COMMUNITY CHALLENGERS

# THE SUSTAINABILITY & CLIMATE ACTION HANDBOOK:
## PRACTICAL TIPS AND EXPERIENCES: WORKSHOP FORMATS, TIPS BY TRAINERS

**INTELLECTUAL OUTPUT 1.2**

THIS HANDBOOK IS PUBLISHED AS THE SECOND PART OF THE INTELLECTUAL OUTPUT 1 OF THE PROJECT "COMMUNITY CHALLENGERS" WHICH IS FUNDED BY THE ERASMUS+ PROGRAMME OF THE EUROPEAN UNION.

THIS HANDBOOK IS ADDRESSED TO YOUTH WORKERS AND TRAINERS AND SHOULD BE GUIDE AND GROUND FOR THE PREPARATION, DEVELOPMENT, IMPLEMENTATION AND FOLLOW-UP OF WORKSHOPS AND TRAININGS FOR AND WITH YOUNG PEOPLE TO BECOME ACTIVISTS AGAINST CLIMATE CHANGE. IT IS AN ADDITION TO IO1.1 THE HANDBOOK: BACKGROUND INFORMATION.

IT IS AVAILABLE IN A PDF VERSION AND ONLINE VERSION WITH INTERACTIVE FEATURES WHERE USERS CAN LEAVE COMMENTS AND FEEDBACK.

THIS HANDBOOK IS AVAILABLE IN ENGLISH.

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# 1.INTRODUCTION: CLIMATE ACTION AND "COMMUNITY CHALLENGERS"

Climate action and activism of young people for the cause of climate and environment protection has become a word of the mouth since the beginning of the global movement "Fridays for Future" in 2018. Whereas the world has moved from using the term climate change to climate emergency in the last few years, and more signs, such as rising sea level, forest fires and floods, are increasingly becoming obvious to all, it is the young people who are concerned about what kind of planet they would have to live on. This concern may take the shape of "eco anxiety" – worry about the future and feeling of helplessness over the potential consequences of climate change for those living now and even more so for those of later generations. Climate action is a response to these developments and is one of the 17 Sustainable Development Goals (SDGs) that are goals of the Agenda 2030 of the United Nations. Chapter 5 of this Handbook further elaborates the Policy Level and the SDGs. The SDG number 13 pleads:

**"TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS".**

Education and information about the current situation for everyone, especially young people, joint reflection and finding tools and methods to express feelings as well as take action greatly helps to overcome the sense of struggling alone. It can give hope for the future and is part of the efforts to reduce climate-induced impacts.

The Community Challengers project seeks to empower young people with tools to take and reflect on climate action and mobilise their communities with innovative and appealing measures. It is developed by the Consortium of 7 partners from Belgium, Croatia, Germany, Italy, Latvia, Portugal and Serbia with complementary expertise in the field

of environmental education, youth empowerment, arts, advocacy and entrepreneurship. The project runs for two years (01/2021-12/2022) and is funded by the Erasmus+ Programme field of Youth.

The project is based on a learning model that combines education, arts and social entrepreneurship, and thus targets both the intellectual and emotional levels. The learning model of the project consists of 4 steps: Learn, Analyse, Create, Advocate (LACA). This method enables young people to learn about climate change; analyse their community from the point of view of sustainability; create a vision for the future, combined with entrepreneurship tools, and advocate for change. Four steps of the model correspond to four so-called Intellectual Outputs of the project. These are results and outputs produced by the project partners, bringing compact knowledge about key facts and figures in the environmental field. It is available in diverse formats: as a Handbook, mapping toolkit, instruction & inspiration for arts creation, and video tutorials. Every format is connected to one step of the learning model:

1. Learn – Climate Action & Sustainability Handbook (O1)
2. Analyse – Community Mapping Toolkit (O2)
3. Create – Community Challengers Guide (O3)
4. Advocate – Advocacy Tutorials (O4).

These outputs are developed and tested by all project partners in their respective countries. Young people and youth workers are the project's main target group and will accompany the testing, attend workshops and give their feedback so that the outputs are fine-tuned and validated.

## ABOUT THE HANDBOOK

The Climate Action & Sustainability Handbook is the first Intellectual Output of the project and the first step "LEARN" of the above described 4-step LACA model.

It is split into two parts:

1st part: IO1.1: The Handbook: Background information and basic knowledge on climate-related issues

2nd part: IO1.2: The Handbook: Practical tips and experiences: workshop formats, tips by trainers

The objective of this 1st part, the Handbook on background information, is to inform young people and the wider public about key environmental issues, their causes and effects in the ecosystem.

The 2nd part on practical tips shows solutions through best practice examples and creates awareness that everybody can be and needs to be part of the solution.
This combination of theory and practical exercises is meant to give youth workers and educators necessary non-formal learning & teaching tools to deliver engaging, participatory and practice-oriented workshops, including exercises and tasks that provoke further reflection or inspire action.

Understanding key environmental and climate change issues and being able to understand and link the developments between the individual (micro) and community, national and global level (macro) is the expected outcome of this book. Young people and every reader shall become aware of key international initiatives and goals, such as the SDGs, European Youth Goals and the European Green Deal.

It shall support the discovery of actions and initiatives that can be taken to become active and tackle climate related challenges, problems and crises. Ultimately, the goals is that everyone is aware of their potential to act as an individual, as a consumer, as a part of a group or community, and thus act for change.

# 2. PRESENT-DAY ENVIRONMENTAL ISSUES AND PRACTICAL TRAININGS

The following issues are the most pressing issues of today on the people and the planet: deforestation, loss of biodiversity, depletion of the ozone layer, acid rain, climate change and global warming, pollution, industrial and household waste, urban sprawl, and overconsumption.

In-depth Information per topic is given in IO1.1. The following imply the related practical workshop formats. Each workshop lists format, duration, learning style, learning objective, steps to take as well as tips for trainers and possible questions for debriefing.

# 2.1 DEFORESTATION

Our forests are disappearing at a rate that is extremely destructive for the environment and the ecosystem. Ever shrinking forests have serious repercussions for the fight against climate change. Learning and Training activities are the following:

## DEFORESTATION

Our forests are disappearing at a rate that is extremely destructive for the environment and the ecosystem. Ever shrinking forests have serious repercussions for the fight against climate change.

### FACTS

**1.3 million** square miles of forest was lost between 1990 and 2016.[1]

**17%** of the Amazon rainforest has been destroyed over the past 50 years.[1]

**30** soccer fields' worth of forest were lost every minute in 2019.[4]

**66%** global forest cover loss is occuring mainly in the tropics and sub-tropics, subsequently destroying the important ecosystem services forests provide.[5]

### CAUSES

The most common causes of deforestation and forest degradation are agriculture, unsustainable forest management, mining, infrastructure projects and increased fire incidence and intensity.[6]

### EFFECTS

Soil is more prone to erosion, causing the remaining forest to become more vulnerable to landslides and fires.[7]

**80%** of land-based species live in forests. Forests are also home to a great number of plant species. Deforestation results in a loss of habitat and can drive many species into extinction.[4,7]

We are all affected. However, **250 million**, those who are living in forest and savannah areas, are directly affected. Moreover, all people people rely on the forest for their food, shelter, and livelihood.[4,1]

Since trees protect against pollution by filtering harmful chemicals from air and water sources (rivers, lakes, etc., deforestation threatens both the health of the ecosystem and the world's population.[3]

**33%** of global emissions are absorbed by trees each year. The carbon dioxide released into the atmosphere, including heat trapping gases resulting from human activity, is absorbed by trees. Deforestation therefore accelerates global warming.[1, 3]

### ACTION

Conservations still have many reasons for hope. A lot of global organisations are shifting to more sustainable and eco-friendly processes. Although big companies can make the most impact on eliminating irresponsible and unsustainable deforestation, as consumers, we still have a big role to play. Making informed consumption choices, reducing single plastic usage, and educating our friends and family are great ways to start.[8]

| THE TRUTH OF THE MAP | |
|---|---|
| Format: | Workshop exercise, homework, group discussion |
| Type: | Blended |
| Duration: | 40 minutes |
| Learning Style: | Verbal, visual, social, solitary |
| Learning Objective: | To explore deforestation processes in the world and in the nearest area. |
| Number of participants: | Open  (individually or in groups) |
| Age: | No age limit |
| What is needed? | A device with internet, paper, and tools to draw. |
| Explanation/steps: | Step 1: Participants choose a territory in Google time-lapse or any other applications or in local websites of the participant's municipality (can be Amazonas, can be the shores of Madagascar or their own region). They explore how the territory has changed over the years. If it is a group work, time should be given for discussion: What did the participants notice in different areas? Are there any similarities? How does it make them feel?<br><br>Step 2: Participants draw a rough, approximate map of the place on paper so that the territories that are deforested can be seen. Then participants fill the drawing in whatever way they feel like, showing the Earth's response to these human actions. It can be abstract or a continuation of the map. Participants can write some key words if they feel like.<br><br>Step 3: All the maps are put out for everyone to see. A silent exhibition takes place for 5 min. |
| Tips for Trainers | Before the task, research the territory that you are giving to look at, in the time-lapse. |
| Questions for debriefing: | • How did you feel while doing the task?<br>• How did you feel when seeing the maps of others?<br>• What does it tell you about the current situation? |
| Further resources: | https://earthengine.google.com/timelapse / |

| THE SOUND OF THE FOREST | |
|---|---|
| Format: | Workshop exercise, site visit |
| Type: | Offline |
| Duration: | 60 minutes |
| Learning Style: | Physical, solitary |
| Learning Objective: | To explore the importance of the forest for our well-being. |
| Number of participants: | No limit |
| Age: | 13 or younger (participants should be able to draw) |
| What is needed? | A circle shaped cardboard (cardboard CD), a marker |
| Explanation/steps: | Each participant gets a paper "CD", marker and goes into the forest. They enter without phones and other distractions but not too far, so they can hear the gong or other sound calling them back in 40 min. After a short walk each participant finds a place to be comfortable and spend time in that spot, "recording" (writing or drawing) on their CD all the sounds they hear - natural and human made. After 40 min of "recording" they return and share their observations about the forest and about themselves to the big group. |
| Tips for Trainers | Remember the importance of silence and explain it to youngsters so they use the time listening and feeling not talking. Shutting down phones or participation without phones is required (if forests are huge and participants can get lost, they shall keep the phones, but silenced). |
| Questions for debriefing: | • How did you feel?<br>• What did you notice around you?<br>• What did you notice happening to yourself? |

