

# We are #GenerationRestoration

How to reverse land degradation, halt desertification and build drought resilience



**World Environment Day**  
2024 PRACTICAL GUIDE

**Our Land. Our Future**  
We are  
#GenerationRestoration



**WORLD  
ENVIRONMENT  
DAY**



**Kingdom of  
Saudi Arabia**  
2024

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This practical guide is designed to get everyone involved in restoring land, halting desertification and building drought resilience. By joining forces, governments, businesses, civil society and individuals can give nature a helping hand and forge a more sustainable world for generations to come.





# The problem with land degradation, desertification and drought



Land sustains life on Earth. Farmlands, forests, grasslands, savannahs, peatlands and even mountains provide humanity with the goods and services that make civilization possible. Those landscapes are underpinned by aquatic ecosystems, such as oceans, rivers and lakes, which sustain the water cycles that keep land fertile.

But the world's ecosystems are under threat. Unsustainable patterns of production and consumption are driving the triple planetary crisis of climate change, nature and biodiversity loss, and pollution and waste. More than one-fifth of the Earth's land area, some 2 billion hectares, is degraded.

Some 3.2 billion people, or 40 per cent of the world's population, are impacted by land degradation, which disproportionately affects those who are least equipped to cope – Indigenous Peoples, rural communities, smallholder farmers and the extremely poor, especially women and youth. Fifty-five million people are directly affected by droughts annually, making it the most serious hazard to livestock and crops in nearly every part of the world.

If land degradation remains unchecked it could reduce global food productivity by 12 per cent, causing food prices to soar by up to 30 per cent by 2040.

World Environment Day 2024, hosted by the Kingdom of Saudi Arabia, is a chance to shine a spotlight on solutions to restoring land, halting desertification and building drought resilience. Since 1973, World Environment Day, led by the UN Environment Programme (UNEP), has raised awareness about critical environmental issues, from climate change to chemical pollution. Every year it mobilizes hundreds of millions of people to take action to protect the planet.



Photo: UNEP/Todd Brown



# The potential of ecosystem restoration



Earth needs a helping hand. The triple planetary crisis threatens to destroy our home and eliminate millions of species with which we share this beautiful planet. But this degradation is not inevitable. We have the power and the knowledge to reverse the harm and restore the environment – if we act now.

The process of reviving natural spaces is called ecosystem restoration, and it has never been more urgent. Many countries around the world are realizing this. Between 765 million and 1 billion hectares of land across the world are earmarked for restoration. Almost half of that is in Sub-Saharan Africa, with significant commitments also in Asia and Latin America.

Countries are showcasing that restoration works under the UN Decade on Ecosystem Restoration, a global push to revive damaged ecosystems, such as forests, grasslands and wetlands. The World Restoration Flagships—a series of pioneering initiatives—demonstrate how restoration delivers a wide range of environmental benefits, including increased productivity, carbon sequestration and biodiversity preservation.

Check out the interactive map to see which countries have already joined the race to restoration.

## ECOSYSTEM RESTORATION WORKS

Nepal has tripled its tiger population by restoring grasslands and forests; the survival rate of newly planted mangroves in Sri Lanka shot up from 3 per cent to 90 per cent since 2005; and African farmers are on track to revive 5 million hectares of agricultural lands. [Read more](#) about winning restoration drives.

Photo: Dreamstime



Bringing degraded ecosystems back to life yields up to US\$30 in ecosystem services for every dollar spent. Restoring 1 billion hectares of degraded land globally will go a long way towards achieving the Sustainable Development Goals, reversing nature loss and curbing climate change.

The Kunming-Montreal Global Biodiversity Framework, a 2022 landmark pact to protect nature, commits countries to ensuring that by 2030 at least 30 per cent of degraded terrestrial, inland water, and marine and coastal ecosystems are under effective restoration.

As the global voice for land, the UN Convention to Combat Desertification (UNCCD) is where governments, businesses and civil society come together to discuss present-day challenges and chart a sustainable future for land. At the end of 2024, the 16<sup>th</sup> Conference of Parties (COP16) of the UNCCD will be held in Riyadh to accelerate action on land restoration and drought resilience.

Successful land restoration requires an approach that uses knowledge and ambition across generations. Everybody alive now is part of a generation that is the first to witness the devastating effects of environmental degradation. We could be the planet's last hope to reverse course.

We cannot turn back time, but we can grow forests, green our cities, harvest rainwater and eat soil-friendly foods. We can be the generation that finally makes peace with land.

Here are some of the ways we can all become #GenerationRestoration.



