

A photograph showing two individuals in a dry, sparsely vegetated landscape. On the left, a person wearing a large, rounded, light-colored hat and a green and grey striped shuka is crouching, working on a small, spiny plant. On the right, another person wearing a red and white patterned shuka and a dark cap is standing, also engaged with the plants. The ground is covered in dry, yellowish-brown grass and small, thorny bushes.

IT'S TIME TO RESET
OUR RELATIONSHIP
WITH NATURE.

by Martin Atkin

*“How do we settle once
and for all our conflicted
and confrontational
relationship with nature?”*



Right now, there's a lot of talk about nature-based solutions.

There's a sense that - although the idea of working with nature rather than against it is by no means new and has been practised by indigenous peoples for millennia - the time has come to treat nature with more respect if we are to overcome some of our greatest existential threats.

But what exactly are nature-based solutions (NbS)? Even the experts can't always agree on a definition or even what to call them - NbS also include as ecosystem-based adaptation, natural climate solutions, nature-based infrastructure or assisted natural regeneration. But whatever you call it, there's a growing consensus working with nature - rather than against it - is a global priority.

"We have to understand NbS as a paradigm shift in the way people see and work with nature," says Diego Portugal, Co-lead of the **IUCN's Commission on Ecosystem Management (CEM)**. "It's a philosophical question about humans' relationship with nature. When we talk about NbS, it's about working side by side with nature."

This fusion of philosophy, science and economics is perhaps one of the most appealing aspects of NbS - the sense that we humans have an opportunity not only to reset our relationship with nature but to re-evaluate our place in the world. "How do we settle once and for all our conflicted and confrontational relationship with nature?" asks **Carlos Manuel Rodriguez**, CEO of the Global Environmental Facility and former Environment Minister of Costa Rica.

"We humans have, over the past two centuries, built a sandcastle of prosperity and progress, thinking that this sandcastle is solid. But now we understand how fragile and how vulnerable we are. I grew up as a conservationist, but my children will grow up as ecological restorationists."



"It's ironic that we are asking nature - which we have done so much to destroy - to help us solve problems we created for ourselves."

“We have a very anthropocentric view of how nature should work for humans,” agrees Geraldo Carreiro, Team Leader at **EU Global Climate Change Alliance Plus (GCCA+)** Support Facility. “It’s interesting that we know climate change is caused by humans, and now humans are looking to nature for solutions to the very problems we created in the first place. It’s ironic that we are asking nature - which we have done so much to destroy - to help us solve problems we created for ourselves.”

“NbS is like working with nature instead of trying to impose our solutions on nature as we did in the past,” he adds. “It uses features that already exist in nature and that nature does really well over time, such as buffering waves, preventing erosion, harmonising pressures and temperatures and water levels, filtering pollutants, cleaning water and air, or regenerating soil. We need to recognise and value these features of nature, otherwise we won’t be able to sustain the planet.”

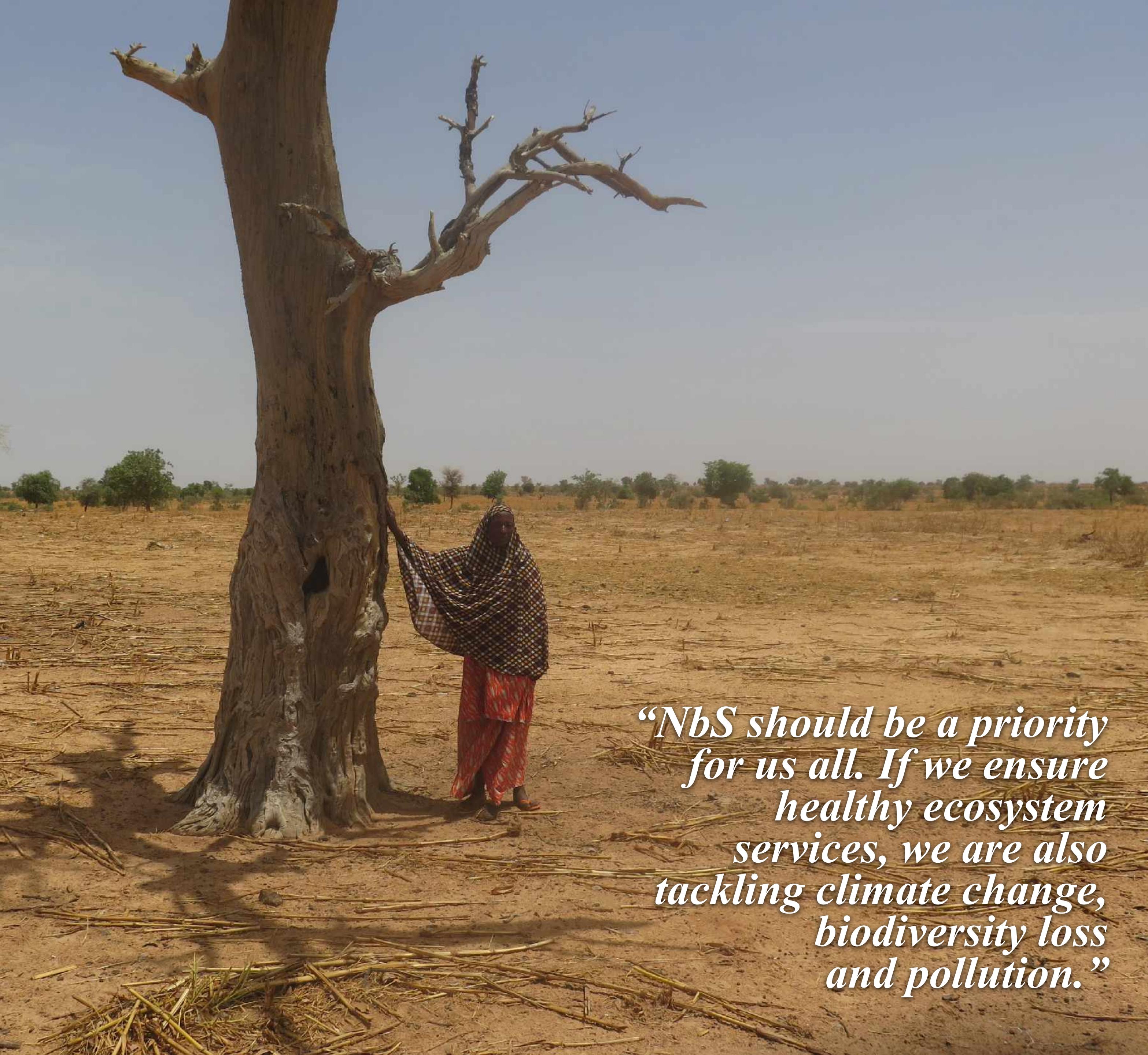
NbS come in many guises, but the IUCN defines them as encompassing three broad areas. “First we have to see NbS as actions that use the power of functioning ecosystems. NbS are not ecosystems, they are actions within ecosystems to protect, sustainably manage and restore them,” says Diego Portugal. “Secondly, they have to offer a solution not only to climate change but to other societal challenges such as food and water security, biodiversity loss, poverty and disaster risk reduction. Finally, NbS must also provide human wellbeing and biodiversity benefits. If they don’t, they don’t qualify.”