# 2.2 DEPLETION OF THE OZONE LAYER

Ozone is gas made from three oxygen atoms (O3). Ozone in the stratosphere is formed naturally through the interaction of solar ultraviolet (UV) radiation with molecular oxygen (O2). The ozone layer is approximately 15-30 km above the Earth's surface and prevents most harmful wavelengths of ultraviolet (UV) light from passing through the Earth's atmosphere. But, the ozone layer can be damaged due to pollution and ozone-depleting chemicals. Learning and Training Activities are:

| SEE HOW THICK | |
|---|---|
| Format: | Group discussion, task |
| Type: | Online, offline |
| Duration: | 30-40 minutes |
| Learning Style: | Visual |
| Learning Objective: | To see how tick the ozone layer is. |
| Number of participants: | 10 - 20 |
| Age: | 13 - 20 |
| What is needed? | Phone or other device connected to internet, 2 rulers |
| Explanation/steps: | Step 1: Group researches about the ozone layer and how it is measured (5 minutes)<br><br>"The ozone layer or ozone shield is a region of Earth's stratosphere that absorbs most of the Sun's ultraviolet radiation. The Dobson Unit is the most common unit for measuring ozone concentration. One Dobson Unit is the number of molecules of ozone that would be required to create a layer of pure ozone 0.01 millimeters thick at a temperature of 0 degrees Celsius and a pressure of 1 atmosphere (the air pressure at the surface of the Earth). Over the Earth's surface, the ozone layer's average thickness is about 300 Dobson Units or a layer that is 3 millimeters thick. What scientists call the Antarctic Ozone "Hole" is an area where the ozone concentration drops to an average of about 100 Dobson Units. One hundred Dobson Units of ozone would form a layer only 1-millimeter-thick if it were compressed into a single layer. "<br><br>Step 2: Group is divided in 2 smaller groups. Together they discuss what they have found out about the ozone layer (5 - 10 minutes).<br><br>Step 3: Each of the groups have to choose one country or city and using internet, need to find out how thick the ozone layer in that place is. After they have found all the information they need to look around the room and find object that are just as thick as the ozone layer. If they can't find objects around them they can research objects on their mobile devices. (10 minutes)<br><br>Step 4: After they have found the objects they explain (through those objects) to the other team how thick the ozone layer is in the city or the country that they chose. (5 minutes). |

| | |
|---|---|
| **Tips for Trainers** | You can choose the countries or the cities beforehand so it is more challenging for them to find objects. Encourage them to think and be creative when they are choosing the objects. |
| **Questions for debriefing:** | <ul><li>What was new for you?</li><li>What did you learn about the ozone layer?</li><li>What was interesting for you?</li></ul> |
| **Further resources:** | https://ozonewatch.gsfc.nasa.gov/monthly/SH.html |

| RECORD IT OUT | |
|---|---|
| **Format:** | Workshop exercise, homework |
| **Type:** | Online, offline |
| **Duration:** | 2 hours |
| **Learning Style:** | Verbal, physical, visual, social, solitary |
| **Learning Objective:** | Using peer to peer education and social media to educate young people about ozone layer depletion. |
| **Number of participants:** | 10 - 20 |
| **Age:** | 13 - 20 |
| **What is needed?** | Phones with good camera, laptops with editing tools or app on the phone for editing, if the workshop is held offline- props that youngsters can use (clothes, hats, blankets etc.), paper, pen |
| **Explanation/steps:** | Step 1: Split participants into smaller groups, depending on the size of the group but 5-7 people in the group would be recommended. Each group gets a pen and a paper and they have 30 minutes to find as much information as they can about the ozone layer.<br><br>Step 2: After 30 minutes, they come back together in the big group and explain to others what they have found. They talk about questions that have risen in their group. Which components did they understand and which not? The other groups can help to answer the questions, if they don't have the answers the trainer can help to answer the questions for the youngsters. Discussion time is around 15 minutes.<br><br>Step 3: After discussions, each group is given a task to create a short video clip (30 seconds- 1minute). In the video, they shall explain the ozone layer to others. The topics can be different for each group and they can come up with their own ideas. If the group is struggling, the trainer can help with some topics. |

| | |
|---|---|
| **Explanation/steps:** | Here are some examples:<br>• How thick is the ozone layer?<br>• What would happen if there was no ozone layer?<br>• How can we protect the ozone layer?<br>• What is the ozone layer, etc.<br><br>For this task, the groups have 40 minutes.<br><br>Step 4: All the groups come together and present their clips explaining to others what was their topic and why they chose it. Then, they show their video. |
| **Tips for Trainers** | This exercise can be done in a group or individually, online or offline. For online workshops, young people can use the things they have at home. Encourage them after the workshop to post the clips on their social media pages or/and send them to you so you can post them on organisations or your page. If the group is struggling with the task, you can help them by encouraging them to divide the roles (camera person, actors, script maker, editor, etc.). |
| **Questions for debriefing:** | • What did you learn?<br>• What was the most interesting part?<br>• How challenging was the task?<br>• What was the hardest part? |
| **Further resources:** | Apps that can be used with included video editing function: TikTok, Instagram (Reels)<br>Other editing apps: Magisto, Hyperlapse, InShot etc. |

# 2.3 OVERPOPULATION

Overpopulation occurs when a species' population exceeds the carrying capacity of its ecological niche*. Right now, the number of the existing human population exceeds the actual carrying capacity of Earth.

The effects of it are unsustainable depletion of natural resources to have access to food, degradation of the environment with the overuse of coal, oil, and natural gas, the destruction of natural habitats, such as forests, and water shortage, as well as wars, conflicts, rising unemployment rate and higher living costs. Learning and Training activities are:



https://www.conserve-energy-future.com/causes-effects-solutions-of-overpopulation.php

## THE TRAFFIC THAT CLOGS THE ROAD

**Overpopulation as a cause of traffic and excessive use of private vehicles.**

| | |
|---|---|
| **Format:** | Discussion, Research |
| **Type:** | Online, offline |
| **Duration:** | 2,5 hours |
| **Learning Style:** | verbal, visual, social |
| **Learning Objective:** | To make people understand how the excess of population is a cause of the excessive use of private vehicles, in turn a problem of environmental sustainability of huge impact. |
| **Number of participants:** | up to 10 |
| **Age:** | 14+ |
| **What is needed?** | Laptop or smartphones, paper, pen |
| **Explanation/steps:** | **Part one:** Cognitive questionnaire (30 minutes) The trainer asks the group a series of questions on the topic, so that any previous knowledge emerges spontaneously and is shared. The questions are as follows: 1) Do you have a personal vehicle? 2) If you do not have one or use it little, which other vehicles or methods do you use? 3) Do you believe that the private vehicle is indispensable? If so, why? This question can receive some typical responses: bad public transport service in the area, restricted timetables, etc. These answers could develop further reflections. 4) Do you know any virtuous examples (including different contexts, or even foreign countries) of sustainable behavior of private transport? For example: "in Amsterdam you go everywhere by bike". 5) What do you know about sustainable personal transportation (example: Bike sharing)? |

| | |
|---|---|
| **Explanation/steps:** | **Part two** (30 minutes)<br>The young people are divided into small groups, maximum 3-4 people, and each group, with a computer or personal device (smartphone), finds data on the Internet about the use of the vehicles in their territory (how many people use them, what age group, perceived quality of the service, etc.) and some good alternative examples.<br>**Part three** (1 hour)<br>The participants, still in subgroups, elaborate a sustainable transport model, according to these guidelines:<br>1) efficiency of public transport (imagine new timetables or new itineraries).<br>2) Improvement of personal mobility in a sustainable way (imagine parking areas for bicycles in bike sharing, etc.).<br>**Part four** (30 minutes)<br>Submit this model to the institutions: The young participants, all together, produce a presentation that summarizes their models into one (example: a PowerPoint presentation) and sends it to an authority they know (Municipality, town planning office). |
| **Tips for Trainers** | If you want to make the exercise faster and more concise, skip the data research part and provide it directly. When dividing participants into sub-groups, try to make the groups varied.<br>Make sure that each sub-group has a leader, that is, a person who can lead the work for everyone by giving everyone the word. If you don't find leaders, move from one group to another and help them yourself. Alternatively, make sure that these roles are designated in each group: a leader (makes sure the task is done so that everyone participates and feels involved), a secretary (writes, draws, etc.), a time manager (establishes a strategy to help the whole group finish in the given time), and a spokesperson (returns the result of the subgroup's work in plenary). Don't give prompt replies right away, avoid participants settling on your ideas. |
| **Further resources:** | The title of the essay is a verse from this song: https://youtu.be/ZbpveyW0ib8 |

