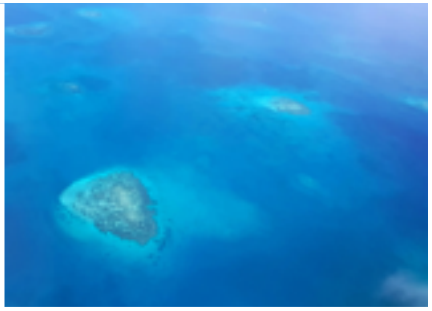






STORIES FROM A CHANGING WORLD

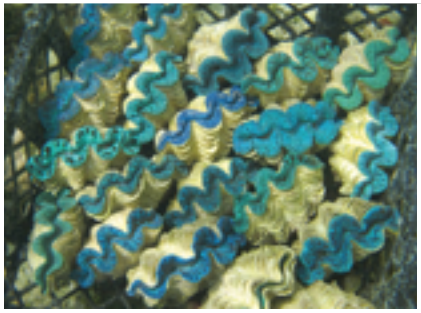
2021

The Global Climate Change Alliance Plus (EU GCCA+)











www.gcca.eu

GCCA+
THE GLOBAL CLIMATE CHANGE ALLIANCE PLUS INITIATIVE

Funded by the European Union

STORIES FROM A CHANGING WORLD 2021

TABLE OF CONTENT

IT'S TIME TO RESET OUR RELATIONSHIP WITH NATURE

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."

"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."*

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."

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.

RESILIENCIA COSTERA:
PROTECTING CUBA'S COASTLINE

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.

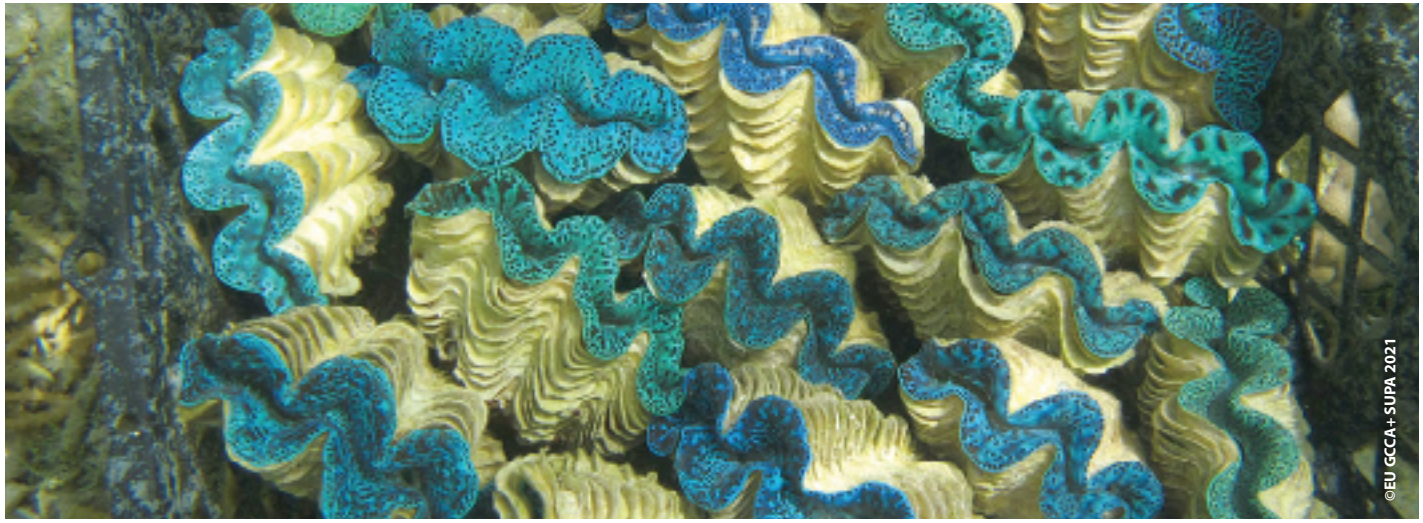
Dr Maritza García, President of Cuba's Environment Agency, says the island's natural defences have been neglected for too long. *"By restoring the ecosystem and returning it to its former state, the people who live in those areas will be better prepared and as far as possible they will be able to remain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

> "We aim to build resilience in Cuba through natural solutions in vulnerable coastal areas, including the rehabilitation of coastal marine ecosystems."

BRINGING CLAMS AND COMMUNITIES BACK FROM THE BRINK IN THE COOK ISLANDS



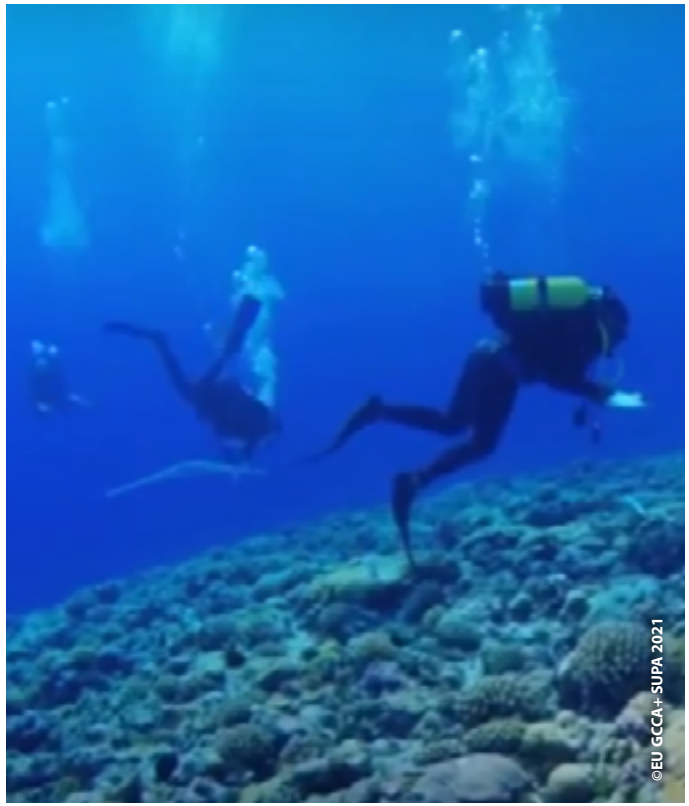
Important though it is, mangrove restoration is just one of many nature-based solutions for building the resilience of coastal communities and economies. In the Cook Islands, for example, as part of a €14.89 million EU-funded programme to scale up climate change adaptation measures across the Pacific 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.



