is **blue** really the new **green**?

by Martin Atkin

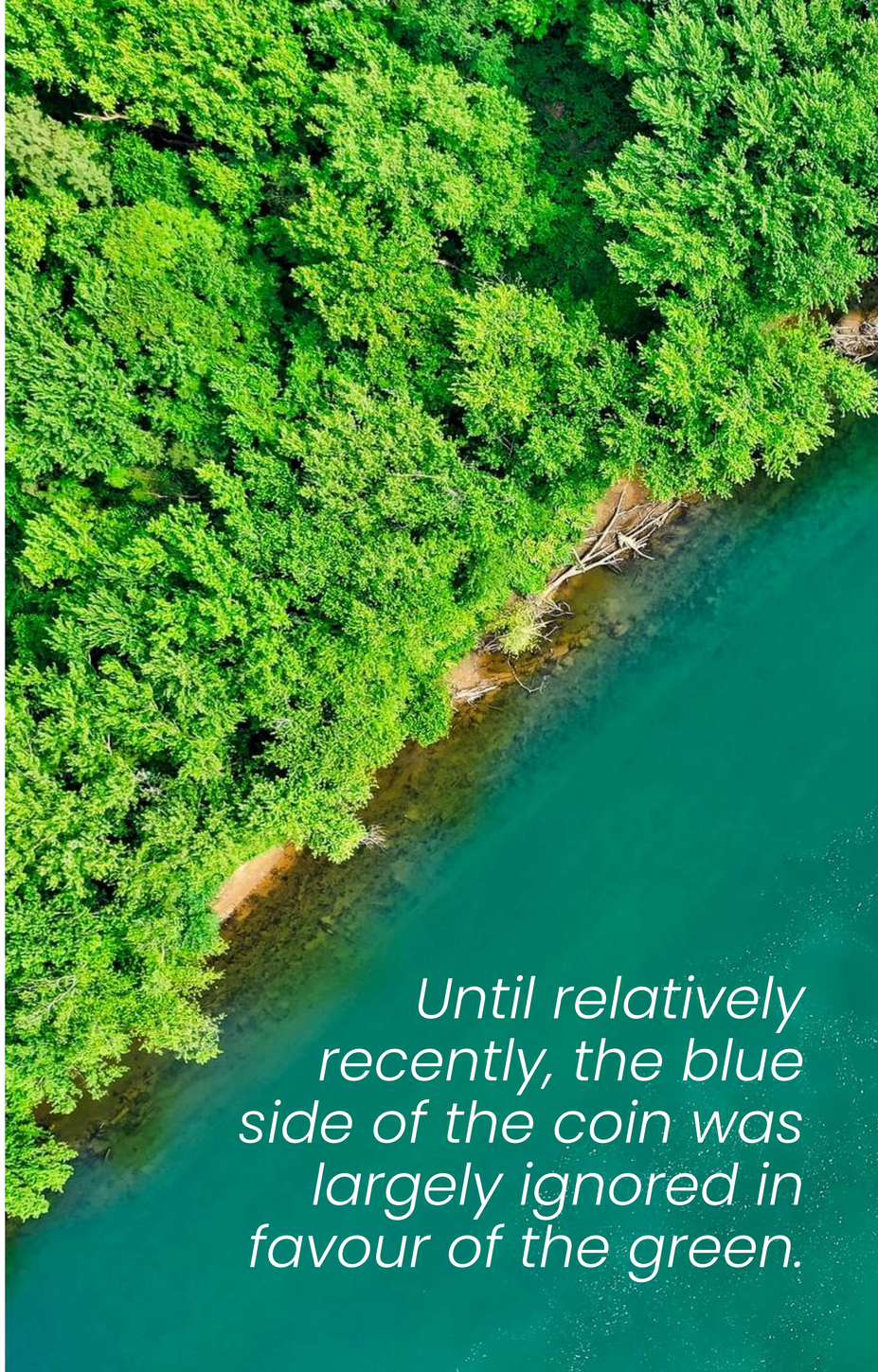

“We shouldn’t measure the importance of the blue economy just by jobs or sales or profit.”
-Virginijus Sinkevičius, European Commissioner

Blue economy, blue governance, blue carbon, blue finance…you'd be forgiven for thinking that climate change and sustainable development has changed colour in recent times. But is blue really the new green?

The 2019 UN climate change conference, also known as COP 25, was dubbed 'the first blue COP' - in the past, ocean and climate experts had largely stayed in their respective silos - and last year's COP26 in Glasgow saw the blue economy still firmly near the top of the agenda. Yet some experts worry that the focus remains on the economic value and exploitation of the world's marine and coastal zones, and not enough attention is being paid to the role of the oceans in heading off climate disaster.

As Virginijus Sinkevičius, European Commissioner for Environment, Oceans and Fisheries told COP 26:

"We shouldn't measure the importance of the blue economy just by jobs or sales or profit. Its importance lies in the one thing that distinguishes the blue economy from any other economic sector: its relation to the ocean and seas. This is a privileged relationship. One of complete interdependence. And as they say, with privilege comes responsibility. Only when we take care of the ocean, will we be able to grow the blue economy, sustainably."



Until relatively recently, the blue side of the coin was largely ignored in favour of the green.

The ‘traditional’ marine economy of the past two centuries has been anything but sustainable. By definition, destructive practices such as industrial fishing, offshore fossil fuel extraction and deep-sea mining cannot be part of a sustainable blue economy - and some ocean economists argue that as such, their value should not be included in the blue economy.

With the need for a sustainable blue economy in mind, 2018 saw the launch of the Sustainable Blue Economy Finance Principles aimed at guiding banks, insurers and investors towards financing a sustainable blue economy.

“There are multiple opportunities to develop a sustainable blue economy that is net zero, nature-positive and fully aligned with the green and digital transformation,” argues Torsten Thiele, Founder of Global Ocean Trust and a contributor to the principles. “But for it to flourish, we do not only need a better understanding of ecosystem-based impacts of human activities and improved governance, but also a rapid push for appropriate innovative finance solutions that engage both the public and the private sector.”