| THANOS' ETHIC | |
|---|---|
| **Format:** | Discussion, Research |
| **Duration:** | 1 hour |
| **Learning Style:** | verbal, visual, social |
| **Learning Objective:** | To bring the group and the community to reflect on a problem from an example familiar to all, especially if the problem is not perceived as an emergency requiring immediate attention. |
| **Number of participants:** | up to 10 |
| **Age:** | 14+ |
| **What is needed?** | Laptop or smartphones, paper, pen |
| **Explanation/steps:** | By now, all young people are familiar with the films of the Marvel Cinematic Universe; perhaps the same can be said of anyone, even adults.The villain of the saga, the alien Thanos, fears that the universe is overpopulated and believes he is the only one who understands the problem: in fact, the heroes don't know about it.The exercise starts with a cognitive discussion: participants are asked how many of them know and have seen the Avengers movies, how many of them think that the problem Thanos faces is real, why it is a problem and how to explain it to those who do not think so.The second part of the exercise is to create a piece of work to spread information and raise awareness about the problem of overpopulation: it can be a blog page, a video, a poster, etc. It is best fitting the style of the exercise if created in a style reminiscent of the 'superheroes and supervillains' theme. |
| **Tips by trainers** | Before the exercise, watching a trailer or a clip of an Avengers film can help set the right mood. However, we do not recommend watching the whole film, because they are too long. |

# 2.4 OVERCONSUMPTION

Overconsumption refers to a concept where the use of a natural resource has exceeded the capacity of a system. However, overconsumption can be described as using resources more than we need. Global consumption and production heavily rely on the use of natural resources. However, our consumption and production habits have grown to be destructive to the planet, leading to environmental deterioration and resource depletion. Learning and Training Activities are:

## OVERCONSUMPTION

Global consumption and production heavily relies on the use of natural resources. However, our consumption and production habits have grown to be destructive to the planet, leading to environmental deterioration and resource depletion.[1, 2]

### FACTS

We are currently consuming an equivalent of

**1.5 planets**

to maintain the resources we use every year.[3]

**1.3 billion**

tons of food, or one third of the food produced globally per year, ends up in the bin due to poor harvesting or transporation practices.[1]

**80%** of the world's natural resources are only used by 20% of the world's population.[4]

Overconsumption is directly linked to the current economic system that promotes consumerism in order to drive growth.

### CAUSES

In recent years, some industries have strongly contributed to overconsumption by producing more than necessary. These include fashion, agriculture, manufacturing, and automobile.[4]

Consumption of wealthy households is also a significant contributor to human impact on the environment.[5]

### EFFECTS

Our planet suffers from the increasing rate of our overconsumption. Forest, water, mineral, animal, and soil resources are over extracted, resulting in the deterioration of the Earth.[6]

Unsustainable practices lead to the collapse and degradation of ecosystems, habitats, and species.[6]

Overconsumption creates more waste and toxins, polluting our air, land, and water.[6]

As a significant amount of resources are utilised by the global North, most of the world's resources are utilised by only a minority of the world population. These resources are exploited to produce goods and services for the global North instead of being used to provide for the basic needs of the global South.[6]

### ACTION

Lifestyle changes and sustainable choices, partnered with a renewed perception of wealth, can help combat consumerism.[5]

Sustainable design, or creating products and systems that are inherently ecological, is a big step towards a circular economy.[5]

Government policies, such as eco-taxes and greater investment in sustainable projects are effective in building, a greener, less consumerist, economy.[5]

| | |
|---|---|
| **I BUY, I EAT, I CONSUME, I POLLUTE** | |
| **Format:** | Discussion, research, task |
| **Type:** | Offline |
| **Duration:** | 2 hours |
| **Learning Style:** | verbal, visual, social |
| **Learning Objective:** | Learn how the consumption of primary goods from large-scale distribution introduces in the environment packaging of such goods that are difficult to dispose of and creates other polluting behaviors. |
| **Number of participants:** | 3-10 |
| **Age:** | 14+ |
| **What is needed?** | Pen, paper, some pocket money for shopping, an example of packaging of a primary good. |
| **Explanation/steps:** | **Part one:** Cognitive questionnaire (30 minutes). The trainer asks the group a series of questions on the topic, so that any previous knowledge emerges spontaneously and is shared. The questions are as follows: 1) What is a primary good? 2) Do you buy the primary goods you use? Where? 3) When you buy them, what do you pay attention to?This question can receive some typical responses: price, packaging, brand familiarity, etc. These answers could develop further reflections. 4) Are you familiar with brands which use sustainability strategies? <br><br> **Part two:** The research (1 hour) If the location of the activity you are carrying out (youth center, etc.) is close to a supermarket, provide the group of young people with a budget and a time limit for shopping and ask them to find virtuous examples. Give a shopping theme, such as a recipe to cook in a healthy and sustainable way, or a need to satisfy. |

| | |
|---|---|
| **Explanation/steps:** | **Part three** (15+ minutes)<br>The youngsters check the packaging of the products they have chosen in search of:<br>An example of packaging of a primary good.<br>How it is disposed of.<br>An example of sustainable packaging (clearly recyclable, etc.). In this phase, the trainer or most competent participants can:<br>Show how a product coming from a short supply chain (Km 0) has less impact in terms of environmental sustainability (transport, etc.).<br>Illustrate virtuous examples: buy eggs or vegetables from the farmer, reuse containers, get water from a "water house", buy loose detergents, etc.<br><br>As a conclusion, the group can:Reflect on whether these sustainable lifestyle possibilities are evident and easily accessible in their territory or not.Reflect on how to "limit the damage" of the use of impacting primary goods (example: chemical detergents) if low-impact alternatives are not found in one's own territory. |
| **Tips for Trainers** | If the location of the exercise (youth center, etc.) is far from a supermarket, the trainer can directly provide the packaging examples for part two or split the exercise over two days and at the end of the first day ask the participants to bring their own examples of good packaging from home for the next time. |

| CREATE, NOT CONSUME | |
|---|---|
| Format: | Practical task |
| Type: | Offline |
| Duration: | 0,5-2 hours (depending of the amount/ size of planting) |
| Learning Style: | social, practical |
| Learning Objective: | To encourage participants to procure primary goods without using large-scale retail outlets. |
| Number of participants: | 3-10 |
| Age: | 14+ |
| What is needed? | Pots, soil, seeds, water, simple gardening tools |
| Explanation/steps: | The best way to reduce over-consumption is to produce your own primary goods. While teaching young participants to grow a vegetable garden may be beyond everyone's means, it is not difficult to give an example of how the activity of growing something is simple and rewarding, perhaps by planting a flower in a pot.<br>The trainer provides participants with pots, soil, seeds, water and a few simple tools such as a spade. Each participant or small group of 2-3 plant their own flower and periodically check its growth, take care of it, and learn about flowering time, risk of pests, in short, learn how to grow. They can also document the process with photos. |
| Tips for Trainers | If the city where the training takes place has a social garden, vegetables can be planted instead; if there are green areas and the cooperation of the institutions, trees can also be planted. |

# 2.5 ACID RAIN

The main causes of acid rain are thermal power plants, but also exhaustion from cars and other industries; it usually causes damage far away from its actual source.
It seriously pollutes waters, and drastically lowers the water pH levels. A large decrease in pH leads to the extinction of microorganisms, and it impacts the quality of the drinking water and impacts all life.
fter falling onto ground, acid rain enters underground streams, which further threatens life and the quality of drinking water. Acid rain is one of the main reasons for the reduction of drinking water supplies worldwide. Learning and Training Activities are:
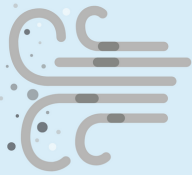
## ACID RAIN

Acid rain, or acid deposition, is any form of precipitation containing high levels of nitric and sulfuric acids. This can include rain, snow, fog, hail, or dust. Acid rain causes negative disruptions in ecologogical systems and hazards to human health.