LAOS AIMS TO LEAD THE WAY IN POST-PANDEMIC SUSTAINABLE TOURISM

Covid-19 has hit the global travel industry hard. World-wide tourism losses are put at US$4.7 trillion, with 62 million jobs lost in 2020 alone. At the same time, climate action demands we drastically reduce our travel footprint. Even as the first tourists start once to enjoy post-pandemic foreign holidays, the UN Glasgow Declaration on Climate Action in Tourism commits to cut global tourism emissions by at least half over the next decade.

But where does this leave countries – many of them in the Global South – who rely on tourism as a source of income and employment? And is this – as many hope – the moment to change the way we travel for good?

In the Lao People's Democratic Republic – more usually simply known as Laos – the €2.2 million EU-funded SUSTOUR initiative aims to show it is possible to reduce the footprint of long-distance travel whilst providing positive benefits for the local environment, people and economy. The sustainable travel scheme builds on a previous successful GCCA+ project in Laos to mainstream climate change into the Government of Lao PDR's poverty eradication efforts, as well as diversifying sources of income for poor rural communities.

For Laos – home to three UNESCO world heritage sites as well as some of the most unspoiled nature in Southeast Asia – it's vital to get that balance right.

"Tourism has been a big part of Laos' economy since the mid-2000s," explains Connor Bedard, Project Manager for SUSTOUR Laos. *"But that's had some negative impacts on communities and the environment. We're trying to curb some of those impacts, because Laos' appeal to tourists is in its nature, its communities and its cultures."*

"Laos is rich in its natural environment. We have more than twenty national parks, and a lot of nature is still untouched," says Inthy Deuansavanh, a hotel and restaurant owner who runs Green Discovery Laos. *"After Covid this will be even more important, because people will want to travel in smaller groups, outdoors, with an emphasis on quality. The way to keep tourism in Laos sustainable is to keep it a niche, high-end, expensive product – that's our strength because we can't compete on price with places like China or Thailand."*

A key plank of SUSTOUR Laos is to help local businesses gain Travelife certification. Having a Travelife certificate means hotel and tour operators can take advantage of consumer demand for more sustainable travel.
"Travelife really helped us have clear sustainability goals and a framework to achieve them," says Alexandra Michat, Director Of Sustainability at EXO Travel and Manager of the EXO Foundation.

"EXO has always been passionate about sustainability, and we always look for like-minded partners in the markets where we operate. Since 2016 we have been taking climate action, for example by measuring our emissions both internally and offsetting our customers' carbon footprint – not just flights, but ground transport and hotels. We also drive positive action in our supply chains by reducing energy, water waste and food waste." In Laos, EXO's carbon footprint is offset through a project for improved cookstoves managed by the Dutch non-profit SNV. Carbon emissions from flights are automatically calculated and added to the ticket price at time of booking.

But Alexandra admits getting the balance right isn't always easy. *"While we encourage and empower staff and travellers to travel lightly by creating unforgettable trips using carbon-neutral transportation and avoiding air travel when possible, we also understand that sometimes some emissions – for example by long haul flights – are unavoidable. That's why we work towards lowering travellers' carbon footprint at their destinations. We're always conscious of the choices we make, the flights and tours we organise – bearing in mind the negative consequences they can have. It's about satisfying the desire to travel whilst trying as far as possible to minimise impact."*

Sustainable tourism isn't just about reducing environmental impacts. Creating jobs and improving livelihoods for local

Link to the online story

#GCCAPlus

GCCA+

people is just as important – according to LuxDev, which runs a "Skills for Tourism" programme in Laos – in 2018 tourism in the country supported around 54,000 jobs, nearly two-thirds of which were women. *"It's very important for the sustainable tourism industry in Laos to provide employment opportunities for local people, especially young people,"* says Inthy. *"If you get local people involved, they begin to understand why they should preserve the environment. Nature has been badly impacted in Laos, through hunting, slash-and-burn agriculture, or cutting down the forest to make a living. If people benefit from sustainable tourism, they are less likely to trash the environment."*

That's a philosophy which Rodolphe Gay and his wife Toune Sisouphanthavong – owners of the famous Maison Dalabua hotel and two restaurants in the Luang Prabang UNESCO world heritage site – are passionate about. *"We are in the process of getting Travelife certification," says Rodolphe. "In the past three years we have completely banned plastic from our properties. It hasn't been easy because plastic is everywhere in Asia. It's crazy. We also recycle as much food waste as we can and use it as compost for our garden."*

Other innovations include banning the use of chemical cleaning products and investing in a wastewater treatment plant. *"Our property surrounds UNESCO classifieds ponds – they are the heart of our hotel,"* explains Rodolphe. *"We were worried that chemicals would get into the ponds and negatively impact the water, the wildlife, and the plants. So now we use only natural cleaning products."* Organic food served in the restaurants comes either from Toune's garden, the twice-weekly local market or the nearby NamKhan EcoLodge farm. Maison Dalabua has also employed a young local woman as a full-time sustainability manager, whose job is to ensure the hotel gets its Travelife certification, as well as raising awareness amongst staff.

In common with other tourist destinations, the pandemic has taken a heavy toll on Laos' economy. *"Tourism provides jobs and income for people in low-income economies such as Laos,"* explains Alexandra. *"The Covid crisis has shown the extent to which communities and conservation organisations were dependent on income generated by tourism. For example, all the souvenirs and other products we buy for our travellers are selected from social enterprises, artisans, charitable programmes and communities in Laos. We take travellers to visit community-based tourism projects, to conservation projects and to places like the Laos Buffalo Dairy, a sustainable farm and social business near Luang Prabang. None of that has been possible during the pandemic. They are really struggling."*

As tourists start to trickle back, albeit slowly, a core element in SUSTOUR Laos' strategy is to raise awareness of the potential of sustainable tourism among local businesses. *"We do a lot of marketing and promotion, to give businesses an incentive to join the programme,"* says Connor. *"It can be difficult to promote some of these ideas in Laos, especially among local businesses. We can help by promoting them through online and offline marketing, as well as promoting Laos in general as a green destination."*

"I think some of the local investors are starting to realise the potential of green tourism," adds Inthy. *"Before covid, very few local companies were involved, but now they are starting to realise how beautiful their country is. It's a good sign, because we need more operators to help Laos become a sustainable destination."*

"Most people understand why we need to travel more sustainably," adds Alexandra. "But they don't always understand how to do it. How we can change our processes, our operations, how we can train our staff to really understand that every choice they make has consequences?"

It is perhaps too early to judge whether sustainability becomes the 'new normal' for post-pandemic tourism. But in Laos, at least, the travel and hospitality sector seems up for the challenge.

