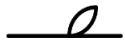


# HANDBOOK FOR YOUTH WORKERS

**Project number: 2020-3-R001-KA205-094853**

**MODULE 1: Human impact in natural systems – environmental challenges**



## Project Information

**PROJECT:** greenACT

**PROJECT TITLE:** Youth 'agents of change' on Climate Action and Environmental Sustainability

**ACRONYM:** greenACT

**PROJECT WEBSITE:** <https://greenactproject.eu/>

**PROJECT NO.:** 2020-3-R001-KA205-094853

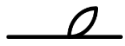
**PROJECT COORDINATOR:** ASOCIATIA D.G.T





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## Project information

GreenACT is a 20 months' project designed to enhance ENVIRONMENTAL EDUCATION and AWARENESS of YOUNG PEOPLE through the organization of SUMMER SCHOOL PROGRAMME to familiarize young people with the idea of environmental citizenship, based on the fact that the future depends on each and one of us by acting responsibly and positively towards our environment and developing sustainable solutions for addressing environmental challenges. In a period where Earth faces the consequences of climate change and global warming crisis and the need for mitigation of climate change is emerging, Green-ACT aims to support further these YOUTH INITIATIVES and raise more awareness in the 6 countries, by educating young people on environmental issues, inspire them in developing a firm ecological mindset, and invite them to have a positive impact in their communities as active agents.

The partnership is composed of 6 partners from 6 countries: Romania, Lithuania, Cyprus, Slovenia, Bulgaria, Portugal.

Furthermore, it aims:

- To promote the idea of establishing SUMMER SCHOOLS for raising young people's environmental awareness.
- To set up the GreenACT MOVEMENT (a network of young activists) for coordinating their actions and engaging citizens.
- To build/increase the capacity of partner organizations to act regarding the reduction of waste in the partner countries by encouraging local communities to recycle and reuse.
- To equip youth workers with new sustainable environmental skills to empower younger people.
- To facilitate brainstorming on challenges and possible solutions of topics such as alternative forms of socio-economy, biodiversity and food production, sustainable production and consumption, transport, etc.








This handbook is developed by each partner with the following aims:

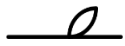
1. to empower youth workers to organize and implement activities for young people, to inspire them to have a positive societal and environmental impact in the world.
2. to engage young people in environmental actions with positive impact.
3. to develop the DATA BANK which will contain a wide selection of tools, resources, teaching material, videos, reports, etc. highly useful for YW and YP.

This handbook will have the following modules:

1. Human impact in natural systems - environmental challenges
2. Green living
3. Sustainable communities - Eco-cities
4. Green act movement: become an active agent for the environment
5. EU and national environmental policies
6. Climate Change & our sustainability

## Key Symbols

<i>Symbols</i>	<i>Explanation</i>
	Definitions
	Case study
	Additional Resources
	Tips
	Activities
	Reminder
	Video

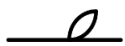


## General Objective of the Module

The module's main target is to **raise awareness** amongst youngsters when it comes to **environmental issues** through a series of lesson plans. These plans are mainly focused on certain areas of human impact in natural systems, as well as the environmental challenges it imposes. The module focuses on the correlation between the human activity and the natural systems surrounding it through explanations, activities, and examples.

### Topics:

1. Different Ecosystems and their Importance
2. Nature protection
3. Biodiversity loss (Biodiversity Convention, Birds Directive, etc.)
4. Urban & Infrastructure Pressure on Ecosystems and Biodiversity
5. Deforestation & Intensive Farming
6. Examples of good practices



## Learning Goals

1. **To offer the needed tools** to be able to tell what an ecosystem is, to differentiate the different types, as well as be aware of their importance
2. **To develop certain ideas and types of behaviour** to further protect nature and the surrounding environment
3. **To provide specific knowledge** on biodiversity, invasive species, and general know-how to act
4. **To make the user understand** how the process of urbanization works, and how it affects the ecosystems and the biodiversity
5. **To raise awareness** on the topics of deforestation and intensive farming, as well as to offer the tools and knowledge on different types of agriculture and deforestation
6. **To offer the knowledge** on already existing good practices in terms of the human impact in natural systems – environmental challenges

# 1. Different Ecosystems and their Importance

## 1.1 Different Ecosystems



**Ecosystems** = Ecosystem is the basic unit of the scientific study of nature. According to this discipline, an ecosystem is a physically defined environment, made up of two inseparable components:

- **Biotope** (abiotic): a specific physical environment with specific physical characteristics such as climate, temperature, humidity, nutrient concentration or pH.
- **Biocenosis** (biotic): a collection of living organisms such as animals, plants, or microorganisms, which interact continuously and are therefore in a situation of interdependence.