Nature-based solutions in the headlines

NbS were on the table in a big way at the recent COP26 climate change talks in Glasgow. **According to WWF**, 92 percent of new nationally determined contributions (NDCs) now include NbS in one form or another - “an encouraging sign that more countries are recognising the crucial role of nature-based solutions in addressing the global climate crisis.”

“Science is clear that nature-based solutions not only address climate change, they also reduce disaster risk, biodiversity loss and food insecurity in an integrated way,” Dr Jack O’Connor, a Senior Scientist with the United Nations University – Institute for Environment and Human Security (UNU-EHS) told the COP.

Yet with only **three percent of climate finance spent on NbS**, it’s clear that actions are falling well short of what’s needed. A push to include NbS in the COP26 agreement **proved divisive**, with an earlier draft referring to “the critical importance of nature-based solutions and ecosystem-based approaches” eventually being replaced with the phrase “protecting, conserving and restoring nature” in the final version. One delegate was reported as saying “Nature has an intrinsic value. It is sacred. That must be reflected. Nature-based solutions were never negotiated here.”



“NbS should be a priority for us all. If we ensure healthy ecosystem services, we are also tackling climate change, biodiversity loss and pollution.”

Despite this setback, the momentum for NbS continues. As Carla Montesi, Director for the European Green Deal within the **Directorate General for International Partnerships (DG INTPA)**, told an EU GCCA+ **COP26 side event**, “NbS should be a priority for us all. If we ensure healthy ecosystem services, we are also tackling climate change, biodiversity loss and pollution.

“We need to work with nature more than against it. We have the solutions in our hands, and integrated NbS are clearly a tool to enable us to act. It’s clear we now need to scale up NbS. It’s not just about words of commitment, it’s about action.”

Underscoring its commitment, the EU promised €1 billion to the **Global Forest Finance Pledge**, to help protect, restore and manage forests - in addition to the €27 billion committed to climate change adaptation and mitigation.

“This is a clear sign from the EU to lead global change and to protect our planet in line with the Green Deal ambition,” said Montesi. “But Europe cannot play this role alone, we need strong partnerships, which is why COP26 is so important.”



“Nature takes time to work, and we need to give nature time in our planning.”

Global solutions, local communities

The EU GCCA+ has been implementing hundreds of NbS projects since 2007, ranging from mangrove and coral reef restoration to agro-forestry and sustainable farming.

Geraldo Carreiro singles out one example, Timor Leste, where high rates of deforestation caused by unsustainable practices including systematic slash-and-burn led to soil erosion, forest degradation and eventually to increased flooding. The result? Increased poverty - especially among young people and women - in a country with the highest unemployment and lowest education levels in the region.

“The situation was alarming due to rising poverty,” he explains. “Farming is the main source of income but it wasn’t providing enough for the population, so we had significant food shortages for four months of the year. We helped young people and women - who had previously been sidelined - to start their own businesses raising and planting trees and crops. That provided them with an income but also helped restore local ecosystems.”

One key element for success is the active, willing participation of local communities. In the case of Timor Leste, that meant convening **Tara Bandu** - an ancient tradition of community decision making. “The success of sustainable ecosystem management was really linked to the participation of people at local level,” he adds.

The participation of local communities can make or break an NbS project. “It’s not a silver bullet in terms of nature based solutions,” says WWF’s Carolina Squera, who runs the EU-funded **Ceres integrated sustainable landscape management initiative** in Brazil and Paraguay. “But the combination of farmers, communities, markets and social mechanisms means we are better able to leverage solutions. It’s really important to bring people together to create long term solutions.”

“Indigenous people have been working with nature and implementing these solutions for millennia,” says Diego Portugal. “We can learn a lot from them, and it is important to take their knowledge and experience into account. The IUCN’s NbS global standard talks about involving all stakeholders - including indigenous people and local communities - and it also talks about the different trade-offs, including those between science and local knowledge.”

“It’s really important to bring people together to create long term solutions.”

Experts also caution that NbS should not be seen as a quick-fix. “Nature takes time to work, and we need to give nature time in our planning,” says Geraldo Carreiro. “That might take 10 or 15 years, it depends on the system. The truth is that it takes years to have a result. We need long-term commitments from decision makers, not just announcements for the short term.”



Mangroves: the poster child for nature-based solutions.