WOMEN TACKLING THE GAMBIA'S WASTE PROBLEM

The Gambia's famous food markets attract tourists and local residents alike. From the sprawling Bakau fish market to the fruit and vegetable stalls at Abuko, the markets dotted around the Greater Banjul Area are an essential part of life in the capital region.

The markets are usually laid out with small shops made of wood and sheet metal – known as canteens – at the front, while inside are the stalls selling meat, fish and vegetables. Much of the produce is grown by women in gardens close by the markets.

But the markets also create tonnes of trash – much of it organic waste which, along with plastic, cardboard, and other rubbish, becomes landfill at the city's infamous Bakoteh dumpsite.

In an effort to tackle the organic waste problem, WasteAid, a UK-based NGO, in partnership with Kanifing Municipal Council (KMC) & Women's Initiative The Gambia, has been awarded €100,000 by the EU Global Climate Change Alliance (GCCA+) to pilot an innovative approach to divert organic waste into productive materials.

"The Greater Banjul Area is a coastal environment, so you get problems with toxins leaking from the dumpsite into the water table and the sea," says Ingrid Henrys, WasteAid Project Coordinator in The Gambia. *"In the past they also burned trash there and that caused smoke and pollution problems for local people, as well as the flies from organic waste. Now burning has been banned and a fence has been built around the dumpsite to stop rubbish blowing away, but the problem remains of how to reduce the amount of organic waste being dumped there."*

As a first step, the women gardeners who grow fruit and vegetables to sell in the markets are being taught how to turn organic waste into compost.

"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. *"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."*

Turning organic waste into compost will enable the women gardeners to reduce their reliance on chemical fertilisers. *"When we talked to them, we realised they were spending a serious amount of money on chemicals, but their productivity was going down each year,"* says Lamin S. Sanyang, Director of Services at KMC. *"If they switch to organic compost it will not only save them money, but it will also be better for soil fertility."*

Ingrid points to another benefit. *"We also need to protect the women's health. Often they use these chemical fertilisers without any protective equipment, and they have no control over what it is or how much they use."*

The Gambia's waste problem goes back decades. *"One of the biggest issues was the lack of vehicles to collect waste,"* says Lamin.

"There was no proper waste collection, so people just used to dump it in the street and in the rivers, which in turn caused disease and pollution. Some communities resorted to burning the rubbish, which also affected their health. During the rainy season there were flash floods because the drains were blocked up with trash. So we decided to take action, and devised the Mbalit Project – Mbalit is the local name for waste."

Link to the online story

#GCCAPlus

GCCA+

WOMEN TACKLING THE GAMBIA'S WASTE PROBLEM

The GCCA+ funded WasteAid programme builds on the Mbalit Project by diverting biodegradable waste away from the dumpsite and turning it into both compost and biochar – a form of charcoal made from biomass – which can be sold for cooking fuel.

"It's not just the women gardeners who benefit, the market vendors are really happy as well," adds Lamin. *"In the past, the rubbish wasn't always collected on time and was left to rot. If the waste is properly managed, it will reduce the number of flies."* It's early days for the pilot project, which was launched at Abuko market in July – but it's already created a stir.

"The word has spread very quickly, especially after the official launch," says Ingrid. "It was covered on the local TV and radio and social media – the training hasn't started yet but already people are interested in it. 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. 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." Ingrid's enthusiasm for nature and the climate is already rubbing off on the women gardeners. *"Wow, this is indeed a great achievement. Our production level will increase,"* says Fatou Ceesa*.

"We have been working this garden for many decades, but our production levels have remained the same. But with this project, our production will increase, and our lives will be improved. We can now get a good price for our vegetables and continue paying our children's school fees, as well as paying medical bills."

"I have a passion for environmental and biodiversity protection, and I am always trying new composting techniques at home," laughs Ingrid. "I also really love to empower women – so this project really brings it all together!"

*Not her real name, for reasons of confidentiality.

Link to the online story

#GCCAPlus

GCCA+

CUBA'S NEW ENERGY REVOLUTION


©Hector Manuel Correa

A renewable energy revolution is sweeping across Cuba. Committed to reducing its greenhouse gas emissions by generating nearly a quarter of its electricity from renewable sources by 2030, Cuba has embarked on an ambitious plan to scale up biogas production.

For decades, Cuba relied on cheap oil imports from Venezuela to fuel its electricity power stations, but the climate crisis has made it clear the country needs to move to a more sustainable and home-grown solution. Cuba's energy and agriculture sectors combined account for more than 90 percent of its greenhouse gas (GHG) emissions.

"Biogas is hugely important for Cuba's energy security," says Luis Cepero Casas, a researcher at the Indio Hatuey Experimental Station of Pastures and Forages, part of the University of Matanzas. *"Firstly, because it is both produced and consumed locally. It's part of the circular economy as well as providing environmental, economic, social and energy benefits. But more significantly, it means we can reduce imports of fossil fuels. We estimate that biogas can generate more than 245 GWh of electricity every year, or reduce this equivalent amount of energy by its use."*

Cepero is one of a team of biogas experts at Indio Hatuey. He's currently working on the EU Global Climate Change Alliance (GCCA+) low carbon sustainable development programme, a €4.4 million project to promote the use of bioenergy in the rural municipality of Martí in Matanzas province. Already one biodigester has been installed in the municipality, and another is due to come on stream soon – with a joint potential of 4500 m3 of biogas per day.

"Biogas has become increasingly widespread in Cuba in recent years," he explains. *"The Movement of Biogas Users (MUB) is spread across the island, although most of the biogas plants today are found in Cuba's agricultural sector. Small-scale peasant farms account for around 98 percent of the country's total existing biodigesters."*

Although there are plans to install around 500 biogas plants using residues from distilleries, canning factories, sugar mills, slaughterhouses and pulping factories, the Ministry of Mines and Energy is focusing on biodigesters using pig and cow manure. At least 7000 more units are needed to meet renewable energy targets.

"Biogas plants reduce CO2 emissions primarily because they are a closed-cycle technology, but they have have another big advantage," says MsC. Cepero. *"They create biofertilisers as a by-product, which can be used instead of chemical fertilisers. The organic fertiliser produced in the biogas plants is natural and does not emit polluting gases, and no fuel is used to obtain or manufacture it."*

It's this combined approach of agroecology and GHG reduction which is at the heart of the GCCA+ programme in Martí municipality, which runs until 2024 and is expected to benefit around 22,000 people. As well as promoting increased use of biogas in homes and on farms, the project aims to use biomethane to fuel buses, in an area where poor public transport has limited accessibility in the past.

