NATURE IN ALL GOALS

BUILDING A NEW RELATIONSHIP BETWEEN PEOPLE AND NATURE FOR THE SUSTAINABLE DEVELOPMENT GOALS

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To the communities we work with and our partners around the world - thanks for your passion and your dedication to a future where people and nature live in harmony.

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INTRODUCTION

The COVID-19 pandemic has been a painful wake-up call to our fractured relationship with nature. The virus was most likely transmitted from wild animals to humans, also known as a zoonotic disease. Alarmingly, this phenomenon is on the rise. Of the new diseases that have emerged in human beings in the past 30 years, **60-70 percent have a zoonotic origin.**

Zoonotic diseases are driven **by the same activities** that are causing nature loss: illegal wildlife trade, the trade and consumption of high-risk live wild animals, deforestation, habitat loss, and large-scale land conversion for food and livestock production. Environmental degradation increases the risk of future pandemics and weakens our resilience against climate change and other disasters.

The pandemic has also highlighted the crushing weight of inequality in our societies. The global economic system, underpinned by extractive business and financial models and weak labour rights, has left millions of formal and informal workers unable to meet their basic needs.

Unequal access to essential services such as healthcare, nutritious food, clean water, sanitation, hygiene, and safe housing, has exacerbated the impact of the pandemic and left public authorities unable to effectively respond.

The pandemic is a reminder that **everything is connected**. Our health, our economies, and the natural environment are all interlinked. Tackling problems in siloes is no longer an option. We must create solutions that respond to these interconnections, and we need those solutions fast.

The SDGs were created with the understanding that everything is connected, and consequently social, environmental, and economic development are indivisible. Individually, the 17 goals make incremental changes but together, the goals will deliver transformational progress for the world. The 17 case stories and guest authors in this publication show how we can restore our relationship with nature to maximise the impact of this agenda.

In the publication, there are initiatives at all levels, from a locally-led renewable energy pilot in an Inuit community (SDG 7) to a global framework such as the Sustainable Blue Economy Finance Principles (SDG 17). Working simultaneously and coherently at multiple levels in society, from the **grassroots to the global**, will help us shift towards a balanced relationship with nature.

Leave No One Behind is a key principle of the SDGs and it is essential for a balanced relationship with nature. The effects of nature loss and climate change disproportionately affect specific groups in society, in particular people living in poverty. We must bolster our commitment to **human rights and social justice** in our efforts to protect and conserve nature.

The needs and agency of communities must be at the centre of our policies, laws, and decision-making mechanisms. The community-based monitoring tool in DRC (SDG 16) and the Just Transition Initiative in Eastern and Southern Europe (SDG 8) are examples of how to facilitate the inclusion of communities most vulnerable to the seismic changes happening now.

Leave No One Behind also means we need to strengthen **civic rights and democratic freedoms**, which have **worsened in the pandemic**. The brave women of Kruščica village (SDG 5) show the importance of access to information and civic participation in public decisions that can have irreversible consequences for the environment and future generations.

The **2019 Global Sustainable Development Report** urgently called for a 'new relationship between people and nature' to achieve the SDGs. Now is the time to rebuild societies that live up to the commitment we made for 2030. Now is the time for a new relationship between people and nature.

BUILDING A PATH TO RESILIENCE FOR COMMUNITIES IN MYANMAR

In Myanmar, a group of local producers from Kyauktwin and Paungdawgyi villages, have adopted sustainable agriculture and a community enterprise model to boost their resilience.

They are using a sustainable farming approach known as agroforestry to produce Elephant Foot Yam. Agroforestry applies farming techniques that restore the land and help improve agricultural productivity. In Kyauktwin and Paungdawgyi, the producers grow the crop alongside forest trees. The trees provide multiple benefits by helping to retain nutrients in the soil and increase water infiltration into the soil which minimises erosion. Improving the health of the soil contributes to higher quality crops and higher yields for the long-term. 1 2 15

In addition to agroforestry, the producers have adopted solar drying technology to prepare the crop for sale. The solar drying technology replaces the use of charcoal which pollutes the air and requires local trees to be cut down. 3 15 In preserving the trees, the communities also build their resilience against climate change and extreme weather events. This is important because Myanmar is highly vulnerable to climate change and natural disasters. 1 13 15

Partnering with WWF, Non-Timber Forest Product Exchange, and Impact Hub Yangon, over 15 local producers have completed business incubation training and formed two community enterprises to sell to local and international markets. 1 2 8 Through the community enterprise model, they can collectively negotiate fair market prices with buyers, agree on agricultural practices to produce the crop and supply larger volumes of the crop to meet growing demand. 1 8 Elephant Foot Yam is a highly nutritious crop with strong consumer demand in Asia.

Since forming the enterprises, the producers have secured a supplier agreement with a Japanese company, Maxomi. 8 9 As a result of the agroforestry techniques and the community enterprise model, the average gross income from selling Elephant Foot Yam has increased in the households involved in the initiative. In 2019, the increase varied from 35 percent to 173 percent in the participating households (from USD 2,800-4800 to USD 3,800-13,000). 1 2 8

The producers also contribute a percentage of their collective income to community forestry management activities such as community forest patrol to safeguard the forest. 15

CONSERVATION AGRICULTURE FOR FOOD, LIVELIHOODS AND WILDLIFE IN SILOWANA COMPLEX, ZAMBIA

In Zambia, climate change has caused an increase in the number of extreme weather events such as floods and droughts. This has particularly affected local communities in Silowana complex, where agriculture is a vital livelihood and source of food security.

In recent years, frequent droughts coupled with unsustainable farming practices have degraded farming land in the complex and contributed to poor harvests. With no alternative, local community members have resorted to other activities such as cultivating in forested areas which bring additional threats of human-wildlife conflicts.

To tackle this cycle of poverty, farmers from Silowana complex have adopted a climate-resilient approach to farming, through a partnership with WWF, Mufulani and Sesheke community resource boards, Barotse Royal Establishment, Department of National Parks and Wildlife, and the Department of Agriculture.

The conservation agriculture approach adopts three principles to restore land quality and improve productivity. 1 2 15
It promotes minimum soil disturbance when planting crops to protect against soil erosion. It also promotes soil cover using organic materials like compost to improve soil moisture, suppress the growth of weeds, and protect the soil from extreme weather. A third principle is crop rotation, a practice that involves alternating the crops planted each season in the same farming land. Crop rotation helps the soil to recycle nutrients and increases resistance against pests and diseases.

Over the past five years, 3,817 farmers have participated in the initiative. They have trained in conservation agriculture and planted a variety of drought-tolerant crop varieties including maize, groundnuts, and millet. They have also adopted new storage technologies to minimise post-harvest loss 1 2 and accessed affordable seeds that grow in local conditions.

