainable, more environmentally friendly, focus on nutrition and promote dietary diversity **Q**

Terry Sunderland
CIFOR Senior Associate



CAPACITY DEVELOPMENT

COMMITMENT TO CAPACITY DEVELOPMENT

Forest Fellowship Programme, MSc scholarships

The Center for International Forestry Research (CIFOR) and the USAID provided master's degree opportunities for 25 highly qualified Indonesian candidates to study forest and biodiversity conservation, natural resource management and related disciplines in the United States.

The fellowship program forms the capacity development component of a CIFOR research program funded by USAID. CIFOR will match qualified candidates with participating U.S. university partners, and assist candidates with various aspects of the university application process. The two-year fellowship covers tuition fees and living and travel expenses, as well as opportunities to carry out field research in Indonesia linked to CIFOR projects.

“The program has been great for me. I learned many new things, new theories, new paradigm, new methods and even new perspectives about research in human dimension of forestry and environmental issues. I will collect data and work with indigenous community in West Borneo, about traditional agricultural practices and fire risk behavior. I would like to know about their mental models how they make decisions about alternative livelihoods.”

Willy Daeli

Master student USAID-CIFOR fellowship program, University of Florida

“I would like to learn more about community and policy especially about tropical forest. This opportunity is great for me. I feel so grateful because I meet people from around the world. I get to learn from other disciplines and got the opportunity to exchange knowledge with them, especially people from Latin America who are also studying forestry because we have similar forest there. The problem, the challenge that they encounter and also the solution, so I can learn from them and compare it with what is happening in Indonesia.”

Metia Lembasi

Master student USAID-CIFOR fellowship program, University of Florida



CAPACITY DEVELOPMENT

RESEARCH IN BIOENERGY DEVELOPMENT

In April 2018, CIFOR signed a memorandum of understanding with Clean Power Indonesia (CPI), the originators of “Listrik Gotong Royong,” bamboo-based biomass power generation projects for and by community users. CPI is focused on expanding biomass energy development and usage in Indonesia and bringing renewable energies to the most remote places in Indonesia. CPI brought electricity to the remote villages of Siberut, but look to expand with CIFOR.

One of the first activities CPI would like to explore with CIFOR under the MOU is “restoration through rejuvenation.” The restoration of degraded land by planting bamboo, a strategic resource native to Indonesia, also helps with soil conservation and other environmental services. Using bamboo is a sustainable option due to its high carbon sequestration potential and is a promising resource, which enables isolated rural communities to mitigate and adapt to the adverse effects of climate change.

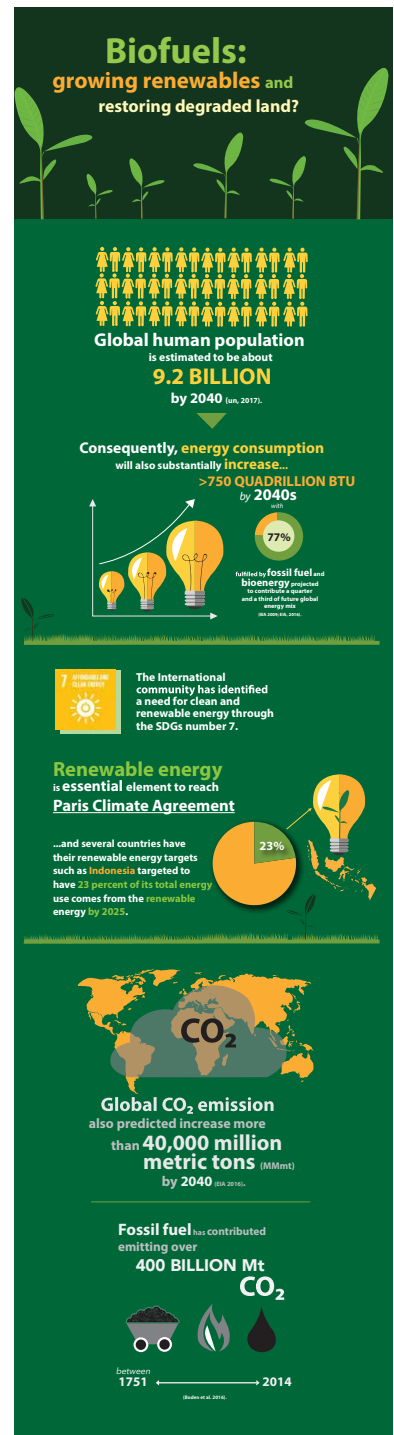
In addition to building biomass potential, the MOU will allow CIFOR to help CPI to monitor livelihood improvements on economic, social and political levels in areas after receiving bamboo biomass power.