Oceans are vital for regulating the climate. They absorb 98 percent of the sun’s heat and distribute it via currents around the planet from the equator to the poles, affecting everything from rainfall patterns and surface temperatures to the daily weather.

The oceans are also the biggest carbon sink in the world - since the 1970s, they have absorbed around half of all our greenhouse gas emissions. Yet until relatively recently, the blue side of the coin was largely ignored in favour of the green.

As ocean ecologist Dr Peter Bridgewater told a workshop organised by the EU Global Climate Change Alliance Plus (GCCA+), “If you’ll forgive the pun, there has been a sea change in our thinking. In 2015, NGOs [non-governmental organisations] stopped showing pictures of tropical forests and concentrated on areas of the planet - the oceans - where there is more significant carbon sequestration than forest lands.”

By definition, destructive practices such as industrial fishing, offshore fossil fuel extraction and deep-sea mining cannot be part of a sustainable blue economy.

Cleaning up the Gulf of Mexico after the Deepwater Horizon oil spill disaster, 2010.

The role of the oceans in tackling climate change has long been known, but more recently there has been a significant shift in understanding the role that marine and coastal environments play in sustainable development. That means balancing the environmental and financial health of the blue economy. As ever, definitions matter - what exactly the blue economy is depends on who you talk to.

As the authors of one recent study drily note, “Various contested interpretations exist…The versatility of the concept means that some advocates are using it to describe oceans as economic frontiers, whereas others emphasise the ocean’s unique biodiversity that needs to be protected.”

Although the terms ‘blue economy’ and ‘marine economy’ are often used interchangeably, it’s important to understand that the blue economy also encompasses freshwater rivers and lakes, as well as groundwater reserves.

As Namibia’s Fisheries minister Bernhard Esau recently commented, “Even though the blue economy is principally about the ocean, it includes inland water bodies such as lakes and rivers, because all water on earth is ecologically interconnected and related with the ocean as the main driver of this water ecosystem. The principles of ocean ecosystems are therefore directly applicable to small water bodies such as rivers and lakes.”

“There are many different definitions and concepts of the blue economy,” explains Dr Pierre Failler, EU GCCA+ Technical Expert and Professor of Economics at the University of Portsmouth. “For me, it’s not just about taking advantage of the oceans from a social and economic point of view, but also from the environmental point of view and the need to have healthy ecosystems.”

Investors calculate that if the blue economy were a country, its annual GDP - around US$2.5 trillion - would be the seventh largest in the world, ahead of Italy and Brazil. But with the global blue economy expected to grow to US$ 3.9 trillion by 2030, who gets to decide what a sustainable blue economy looks like? How do we prevent a similar exploitation of nature - through mining, tourism and other uses - which has proved so destructive to ecosystems on land?

“Blue governance should sit at the centre of the blue economy,” says Bridgewater. “Blue governance is critical. There are so many players in this area that making sure everyone is working in as legal and effective a way is really really important.”

Unlike terrestrial ecosystems, however, the marine environment is subject to few national boundaries and - depending on your point of view - is a shared resource or an opportunity ripe for exploitation.

As well as climate change, threats to the blue economy include man-made disasters such as oil spills, plastic pollution, over-development, habitat destruction, and unsustainable fishing.

According to WWF, “the direct and indirect value generated by marine environments is increasingly under threat from environmental drivers. This poses a risk to current and future assets and revenues dependent on a healthy Blue Economy.”

“We’re hearing a lot more about blue governance,” says Failler. “A sustainable blue economy needs effective institutional arrangements, processes and collective decision-making. Without coordination, planning and monitoring, and international standards, it simply won’t be sustainable.”

Faced with the need to balance jobs and economic growth with protecting marine and coastal zones, the EU GCCA+ is working with coastal communities and small island nations all over the world to help them reap the benefits of a sustainable blue economy. From small-scale sustainable fishing to restoring mangrove forests, the focus is on boosting climate, food and job security whilst making sure that both nature and people can thrive.

A recent review of EU GCCA+ activities supporting the blue economy identified 35 projects in 40 countries ranging from disaster risk management to mangrove restoration and sustainable fisheries - together worth around €184 million.

“An increasing number of coastal countries are betting on the blue economy to promote sustainable development,” says Pierre Failler. “The blue economy is vital for the island nations of the Pacific, the Caribbean and Africa because of their strong interdependence with the ocean. They understand the blue economy is about the sustainable use and conservation of the oceans.”

Oceans account for 80 percent of the world's trade.

Turning the tide for traditional fisher folk

It's another hot day on the beach in the Comoros Islands. Groups of women pick their way over the rocks, occasionally stooping and shouting with excitement. After three months during which fishing was prohibited to allow the octopus population to recover, the beach is open again to allow traditional fishing on foot. It's no wonder the women are excited - the octopuses have doubled in size.

"The women practice foot-fishing at low tide," explains Hilal Saidina Said Bacar, a local community worker with the NGO Dahari. "We divided the fishing zone into three sectors and closed one of them temporarily for three months. During that time fishing was forbidden. After three months, thank God, there has been a huge change.

"Before, we went for two years without catching an octopus that weighed more than 1.5kg - now they are regularly weighing in above 6kg."

Her friend Amina Miradji agrees. "We've never had such a yield. I wish we could do a new closure, because the last time we had good results. We had a lot of octopuses - I myself ate plenty of them!"

Comoros is one of the poorest and most climate vulnerable nations in the Indian Ocean, yet is surrounded by a marine environment which, if managed sustainably, could support employment and food security. Its Exclusive Economic Zone (EEZ) is around a hundred times the size of its land mass, but contributes less than 20 percent to the country's GDP.

Along with other Western Indian Ocean states such as Mauritius, Mozambique and Somalia, Comoros is experiencing a perfect storm of rising sea temperatures, ocean acidification, tropical cyclones and over-fishing. Catches have been declining steadily since the early 2000s, forcing fishermen go venture further and further from shore - with dangerous consequences.

“Sometimes we have to fish far out to sea from the island,” says local fisherman Amir Youssouf. “We don’t have any choice if we want to earn a living. Here in my village, some of the fishermen of my generation have lost their lives because they had to fish far out to sea. They have left their children behind as orphans.”