"Small-scale family biogas plants can be easily built and assembled locally," adds Cepero. *"In Cuba we have a number of different proven models which can be adapted according to what materials are available. Lots of people are already trained to design and build small-scale plants, although sometimes there is a shortage of construction supplies which can slow things up."*

With more than two thirds of the Cuban population still relying on electricity for cooking, domestic biogas production could be a game changer. In the neighbouring municipality of Jovellanos, the Correa family have been cooking with biogas for the past three years.

Link to the online story

#GCCAPlus

"We have a biodigester which is fed every day by a member of the family on a rotating basis," says Héctor Correa, who with his wife and two sons runs the Finca Coincidencia family farm. *"It uses at least 210 kg of fresh waste produced by our cows and pigs. Thanks to the biodigester, we use significantly less electricity on the farm, which means we also save money. Even when there is no electricity, the biogas is always available."*

"The biodigester provides enough gas not only for heating, cooking and refrigerating food for the family, but also for preparing food and drinks for the for the half-a-dozen people who work on the farm," says Héctor's wife Odalis.

There are other benefits as well. "We use all the effluents and biofertilisers produced in the biodigester to fertilise the land," adds Héctor. *"That helps to close the production cycle and save money, as we don't need to buy chemical fertilisers. It also means the food we grow is healthier. I'm very happy that we are making a small contribution to reducing greenhouse gasses and improving the environment."*

Back at the Indio Hatuey research station – named after an indigenous leader who fought against the Spanish conquistadores in the early sixteenth century – Cepero and his team are stepping up their own fight against climate change.

"I am optimistic that Cuba can make the transition to cleaner energy in the future," he says. *"It's clear there is a growing awareness in the country about the need to apply renewable energy sources, from the state right down to individuals. Cuba has a huge potential for renewable energy – not just biogas, but solar, wind, biomass, ocean wave energy, geothermal and small hydroelectric schemes. If we combine these resources we can guarantee all Cuba's energy needs all the time."*

"Thanks to the biodigester, we use significantly less electricity on the farm, which means we also save money. Even when there is no electricity, the biogas is always available."

©Hector Manuel Correa

SEARCHING FOR SWEET WATER IN BANGLADESH

"I was heavily pregnant and my feet were swollen, but I still had to walk a long way every day carrying heavy containers of water," recalls Mossamad Hanufa Begum with a sigh. *"My husband was at work all day, there was no-one else available to fetch water, and the water in the ponds near our house was unusable."*

Life is hard in Manikkhali, a small village in the the low-lying Barguna district of southern Bangladesh. Home to the Sundarbans – one of the largest mangrove forests in the world - and bordered by the rivers and the sea of the Ganges delta, the region is highly vulnerable to sea level rise, salt water contamination, tropical storms and flooding.

About 20 million people in the coastal areas of Bangladesh are already affected by salinity in soils and drinking water, and around 70 percent of people in the region depend on pond water for drinking and domestic use because the ground water is too salty.

In the past, the residents of Manikkhali drew fresh water from the natural ponds surrounding their village, but in recent years the impacts of climate change have made it unfit to drink. Rivers dry up in the hot season, while saline water intrusion has contaminated canals, ponds and crop fields. The problem is particularly acute for women, who are traditionally responsible for keeping the family home supplied with fresh water. A World Bank study links health problems during pregnancy and early childhood to drinking water contaminated by salt.

Now, however, the lives of villagers like Hanufa have been made easier thanks to new EU-funded rainwater harvesting systems installed by the Local Climate Adaptive Living facility (LoCAL), part of an €8 million EU GCCA+ programme to help Bangladesh cope with the worst impacts of climate change.

Disease wasn't the only risk. According to UNICEF, women and girls faced sexual harassment as they made the long trek to and from the nearest supply of clean water. So far, 30 rainwater harvesting systems, each with a capacity of 1,000 litres of water, have been installed in Manikkhali alone. Costing just €20 per household, more than 450 poor families now have access to drinking water for the next ten to fifteen years.

"We no longer have to carry contaminated water from far-flung ponds," says Mossamad Rina Begum, who also lives in Manikkhali village. "Before, we had to be really careful to ration our water intake – and that left us dehydrated and unwell. Now we don't have to worry about that at all."

Her friend Mossamad Rekha Begum agrees. *"I had to wait for my husband to fetch the water because it was difficult for me to carry large amounts from far away. It was time consuming. We had to get up very early to fetch the water before he went to work. Now the problem is solved."*

The rainwater harvesting project has had other positive spin-offs. Villagers who were previously unaware of climate change and its impacts are now involved in managing the scheme and exploring other ways to become climate resilient.

"This rainwater harvesting plant was a real eye-opener!" says Hanufa. *"The local authorities and communities are much more aware about the human impact of climate change, and how local solutions can build climate change resilience".*

"The parishads [local assemblies] have seen the positive affects of rainwater harvesting, and have now include climate change in their planning and financing. The community has united to make decisions and also to help maintain the plant."

Local ownership of the scheme is key to the success of the project. *"The scheme is maintained by a designated committee and the household members,"* says Md. Farid Mia, Chair of the local union [council]. *"The community and local government take responsibility to clean, maintain, and repair any parts that are damaged at their expense."*

DIGGING DEEP FOR SAFE WATER IN NIGER

Nine thousand kilometres from Barguna, the women of Bazinga in rural Niger know all about the hardships of daily water collection. "Until two years ago, the women endured a real nightmare," says Mamane Tourba, Mayor of Dogonkiria rural commune in the country's south-west. *"They had a choice – either walk more than five kilometres every day to fetch water or wait for hours to get a trickle of water from the village well. The women's morale hit rock bottom because it was the only source of water during the dry season."*

Built in 1977 with Japanese aid money, the village well gradually filled with sand until it was nearly useless. *"The women told us the well simply wasn't deep enough to meet the needs of the village,"* says the Mayor. *"We dug out five metres of sand and the well is now 12 metres deep. It never lacks water any more – much to the delight of the villagers!"*

The Bazinga well was renovated using a grant from the EU's Local Climate Adaptive Living Facility (LoCAL), a €4 million programme designed to help local authorities in least developed countries (LCDs) become more resilient in the face of climate change. Altogether, seven field projects covering more than 30 municipalities in the Dosso and Zinder regions have been completed. In Dongokiria and neighbouring Sokorbé, eight wells have been brought back to life and three new ones constructed. Nearly six thousand people, including four thousand women, now have better access to drinking water.