Protecting vulnerable coastal communities

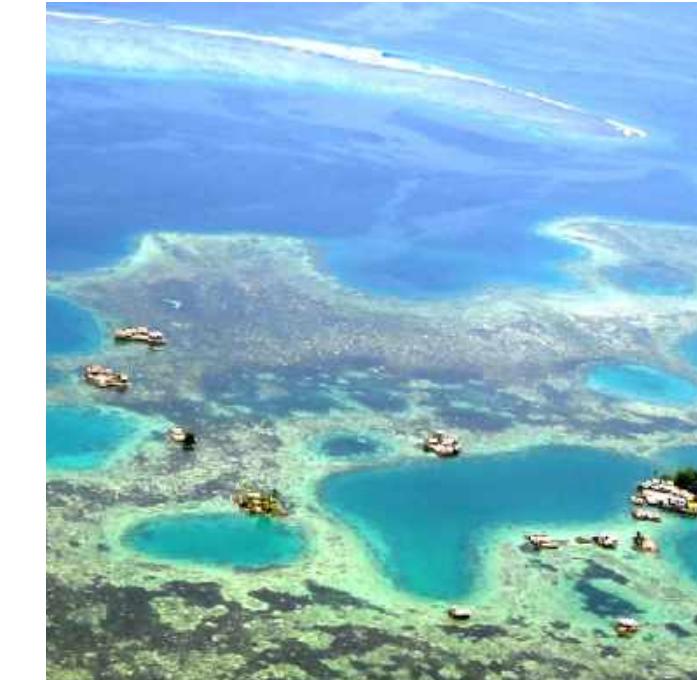
Mangroves have been called ‘**the quiet achievers**’ - they protect around 136,000 km² of coastline around the world from storm surges, tsunamis and extreme weather events, at the same time stabilising coastal erosion and filtering harmful sediments from the water. They provide a safe breeding nursery for endangered creatures, and livelihoods for many millions of people, as well as sucking up and storing carbon.

Mangroves are the ultimate NbS, and they do this at virtually no cost - unlike multi-million dollar infrastructure projects such as concrete sea walls. “Mangroves are a good example of a nature-based solution which can help to both mitigate climate change by absorbing carbon, and adapt to it by reducing some of the impacts,” agrees Geraldo Carreiro. “You need to distinguish between what is needed for mitigation - reducing the amount of carbon in the atmosphere - and what is needed for adaptation - they don’t always go hand in hand.

“If you are not careful, adaptation can also contribute to climate change - for example by building a concrete sea wall. Healthy mangroves would do the same job.”

On the adaptation side, the **Global Mangrove Alliance** (GMA) estimates that mangroves prevent more than US\$65 billion in property damage and reduce flood risk to around 15 million people every year. In terms of mitigation, mangroves convert carbon dioxide to organic carbon at higher rates than almost any other ecosystem.

According to the GMA, the world’s mangroves currently store more than 21 gigatonnes of CO₂ - some of which is released back into the atmosphere every time a mangrove ecosystem is destroyed. Yet despite their obvious advantages, **UN Environment estimates** that half the world’s mangrove forests have been lost in the past 40 years.



Guyana: a €4.17 million programme ran from 2009-2014, combining mangrove restoration with community development. As a result, local women make a living from bee keeping and selling mangrove honey, beeswax candles and other products, whilst improving coastal protection.

Mozambique: a €47 million programme included replanting nearly 230 ha of mangroves to protect the coastline from storms and erosion. When Cyclone Idai hit in March 2019, more than a thousand people died - but it could have been far worse without the mangrove forests. “Ultimately, it’s our mangroves that saved us. They are our first line of defence,” says Manuel de Araújo, Mayor of the coastal city of Quelimane.

Jamaica: after eight people were killed and 500 families lost their homes as Hurricane Ivan hit in September 2004, a **€4.8 million programme** replanted a total of five hectares of mangroves. The return on investment is significant - according to **some estimates**, the total protection value of mangroves in Jamaica amounts to more than US\$186 million per hectare.

Solomon Islands: one of the nations most vulnerable to rising sea levels has benefitted from a **€2.8 million project in five coastal communities** including replanting and sustainable agro-forestry. “Losing mangroves is the same as losing your livelihood,” says farmer Dominic Odu. “If we cut and harvest mangroves at the current rate, soon there won’t be any left. So we decided to replant.”

Tonga: as part of the €8 million GCCA+ SUPA programme, the island of Tongatapu was chosen to restore mangroves as one element in a hybrid NbS ‘green buffer’ approach, which included planting other native species and improving hard infrastructure such as culverts, drains and roads. The project was complemented by a **community beach clean-up**, led by local women, which collected five truck-loads of plastic and other rubbish.

Bringing clams and communities back from the brink

Important though it is, mangrove restoration is just one of many nature-based solutions for building the resilience of coastal communities and economies. In the Cook Islands, for example, as part of a **€14.89 million EU-funded programme** to scale up climate change adaptation measures across the Pacific Ocean, a project is underway to restore coral reefs which have suffered from a combination of climate change and over-fishing of clams.

The outlying island of Aitutaki used to be famous for its brightly-coloured giant clams - known to the islanders as pa'ua - attracting tourists and scuba divers from all over the world. Clams are a significant source of income and food security for the people of Aitutaki, and were a traditional centrepiece of celebratory feasts. Older members of the island community remember a time when they were so plentiful they stretched as far as the eye could see.

All that changed in the 1980s and 90s when over-fishing brought the giant clams to the brink of extinction, despite parts of the lagoon being designated a protected area. Along with centuries of priceless cultural heritage, the island's tourism economy took a hammering.

In an effort to reverse the damage and restock the clam beds, new species were introduced from Palau and Australia and a nursery established to breed Cook Islands native clams. Local schools formed the **Aitutaki Reef Keepers club** which helps to transplant small clams to the coral reefs where they can safely grow to maturity in specially designed cages. "It's just one example of what is possible when many people do just one small thing to help our marine environment," says Dr Charlie Waters, an Australian scientist who helped set up the project.



Clams are a significant source of income and food security for the people of Aitutaki.

Resiliencia Costera: protecting Cuba

When Hurricane Irma hit in Cuba in 2017, it was the first Category 5 hurricane to make landfall in nearly a century. After a two-day battering, the storm left behind ten dead, thousands of wrecked homes and nearly half a billion euros' worth of damage - mostly from coastal flooding.

Cuba is increasingly vulnerable to extreme weather events and sea level rise. ***Resiliencia Costera*** ('coastal resilience') is a three-year, €5 million initiative funded by EU GCCA+, which aims to strengthen Cuba's ability to cope with the worst impacts.

"Resilience means the ability of ecosystems and organisms to adapt to vulnerabilities or changes in the environment," says Dr Santos Orlando Cubillas, Director of Resiliencia Costera. "We aim to build resilience in Cuba through natural solutions in vulnerable coastal areas, including the rehabilitation of coastal marine ecosystems."

Coastal biodiversity such as coral reefs, sea grass beds and mangroves is vital for economic, social and cultural development.