In July 2018, CIFOR signed an MOU with Sriwijaya University in South Sumatra, to explore opportunities to restoring degraded peatlands through the paludiculture technique in Sumatra.

As one of the leading institutions in the province, Sriwijaya University and CIFOR will collaborate on researching what species can be cultivated successfully on certain types of degraded peat lands to restore them into sustainable forest and produce biomass and bio-oil.

Previously, CIFOR had worked together with Sriwijaya University in media workshops, events such as the Global Landscapes Forum Peatlands Matters and the Asia-Pacific Rainforest Summit, and the mentoring of local and international masters degree students.

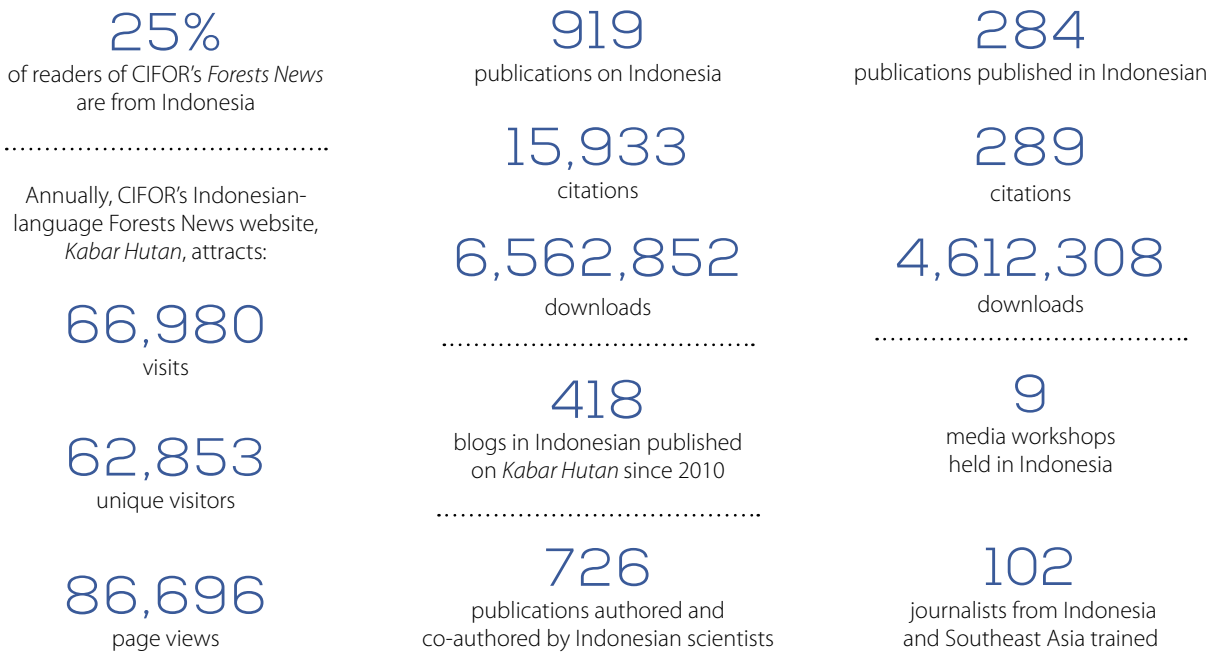
The National Institute of Forest Sciences (NIFOS), Republic of Korea, currently funds CIFOR's bioenergy research.



