OISCA International

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THE EARTH IN PERIL


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IN PERIL

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our living planet

The Earth is the only planet in our solar system that has the ability to give and sustain life. Our Earth is made up of living and non-living things that together, produce a healthy and living ecosystem. Earth has many processes and systems like the food web, water cycles, and nutrient cycles, that support life in these ecosystems. This enables our Earth to provide us with many and different services for us to live. The air we breathe, the food we eat, the materials used to develop new gadgets and technologies, the construction materials for building schools and hospitals, the electricity and energy that turns our equipment on — these are all derived from nature.

The Earth experiences many natural phenomena, either atmospheric, geological, or hydrological events, such as tropical cyclones, earthquakes, fires, and drought. Humans have no control over these events: we cannot dictate when, where or how they will occur. These occurrences, however, help shape the ecosystems on Earth. Natural wildfires help replenish soil nutrients. Typhoons cause currents that bring nutrients from the bottom of the ocean to marine animals at shallower depths. Volcanic eruptions fertilize soils. These natural events contribute to the many processes and checks-and-balances that sustain life on Earth.

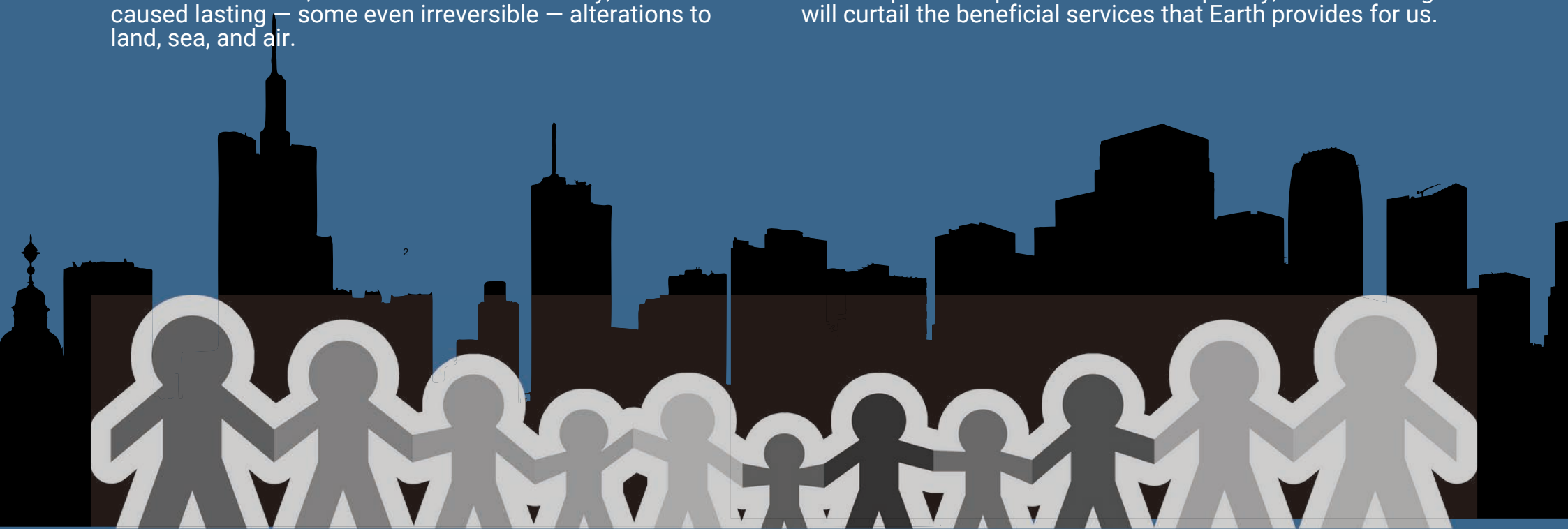
age of the anthropocene

The 'Anthropocene' is a term used to define the period when human activities started to have a significant impact on Earth. Some estimate the start of this era during the Industrial Revolution in the 1800s when the huge consumption of fossil fuels to support transportation and industries started. Others place it during the Great Acceleration in the 1950s, when human and technological activities rapidly increased. Regardless, the Anthropocene signals the start of heavy human interventions and developments, led by highly industrial countries, that had undeniable effects to our environment and ecosystems.

During the Anthropocene, agricultural and technological advancements made to improve food production, local and international trade, as well as national security, have caused lasting — some even irreversible — alterations to land, sea, and air.

Human activities have resulted in habitat destruction, overexploitation of resources, pollution, and climate change. As a result, we are now experiencing the inevitable damage that has been brought to Earth. Many species are on the verge of extinction because of human actions like hunting and habitat conversion. Deforestation still persists, with at least 420 million hectares of forest cleared since 1990. The Pacific Ocean has a garbage patch twice the size of Texas that is full of marine litter. Our food has traces of plastics in them, and our natural disasters are becoming more intense and strong.

Climate change is a mark of the Anthropocene, a crisis that will be felt increasingly in the years to come. Its impacts will affect our health and the environment, as well as on how we deal with catastrophes and pandemics. Consequently, climate change will curtail the beneficial services that Earth provides for us.



the making of a natural disaster

When natural events occur in a populated area like cities and agricultural fields, they become natural hazards that have the potential to cause destruction to lives and properties. When death or damage is recorded, then these hazards become natural disasters.

Human activities such as deforestation, land use alterations, and climate change have particularly made natural hazards closer to humans. Our actions also contribute to making them more disastrous.

In this book, we will look into some natural hazards that have become disastrous events to several communities. We will learn about wildfires in the Philippines, desertification in in Kazakhstan and Uzbekistan, typhoons and storm surges in Southeast Asia, and tsunamis in Japan. We will provide examples of how organizations like OISCA International, together with its partners, have been working to address these issues on the ground. Finally, we will talk about the people and communities at risk from natural disasters, and explore ways to help nature mitigate the effects of natural disasters.

our Earth in peril: case studies

Caretakers putting out a forest fire in Aritao, Nueva Vizcaya, Philippines.

wildfires

WHAT ARE WILDFIRES

A wildfire is a natural process in some types of vegetation like forests, brushes, peatlands, and grasslands that help release important nutrients to the soil. Some wildfires are beneficial to certain types of forests. Healthy burns, as they are called, help clear undergrowth, allowing new plants to grow and giving larger plants room to flourish. For centuries, assisted wild fires have also been used by indigenous and local communities to assist in agriculture.

Wildfires have natural and human-made causes. Natural causes of wildfires include lightning strikes and volcanic eruptions. However, many forest fires are triggered by human activities like unattended campfires, fireworks, or discarded cigarette butts near dry vegetation. The combined effects of man-made activities such as deforestation and climate change have made forest fires more widespread, dangerous, and frequent. With climate change contributing to drier seasons and more pronounced droughts, degraded forests and dried up lands will be more prone to more severe wildfires.