Resiliencia Costera focuses on the Sabana-Camagüey archipelago, covering fifteen coastal municipalities with a combined population of around 600,925 people on Cuba's northern coast.

Dr Maritza García, President of Cuba's Environment Agency, says the island's natural defences have been neglected for too long. "By restoring the ecosystem and returning it to its former state, the people who live in those areas will be better prepared and as far as possible they will be able to remain in their fishing communities."

Meanwhile on Cuba's southern coast, the Green Climate Fund (GCF) has allocated nearly US\$30 million for a coastal resilience project to protect a further 440,000 people and restore vulnerable habitats. The Mi Costa project aims to improve the health of more than 9,000 ha of seagrass beds and around 134 km of coral reefs. "A key aspect of the project will be its focus on working with communities and local authorities to fully understand the value of ecosystems to their own resilience and livelihoods," adds Dr García.



*La Langue de Barbarie, Senegal:
casuarina trees have been
planted to stabilise coastal erosion
as part of a hybrid NbS programme.*

Hybrid NbS

Nature doesn't always have to cope alone. "You can complement nature-based solutions with grey infrastructure - so-called hybrid NbS," explains IUCN CEM's Diego Portugal. "For example you can combine a sea wall with a mangrove restoration project."

That's exactly the approach taken by an **EU GCCA+ project** to protect residents in Saint Louis on Senegal's Atlantic coast. Rising seas and coastal erosion mean the ocean is quite literally at their doorsteps - in some places the beaches wash away at the rate of two meters a year.

For centuries, Saint Louis was protected by the Langue de Barbarie, a 30 km sandy peninsular, part of which is a UNESCO world heritage site. But a poorly-designed flood relief scheme in 2003 effectively cut the peninsular in two, and what started as a four metre wide channel is now more than four kilometres across.

For the former residents it's too late - one village is already under more than a metre of water. But elsewhere, a combination of man-made and natural solutions are helping keep the waves at bay. Launched in 2014 with €4 million from the EU, the Integrated Coastal Zone Management (GIZC) scheme has planted at least 276 hectares of casuarina trees and 260 hectares of mangroves in the Petite Côte, Saint-Louis and Casamance areas. These have been complemented with grey infrastructure and engineering works such as breakwaters, groynes and dykes.

"Beach reconstruction and reforestation are very important," says Dior Sidibé, GIZC Project Manager at the Ministry of the Environment. "A healthy ecosystem plays a vital role in the conservation and regeneration of biodiversity, it helps stop salt water from spreading inland. It stabilises the coastline and slows down coastal erosion. Coastal erosion is a natural phenomenon, but it exacerbated by human action."



A woman with dark hair tied back is working in a field of young green plants. She is wearing a light blue t-shirt with text on it. The text on the t-shirt reads: "Workshop", "Gestão Agroflorestal", "Sustentável", and "Exemplos e Oportunidades em Timor-Leste". She is focused on her work, bending over a raised bed of plants. The background is filled with more green foliage.

Away from the coast, EU GCCA+ integrates nature-based solutions into farming, forestry and sustainable land use projects across Latin America and the Caribbean, Africa, Asia and Oceania. The importance of sustainable landscape management is underlined in a **2020 EU report** which states that NbS are “essential to enable sustainable agriculture production systems” and that nature-based farming practices can “simultaneously address climate change mitigation and adaptation, biodiversity protection, soil and water management objectives.”

The EU Action for Sustainable Landscape Management is a €123 million programme involving 23 projects across 20 countries, aiming to “promote inclusive and sustainable management of land through integrated landscape approaches.”

The programme, which runs through to 2026, aims to show that NbS can deliver a wide range of positive outcomes including food security, disaster risk reduction, rural development and job creation, whilst also contributing to climate change mitigation and adaptation. Many of these are already underway, using €44 million of funding from the EU GCCA+.



Nature-based farming

Africa's **Great Green Wall** is one of the world's most famous NbS projects, to which the **EU currently contributes more than €700 million a year**. What started as a simple idea to plant trees to stop the Sahara desert advancing has, according to the UN Convention to Combat Desertification (UNCCD), turned into "a compelling solution to the many urgent threats not only facing the African Continent, but the global community as a whole – notably climate change, drought, famine, conflict and migration."

With an emphasis on participation and inclusion, the Great Green Wall encourages communities in the Sahel not only to plant trees but to adopt sustainable farming methods and create integrated agri-forest systems. By 2030, the project aims to create 10 million jobs in rural areas and sequester around 250 million tonnes of CO₂.

However, sustainable agriculture doesn't always mean reverting to traditional farming methods. In Sudan, at the eastern end of the Great Green Wall, a **€8.5 million EU GCCA+ project** aims to restore degraded ecosystems whilst improving the livelihoods

"I have a regular supply of wood for cooking, crop yields are better, and the trees provide welcome shade when we work."

of rural communities in Northern State, River Nile State, Kassala State and North Darfur State. Alongside tree-planting, farming communities are encouraged to "reflect on the sustainability and the impact of traditional practices of land use and irrigation techniques," and to move to alternative livelihoods that make fewer demands on nature, but still provide a decent income.

It's a similar story in Mali, where EU GCCA+ works with **Sahel Eco** in rural communities to train farmers to regenerate the land naturally. "In the past, I would cut down and burn trees to clear land," says Ousmane Guindo, a farmer from Sokoura. "But then there was nothing to stop the wind. The crops got buried in sand and yields were very poor. So I started leaving tree stumps intact and nurturing new shoots - the leaves decompose and fertilise my crops, I have a regular supply of wood for cooking, crop yields are better, and the trees provide welcome shade when we work."

NbS are often surprisingly low-tech, ranging from mulching and composting to tree planting. “It’s more about educating people than spending money. I have seen some big high-tech projects in Africa which have failed because they cost too much and they can’t be maintained,” says Michael Cherlet, one of the lead authors of the **World Atlas of Desertification**.

Soil erosion is one of the most widespread forms of land degradation - and a challenge perfectly suited to NbS. Dr Leigh Winowiecki, a Soil Systems Scientist at **World Agroforestry**, combines digital technology with on-the-ground restoration schemes to bring previously degraded land back into productive use. “Using earth observation satellite data we can identify soil erosion hotspots and track the effectiveness of nature-based solutions over time,” she told the EU GCCA+ COP26 side event. “Then using assisted citizen science data, the **Regreening Africa app** can track and geo-reference restoration interventions including in the Great Green Wall and beyond. We can track the number of trees planted and their survival rate. Farmers will take care of the trees and the soil when they can see the value.”