The concept of "ecosystem" can take on many different levels. From multicellular organisms such as insects, animals or plants to lakes, mountain ranges or jungles to the entire planet Earth.

### Forest Ecosystem

Forest ecosystems are classified according to tropical, temperate, or subtropical climates. In the tropics, rainforest ecosystems contain more diverse flora and fauna than ecosystems in any other region of the planet. In these hot and humid environments, trees grow tall, and foliage is lush, and dense, with species living from the forest floor up to the canopy. In temperate regions, forest ecosystems can be deciduous, coniferous, or often a mixture of both, with some trees shedding their leaves each fall, while others remain evergreen year-round. . At the extreme north, just south of the North Pole, deep forests - also known as taiga - are home to many trees.

### Grassland ecosystem

Different types of grassland ecosystems can be found in grasslands and savannas. Prairie ecosystems are usually found in tropical or temperate regions, although they can also exist in colder regions, as is the case with the famous Siberian steppe. The grasslands share a common climate characteristic of being semi-arid. Plants are sparse or non-existent, but flowers may intermingle with grass. Grasslands provide an ideal environment for herbivores.

### Tundra's Ecosystem

As well as the desert, a harsh environment characterizes the tundra ecosystem. In the snowy, windy, treeless tundra, the ground can be frozen year-round, a condition known as permafrost. During the short springs and summers, the snow melts, creating shallow ponds that attract migratory waterfowl. Lichens and small flowers may appear during this time of year. The term

"tundra" generally refers to polar regions, but at lower latitudes, tundra-like communities known as alpine tundra can be found at higher elevations.

### **Freshwater Ecosystem**

Freshwater ecosystems can be found in freshwater springs, rivers, streams, ponds, lakes, swamps, and marshes. They are divided into two categories: those where the water is almost stationary, like a pond, and those where the water flows, like a stream. Freshwater ecosystems are home to many species of fish: algae, plankton, insects, amphibians, and aquatic plants also inhabit them.

### **Marine Ecosystem**

Marine ecosystems differ from freshwater ecosystems in that they contain salt water, which often supports other types of organisms than freshwater. Marine ecosystems are the richest type of ecosystem in the world. These include not only the ocean floor and surface, but also tidal areas, estuaries and salt marshes, mangroves, and coral reefs.



#### **Explore your area! Ecosystem reflections**

Participants are divided into groups of 3-4 people. The task is to explore the community and to find out what types of ecosystems can be found. Remind the participants to not only stick to the big ecosystems presented before, but to take into consideration the smaller ones as well, such as the bacterial ecosystem, flower ecosystem and so on (abiotic or biotic). Time needed:

- 30 minutes to explore the community
- 30 minutes for discussion



#### **Possible questions for debriefing:**

1. What did you do?
2. What types of ecosystems did you find?
3. How did you work in your team? Did you have a strategy? Which one?
4. How did you feel doing this activity?
5. What have you learned?



## 1.2. The importance of different ecosystems

Ecosystems explain how energy and matter circulate or move through different environments including biotic and abiotic factors. An interactive stable system or biome formed by the interaction of different organisms with each other, and non-living components of the environment is called an ecosystem. Let us understand more about the importance of the ecosystem.

### The role of the ecosystem

Key points covering the role of ecology in the world are:

- It is important to have ecological processes and regulations of the energy flow, support of living systems and provide stability.
- It is required to have an extremely important process known as the nutrient cycle, where nutrients in the form of energy and matter are exchanged between biotic and abiotic components.
- It is useful to maintain a good balance between different nutrient levels of the ecosystem.
- Ecosystems allow the recycling of minerals in the biosphere. The biosphere is briefly explained later in the document.
- It produces many organic compounds that help exchange energy between different levels of organisms.
- It enriches people with food, fibre, paper, wood, and medicine; it also provides renewable and non-renewable energy sources.

