What is

Carbon Offsetting?

A guide to credible climate finance and its role in the global transition to net-zero.

ecoact
an atos company

Contents

1. Why carbon offsetting is a vital tool in the climate change 'toolbox'

In parallel with deep decarbonisation efforts, voluntary carbon offsetting can support both carbon reduction and sequestration initiatives beyond a company's value chain.

In the face of climate emergency, it offers an opportunity to take immediate action to contribute to climate change mitigation and thus accelerate collective climate action.

For more than ten years, the carbon market and the mechanism of offsetting have evolved through a continuous process of development, feedback and improvement. Its complementary role to emission reduction efforts is the subject of scientific consensus. The Paris Agreement reminded us that global net-zero will not be achievable if we do not use every tool at our disposal - carbon offsetting is one of them. The Intergovernmental Panel on Climate Change (IPCC) highlighted in the last part of its 6th Assessment Report (AR6, April 2022) that solutions to remove carbon from the atmosphere are essential to offset residual emissions and achieve net-zero.

However, the complexity and evolution of voluntary carbon offsetting has led to some reluctance and even confusion. **This guide aims to help you better understand how voluntary carbon offsetting contributes to the goal of net-zero and the sustainable development objectives. It delves into the principles and necessary conditions to implement voluntary carbon offsetting rigorously, as a complement to, but not a replacement for, a science-based emissions reduction strategy.**

We will analyse voluntary carbon offsetting projects in detail, including the principles for their implementation and corresponding verification and certification. We also explain the **different types of projects, frameworks, and best practices that we encourage companies to adopt.**

Through our commitments, practices, and methods, we present how you can deliver a robust offsetting strategy as well as how to develop new methodologies and projects.

In addition to reducing greenhouse gas (GHG) emissions aligned with science and restoring and protecting carbon sinks within their value chain, such as rainforests and coastal mangrove forests, **voluntary carbon offsetting enables organisations to also finance projects with a high climate impact beyond their value chain.**

2. What is carbon offsetting?

Carbon offsetting is a mechanism used to finance greenhouse gas (GHG) emission reduction/avoidance or sequestration equivalent to the residual emissions of an organisation, business or territory beyond its value chain.

This financing is achieved through the purchase of carbon credits. One carbon credit equates to one metric tonne of reduced/avoided or sequestered carbon dioxide (CO_2) by the project financed through this mechanism.

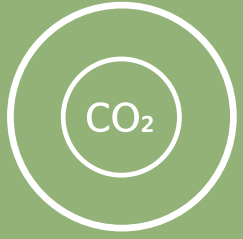
Once purchased, the credit is then retired through publicly accessible emission registries held by international standards and global exchanges. When a credit is used for offsetting, it becomes an offset, and the credit is permanently retired so it cannot be reused (for transparency and accountability, carbon credits are assigned serial numbers).

Carbon offsetting is effectively putting a price on carbon for organisations, which will push them to accelerate internal reductions, including supply chain emissions, justify investment into new low-carbon business models, and will ultimately demonstrate that business-as-usual is no longer an option.

Achieving net-zero emissions by 2050 on a global scale requires massive investment in biological or geological carbon sinks. Carbon offsetting plays an important role in the fight against climate change by **allowing funding to be directed to projects with high carbon reduction/avoidance or sequestration potential.**

Yucatán Peninsula, Mexico, where EcoAct is developing a mangrove restoration project with local partners

By driving finance to projects that reduce/avoid or sequester GHG emissions, **voluntary carbon offsetting becomes a key part of a comprehensive climate strategy**. It engages the organisation in climate action beyond its value chain.