# How to bolster food production through restoration



Globally, at least 2 billion people depend on the agriculture sector for their livelihoods, particularly poor and rural populations. However, our current food systems are unsustainable and a prime driver of land degradation.

## SAVING NATURE BEGINS WITH YOUR PLATE

The way we produce and consume food is driving over 80 per cent of biodiversity loss.



Photo: Unsplash

Here are some ways to fix the global food system and protect landscapes, from forests to wetlands.

## MAKE AGRICULTURE SUSTAINABLE

One of the best ways to make food systems more sustainable is through agriculture finance reform. Currently, agricultural producers receive US\$540 billion a year in financial support from countries. About 87 per cent of subsidies either distort prices or harm nature and human health. But we can change this.

### ◆ Governments and the finance sector can:

- Promote regenerative agriculture to increase food production while preserving ecosystems
- Redirect agricultural, forestry and fishing subsidies towards sustainable practices and small-scale farmers





- Ensure more equitable access to land, water, credit and markets for smallholder farmers and marginalized communities
- Invest in research and development specific to Indigenous Peoples' food systems to unlock their potential for wider application

#### ◆ **Agricultural businesses can:**

- Develop climate-resilient crop varieties and other adaptation measures to help farmers mitigate the impacts of drought and climate change
- Combine Indigenous Peoples' traditional wisdom with scientific advancements to develop crops and farming methods that are sustainable and scalable
- Adopt sustainable farming techniques by using traditional crop varieties for their nutritional value, drought and pest resistance and adaptation to climate change
- Reduce food waste and loss at retail and food service levels to cut down on water usage and carbon emissions
- Increase funds for research and development in new technologies for crop and livestock production
- Ensure the measured use of fertilizers and insecticides to avoid soil degradation
- Focus on crops that are adapted to local ecosystems and climate

#### ◆ **Schools, universities, companies, clubs, civil society and faith-based organizations can:**

- Use sustainable foods and reduce food waste in cafeterias and at events
- Share knowledge about sustainable foods and cooking practices
- Practice sustainable agriculture in community gardens and on campuses
- Foster community engagement based on common values
- Implement youth-specific education and awareness campaigns on the importance of land restoration in communities

#### ◆ **Individuals can:**

- Use purchasing power to support only brands that sustainably source materials
- Buy local to support local farmers to reduce greenhouse gas emissions
- Include more soil-friendly foods in our diet, such as lentils, beans and chickpeas
- Shift diets so that they are regional, seasonal and plant-rich
- Use the [planet-based diet calculator](#) to find out how food choices impact the environment
- Shop for sustainable and locally produced food products and beverages
- Demand better labeling including information on products' carbon footprint and sustainability
- Spread the word by hosting sustainable cook-offs and share tips to reduce domestic food waste

## EARTH-HEALING FOODS

Some foods can actually help [repair soil](#). Try including more pulses in your diet, like beans, lentils, chickpeas and peas.



Photo: Unsplash

## SAVE THE SOIL

Soil is more than just the dirt under our feet. It is the planet's most biodiverse habitat with almost [60 per cent](#) of all species living in soil. And it is estimated that [95 per cent of our food](#) is directly or indirectly produced on soil.

Soil health is the capacity of soil to function as a living system. Healthy soil is the largest store of terrestrial carbon and plays a vital role in climate mitigation by decreasing greenhouse gas emissions in the atmosphere.

Every five seconds, the equivalent of one football pitch of soil is eroded as land is overcultivated and overgrazed, and trees are cut down. Yet, it takes 1,000 years to generate 3 centimetres of topsoil. Here are ways to keep soil healthy and productive.

◆ **Governments and the finance sector can:**

- Support organic farming that uses little or no synthetic chemicals
- Reform subsidies and loans to encourage soil friendly farming
- Invest in sustainable land management and conservation that protect natural infrastructure of waterways

◆ **Agricultural businesses can:**

- Practice zero-tillage to maintain a permanent or semi-permanent organic soil cover
- Add compost and organic materials to soil to improve its fertility, water retention and microbial activity
- Install irrigation techniques such as drip irrigation or mulching to help maintain soil moisture levels and prevent drought stress

◆ **Schools, universities, companies, clubs, civil society and faith-based organizations can:**

- Build the knowledge, skills and capacity of youth to engage in land restoration activities effectively



- Engage youth groups globally through campaigns such as the [International Year of Soils](#) and [World Soil Day](#) to teach young people and children about the importance of soil health and organisms through books such as [The Magical World of Soil Biodiversity](#)
- Include composting on compounds and campuses

#### ◆ **Individuals can:**

- Collect kitchen waste to use as compost in gardens or balconies or contribute to composting schemes
- Learn about sustainable agriculture practices that preserve soil health, retain water and minimize erosion

## BATS SUSTAIN OUR FRUIT SUPPLY

More than 300 fruit species depend on bats for pollination. Without bats, we could say goodbye to bananas, avocados and mangoes.