However, warns the GCCA+’s Geraldo Carreiro, sustainable land use projects will only succeed if they can demonstrate economic as well as environmental benefits. “You have examples of best agricultural practices from the 80s and 90s - such as soil and water conservation, reduced use of pesticides and fertilisers, using organic manure and local varieties - which felt less secure for some farmers in the short term. They were best in ecological terms but not necessarily economically, because they didn’t take into account all the elements needed for sustainable agriculture and could not compete with intensive agriculture in the same market. There are many good examples of how local communities manage their environment, but it must be linked with accessing the benefits of their own landscape.”

“The Regreening Africa app can track and geo-reference restoration interventions.”



Cape Verde: You don't get much more low-tech than the EU GCCA+ **Agro Floresta project** in Cape Verde, off Africa's west coast. Here, 'agro-ecology' means recycling sugar cane waste - known as bagasse - to make 'nests' around crops which protect them from the wind and help retain moisture in the soil. The project also incorporates other sustainable farming techniques such as crop resilience, natural pest control and reducing the use of chemicals on the land.



Benin: For decades, Benin's Ouémé river basin has suffered from intensive farming and over-use. Forest 'galleries' - narrow strips of trees which line the river banks - were cut down to make way for crops, to sell as timber or to use as charcoal - leading to devastating flooding, especially on the lower reaches of the river. A project to map the extent of the tree loss using **aerial photography** was funded by a €8.3 million joint project by the EU GCCA+ and UNDP. Using the updated information, 80 ha have far been replanted with more than 190,000 trees, in strips around 25 metres wide on both sides of the river.



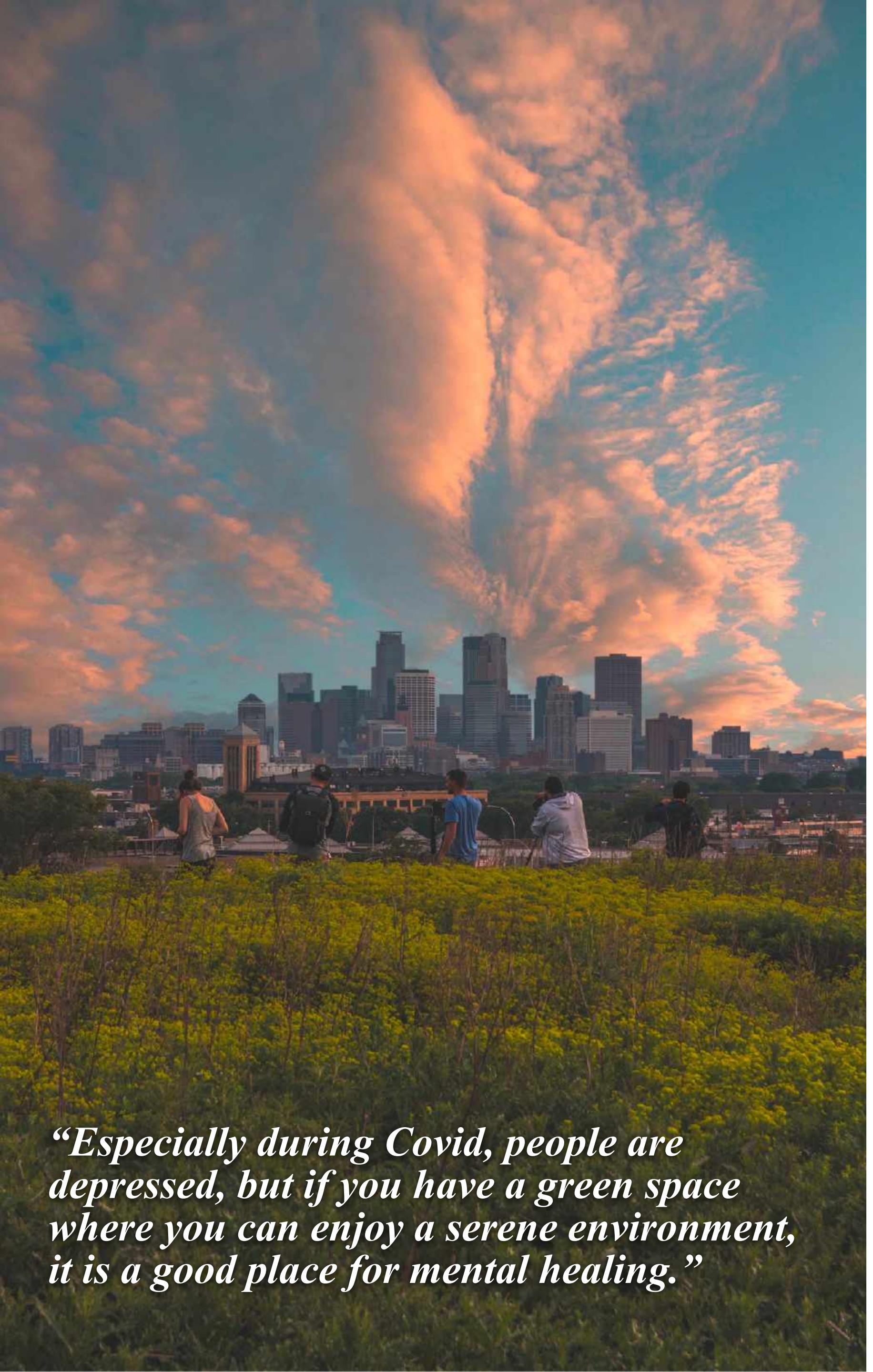
Dominican Republic: In El Seibo, the local economy depends on healthy ecosystems. "It's really important that we work with the local communities, farmers, fishermen and those working in the tourism industry to hear their experiences and involve them in the solutions," says Friederike Eppen, Project Coordinator of a **€5 million EU GCCA+ project** for increased food security and disaster risk reduction. "By focusing on the services provided by ecosystems, we can ensure healthy agricultural land, as well as conserving the mangroves and coral reefs that protect the coast."