Since adopting conservation agriculture, farmers in the complex have seen higher yields in comparison to farmers using conventional farming methods. 1 2 Most farmers now harvest more than double the usual harvest and have used their extra income to invest in their children's education, 4 to buy additional livestock such as cattle as well as food. 1
In recent years, a reduction in farming in wildlife habitats has been noted, as the number of farmers adopting conservation agriculture has increased. 15 Additionally, the farmers are sharing their knowledge of conservation agriculture with other farmers in their communities. 13 15 17

GUEST CONTRIBUTOR

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BUILDING SUSTAINABLE FOOD SYSTEMS AND HEALTHY NUTRITION PATTERNS IN AFRICA AFTER COVID-19

The COVID-19 pandemic has exacerbated many of the cracks in our food systems that are threatened by climate change, land degradation, nature loss, incoherent policies, and chronic underinvestment.

Even before COVID-19, malnutrition, hunger, and starvation were silent pandemics that killed millions of Africans every year. These issues continue to threaten the livelihoods of millions of smallholder farmers who contribute up to 90 percent of food production in some sub-Saharan African countries.

As of 2019, one in every five people in sub-Saharan Africa is undernourished, and 257 million people go to bed hungry every night. Under-nutrition (inadequate caloric intake and micronutrient deficiencies) continues to disproportionately impact children and pregnant women, with the birth of millions of low birthweight babies, leading to high rates of stunting. The effects of chronic food insecurity and malnourishment, and rising rates of obesity caused by rapid urbanisation, are leading to a humanitarian crisis never seen before.

To address this crisis and the linked challenges of climate change and biodiversity loss, we need policies that address the intersections of human and planetary health in our food systems. A holistic approach will help redirect investments towards issues affecting food security and nutrition in the region such as safe drinking water, good sanitation, education, school feeding, social safety nets, gender equality, and access to finance for small scale farmers.

We need **locally adapted** food systems that tap into local knowledge and local innovation. There are already excellent examples of countries in Africa taking the lead in developing climate-resistant crop varieties. Mozambique is pioneering a global prototype for **heat-tolerant bean seeds**. In Ethiopia, farmers' yields have increased by up to 40 percent after the development of rust-resistant wheat varieties.

Furthermore, there are **traditional vegetables** grown on family farms in Africa that have nourished communities for hundreds of years and are a core part of the culture and cuisine. These vegetables such as kale and okra, have high nutritional value and provide millions of people with micronutrients, vitamins, and dietary fibre.

There is also a need to pay more attention to **orphan crops** produced in many local parts of Africa such as *finger millet, groundnut, teff, yam, cassava, millet, cowpeas, pigeon pea, cassava, and yams*. These foods serve as important staples in the local diet and tend to be high in magnesium, protein, and fibre and are a good source of antioxidants. They also provide much-needed income for farmers and are uniquely adapted to their local environments.

To successfully feed the **2.5 billion people** who will inhabit Africa by 2050, we need a **'whole of SDG'** approach. This means integrated action taken by public and private actors at local, national, regional, and global levels. We need collaboration across multiple sectors, including agriculture, trade, health, environment, gender, education, transport, and infrastructure.

Just as all SDGs are interconnected, and no goal can be fully achieved without progress in the others, our success in attaining global food security will depend on how effectively we work together towards our common goal.

FACILITATING RENEWABLE ENERGY SOLUTIONS FOR BETTER HEALTH AND ENERGY SECURITY IN KARACHI, PAKISTAN

In Karachi, the largest cosmopolitan city in Pakistan, communities in the peri-urban areas rely on mangroves and other forest trees for fuel to use at home. Burning wood for fuel, however, is unsustainable and negatively affects human and environmental health.

Burning firewood indoors causes chronic respiratory diseases as well as eyesight illnesses, especially among women and children. In Pakistan, indoor air pollution is linked to 63,500 deaths annually. Firewood fuel also contributes to greenhouse gas emissions.

Furthermore, mangrove forests are an important contributor to climate resilience. They are five times more cost-effective than human-made infrastructure in providing protection from extreme weather-related events such as cyclones and tsunamis.

For three years, communities in Gadap Town, Maripur and Rehri, worked together with Karachi Metropolitan Corporation, WWF, and the electricity supply company, K-Electric, to provide clean and renewable energy solutions. 7 The transition to clean and renewable energy involved in-depth community engagement to install solar energy systems, fuel efficient stoves and gasifiers in 2,561 households.

In Rehri, 12 biogas systems have been installed for 41 households to use. Biogas is a clean, odourless fuel that uses cattle manure and toilet waste to produce methane gas for cooking and heating. 7 11

The switch to clean and renewable energy has improved the health outcomes of local residents. In Gadap, of the individuals who now use clean energy solutions, 53 percent have reported a reduction in respiratory diseases, 51 percent reported a reduction in eye related problems, and 52 percent reported a reduction in skin related problems. 3

A total of 89 residents, including 43 women, have started new livelihood activities associated with the maintenance of biogas, solar gas and fuel-efficient stoves in their communities. 1 5 8 Women have reported having more time to spend on income generating activities because renewable energy is more efficient than traditional firewood fuel.

The transition has brought positive benefits for the environment. In Rehri, manure was previously disposed of in the Arabian Sea but is now processed for use in biogas plants, thereby reducing organic waste in the sea. 3 6 11 14 Since the biogas systems have been installed, the daily use of mangrove firewood has decreased from 15.58 kilograms per day per household to 1.88 kilograms per day. 13 15

In addition, local communities have planted 90,000 mangroves and 63,555 saplings of other native tree species to restore local landscapes. This will help strengthen climate resilience and improve local biodiversity. 13 15

YOUNG PEOPLE IN HONG KONG PLANT SEEDS OF HOPE FOR THE PLANET

Young people across the world have built a global movement for action on climate change on a scale never seen before. Their ingenuity, determination and collective power has sparked hope for the world that transformational change is possible.

The One Planet Youth programme, launched in 2017, is an initiative that supports young people in Hong Kong to take local action on conservation issues.

Every year, 30 young people participate in a nine-month leadership training programme where they learn about local environmental issues such as freshwater conservation and waste recycling.4 Participants choose the learning topics and WWF organises workshops and knowledge exchange opportunities with a wide variety of specialists including artists and scientists. In 2018, for example, young leaders visited the biggest Marine Protected Area in Malaysia. After the trip, they hosted public talks and workshops in Hong Kong, to promote the importance of Marine Protected Areas.