A sustainable blue economy was an important part of the EU-funded €3 million GCCA+ programme to strengthen climate resilience in the Comoros.

Besides managing coastal fishing zones through planned closures, the women were also taught less damaging fishing methods. “We used to use harpoons, and if the octopus refused to come out we would smash the coral reef with stones and iron bars to catch it. Now people understand that if the octopus hides in the coral, they should not crush the coral but prise the octopus out with wooden sticks,” explains Hilal.

Although the project was aimed at both men and women, more than 80 percent of those taking part were women. “There were octopuses all over the place!” laughs foot fisher Zainati Youssouf. “Someone even caught a 7kg octopus! I’m telling you, someone caught more than 20kg of octopuses in one day - she brought them home and sold all of them!”

Where blue meets green

‘Blue forests’ may sound like a contradiction in terms but, according to UNEP, “there are some very different types of forest - in and under the water - that are just as beautiful and just as precious” as any you’ll find on land. “We’re just beginning to understand how important Blue Forests are in keeping our planet's climate stable,” says UNEP’s Head of Marine and Freshwater Ecosystems Leticia Carvalho.

Not only do blue forests make a significant - if undervalued - contribution to the blue economy, they are vital for absorbing blue carbon - another term which has become popular in recent years. “Blue carbon refers to the CO2 absorbed and stored by marine and coastal ecosystems,” explains Failler.
“Seagrass meadows, tidal marshes and mangroves are the three major blue carbon ecosystems, given their sequestration and storage capabilities.”

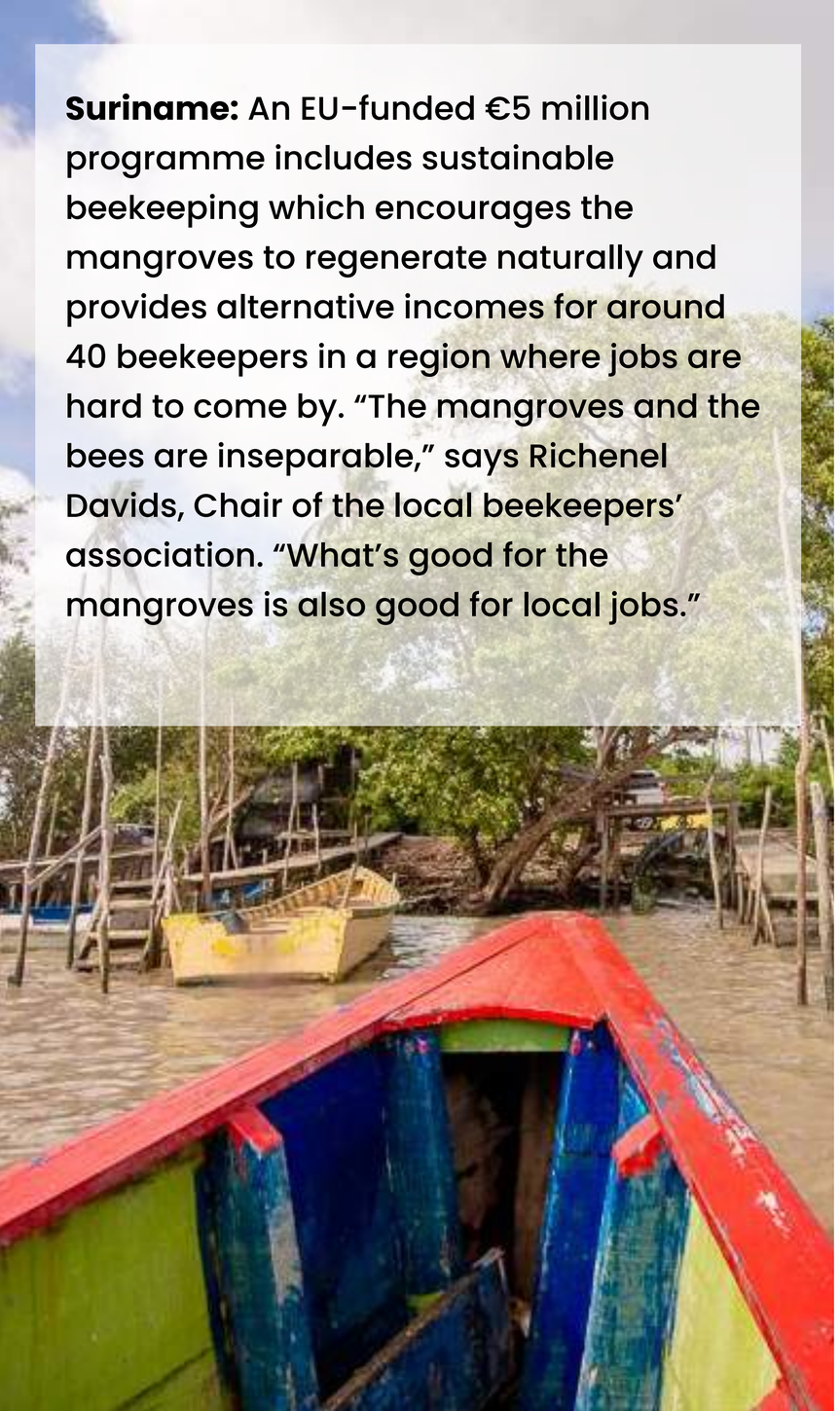
Mangroves are perhaps the best known of these blue forests. Not only do they soak up huge amounts of carbon - around four times more than rainforests - but they provide natural protection against increasing frequent and more intense extreme weather events such as cyclones and storm surges. Their roots shelter huge biodiversity of fish, crustaceans and shellfish, upon which some 200 million people depend on for their food and livelihoods.

Recognising their potential contribution to the blue economy, to disaster risk reduction and climate change adaptation and mitigation through carbon capture and storage, the EU GCCA+ has been working to restore, protect and replant mangroves around the world, completing 16 projects in 12 countries since 2007. In line with a balanced approach to the blue economy, these projects not only aim to tackle the global climate change and biodiversity crisis, but to provide sustainable jobs and livelihoods.