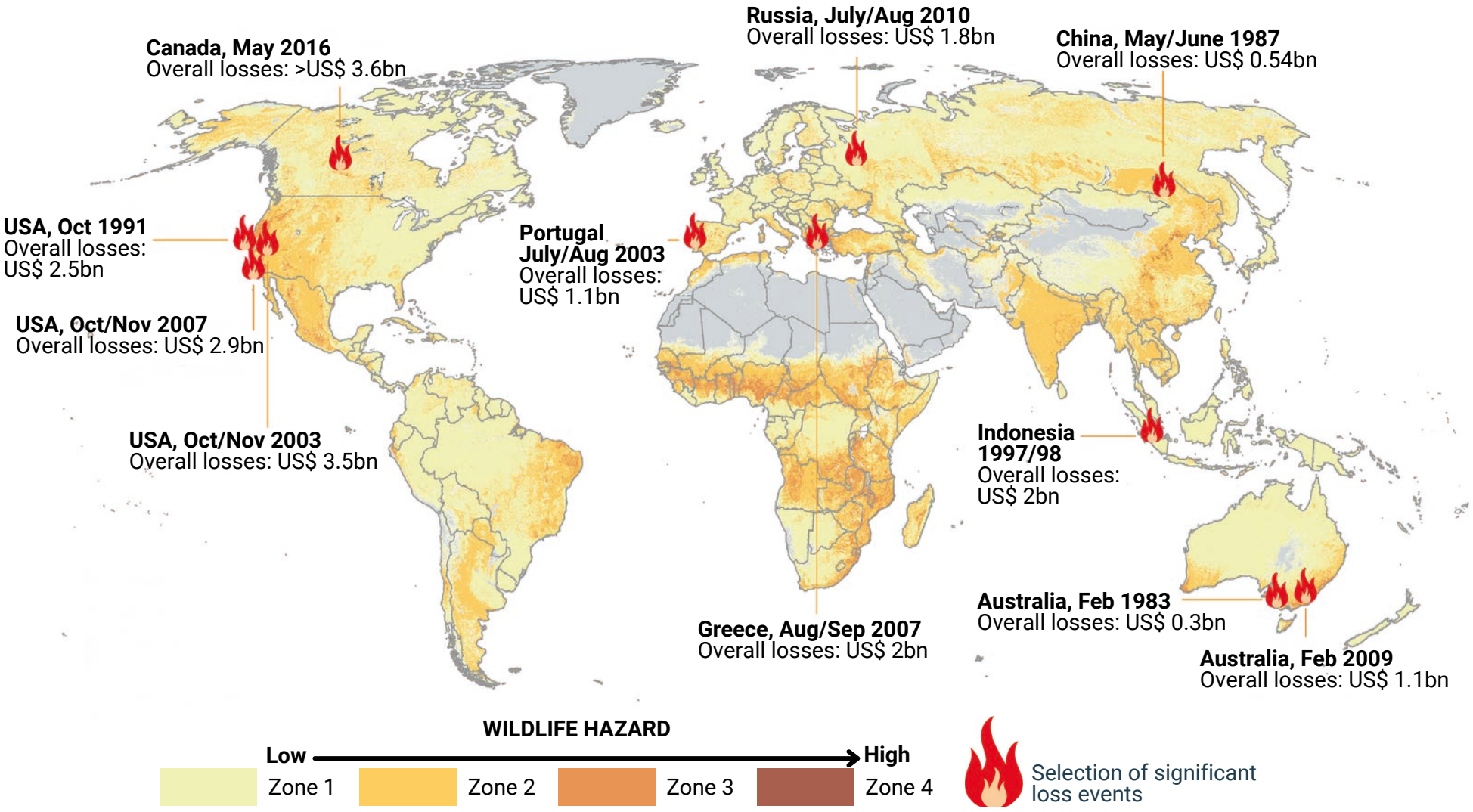
WHAT WILL HAPPEN NEXT

The Earth is becoming warmer and drier, and consequently, wildfires have increased in frequency and intensity over the years.

Severe wildfires are hazardous to communities. Smoke inhalation can cause respiratory and cardiovascular illnesses. Homes, livelihood, crops, and even lives may be lost in the fire. And this does not only affect humans, but wildlife, too. Repeated and frequent wildfires also cause erosion, which depletes the nutrients and productivity of soils. In turn, the eroded soil ends up in rivers and streams, degrading sources of water vital for drinking and irrigation.

Severe wildfires release more carbon dioxide and methane in the atmosphere thus hastening the effects of climate change, which makes the world drier and warmer and more prone to wildfires — creating a dangerous cycle for the Earth.

GLOBAL WILDFIRE HAZARD AND SIGNIFICANT LOSS EVENTS



Adapted from: Wildfire – causes, losses and consequences.
Munich Re NatCat Service, https://www.munichre.com/topics-online/en/climate-change-and-natural-disasters/natural-disasters/wildfire-causes-losses-consequences.html

CASE STUDY 1: BURNING FORESTS

FOREST FIRES IN ARITAO
Nueva Vizcaya, Philippines —
Years of logging and altering the use of forestland, and shifting agriculture have resulted in forest clearing and degradation in Aritao, Nueva Vizcaya. As a result, the forest became dry and barren and susceptible to forest fires.

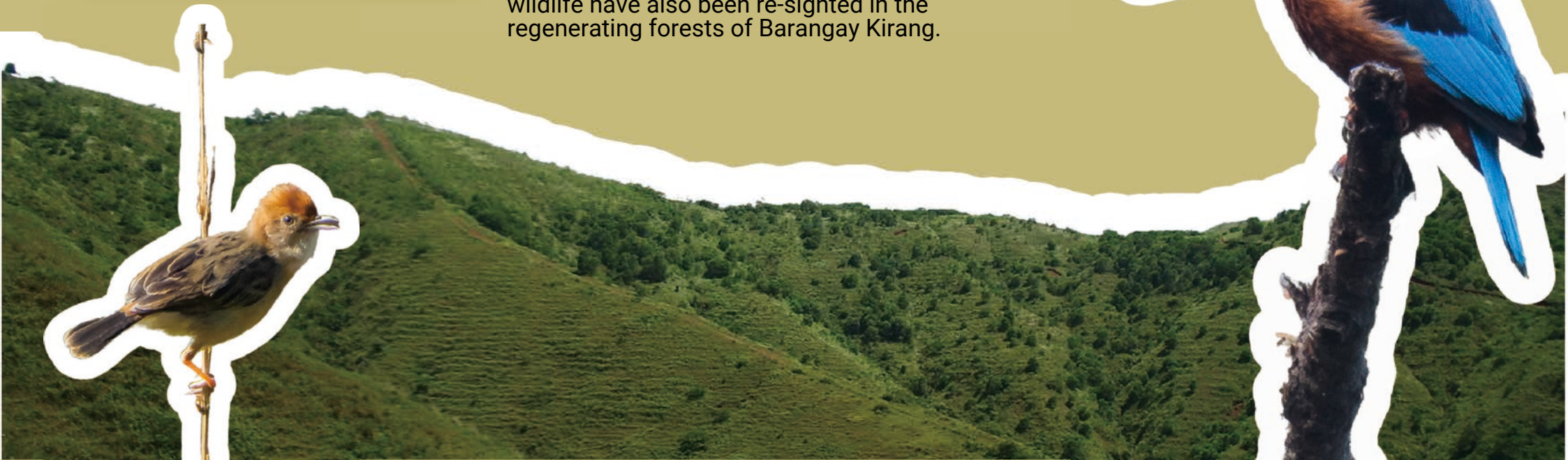
Indiscriminate burning of trash, unattended slash-and-burn farming, and discarded cigarette butts make the situation worse. Every year, forest caretakers report at least 3 fire events, most commonly during the dry season within the months of February to May.