As part of the programme, the young leaders design and implement conservation projects. For example, two young leaders, Karol and Blanco, became mystery shoppers to investigate illegal wildlife pet trade in local markets.15 16 The project has informed work by WWF Hong Kong to further investigate the endangered status of popular species in the pet trade.

Through the programme, young leaders participate in citizen science projects to collect data on local biodiversity. Activities have included a marine litter survey along the coastline of Hong Kong and bird and insect surveys in wetland reserves. The data participants collect helps improve understanding of the status of biodiversity in Hong Kong.4 15

Since 2017, approximately 800 young people have participated in training sessions to improve their knowledge on conservation issues.4 Over 150 young leaders and youth groups have collaborated on 16 citizen science programmes. The programme graduates have successfully completed over 17 conservation community projects and engaged 5,000 citizens in local conservation efforts.15 17 Since completing the programme, over 70 percent of graduates state they have adopted more sustainable behaviours.

To build on the impact of this initiative, an alumni network has been established to connect young leaders and create opportunities for peer mentoring.4 WWF is currently developing a career internship programme where alumni can co-create initiatives with WWF Hong Kong.

THE BRAVE WOMEN OF KRUŠČICA

Trigger warning: One reference to gender-based violence

Kruščica river in Bosnia and Herzegovina is a wild river forming part of a larger landscape, that is designated as a protected area. In 2017, villagers living near the river started a campaign to prevent the development of two planned hydropower plants in the river. If developed, the hydropower plants would damage the natural ecosystems, compromise agriculture and tourism, and cut off water supply to the community and surrounding cities.

With courage and determination, the brave women of Kruščica village physically occupied the bridge leading up to the river, to prevent access for the hydropower developers. On one occasion, 24 August 2017, 18 women and one man were injured by special forces hired to forcibly remove them from the bridge.

Despite the trauma, the incident emboldened the women to continue protecting the river. They stayed on the bridge day and night for more than 500 days in the face of violence, intimidation, and legal objections. In December 2018, they successfully won a legal case to revoke the permit for the construction of the two plants because the villagers had not been properly informed or involved in the development of the proposals. 1 10 16

Since then, the local community has formed a citizens association, Eko-Bistro, to continue their campaign and ensure transparent and meaningful participation in public planning. 16 Several women have run and won local elections to help improve transparency and representation in local public policy. 5 16

Over the past three years, MAVA Foundation and WWF-Adria have provided technical and financial support to the women, by helping them to prepare their legal cases and to develop their association. 1 5 16 They have also worked with the women to build international visibility for their work, through public media campaigns and engagement with senior representatives in the EU. 17

Despite their inspiring progress, the struggle is far from over for the women of Kruščica and their communities. Currently, more than 400 small hydropower plants have been proposed or planned across Bosnia and Herzegovina, including on the Kruščica river.

RESTORING WETLANDS, WILDLIFE AND WELL-BEING IN CHANGDE, CHINA

A wetland is an area of land that is permanently or seasonally filled with water. Wetlands are home to 40 percent of all the world's species and when sustainably managed, they help us adapt to and mitigate the impacts of climate change. Peatlands, for example, make up only three percent of the earth's surface but these wetlands hold twice as much carbon as the world's forests.

In Changde, China, wetlands have shaped the city's history for 6,500 years. They play a central role in the country's flood mitigation strategy because they have a natural capacity to store large amounts of water and regulate water quantity during droughts and floods.

One of the wetlands in Changde, Chuanzi creek, is an important waterway because it connects Liuye Lake, the largest urban lake in the city, to Yuan River which flows into Dongting Lake, the second-largest freshwater lake in China.

Over fifty years, the creek became increasingly degraded as a result of invasive species in the water stream and the pressures of rising urbanisation. Consequently, the water quality in the creek worsened, with severe pollution that flowed into other wetlands. 3 6 15

Over 14 years, the local government worked with Hannover and WWF to restore the natural functions of the creek. Waste, rubbish, and invasive species were removed from the wetland. The drainage system was also repaired as it was frequently overwhelmed during heavy rainfall, leading to floods.

As a result of the restoration, the creek regained its natural connection to Liuye Lake and Yuan River. 6 15 The water quality significantly improved, boosting ecotourism activities in the creek. 8 The pollution has disappeared 3 and more than 50 species of waterbirds have reappeared. 15 Local drainage systems that used to be overwhelmed during heavy rainfall can now regulate water flow during storms. 11 13 These changes have immensely improved the quality of life for the 300,000 residents living nearby.

In 2018, Changde city was accredited as one of the world's first wetland cities by the Ramsar convention. 6 This accreditation recognises the city's efforts to restore and sustainably manage its wetlands for the long-term. WWF currently works with local wetland park administrations and Changde Forestry Bureau to support the city's goal to protect 80 percent of its wetlands by 2030.

HOW CANADA'S FIRST INUIT ENERGY CO-OPERATIVE ARE MOVING TOWARDS A RENEWABLE FUTURE

The Hamlet of Gjoa Haven is located in Nunavut, Canada's northernmost territory. Access to energy is critical for this community, especially in winter, when the sun does not rise above the horizon for over a month, and temperatures reach as low as -50 degrees Celsius.

Energy is currently sourced from fossil fuels, mainly diesel. Diesel is shipped into the community once per year and stored in giant tanks. Diesel spills in the community are a real risk and can have irreversible consequences for human health, water quality, and local wildlife that the community depends on for food. 2 3 6 15 Diesel exhaust is also classified as a carcinogen by the World Health Organization. 3

In addition to these risks, diesel energy is very expensive for the community. The monthly energy bill for households in Gjoa Haven can be between 700 and 1000 Canadian dollars. These high costs affect nearly all aspects of life in the North, including the residents' ability to afford housing and food.

In response to the high cost and risks of diesel energy, the community is exploring sustainable and affordable energy alternatives. The Hamlet has formed Canada's first Inuit energy co-operative to pilot three solutions that will help reduce reliance on diesel fuel and transition to clean and renewable energy.

One solution is a solar array to help power the community arena. A metering system has been installed to promote the efficient use of the energy generated.

In summer, the solar array generates surplus energy which is directed into the grid to be used elsewhere. The energy directed into the grid is tracked through credits which can be then used when the building needs to draw energy from the grid in winter. 7

The second solution is a home energy monitor system that residents have installed to track energy use and improve energy efficiency. 7

The third is a waste-to-heat solution that uses historic waste oil stockpiled in the community for heating. Re-using waste oil helps reduce the chance of oil spills as a result of historic waste. 11

Within the first six months of operation, all three solutions are generating financial savings and helping reduce diesel use. The co-operative model is an important aspect of the pilot because it facilitates greater investment in community-led ownership. So far, two community members have accessed business skills training to run the co-operative and ensure the solutions remain economically viable. 8 Three community members currently work on operations and maintenance of the solutions. 8

Multiple stakeholders are supporting the pilot including WWF, local, territorial and federal government authorities, Crown-Indigenous Relations and Northern Affairs Canada, Kikitak Housing Association, Qulliq Energy Corporation, the Alaska Center for Energy and Power, and Green Sun Rising.

