



WORKING TOGETHER
TO DEMONSTRATE THE
BENEFITS OF FOREST
CONSERVATION THROUGH
BETTER FOREST CARBON
MONITORING



Supported by:



Federal Ministry for the
Environment, Nature Conservation
and Nuclear Safety

based on a decision of the Parliament
of the Federal Republic of Germany

SUMMARY

2013



Thap Lan National Park, © Justin Foster / WWF-Thailand

TREEMAPS

TRACKING REDUCTIONS IN CARBON EMISSIONS THROUGH ENHANCED MONITORING & PROJECT SUPPORT

Enabling Thailand to realize the benefits of forest conservation through better forest carbon monitoring



**SINCE 1950,
THAILAND HAS
LOST OVER HALF ITS
NATURAL FORESTS.**

In the past 20 years, Thailand lost 577,000 hectares of forest, at an average rate of 0.15 per cent per year. While rates of forest degradation are not currently available, they are estimated to be substantial.

Millions of people in Thailand depend on forests for their livelihoods and the vital ecosystem services they provide, such as clean water, and preventing erosion and flooding. The loss of forests releases significant amounts of carbon into the atmosphere and threatens endangered wildlife including tigers, elephants, tapirs, clouded leopards and hornbills.

REDD+ – the UN initiative for reducing emissions from deforestation and forest degradation – offers an opportunity for Thailand to receive funding to conserve its forests. This will help to reduce carbon emissions, protect vital biodiversity and ecosystem services, and create sustainable livelihoods for many people.

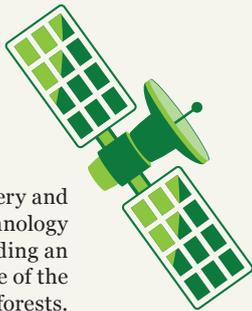
But to take advantage of REDD+ and other carbon finance opportunities, Thailand needs to be able to accurately measure and monitor the carbon in its forests.

WWF is supporting this through TREEMAPS (Tracking Reductions in carbon Emissions through Enhanced Monitoring and Project Support), with local partners including government, communities and academic institutions. By developing and sharing knowledge, skills and technology, the project will enable people in Thailand to maximize the benefits of managing forests sustainably.

WHAT WE ARE DOING

FOREST CARBON MONITORING

We're working with government and academic technicians in Thailand, to establish Thailand's first forest carbon basemap. Our key government partner in Thailand is the Department of National Parks, Plant and Wildlife Conservation (DNP). The forest carbon basemap will form the basis of a system for Measurement, Reporting and Verification (MRV) of forest carbon, an integral part of all REDD projects. Using cutting-edge technology will allow us to meet the highest level of detail and accuracy (Intergovernmental Panel on Climate Change (IPCC) Tier 3).



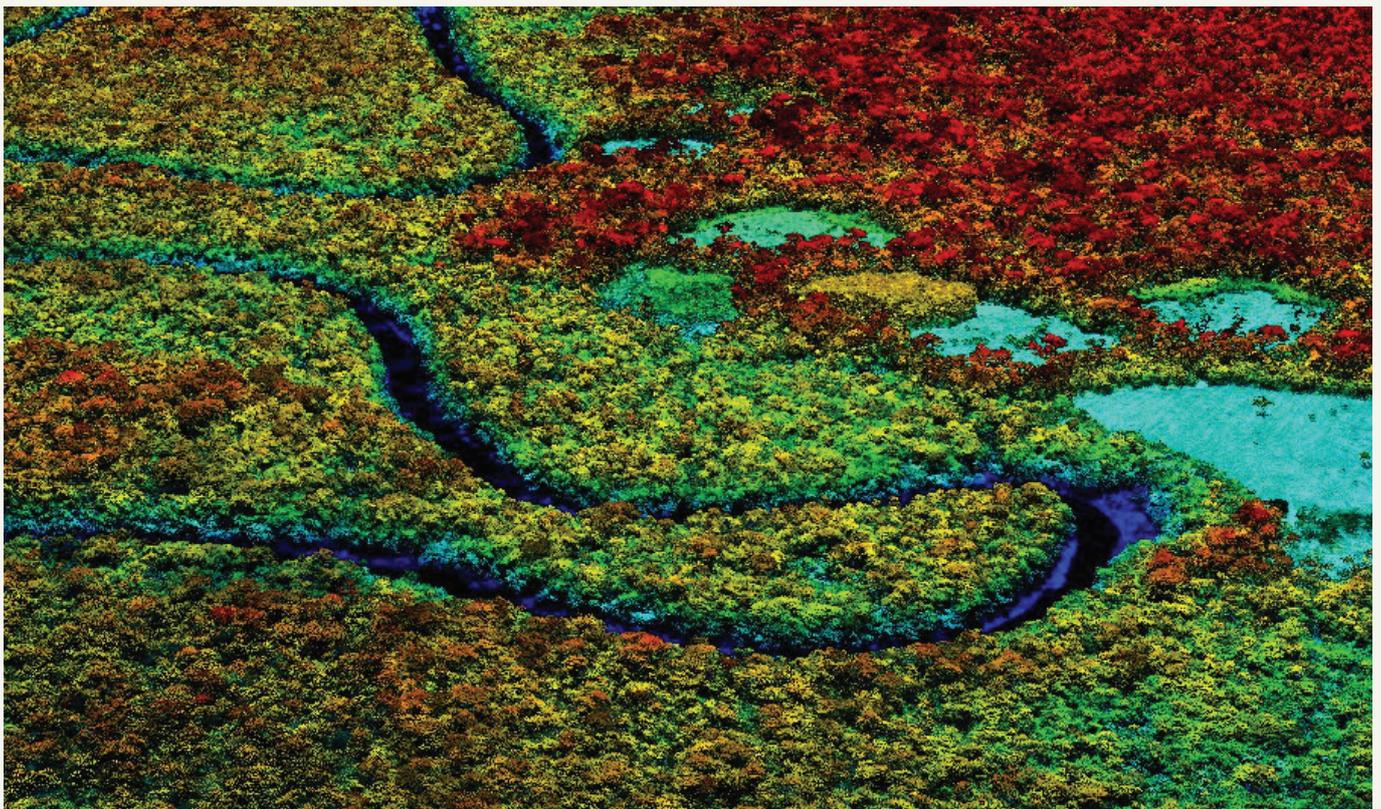
Satellite imagery and advanced technology are providing an accurate measure of the health of our forests.