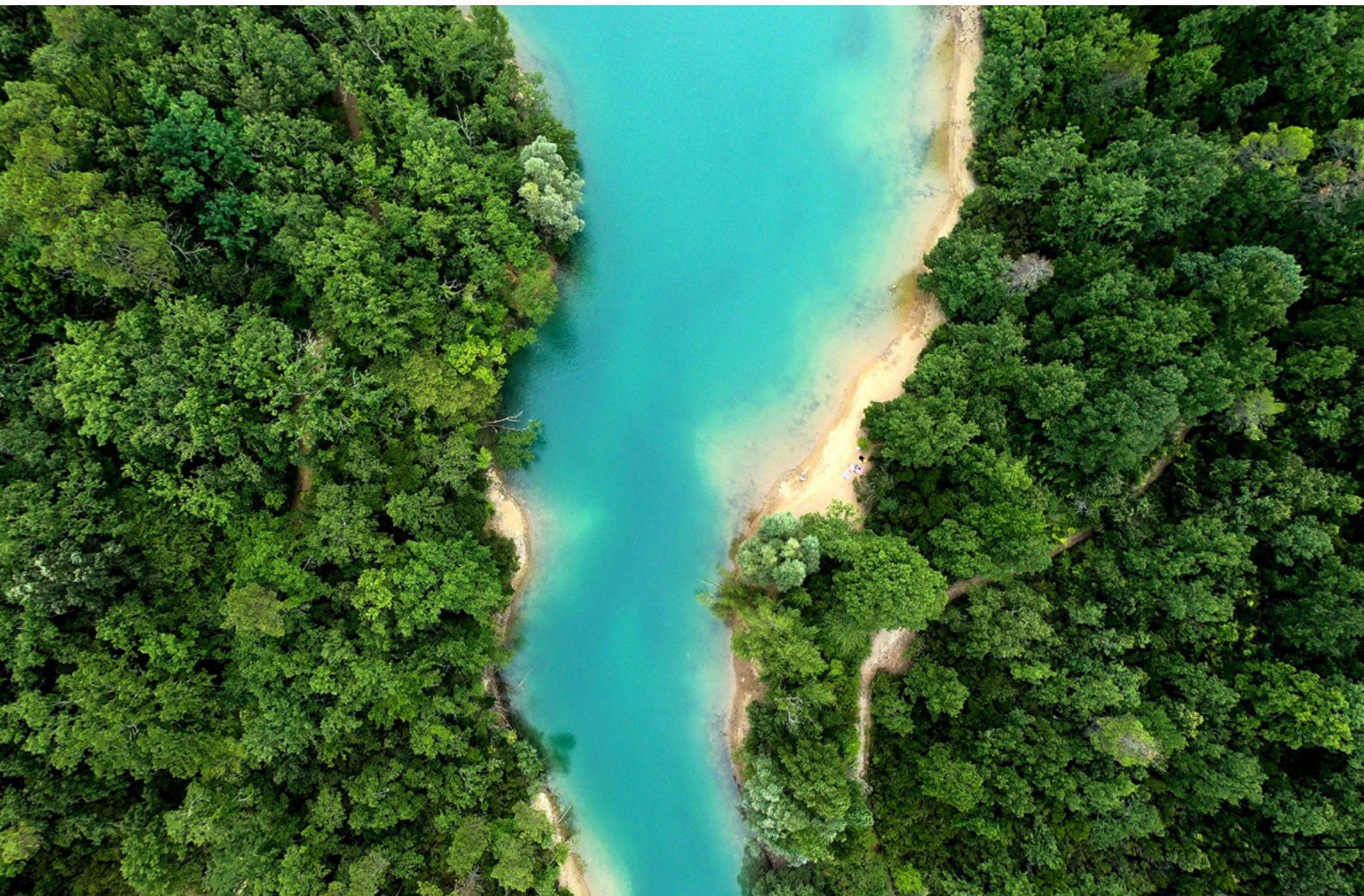
Voluntary carbon offsetting

Both private and public sectors engage with carbon offsetting for compliance or voluntary purposes, leading to two types of carbon markets: 1) compliance markets, where governments set up for example a carbon tax or an emissions trading scheme (e.g., ETS), and 2) voluntary carbon markets, where **companies that do not fall under any legislation opt to engage voluntarily to take responsibility for all their emissions now whilst creating added value to their customers and investors.**

Their motivations are diverse: to act on climate change; to create added value for their customers, investors or citizens; to anticipate future regulation, or to engage in a collaborative process with key stakeholders (e.g., employees, NGOs, media), etc.

Voluntary carbon offsetting therefore consists **of financing voluntary actions by purchasing carbon credits in the voluntary carbon market (VCM)**, facilitating a measured and verified reduction/avoidance or sequestration of GHG emissions elsewhere while supporting sustainable development, often in countries that need it most.

According to VERRA's Verified Carbon Standard (VCS), by the end of 2019, the VCM had reduced/avoided or sequestered over 608 million tonnes of CO_2e, which is the equivalent of more than 131 million cars taken off the road for a year.



3. How does carbon offsetting help us reach net-zero?

There is enormous pressure now from all angles to achieve net-zero as soon as possible. We are in a climate emergency and that requires urgent and ambitious action from business by every means possible.

Organisations cannot offset their way to net-zero. Net-zero is a long-term goal requiring deep decarbonisation of 90-95% of emissions and removal of the remaining 5 to 10% of residual emissions. In the near-term, organisations are encouraged to invest in carbon offset projects that reduce emissions outside their value chain to address the following global gaps:

• **Timing gap:** As a planet we must decarbonise as quickly as possible. Current planned action from governments around the world will lead to overshooting required timelines advised by the IPCC and climate science.

• **Ambition gap:** According to the Climate Action Tracker, all the global pledges and targets in existence will still lead to approx. 2.7°C of warming by 2100. Regarding policies on climate action in practice, it can lead to approx. 2.5°C – 3.5°C of warming.