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DECARBONISING OUR ENERGY SYSTEM FOR NATURE AND THE SDGs

Nature cannot be protected, nor the SDGs achieved in the teeth of a climate emergency. We urgently need to decarbonise the global economy if we are to prevent an unstable climate that, in turn, destabilises ecosystems, communities, and economies around the world.

Simultaneously, we have to bring clean, reliable, and affordable energy to the estimated one billion people who live without electricity. We must scale-up nature-based solutions that provide complementary climate mitigation benefits and a shield for climate risks to socially vulnerable communities across the world.

When it comes to energy, the starting point has to be efficiency. The cheapest and cleanest kilowatt is the one that is never generated, and by ensuring that we use energy as sparingly as possible, we reduce its economic and social costs.

There are many easy wins to be had. Improved regulatory standards can require more efficient appliances. Simple fixes such as better insulation or shading can reduce the need for energy for heating and cooling, respectively. People can be educated to change their energy-wasting behaviour. Our **Cool & Solar initiative** combines these elements – pushing for better policy, educating people about passive cooling and behaviour change, and promoting the most efficient systems in the marketplace.

Of course, the imperative to use energy more efficiently becomes greater the fewer resources you have. Initiatives that provide efficient cookstoves, for example, can dramatically improve the quality of life of poor people, both by reducing their need to gather or buy firewood, and by reducing respiratory illnesses caused by domestic wood-burning. Around the world, WWF is helping to provide **clean cookstoves** to improve lives and reduce pressure on forests.

Poor people also need access to electricity. For many millions of people in rural areas of least-developed countries, it is not economic for power grids to be extended to their communities. However, the tumbling cost of solar power is increasingly putting it within reach, while pairing panels with batteries can – cost-effectively – provide power around the clock. WWF's **Myanmar Solar Sisters** project is an example of the innovation of bringing solar power to poor communities.

At a larger scale, microgrids can combine one or more renewable energy technology – solar, wind, and biomass energy – with battery storage to power entire communities. Here, the challenge is less the technology and more about developing business models and means of financing that are appropriate for low-income communities. With the right support and guarantees from governments and development banks, microgrids can help solve the challenges of rural electrification. WWF's **mini solar grids initiative** in the Sundarbans shows how this could work.

The next step must be tearing down the perverse incentives that subsidise the production and consumption of fossil fuels. The International Monetary Fund (IMF) estimates that, globally, the fossil fuel sector was subsidised to the tune of **USD 5.2 trillion in 2017**, including both direct subsidies and indirect costs, such as from environmental damage.

Removing these subsidies would have an enormous and direct effect on emissions. The International Monetary Fund estimates that, were fossil fuels priced efficiently in 2015, global carbon emissions would have been 28 percent lower, deaths from fossil fuel air pollution 46 percent lower, and government revenues would have risen by the equivalent of 3.8 percent of GDP.

This necessary and deep energy decarbonisation for people and nature should not be traded with but complemented by, nature-based solutions. Nature-based solutions are estimated to provide as much as a 35 percent increase in job-creation intensity, according to the International Labour Organization. And it will have multiple societal benefits, such as food and security and climate protection for vulnerable communities.

The benefits of decarbonising the energy system must be shared evenly. A just transition will require the participation of, and targeted support for, communities, citizens and workers at the front lines of change. Participatory planning, targeted development of new opportunities, and job training can help build support for a clean and equitable future.

A SOCIALLY JUST TRANSITION FOR COAL WORKERS AND LOCAL COMMUNITIES IN EASTERN AND SOUTHERN EUROPE

In Europe, the coal industry has seen a continuous decline, leading to increased job losses, stagnating local economies, and broken communities as people migrate in search of economic opportunity.

The future of this industry is no longer viable because the world needs a rapid reduction of greenhouse gas emissions in the next ten years to limit global warming to 1.5 degrees Celsius. The transition to low-carbon economies must be carefully managed to ensure no one is left behind, in particular, the workers and local communities who are highly dependent on high carbon industries.

A socially just transition (just transition) is a shift to low carbon economies in a way that centres the needs of workers and local communities most vulnerable to the changes. A just transition aims to ensure that future industries provide decent work opportunities and drive locally thriving economies within the planet's natural limits.

In 2018, communities from four coal-producing regions in south-west Bulgaria (Bulgaria), Western Macedonia (Greece), Silesia (Poland), and Ruhr (Germany) partnered with WWF to foster a just transition to low-carbon local economies.