Guinea: One of the latest EU GCCA+ NbS projects combines sustainable farming, restoring ecosystems and improving food security on **family farms**. It's part of the **€2.3 million West Africa smart agriculture programme** in partnership with the Economic Community of West African States (ECOWAS). "Family farms are essential to feed the growing population, and they need to step up productivity," says Project leader Gnouma Lazard Tolno. "But increased production endangers biodiversity and carbon sinks in the forests of Upper Guinea. We have to produce more grain on less land, so restoring soil fertility is vital."



Maldives: In the 570 ha Addu Nature Park - the largest in the country - land is **leased to local communities** to farm using both traditional and modern sustainable agro-ecology methods. Farmers grow bitter gourds, peppers, bell peppers, cucumbers, sweet melons and butternut squash - and once sold, some of the money goes back into the community. Other locals make a living from **selling sustainably-harvested coconuts**. Building on a previous EU GCCA+ €6.5 million wetlands conservation and coral reef monitoring project, the current programme aims to increase ecotourism and environmental protection in the south of the Maldives.



“Especially during Covid, people are depressed, but if you have a green space where you can enjoy a serene environment, it is a good place for mental healing.”

Nature in the city

Nature-based solutions aren't just for rural landscapes. There are plenty of examples of NbS being used to help both people and ecosystems thrive in urban environments - such as landscaping waterfronts and beaches for coastal protection, creating artificial lakes and green areas which can be flooded to act as sponges during heavy rain, rather than flooding streets and sewers.

There are other, more intangible benefits for city dwellers. “NbS allows us to use the benefits which we often take for granted from nature - these are often called ecosystem services,” says the IUCN CEM’s Diego Portugal. “In cities, these services include cultural services such as educational or inspirational benefits that we get from nature. For example, I live in Berlin, and there’s a lake near my home where I go running all the time. This is also a cultural ecosystem service.”

Mental health and wellbeing are increasingly recognised as advantages of NbS, alongside environmental and economic benefits.

“We have taken disused areas and turned them into green spaces which people can enjoy,” Grace Karanja, an Environmental Officer in Nakuru County, Kenya, told an **EU GCCA+ Regional Workshop**. “Especially during Covid, people are depressed, but if you have a green space where you can enjoy a serene environment, it is a good place for mental healing.”

Nakuru County - the fourth most populous city in Kenya - **has been recognised** for involving citizens in designing and implementing urban NbS. “Citizen involvement is really important,” said Karanja. “The very people who are being affected by climate change are the ones participating in climate planning. They identify actions in their local neighbourhood which can achieve a sustainable environment. If they are affected by floods or issues of waste management we bring them on board and work with them to implement local solutions, for example greening and rehabilitating abandoned areas.”

The EU's **Connecting Nature** initiative - set up under EU Horizon 2020 - lists a number of urban NbS including street trees, parks and green areas which intercept dust, toxins and noise, as well as sheltering and cooling property and acting as carbon sinks. More recently, urban NbS has evolved to encompass energy production, water and waste management. "There is some flexibility for interpretation in terms of where nature-based solutions begin and end," says Connecting Nature's Technical Lead Dr Stuart Connop. "This can create a problem for cities that are already used to communicating about green and blue infrastructure, and are trying to introduce nature-based solutions as an emerging concept.

"The ideal nature-based solution uses a comprehensive co-design and co-creation of ideas process, with strong innovation possibilities, leading to multiple ecological, environmental and social gains. It is a big task, but this approach will ultimately change the way we make and manage our urban areas, and lead to more resilient and sustainable urban living."

In Rajshahi, a city in Bangladesh which used to be notorious for air pollution, a hybrid NbS programme has transformed life for residents. Using a combination of tree and flower planting, a 'zero-soil' policy and a ban on lorries during the day, Rajshahi saw the biggest reduction in urban air pollution of any city in the world - down 67 percent in just two years. "We even managed to significantly reduce the average temperatures in the city," said Monhammad Shariful Islam, the city's chief engineer. "The project also helped to reduce energy consumption and greenhouse gas emissions."

Urban NbS are a relatively recent departure for the EU GCCA+, which has traditionally funded climate change adaptation and mitigation projects in rural areas. However, as Technical Expert Monica Bonfanti says, "Cities are not fully perceived as an arena where climate actions take place. The climate change dimension of urban planning should be scaled up to enable cities to cope with the different dynamics of climate change, and sustainable development should be strictly linked to sustainable urban planning."



*Greening the city:
Paris Road, Rajshahi*



The Gambia: market waste waiting to be turned into compost.

Turning waste into profits

When municipal authorities in Banjul, capital of the Gambia, realised they needed to do something to tackle the city's mounting waste problem, they turned to the army of women fruit and vegetable growers who supply urban markets for help.

The markets create tonnes of organic waste which, along with plastic, cardboard, and other rubbish, becomes landfill at the city's infamous Bakoteh dumpsite. Now a **€100,000 pilot project**, funded by EU GCCA+ and implemented by UK NGO WasteAid, is teaching the women gardeners who supply the markets how to turn organic waste into compost. Composting has economic, health and environmental benefits - the women save money on chemical fertilisers, are no longer exposed agro-chemicals and the enriched soil produces better quality and more abundant crops.

At the same time, the mounds of organic waste which used to pollute waterways and were a breeding ground for rats and diseases have been significantly reduced.

"It's very important to get the women involved, because it's mostly women who do the small-scale fruit and vegetable growing in the city," explains Ingrid Henrys, WasteAid Project Coordinator in The Gambia. "We're starting with 30 women farmers from two gardens, and the women themselves will choose who takes part in the pilot."

"After they are trained, they will be able to pass their skills and knowledge onto the others."

"The Gambia is a very agricultural economy, producing a lot of organic waste, but most of it goes to the dumpsite when it could be used as compost," she adds. "Many farmers don't compost because they don't know about it, or they think it takes too much time and effort. But the way they farm is really degrading the soil."

Where now for nature-based solutions?