• **Finance gap:** Governmental funding of low-carbon pathways are not enough on their own. The United Nations Environment Programme (UNEP) says the finance gap currently stands at USD 4.1 trillion. The private sector is therefore a critical tool in mobilising capital, and this must be utilised in an effective way.

Carbon offsetting plays a solid role in helping bridge these gaps, and while it should not be seen as the solution, it should be seen as a valuable means to finance sustainable development and support projects that are doing some vital work to preserve habitats, implement sustainable development and improve people's lives whilst eliminating some of our international carbon emissions.

Mangrove planters,
Deraytaw Myanmar Mangroves Project

Existing or developing international initiatives define the role of voluntary carbon offsetting in achieving net-zero emissions at the organisational level. These include the Oxford Principles for Net Zero Aligned Carbon Offsetting; the Science Based Targets Initiative (SBTi); the Integrity Council for the Voluntary Carbon Market (ICVCM); the Voluntary Carbon Markets Integrity Initiative (VCMI), and the ISO 14068 standard. The last two will release their corresponding publications in 2023.

For example, according to the Oxford Principles for Net Zero Aligned Carbon Offsetting, there are four key elements to credible net-zero aligned offsetting:

1. Prioritise reducing your own emissions first, ensure the environmental integrity of any offsets used, and disclose how those offsets operate.

2. Shift offsetting towards carbon removal and long-lived storage, where offsets directly remove carbon from the atmosphere permanently or almost permanently.

3. Support the development of net-zero aligned offsetting.

4. Adopt a credible nature-based approach to carbon offsetting, such as forest restoration.

Female-led WASH (Water, Sanitation and Hygiene) committee at a Water collection point, **Clean Water Ethiopia Project**

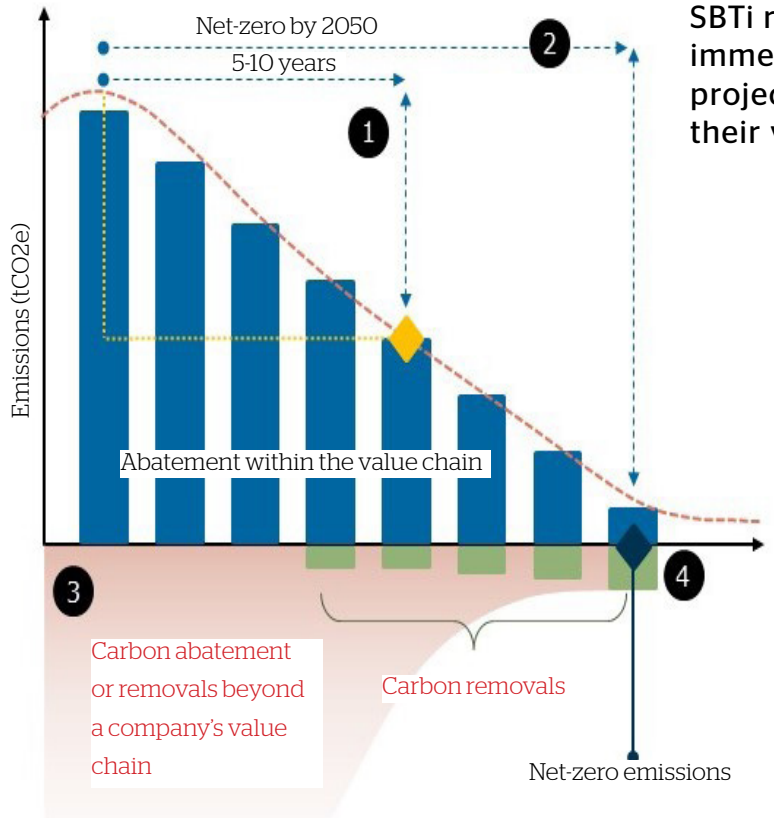
A strategic framework for business action: the SBTi's Corporate Net Zero Standard

In October 2021, the SBTi launched the Corporate Net-Zero Standard framework, in partnership with CDP, Global Compact, the World Resource Institute and WWF. The Corporate Net-Zero Standard is the world's first framework for corporate net-zero target setting in line with climate science. It includes the guidance, criteria, and recommendations companies need to set science-based net-zero targets consistent with limiting global temperature rise to 1.5°C.

The SBTi Corporate Net-Zero Standard defines corporate net-zero as:

1. The reduction of scope 1, 2, and 3 emissions to zero or to a residual level that is consistent with reaching net-zero emissions at the global or sector level in eligible 1.5°C-aligned pathways.

2. The neutralisation (carbon sequestration) of any residual emissions at the net-zero target year and any GHG emissions released into the atmosphere thereafter.



Source: EcoAct (2022), adapted from SBTi Corporate Net-Zero Standard (2021).

