



KEY FACTS ON THE URGENCY OF CLIMATE CHANGE

WHY DO CLIMATE, NATURE AND PEOPLE MATTER?

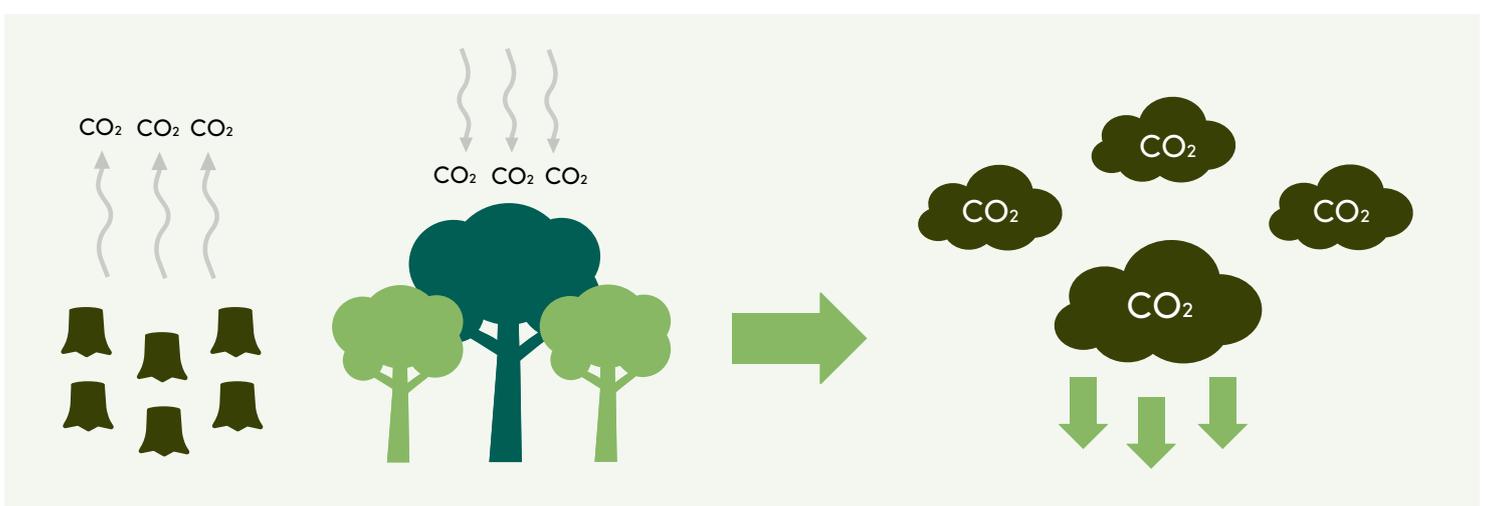
The climate is in crisis, and nature is responding with extinctions of faunal and flora species unable to adapt. We are a part of nature, and must work with it rather than against it, transforming destructive practices into creative solutions. The time to change is NOW.

And while the challenges are great, so must be the solutions: nature-based solutions. Here, CIFOR-ICRAF showcases some

of each – in particular, solutions developed by our research scientists in close collaboration with partners.

We encourage you to explore these solutions, assess them critically, and take action to implement those that resonate with you and your community.

ONE WORLD, ONE HEALTH. CLIMATE. NATURE. PEOPLE.



THE CHALLENGES AND SOLUTIONS

Challenge

If the Paris Agreement targets, countries will need to remove a billion tonnes of CO₂ from the atmosphere by 2025, and more than one billion tonnes annually thereafter. But the current pipeline of projects in development will remove only around 150 million tonnes of CO₂ by 2025 – well short of what's needed¹.

Solution

Nature-based solutions are effective ways to increase carbon sequestration and ensure sustainable economic development.

NATURAL CARBON SINKS



Wetlands

Wetlands, including peatlands, mangrove forests and seagrass meadows, are among the most carbon-rich landscapes on Earth, storing three-to-five times more carbon than other tropical forests².



Peatlands

Tropical peatlands are the most carbon-rich biome on Earth³. They cover only 3-to-5% of the Earth's surface but store over 30% of all soil carbon⁴.



Mangroves

In Indonesia alone, blue carbon could help reduce emissions by as much as 200 million tonnes of CO₂ annually – the equivalent of 30% of its emissions from land⁵.



Soil

By managing farmland soil better, the top 30 centimetres of soil could increase and store an extra 0.9 to 1.85 gigatonnes of carbon every year. This is equivalent to the carbon emitted by the global transport sector (1.87 gigatonnes)⁶.

HOW CAN WE APPLY NATURE-BASED SOLUTIONS?



Climate-smart agriculture

In Viet Nam, farmers using climate-smart agricultural methods increase their rice yields 9-15%, use 70-75% fewer seeds, 20-25% less nitrogen fertiliser and 33% less water. Many other countries also report that climate-smart agricultural methods reduce emissions by between 20 and 62%⁷.



Agroforestry

Sequestering an average of 8.4 tonnes of carbon per hectare per year, agroforestry could sequester eight billion tonnes annually across the globe – equivalent to 40% of a decade of fossil-fuel emissions from UK, Germany, France and Canada combined in the 2010s.^{8,9,10}



Renewable energy

Biomass, such as waste from forests and farms, can be used to generate energy without net contributions to global greenhouse-gas emissions¹¹.

Bioenergy can produce at least 25% of the global energy demand and contribute to the impact of climate change through reducing emissions in the energy sector¹².

SOURCES:

¹ <https://www.reuters.com/world/world-must-remove-1-bltn-tonnes-co2-by-2025-meet-climate-goal-report-2021-06-29/>

² <https://www.cifor.org/topic/wetlands-and-blue-carbon/>

³ https://www.cifor.org/publications/pdf_files/factsheet/6439-factsheet.pdf

⁴ https://forestsnews.cifor.org/49684/the-power-of-peatlands?fnl=en&utm_source=CIFOR+Website&utm_medium=Section&utm_campaign=Bioenergy-and-restoration

⁵ <https://forestsnews.cifor.org/62318/why-blue-carbon-needs-to-be-on-the-climate-agenda?fnl=>

⁶ <https://blog.ciat.cgiar.org/new-study-up-to-7-billion-tonnes-of-carbon-dioxide-can-be-removed-from-the-atmosphere-each-year-through-better-soil-management-on-farm-land/>

⁷ https://cgspace.cgiar.org/bitstream/handle/10568/34042/Climate_smart_farming_successesWEB.pdf?sequence=5

⁸ <https://www.sciencedirect.com/science/article/pii/S0167880919301835?via%3Dihub>

⁹ <https://www.sciencedirect.com/science/article/pii/S0167880917305297?via%3Dihub>

¹⁰ <https://forestsnews.cifor.org/64558/no-time-to-waste-tropical-forests-become-source-of-global-warming?fnl=>

¹¹ <https://www.cifor.org/feature/energy-from-forests>

¹² <https://www.cifor.org/knowledge/publication/7026/>

CIFOR-ICRAF

The Center for International Forestry Research (CIFOR) and World Agroforestry (ICRAF) envision a more equitable world where trees in all landscapes, from drylands to the humid tropics, enhance the environment and well-being for all. CIFOR and ICRAF are CGIAR Research Centers.