Despite the hype, NbS didn't explicitly make it into the final COP26 text, and there's a sense that there needs to be an injection of realism. "Everyone is talking about offsetting carbon emissions through NbS, but that's not their main point. That's why it's important that companies reduce their emissions locally. It is really important to emphasise that NbS are not a magic solution to climate change, and that NbS cannot solve climate change on their own."

"It is fair to say that the trend is towards NbS, but they are only one part of the answer," agrees Geraldo Carreiro. "We shouldn't see NbS as a new technology. You need to separate what's needed for mitigation and what's needed for adaptation. NbS are not a substitute for reducing emissions."

"We also need to acknowledge that there are many projects out there, such as tree plantations, which are called NbS but which are essentially greenwashing and are not aligned with IUCN's NbS global standard.

"There are also many NbS projects which have failed or didn't work so well because of trade-offs and collateral effects. That's why we encourage the use of the IUCN global standard to help design good NbS interventions, minimise potential problems and implement high quality NbS," says Portugal. "The concept of NbS has been more than ten years in the making, so there are a lot of lessons to draw on, but there's still a lot to learn. For example, most documented experiences of NbS projects are designed in Europe or North America - Latin America, Asia and Africa can develop a different new understanding - above all, NbS must be context-specific."

Another major challenge is in scaling up successful pilot projects. "What needs to happen now?" asks UNEP's Senior Advisor on Disaster Risk Reduction, Karen Sudmeier. "We have these models that can be replicated elsewhere. We need to document what works and what can be improved for implementing NbS at large scale into existing development and disaster risk reduction programmes so we start to see change around the world."

"We shouldn't see NbS as a new technology. You need to separate what's needed for mitigation and what's needed for adaptation. NbS are not a substitute for reducing emissions."

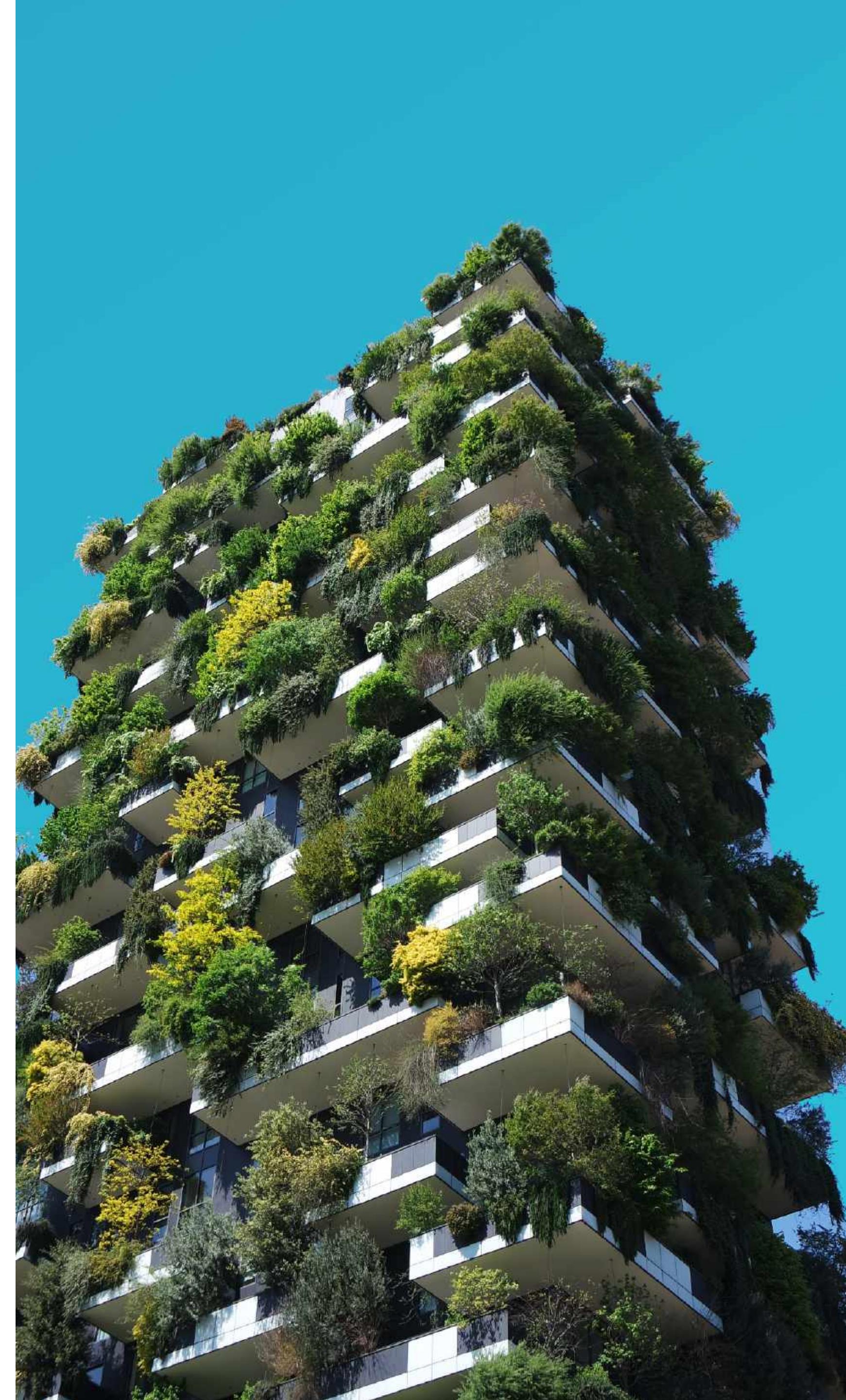
According to **UNEP's State of Finance for Nature report**, we need to triple the amount we invest in NbS each year by 2030, and to ramp that up to more than US\$8 trillion by 2050. And it's not just about money, we need a societal shift away from rewarding economic activities which damage rather than support nature.