Because the forests are dry, the fires spread more easily. The forest fires causes air pollution to nearby communities, compromises water quality for drinking and farming, and clearing trees and homes of native wildlife. Keeping fires off Aritao's forest requires massive resources and effort for local volunteers, often endangering the lives of fire patrollers.

BRINGING BACK ARITAO'S FORESTS

OISCA Philippines initiated a reforestation program in Barangay Kirang, Aritao, Nueva Vizcaya in 1993, involving local caretakers, Japanese volunteers, and school children. Apart from tree planting activities, forest fire prevention and control measures also form part of the program. The caretakers act as fire patrollers who put out forest fires as soon as they are reported. They also create and maintain fire lines in between fire seasons. Educating local communities to be more responsible and cautious in farming activities and garbage disposal is crucial in ensuring that forest fires do not start.

After more than 25 years, the volunteers are starting to see their hard work pay off. Farmers report better year-round water supply and native wildlife have also been re-sighted in the regenerating forests of Barangay Kirang.



Abandoned boats in a former sea port in Moynaq, northern Karakalpakstan, Uzbekistan.

desertification

WHAT IS DESERTIFICATION

Desertification happens when an area that is already naturally dry and have limited rainfall continue to be degraded, causing the land to turn into a desert environment. Desertification is caused by climatic variations compounded by the impacts of manmade events such as climate change, deforestation, land degradation, and unsustainable water use.

Human activities such as intensive farming, overgrazing, mining, and urbanization clear existing vegetation and remove nutrients from soils. As the soils become further compacted from these activities, erosion becomes inevitable and contributes to more nutrients being lost.

Furthermore, these activities use excessive water, causing groundwater, the freshwater stored in the porous rocks under the Earth's surface, to dry up. Groundwater stores about 30% of the Earth's freshwater and supplies water for drinking, irrigation, and bathing. It is most crucial during drought. When groundwater becomes overly used and depleted, saltwater that is not drinkable and harmful to crops and vegetation, start to seep through.

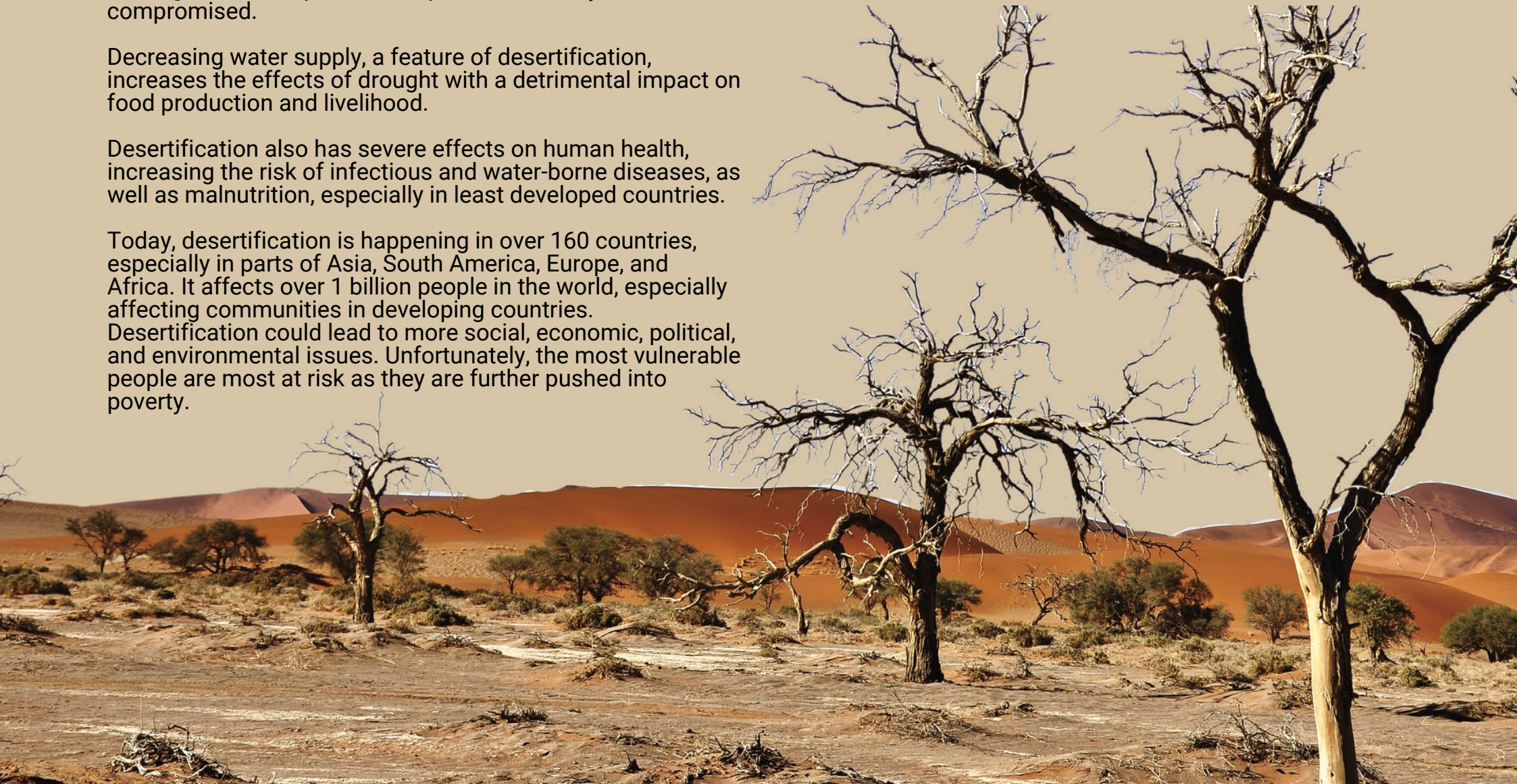
WHAT WILL HAPPEN NEXT

Desertification happens when land can no longer retain water and the soil no longer has nutrients to become productive. When this occurs, the land is too dry and no longer hospitable for humans and animals to live. When the land is no longer viable to produce crops, food security becomes compromised.