### Why is the ecosystem so important?

The importance of the ecosystem can be understood in terms of the following points and all related terms and factors.

- Conservation of matter and energy takes place in ecosystems, and the energy flowing through the system is balanced as it flows from one organism to another, and matter is recycled.
- The different ecosystems that interact with each other are called the biosphere. So, we can say that the biosphere is the sum total of all global ecosystems.
- An ecosystem includes:
  - A community
  - Biotic ingredients
  - Abiotic ingredients

### Biotic and abiotic factors in the ecosystem

In the case of biotic elements, without the producers on this earth, no other life would exist in the world today. These biotic elements are fundamental to the food chains formed by all other ecosystems on earth. For example, a tree produces fruit that can be eaten by humans or any other living organism. The same plant also helps convert carbon dioxide from normal air into oxygen, which is inhaled by humans during the respiratory process. In addition, the plant also stores energy and acts as a decomposition element, which can also be used as fuel. Thus, a single value producer creates more than one life factor on earth, which makes ecosystems more alive and productive than any other living thing on earth.

Likewise, abiotic factors include all the non-living physical and chemical parts of an ecosystem that shape its environment and help maintain a healthy ecosystem. In terrestrial ecosystems, examples might include temperature, light, and water, and in marine ecosystems, abiotic factors would include salinity and ocean currents.

Conclusion:

An ecosystem is a geographical area where plants, animals, and other organisms, as well as weather and landscapes, interact with the seasons and the environment and strive to coexist. Ecosystems include both biotic and living organisms, as well as abiotic factors including non-living organisms. The biotic factors are the living organisms in an ecosystem including plants, animals, and bacteria while the abiotic factors are the non-living components related to water, soil and atmosphere.



How does the energy flow in the ecosystem -  
<https://www.youtube.com/watch?v=5jBV9vjmXZI>



The ecosystems

The group of participants will be split into 4 groups:

- seaweed
- fishes
- pelicans
- humans

Each group will have 2 lives and the following tasks:

seaweed - they will have 2 minutes to find a place to hide. In the moment in which they will find the place, they will not be allowed anymore to move.

fishes - they will also have 2 minutes to find a place to hide. When the activity will start their task will be to find the seaweed and to “eat” it and to hide from the pelicans and humans.

pelicans - they will also have 2 minutes to find a place to hide. When the activity will start their task will be to find the seaweed and the fishes and to “eat” them and to hide from the humans.

humans - they will be allowed to enter the last one. They will have the task to find all the other species and to “eat” them.

Time needed:

- 2 minutes for letting the seaweed to hide
- 2 minutes for letting the fishes to hide
- 2 minutes for letting the pelicans to hide
- 10 minutes for completing the tasks
- 20 minutes for discussions



Possible questions for debriefing:

1. How was it for you to be involved in such activity?
2. How was it for you to follow the rules?
3. What can we learn from this activity?

This activity can be done with species from different ecosystems (for example with species from forest ecosystems, such as: weed, small birds, predatory birds, humans).

## 2. Biodiversity and nature protection

Biodiversity must be protected and maintained to preserve life-sustaining conditions on the planet. Protection is required because many organisms and habitats are already threatened by harmful human-induced changes. Biodiversity is conserved by creating nature reserves and protecting different types of habitats and species.

Healthy ecosystems, the interdependent web of living things and their physical environment, are essential for all life on Earth. Our ecosystem provides us with clean air, fresh water, food, resources, and medicine.

Biodiversity, the variability of life on Earth, is a major factor in nature's resilience. In a biodiverse ecosystem, if the environment changes and some organisms can no longer thrive, others can take their place and perform essential functions. It is often the neglected species most important to healthy ecosystems. For example, insects play an important role in pollinating flowering plants – a third of the food we eat depends on pollinators.