### FACTS

**4.2 - 4.4** is the pH level of acid rain. Normal rain has a pH level of around 5.6.[1]

Winds can carry pollutants far from their original sources, making acid rain a transboundary and international concern.[4]

When fossil fuels are burned, sulfur dioxide and nitrogen oxides are released into the atmosphere. These react with other elements and form acidic compounds that spread through the air, enter water systems, and sink into the soil.[3]
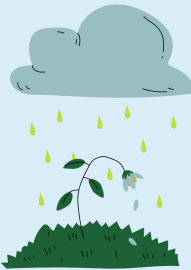
**66%** of sulfur dioxide and
**25%** of nitrogen oxide found in the atmosphere come from electric power generators.[7]

### CAUSES

Acid rain can result from natural causes, such as volcanic eruptions and rotting vegetation. However, most acid rain is a product of human activities, such as coal-burning power plants, factories, automobiles, and oil refineries.[1,3]

### EFFECTS

Acid rain has many ecological effects, especially on aquatic environments. Acidic water contributes to more aluminum absorption from the soil, making waters toxic for aquatic animals and threatening their survival. Animals that depend on the water for their food are also affected.[2,3]

Acid rain also removes minerals and nutrients from the soil, leaving trees and plants more vulnerable to disease, cold temperatures, and insects. Moreover, trees' and plants' capactiy to reproduce is also stunted.[2,3]

Acid rain particles in the air are harmful to humans. When inhaled, these have negative effects on heart and lung function.[2]

Natural weathering caused by rain, sun, snow, and wind are accelerated by acid rain. This damages structures, such as buildings, statues, and monuments.[2, 3, 4]

### ACTION

Reducing acid rain starts with eliminating the pollutants that cause it. This means shifting to sustainable energy sources and implementing emission regulations and standards. Individuals can do their part by reducing single vehicle use and using public transportation, carpooling, walking, or biking instead.[3, 4, 7]
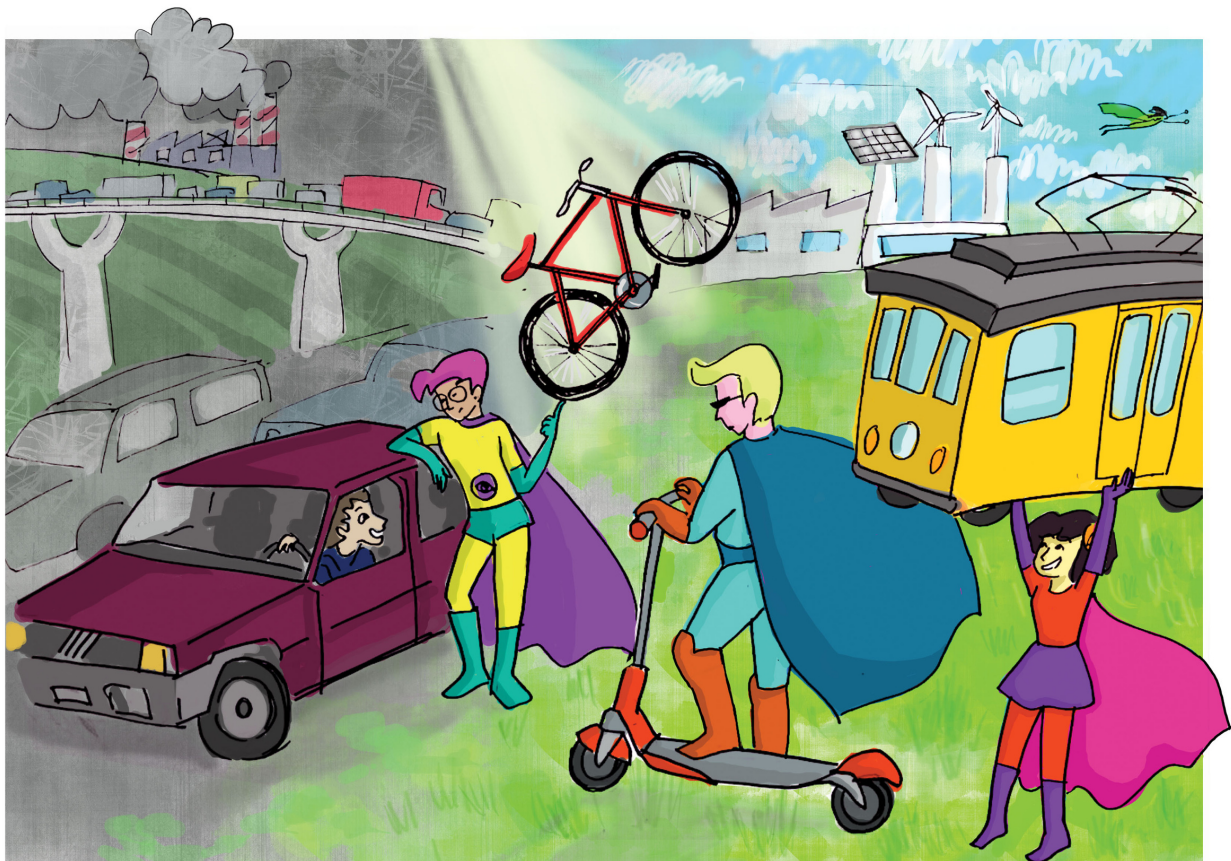
| | UTOPIA |
|---|---|
| Format: | Workshop exercise |
| Type: | Online, offline |
| Duration: | 0,5-2 hours (depending of the amount/ size of planting) |
| Learning Style: | Verbal, social, solitary |
| Learning Objective: | To understand how different the world should be we are living in. Learn how different our behaviours should be, to eliminate the issues connected to acid rain in our daily life. |
| Number of participants: | 12 - 30 |
| Age: | No limits |
| What is needed? | In case of a group activity: markers and flipcharts.<br>In case of an individual activity: paper and pen, or a computer to compose a digital document.<br>In case of an online activity: an online platform to develop the outcomes – we recommend using a free of charge version of Mural, as it has the highest flexibility and allows cooperation of multiple groups at the same time. |
| Explanation/steps: | 1. Before the activity, young people get acknowledged with the topic, by reading the description in the guide or using other sources.<br>2. At the beginning of the activity, participants should map the biggest polluters, the biggest contributors to the particular problem – in this case Acid rain. This can be done in a brief discussion among the participants, and the results do not have to be written anywhere.<br>3. In the next steps, participants need to turn on their imagination. Participants need to describe the world in which all the problems connected to Acid rain are solved. Particular focus should be put on the biggest polluters and the ways how they changed, to completely eliminate/eliminate to a high extent the problems they are causing. Participants can also take a closer look at their own behaviors and the ways this behavior is changed in the perfect world, to achieve environmental sustainability and solve the existing problems with Acid rain.<br>4. The results should be written on a flipchart/in a digital space. Each utopia should have its own name.<br>5. Participants present their utopias. |

| | |
|---|---|
| **Debriefing Questions** | • Was it difficult to imagine such a world?<br>• Which parts of your plan for the utopia are realistic to achieve?<br>• Do you think the behaviours of different actors in your utopia can change, even to some extent? If yes, which? If not, why?<br>• What do you think stops these actors from changing their behaviours? |
| **Tips for Trainers** | Convince your participants that their utopia does not have to be realistic. They can dig deep in their imagination to find the craziest solutions. This brings a lot of fun and entertainment to the exercise. |
| **Further resources** | mural.com, zoom or similar online meeting if the groups meet remotely |

| ACID RAIN ROLEPLAY | |
|---|---|
| Format: | Group discussion |
| Type: | Online, offline |
| Duration: | 0,5-2 hours (depending of the amount/ size of planting) |
| Learning Style: | Verbal (linguistic) |
| Learning Objective: | To discuss the problem of acid rain from the perspective of different stakeholders. |
| Number of participants: | 4 - 8 |
| Age: | 12+ |
| What is needed? | A few pens, a few pieces of paper to write down the roles. |
| Explanation/steps: | The purpose of this exercise is to role play different stakeholders involved in or affected by acid rain. Each participant of the activity takes the role of an interested stakeholder, for example: an environmentalist, a farmer, a coal miner, a manager of a power company, a fish, a bird, a tree, a lake, a citizen from an affected region etc.<br><br>Assign the roles (for example randomly) and organise a group discussion/debate on acid rain using the perspective of an assigned role. Each participant should share with the rest of the class how acid rain affects their character and present arguments for or against laws that control acid rain. |
| Debriefing Questions | • Do you think it is important to implement laws and measures that control acid rain, even if it might affect some stakeholders negatively?<br>• Are there any measures we can take that will not have any negative impact on any stakeholders? |