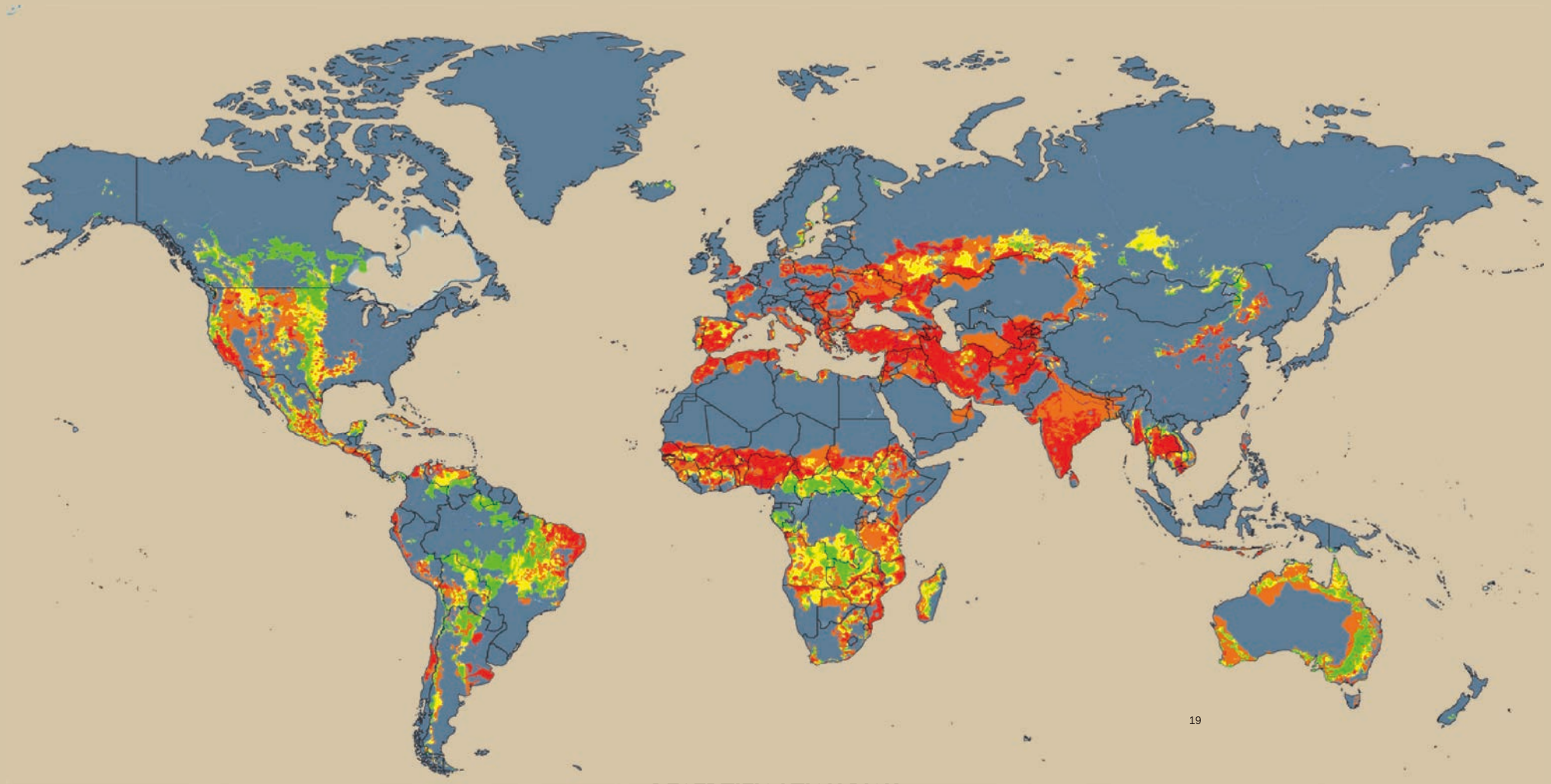
Decreasing water supply, a feature of desertification, increases the effects of drought with a detrimental impact on food production and livelihood.

Desertification also has severe effects on human health, increasing the risk of infectious and water-borne diseases, as well as malnutrition, especially in least developed countries.

Today, desertification is happening in over 160 countries, especially in parts of Asia, South America, Europe, and Africa. It affects over 1 billion people in the world, especially affecting communities in developing countries. Desertification could lead to more social, economic, political, and environmental issues. Unfortunately, the most vulnerable people are most at risk as they are further pushed into poverty.



RISK OF HUMAN-INDUCED DESERTIFICATION MAP



Adapted from: United States Department of Agriculture - Natural Resources Conservation Service Soils
https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/use/worldsoils/?cid=nrcs142p2_054004

CASE STUDY 2: A NEW DESERT IS FORMED

DESERTIFICATION OF THE ARAL SEA
Turkmenistan, Kazakhstan, Uzbekistan, Central Asia —

Once the 4th largest lake in the world, the Aral Sea was an important waterbody that supported fishing communities in the arid region of Central Asia. The lake was fed by melted snow and rain by two major rivers -- the Syr Darya and the Amu Darya. But in the 1950s-1960s, the former Soviet Union embarked on an ambitious project to transform the arid lands into agricultural fields to cultivate cotton and other crops. The water from the two rivers were diverted to irrigate the farms. But the excessive irrigation, compounded by prolonged patterns of heat in the region, caused the Aral Sea to slowly dry up.

The drying up of the Aral Sea led to an ecological collapse, and the lake essentially ceased to provide water and livelihoods to the people. Communities dependent on the lake to fish could no longer do so. The lake became polluted with excess fertilizers and salt water began to intrude the lake, which contaminated agricultural lands. The salt and pollution also led to respiratory diseases, anemia, cancer, and birth defects among the local residents. Further, disease that usually occur in desert areas have now spread to the Aral Sea region. Even the climate in the region has been altered because of this: without the thermal regulation provided by the lake, nights became colder and the days are hotter. Because of this, farming time has been shorted, compromising the production of crops that started the drying of the lake in the first place.

HOPE FOR THE ARAL SEA

Governments have been racing against time to bring back the Aral Sea. In Kazakhstan, a dam was built to bring back the water - and the fisheries - to the lake. Government and international organizations have initiated reforestation projects, as well as agricultural technologies using less water-intensive and diversified crops. In Uzbekistan, a School of Progress was opened by UNICEF to provide opportunities for young people.

In the Karakalpakstan Republic in northern Uzbekistan, OISCA International, alongside its partners, the Forestry Bureau of the Karakalpakstan Republic and the Karakalpakstan Agricultural University, are developing a pilot project to green the desert of the Aral Sea, while providing livelihood for the local communities. For this model project, Dr. Satoshi Togashi of OISCA is using learnings from Inner Mongolia, China, an area with similar landscape to Northern Uzbekistan, in transforming the barren lands of the northern Aral Sea by replanting saxaul trees. These trees, among a few that can grow in the region, can live in salty environments. They stabilize soils and can help control poisonous dusts from being blown away.

Search and rescue efforts after supertyphoon Haiyan made landfall in Tacloban City, Leyte, Philippines.

super typhoons & storm surges

WHAT ARE TYPHOONS

Tropical cyclones, also generally referred to as typhoons or hurricanes, start as rotating, circular systems of moist air and storms that form in warm oceans. If the system persists in an area with low pressure, it will keep on rotating and may eventually grow into a larger and more intense tropical cyclone. These weather events can be destructive because they bring heavy wind and rainfall that may cause landslides and flooding. During tropical cyclones, storm surges, or the irregular rise of seawater because of a typhoon, commonly occur. Storm surges may cause flooding in coastal areas.