On the European level, there is the EU's biodiversity strategy for 2030, a comprehensive, ambitious and long-term plan to protect nature and reverse the degradation of ecosystems. Three of the targets concern the network of nature protection areas. These are:

- increasing the surface area protected so that a minimum of 30% of the EU's land area and 30% of the EU's Sea area are covered by legal protection
- strictly protecting at least, a third of the EU's protected areas, including all remaining primary and old-growth forests
- more effective management of all protected areas



Exploring the ecosystem protection in my community

The first step of the activity - The group of the participants will be divided into small groups of 4-5 participants. Each group will have the task to find at least 5 measures that the local authority from their community takes for the protection of ecosystems.

The second step of the activity - the same small groups of participants will now have the task to propose some new measures that the community should consider in order to protect the ecosystem.

Time needed:

- 15 minutes for completing the task
- 15 minutes for proposing the new measures
- 20 minutes for discussions



Possible questions for debriefing:

1. What are the measures that you have found?
2. Where did you find the information describing them?
3. What are the new measures that your group wants to propose?
4. What are the measures that people, in general, can take to protect the ecosystems?
6. What have you learned from this activity?

### 3. Biodiversity loss

Biodiversity loss has many causes, but the biggest culprits by far are habitat destruction and over-exploitation of species, driven by exploding numbers and our unsustainable consumption.

#### Habitat Destruction

The increase in population brings with itself the need of having more and more living space. Harmful human activities continue to encroach on the natural environment, destroying the habitats of countless species. As our numbers increase, cities, infrastructure, and arable land (see "Agricultural Intensification" below) expand and merge, splitting the remaining habitat and leaving isolated "islands" with natural populations of plants and animals too small to exist. According to IPBES, only a quarter of the land surface and a third of the ocean are left relatively untouched by human activity.

#### Overexploitation

Population increase also means that the need to have more and more things gets bigger according to the need. Humanity's relentless consumption of resources such as wood, oil and minerals continue to destroy natural habitats around the world. We also put enormous pressure on wildlife populations, both through bush hunting in the developing world and large-scale industrial fishing in our waters. Poaching and wildlife trade remains a major threat to many species, including rhinos, tigers, and pangolins.

## Climate change

With a rising human population number, climate emissions began to grow as well. Our planet is on the verge of a climate crisis due to our relentless production of greenhouse gases, including carbon dioxide and methane. We are headed for a 3-4°C warmer world by the end of this century if the current climate ambitions of nations are fulfilled. We have seen the decline of species due to the increase in global temperature. Each half-degree of warming has a major effect on ecosystems, with mobile species lacking migratory zones and temperature-sensitive organisms such as corals dying out. As key rock species such as reef-building corals disappear, the rich and complex ecosystems they support also collapse.

## Pollution

As the population grows, the disposal of waste from households, agriculture and industry is becoming more and more a serious problem. Our oceans are choking with plastic waste that is killing millions of animals, from sea turtles to whales. The Ellen MacArthur Foundation estimates that by 2050 there will be more plastic than fish in the sea. In addition to affecting human life, noise, light and chemical pollution harm the health of wildlife.

## Agricultural intensification

The bigger the population, the bigger the need for nourishment and food. Agriculture deserves special mention here as it is one of the main causes of habitat destruction, climate change and pollution. Agriculture accounts for 50% of Earth's habitable land area, 80% of threatened mammal and bird species are due to agriculture, and our modern food system is also a factor. The largest contributor to climate change, is responsible for about a third of all greenhouse gas emissions, more than half of which comes from livestock farming. In response to the unsustainable consumption patterns of the Global North and to feed our huge population, humanity has developed agricultural systems based on monocultures, artificial fertilizers, drugs and insecticides. Monoculture households are increasingly susceptible to disease and therefore require extensive use of pesticides to destroy insect populations. Intensive agriculture leads to soil depletion and runoff from farms contaminates water sources and causes harmful algal blooms and a decline in fish stocks.

## Invasive species

Human movement around the world has a huge emissions footprint, but it also facilitates the spread of invasive species, both accidental and intentional. Due to the introduction of non-native species in some areas, such as rabbits and cats in Australia, goats in Saint Helena and American mink in the UK, we have endangered many vulnerable ecosystems, threaten native species, and reduced biodiversity.



Quiz - Test your knowledge of biodiversity loss!