Companies that set science-based emission reductions targets in line with the latest climate science must:

1. Set near-term science-based targets (SBTs): 5-10 year emission reduction targets in line with 1.5°C pathways.

2. Set long-term science-based targets (SBTs): Target to reduce emissions to a residual level in line with 1.5°C scenarios by 2050 or earlier.

On a voluntary basis, companies can also commit to:

1. Carbon sequestration to offset their residual emissions.

2. Investments in emission reductions beyond their value chain.

The development of voluntary carbon offsetting projects allows companies to act on both commitments and thus contribute towards reaching societal net-zero.

In addition to carbon reduction and sequestration efforts, given the urgent need to mobilise short-term climate finance, **the SBTi recommends that companies invest immediately in voluntary carbon offsetting projects that reduce/avoid emissions outside their value chain.**

4. What are the benefits of voluntary carbon offsetting projects?

Voluntary carbon offsetting is not, and should not be, only about trading carbon. It's a vital tool to direct private financing to climate-action projects that would not otherwise get off the ground, such as reforestation projects or investment in renewable technologies and the infrastructure needed to expand their reach.

Within a robust climate strategy, carbon offsetting:

• Provides organisations with an additional tool to advance climate action.

• Translates organisations and investors' capital into projects that contribute to a low-carbon economy leaving no one behind.

• Provides vital finance to protect and restore endangered precious carbon sinks and natural habitats.

• Delivers wider environmental, social, and economic benefits aligned with the United Nations' 17 Sustainable Development Goals (SDGs), such as protection of ecosystems and endangered species, job creation, education, and healthcare.

• Drives capital and low-carbon technology to local economies.

• Helps organisations stay on track with their present and future climate goals.

• Puts a price on emitting carbon that motivates the emitter to reduce or stop the underlying emitting activities.

• Shows that climate leadership has shifted from being a cost to being a competitive advantage.

• Creates value for stakeholders: In 2021, the results of the world's largest global public opinion poll on climate change, Peoples' Climate Vote, revealed that 64% of people believe climate change is a global emergency and demand urgent action across multiple sectors, paying close attention to both the social and environmental impacts of companies' behaviours.

Consumers are also not lagging behind. According to EY Future Consumer Index, 43% of global consumers want to buy from companies and brands that benefit society, even if their products or services cost more. 64% are prepared to behave differently if it benefits society.

Four tips to ensure you are investing in robust and effective carbon offsetting:

Work only with those experienced in designing and implementing certified offsetting projects.

Give preference to offset providers that are partners of the most rigorous standards, signatories to best practice and audited by third parties.

Select carbon credits that benefit from reference standards focusing on accounting, monitoring and verification of projects, and that are subject to registration by a recognised independent entity.

Communicate transparently on your offsetting efforts, with clear information on the selected projects and their impact, as well as references to the corresponding standards and certifications. More on how to communicate your offsetting strategy.

5. How do we ensure emission reductions and other social and economic benefits are taking place?

Only carbon credits from third-party accredited projects, adhering to internationally recognised standards should be considered. Verified carbon offsetting projects ensure that the credits are high-quality and offer measured emissions reductions or sequestration, which have been subject to a rigorous auditing process. They also ensure that the projects provide additional and measured value to the communities in which they operate and that these do not negatively impact the ability of local communities to earn their livelihoods, as well as protect local and indigenous people's rights.

The VCS and VERRA also require projects to establish mechanisms for communication with local stakeholders during project design and implementation. Concerns can be raised about any potentially negative impacts and must demonstrate to the auditor at validation and every verification that it has taken due account of all, and any input received.

The feasibility and effectiveness of projects are a priority for EcoAct. We only engage with projects that have been certified by internationally recognised standards. These projects are subject to rigorous auditing processes that ensure that the project adheres to the following criteria:

• **Additionality:** reductions in emissions achieved by the project are supplementary to what would have happened in the absence of the payments derived from the sale of carbon credits. To generate carbon credits, a project must demonstrate that it would not have been possible without the funding provided by the carbon offsetting mechanism. This additionality of GHG emission reductions is a sine qua non condition for guaranteeing the environmental integrity of a carbon offset.

Forest patrol to monitor and protect against illegal logging and hunting. **Anourok Cambodia Forestry Project**

• **Permanence:** refers to emission reductions being 'permanent' and representing a long-term mitigation benefit. Measures are in place to limit the risk of reversal of CO_2 emission reductions to ensure their permanence.

• **No leakage:** the mitigation activity does not lead to the increase of emissions outside the boundaries of the activity.

• **Measurability:** net GHG emission reductions or removals by sinks are quantifiable using recognised conservative methods against a credible baseline.