More recently, projects have also included seagrass beds and salt marshes. In Cape Verde, for example, the government has announced it will include seagrasses in its Nationally Determined Contribution (NDC) - the national climate change plans and actions. In Mauritania, seagrass beds in the Banc d’Arguin National Park contribute to 20 percent of the NDC estimated at US$9 billion - a hefty return on investment, as it only costs US$1.5 million a year to maintain the park.

“We need to merge the blue and the green, not keep them separate,” Dr Gilliane Brodie of the University of the South Pacific told an EU GCCA+ regional workshop. “This is particularly important for island environments. Imagine what it’s like for local communities to try and integrate different plans from different ministries - it’s quite challenging for them.”

Suriname: An EU-funded €5 million programme includes sustainable beekeeping which encourages the mangroves to regenerate naturally and provides alternative incomes for around 40 beekeepers in a region where jobs are hard to come by. “The mangroves and the bees are inseparable,” says Richenel Davids, Chair of the local beekeepers’ association. “What’s good for the mangroves is also good for local jobs.”



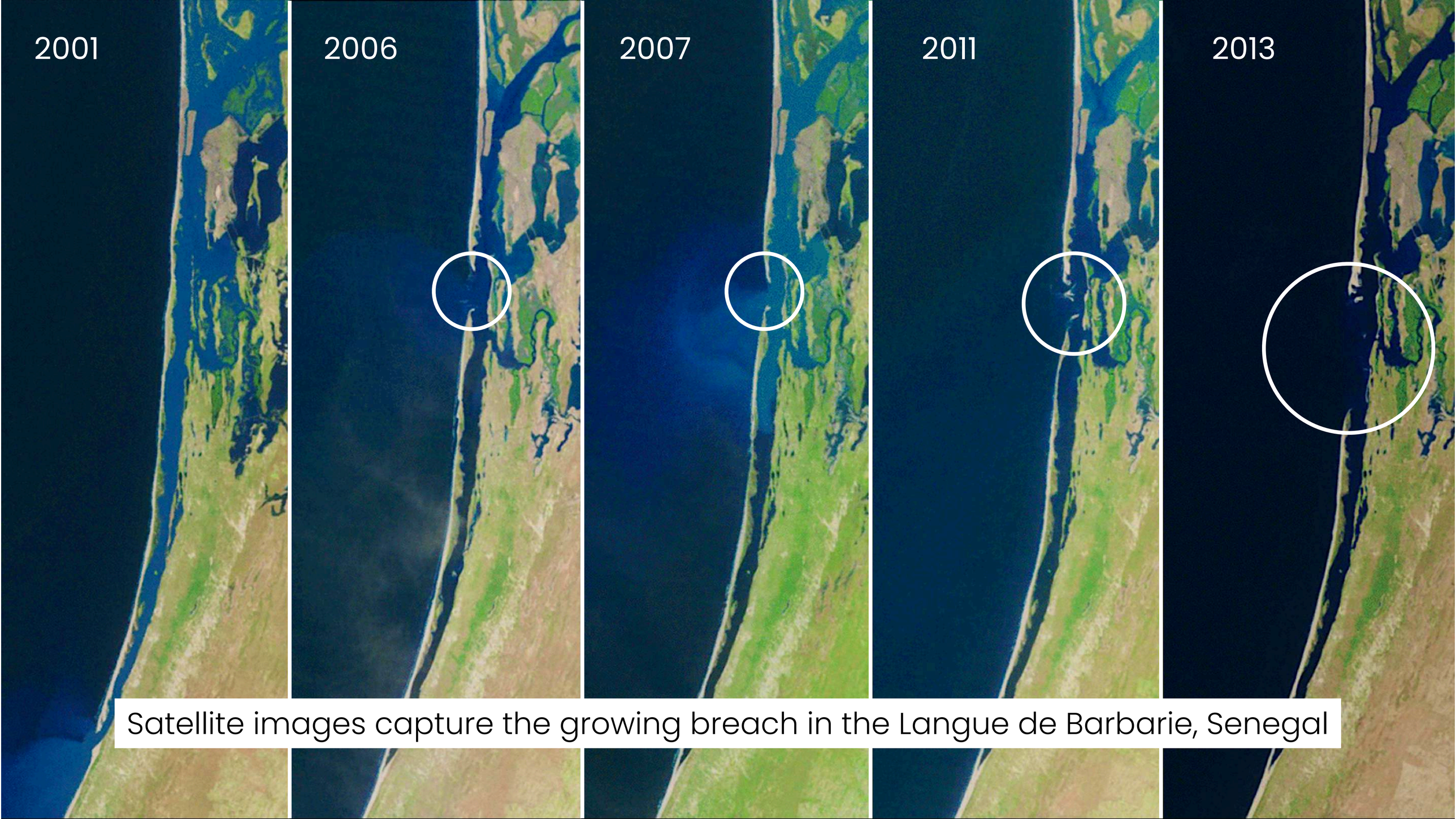
Cuba: As part of Cuba’s ambitious Tarea Vida (‘Project Life’) strategy - a 100-year plan to combat climate change adopted in 2018 - the EU GCCA+, UNDP and Green Climate Fund are restoring mangroves, seagrass beds and coral reefs to support a sustainable blue economy. “Coastal biodiversity such as coral reefs, sea grass beds and mangroves promotes economic, social and cultural development,” says Project Coordinator Dr Sergio Lorenzo.

Jamaica: Following 2004’s disastrous Hurricane Ivan, with EU GCCA+ support, more than seven hectares of degraded coastal areas were planted with mangroves trees, and over 1,500 square metres of seagrass replanted. “I am passionate about the mangroves and seagrass,” says Chalene Roye-Myrie, a marine biologist at the Jamaican National Environment and Planning Agency. “It’s been a fantastic success.”

Solomon Islands: 65,000 hectares of mangroves provide food, jobs and homes for thousands of people. The EU GCCA+ funded projects in five coastal communities to replant and restore the forests. “Losing mangroves is the same as losing your livelihood,” says farmer Dominic Odu. “If communities continue to cut and harvest mangroves at the current rate, soon there won’t be any left.”