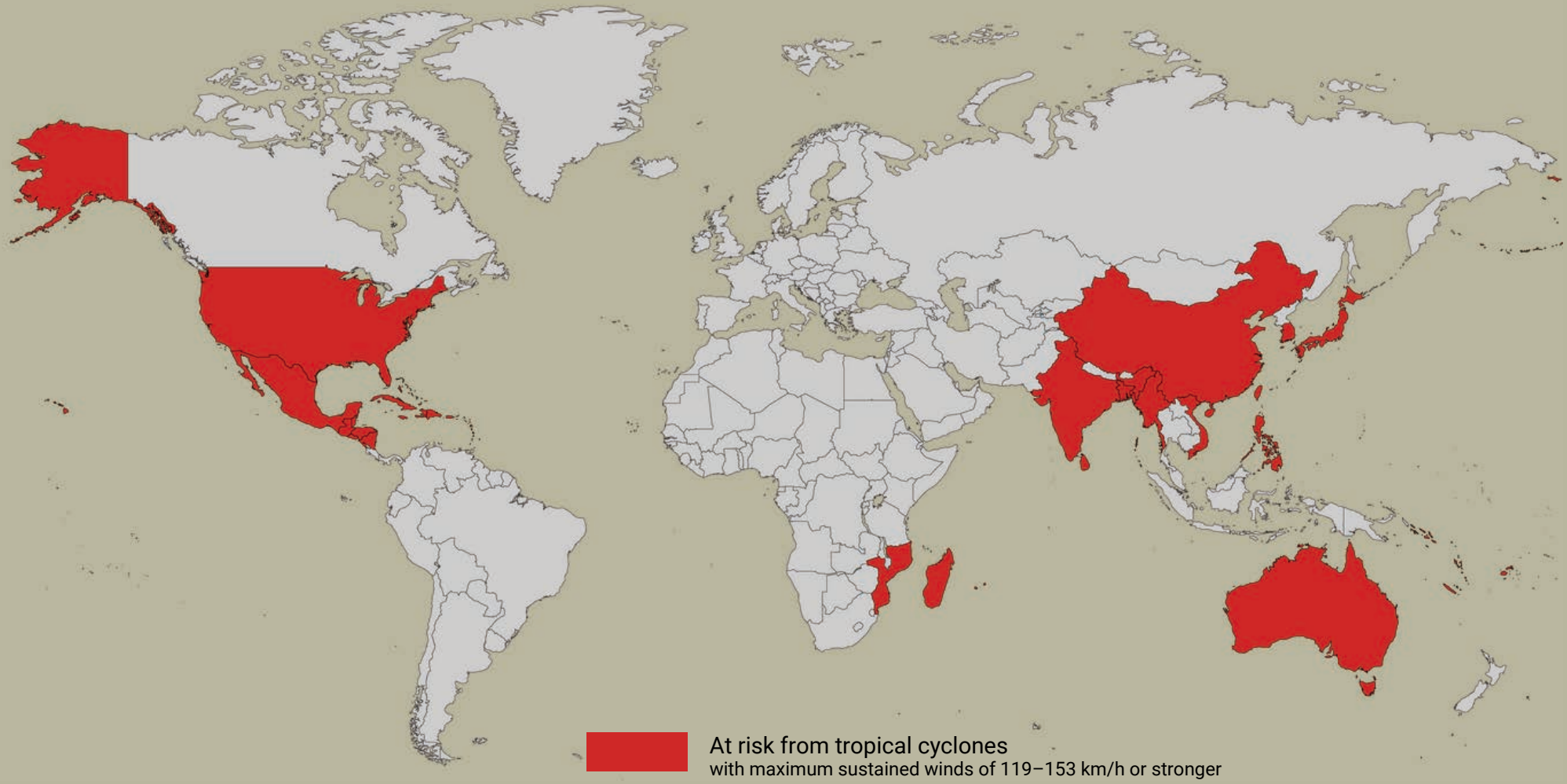
Although typhoons connote disasters, they are regular weather phenomena that contribute to the Earth's water circulation, preventing massive drought and desertification. In forests, typhoons help regenerate soil nutrients and promote growth of new plants. Typhoons help oxidize lakes and oceans, which help bring nutrients to the surface of waterbodies.

THE RISKS FROM SUPER TYPHOONS

Studies have shown that typhoon occurrences in East and Southeast Asia are becoming more intense by 12-15% since the 1970s. Category 4 and 5 typhoons (with over 205km/h wind speed) have also doubled during this time. The change in typhoon intensity and patterns is strongly attributed to a warming climate brought about by climate change. A warmer ocean would provide more energy for typhoons to develop, and intensify.

With climate change, super typhoons (and other extreme weather conditions) are expected to occur more often, bringing with them the accompanying danger to the lives, agriculture, and properties in communities that lie along their path. The more intense typhoons are, the greater the damage they can bring from flooding, storm surges, and landslides. Super typhoons will also intensify the health risks from water-borne and other diseases. In Asia alone, at least 1 million lives were lost, along with $2 trillion in economic damages, due to typhoons between 1970 to 2019.

COUNTRIES MOST AT RISK FROM TROPICAL CYCLONES



Based on Data From: Global Tropical Cyclone Tracks
Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Global_tropical_cyclone_tracks.jpg

CASE STUDY 3: IN THE EYE OF THE STORM

ONSLAUGHT OF SUPER TYPHOON HAIYAN
Central Philippines —

The Philippines is among the countries most vulnerable to typhoons. Lying along the typhoon belt in the Pacific, the Philippines experiences an average of 20 typhoons in a year. One would expect the country to be prepared for any storm, but its preparations were not enough to withstand the strongest tropical cyclone to make landfall ever recorded.

On 8 November 2012, Category 5 typhoon Haiyan made landfall in the eastern Philippines. It made the world record for the highest wind speeds measured at landfall at 315 km/hour. Heavy rainfall caused landslides. But apart from torrential rains and strong winds, the typhoon brought massive storm surges of 7 meters that caused flash floods that were more disastrous. It is among the deadliest typhoons to hit the country, with more than 7,000 people reported killed.

Typhoon Haiyan left 1.9 million Filipinos without homes, with another 6 million people displaced. Infrastructure alongs its path were severely damaged. Six million people lost their source of income, with an economic impact amounting to at least $5.8 billion.

However, in a country like the Philippines, disaster risks are also associated with massive deforestation, mismanaged resources, and land use changes. Considered one of the world's natural hazard hotspots, climate change and environmental degradation would have severe consequences to the country's disaster risk and mitigation.

GREENING DISASTER RISK RESPONSES

COASTAL REFORESTATION
Southeast Asia —

Natural disasters such as the aftermath of Typhoon Haiyan have highlighted the importance of an ecological approach to disaster risk management. For instance, areas with thick mangrove forests were able to lessen the impact of typhoon Haiyan. Deforestation also increases the likelihood of landslides and flash floods. This led to an important lesson: to promote environmentally-smart and nature-based strategies such as mangrove rehabilitation and protection as a strategy to mitigate the impacts of future disasters.

Nature-based disaster management strategies like forest restoration and conservation are sustainable ways of enabling communities to be more self-reliant and resilient in the face of natural hazards. It provides benefits for nature and society, such as adaptation to climate change, flood prevention, biodiversity conservation, food supply, and carbon sequestration. Mangrove reforestation in particular enhances protection against natural hazards and improves water filtration.