<https://populationmatters.org/test-your-knowledge-biodiversity-loss>



<https://climateprimer.mit.edu/climate-science>

MIT Climate Science, Risk & Solutions is an interactive, online textbook from MIT that can be used as a supplemental resource for high school teachers approaching the topic with their classes. The site offers a historical timeline, graphs, and images to tackle the science, and the slick interactive features will be engaging to teens. Students can scroll through the entire text, or jump among the topics, which are divided into sections: Climate Science, Climate Change, Risk, and Solutions. Each chapter uses different elements to engage students; read-aloud sections, interactive graphs, and short quizzes help break up the dense text.



<https://climatekids.nasa.gov/menu/watch/>



Debates - Do you think that in the future we will be affected by climate change?

The facilitator will split the room in two, sticking down on the floor the following messages:

- I agree
- I don't agree

The participants will be invited to take part in this activity and to position themselves in the room in accordance with their answers to the next questions/sentences and to explain their answers:

1. It is too late to prevent climate change.
2. Is it the responsibility of the governments to protect nature?
3. In the future the most affected countries by climate change will be the ones that are not so developed.
4. After the COVID-19 restrictions were lifted the pollution levels decreased.
5. Should people focus more on endangered species rather than on the ones that are not at risk?
6. Will the effects of climate change be worse than a disease?
7. The effects of climate change will drive more people into poverty.
8. Now, over two-thirds of the land in Africa is degraded. Does this affect us as Europeans?
9. Do the daily activities that we do increase climate changes?
10. During the COVID-19 pandemic the climate change effects decreased.

Time needed:

- 30 minutes for debates
- 20 minutes for debriefing



Possible questions for debriefing:

- How did you feel during this activity?
- What have you learned?
- What action can you take in your daily life to protect nature?

## 4. Urban & Infrastructure Pressure on Ecosystems and Biodiversity

The integration of biodiversity into urban development is important for many Sustainable Development Goals, especially:

- Goal 3. Good health and well-being,
- Goal 6. Drinking water and sanitation,
- Goal 11. Sustainable cities and communities
- Goal 12. Sustainable consumption and production,
- Goal 13. Climate action and
- Goal 15. Life on land.

Cities are often located, and tend to expand, in areas important to biodiversity such as estuaries, coastlines and fertile plains. Biodiversity and ecosystem services - both within cities and beyond borders - are important to urban dwellers because they contribute to food and water supply, temperature regulation, absorption of pollution, reduce vulnerability and disaster risk, and provide accommodations and recreational opportunities that contribute to human well-being, economic stability, and material security. Today, more than half of the world's population lives in towns and cities, a number that will increase to two-thirds by 2050. The projected urban growth and expansion can lead to significant biodiversity loss as natural habitats are fragmented or displaced by infrastructure construction and city expansion.

The pressure on existing urban ecosystems will increase because of predicted climate change effects like floods, droughts, and heat waves. The production of vital ecosystem services in cities will be significantly impacted by the combination of these elements, which will have an adverse influence on the citizens' quality of life. For instance, poorer air quality and less resilience to natural catastrophes are two consequences of the loss of urban ecosystem services. Cities will

flood more frequently, negatively affecting infrastructure and services like water and sanitation, sewage, and energy delivery. The urban poor is particularly sensitive to these changes because they frequently reside in risky regions, have fewer resources to adapt to changes, and depend heavily on ecosystem services in the area for their livelihoods.

Nature-based solutions are actions that leverage ecosystem services provided by nature to address environmental problems, such as climate change. They are composed of "smart" green infrastructure solutions that alter how urban infrastructure, including roads, drains, floodgates, riverbanks, water and sanitation facilities, electricity supply, and buildings, is thought of, designed, and managed to be resilient to the effects of climate change. Solutions derived from nature have been demonstrated to be resource and cost-efficient. Here are a few illustrations of how to incorporate environmentally friendly ideas into urban planning.

Building natural barriers like mangroves, oysters, and coral reefs in coastal cities can lessen the risk of storm and wave damage, filter contaminated waters, and sustain local fishing communities.

In addition to lowering temperatures and pollution levels and enhancing people's health, planting trees, and creating or restoring green public spaces in cities can boost tourism profits and offer leisure options.

Supporting urban farming in public spaces, as well as in backyards and communal gardens, can increase food security in emergency situations and generate additional income, particularly for women.