Mozambique: The €47 million EU GCCA+ programme included the restoration of nearly 230 hectares of mangroves. “Many species use the mangroves as breeding grounds,” says Viejas Pedro Ernesto, an agricultural technician with the project. “But as they become deforested, these species are dying out. Now the people replanting trees as they cut them down. They can continue reaping the benefits they always have.”

Bangladesh: One of the most climate vulnerable countries in the world, Bangladesh has a significant blue economy which could greatly boost its prosperity. “The vast resources of the blue economy have mostly remained untapped,” says Foreign Minister AK Abdul Momen. An EU-Bangladesh collaboration aims to develop the country’s newly-expanded EEZ, to create sustainable jobs in fisheries, aquaculture and tourism, and to develop new biotechnologies.



Satellite images capture the growing breach in the Langue de Barbarie, Senegal

The Langue de Barberie in 2018. Extensive dune restoration with tree planting has helped close the breach.

Africa’s blue gold

In 2003, the city of Saint-Louis on Senegal’s Atlantic coast was threatened with devastating floods. As the waters from the Senegal River rose and the UNESCO World Heritage Site faced inundation, the city council made what they thought at the time was a sensible decision to avert disaster: they dug a two-metre wide channel through the sand dunes to divert the flood waters.

The city was saved but the unintended consequences are felt to this day. Over the next ten years the narrow trench widened to a breach nearly four kilometres across, cutting the famous Langue de Barbarie - a narrow, 30 km peninsula at the mouth of the Senegal river - in two. Parts of the dunes were submerged and some fishing communities lost their homes, their livelihoods and the land they used for growing food.

Launched in 2014 with €4 million from the EU GCCA+, an Integrated Coastal Zone Management (ICZM) scheme aimed to reverse some of the worst impacts and help the inhabitants of Saint Louis and the surrounding area become more resilient to rising sea levels. By 2019, a combination of natural and human actions had partly restored the dunes and the Langue De Barbarie was once more intact.

What happened in Saint Louis is a cautionary tale for Africa’s blue economy, and the list of potential hazards is ominously long. The continent’s fragile ecosystems which protect its coastlines are under threat from deforestation, sand mining, over-development and pollution.

Foreign-registered industrial fishing vessels cost the West African economy US$2.3 billion a year.

According to one estimate, illegal fishing in West Africa alone steals an estimated US$1.3 billion in revenue from the region each year, representing 40 percent of all fish caught. The African Development Bank (AfDB) claims coral bleaching off the coast of Tanzania and Kenya in 1998 cost the tourism industry up to US$18 million.

The African Union talks of the blue economy as the "new frontier of the African Renaissance" - but that won't happen unless development goes hand in hand with sustainability. "It's not just about preserving coastal marine ecosystems, they have to be preserved in good shape," says Failler. "At the moment, for example, mangroves and seagrass beds around Africa are only generating around 45 percent of their potential value because they are in poor shape."

Yet with careful sustainable management, Africa's blue economy could be a goldmine. Thirty-seven nations in Africa have coasts and some 90 percent of the region's trade is conducted by sea, according to the University of London's School of Oriental and African Studies (SOAS). The African blue economy is valued at around US$296 billion today, but is projected to grow to US$405 billion by 2030 and US$576 billion by 2063. Jobs in the blue economy are predicted to rise from 49 million today to 78 million in 2063.

Realising the potential of the blue economy whilst simultaneously tacking the climate and biodiversity crisis will be tough. But Failler is adamant that it can be done.

"The blue economy is really based on four principles. It must be based on a circular economy. It must have good governance. Environmental and social sustainability is essential. Finally, there must be empowerment and inclusive decision making, especially for women and young people. Without those, the blue economy is just another frontier to be exploited."

Community involvement is key. In 2020, researchers investigating blue economy projects across Africa found that "much of the emphasis on blue economy is placed on economic gains; as a result, traditional livelihoods and small-scale local operations are outcompeted by international corporations and government initiatives, with little or no regard for social inclusion and environmental sustainability."

Failler's four principles lie at the heart of the €5.3 million EU GCCA+ ICZM project currently underway in The Gambia, which aims to boost resilience for the 50 percent of the population who live in coastal areas. The threats don't just come from climate change - toxic pollution and plastic waste from dump sites near the shore are also a major problem - especially in the rainy season when garbage blocks the drains and swollen rivers pour tonnes of filth into the ocean. That in turn impacts those who make a living from the sea. "If you go to the coastal areas you will find a lot of women working in the fish processing industry," says Arune Jobe, GCCA+ coordinator for the ICZM project. "For a lot of them, it's a means of sustaining their livelihood."

In a classic example of a circular economy, organic trash from markets in The Gambia's capital Banjul is diverted from dump sites and being turned into compost to use in the gardens which in turn supply the markets. Using organic compost also cuts down on harmful chemical fertilisers which leach into the water table and eventually into the sea.

"It's essential to take a holistic approach to the blue economy," observes Failler. "The only way to face challenges such as climate change and plastic pollution is through transformational change. The human, technical and financial resources needed to meet these challenges go way beyond different sectors and different countries. We need a global blue governance."