"The village well is now deeper, and protected by a retaining wall," notes Mayor Tourba.

"Everyone must remove their shoes before entering the enclosure, to protect against contamination. Any soilled water runs away down a channel to avoid stagnation and is used to irrigate newly planted trees which will provide shade around the well. There is a separate channel where animals can drink."

LoCAL stresses community involvement in all its projects. "Everyone pays a monthly user fee, and the money collected is managed by a committee responsible for maintaining the well. This ensures a better sustainable use of the well and its water," he says.

Niger is one of the driest countries in Africa, with three-quarters of its territory lying in the Sahara desert and the Sahel region. Unpredictable rainfall patterns and extreme weather events driven by climate change spell misery for rural communities - last year the country was hit by devastating floods which affected more than 400,000 people and destroyed 9000 hectares of agricultural land.

For most of the year, however, people here are more concerned with the lack of water than by having too much. Less than 100 km from Dogonkiria, another EU-funded programme provides water for nearly 9000 inhabitants and their animals in Dogondoutchi, a mainly farming community. Here, the dry season really means dry – it is common for not one single drop of rain to fall between October and May, while the rainy season brings flash flooding which washes away valuable topsoil.

Women are the main beneficiaries of the six multi-purpose cement wells which have been constructed by EU GCCA+ development partner Eau Vive in the district. For one of them, Fatima Dankani, the new wells mean less time spent fetching and carrying enough water for her family, which previously took an entire day and involved carrying up to 40 litres of water.

"Ever since the well has been rehabilitated, there has been a difference in my life." – Fatima Dankani

"Altogether, seven people depend on me for water on daily basis. I cannot let them down. My children used to cry if I took them to the well, but I couldn't leave them as there was no one to look after them," she says. "My whole family has greatly benefitted from this well, and it has reduced my suffering."

The €1.5 million project in Dogonkiria has benefits which go far beyond reducing women's workloads. Vegetable plots have sprung up around the wells, significantly improving food and nutritional security, and enabling women to sell surplus produce in nearby markets. Livestock farmers can rely on water for their cattle, while some women have been trained to grow tree seedlings, which are then planted to provide shade and to reforest the land. As one village leader says, the wells have helped give women back their freedom.

"They don't want their daughters to suffer as they did."

OLD TRADITIONS, NEW SOLUTIONS IN TIMOR LESTE

"The relationship between fresh water and the people of Timor Leste has always been complex," says Isabel Pereira, a native Timorese who works as National Adviser for the German development agency GIZ.

"People live on steep mountains and water has never been easy to find or manage. Now that the rains come too late or all at once, people in the villages must use their old traditions to cope with less water."

For centuries, the mountain farmers of Timor Leste have turned to 'tara bandu' to help them make big decisions. The traditional Timorese custom aims to solve community challenges through consensus and without resorting to conflict. Tara bandu – based on collective wisdom and experience – is used to create common guidelines for living in harmony with nature and with other people. So after years of drought, with fresh water becoming increasingly scarce, the farmers turned to their own cultural traditions to avoid conflict.

"People in Timor Leste are becoming aware that if the climate is changing, people must change too. In particular, mountain communities must be prepared to protect their land, to store water and to use their natural resources wisely if their children are to continue living on the land of their ancestors," says Isabel. The EU GCCA+ €4 million programme in Timor Leste helps remote farming communities become more resilient to the impacts of climate change, including extreme drought and flooding.

Communities used tara bandu to agree conservation agriculture measures, including digging reservoirs to collect rainfall and conserving soil by avoiding slash and burn. Although advised by experts from GCCA+, the UN and NGOs, it was the communities themselves who met, discussed and agreed the best way forward.

In the northern coastal region of Liquiça, for example, the water supply to 36 households in one village was repaired and upgraded following tara bandu. Antonia Alves de Jesus was one of those to benefit. "Before, we didn't get water and we couldn't plant any vegetables," she says. *"Now that we get water, we can plant our garden and we also have a good supply of water for the animals."*

"We've cut costs, reduced labour and increased yields. Despite long periods of drought, there's still enough water." - Farmer Joao da Cunha

Alongside traditional, nature-based solutions, Timor Leste is also experimenting with 21st century water conservation. A hilltop above Akrema village on the remote island of Atauro is the site of a pilot hydropanel plant which produces water from sunlight and air – although teething problems combined with the relatively high cost have led some to question the technology's viability in low-income countries.

"During the long dry season it's really difficult to access water for drinking, for the animals and for cooking," Adap Coreia, a villager who helps manage the hydropanel project, told Channel News Asia.

"In the past we only used the water collected in the tank from the rain. This gives us another option. Climate change is really affecting our activities – the fishing, our agriculture and keeping the animals. It's changing the seasons for corn. It cannot grow well because of not enough water and some coconuts we plant die because it's too hot."

However, for the vast majority of Timorese, the best way to cope with future droughts is to work with nature. *"We're not planning for big and expensive solutions, we take small steps to make a difference,"* says Isabel.

"If the climate is changing, then we can also change ourselves. We can use our traditions and our wisdom, and we can build on what we have learned in recent years."

THE WRONG KIND OF WATER IN NAURU

Water insecurity isn't just about having not enough to drink - it's also about having the wrong kind of water. Surrounded on all sides by the ocean, and threatened by rising sea levels, many small Pacific island nations experience chronic fresh water shortages.

Low-lying coral atolls, some just a couple of metres above the waves, have been hit by a double-whammy of rising sea levels and increased droughts – during one particularly severe dry spell in 2013, large families on the Marshall Islands were forced to live on less than five litres of water a day.

Nauru, part of the Micronesia group located roughly half way between Australia and Hawaii, has no piped water system, making residents highly vulnerable to water shortages. Recent research by the EU GCCA+ showed that a third of households have less than 5,000 litres of water storage capacity, with many of them relying on neighbours or having to buy bottled water.

The study, part of the Scaling Up Pacific Adaptation (SUPA) project in 2020, also found that many of the most water-vulnerable homes had elderly or disabled people living in the household.

"Nauru relies on a reverse osmosis water purification system, which produces a maximum of two million litres of water a day if we run all three plants," says General Operations Manager Mohammed Ali. "But it's very expensive, and when the electricity supply fails then we can't run the system at all. Then we have to rely on rainwater or the underground water supply, which is very brackish. When there is a drought demand shoots up."

"There are high levels of bacteria in the ground water supply," explains community leader Haseldon Buraman. "It is also very saline because of inundation from rising sea levels. It's not fit for drinking, we can only use it for toilets or laundry."