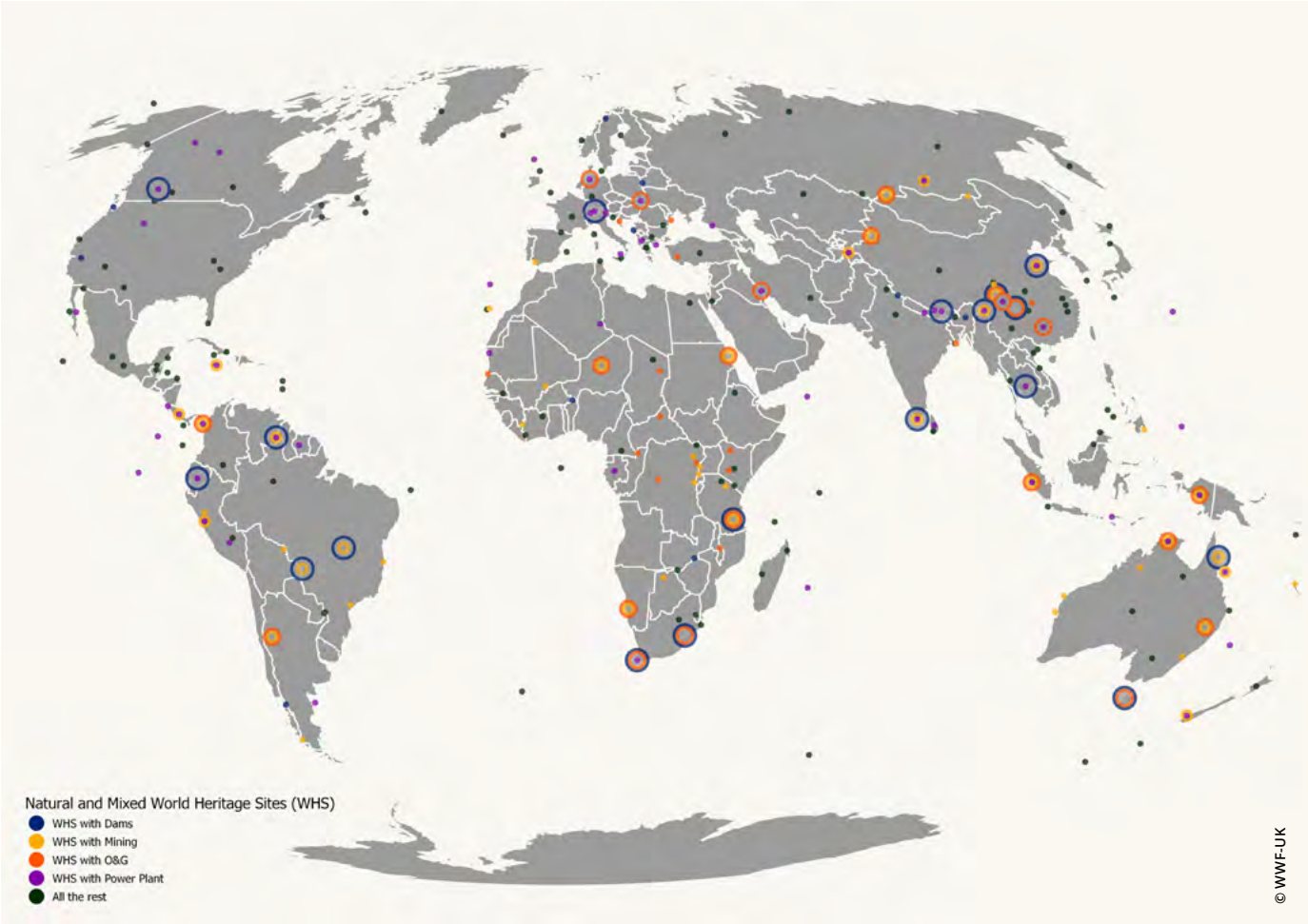
Over two years, two roadmaps for south-west Bulgaria and upper Silesia were produced in consultation with local stakeholders.

The roadmaps assess alternative pathways for local economic development that are underpinned by green and socially equitable industries.[8][9] For example, a roadmap for Western Macedonia outlined six scenarios of economic development by 2030. Three of these scenarios assessed the impact of continuing the local lignite production industry and revealed a net loss in terms of jobs and local economic growth. The other three scenarios assessed the potential of a future local economy based on sustainable industries such as renewable energy and eco-tourism. These three scenarios indicated an increase in jobs created and local added value, with the renewable energy sector offering the greatest contribution in terms of employment and economic growth.

The initiative, funded by the European Climate Initiative of the German Ministry of Environment, also held two forums in Greece and Germany where mayors from coal-producing regions came together to discuss solutions for a just transition.[17] In 2019, a Declaration of Mayors was launched that outlines recommendations for just transitions in coal regions. Since its launch, more than 50 mayors across Europe have signed the Declaration.[9][11]

Public dialogue is an essential component of this process as it allows citizens, workers, businesses, and local authorities to collectively shape their future economies. To facilitate public dialogue, the initiative has hosted over 10 public events,[16][17] and produced four documentary films and a policy report on just transition in the four regions.

TRANSFORMING INFRASTRUCTURE DEVELOPMENT FOR PEOPLE AND NATURE THROUGH SPATIAL FINANCE



Road and rail infrastructure play a vital role in economies. These types of infrastructure transport agricultural produce to markets, and facilitate people's daily mobility and goods across borders.

At the same time, roads and other major infrastructure such as dams can present some of the biggest threats to natural habitats and wildlife. Over the next three decades, an estimated 25 million kilometres of roads will be constructed globally, with 90 percent of these roads built in low-income countries with high biodiversity. If they are not carefully planned, these infrastructure projects could leave countries with huge debts, increased poverty, and irreversible damage to the natural environment. 1 9 15

Spatial Finance is an emerging, interdisciplinary field that uses geospatial tools, such as GIS and satellite imagery, to provide data and analysis on the social, environmental, and financial costs of infrastructure projects. The data helps improve transparency in financial decision-making and facilitate constructive dialogues at early planning stages. 9 15 16

Work is underway in this innovative field to connect stakeholders from a range of disciplines and develop tools that policy-makers and investors can use immediately. To help with this, WWF has designed a spatial intelligence platform, SIGHT, which brings together diverse spatial datasets and satellite imagery to provide a near real-time understanding of the status of key biodiversity areas around the world. 17

In June 2019, WWF and Investec Asset Management launched cutting-edge research on the use of geospatial data and satellite imagery to assess environmental risks in sovereign debt investment. 9 17 The global infrastructure funding gap is estimated to be USD 15 trillion by 2040 and will likely be financed by sovereign bonds. Sovereign debt is a huge asset class of nearly USD 70 trillion and makes up as much as two-thirds of the global bond market.

With accurate information and a holistic understanding of the implications of infrastructure projects, investors can direct investments towards sustainable development outcomes that promote policy coherence and provide long-term value. 17

SUPPORTING TERRITORIES AND AREAS CONSERVED BY INDIGENOUS PEOPLES AND LOCAL COMMUNITIES IN MYANMAR

Indigenous Peoples make up five percent of the world's population and contribute significantly to global efforts to protect nature. Of the world's remaining biodiversity, 80 percent is found in Indigenous Peoples' lands and territories, and according to the latest global assessment on nature (IPBES-7), nature loss is declining less rapidly in areas managed by Indigenous Peoples.

Secure land rights and legal recognition of their custodianship helps improve the well-being of indigenous communities as well as their capacity to sustainably manage the environment. This is particularly important in Myanmar where indigenous territories are threatened by coal mining, timber extraction, and unsustainable infrastructure development.

Since 2016, indigenous and ethnic minority civil society groups in Myanmar have been working for legal and political recognition of their territories. Also known as 'Territories and areas conserved by Indigenous Peoples and Local Communities' (ICCAs), these are formally recognised areas that are sustainably governed by indigenous communities.

WWF is supporting activities to promote the recognition of ICCAs in the country. Activities have included a study tour with indigenous and ethnic organisations from Myanmar to learn about a well-functioning ICCA in the Philippines. This led to the formation of a working group, ICCA NEWS, which currently coordinates efforts to secure recognition in Myanmar.