# 2.6 CLIMATE CHANGE & GLOBAL WARMING

Climate change (and global warming) are the main environmental topics in the last decade. It mainly refers to emissions of greenhouse gases (GHG) that contribute to changes of climate and rise of average global temperatures. The rise of temperatures affects the ice sheets, polar caps, and all ice on the planet where water is stored, and it is argued that the melting of ice will raise the sea and ocean levels and thus impact millions of inhabitants and the infrastructure of people living on the coastline. Climate change threatens people with food insecurity, water scarcity, flooding, infectious diseases, extreme heat, economic losses, and displacement. These impacts have led the World Health Organization to call climate change the greatest threat to global health in the 21st century. Learning and Training Activities are:

| CHALLENGE THE MYTHS | |
| --- | --- |
| **Format:** | Workshop exercise |
| **Type:** | Online, offline |
| **Duration:** | 0,5-2 hours (depending of the amount/ size of planting) |
| **Learning Style:** | Verbal, social |
| **Learning Objective:** | To learn how to challenge most common fake narrations and myths regarding climate change and global warming. |
| **Number of participants:** | 6 - 24 |
| **Age:** | 16+ |
| **What is needed?** | Flipchart, paper, markers, alternative in an online setting (Jamboard, Mural etc.), access to the internet (phone, laptop – optional) |
| **Explanation/steps:** | 1. Divide children into groups of 3 people.<br>2. Equip each group with a flipchart paper and a marker<br>3. Ask each group to write down 4 common slogans of climate change and global warming denialists (incorrect narratives), such as :<br>• Climate change is not caused by humans<br>• How can we experience global warming, if it was snowing so much this winter?<br>• There are no alternatives for fossil fuels.<br>This should take 15-20 min.<br><br>1. Each group presents their proposals (5 min.)<br>2. Groups exchange the flipchart paper. Their task then is to prove the narrative false (if possible) with quality arguments (30 minutes).<br>3. Groups present the outcomes and discuss the more heated topics (15 min.) |
| **Debriefing Questions** | • Were there any narratives/arguments that surprised you?<br>• Why do you think climate change denialism is so popular?<br>• Is it easy to find compelling arguments in such discussions? |

| CALCULATE THE CARBON FOOTPRINT | |
|---|---|
| **Format:** | Workshop exercise |
| **Type:** | Online, offline |
| **Duration:** | 45 minutes + preparation |
| **Learning Style:** | Verbal, social |
| **Learning Objective:** | The objective of the activity is to understand the environmental impact and carbon footprint of our learning activities, and how this can change if we apply environmentally-friendly solutions. |
| **Number of participants:** | open |
| **Age:** | 16+ |
| **What is needed?** | Laptop, internet connection |
| **Explanation/steps:** | 1. The facilitator has to prepare at least 2 scenarios of a group activity. This activity, if possible, should be international with participants from several countries. These scenarios should differ in terms of their sustainability. The first scenario is supposed to be standard, with no environmental-friendly approach:<br><br>• everybody uses flight transportation<br>• no vegetarian diet<br>• Event duration: (in days): 5<br>• Country: Belgium, Brussels<br>• Participants: 20<br>• Employees: 2<br>• Heated area: 300m2<br>• Air conditioned area: leave this empty<br>• Number of people arriving by car: 0<br>• Average distance travelled (car): 0<br>• Number of persons travelling by public transport: 0<br>• Average distance travelled (public transport): for example, 500km<br>• Number of short-haul flights: (include roundtrips!): 34<br>• Number of medium-haul flights: (include roundtrips!): 10<br>• Number of long-haul flights: (include roundtrips!): 0<br>• Percentage business class flights: 0<br>• Number of overnight stays in 2-3 star hotels: 22 x 5 days<br>• Amount of meals, not vegetarian: no of people x no of days x 3 meals a day): 22 x 5 days x 3 meals<br>• Amount of meals, vegetarian: no of people x no of days x 3 meals a day)<br>• Snacks, water, coffee, tea, wine, beer, spirits: Leave empty or add own guesses<br>• Energy: Click on "Empirical values"<br>• Material: Click on "Empirical values"<br>• Transport: Leave empty<br>• Waste: Click on "Empirical values" |

| | |
|---|---|
| **Explanation/steps:** | The second scenario:<br>• Everybody uses public transportation (trains, buses)<br>• Everybody on a vegetarian diet<br>• Event duration: (in days): 5<br>• Country: Brussels<br>• Participants: 20<br>• Employees: 2<br>• Heated area: 300m2<br>• Air conditioned area: leave this empty<br>• Number of people arriving by car: 0<br>• Average distance travelled (car): 0<br>• Number of persons travelling by public transport: 24<br>• Average distance travelled (public transport): for example, 500km<br>• Number of short-haul flights: (include roundtrips!): 0<br>• Number of medium-haul flights: (include roundtrips!): 0<br>• Number of long-haul flights: (include roundtrips!): 0<br>• Percentage business class flights: 0<br>• Number of overnight stays in 2-3 star hotels: 22 x 5 days<br>• Amount of meals, not vegetarian: 0<br>• Amount of meals, vegetarian: no of people x no of days x 3 meals a day): 22 x 5 days x 3 meals<br>• Snacks, water, coffee, tea, wine, beer, spirits: Leave empty or add own guesses<br>• Energy: Click on "Empirical values"<br>• Material: Click on "Empirical values"<br>• Transport: Leave empty<br>• Waste: Click on "Empirical values"<br><br>2. Participants are divided into 2 groups. Their task is to calculate the carbon footprint of the activity with this calculator.<br><br>3. After they finish, they reveal their results one after another. The difference is really significant. |
| **Debriefing Questions** | • Did you expect these results?<br>• Do you think we should sacrifice some of our comfort of short travels, to lower the carbon footprint of our travels?<br>• Do you think lowering the carbon footprint of individuals and small groups is meaningful for the environment? |
| **Tips for Trainers** | If it is an online training, you can use Padlet to present different scenarios. If it is in-person training, prepare scenarios on flipcharts before the activity. Alternative for this exercise is to measure only the difference between the carbon footprint of flights and train travels. For this purpose, it is necessary to provide a detailed list of connections, that indicates particular cities of initial and final destination. One group measures the CO2 emission of train connection with this calculator. The second measures the CO2 emission of flights with this calculator. |

# 2.7 URBAN SPRAWL

Urban sprawl generally refers to rapid expansions of urban areas and over urbanisation: building of houses, roads and other infrastructure disregarding proper urban planning. Urban sprawl refers to uncoordinated growth, the rapid expansion of urban areas, cities, towns, commercial properties) over large expanses of land. This is usually characterized by poor urban planning and a driver of several challenges for the environment. Learning and Training activities are:
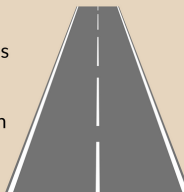
## URBAN SPRAWL

Urban sprawl is the rapid expansion of urban areas (e.g. cities, towns, commercial properties) over large expanses of land. This is usually characterised by poor urban planning and a driver of several challenges for the environment.[4,6]
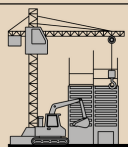
### FACTS

**1 million** square kilometres of land comprised the world's urban settlement area (cement, asphalt, etc.) in 2010. This is almost double the area of France.[3]

If the current urban sprawl trend continues, the area of the planet covered by urban areas will increase to more than

**3 million** square kilometres by 2050.[3]

**73%** of the European population lives in cities. By 2050, this is expected to increase to 82%.[7]

**1,120** square kilometres of natural and semi-natural areas in Europe were lost to urban land development from 2000 to 2006.[7]

### CAUSES

Lower land rates in suburbs prompt people to settle outside urban areas.[1]

Improved infrastructure fuels expansion by lowering costs of development and construction.[1]

Unprecedented development, loss of green cover, traffic jams, and overpopulated areas lead residents to move out to new areas.[1]

Population growth causes residents to move out of city areas, as the number of people exceeds the maximum capacity.[1]

### EFFECTS

Increased dependency on automobiles and by-products of development and construction causes an increase in air, water, and land pollution.[1,2]

Moreover, this contributes to higher greenhouse gas emissions, which has a lot of consequences for the climate and environment.[5]

Expansion of urban areas causes displacement of wildlife and disturbances in the ecosystem, which also has ripple effects for the environment.[1]

Urban expansion also leads to increased risks for natural disasters (floods, wildfires), health issues, sanitation concerns, and the overall quality of life.[2]

### ACTION

New urbanism promotes principles of well-designed cities, walkable streets, and sustainable urban practices. Its goal is to create greener cities and support the wellbeing of residents. This limits the uncontrolled expansion of urban areas.[1,2]

Policies and regulations can lessen trends of urban sprawl (e.g. zoning provisions, growth boundaries, and development phases).[2]

Educational programmes aimed to promote the understanding of the effects of urban sprawl and ways to mitigate it are also helpful.[2]

| URBAN GARDENING | |
|---|---|
| Format: | Workshop exercise, site visit, Call for action & solutions, Group discussion |
| Type: | Offline |
| Duration: | open |
| Learning Style: | Verbal, physical, visual, social |
| Learning Objective: | To explore the concept of urban gardening in the context of the deficiency of agricultural fields due to urban sprawl, visit urban gardens in your area and plan out a possible scenario of creating an urban garden in a local community. |
| Number of participants: | 15 |
| Age: | 16-26 |
| What is needed? | Laptop, smartphone |
| Explanation/steps: | Spoken or Power Point presentation of the concept of urban gardening. Collective visit to urban gardens in your area. Analysis of potential problems and possibilities. Planning out a solution for your local community. |
| Debriefing Questions | Compare best local practice with your local community.What are advantages and disadvantages? Create a sketch of the possible green solution and present it to all participants.What are your green solution ideas for infrastructure? |
| Tips for Trainers | To be focused on presumable beneficiaries of urban gardens which were affected by different aspects of urban sprawl. |
| Further resources | Videos, websites on urban gardening |

| VIA VERDE | |
|---|---|
| **Format:** | Group discussion |
| **Type:** | Online |
| **Duration:** | 2 hours |
| **Learning Style:** | Verbal, visual |
| **Learning Objective:** | To present, analyse and moderate a public discussion on the concept of green transformed highways or other post-industrial infrastructure in urban surroundings. |
| **Number of participants:** | 15 |
| **Age:** | 16-26 |
| **What is needed?** | Laptop |
| **Explanation/steps:** | 1. PowerPoint presentation of local practice and best world practices on green transformed roads.<br>2. Short analysis of the practice.<br>3. Moderate debate on what action is needed to realise a similar project in the local community (which funding is needed, which stakeholders to be involved, how many people needed to plant, how to sustain etc.) |
| **Debriefing Questions** | • Compare best local practices with your local situation.<br>• Create a sketch of the possible green solution and show it to all participants.<br>• What are your green solution ideas for infrastructure?<br>• Which changes in your community are necessary to realise a 'Via Verde'? |
| **Tips for Trainers** | To be focused on presumably beneficiaries of urban gardens which were affected by different aspects of urban sprawl. |
| **Further resources** | Videos, websites on urban gardening |

# 2.8 POLLUTION

Pollution is one of the biggest threats to the health of the planet and the people. It is the introduction or presence of harmful substances, called pollutants, into the environment. Although pollutants can come from natural causes, pollutants caused by human activity are most damaging to the environment. Due to our overproduction and overconsumption, pollution is increasing at an unprecedented and destructive rate.
Learning and Training Activities are:

## POLLUTION

Pollution is the introduction or presence of harmful substances, called pollutants, into the environment. Although pollutants can come from natural causes, pollutants caused by human activity are most damaging to the environment. Due to our overproduction and overconsumption, pollution is increasing in an unprecedented and destructive rate.[4,7]

### FACTS

There are three major types of pollution: air, water, and land.