The four-year, €15 million EU-funded SUPA project covers the Cook Islands, Federated States of Micronesia (FSM), Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Tonga and Tuvalu. Faced with increasingly urgent water shortages, four of them - FSM, Nauru, Niue, and Kiribati – are focusing on community water security, installing rainwater harvesting and desalination units and providing training to maintain the new systems.

More than 3000 km to the north west, on the tiny island of Fais, a tricky operation is underway to install a giant rainwater tank. Fais – an outlying island of Yap State in FSM – has no harbour and the airstrip can only take small planes, so the 5000 litre tank is first offloaded from a ship anchored offshore onto a small boat, then floated the last few metres onto the beach. From there, the islanders carry the tank by hand to the installation site.

"The islanders are very self-sufficient – the only way to transport anything on Fais island is to carry it." says Christina Fillmed, Executive Director of the Yap State Environment Protection Agency. *"Sometimes during a drought, coconuts are the only source of water and hydration. There's a community water tank next to the elementary school but access is rationed. The supply of good quality water has been degrading steadily over the last few decades – there are some underground aquifers but they are considered no longer fit for human consumption because of saltwater intrusion."*

Drought in the western Pacific tends to be worse in El Niño years, which bring more frequent and intense tropical storms. The new water tank will help Fais cope with these increasingly unpredictable rainfall patterns is part of the €4.5 million EU-North Pacific Readiness for El Niño (RENI) project, which aims to secure food and water resources for vulnerable communities ahead of droughts.

"The availability of fresh water in the outlying islands of the FSM is highly dependent upon favourable environmental conditions," adds Christina.

Community involvement is vital for the project's success. Training has been provided so that islanders can maintain the tanks and pumps themselves, and they have signed a maintenance agreement to make sure the infrastructure stays working.

"The community are really providing a huge contribution," says Raymond Tamow, EU GCCA+ project officer for Yap State. *"They dug the foundations, filled them with aggregate and helped offload the tanks to the shore and then to the houses. They work closely with the government officials, and without them the project would not have been completed on time."*

Watching the rainwater tanks come ashore in Fais was Andrew Jacobs, at the time the EU ambassador to the Pacific. "We were on the island when the water tanks were delivered," he says.

"Talking to the community, it's clear they are going to make a huge difference in in the future. Getting drinkable water has always been a major problem here. We also installed a well which started pumping fresh water up just one day before a major cyclone hit the island. It's made an immediate difference."

Community involvement is vital for the project's success. Training has been provided so that islanders can maintain the tanks and pumps themselves.

FROM BUTTERFLIES TO BEES IN TANZANIA

Before the Covid-19 pandemic hit international travel, Tanzania's East Usambara mountains were a favourite destination for tourists seeking relief from the heat and humidity of the coast. Unlike much of the country, the mountains are cool and rainy for much of the year – but that hasn't protected them – or the people who live there – from climate change.

Deforestation, mainly driven by the need for cooking fuel and charcoal production, led to the region being ranked by Conservation International as one of the world's ten most endangered biodiversity hotspots.

"There's a very clear line between deforestation and cooking, and that makes it a gender issue since the women do all the cooking and collecting firewood." - Jane Wilkinson, Strategic Mitigation Adviser, EU GCCA+

In 2014, as part of it's Tanzania Eco-Villages programme, the EU GCCA+ began a €8 million programme – Integrated Approaches for Climate Change Adaptation in the East Usambara Mountains – to increase and diversify the incomes of 2,500 families in eight communities. Spanish NGO ONGAWA, in partnership with Muheza District Council, was chosen to implement the project, which – crucially – aimed to empower women to make their own independent financial decisions through village savings and loans groups.

"Before the project, women weren't interested in participating in sustainable development activities," says Halima Sheshe Idd, Chair of Mgambo Village. *"But now women have been motivated and they participate like men. In our village savings and loans group, women and men make collective decisions. When a woman gets a loan she decides on her own how to use the money and no man influences her decision. I took out a loan and developed my farm to grow cloves, cinnamon, black pepper and bananas. I planted them professionally based on the training I got from the project."*

Other women have retrained as butterfly farmers, selling the insects to visitor attractions in the US and Europe whilst helping to regenerate native species. Some act as tour guides in the nearby Amani Forest Nature Reserve. *"I had a business selling clothes, but the money I make from being a tour guide has enabled me to invest in the business and increase my income,"* says Amina Juma Omary. *"I made the decision about how to use the extra money – then later I told my husband and he agreed!"*

There are more women working in agriculture in Tanzania than in any other sub-Saharan country – 81 percent of the female population works in farming, compared to 55 percent in the rest of sub-Saharan Africa. This makes them especially vulnerable to the impacts of climate change – but time and again, given the right opportunities, access to finance and training, women prove themselves to be astute business operators.

Anna Sabini, a livestock farmer from Mgambo, says the ability to access microfinance through the village savings and loans group has been a life-changer. *"I got a loan to buy goats, pay for health insurance and send my kids to school. I've also managed to persuade other women to join – we started as a small group but they've seen the benefits."*

WOMEN FARMERS GO BACK TO SCHOOL IN UGANDA

"Many people see farmers as failures," says Mercy Ssekide. *"They think farmers are uneducated and that's all they can do. But farming is a business, a business that provides for your home and educates your children."*

Mercy, a farmer and entrepreneur from the Mubende district of Uganda, is one of a growing band of women changing agriculture across the globe – and becoming more resilient to the worst impacts of climate change. But they face an uphill struggle. According to Fairtrade International, around 60–80 percent of the world's food is grown by women. In developing countries they account for around half the agricultural workforce. Yet they often don't own the land and see little of the profit made from it.

From the start, EU GCCA+ has funded programmes around the world aimed at helping women farmers to become climate change leaders in their communities. Mercy Ssekide is one of thousands to have benefitted – in her case, she was trained at a farmer field school funded by the EU and run by the UN Food and Agriculture Organisation (FAO). As part of the €11 million programme, more than 300 field schools – sometimes known as schools without walls – have trained more than 4000 farmers throughout Uganda's central 'cattle corridor' which runs roughly south-west to north-east across the country. The corridor is highly vulnerable to climate change, suffering frequent floods, prolonged droughts and unpredictable rainfall.

"Many farmers don't benefit from farming because they don't think of it as a business. They should have a passion for farming," says Mercy, who is a successful pig breeder in addition to her other farming activities. "I started off as a tenant but now I own my own land. Who am I, a mere farmer, to own land with a title?" she laughs.