• **Independent auditing:** the reduced/avoided or sequestered emissions of each project must be verifiable according to a recognised methodology, developed by experts and verified by an independent body. Without a certified and verified methodology a project cannot issue carbon credits.

• **No negative impact on local populations:** mitigation activities being implemented do not lead to negative impact or harm to local communities.

• **No double counting:** to ensure the environmental integrity of mitigation activities, emission reductions or units cannot be claimed or accounted more than once. The new accounting framework in Article 6.2 of the Paris Climate Agreement addresses the critical issue of accounting for internationally transferred mitigation outcomes (ITMOs) to avoid double-counting, both by the country obtaining them and the country supplying them.

Worker at cookstove factory, **Kumasi Stoves Project, Ghana**

To ensure the robustness of the carbon credits being sold, **EcoAct has additional due diligence processes via its EcoScore©**. We rigorously assess more than 30 criteria around seven main risk categories (financial & political, owner experience, certification, delivery, technological & environmental, reputational, and legal). EcoScore© is a unique risk management matrix designed in accordance with international standards on risk management, notably ISO 31000, and it enables us to select the most high quality projects.

In addition, we carry out audits in the field to check first-hand projects' carbon reduction/avoidance or sequestration activities and their positive impacts in the communities. We also work closely with project developers and local communities to verify the methodologies used to assess emissions reductions and co-benefits.

How can we ensure the permanence of offsetting projects?

Climate change is already having a lasting impact on global ecosystems, with rising sea levels, frequent flooding, wildfires, droughts, etc. All these risks must be better integrated not only into carbon finance but also (and above all) into all environmental projects.

As part of the certification process, the international carbon standards require projects to conduct a risk analysis, including forecasting climate impacts at the project level, which must be demonstrated through project documentation and feasibility studies. For example, if part of a mangrove is expected to be eroded due to sea level rise within 100 years, then the appropriate VCS certification methodology requires that this area cannot be considered in the calculations unless an adaptation measure is implemented to prevent this erosion. They also need to implement risk mitigation measures (such as fuel treatments, the establishment of fire breaks and fire towers, or the use of conservation easements, etc.) to reduce the risk of reversals.

This is a difficult exercise that requires foresight at project level but allows us to reflect on the importance of adaptation actions. This is an important point to consider: to have a better chance of functioning, a carbon offset project, whether restoration, reforestation, afforestation, or conservation, must imperatively implement adaptation measures and consider climate risks.

In short, project developers have a real interest in doing everything possible to prevent this type of event from interfering in their projects by implementing the necessary actions and measures in advance.

In the case of extreme weather events, malicious acts (e.g., deliberate fires), or negligence, standards, such as the Verified Carbon Standard (VCS), have established "buffer reserves" (also called "pools") to which each project contributes by setting aside a number of offset credits that cannot be sold on the market – these credits are ex-post, meaning the emission reduction has already taken place.

Following the mechanism of an insurance policy, the credits set aside (reserved) can be drawn upon to compensate for reversals for any project. Put into practice, in the case that a reversal occurs, the reserved credits are cancelled from the buffer reserve, ensuring that issued credits still represent real emissions reductions.

The number of credits a project must set aside is usually based on an assessment of the project's risks for reversals. Currently, the diversification of projects (types and locations) ensures that buffer reserves are resilient and are not at risk even by extreme weather events, malicious acts, such as deliberate fires, or negligence.

In the case of Gold Standard accredited projects, they count on a "Compliance Buffer" that remains untouched even after the crediting period of the project, further reducing the risk of reversal and non-permanence.

These buffer reserves are regularly updated to take into account the evolution of scientific knowledge, particularly regarding climate change. Information and data regarding the credits reserved are available online.

Certification bodies, guarantors of the quality of carbon credits

The certification bodies, known as standards, **define the requirements for the quality of the projects and the carbon credits generated by them.** Their main objective is to define a set of criteria, such as those established by the International Carbon Reduction & Offset Alliance (ICROA), and the **certification of projects to ensure rigour and transparency.** Certification by an internationally recognised standard is essential for rigorous and robust offsetting.

In addition to the defined criteria, **each standard sets its own methodologies.** These are developed by experts in the field (e.g., improved cookstoves, forests, mangroves, etc.) which are also verified by independent bodies.

These methodologies allow for unique accounting of avoided/reduced or sequestered GHG emissions, which are then verified to obtain the corresponding validation and certification.

To obtain certification and generate carbon credits, a project must follow several steps: study of the carbon reduction potential, formalisation of the project, implementation of the project activities, monitoring and verification. Projects are regularly audited by an independent body to assess their compliance with the requirements set out by the corresponding standard.

All documents informing the registration and verification of each carbon credit are publicly available.