Like in the Philippines, the coastal area of Demak in Indonesia lost much of its mangroves because of conversion to aquaculture ponds or coastal development, or harvesting for firewood. As a result, Demak suffers from severe erosion, salt-water intrusion, industrial pollution influx, and catastrophic flooding during high tides, storm surges, and periods of excessive rainfall.

In partnership with the government of Demak Regency, OISCA started reforesting mangroves in the small village of Bedono in 2015 to offer protection against erosion and flooding. One family remains here, the family of Rohani, after the rest of the neighborhood were relocated after a particularly strong flooding. But for Rohani, who commits to protect the forest, the growing mangroves will be able to provide food and security for his family. He hopes that his old neighbors will be able to return to the village again.

Damage in Kirikiri, Otsuchi, Iwate Prefecture, northeastern Japan caused by the 9.0 magnitude earthquake and tsunami.

tsunamis

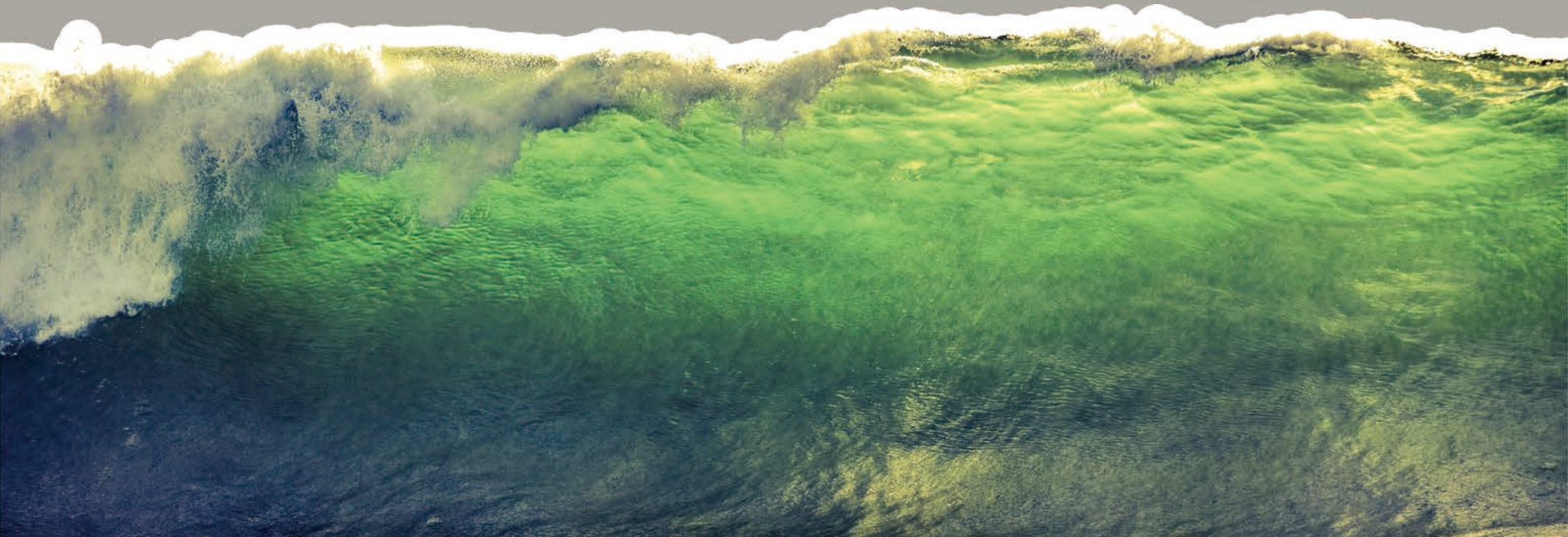
WHY TSUNAMIS OCCUR

Tsunamis are series of huge waves that occur after a strong earthquake, an underwater volcanic eruption, or a sudden disturbance in the sea like landslides. The water displaced by an earthquake or a volcanic eruption will spread outwards, sometimes crossing vast expanses of ocean. As the waves reach shallower waters, they slow down and build great heights before they crash into the shore, at times reaching many kilometers inland.

Before a tsunami strikes, the seawater may appear to recede rapidly, exposing the sea floor. Then quickly, the huge waves start to come in-- sometimes, as high as 35 meters.

Tsunamis frequently occur in an area called the Pacific Rim of Fire. This is an area in the Pacific Ocean that experience frequent volcanic eruptions and earthquakes, and because of this, would naturally experience majority of the tsunami events in the world.

Tsunamis are some of the most dangerous natural events in the world because they can gain height as the waves reach the shore, they can crash at great intensity, and they can travel far across the ocean and inland. For this reason, scientists have devised the Pacific Tsunami Warning System, an early warning system to track earthquakes and eruptions that can cause tsunamis.