Mercy even managed to convince her husband to join the farmer field school. "During the training I realised we had to work together. If you don't cooperate you will not be successful." Now Mercy and her husband have separate bank accounts. "When my wife gets money she puts it into her own own bank account, and I also have a bank account," he notes. *"We have two children at university, and we each contribute half the school fees."*

"A sustainable, inclusive and equal world cannot be built without quality education for all," says Jutta Urpilainen, EU Commissioner for International Partnerships.

"Education can help us cope with some of today's and tomorrow's challenges and make our trends. Think about the power of education to change behaviours on the environment or climate change...It is my conviction that educating and empowering women and girls is the precondition for creating truly inclusive societies."

Besides the field schools, Ugandan farmers have benefitted from new water tanks for cattle, bioenergy plantations to improve sustainable energy production, energy saving cook stoves and small scale irrigation schemes. Women are also encouraged to become more resilient by diversifying into different crops.

Betty Ndugga is an entrepreneur who grows coffee trees which she then sells to other women to set up their own coffee farms. After her husband died, she returned to her village in Luwero district and joined a local farmer field school where she was trained in coffee production.

"After I learned how to raise the coffee seedlings I started to operate my nursery as a business enterprise. I wanted to be able to look after my family because I am a widow." – Betty Ndugga

FIGHTING FOR FUTURE IN SUDAN

Inspired by Greta Thunberg and the Fridays for Future movement, a new generation of women around the world is leading the way on climate action. From Vanessa Nakate and Hilda Nakabuye in Uganda to Chheang Yengsreylen in Cambodia, young women – fed up with a lack of action at international level – are taking matters into their own hands.

"In Khartoum we have been experiencing extreme climate conditions," says Sudanese student Lina Adil, one of the organisers of the EU-funded Climathon in 2018 and 2019, and Climate Action Programme Manager at Impact Hub Khartoum.

"In the summer the temperatures reach very high levels, and that really affects our performance, our daily life and work. You can't really study well in such heat. But in 2020 during the rainy season the Nile flooded all over the streets – that hasn't happened since 1986. When we have extreme weather events the infrastructure in Sudan is not reliable enough to adapt, you cannot move around, there's no transportation, you can't go to work or university, the water just stays in the streets."

"I was very privileged to get an education, and that helped me to realise that climate change is real and is happening, and that it effects people in Sudan and East Africa more than others," says Lina.

"We didn't do this damage – others did it – but we are paying the price and one way or another we will have to adapt to it. It really requires all of the people to come together to think how we can adapt to this."

Climathon Khartoum, supported EU GCCA+ in collaboration with the Sudan National Council for Environment and UN Environment, aimed to connect different people to work together on practical solutions to the climate crisis facing the country. Young entrepreneurs were invited to pitch and develop practical ideas for tackling climate change in Sudan.

Success stories include Artik Energy, born out of a brain-storming workshop at Climathon 2018, which has installed solar water pumps for farms and small-scale domestic systems in villages where residents previously had no access to electricity.

"We are trying to leverage entrepreneurship to create solutions in three main areas: desertification and drought; heavy rains and floods; and sandstorms and heatwaves," says Lina.

"So looked for young people who could start small businesses to address these three areas. But climate change isn't really a topic of conversation for most people in Sudan – it's seen as an elitist issue. So we started doing public symposiums on topics which people could relate to – for example climate change and peace, or climate change and the economy. We really cut the issue up into bite-sized chunks which were easily understood by every person regardless of their background, their age or their education. Conveying knowledge is essential, then people can decide to act or not."

ONE WOMAN'S SWEET SMELL OF SUCCESS IN GUYANA

Carlotta De Jesus isn't shy when it comes to dispensing advice. *"I tell my daughters, equip yourself with everything you need for life – don't let the men feel you can't survive without them. Always make sure you take care of yourself. No matter what job you do, keep in mind that you have to maintain high self esteem - and look good doing it too!"*

It's a mantra which Carlotta has followed all her life. Starting out as a farmer, she also built up a successful business making and selling clothes. But it's a beekeeper, honey producer and environmental activist that she's best known in her home town of Victoria in the Demerara region of Guyana. Together with her husband Colin, she runs the Victoria Honey House, which produces and sells high-quality honey to locals and tourists, as well as exporting it all over the world.

"I say to people, especially girls, you can do whatever you want to do and be the best at it, once you put your heart and mind to it." – Carlotta De Jesus

Carlotta's sweet success story really took off a decade ago when the EU-funded Guyana Mangrove Restoration Project was launched, aiming to protect this low-lying Caribbean nation from the Atlantic ocean by restoring the coastal mangrove forests. Sensing an opportunity to build her business and help restore the mangroves at the same time, Carlotta – who was already a successful beekeeper – relocated many of her hives into the mangrove forests. There, the bees help pollinate the trees and produce a honey with a unique taste.

"I was keeping bees along the highway, but I heard that the mangroves produce good honey," she says. *"So we placed hives in between the existing mangroves. The mangrove honey isn't as sweet as other kinds, the salt from the sea makes our honey different. It has a light, golden colour and a completely different flavour – people really like it."*

As well as reintroducing the bees, Carlotta also got involved with replanting mangrove trees – she personally grew around 6,000 saplings and helped lead community replanting schemes. She's also an active member of the Victoria Mangrove Reserve where she runs horse-drawn cart tours for tourists.

The €4.14 million mangrove restoration project ran for three years before being handed over to the local community to manage for themselves. In that time, an astonishing 420,000 black mangrove seedlings were grown and planted, with five kilometres mangrove forest restored along the east coast of Demerara, west coast of Berbice and the Corentyne Coast. A mangrove visitor centre was established, hosting 3,000 students a year and around 200 tourists every month before the Covid-19 pandemic.

But the project also faced considerable challenges, such as climate-induced extreme weather patterns which impact honey production. "If we get too much sun we don't get blossoms, so the bees have nothing to feed on," says Carlotta. *"When we get too much rain, the rain knocks the blossom off, so the bees find it hard to pollinate. Unpredictable weather is bad for business."*

There were also problems with the mangrove restoration itself. Not everyone understood why it was important to protect the mangroves. *"People used to cut and burn the trees, or use them for construction,"* she says. *"But then they realised that if the water comes up really high, the mangroves are there for our protection."* There were some early failures. *"The first time the we tried to plant new mangrove trees, the young plants died because of the constant erosion of the seashore,"* she says. *"We learned the importance of preparing properly and putting in infrastructure to deal with waves."*

Despite these setbacks, Carlotta never doubted she was doing the right thing. She went on to become leader of the local council and president of the mangrove producers' cooperative. And she's a firm believer in getting young people involved. *"Education is the biggest thing you can depend on. When you have education, you can pick, choose and refuse. I am still learning every day. I say to people, especially girls, you can do whatever you want to do and be the best at it, once you put your heart and mind to it."*

THE EFFECT OF CORONAVIRUS ON CLIMATE FINANCE

It seems calamitous that at precisely the moment when the need to scale up climate finance is most urgent, the public finance engine room of climate investment could 'run out of steam'. In this issue, we consider why there are actually many reasons to be optimistic about the future of climate finance, especially in a post-COVID-19 world.