**40%** of plastic produced annually is disposable, and will only be used for a few minutes before disposal.[1]

**80%** of litter in the ocean originally comes from land.[1]

**60-90%** of this is made of plastic materials.[1]

The Great Pacific Garbage Patch contains approximately **1.8 trillion** plastic pieces. This continues to float on the ocean and affects marine with toxic materials and substances.[1]

According to authorities, plastic waste kills around **100,000** marine mammals yearly, and millions of birds and fish.[1]

**7 million** premature deaths are due to effects of air pollution. Air pollution is also the fourth-largest risk factor for early death.[2,3]

It takes an estimated time of at least **400 years** for plastic products to break down, due to additives.[7]

### CAUSES

Runoff is the term for chemicals dumped into waterways, which is often done by factories. Such practices create a toxic environment for aquatic ecosystems.[7]

The extraction of fossil fuels, which is also the main cause of $CO_2$ emissions, is a major cause of air pollution. Air pollution contributes to climate change, and is also worsened by it.[2,3]

Irresponsible mining practices sometimes leave soils contaminated with toxic substances.[7]

Garbage collection systems are often inefficient and improper, people maintain careless recycling and trash disposal habits. As a result, trash, such as paper, junk appliances, plastic, and cans, accumulate and spoil the landscape.[7]

### EFFECTS

Waste accumulation hinder plants from creating and absorbing nutrients and can also cause animal deaths. Moreover, pollutants contaminate the soil and eventually harm people.[7]

Air pollution excaberates climate change by influencing the amount of sunlight absorbed by the atmosphere.[7]

Polluted water exposes humans to hazardous materials, causing immediate or future illness. Air pollutants harm the eyes, throat, and the lungs.[3,6,7]

### ACTION

Refrain from using of disposable petroleum-based plastics, eliminate the single-use plastics, and instead utilise reusable and compostable alternatives.[1]

Improving systems in product design, recycling, reusing, waste management, crop rotation, and precision farming contribute to decreasing the production of pollutants.[5]

The cooperation between different actors on both local and international levels, as well as environmental, political, and economic leadership is necessary.[1,7]

| RIVERS AND STREAMS | |
|---|---|
| **Format:** | Workshop exercise, Group discussion |
| **Type:** | Blended |
| **Duration:** | open |
| **Learning Style:** | Verbal, visual, social |
| **Learning Objective:** | To present, analyse and moderate a public discussion on strategies of active citizenship in climate and environment-related issues through artistic actions. |
| **Number of participants:** | 15 |
| **Age:** | 16-26 |
| **What is needed?** | Laptop, scissors, pen, paper or any material you find suitable for your medium of expression. |
| **Explanation/steps:** | 1. PowerPoint presentation of local practice and best world practice in art as a medium to act for climate and environment.<br>2. Short analysis of the practice.<br>3. Working in groups to create an art piece directed toward a certain problem of urban pollution.<br>4. Presentation of the art piece |
| **Workshop instructions** | • What do you think about comparing the best local practices with your local situation?<br>• Create individual sketches for the art pieces and according to the preferences from the groups<br>• Was it easy to 'translate' your idea or topic into an art piece?<br>• Which opportunity do you consider in transporting action and awareness of climate change through art to the wider public ? |
| **Tips for Trainers** | To stress out the possibilities of different art media to elaborate different urban pollution problems. |
| **Further resources** | videos, websites, articles |

| CYCLING | |
|---|---|
| Format: | Workshop exercise |
| Type: | Blended |
| Duration: | open |
| Learning Style: | Verbal, visual |
| Learning Objective: | To present and explain how public transport and cars especially affect pollution and to develop bicycle consciousness in youth generation. |
| Number of participants: | 15 |
| Age: | 16-26 |
| What is needed? | Laptop, pen, paper |
| Explanation/steps: | 1. Present bicycle as transport solution<br>2. Explain and demonstrate simple bicycle repair<br>3. Organize a bicycle city tour together with participants. |
| Debriefing questions | • Compare best local practice with your local situation.<br>• How can you integrate a bicycle as a major transport solution in your daily-life? What is needed for you-personally and in your community?<br>• What are solutions to provide bicycles for everyone even if they cannot afford it? |
| Tips for Trainers | Present bicycle as a style of life. |
| Further resources | videos, websites |

# 2.9 INDUSTRIAL AND HOUSEHOLD WASTE



Industrial waste is generated by manufacturing and industrial processes. All industries and all economical activities create waste. Whereas Household waste is referred to waste produced goods at homes. It is also called domestic waste. Although this waste is not as dangerous as the industrial waste, it still impacts the environment in a massive way. Learning and Training Activities are:

| COMPOST | |
|---|---|
| **Format:** | Workshop exercise |
| **Type:** | Offline |
| **Duration:** | Open, depending on the Workshop outline and number of participants |
| **Learning Style:** | Verbal, physical, visual, social |
| **Learning Objective:** | The objective of this workshop is to gain practical knowledge on how to tackle an issue in the area of household waste focused on food and textile. |
| **Number of participants:** | 12 |
| **Age:** | 18-35 |
| **What is needed?** | one plastic bin (plant pot 100 liters), food scraps, leaves and branches, gloves, shovel. |
| **Explanation/steps:** | Compost is organic material that can be added to the soil to help plants grow. Food scraps and yard waste together currently make up more than 30 percent of what we throw away, and could be composted instead. Making compost keeps these materials out of landfills where they take up space and release methane, a greenhouse gas.<br><br>Composting requires three basic ingredients:<br>• Browns: Material such as dry leaves, branches, and twigs.<br>• Greens: Material such as grass clippings, vegetable waste, fruit scraps, and coffee grounds.<br>• Water: Having the right amount of water, greens, and browns is important for compost development.<br><br>Your compost pile should have an equal amount of browns to greens. You should also alternate layers of organic materials of different-sized particles. The brown materials provide carbon for your compost, the green materials provide nitrogen, and the water provides moisture to help break down the organic matter.<br><br>**What to Compost?**<br>Fruits and vegetables, eggshells, coffee grounds and filters, tea bags, nut shells, cardboard, paper, yard trimmings, grass clippings, houseplants, hay and straw, leaves, wood chips, and cotton and wool rags.<br><br>**What Not to Compost and why?**<br>• Dairy products (butter, milk, yogurt, eggs): Creates odour problems and attract pests<br>• Fats, grease, oils: Creates odour problems and attract pests, rodents and flies<br>• Meat or fish bones and scraps: Creates odour problems and attracts pests, rodents and flies<br>• Pet wastes (dog or cat): Might contain parasites, bacteria, germs, pathogens, and viruses harmful to humans<br>• Chemical pesticides: Might kill beneficial composting organisms |

| | |
|---|---|
| **Tips for Trainers** | **How to Compost at Home:**<br><br>There are many different ways to make a compost pile. Select a dry, shady spot near a water source for your compost pile or bin. Add brown and green materials as they are collected, making sure larger pieces are chopped or shredded. Moisten dry materials as they are added. Once your compost pile is established, mix grass clippings and green waste into the pile and bury fruit and vegetable waste below the compost material. When the material at the bottom is dark and rich in color, your compost is ready to use. Your compost is starting to form after two months.<br><br>**Indoor Composting:**<br><br>You can compost materials indoors using a special type of bin, which you can buy at a local hardware store, gardening supplies store, or, better make yourself. |
| **Further resources** | https://www.youtube.com/watch?v=bGRunDez1j4<br>https://www.youtube.com/watch?v=t_1HL9H1cnA<br>http://ekoblog.info/uradi-kompostiranje/<br>https://learn.eartheasy.com/guides/composting/ |