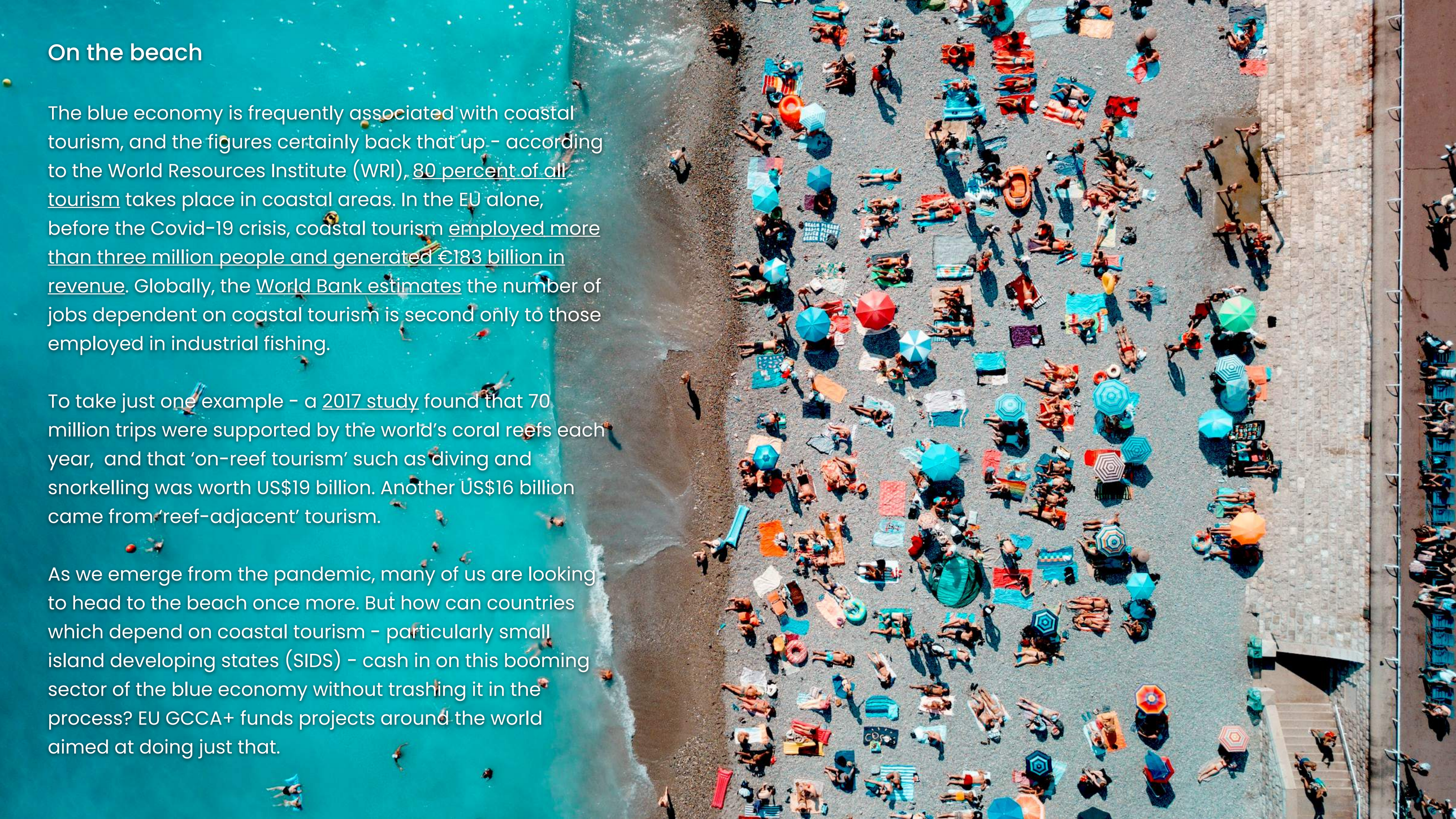
According to IUCN, at least 14 million tons of plastic end up in the ocean every year, and plastic makes up 80 percent of all marine debris.

On the beach

The blue economy is frequently associated with coastal tourism, and the figures certainly back that up - according to the World Resources Institute (WRI), 80 percent of all tourism takes place in coastal areas. In the EU alone, before the Covid-19 crisis, coastal tourism employed more than three million people and generated €183 billion in revenue. Globally, the World Bank estimates the number of jobs dependent on coastal tourism is second only to those employed in industrial fishing.

To take just one example - a 2017 study found that 70 million trips were supported by the world's coral reefs each year, and that 'on-reef tourism' such as diving and snorkelling was worth US$19 billion. Another US$16 billion came from 'reef-adjacent' tourism.

As we emerge from the pandemic, many of us are looking to head to the beach once more. But how can countries which depend on coastal tourism - particularly small island developing states (SIDS) - cash in on this booming sector of the blue economy without trashing it in the process? EU GCCA+ funds projects around the world aimed at doing just that.



Barbados

Making tourism sustainable means taking care of the whole tourism value chain, including waste. Along with other SIDS, solid and chemical waste management and disposal is a significant challenge. The Implementing Sustainable Low and Non-Chemical Development in Small Island Developing States (ISLANDS) programme - funded by the Global Environment Facility and implemented by UN Environment - aims to increase recycling and reduce the amount of waste going to landfill.

As the Barbados Sanitation Service Authority (SSA) says: “A cleaner Barbados will be a benefit for the island's tourism promotion efforts. A modern and progressive way of keeping the island environmentally friendly and clean can be a competitive edge for a destination, especially with health being a paramount consideration of travellers in deciding where to visit.”

Seychelles

Some of the most Instagrammable beaches in the world have been hit hard by rising sea levels and coastal erosion. “Fifteen years ago you could walk all along the beach to Source d’Argent,” says La Digue resident Lionel Waye-Hive, who runs a family-owned boat charter and bicycle hire business. “Now it’s all finished. There is no more beach. And if it goes on like this, all the houses and hotels along here will disappear as well.”

In partnership with EU GCCA+, the government of the Seychelles has produced a guide for hotels and guest houses, which advises “tourism business operators need to be fully aware of the current and predicted impacts of climate change on tourism, and consider the effects that these impacts may have to their respective business over the short and long terms.” Among the advice is to plant trees, save energy, use less water and serve local food.

Cook Islands

As part of a €14.89 million EU GCCA+ programme across the Pacific Ocean, a project is underway to restore coral reefs and tempt back tourists. The island of Aitutaki used to be famous for its brightly-coloured giant clams - known to the islanders as pa'ua - attracting scuba divers from all over the world. Older residents remember when clams were so plentiful they stretched as far as the eye could see.

But over-fishing brought the giant clams to the brink of extinction, and the island's tourism economy took a hammering. Now - thanks to an initiative involving local schools - a nursery has been established to breed Cook Islands native clams which are then transplanted to the coral reefs in specially protective 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.