Our approach combines data from several sources:

- **On-the-ground surveys** - vegetation plots, designed specifically for LiDAR, will be established in forest areas included in the survey.
- **Satellite imagery** – comparing our estimate of current carbon stocks with freely available Landsat images from previous years allows us to calculate Thailand's historic emissions from deforestation and forest degradation, against which future reductions can be measured.
- **LiDAR (Light Detection And Ranging) technology** – an airborne sensor that bounces laser beams off the foliage in the forest and the ground below, giving a highly accurate measure of ground topography and forest height and structure. LiDAR information will make future MRV more accurate and cost-effective.

Forest carbon monitoring will be an ongoing commitment, so it's important that people and institutions within Thailand are equipped to manage every part of it. We're collecting, processing and analysing all data within Thailand, in partnership with the Thai government and academic institutions. The Thai government will own the data and the goal is for it to be available to regional government offices and other stakeholders.

LiDAR – Light Detection And Ranging – is a laser scanning device, mounted on an aircraft, that collects data during aerial surveys to produce highly accurate 3D maps of the forest. This image depicts forests in eastern Columbia



RUNNING A SUB-NATIONAL REDD+ PILOT PROJECT

Management of forests and protected areas is decentralized in Thailand. That means local and regional structures and experiences will play an important role in running carbon projects and supporting national objectives.

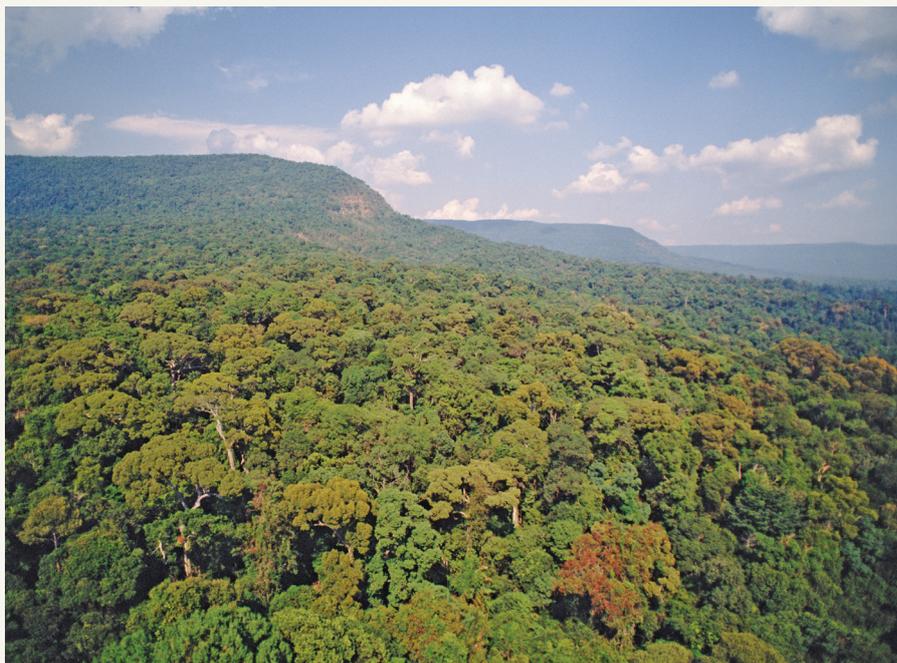
As understanding of REDD and related opportunities is generally low at this level, we're setting up Thailand's first REDD pilot project that will provide valuable experience and insights. Local stakeholders, including forest-dependent communities and local government, will have significant input into the design and running of the project.