| TEXTILE REMAKE | |
|---|---|
| **Format:** | Workshop exercise |
| **Type:** | Offline |
| **Duration:** | Open, depending on the Workshop outline and number of participants |
| **Learning Style:** | Verbal, physical, visual, social |
| **Learning Objective:** | The objective of this workshop is to gain practical knowledge on how to tackle an issue in the area of household waste focused on food and textile. The objective is also to get young people interested to learn a new skill through a fun and engaging way. |
| **Number of participants:** | 12 |
| **Age:** | 18-35 |
| **What is needed?** | One sewing machine, thread, textile parts (old tshirts, jeans, any other textile parts) |
| **Explanation/steps:** | Reducing the textile industry's environmental footprint will require a radical shift in its business model: from selling ever-more new products to waste prevention and resource sufficiency. If more new clothing is sold every year, the total negative impact of the industry will continue to increase. This means that we must reduce the amount of new textile products made from virgin resources entering the economy in the first place.<br><br>We should buy less, or we can buy used clothing. This will require some practical learning, but it will be fun and will definitely help reduce textile waste.<br><br>To remake your own textile, you need a sewing machine, some thread and skill. The good thing is that you can do this at home, but you will need to learn to use the machine to remake your textiles. In order to get you going you need to find a person who is skilled with sewing and to teach you how to get started. All you need is practice. You can start with fixing your t-shirts, jackets or jeans, and once you develop, you can start creating your own designs. Even if you do not learn to use the sewing machine, you can team up with people who do, and re-make your clothing. |
| **Tips for Trainers** | For this exercise you need a skilled person to work on a sewing machine.Alternative: If an expert on sewing or cloth production cannot be present, the core of the workshop can focus on the participant's wardrobe. E.g. looking at their tshirts and jeans: how many years does it take to wear them off? Where do they come from, how far did they travel for production? A creativity workshop can align with this task, giving participants room and space to rethink what can be done with old clothes and textiles (a lot of tips available online). |
| **Further resources** | https://meta.eeb.org/2020/07/16/reuse-repair-remake-is-the-future-of-fashion/https://www.youtube.com/watch?v=yL21GBIWilA |

# 2.10 LOSS OF BIODIVERSITY

Biodiversity is the diversity of the living world on our planet, from individual species to entire ecosystems. Biodiversity is not just the species that live on the planet, but also the variety of genes, variety of seeds and food crops, and the variety of ecosystems as well. All of these varieties have value; they give us our resources, and provide numerous ecosystem services.

Artificial extinction is caused by human activities such as fishing, hunting, soil and air pollution, deforestation and massive agricultural activities. These activities destroy our environment, and in that way we endanger our own survival. Learning and Training Activities are:

## TREEHUGGER

According to the World Wildlife Fund, "30% of the Earth's land surface is covered in forests. These forested areas can provide food, medicine and fuel for more than a billion people. Worldwide, forests provide 15 million people with jobs in the forest sector, and more than 40 million people have jobs related to forests."

Forests do not only provide for the people, they play the main role in the function of the biosphere of the planet. They produce oxygen vital for all of life, they use and store the CO2, they hold the land together to prevent erosions, and capture water. Trees are home to birds and millions of other species and living creatures. Trees regulate the climate, lower the temperatures. They are a super biological machine, without which no life can be sustained on the planet.

| | |
|---|---|
| **Format:** | Workshop exercise |
| **Type:** | Offline |
| **Duration:** | Open, depending on the Workshop outline and number of participants |
| **Learning Style:** | Verbal, physical, visual, social |
| **Learning Objective:** | The objective of this workshop is to gain practical knowledge on tree planting, and to get closer to issues of biodiversity in a practical way. |
| **Number of participants:** | 12 |
| **Age:** | 18-35 |
| **Explanation/steps:** | A place to plant, a shovel, a tree to plant. |
| **Tips for Trainers:** | Planting trees is fun and easy. All you need is a place to plant it and a shovel. Note that it may be necessary to consult a local environmentalist to make sure you plant a tree that is suitable for local climate and local environment. |
| **Further resources** | For this exercise you need a place to plant a tree and a shovel. You need to make sure you plant a proper tree that is suitable for the area. After planting, you need to make sure the tree is watered regularly. |

| BEES | |
|---|---|
| The ecosystem services are among the most important function of the biodiversity: it keeps our climate stable; it decomposes organic material. Pollination is a crucial service provided by nature; it reproduces the plant world, which is an essential food source for humans and animals (bees). Nature, through ecosystem service, provides clean water and clean air. | |
| **Format:** | Workshop exercise |
| **Type:** | Offline |
| **Duration:** | 1 course à 7 classes, 1 course à 4 classes (90 minutes each) |
| **Learning Style:** | Verbal, physical, visual, social |
| **Learning Objective:** | The objective of this workshop is to gain practical knowledge on beekeeping and bee friendly plants, and to get closer to issues of biodiversity in a practical way. |
| **Number of participants:** | 12 |
| **Age:** | 18-35 |
| **What is needed?** | Apiary with beehives and beekeeping equipment, a professional beekeeper and a person knowledgeable on bee-friendly plants. |
| **Explanation/steps:** | One of the most important aspects of biodiversity are the bees. Bees pollinate 70% of plants used by humans and animals. Due to pesticides used in agriculture, and other chemical toxins that are being released by the industry onto the land and air, bees are threatened to the point of extinction. If there were no bees to pollinate and to foster biodiversity, life on the planet would collapse. The workshop Beekeeping course will be a combination of theory and practice. The course consists of 7 classes (90 minutes each), with the following itinerary: <br><br> 1. Historical development of beekeeping <br> 2. Biology of the bees <br> 3. Beekeeping equipment <br> 4. Beekeeping with LR beehive <br> 5. Honey bee swarming <br> 6. Maintaining bees healthy <br> 7. How to start beekeeping <br><br> The bee-friendly plants workshop will be a combination of theory and practice. The course consists of 4 classes (90 minutes each), with the following itinerary: <br> 1. Bee-friendly plants and their blossoming season <br> 2. Benefits of plants for the ecosystem, bees, and people <br> 3. Application of plants in health, diet and cosmetics4. Planting activity |

| | |
|---|---|
| **42**<br><br>**Tips for Trainers:** | For this exercise, you need an experienced beekeeper with both practical and theoretical knowledge, as well as a person experienced with plants.<br>Alternative:<br>Depending on local implementation, some smaller scale exploration of the importance of bees can be organized. The group could create a plan of a typical daily menu. It could be jointly discussed and reflected if this menu would exist if bees were extinct. In addition, the group could visit a beekeeper and include some flower planting. |
| **Further resources** | https://www.youtube.com/watch?v=ryThwgpdkFw https://www.youtube.com/watch?v=2ID7XaSAlCs |

# 3. CLIMATE-SMART COMMUNITIES

Both individual and community level can be empowering and impactful in making a difference to the environment. Communities play a decisive role in addressing the climate crisis and can be engaged in sustainable and climate-smart policies and decision- making processes. Starting from community actions such as cutting CO2 emissions, reducing waste and redistributing food or upcycling furniture, further benefits can be generated like improved health and wellbeing, community cohesion, new skills, training and jobs.

Through the work of local communities, climate action can be sparked and sustained through small and tangible steps including: making small changes to behaviour, harnessing people's desire to connect with their communities, using good examples to demonstrate what's possible, measuring and showing the difference you are making, creating a network of advocates and enthusiasts, taking active steps to be diverse and inclusive and to be honest about what is and isn't effective*.

Below are best practice examples from project partner communities that highlight different community initiatives on a way to become sustainable and climate-smart in Europe and beyond.

Sources:
https://rijeka2020.eu/program/zeleni-val/
https://rijeka2020.eu/zeleni-val-epk-senzornim-vrtom-oplemenio-dvoriste-vrtica-krnjevo/

https://www.tnlcommunityfund.org.uk/news/press-releases/2020-09-17/how-to-tackle-climate-change-through-community-action.

## URBAN GARDENS IN BARCELONA, SPAIN

The city of Barcelona realized the concept of the network of urban gardens as a participation programme of the Department of Environment which is addressed to citizens over 65 years old. According to The Barcelona website, it is aimed at incorporating them into environmental improvement activities through vegetable growing by following the principles of organic farming. This programme began in 1997 with the launch of Can Mestres gardens, although the first garden which started to work in Barcelona was the Hort de l'Avi one in the Gracia district in 1986 as a result of a request from a group of neighbors.

Urban Gardens have important social values for people involved since they allow them to spend their time. Besides, they favour the creation of a network of new relationships and improve their quality of life through physical activity, which is very positive for their health. They also have a high environmental value to the city, since they become new public spaces.

Other highlights are their role in environmental education through activities aimed at schools, which allow children to know the agricultural world and the principles of organic farming. They also have a social function regarding coexistence between generations, since educational activities in urban gardens promote relationships between children and the elderly.

The programme of urban gardens in Barcelona is carried out along with districts.

Sources:

https://ajuntament.barcelona.cat/ecologiaurbana/en/services/the-city-works/maintenance-of-public-areas/management-of-biodiversity-and-green-areas/urban-gardens

## GREEN WAVE IN RIJEKA, CROATIA

In cooperation with Parkticipacija i Recycled Estate - Vukomerić on the meadow Klub Močvara i Pogon - Center for Independent Culture and Youth in Zagreb, a garden was built that serves as a training ground for everyone who wants to learn something about building and maintaining a garden in the city. It evolved during the project 'Zagreb Open City' as an important part of the future.

According to the Zagreb open city project's website, the intercultural social garden project began with land clearing in June 2016. After the location was prepared, garden beds were built and wooden furniture was made as part of the Day D festival of design with designer Dorotea Kutleša.