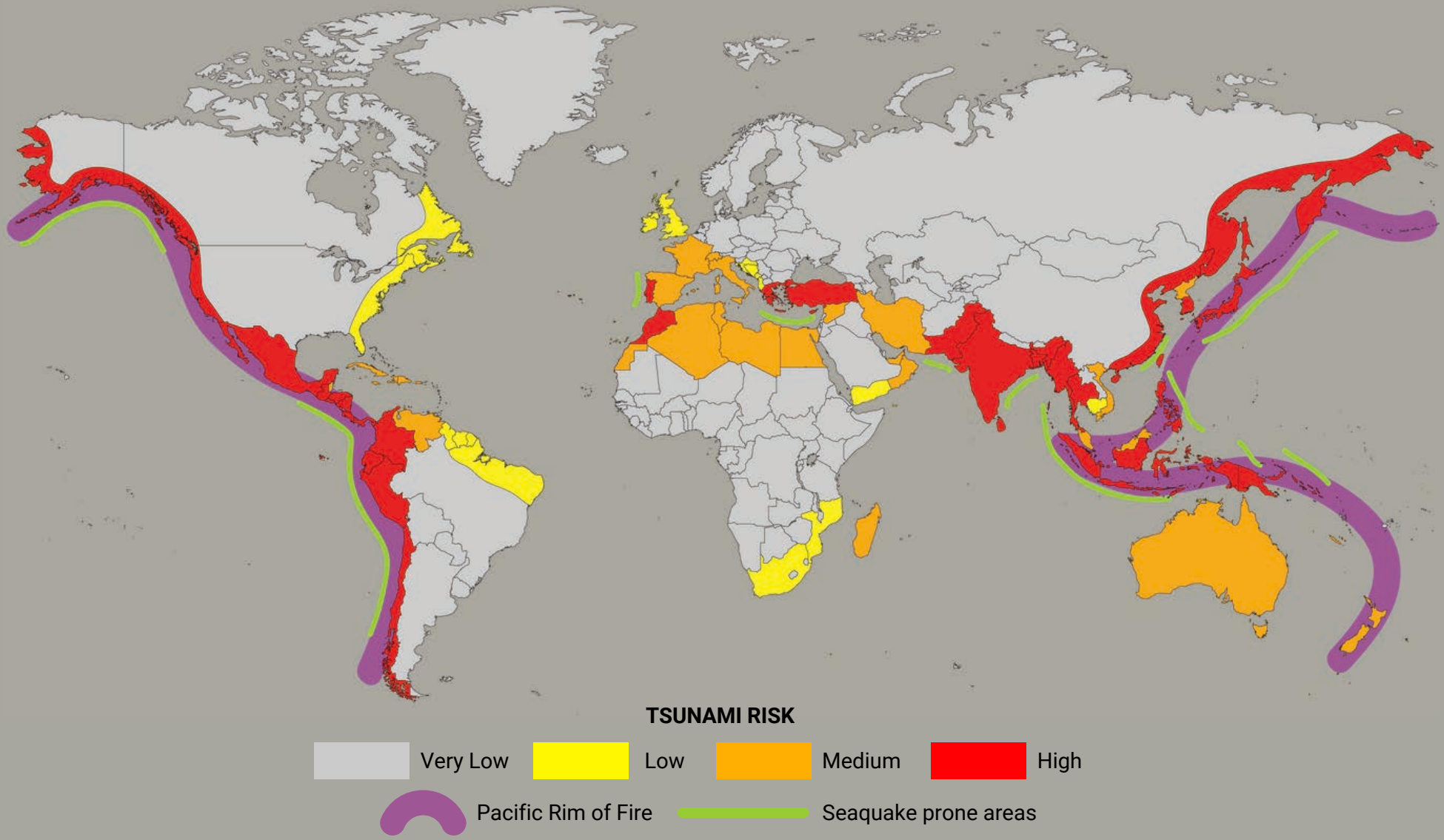
WHAT HAPPENS NOW

Evidence points to healthy mangrove forests and coral reefs as great natural defenses against tsunamis, storm surges, and coastal erosion. These ecosystems slow down the waves before they crash inland, effectively reducing their destructive impact. But with the continued degradation of these ecosystems, the risks for greater impact is much larger now for coastal communities. In Southeast Asia, for instance, more than 100,000 hectares of mangrove forests were lost between 2000 and 2012. Conversion of mangrove stands to fish and shrimp ponds, rice fields, or oil plantation is the main culprit. Coral reefs meanwhile are affected by warming seas. A 2020 study shows that around 14% of the world's coral reefs were lost since 2009, with coral bleaching due to elevated sea surface temperature as the major cause of concern.

Climate change amplifies the risks already associated with disasters and growing studies show that climate change would likely increase the impacts from earthquakes and tsunamis. The rise in sea level will make coastal areas more prone to flooding from tsunamis and storm surges. With sea level rise, tsunami-induced flooding may go farther inland and cause more damage to communities.

Localized tsunamis may also occur from landslides caused by collapsing icebergs, melting permafrosts, and above underwater and above-ground landslides — all of which are heavily impacted by climate change. There are also studies suggesting that melting ice glaciers triggered by a warming planet will destabilize magma chambers that could induce volcanic eruptions.

COUNTRIES MOST THREATENED BY TSUNAMIS



Adapted from: CNN NEWS18, https://www.news18.com/news/india/map-countries-most-threatened-by-tsunamis-2-464218.html

CASE STUDY 4: WHEN THE SEA ENGULFS THE LAND

TSUNAMI IN JAPAN
Tohoku Region, Northeastern Japan —

On 11 March 2011, a magnitude-9 earthquake struck the northeastern region of Japan, triggering a tsunami and a nuclear disaster. Known today as the Great Tohoku earthquake, it was the strongest earthquake recorded in Japan. In less than an hour, a series of waves as high as 40 meters hit coastal communites and went inland as far as 10 km in Sendai. Around 500 kilometers of coastal towns were affected by massive flooding, toppled seawalls, and destroyed infrastructure. Moreover, the tsunami caused a nuclear power plant meltdown in Fukushima, causing small traces of radiation and chemicals to leak.

The impact of the tsunami resulted in direct economic losses amounting to $199 billion. More than 120,000 buildings were destroyed, and almost 20,000 people died from the event.

The effects of the earthquake were felt outside Japan. The tsunami reached as far as the Pacific coast of the USA and Chile. Icebergs in the Sulzberger Ice Shelf in Antarctica broke apart, while nesting seabirds in the Midway Atoll National Wildlife Refuge in the middle of the Pacific Ocean died as a result of the disaster. Furthermore, the destroyed buildings in Japan released thousands of tons of greenhouse gases, while five million tons of debris were pushed out to the sea, some reaching the US and Canada.

JAPAN'S TSUNAMI

COASTAL RESTORATION
Miyagi Prefecture, Japan —

The magnitude of the 2011 tsunami surprised even scientists predicting earthquakes and tsunami events in Japan. The disastrous event highlighted coastal restoration as beneficial to communities living near coasts.

The devastating day continues to take a toll on people's minds, hearts, and sense of security. Survivors are in fear of big waves causing much bigger destruction. For a particular group of survivors, joining in the efforts to rehabilitate the tsunami-damaged coastal forest is a way to cope with the loss, as well as to prepare for future natural disasters that could hit their region.

Mr. Mori Koichi is one of the members of the Association for the Coastal Restoration Project in Natori City, Miyagi Prefecture. Mr. Mori along with fellow survivors are working in collaboration with OISCA, the local and national government of Japan, volunteers, and forest experts to restore the 100-hectares coastal forest with 370,000 black-pine seedlings. Mr. Mori and other survivors are not project beneficiaries: they are the core members of the restoration. This approach encourages a sense of ownership and guarantees a sustainable, long-term involvement of tsunami survivors. They are involved in the decision-making and actual project implementation. In 15 years, Mr. Mori is looking forward to seeing the growth of the seedlings planted along the coastlines of Natori City. While eating their favorite rice balls, Mr. Mori and his friends will surely be reminiscing the happy moments that they have shared while raising the seedlings.

at risk

Natural disasters have increased three-fold in the past 30 years. This is further worsened by climate change that amplify the occurrences and risks from drought, typhoon, flooding, and wildfires. Although these disasters are felt all over the world, the people in low-income countries and disadvantaged communities are the first to feel the impacts of pronounced natural hazards and climate change risks.

The Global Assessment Report on Disaster Risk Reduction for 2015 estimated the annual loss from tropical cyclones, flooding, earthquake and tsunamis at US$314 billion. The cost of preparing and recovering from these is already a major financial burden for developing countries and at-risk communities.

The social and economic costs are also high. These disasters displace families from their homes and compromises access to water, food, and livelihoods, forcing people into hunger and poverty. Natural resources in affected areas affects farmers and fishers but also puts a halt in food production.

Apart from lost lives, disasters also cause diseases and other health risks. Communicable diseases typically follow a disaster because access to clean food, drinking water, and sanitation are suspended. Moreover, chronic respiratory and heart diseases from inhaling or ingesting smoke and pollutants, or stunted development from malnutrition require long-term health check-ups and maintenance.

at risk

The social and economic characteristics of communities play an important factor in their ability to cope with disasters. Particularly vulnerable are the women and children, the elderly, disabled, and poor members of the community because they have little safety nets to prepare for and respond to disasters.

Natural disasters also increase the inequality experienced by women and girls. Women, especially mothers, feel the impacts more because they are responsible for child care and assume caregiving roles. In some societies, women tend to suffer from societal discrimination like lower wages and educational attainment so their capacity to effectively respond to disasters become limited. Women and girls are also more vulnerable to abuses and violence in disaster situations.