Buildings' energy consumption can be decreased, noise levels can be lowered, heat stress can be decreased, and rainwater can be captured and used again.

Floodplain restoration, the development of permeable surfaces, and the installation of stormwater tree pits protect towns from flood damage, enhance the habitats of wild animals, aid in the re-flooding of carbon-rich soils, lower nitrogen loads, and enhance the landscape.



Plant your vegetables! (In order to implement this activity, the young people will need the agreement of the local authority to create the city garden)

The group of participants will be split into groups of 4-5 persons. Each group will have the task to find a place in their community that can be changed into a small garden. Together with the facilitator, the young people will need to choose some vegetables that can be gardened.

The idea of this activity is to involve young people in their community and take advantage of the places that are not used and create a vegetable garden.

Time needed: 1 day to plant the vegetables



Possible questions for the debriefing:



- How did you feel during this activity?
- What have you learned?
- What action can you take in your daily life to protect nature?

## 5. Deforestation & Intensive Farming

The number of cattle required to produce beef grows in tandem with global meat demand. Every year, millions of acres of uncultivated land are cleared to make way for feed crops and grazing pastures because these animals require space and food. Forests are being cleared to provide fodder for chickens and pigs, among other animals.

Animals usually need more energy to maintain themselves than they do to provide food for people to eat. Therefore, raising animals for food is always more damaging than raising plants for human use.

On the planet, 45 percent of the land is used for livestock operations, while another 10 percent is set aside for the cultivation of crops used as animal feed. The production of beef alone uses around 60% of the world's arable land, necessitating a sizable amount of space for cattle grazing and the cultivation of feed crops like soy. In the last 20 years, soy production has increased, mostly due to the expansion of animal husbandry. In tropical regions, 1.2 million acres of land are cleared each year for soy farming; if animal protein consumption is not decreased, this amount will rise.

The plant and animal species that inhabit our biodiverse rainforests are frequently the ones most severely impacted by destruction. Not counting the damage caused by recent fires, at least 15% of the Amazon rainforest has already been gone. Most of that land—about 80%—is dedicated to raising crops and establishing livestock grazing pastures.

Although humans have been cutting down trees for thousands of years, the industrial revolution of the nineteenth century increased the demand for lumber and brought to the development of technologies that sped up and simplified the process of clearing land.

Although it is difficult to determine an exact figure, it is estimated that between 3.5 and 7 billion trees are felled each year. Nearly 30% of this estimate is attributed to the rise of agriculture, which includes clearing land for grazing and growing crops for livestock.

Every year, 6.7 million acres of tropical forests are bulldozed or set on fire for the purpose of raising cattle. This is more than five times more harmful than any other product in the area and is responsible for more than half of South America's deforestation.

A silent rival that has doubled in the past 20 years due to the rise in demand for meat and dairy products is soy cultivation for animal feed. Eighty percent of the 346.02 million metric tons of soy produced annually across the world is consumed by animals. In Brazil, soy farming occupies almost 60 million acres completely, and that number is rising in step with the rise in demand for meat.

Although many different businesses directly or indirectly contribute to deforestation, animal agriculture is the primary culprit. Logging and infrastructure development follow closely. There are certain natural causes of deforestation, such as forest fires and invading species, but they are frequently made worse by human activity.

## Logging

The process of chopping and preparing trees to produce goods made of wood. Our trees are heavily logged to construct homes and make paper products.

15 percent of the world's annual greenhouse gas emissions are caused by the logging and conversion of tropical forests. Logging is becoming one of the main causes of deforestation as the world's population rises and more homes are constructed.

Clearcutting is a more intrusive tree removal technique that eliminates all trees and tree seedlings from a region. This kind of logging is frequently employed in ranching to increase the size of croplands and grazing pastures in addition to being used to produce paper and lumber. In addition to endangering the normal regrowth of tree saplings, this rapid clearing of forests also poses a hazard to animal and plant species.

Selective logging, which involves only a few trees being cut down per area, is slightly less invasive and employed for high-value wood products, but smaller trees are still harmed, and local species are still displaced. According to a study, selective logging can increase the total number of trees cut annually rather than decrease it.

Since trees and bushes no longer block water from entering forests, both clearcutting and selective logging make forests more prone to flooding and fires. In addition, logged areas are more exposed to sunshine, which dries them up and makes them more flammable.