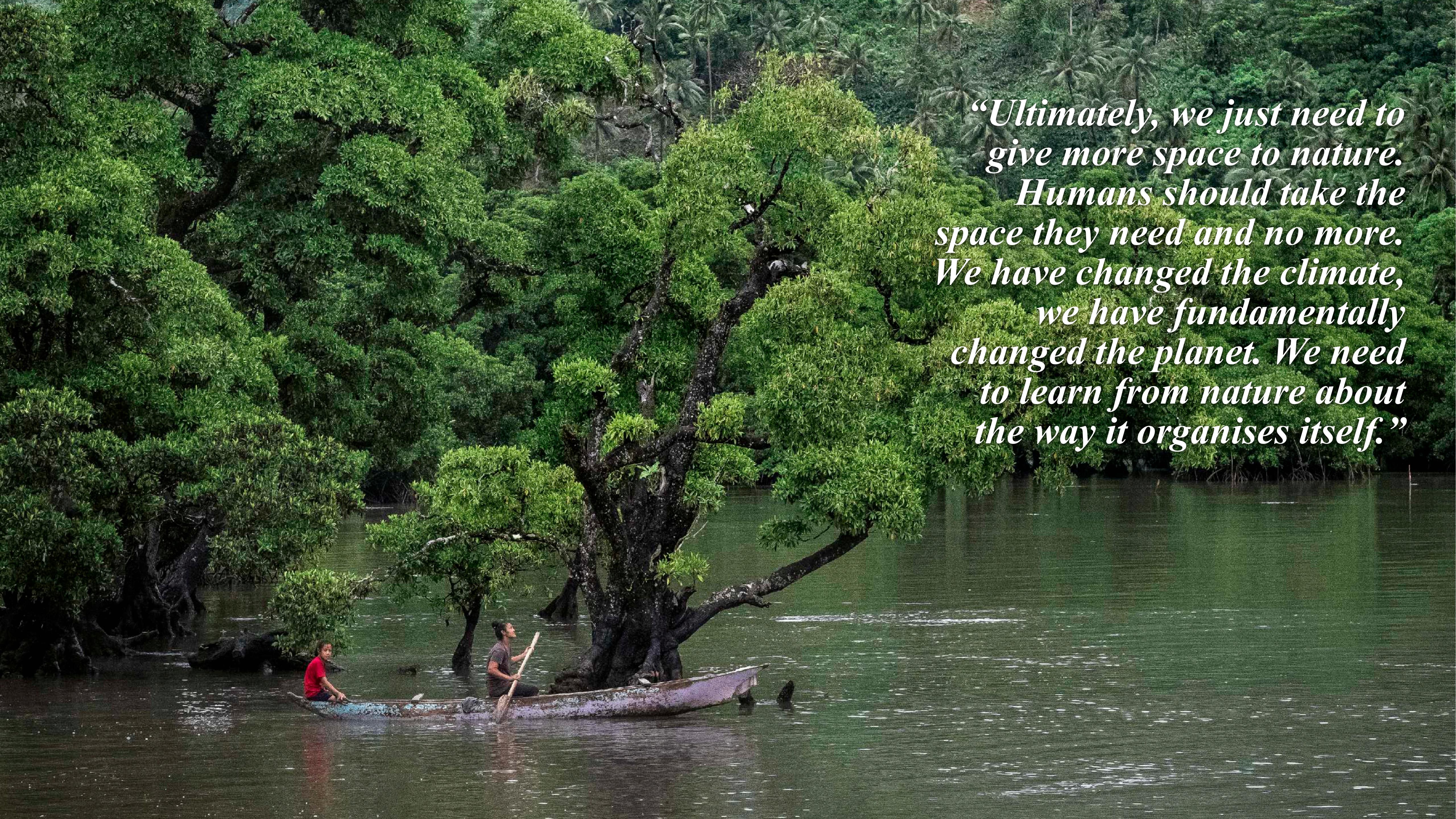
Scaling up or 'landscaping' NbS comes with its own challenges. As Alex Chausson of the NbS Initiative at the University of Oxford puts it, "There is a tension between the need to scale-out NbS across landscapes, and the context-specific nature of successful NbS implementation. To be successful, NbS need to be shaped to local social-ecological realities."

"To have a landscape scale, you need a holistic idea of your whole intervention," agrees Diego Portugal. "That means taking into account the social, environmental and economic priorities in the area you are working in."

That's not to say that large scale NbS can't work. The Great Green Wall demonstrates that, as long as they are flexible enough to be adapted to local needs and that local communities are fully involved in their design and implementation, NbS can be effective at the macro level.

"Ultimately, we just need to give more space to nature," concludes Geraldo Carreiro. "Humans should take the space they need and no more. We have changed the climate, we have fundamentally changed the planet. We need to learn from nature about the way it organises itself."





“Ultimately, we just need to give more space to nature. Humans should take the space they need and no more. We have changed the climate, we have fundamentally changed the planet. We need to learn from nature about the way it organises itself.”

Photo credits

Cover:

© EU GCCA+

2 © EU GCCA+ / *Bernardino Soares*

3 © *Gene Gallin* / *Unsplash*

5 © *LoCAL -UNCDF* / *Al Qatami*

6 © EU GCCA+

8 © *Vijeshwar Datt* / *Unsplash*

9 *Guyana* - © EU GCCA+

Mozambique - *Ton Rulkens* / *Creative Commons*

Jamaica - © *Jamaican National Environment and Planning Agency*

Solomon Islands - © EU GCCA+

Tonga - © EU GCCA+ / *SUPA* / *SPC*

10 © EU GCCA+ / *SUPA*

11 © EU GCCA+ / *Mundo Latino Cuba*

12 & 13 © EU GCCA+ / *Sylvain Cherkaoui* / *Climate Tracker*

14 © EU GCCA+ / *Bernardino Soares*

15 © UNCCD

16 © *Regreening Africa*

17 *Cape Verde* - © *ADPM Mertola*

Benin - *Marco Schmidt* / *Creative Commons*

Dominican Republic - © EU GCCA+ / *Anatoly Kireev*

Guinea - *Adobe stock*

Maldives - © EU GCCA+ / *Ali Nishan* / *Climate Tracker*

18 © *Spencer Bergen* / *Unsplash*

19 *Rajshahi* - *Grambangla* / *Creative Commons*

20 *The Gambia* - © *Ingrid Henrys* / *WasteAid*

22 © *Michele Bitetto* / *Unsplash*

23 © *Vlad Sokhin* / *Panos Pictures*

24 © EU GCCA+

25 © EU GCCA+ / *Anatoly Kireev*



The Alliance for a
changing world.



www.GCCA.eu
#GCCAPlus

Text © GCCA+ 2021