Dominican Republic

It’s another beautiful day in Miches on the northern coast of the Dominican Republic, and tourists are starting to return to the sun-drenched, pure white sandy beaches. But Miches - described by the New York Times as an “Instagram goldmine” - is still one of the poorest towns in the country, and locals don’t always see the benefits from tourism.

Yonattan Mercado, who has lived in Miches his whole life, now works for the government looking after two local nature reserves as part of an EU-funded programme to boost climate resilience. “They are home to dozens of wild species, but they also provide income for many local families,” he explains. “We’re experiencing the local impacts of climate change on the mangroves, beaches, coral reefs and other key ecosystems. Higher temperatures, shorter rainy seasons, degraded coral reefs and constant coastal erosion are all taking their toll. Some communities have already been abandoned because the beaches have washed away.”

Palau

The tourism authority certainly doesn't hold back on the hype: "Lost in a great expanse of deep blue ocean, there lies a Pristine Paradise, one of the few remaining paradises on Earth." Despite Palau's remote location, pre-pandemic tourism was on the rise - tourism accounted for US$137 million in 2019, with more than 123,000 visitors.

But Palau, along with other island nations, suffers from the global plastic crisis - and tourists certainly don't want unsightly plastic trash littering those beautiful beaches and coral reefs. Now, with the support of the EU GCCA+ SUPA (Scaling Up Pacific Adaptation) programme, thirty schools have each adopted a beach to clean - with the results fed into the Big Microplastic Survey. As Dr Gilliane Brodie of the University of the South Pacific says, "Education and institutional strengthening are fundamentally linked the future success of a sustainable blue economy in the Pacific."

Maldives

As the poster child for climate-threatened SIDS, the Maldives ironically relies on long-haul tourism for a significant slice of its GDP - but transforming the sector to become more sustainable is challenging. Building on a previous €6.5 million wetlands conservation and coral reef monitoring project which ran from 2009-2015, the current EU GCCA+ €4 million programme aims to increase ecotourism and environmental protection in the south of the Maldives.

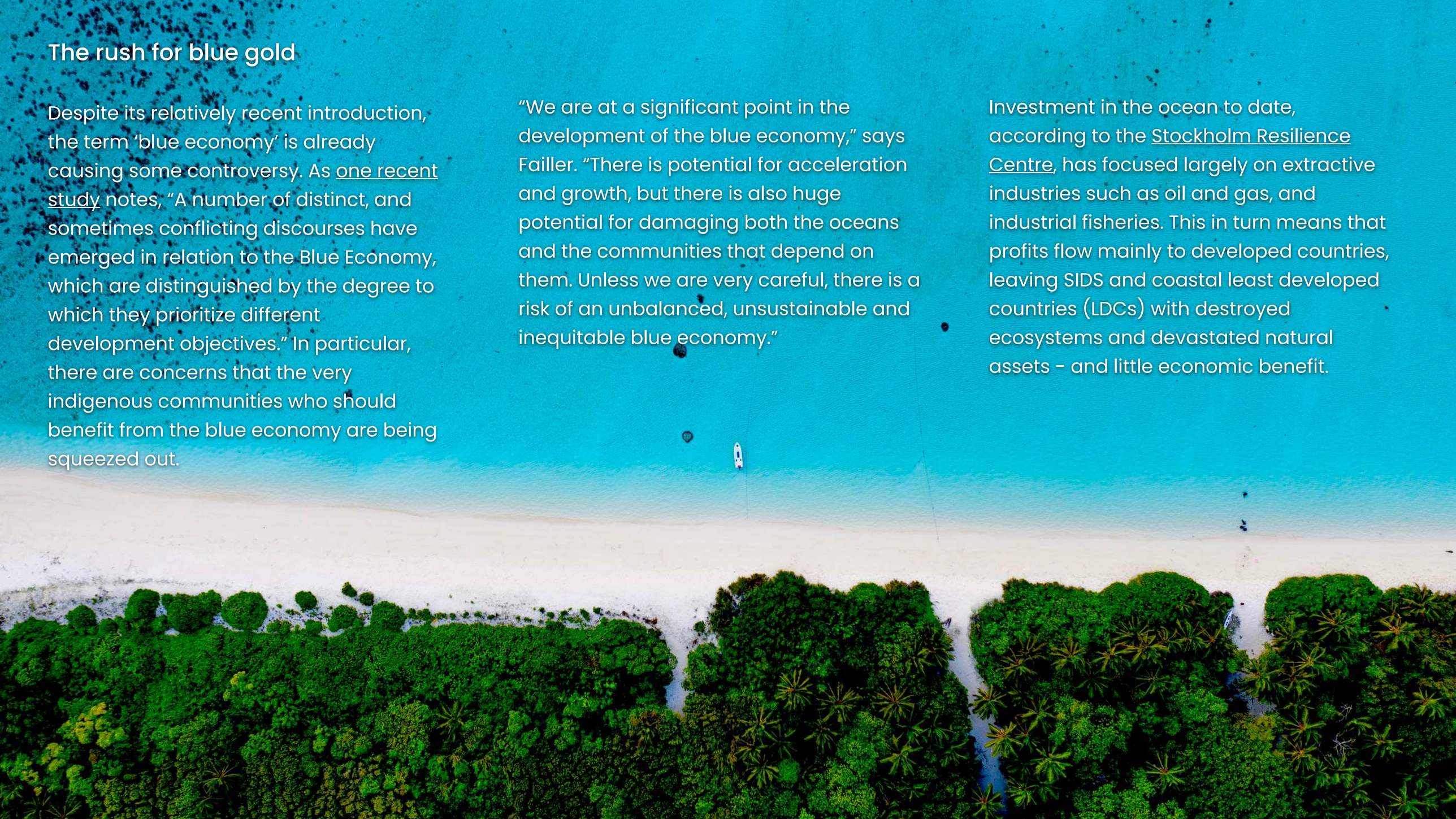
Addu Atoll attracts both local and international visitors, lured by the lakes, mangroves and scenic cycling routes, as well as the Bedhi bay area, famous for its red mangroves, baby stingrays and sharks. Local mother-of-two Saheema is a frequent visitor with her children. “Since the nature park was created, the whole place looks better and cleaner,” she says. “We love it and we often come here to snorkel. I am proud of having a place like this on my island.”