Photo: Unsplash



## BRING BACK THE BUZZZ

Close to 75 per cent of the world's fruit and seed crops depend, at least in part, on pollinators including 87 of 115 leading food crops worldwide. And while bees are the most prolific pollinators, they get a lot of help from others, such as bats, insects,

butterflies, birds and beetles to name a few. However, all pollinators, especially bees, are in serious decline, primarily due to intensive agricultural practices, pesticide use, invasive species, diseases and climate change.

Here are ways to bring back the buzzz.

#### ◆ **Governments can:**

- Reduce air pollution and minimize adverse impacts of pesticides and fertilizers on human and planetary health
- Conserve and restore natural habitats such as meadows, forests and wetlands where pollinators can thrive
- Incentivize and encourage farmers to support pollinators by planting non-invasive, pollinator-friendly perennial plants

#### ◆ **Cities can:**

- Bring back nature into cities and green infrastructure
- Change mowing regimes so that more wild places emerge in cities – see initiatives like [No-Mow-May](#), [Low-Mow-Spring](#) as examples
- Practice pollinator-friendly landscaping, such as installing ponds in gardens and city parks

#### ◆ **Households, schools, companies, clubs, civil society and faith-based organizations can:**

- Support local beekeepers by buying their products
- Adopt ecosystem-based approaches for pest control in gardens and campuses, and encourage others to do the same

- Provide nesting sites by installing bee “hotels” and pollinator farms on balconies, terraces or gardens
- Attract pollinators, including birds and butterflies to gardens by planting diverse native flowers

◆ **Universities can:**

- Consider joining the [Nature-Positive-Universities Alliance](#) or similar initiatives to take restoration action on campus





# How to revive water cycles and sources



The world's freshwater ecosystems supply food and water to billions of people, protect us from droughts and floods, and provide habitat for countless plants and animals. They also sustain the water cycles that keep land fertile and are crucial for restoration. Yet freshwater ecosystems are disappearing at an alarming rate, degraded by pollution, climate change, overfishing and overextraction.

## FISH NEED LAND TOO

Many fish survive on insects that are attracted to long grasses and flowers.

Photo: Canva



## RESTORE FRESHWATER ECOSYSTEMS

Here is how we can protect and restore freshwater ecosystems not just in the wild but in urban areas.

### ◆ Governments can:

- Invest in holistic, integrated water resource management plans that take into account the entire water cycle: from source to distribution, economic use, treatment, recycling, reuse and return to the environment
- Improve water quality by reducing pollution and increasing monitoring to identify pollution sources and assess the health of freshwater ecosystems

- Join the [Freshwater Challenge](#), a country-led initiative that aims to support, integrate and accelerate the restoration of degraded rivers and wetlands by 2030, and conserve intact freshwater ecosystems
- Limit the expansion of agricultural and urban landscapes near critical freshwater ecosystems and improve watershed management
- Restore degraded freshwater habitats by removing invasive species, replanting native vegetation and restoring natural flow regimes
- Enforce regulations and zoning laws that prevent the destruction of freshwater habitats through urbanization, deforestation and unsustainable land use

### ◆ Businesses can:

- Invest in rainwater harvesting, smart irrigation practices and recycling water plants
- If you are involved in finance, ensure equal access to resources, training and funding for women and youth to start businesses or social enterprises focused on ecosystem restoration, such as eco-tourism and green technology

### ◆ Cities can:

- Serve as a hub for wastewater innovation, addressing water supply, sewage management, stormwater runoff and urban flooding
- Scale up water reuse for industry and agriculture, which can lower investment costs and energy use
- Learn how to become a '[Swimmable City](#)' which can help ensure water quality

◆ **Schools, universities, companies, clubs, civil society and faith-based organizations can:**

- Study local rivers and other waterways that provide water to cities and towns to compare how they have changed over time
- Rewild local rivers by growing vegetation around them
- Create more wild habitats in rivers for biodiversity to thrive
- Join the [World Water Quality Alliance](#) and learn how to conduct water quality and pollution tests for your local freshwater bodies
- Research where your local Rotary clubs are and take part in the [Community Action for Freshwater Initiative](#) to protect your local waterbodies
- Join #GenerationRestoration in your local city to take action to restore nature in urban areas, including combating drought, pollution and floods