ICCA NEWS currently consists of at least 50 members from various ethnic groups in the country. The group supports its members to establish documentation needed for ICCA recognition and engage in policy advocacy. The group holds regular meetings to share best practices and discuss issues affecting Indigenous Peoples and Local Communities.

In December 2018, after many consultations with the government, an agreement was reached to include ICCAs in the draft Conservation of Biodiversity and Protected Area (CBPA) by-law. 1 10 16

For ICCA NEWS, legal recognition of ICCAs in the by-law would mean that Indigenous Peoples and ethnic minorities must be involved in decisions affecting their territories, 10 including secure access and tenure rights. 1 10 It would also ensure the contributions of Indigenous Peoples and ethnic minorities to national conservation goals are formally recognised. 15 The by-law proposal is awaiting approval from parliament.

RE-GREENING MILAN FOR A RESILIENT FUTURE

Cities occupy three percent of the Earth's land but contribute 70 percent of greenhouse emissions. It is estimated that by 2050, 70 percent of the global population will live in cities and cities will account for 85 percent of global economic output. Cities are therefore vital to tackling the intergenerational challenges of inequality, nature loss, and climate change.

In Milan, Italy, the local municipality is leveraging nature to build the city's resilience through a partnership with local citizens, WWF, Fondazione Politecnico di Milano, Ambiente Italia, Eliante, AMAT, RFI, and Italferr. The partnership has designed three projects to improve the city's infrastructure and address several environmental health risks including noise and air pollution, flood risks, heatwaves, and a phenomenon known as the urban heat island effect.

Urban heat island effect happens when an urban area experiences significantly hotter temperatures than nearby rural areas. This is caused by several factors such as energy use, lack of natural vegetation, and how well buildings and infrastructure absorb and emit energy.

One of the projects is a new public park that will create a green buffer in the Giambellino neighbourhood. Plans for the park include a butterfly meadow, a community garden and orchard, a wall planting demonstration, pollution-absorbing plants, and an area for birdwatching. 2 11 15 Through a co-creation process, residents are contributing to the design and future management of the park. 11 16 The park is also designed to encourage healthier lifestyles by providing opportunities to grow and access vegetables 2 3 and spend more time outdoors in the natural environment. 3 11

The second project promotes the building of green roofs and walls in the city's infrastructure planning. Green roofs and walls can absorb excess heat during warmer months and improve energy insulation in winter. To promote uptake, the coalition plans to organise public campaigns, facilitate training sessions, and provide funding and technical support to monitor the impact of the green infrastructure.

The third project will redesign a local railway station, Tibaldi station, to trial green elements and noise barriers within the railway station. The green elements include green walls, and vegetation to absorb pollution and slow water run-off. The aim is to improve biodiversity and ecological connectivity, 15 contribute to the absorption of carbon dioxide and other pollutants in the air 13 and involve citizens in the co-management of the green areas. 16

GUEST CONTRIBUTION

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NATURE FOR SUSTAINABLE URBAN AND PERI-URBAN DEVELOPMENT

Nature plays an important role in all aspects of a city, beginning with essential services such as clean air and water. Street trees and city parks, for example, clear air of dangerous airborne particles, while green spaces provide shade that helps to reduce cooling costs and energy use in warm climates.

In addition to the physical and economic benefits that nature provides, access to nature also improves physical and psychological well-being (see **IPBES-7 report 2.3.1**). Encouraging people to go outdoors provides exercise, and brings people in contact with each other. This helps strengthen the personal and social resilience needed in times of economic stress and other crises.

Currently, 55 percent of the world's population live in cities and by 2050, this will increase to 70 percent. This growth will be more prevalent in low-income economies, with few resources, and a high proportion of informal settlements that lack basic services such as safe water and sanitation.

The challenge of achieving sustainable, equitable, and healthy living standards needs to be solved within urban systems connecting all functions and services in a city. As we enter our decade of action to achieve the SDGs by 2030, we propose three entry points that will help cities worldwide catalyse progress.

Access and equity are non-negotiable

Widespread and free access to nature has significant impacts on a city's equitable development. Increasing or improving urban green spaces, especially in poorer areas, can profoundly improve the quality of life for those who suffer disproportionately from climate change, air pollution, and lack of access to fresh food and clean water.

The sustainable use of green spaces for urban agriculture contributes to food security, particularly for the most vulnerable who may otherwise lack access to fresh food products. This implies that parks and public gardens are not just options for wealthy suburbs and rich cities but must be integrated throughout cities in close collaboration with residents.

Look beyond a city's boundaries

While we have seen that nature plays a big role in supporting life in the city, it is increasingly understood that the responsibility and benefits of conserving nature go beyond city boundaries. It is estimated that between 2000 and 2030, urban growth could threaten 290,000 km2 of natural habitats. A well-connected network of green spaces or biodiversity corridors in and around a city can help sustain, protect, and restore the health of natural ecosystems.

Invest in resilient infrastructure by investing in nature

Nature-based infrastructure is an effective strategy to address the effects of climate change in cities. Flooding and coastal erosion is a major threat to many cities, most of which are located on rivers and coasts. De-paving, greening roofs, restoring wetlands and natural water flows in river corridors, all help to slow down and absorb water run-off and reduce flood peaks. Urban parks can double as flood or storm surge barriers. These solutions serve to increase water availability when it is needed, by replenishing underground reservoirs and improve water quality through biofiltration.

Despite the effectiveness and multiple benefits of nature-based infrastructure, it represents a small fraction of national infrastructure spending. For example, **less than 1 percent** of total investments in water-managed infrastructure is allocated to nature-based solutions in Europe.

In the most rapidly urbanising areas of the world, where finance is typically limited, the true advantages of nature and nature-based solutions must be assessed and **built into urban development plans** at the early stages. Through effective governance and financing, we can realise the benefits of nature for those who are most in need.

FISH FORWARD 2: TOWARDS SUSTAINABLE SEAFOOD SUPPLY CHAINS

Seafood is an important source of nutrition, providing essential micro-nutrients, vitamins, and protein. In several economies such as Ghana and Indonesia, seafood consumption contributes 50 percent or more of total animal protein intake.

Since the 1970s, the number of overfished stocks has tripled. The main causes are increasing global fish demand, unsustainable fishing practices, and climate change. Declining fish stocks mean many fishers have to work harder and sometimes in illegal conditions to earn a living. The COVID-19 pandemic has severely disrupted international supply chains, affecting the livelihoods of millions of small-scale fishers, who supply almost half of the world's seafood.

In partnership with the Environmental Justice Foundation and the European Commission, WWF launched the Fish Forward 2 initiative in 2018. This initiative works in 17 countries to engage consumers, retailers, producers, and policy-makers on sustainable seafood supply chains. Sustainable seafood supply chains aim to positively contribute to the livelihoods and food security of fishers and fish workers, as well as the health of natural ecosystems.