The rush for blue gold

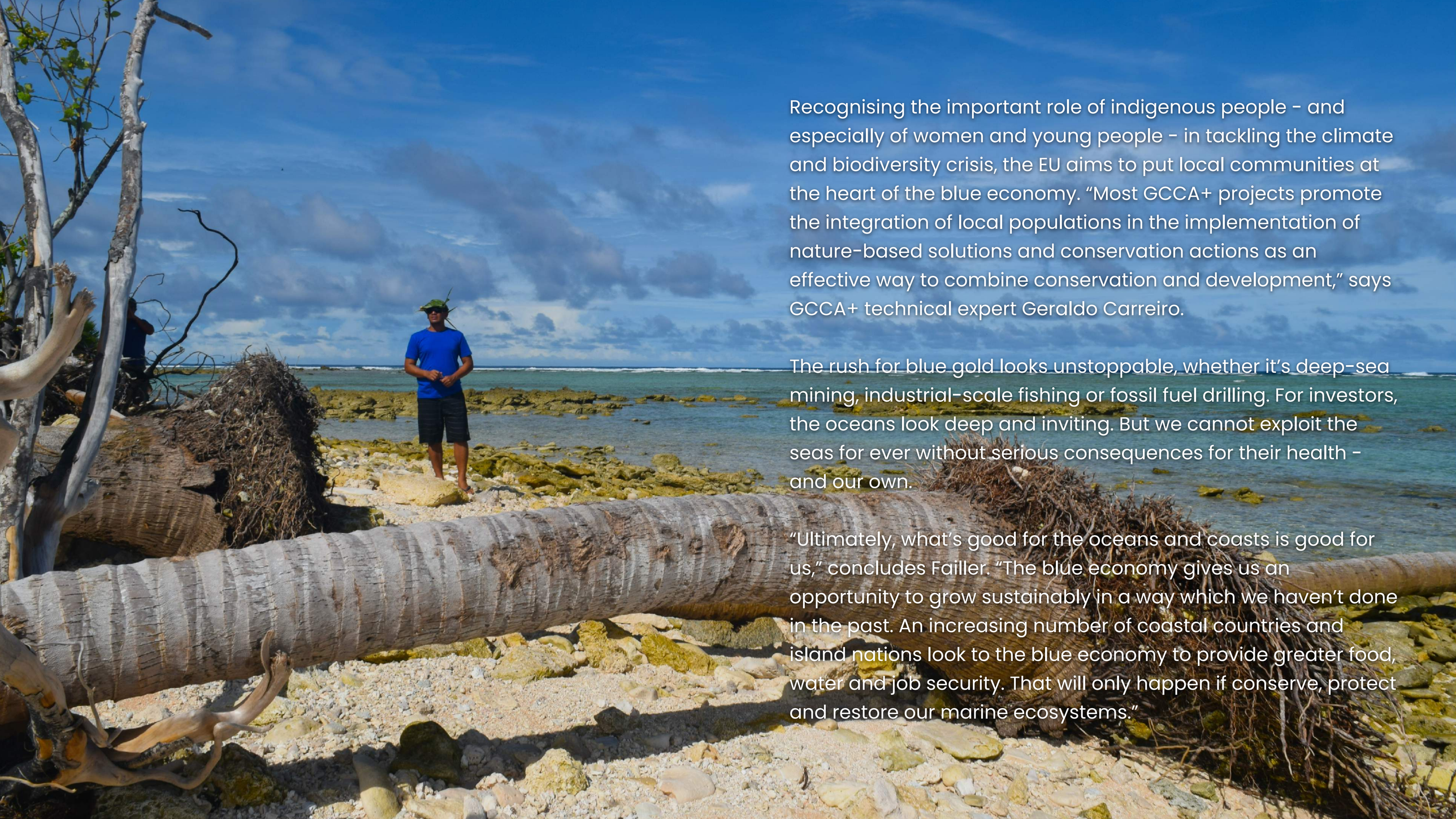
Despite its relatively recent introduction, the term ‘blue economy’ is already causing some controversy. As one recent study notes, “A number of distinct, and sometimes conflicting discourses have emerged in relation to the Blue Economy, which are distinguished by the degree to which they prioritize different development objectives.” In particular, there are concerns that the very indigenous communities who should benefit from the blue economy are being squeezed out.

“We are at a significant point in the development of the blue economy,” says Failler. “There is potential for acceleration and growth, but there is also huge potential for damaging both the oceans and the communities that depend on them. Unless we are very careful, there is a risk of an unbalanced, unsustainable and inequitable blue economy.”

Investment in the ocean to date, according to the Stockholm Resilience Centre, has focused largely on extractive industries such as oil and gas, and industrial fisheries. This in turn means that profits flow mainly to developed countries, leaving SIDS and coastal least developed countries (LDCs) with destroyed ecosystems and devastated natural assets - and little economic benefit.



“We cannot exploit the seas for ever without serious consequences for their health - and our own.”



Recognising the important role of indigenous people - and especially of women and young people - in tackling the climate and biodiversity crisis, the EU aims to put local communities at the heart of the blue economy. “Most GCCA+ projects promote the integration of local populations in the implementation of nature-based solutions and conservation actions as an effective way to combine conservation and development,” says GCCA+ technical expert Geraldo Carreiro.

The rush for blue gold looks unstoppable, whether it’s deep-sea mining, industrial-scale fishing or fossil fuel drilling. For investors, the oceans look deep and inviting. But we cannot exploit the seas for ever without serious consequences for their health - and our own.

“Ultimately, what’s good for the oceans and coasts is good for us,” concludes Failler. “The blue economy gives us an opportunity to grow sustainably in a way which we haven’t done in the past. An increasing number of coastal countries and island nations look to the blue economy to provide greater food, water and job security. That will only happen if conserve, protect and restore our marine ecosystems.”

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