Children suffer from mental, physical and psychological problems during natural disasters. Their social safeguards such as child care and school set-up crumbles at the height of a disaster. The Society for Research in Child Development reports that children exposed to disasters are more likely to have acute illnesses such as diarrhea and respiratory diseases. They are also more likely to exhibit post-traumatic stress disorders and other mental health issues such as difficulty sleeping or depression. Children exposed to natural disasters likewise have lower school attendance and have problems concentrating in school.

Age and disability affect a person's ability to respond during and after a disaster because of their impaired mobility and health conditions.

back to basics

THE SOLUTIONS ARE IN NATURE

Nature has a natural solution to solve most of our environmental crisis -- if only we let it!

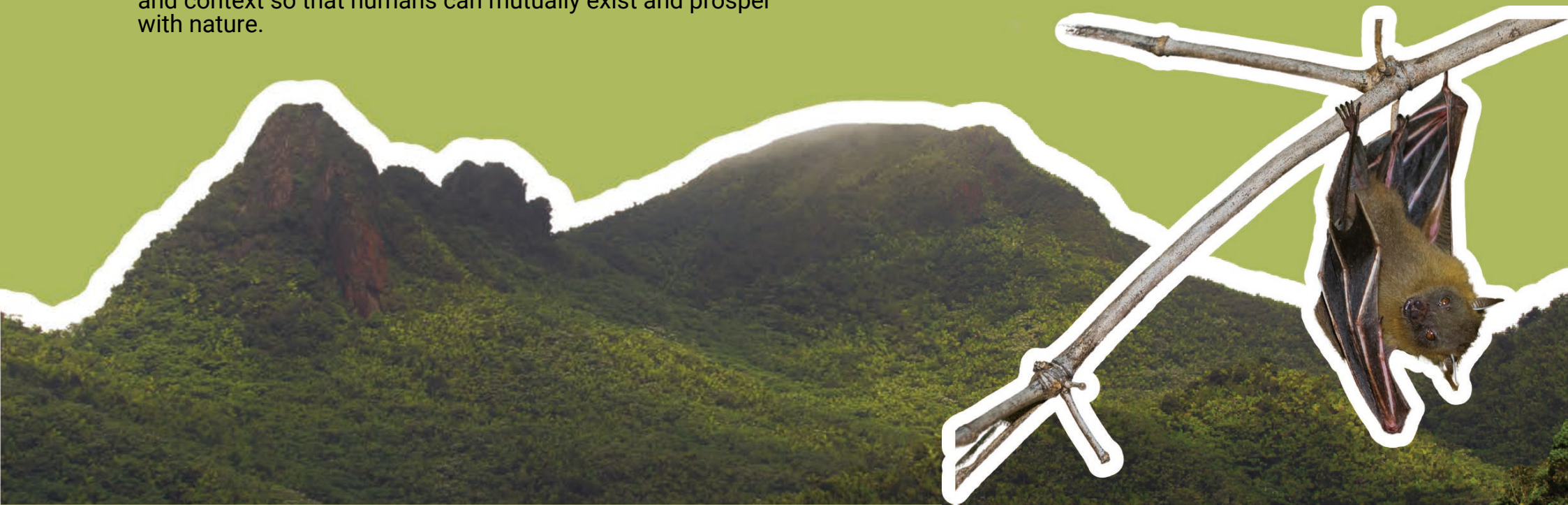
An ecosystem-based solution involves a collective, holistic, and action-oriented approach of harnessing the power of nature in designing solutions to climate change and disaster mitigation. This approach can be adopted in agriculture and food production, water security, biodiversity conservation, projects to improve society's well-being and economic development, or a solution to a societal challenge.

Ultimately, the goal is to continue supporting human welfare and needs across the world but in harmony with nature. This approach is also site-specific and sensitive to local cultures and context so that humans can mutually exist and prosper with nature.

The core activities include rehabilitating, reforesting, and restoring denuded ecosystems as the more cost-effective strategy to mitigate the impacts of natural disasters.

Local communities participate in finding solutions and actions as project caretakers. Farmers and the youth are also trained in eco-friendly agriculture and food production practices, providing an additional source of income that help communities cope in the event of disasters.

Educating and engaging children and the youth are important in developing proactive adults who are aware of the relevance of working with nature and not against it.



back to basics

THE SOLUTIONS ARE IN NATURE

Here are simple examples of ecosystem-based solutions that we can start with our own community. And because they are natural and culturally sensitive, they tend to be more cost-efficient and practical in the long run.

Think of ways on how you can customize and localize your own nature-based solutions for disaster risk management, and also for other needs of society. Do you want a solution for flooding? Are you thinking of providing a sustainable food source to your community? Thinking of engaging students in nature-based activities? There's an ecosystem-based solution for these issues.

Examples of Nature-based Solutions

- Restoring and protecting forests and wetlands in coasts, water basins and flood-prone areas.
- Protecting mangroves, seagrass beds, and coral reefs as natural defense against storm surges and tsunamis.
- Reforestation using native trees.
- Opting for environmentally-friendly and restorative agricultural practices like crop rotation.
- Advocating for locally and organically produced goods and products

COSMO OIL ECO CARD FUND

The Cosmo Energy Group works diligently to foster the public's concern for the preservation of the global environment and encourage their participation in environmental conservation activities through active environmental communication measures. Further, it addresses environmental problems with sincerity, taking on issues close to home as well as those with a broad global scope. The overall goal of which is to develop initiatives that become a standard for others to follow while also becoming a leader in the creation of new social environment trends.

Part of this commitment is through the Eco Card Fund. While implementing measures to slow climate change and protect ecosystems, we are supporting organizations that are working steadily to solve fundamental problems such as poverty. The Cosmo Oil Eco Card Fund has engaged in environmental activities in Japan and abroad in partnership with OISCA.

COSMO OIL Eco Card Fund

Learn more about the Eco Card Fund
Visit https://ceh.cosmo-oil.co.jp/eng/envi.html

Support the activities of OISCA.
The OISCA project is a long-term effort to improve human capacities, develop rural areas, protect the environment, and raise awareness. For this reason, we need continuous support. We are looking for supporting members and supporters to sustain the spirit and activities of OISCA.

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OISCA INTERNATIONAL

The Organization for Industrial, Spiritual and Cultural Advancement (OISCA) - International aims to be a world where all people overcome various differences and coexist, protecting and nurturing the foundations of all life on earth. OISCA was founded in 1961. Headquartered in Japan, it is an international NGO that develops activities in 41 countries and regions.

OUR MISSION
To serve humanity through environmentally, socially, culturally, and economically sustainable development.

OISCA AND THE UN SDGs
OISCA International is in consultative status with the United Nations (UN). In line with the UN Sustainable Development Goals (SDGs), OISCA is operating in 36 countries worldwide applying its approach to development and international cooperation.

OUR FOUR-PILLAR APPROACH
OISCA implements its four-pillar approach to development and these are: Capacity Building Program, Sustainable Development, Environmental Conservation Program, and Children's Forest Program (CFP).

WHERE WE WORK

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