A key objective of the initiative is to raise awareness among European consumers, the world's largest seafood market, of the true cost of current seafood production models, and the value of sustainable seafood supply chains. So far, over 64 million European consumers have been reached through targeted campaigns on the social impacts of seafood production. 4 12 13 14

In the EU, Fish Forward 2 continues to engage policy-makers and companies through participation in EU advisory councils and policy reports on issues related to the seafood sector. 2 13 14 At present, 24 companies have committed to improving their seafood portfolio with support from WWF and the Environmental Justice Foundation. 17 9 8

Fish Forward 2 also supports inclusive policy reforms around the world to ensure fishers are meaningfully consulted in policy and legal reforms. Fishers have engaged in consultations to inform Fishery Improvement Plans in India and the creation of the Women Fishers Association in Turkey. 1 5 10 16 Additionally, 413 seafood producers have accessed training on sustainable fisheries management, climate change and gender issues in South Africa, India, Philippines, and Tunisia.

13 CLIMATE ACTION

TRILLION TREES: HOW TANZANIA'S FORESTS ARE HELPING TO BUILD CLIMATE RESILIENCE

Forests and woodlands cover over 50 percent of land area in Tanzania and supply food, firewood, freshwater, and jobs to millions of people. Healthy forests boost the country's resilience to climate change as they capture and store large amounts of carbon and buffer against climate change impacts such as flooding and storm surges.

The health of these vital ecosystems can be improved through adopting sustainable forest management practices, restoring degraded forest land and conserving intact landscapes. In all three solutions, local communities play a central role as they possess first-hand knowledge of the forests.

For more than two decades, communities have been working with WWF, and more recently the Trillion Trees Partnership, to sustainably manage forests across Tanzania.

At present, 45 villages in the Ruvuma landscape are managing over 450,000 hectares of community forests using sustainable management practices. 1 13 15 Through a collaborative partnership with WWF, they have been able to develop management and harvesting plans and gain access to reliable markets through a Forest Stewardship Council group certification scheme. 1 8 12 15

To help restore local forests, communities living near Vikindu, Pugu and Kazimzumbwi forest reserves are working with Trillion Trees, WWF and Tanzania Forest Services to plant new trees. The reserves are situated close to the capital city, Dar es Salaam, and provide vital services to the capital city such as carbon storage, clean air, and flood mitigation. 3 11 13 Restoring the forests will also help create new sustainable livelihoods such as eco-tourism and bee-keeping. 1 8 In 2018 and 2019, the communities planted 45,000 native tree seedlings and a further 20,000 trees in other forested areas. 13 15

At the policy level, WWF with the support of Trillion Trees is working with the government of Tanzania to develop a national strategy for forest landscape restoration. This is part of the government's plan to restore 5.2 million hectares of degraded forests by 2030. 13 15 16 The strategy will identify the most effective areas for restoration and create approaches to improve connectivity between forests for increased benefits to people, nature, and the climate.

ACCELERATING COASTAL COMMUNITY-LED CONSERVATION

Oceans and seas are vital for human health and the health of our planet. They are home to 80 percent of life on Earth and provide livelihoods to more than three billion people. The ocean is also a unique 'carbon sink', having absorbed approximately 30 percent of total carbon dioxide emitted since pre-industrial times.

Despite this, as much as 66 percent of the ocean and marine environment has been significantly altered by activities including pollution, climate change, overfishing, and the destruction of coastal habitats.

Community-led management of marine resources by coastal communities and small-scale fisheries are vital to restoring the health and resilience of our oceans. These communities have been custodians of ocean ecosystems for multiple generations. Their food, livelihoods, and social ties are inextricably linked to the health of the ocean.

Unfortunately, the contributions of coastal communities and small-scale fishers are often undervalued, underreported, and consequently overlooked in fisheries policy. Community-led coastal management continues to be limited by a lack of funding, limited access to information, weak enforcement, and insecure access and ownership of natural resources. As a result, where management measures are in place, their implementation can often be ineffective, leading to declining ocean ecosystems and increasing vulnerabilities of coastal communities.

WWF, in partnership with international organizations such as FAO, EDF, Blue Ventures, and WorldFish, and more than 200 local partners, seeks to address these challenges and accelerate the uptake of coastal community-led conservation around the world.

The initiative will support locally managed marine areas and small-scale fisheries to deliver significant benefits to 12 million people who are highly reliant on oceans. Starting from 100 priority sites in 34 countries, the initiative will scale up existing efforts to support:

- Community-led advocacy on public and private investment towards community-based coastal management 1 2 9 17
- Recognition and effective participation of coastal communities in national and regional policy 14 and decision-making 16
- Additional finance 9 and market access opportunities 1 8 for community-level economic activities
- Emerging good practice through a new online tool designed to document effective approaches across the world 17
- 15-20 new learning and innovation hubs and networks aiming to reach 1 million people. 17

With this support, the initiative aims to facilitate the development of a global movement that will secure at least seven million km² of critical coastal ecosystems by 2030.

SOCIAL AND ECOLOGICAL RESTORATION IN OAXACA, MEXICO

The Copalita-Zimatán-Huatulco watershed in Oaxaca state, Mexico, is an invaluable ecosystem that has underpinned the social, cultural, and economic activity of local communities for centuries. It is home to approximately one-third of the country's biodiversity and is a vital source of freshwater, used to grow key commodities such as maize, coffee, and beans.

Surrounding this important watershed is a forest landscape which is deeply connected to the health of the watershed. In the early 2000s, the forest was declining at a significant rate as a result of deforestation, unsustainable agricultural production, poorly managed tourism, and climate change. These changes led to a decline in water quality and water availability in the watershed.

For 15 years, local communities have led a process to restore the watershed and the surrounding forest landscape by investing in activities that enhance the interconnections between the watershed and the forest.