## Forest Fires

To make room for cattle and feed crops, forests are set on fire, destroying vegetation and wildlife in the process. These deliberate fires, often known as "slash-and-burn fires," disrupt soil fertility, change water cycles, and endanger communities of people who live and work in the forests.

One of the biggest wildfires in recorded history occurred in 1997 because of intentionally started fires that erupted throughout Indonesia. The flames claimed the lives of hundreds of humans, animals, and plants. For months, dense smoke blanketed nearby nations including the Philippines, Thailand, and Malaysia, and locals were urged to stay indoors.

## Expansion of Infrastructure

As the world's population grows, cities and highways expand, often to the detriment of biodiverse forests. The Interoceanic Highway, which stretches over 1,600 miles across Brazil and Peru, rips through lush forests to make room for cars and trucks.

The construction of roads through forests, particularly the Amazon rainforest, increases the likelihood of animal deaths due to habitat loss and motor accidents. New roads also make illegal logging and poaching more convenient. Infrastructure expansion not only displaces animals and increases the risk of deforestation, but it also encroaches on the homes and livelihoods of residents.



013 ARTICLE READING How Does Agriculture Cause Deforestation, and How Can We Prevent It?

<https://sentientmedia.org/how-does-agriculture-cause-deforestation/>



The Fire in the Mediterranean Region: A Case Study of Forest Fires in Portugal:

<https://www.intechopen.com/chapters/55996>

## 6. Examples of good practices

There are different initiatives coming from multiples entities that aim to decrease the human impact on nature by:

- the initiative to collect trash from certain areas such as beaches, forests, seas, oceans, mountain trails or even from cities
- the existence of National Parks in each state, meaning there is a slightly larger area protected by the country's government
- switching from fossils fuels to renewable types of energy
- the creation of multiple spaces where the trash can be selectively collected, as well as having legal contexts for littering
- raising awareness campaigns over water or energy waste
- some countries having a concrete curriculum for environmental preservation and protection, as well as teaching children on human impact on the surroundings
- the existence of international agreements such as the Paris agreement from 2015
- promoting public transportation campaigns in big cities
- the initiatives to replant certain areas of forests or to plant new areas
- create more eco-friendly houses



Take action!

The group of participants will have the task to choose an action that they can do at that

moment, to protect the environment. They will have 10 minutes to think about the action that they want to take and the necessary materials that they need (garbage bags, gloves, laptops etc.)

Time needed:

- 10 minutes
- 60 minutes for implementing the activity
- 20 minutes debriefing



Possible questions for debriefing:

1. How did you choose the activity?
2. Which was your strategy in doing the activity?
3. How did you feel while implementing the activity?
4. What impact do you think this activity will have on your community?
5. What have you learned from this activity?

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2. Urban development, Biodiversity and Ecosystem - <https://cdn.sida.se/publications/files/sida62003en-urban-development-biodiversity-and-ecosystems.pdf>
3. Nature & Biodiversity - European Commission - <https://webgate.ec.europa.eu/greencitytool/resources/docs/guidance/nature.pdf>
4. Biodiversity strategy for 2030 - European Commission - [https://environment.ec.europa.eu/strategy/biodiversity-strategy-2030\\_en](https://environment.ec.europa.eu/strategy/biodiversity-strategy-2030_en)
5. Our Climate Our Future project (educational materials for environment protection) - <https://ourclimateourfuture.org/resource/discussion-guide/>



6. Global Oneness Project houses resources that explore life experiences around the world - <https://www.globalonenessproject.org/>
7. You matter world Association - <https://youmatter.world/en/definition/ecosystem-definition-example/>
8. Population matters - <https://populationmatters.org/test-your-knowledge-biodiversity-loss>
9. MIT Climate Science, Risk & Solutions - <https://climateprimer.mit.edu/climate-science/>
10. Climate Kids - Earth Science Communications Team at NASA's Jet Propulsion Laboratory / California Institute of Technology - <https://climatekids.nasa.gov/menu/watch/>
11. Sentient media - 013 ARTICLE READING How Does Agriculture Cause Deforestation, and How Can We Prevent It? - <https://sentientmedia.org/contact/>