◆ **Individuals can:**

- Become a restoration leader in your own community by learning about the latest restoration science and best practices
- Pressure elected officials at all levels of the government to enact policies that support ecosystem restoration and conservation

## RENEW MARINE AND COASTAL AREAS

Oceans and seas provide humanity with countless essentials, including oxygen, food and water, while mitigating climate change and helping communities adapt to extreme weather. About [37 per cent of the global population](#) resides within 100 km of the coast, while over 3 billion people, primarily in developing nations, rely on marine and coastal biodiversity for their livelihoods. Yet the world's oceans are facing mounting pressure from climate change, pollution and biodiversity loss.

## MANGROVES ARE CLIMATE HEROES

They extract up to five times more carbon from the atmosphere than forests on land. Here are [six things you can do](#) to bring back mangrove ecosystems.



Photo: UNEP/Stephanie Foote

◆ **Governments can:**

- Accelerate action on implementing the Kunming Montreal Global Biodiversity Framework.
- Restore blue ecosystems, including mangroves, salt marshes, seagrass meadows, kelp forests and coral reefs
- Enforce strict regulations to control pollution and reduce excess nutrients, agricultural runoff, industrial discharge, and plastic waste before they reach coastal areas
- Incorporate Indigenous Peoples, women and youth perspectives on land use and conservation to improve restoration projects for sustainable outcomes
- Establish effectively managed marine protected areas to conserve and restore biodiversity and help mitigate and adapt to the impacts of climate change
- Support the [High-Level Climate Champion Ocean Breakthroughs](#), including the [Mangrove](#) and the [Coral Reef Breakthroughs](#)

◆ **Businesses can:**

- Carefully manage and regulate development around coastal areas to ensure economic activities do not harm the nature they rely on
- Redesign products so they can be reused, repurposed, repaired and recycled especially plastic products
- Invest in the recovery of nutrients from wastewater and livestock waste to use as fertilizers, closing the circle and promoting the efficient use of fertilizers

◆ **Cities and municipalities can:**

- Involve local communities in conservation efforts through education and outreach programs to bolster restoration initiatives
- Strengthen systems for sound waste management to reduce marine pollution

◆ **Schools, universities, companies, clubs, civil society and faith-based organizations can:**

- Learn to reduce, reuse and recycle to slash the plastic waste ending up in our ocean
- Read up on the importance of mangrove ecosystems and what you can do to bring them back
- Learn about and consume only local and sustainable fish and seafood
- Learn more about how blue ecosystems underpin human well-being and how one-quarter of all marine life is fostered in coral reefs





# How to bring nature back to our cities



Cities are home to more than half of the world's people and their environmental impact is profound. They account for 75 per cent of global resource use, produce more than half of global waste and generate at least 60 per cent of greenhouse gas emissions.

As cities grow, they transform the natural world around them such as forests, wetlands, farmlands and waterways potentially leading to droughts and land degradation. And while cities are often referred to as concrete jungles, that does not have to be the case. Urban areas can be oases capable of growing food and supporting remarkable biodiversity, shrinking their environmental footprint. Here are some ways we can bring nature back to cities

## TREES ARE COOL

Growing trees alongside streets can lower the maximum temperature in cities by up to 5 degrees Celsius.



Photo: Canva

### ◆ Businesses can:

- Install more green roofs and vertical gardens on buildings to help mitigate the loss of green spaces in cities and provide habitats for birds, insects and plants
- Invest in green infrastructure such as permeable pavement, rain gardens, and bioswales to manage stormwater runoff and reduce flooding

### ◆ Cities and municipalities can:

- Increase urban forests to improve air quality, provide more shade and reduce the need for mechanical cooling
- Implement small shifts like mowing urban lawns less intensely can increase biodiversity while also saving costs in the city budget
- Preserve water bodies, such as lakes, canals, ponds and wetlands in urban areas to alleviate deadly climate-induced heatwaves and increase biodiversity in urban areas

### ◆ Individuals, faith-based organizations, schools and universities can:

- Green campuses, balconies, rooftops and gardens in urban areas
- Learn from the Generation Restoration cities that have been awarded by UNEP for their successes in restoring urban ecosystems
- Learn to grow a micro-forest in cities following the Miyawaki method
- Volunteer time and labour and contribute to the rehabilitation of degraded landscapes and ecosystems