The reference standards on the voluntary carbon market are:

- The **Gold Standard,** established in 2003 by WWF and other international NGOs
- The **Verified Carbon Standard (VCS)**, developed and run by the non-profit VERRA
- The **American Carbon Registry (ACR)**
- **Plan Vivo**

In addition to the reduced/avoided or sequestered GHG emissions, co-benefits are increasingly considered in the methodologies and complementary standards have been established to further enhance their value (e.g., The Climate Community and Biodiversity Standard, Social Carbon, etc.).

Wind turbines,
Aegean Wind bundle, in Turkey

6. Types of carbon offsetting projects

• **Ecosystem restoration** (reforestation of degraded forests, restoration of mangroves, agroforestry, ecosystem conservation, reduction of deforestation, etc.).

• **Renewable energy production** on a small scale or in areas not connected to the electricity grid (solar, wind, biomass, etc.).

• **Energy efficiency improvements** (energy-saving and improved cookstoves).

• **Improved waste management** (biogas, biochar etc.).

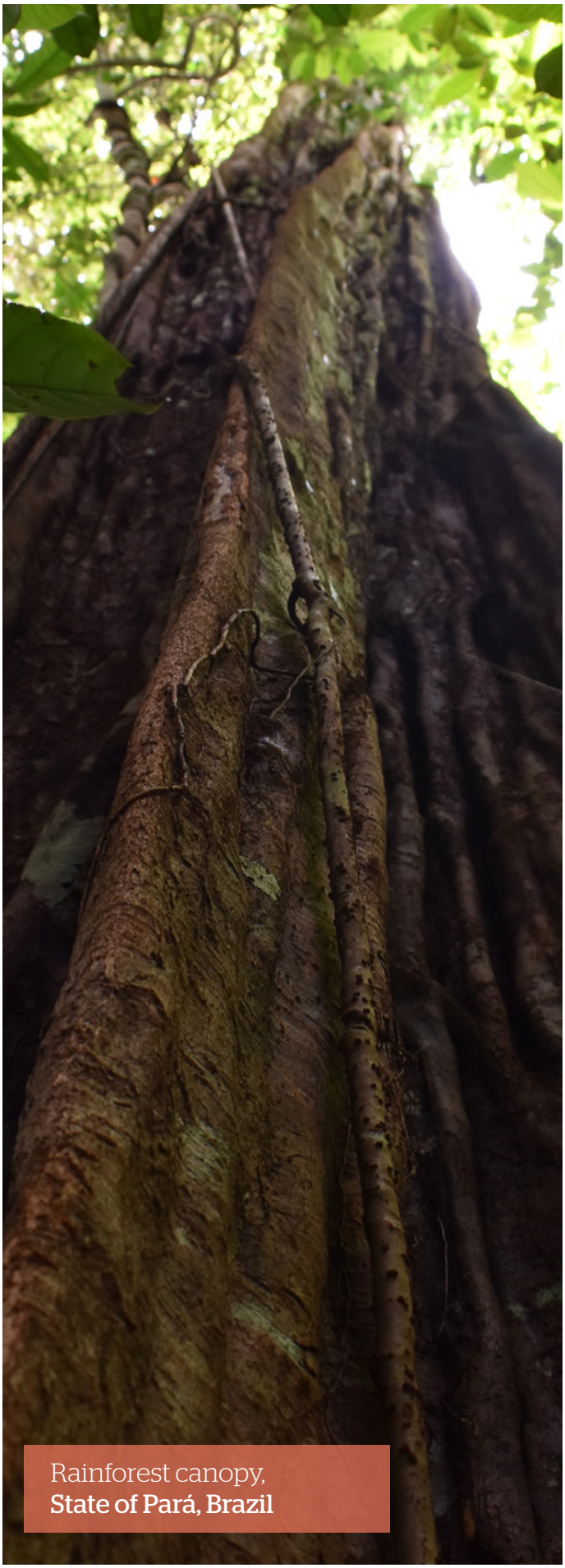
All these types of projects are recommended by the scientific community, as stated in the latest IPCC report, published in April 2022 (AR6 WGIII).

It is key to support offsetting projects that deliver both environmental and social benefits for people, aligned with the UN SDGs. These include objectives like reducing poverty in all its forms, providing clean water and sanitation for all, achieving gender equality and empowering all women and girls, etc. Beyond climate protection, offsetting projects should focus on achieving tangible and measurable benefits to the communities in which they operate, empowering them to have ownership of a more sustainable future.

For example, EcoAct's award-winning Sudan Low Smoke Cookstoves project, the first to be developed in a conflict zone, is delivering health and economic benefits to Sudanese families, with particular focus on female empowerment.

The Hifadhi-Livelihoods Cleaner Cookstoves project (financed by The Livelihood Fund and developed in partnership with EcoAct) is training local artisans and project officers to manage the distribution of better and cleaner cookstoves in rural Kenya, which has positive impacts on families, communities and the environment.