As well as assessing drivers of deforestation and degradation, it will look at how to calculate the co-benefits from ecosystem services that forests provide, such as clean water and flood protection. Social and biodiversity safeguards will be built into the project design.

Our pilot site is the Dong Phrayayen Khao Yai (DPKY) Forest Complex in the northeast of Thailand. The area, which includes several national parks, is a UNESCO World Heritage Site. It contains globally important monsoon forest ecosystems and is home to more than 800 species of wildlife, including tigers, elephants and gibbons.

The area has suffered from deforestation, and continuing encroachment is threatening DPKY's World Heritage Site status. In 2011, UNESCO recommended setting up a REDD project, as one of several key recommendations, to counter this.

The pilot site will provide useful experience in a number of issues, including promoting cooperation between government agencies and local communities, planning for infrastructure development and protecting endangered species. We'll be documenting what we learn and sharing it at both national and regional level for further uptake.



Dry evergreen forest in Khao Yai National Park, part of the TREEMAPS project site

© naturepl.com / Thoswan Devakul / WWF-Canon

BUILDING CAPACITY

We want our project partners to be able to use and benefit from these activities. Lack of training and capacity is repeatedly cited as one of the biggest barriers to realizing the benefits of REDD in the Greater Mekong region. TREEMAPS aims to fill this gap by making capacity building central to every aspect of the project.

We're facilitating a number of activities to enable everyone from local communities to the Thai government project partners to make the most of new carbon financing models and the other benefits standing forests bring. These include:

- On-the-job training for all project activities, including using technology such as LiDAR and related information systems
- Training courses and workshops
- Study tours.

Activities have been designed to complement, contribute to and bring together other capacity-building efforts in the region.

SHARING KNOWLEDGE

We'll multiply the impact of TREEMAPS by sharing what we learn with other countries in the Greater Mekong region and internationally. We aim to make Thailand a knowledge hub for REDD, MRV for climate agreements and project design document (PDD) development.

Many of the concerns TREEMAPS deals with are relevant to REDD projects in other countries:

- Land tenure issues
- Biodiversity and social safeguards
- Carbon assessment and MRV challenges
- Payment structures and linking REDD projects to financing
- Co-benefits of maintaining carbon stocks
- Use of technology such as LiDAR.

We're sharing information through a number of regional platforms, and cooperate closely with all the Lower Mekong governments, bilateral and multilateral donors and other partners.

TREEMAPS is supporting Thailand to develop the capacity to measure and monitor change in forest carbon and to take advantage of the range of emerging forest carbon financing and benefit opportunities.

Current approaches to measuring forest carbon in Thailand aren't capable of delivering the level of accuracy required by REDD or by private sector voluntary carbon markets. As in many tropical countries, understanding of REDD, specialist skills and access to technology are lacking in many parts of Thailand. Additionally, policy and planning often fail to take account of the multiple values of standing forests – such as biodiversity conservation, ecosystem services and climate change mitigation.

TREEMAPS will support Thailand to achieve its REDD-readiness aims, and to continue to design, run and benefit from projects to manage forests sustainably.

	<p>The Department of National Parks, Wildlife and Plant Conservation, is a dependant department of the Ministry of Natural Resources and Environment.</p>
	<p>WWF's key partner within the Thai government for the project is the Department of National Parks, Wildlife and Plant Conservation (DNP).</p>
<p>Supported by:</p>  <p>Federal Ministry for the Environment, Nature Conservation and Nuclear Safety</p> <p>based on a decision of the Parliament of the Federal Republic of Germany</p>	<p>TREEMAPS is funded by the German government's International Climate Initiative (BMU-ICI). Additional funding comes from WWF-Germany and WWF-US.</p>

Find out more and view the latest project updates and resources at:

wwf.panda.org/greatermekong/treemaps

	<p>Why we are here To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature. panda.org</p>
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