Governments' capacity to scramble together eye-watering volumes of emergency relief proves that money can be raised when there is the will to do so. The scientific likelihood of a serious, flu-like pandemic has been understood for decades. In 2015, a commission established after the Ebola outbreak by the US National Academy of Medicine estimated that investing USD 4.5 billion globally would minimise the risks of future pandemics. In a case of 'too little, too late', the cost of COVID recovery puts that original USD 4.5 billion into context. By June 2020, COVID-19 rescue packages alone had exceeded USD 15 trillion.

Since 2016, the International Energy Agency has called for USD 1.5 trillion in annual investments to 2030 in the energy sector alone, to align it with Paris Agreement goals. In 2018, however, total climate finance flows reached USD 579 billion, topping half a trillion for the first time – but still dramatically short of the levels needed. If COVID-19 has proven one thing beyond any doubt it is that the costs of inaction do vastly outweigh the costs of action.

The sheer value of the finance available has provided an opportunity to make the green transition irreversible, an objective the EU's EUR 1.8 trillion Next Generation recovery plan is aiming to achieve. The package prioritises climate neutrality and digitalisation on the back of a pathway already mapped in the EU Green Deal and sets a starting point for others to follow. COVID-19 has not impacted countries and communities equally. Indeed, external shocks, such as climate change and COVID-19, hit the poorest and most vulnerable communities hardest and amplify pre-existing inequalities. In a climate-changed world of irreversible impacts, the pandemic's massive disruptions to global supply chains have resulted in the loss of around 495 million full-time-equivalent, mostly low-paid jobs. In 2020, the World Bank estimates that many of the development gains made since 1990 will be decimated while around 150 million people will fall back into extreme poverty.

Before COVID-19, many low-income countries were already highly indebted and could ill afford to support vulnerable households and sectors, let alone boost climate investment. The USD 1 trillion earmarked by the international community to support COVID recovery in low-income countries prioritises many of the same countries that are also most vulnerable to climate change. Together with least-developed countries and many small island developing states, development partners should insist this recovery is urgently aligned with sustainable and sustained growth and resilience goals.

Looking ahead, recovery finance invested in low-carbon and climate-resilient outcomes around the world should count as climate finance.

After the 2008–09 financial economic crisis, Chinese and US stimulus packages invested heavily in wind and solar, thereby greatly reducing technology costs. The spike was recorded in higher-than-average climate finance flows for several years and the ultimate legacy is today's price parity for wind- and solar-power-generated electricity.

Countries should anticipate growth in climate finance levels. Governments can deploy powerful policy and public financial management avenues to ensure this happens, including inter alia, direct investing blended finance, public private partnerships, taxonomies, and ultimately, carbon pricing. Under international cooperation, development partners must deliver the 2020 climate finance goal transparently and on time.

Finally, international climate finance flows must continue to grow, even as overseas development assistance (ODA) budgets are being eyed up by constrained domestic agencies and ministries. ODA targets are linked to gross national income (GNI) goals and, with the collapse of GNI in 2020, many developing countries may worry that climate finance will disappear. This cannot be permitted as the fragile climate system on which we all rely depends upon sustainable development everywhere.

The opportunity to align recovery with scaled-up climate finance and strengthened climate action is unimpeachable. It is up to governments to make it happen.

Link to the online story

#GCCAPlus

GCCA+

GROWING ONIONS IN THE SAND OF MAURITIUS

Belle Mare is a small village situated on the eastern coastal side of the island of Mauritius. Residents are mainly small planters highly vulnerable to a high incidence of pests and disease due to climatic conditions such as high temperature and humidity. They also face the challenge of climate extremes, such as drought and high-intensity rainfall.

This is where an EU-funded project combines scientific knowledge from the University of Mauritius with nature-based solutions. To cultivate their crops, coastal farmers have been using high levels of agrochemicals, fertilisers, and pesticides. All of these chemicals leach through the sand and ground, creating big problems also for the tourism industry.

"In today's world, we need the hybrid integration of technology-based solutions with nature-based ones, which I believe will be crucial for the survival of the planet and thriving communities", explains Sunita Facknath, professor in Sustainable Agriculture, who leads the project on the transformation of Belle Mare into a Climate-Smart Agriculture village, supported by the EU-funded Global Climate Change Alliance Plus (GCCA+).

This is how onion fields can grow in the sand of coastal regions in Mauritius. The training and mentorship in Climate Smart Agriculture techniques by the staff from the University of Mauritius include placing a thick layer of sugarcane stalks on the soil prior to planting seeds (mulching); planting melliferous plants such as marigold, petunia and other plants that attract honeybees and other pollinators; using compost instead of fertilisers, and natural pesticides known as biopesticides instead of the usual toxic pesticides. The use of simple gravity-based drip irrigation instead of electrically operated overhead sprinklers limits the waste of water in this dry area with irregular water supply. 9000 litres water tanks provide a good supply of water on a daily basis.

"When you use a layer of organic mulch or even straw from debris left over from the previous cropping season, the nutrients do not go down through the sand. By introducing techniques like mulching and composting, the soil is able to retain more water," says Dr. Facknath.

Fifteen small planters were selected and are beneficiaries of the programme. Each of them received water tanks, sprayers for biopesticides and tillers. The final goal is transforming Belle-Mare into a Climate Smart Agriculture village that could set a trend to promote sustainable livelihood, enhancing national food security in a productive, climate-resilient, environment-friendly way that produces lower levels of greenhouse gas emissions.

Link to the online story

#GCCAPlus

GCCA+

THE EU GCCA+ 2021 FEATURES STORIES

ABOUT EU GCCA+

The Global Climate Change Alliance Plus (EU GCCA+) is a flagship initiative of the European Union helping most vulnerable countries respond to climate change. It started in 2007 and has become a major climate initiative with over 80 programmes in Africa, Asia, the Caribbean and Pacific region.

JOIN OUR COMMUNITY

> https://europa.eu/capacity4dev/gcca-community

READ & SHARE

www.gcca.eu/stories

GCCA+