In partnership with WWF, Fundación Gonzálo Río Arronte, and Caudalie company, they adopted sustainable water management practices to improve the health of the watershed. 6 They installed 280 dry toilets, 204 biofilters to treat water in homes and schools, and rainfall water harvesting systems to collect rainwater. 1 6 11 15 These installations have helped to increase water supply and reduce water contamination in the watershed. 3 6 15

An important part of restoring the watershed and the forest has been the transition to sustainable agricultural production. 2 The communities formed 13 community conservation enterprises to produce native plants using sustainable production methods. They grow crops such as vanilla plantations and shade-grown coffee which require trees for their growth and help to reforest land. 2 15 They also use organic fertilisers instead of chemical fertilisers to grow their crops and restore the health of the farming land. 2

In using these techniques, the community enterprises have significantly improved their agricultural productivity. For example, the average cost of conventional corn production in the region is 12,900 pesos (USD 577) per hectare to produce a yield of 600 kilograms. In comparison, the community conservation enterprises have saved production costs by 33 percent and increased their yield by a third to 800 kilograms. 1 2

In addition to sustainable water management and agricultural production, the communities have reforested over 2,625 hectares of land with 27 different varieties of native tree species. 13 15 As a result of these reforestation activities, 14 new water sources have emerged that supply water to 2,500 people. 6

Through this partnership, the communities show how an integrated relationship between nature and human life not only restores a landscape but transforms the possibilities within it.

GUEST CONTRIBUTOR

SHIFTING TOWARDS WELLBEING ECONOMIES

The COVID-19 pandemic has highlighted the inequalities and dysfunctionalities in our current economic systems. It has never been more crucial that we focus our systems on delivering wellbeing for all.

The concept of collective wellbeing is familiar the world over, even though different terms might be used to describe its key idea; quality of life for all people and sustainability for the planet. A wellbeing economy is one that delivers on this vision by promoting:

1. Dignity: Everyone has enough to live in comfort, safety, and happiness
2. Nature: A restored and safe natural world for all life
3. Connection: A sense of belonging and institutions that serve the common good
4. Fairness: Justice in all its dimensions at the heart of economic systems, and the gap between the richest and poorest greatly reduced
5. Participation: Citizens actively engaged in their communities and locally rooted economies.

In pursuit of a wellbeing economy, the **Wellbeing Economy Governments (WEGo) partnership** was established. WEGo is an alliance of national and regional governments that share expertise and policies to build wellbeing economies. WEGo was instigated by the Wellbeing Economy Alliance who continues to support the partnership.

The objectives of WEGo are to:

- Collaborate on innovative policy approaches to create wellbeing economies
- Progress toward the UN Sustainable Development Goals by fostering cooperation to identify approaches for delivering wellbeing
- Address the pressing economic, social, and environmental challenges of our time.

WEGo is currently comprised of Scotland, New Zealand, Iceland, and Wales, with the Scottish Government's Office of the Chief Economist providing secretariat support. The members are adopting policies that prioritise people and the planet by mainstreaming social equity and ecological restoration in their public budgets.

For instance, Iceland is ranked **first for gender equality**, New Zealand has a national **budget** informed by wellbeing indicators and Scotland is developing its **circular economy agenda** and **Fair Work Action Plan**. Wales has a world-leading **Future Generations Commissioner** and **Wellbeing of Future Generations Act** which compels public bodies to think about how decisions will affect people living in Wales in the future.

We no longer have time to do business-as-usual but we still have the opportunity to make a difference. Action on the SDGs in the next ten years is not possible without a fundamental transformation of our economic system.

COMMUNITY-LED MONITORING OF THE SDGS IN THE DEMOCRATIC REPUBLIC OF CONGO

Leave No One Behind is one of the core principles of the Sustainable Development Goals. When it comes to the natural environment, this is particularly important because nature loss and climate change disproportionately affect specific groups, for example, Indigenous Peoples and rural communities. These groups of people are less likely to be able to access support or replace the natural services and resources lost as a result of environmental degradation.

Community-led monitoring is an essential step to ensure people most vulnerable to nature loss and climate change have quality information they understand, and can effectively participate in formal decision-making.

In the Democratic Republic of Congo, three rural communities from the Maï-Ndombe, Tshuapa and Équateur provinces, worked with the Ministry of Rural Development and WWF to create a community monitoring framework on SDGs implementation. 10 16 17 The framework is embedded in a participatory process that requires community members to formulate and select the most relevant local SDG indicators to assess progress in their villages.

The assessments are aggregated to give a total percentage in five categories of capital - natural, social, infrastructure, financial, and human. The data collected is then shared with national ministries to help inform policy planning. When implemented properly, this framework can help improve decision-making on SDGs in other rural communities, who make up 56 percent of the country's population.

In June 2018, the national government adopted the tool as an official monitoring mechanism for SDGs implementation. The Ministry of Rural Development has created an internal department to scale the tool across the country in partnership with WWF, Ministry of Planning, National Institute of Statistics, Development Indicators Analysis Unit, OXFAM, and ISCO. 16 17 A CSO network has also been established to facilitate learning and exchange on how to effectively support community-led data collection and monitoring on SDGs. 17

A GLOBAL PARTNERSHIP FOR A SUSTAINABLE BLUE ECONOMY

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Ocean ecosystems play a critical role in our global economy. They help to facilitate approximately 80 percent of global trade through maritime transport and support the livelihoods of three billion people.

Whilst COVID-19 has severely impacted the ocean economy, in particular maritime transport, tourism, and fisheries sectors, it has highlighted the urgent need to invest in the health and resilience of natural ecosystems to reduce the risk of future pandemics.

At present, ocean ecosystems are in severe decline as a result of unsustainable infrastructure development, over-exploitation of natural resources, pollution, and rising sea levels and temperatures caused by climate change. We are not on track to meet three of the four SDG 14 targets with a 2020 deadline, so there is an urgent need to find transformational opportunities that accelerate progress.

The Sustainable Blue Economy approach is one such opportunity. It promotes the sustainable use of the ocean and its resources in order to:

- Provide social and economic benefits for current and future generations
- Restore, protect and maintain diverse, productive and resilient marine ecosystems
- Promote the use of clean technologies, renewable energy, and circular material flows.

Achieving a sustainable blue economy would offer countries the chance to not only recover from the pandemic but build resilient and equitable economies. To drive this forward, the Sustainable Blue Economy Finance Principles were launched in 2018 by WWF, the European Commission, European Investment Bank, and the Prince of Wales' International Sustainability Unit. The 14 Principles aim to direct mainstream finance 8 9 towards investments that go beyond the avoidance of harm to catalyse social, environmental, and economic value from our oceans.

Signatories to the principles include the European Investment Bank, the World Bank and the Asian Development Bank, and several actors in private finance. The principles have been adopted by UN Environment as the overarching framework for the new Sustainable Blue Economy Finance Initiative launched in November 2019. This initiative will provide an interactive finance platform to support the implementation of the Principles, share good practice on Sustainable Blue Economy finance, and facilitate the development of supporting guidance. 17

To find out how WWF is supporting the integrated and inclusive implementation of the Sustainable Development Goals, please visit: wwf.panda.org/knowledge_hub/sustainable_development_goals

Or contact Marion Osieyo, SDG Hub Manager, Governance Practice
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