A WEALTH OF INFORMATION ON FORESTRY

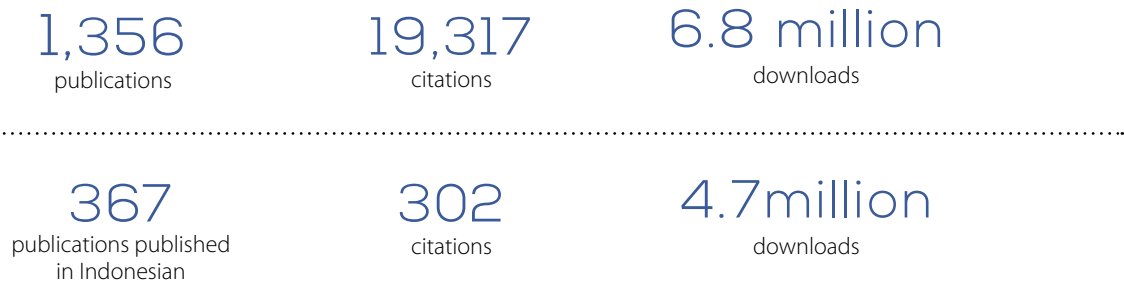
CIFOR works to ensure its published findings on Indonesia's forests and people reach the widest audience possible, including decision makers and local partners, to support evidence-based policy and practice.

Outreach and social media



Publications

Until 2018



Popular publications on Indonesia (2014-2018)

Creating independent, productive and sustainable oil palm small-holder farmers in Indonesia: a small holder farmers typology development perspective (in Indonesian) (2016):

20,236
downloads

The challenge of establishing REDD+ on the ground: Insights from 23 subnational initiatives in six countries (2014):

8,914
downloads

Environmental valuation in Indonesia: Implication on forestry policy, legal responsibility and state loss estimation (in Indonesian) (2014):

8,137
downloads

Measuring carbon emissions (in Indonesian) (2014):

6,962
downloads

Social impacts of oil palm in Indonesia: A gendered perspective from West Kalimantan (2015):

6,819
downloads

Best five citations (2014-2018)

How are REDD+ proponents addressing tenure problems? Evidence from Brazil, Cameroon, Tanzania, Indonesia, and Vietnam (Sunderlin, et al., 2014):

160
citations

Improving educational quality through enhancing community participation: results from a randomized field experiment in Indonesia (Pradhan, et al., 2014):

135
citations

Major atmospheric emissions from peat fires in Southeast Asia during non-drought years: evidence from the 2013 Sumatran fires (Gaveau, et al., 2014):