Learn more about our voluntary carbon offsetting projects.



Rainforest canopy,
State of Pará, Brazil

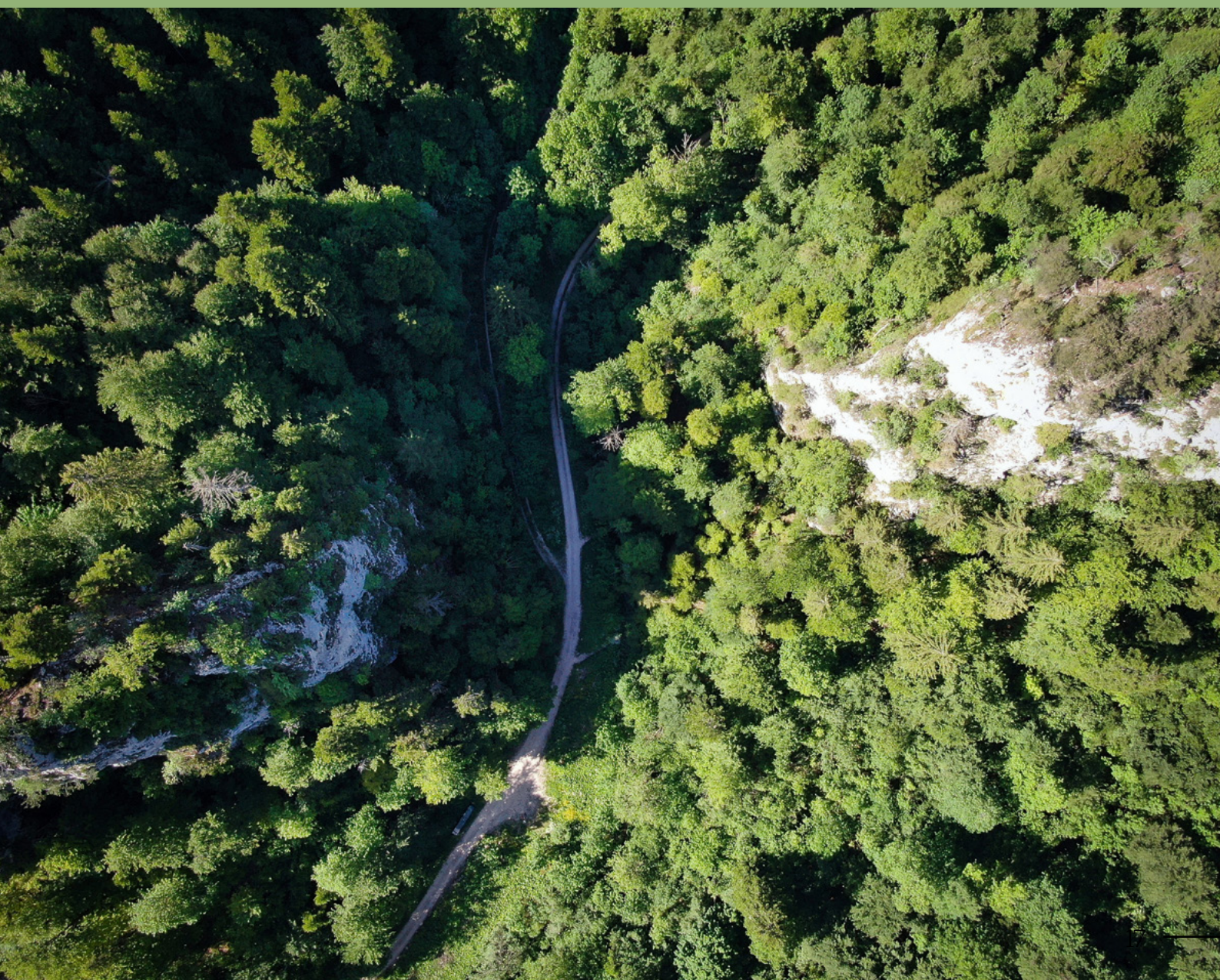
Many carbon offsetting projects are part of nature-based solutions

Nature-based solutions are defined by the International Union for Conservation of Nature (IUCN) as "actions to protect, sustainably manage, and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits".

Nature-based solutions include:

- **The preservation of functional and ecologically healthy ecosystems**
- **Sustainable management of ecosystems**
- **Restoration of degraded ecosystems or creation of ecosystems**

The State of Finance for Nature in the G20, published in January 2022 revealed that current G20 investment in nature-based solutions is insufficient. Nature-based solutions are a valuable means of climate mitigation and adaptation and can also provide numerous environmental and social co-benefits. Therefore, they play a key role in ensuring a sustainable future and supporting an equitable global transition.