The intercultural social garden is constantly open to all interested who can join the project through the contact section on the website or can walk to the Klub Močvara and watch the progress of urban greenery from the embankment. Further activities are continuously happening.

Source:
http://www.zagrebotvorenigrad.hr/interkulturni-drustveni-vrt/

## VIA VERDE, MEXICO CITY, MEXICO

Mexico City realised the Via Verde project focused on turning the City's grey to green through the construction of vertical gardens on columns along the Periférico ring. According to The Guardian, the idea for Via Verde emerged in 2016, when architect Fernando Ortiz Monasterio of the firm Verde Vertical started an online petition to gauge public support. The petition outlines specific goals: promising to "produce enough oxygen for more than 25,000 residents, filter more than 27,000 tons of harmful gas yearly, capture more than 5,000kg of dust, and process more than 10,000kg of heavy metals". The petition also assured supporters of the project's minimal impact: the vertical garden technology does not jeopardise a wall's structural integrity, while drip irrigation uses rainwater and other non-potable sources. Organisers conducted a survey with various options for funding: government funding via taxes, citizen funding via donations to a public trust, or private funding via corporations (with the qualification that 10% of the columns would be used for corporate advertisement). Private funding won and corporations invested money. Construction on greening the 1,000 concrete columns began later in 2016 and, so far the plants are thriving. According to Guardian "the photogenic plants climbing up the freeway barriers have featured in countless videos in the local and international media, and often referenced as a sign of the polluted city's changing priorities."

Sources:

https://www.theguardian.com/cities/2018/oct/30/mexico-city-via-verde-vertical-gardens-pollution-climate-change

**COED HILLS RURAL ART SPACE, WALES, UK**

Coed Hills Rural Art Space situated in the picturesque Vale of Glamorgan, near Cardiff is created on the idea of artistic freedom, sustainability and permaculture. According to Visitwales website, visitors are welcome to enjoy the artwork, the market and forest gardens and workshops on sustainable living. The whole site is run on alternative energy, from high-tech wind turbines and biomass underfloor heaters, to solar showers made out of scrap radiators. With its permaculture gardens, the place is an inspiration for the budding and more experienced eco-conscious. Residents and volunteers live in railway carriages, Mongolian Yurts, log cabins, tipis and straw baled buildings. At the heart of Coed Hills lies the core community. A group of people embracing the new and old in order to lead a more sustainable existence, both ecologically and socially. The number of residents has grown, bringing new energy that has allowed some great projects including exciting new structures growing in the forest and a woodland camp area with earth oven and sculptural pstove. Visitors can take some aspects with them and adapt it to their own lifestyle. The community is happy to engage with visitors, sharing their knowledge of, and enthusiasm for sustainable living.

Source:
https://www.visitwales.com/attraction/visitor-centre/coed-hills-rural-arts-space-852573

## DEVOLVER A TERRA, PORTUGAL

The project aims to encourage good ecological practices among the youngest, namely in learning about the recovery of organic waste and its transformation into high quality compost. After understanding the composting process, students can see how waste, with no apparent value, can be very useful to fertilize school gardens and gardens, thus diverting tons of waste from our landfills and saving tons of $CO_2$ emissions.

With the increase in the average amount of waste produced by each Portuguese in recent decades, as a result of economic growth and the consequent increase in consumption, it is extremely important to reduce the amount of waste generated and sent to landfill or incineration. Home composting is a simple method of recycling organic waste resulting from cooking meals and cleaning green spaces, which can easily be put into practice either in schools or by families. In this way, they will be producing compost, a material rich in nutrients, which allows the recycled organic matter to be returned to the soil and to encourage, among younger people, more ecological practices and healthier habits.

Source:
https://devolveraterra.zero.ong/#projeto

## BIKEMETRO, PESARO, ITALY

Since 2005, the city of Pesaro in Italy runs a program of sustainable mobility that has made one citizen out of three to prefer to travel by bike. This program is called "Bicipolitana", which can be translated as "Bikemetro".

The bicipolitana is a network of 87 kilometers of cycle paths, with the aim of achieving a city that is completely cyclable over a distance of more than 180 kilometers, all the way to the foothills where cycling is mainly practiced as a sport. The routes, and the way they are presented to the community, are similar in structure and organisation to the metros of major European cities. This system consists of 11 lines (i.e. 11 cycle routes), some of which also have a high tourist enhancement value: red line 1, for example, allows cycling alongside the old city walls of the historic centre; line 2 has enabled the enhancement of the seafront: a splendid promenade along the beach; line 3, on the other hand, through a route in a fluvial environment along the river Foglia, gives a new perception and a new look at the landscape of the surrounding hills, contributing to the recovery of the areas behind the industrial areas. These networked routes are not only spatial-functional connections, but also social connections, which have given new life to places in Pesaro that were previously unknown, degraded or abandoned.

Bicipolitana is a project characterised by an integrated approach between the actual implementation of zones 30 (neighbourhoods with a speed limit of 30 km/h) and cycle routes combined with a precise promotion strategy. Elegant and intuitive graphics are, for example, the basis of the communication to promote the use and recognisability of cycle routes.

Source: https://www.bicipolitana.it/

## BREATHING SPACE FOR THE SAVA RIVER, SERBIA

Helen Mayer Harrison and Newton Harrison created their art project Breathing Space for the Sava River in 1989-1990. While on a DAAD (German Academic Exchange Service) fellowship in Berlin, they were invited to (former republic) Yugoslavia by Dr. Hartmut Ern, of the Berlin Botanical Gardens and asked if they could help with the formation of the nature reserve in the area that had once been a no-man's land situated at the border between the former Austro-Hungarian and Ottoman Empires. This nature reserve existed as a many hundred sq. km floodplain and the last of its type remaining in that part of Europe with endangered species and an ancient farming community who lived by an endangered wetland oak forest, a miraculous place. They felt that such a reserve would find its uniqueness under attack from effluent of the surrounding industrial farming. Therefore, they proposed a nature corridor to protect it that would run the length of the Sava River from its twin beginnings above Ljubljana to its ending in Beograd at the Danube River, where it supplies the lower Danube with one third of its clean water and presented it as an art project.

## THE NEW BERLIN, LEIPZIG, GERMANY

Leipzig is a post-industrial city which is using abandoned factories and their big capacities for cultural development. According to Goethe.de "To keep Leipzig affordable for its own residents, the city promotes alternative living and working spaces. It has now become a sort of urban laboratory experimenting with new and unusual models of collective, cooperative and solidarity-based housing.

They call it "the new Berlin". The German and international press is forever poring over the so-called "Hypezig" phenomenon, a portmanteau of "hype" and "Leipzig". Two hundred kilometers away from Berlin, its big sister, Leipzig, a former industrial and cultural hub of East Germany that was deserted by many of its residents after the fall of the Berlin Wall, has been reborn out of its ashes – and at a remarkable pace. In order to keep Leipzig affordable for its own residents, in 2015 the city issued a directive to promote alternative living environments. It set up the Leipziger Freiheit network, which brings many associations and cooperatives together to work towards this goal. Since then, the city has funded a number of initiatives and invested in counselling residents who want to develop alternative forms of housing."

For example, the former Dietzold factory marks Atelierhaus, a project launched by Haushalten e.V. in 2014. For 15 years now, this association has been putting artists – and others in precarious housing situations – in touch with owners.

The association has come up with a new system in which tenants can live on the premises for a fixed period of time without paying rent. In return, they renovate the buildings to keep them from falling into disrepair. Its latest housing model, Atelierhaus, is reserved for artists.

Source: https://www.goethe.de/en/kul/mol/dos/liv/21311515.html

## PROJECT "GREEN BAROMETER", LATVIA

In 2020, five leading Latvian nature protection organizations- Latvian Fund for Nature, World Wildlife Fund for Nature, Latvian Ornithology Society, Association of Latvian Organic Agriculture and NGO "Green Liberty" started to implement a project called "Green barometer". The goal of the project is to supervise and evaluate political development related to nature and environment topics, to encourage discussions about nature and environment problems among policy makers and to achieve the inclusion of these issues in the agenda of Latvian policy makers and parties. This is the first comprehensive political parties and political decision valuation from an environmental perspective in Latvia.

Within the project the organisations are creating regular policy reviews who are looking at current issues related to environment, nature and climate questions, but the main activities are connected with elections. "Green barometer" was analysing and evaluating political party programs in 2021 during regional elections and will do the same in 2022 during parliamentary elections. Project partners in this project are also giving their view and vision of what are the main "green" actions that need to be included in party programs and invite politicians to discussions. Discussions are called "Green Grill'' (Zaļais grills) and they are happening during the time of elections and throughout the project. Also the organisations are challenging politicians to "Green tests" (Zaļajiem testiem) to test politician knowledge about environmental questions and their environmentally friendly habits. And they also are creating a podcast called "Green Barometer" where they are speaking about environmental politics with various experts.

This is a big step towards more conscious policy makers at the local, regional and national level. And helps people to get a deeper look at the political party programs, plans, politician opinions and perspectives about nature and environment topics.

This project will be active till October 2023 and is supported by the program "Active citizens fund".

Source: http://www.zalais-barometrs.lv/