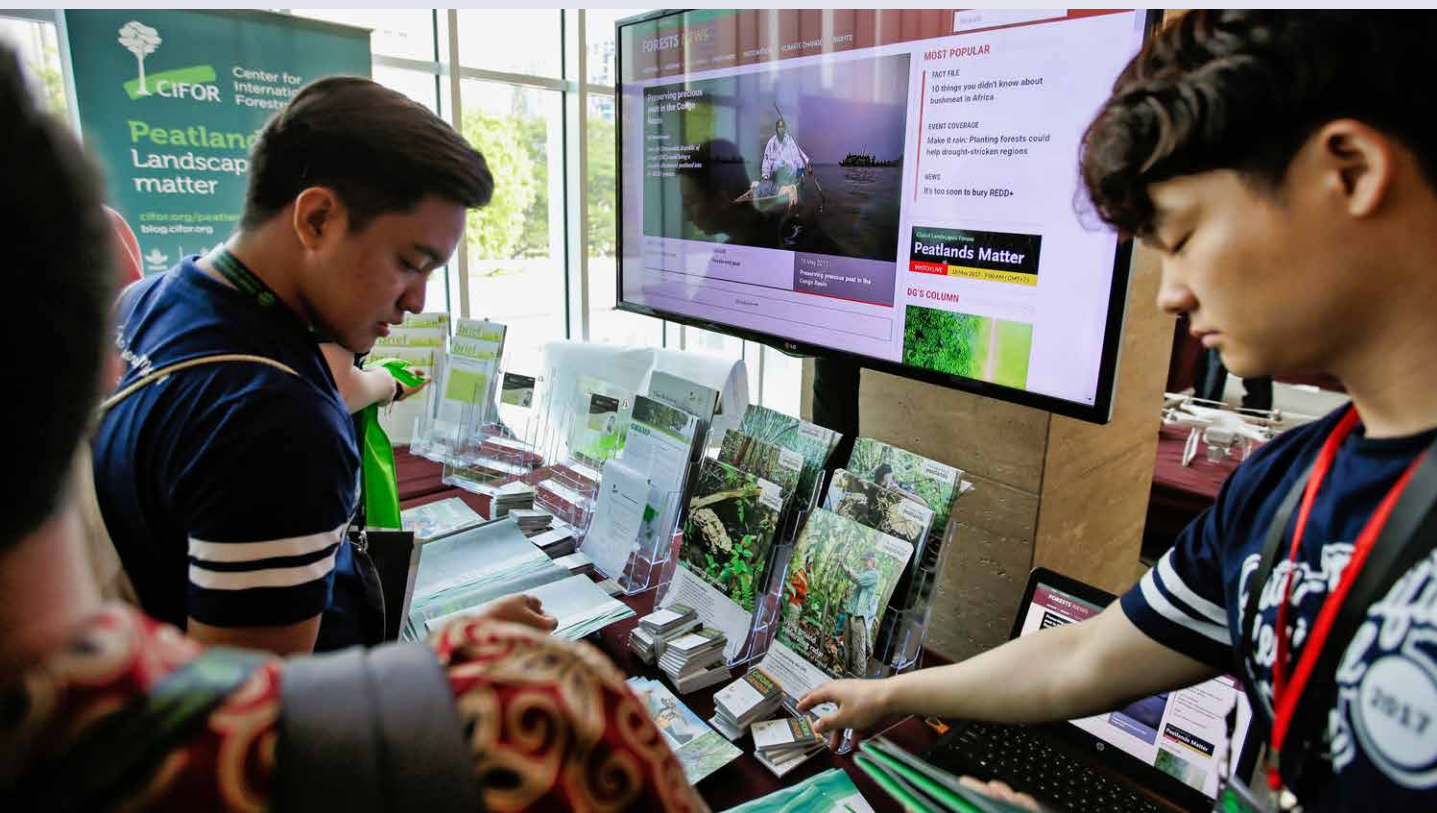
125
citations

The potential of Indonesian mangrove forests for global climate change mitigation (Murdiyarso, et al., 2015):

110
citations

Governing the design of national REDD+: an analysis of the power of agency (Brockhaus, et al., 2014):

88
citations



CIFOR's funding partners

CIFOR's work is possible thanks to the financial support of our funding partners and the collaboration of our strategic partners. We work closely with a range of local and international organizations and institutions to deliver research projects with the greatest potential impact. Governments, private foundations, international organizations and funds, universities and United Nations agencies, among others, support our work. CIFOR's top funding partners: CGIAR Fund Donors, European Union (EU), Norwegian Agency for Development Cooperation (NORAD), Australian Department of Foreign Affairs and Trade (DFAT)/Australian Aid, United States Agency for International Development (USAID), the German Federal Ministry for Economic Cooperation and Development (BMZ) and the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), Global Environmental Facility (GEF), International Fund for Agricultural Development (IFAD), Ministry for Foreign Affairs of Finland, Austrian Development Agency (ADA), UK Government, Department for International Development (DFID), French Global Environment Facility (FFEM), Swiss Agency for Development and Cooperation (SDC).

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RESEARCH
PROGRAM ON
Forests, Trees and
Agroforestry

The CGIAR Research Program on Forests, Trees and Agroforestry (FTA) is the world's largest research for development program to enhance the role of forests, trees and agroforestry in sustainable development and food security and to address climate change. CIFOR leads FTA in partnership with Bioversity International, CATIE, CIRAD, ICRAF, INBAR and TBI. FTA's research is supported by CGIAR Fund Donors: [cgiar.org/funders/](https://www.cgiar.org/funders/)

[cifor.org](https://www.cifor.org)

forestsnews.cifor.org



Center for International Forestry Research (CIFOR)

CIFOR advances human well-being, equity and environmental integrity by conducting innovative research, developing partners' capacity, and actively engaging in dialogue with all stakeholders to inform policies and practices that affect forests and people. CIFOR is a CGIAR Research Center, and leads the CGIAR Research Program on Forests, Trees and Agroforestry (FTA). Our headquarters are in Bogor, Indonesia, with offices in Nairobi, Kenya; Yaounde, Cameroon; Lima, Peru and Bonn, Germany.