7. Why is there such variation in price of carbon credits?

Cooking with a cookstove, **Kumasi Stoves Project in Ghana**

The carbon market like any other market is driven by supply and demand, competition, and competitive pricing. In addition, market dynamics mean that project developers adjust their pricing to reflect market demand.

The voluntary carbon market encompasses many different project types in many different locations. As well as a range of co-benefits (such as employment opportunities for local communities or education programmes), each project has a unique scope that impacts the cost structure. This has a direct effect on operational cost and is among the reasons why voluntary carbon credits vary in price.

Beyond operational costs, the geography of the project, delivery time and the different types of projects, the price of a carbon credit is also influenced by:

• Volume of credits purchased at a time – as in any other market, the higher the volume the lower the price.

• Credit vintage – the vintage if a carbon offset refers to the year that its associated credits were issued. It can also refer to the year in which the greenhouse gas emission reductions occurred. Generally, carbon credits are issued once they complete a third-party verification. The older the vintage the cheaper the price. Usually, organisations seek out carbon offsets with vintages around the same timeframe as the residual emissions that they are looking to offset (1-3 years).

It is important to always consider that the price of a carbon credit must account for the costs of setting up a project, its ongoing monitoring, and the cost of gaining verification. Most importantly, it must enable its long-term viability.

8. What makes EcoAct different from other carbon offset providers?

For over 16 years, EcoAct has been promoting best practice, rigour and transparency across all our clients' net-zero plans – from emissions management, through drastic CO_2 emission reductions, to carbon offsetting of residual emissions.

We encourage and support our clients in setting and achieving science-based emission reduction targets (aligned with the SBTi's recommendations) while developing and implementing a robust carbon offsetting strategy that best aligns with their values and priorities.

As an accredited project developer and Gold Standard partner, we are dedicated to both supporting and developing high-quality certified carbon offsetting projects that put nature and communities at their centre, delivering tangible and measurable benefits to local communities.

We facilitate a revenue stream to support the development and implementation of projects, but we also provide clients with staff expertise, due diligence, and risk management, along with the compliance elements of carbon credits registry management and surrender.

EcoAct's role, therefore, goes beyond trading carbon credits. It offers a set of services and expertise needed to guarantee high-quality certified carbon offsetting projects, and so ensures the environmental and social integrity of each carbon offsetting project we develop or support.

We regularly visit and audit projects ourselves and through a detailed on-site due diligence process and framework, we verify the reality of a project's operations on the ground and impacts in the field. We also engage with project developers and local communities to understand and verify the methodologies used to assess emissions reductions and to hear the experiences of project beneficiaries.

Funds from the sale of carbon credits are also reinvested back into the market and into our research and innovation work to advance corporate climate action. An example is the first methodology developed by our Climate Innovation & Knowledge Centre for certifying conservation and preservation measures for seagrass beds, in cooperation with Interxion, Schneider Electric France, and the Calanques National Park.

Our commitment:

As part of our voluntary carbon offsetting offering, we follow the guidelines defined by the International Carbon Reduction & Offset Alliance (ICROA) Code of Best Practice.

ICROA is a non-profit initiative housed within the International Emissions Trading Association (IETA) that brings together actors committed to promoting emissions reductions and offsetting to the highest standards of environmental integrity and in support of the Paris Agreement.

Each year, ICROA accredited organisations, such as EcoAct, are audited to ensure their activities adhere to ICROA's Code of Best Practice.

To guarantee clients ownership of carbon credits, we have established an internal registry of carbon credits for buying, selling, and cancelling transactions. Following ICROA's best practice, the registry is also audited annually by an independent auditor, certifying that:

• The traceability of purchases, sales and cancellations of carbon credits is ensured through registration in one or more international registries accredited by different standards.

• Their origin is identified, and carbon credits sold and cancelled correspond to unique, permanent, and measurable emissions reductions or sequestration.

In addition, we carry out our own audits on all our voluntary carbon offset projects to ensure their quality and compliance with market best practice.

Aware that climate change impacts both our economy and wellbeing, we only select and develop projects that provide the greatest possible co-benefits in line with the UN SDGs.

Factsheet

Your climate experts.
Your partner for positive change.

EcoAct, an Atos company, is an international climate consultancy and project developer that supports companies to set robust science-aligned net-zero strategies and achieve their climate targets. Founded in France in 2006, the company now spans three continents with offices in Paris, London, Barcelona, New York, Montreal, Munich, Milan and Kenya.

With a team of more than 260 international climate experts, EcoAct's core purpose is to lead the way in delivering sustainable business solutions that deliver true value for both climate and client. EcoAct is a CDP Gold Partner, a founding member of ICROA, a strategic partner in the implementation of the Gold Standard for the Global Goals and reports to the UN Global Compact.

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