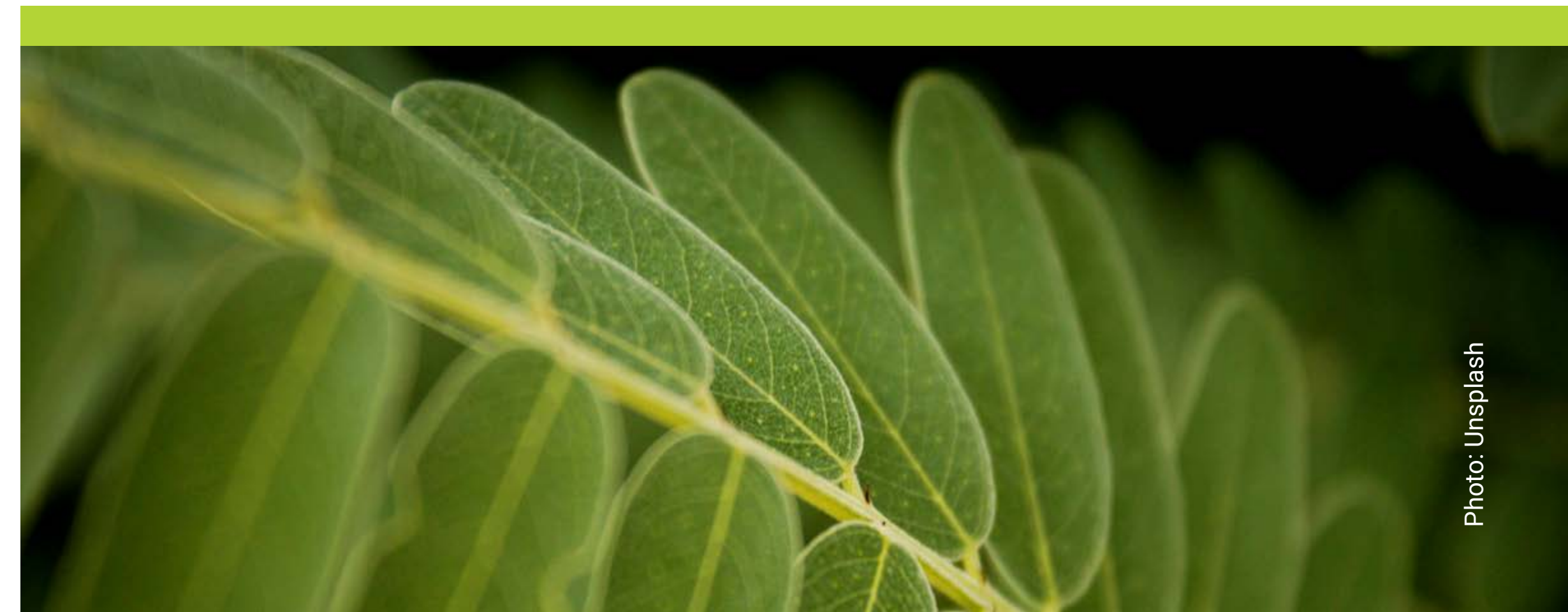


Photo: Unsplash

# How to generate financing for restoration



Investments in nature-based solutions need to ramp up from US\$200 billion to US\$542 billion by 2030 to meet the world's climate, biodiversity and ecosystem restoration goals. Finance remains one of the biggest barriers to achieving these targets. Government, business and finance leaders must work together to close the existing finance gap. Here is how that can be done.

◆ **Governments can:**

- Invest in early warning systems to prevent the worst impacts of drought
- Redirect public and private capital towards sustainable land use projects and land restoration projects
- Allocate funding to nature-based solutions
- Issue green bonds to raise funds to finance land restoration projects
- Enact regulations, tax incentives and subsidies that shift investments towards large-scale restoration and infrastructure projects that do not degrade ecosystems

◆ **Businesses can:**

- Integrate ecosystem restoration into their business models
- Develop sustainable technologies while implementing efficient waste management practices
- Ensure equal access to resources, training and funding for women to start businesses or social enterprises focused on ecosystem restoration, such as sustainable agriculture, eco-tourism and green technology
- Invest in youth-run green enterprises such as eco-tourism ventures, organic farming cooperatives, and sustainable forestry enterprises that generate income while contributing to the restoration and conservation of land



Photo: UNEP/Todd Brown



**We Are #GenerationRestoration: A Practical Guide** was developed for 2024 World Environment Day, focusing on land restoration, desertification and drought resilience.

**FOR MORE INFORMATION**  
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