



# TOOLKIT

**ACTIVITIES & RESOURCES FOR A BETTER  
UNDERSTANDING OF THE ROLE OF FORESTS IN  
FIGHTING CLIMATE CHANGE**

October 2017



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## ERASMUS+

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Erasmus+ is the EU flagship training and education programme for the period 2014-2020. It emphasises student and employee mobility and fosters European collaboration in the fields of education, training, youth and sport.

The Erasmus+ programme aims to boost skills and employability, as well as modernising Education, Training, and Youth work.

Over 4 million young people, students and adults will have gained experience and skills by studying, training or volunteering abroad through Erasmus+.

Erasmus+ supports organizations in forming transnational partnerships in order to undertake creative and worthwhile activities.

For more detailed information, visit following link: [https://ec.europa.eu/programmes/erasmus-plus/node\\_en](https://ec.europa.eu/programmes/erasmus-plus/node_en).

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# Erasmus+

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## PROJECT INTRODUCTION



Climate change is a global problem caused by several factors. Among them, deforestation and forest degradation generate 20 % of total greenhouse gases emissions, responsible for climate change. For this reason, the Forestry sector plays an important role in the fight against this phenomenon. This is especially significant in the case of the European Union, whose consumption of wood and wood products is one of the highest in the world.

Currently, activities focusing on Environmental Education address climate change and forest benefits in a separate way. As a result, society is hindered in understanding the important role of forests in climate change.

This project idea was born to meet this need. The «*Educating on “Climate Forests”*» project counted with the participation of 5 different partners consisting of NGOs and higher education institutions that work with young people from environmental fields or with concerns on current environmental problems. These partner organisations are E-Zavod (Slovenia), EURO (Italy), Usak University (Turkey), Hnutí DUHA – Friends of the Earth Czech Republic (Czech Republic) and, as a coordinating organisation, IROKO DFS (Spain).

The overall objective of this project was to broaden the approach of non-formal education to address climate change, highlighting the relevance that forests have in its mitigation.

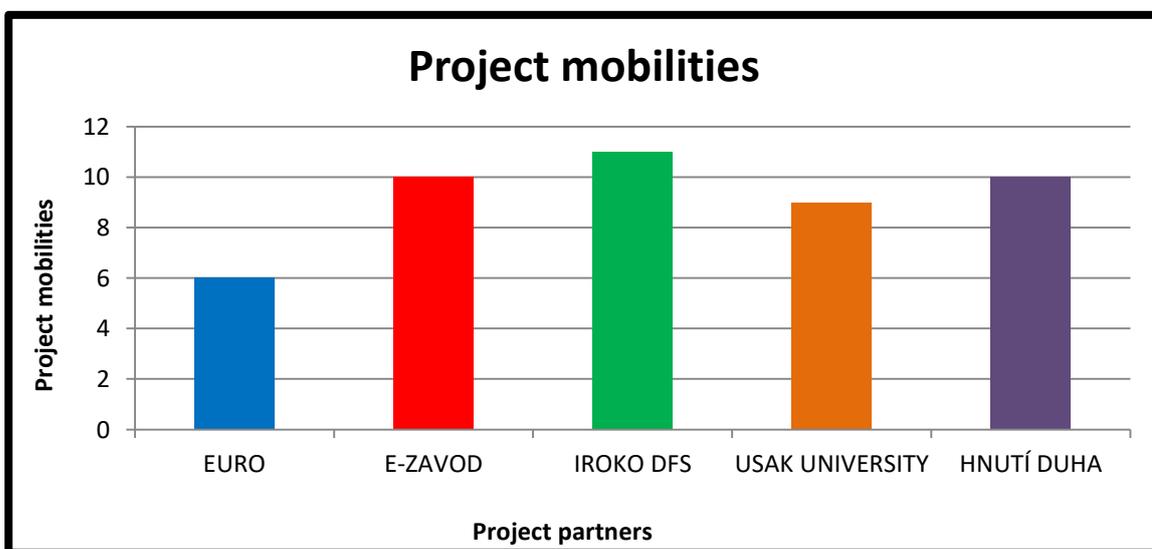
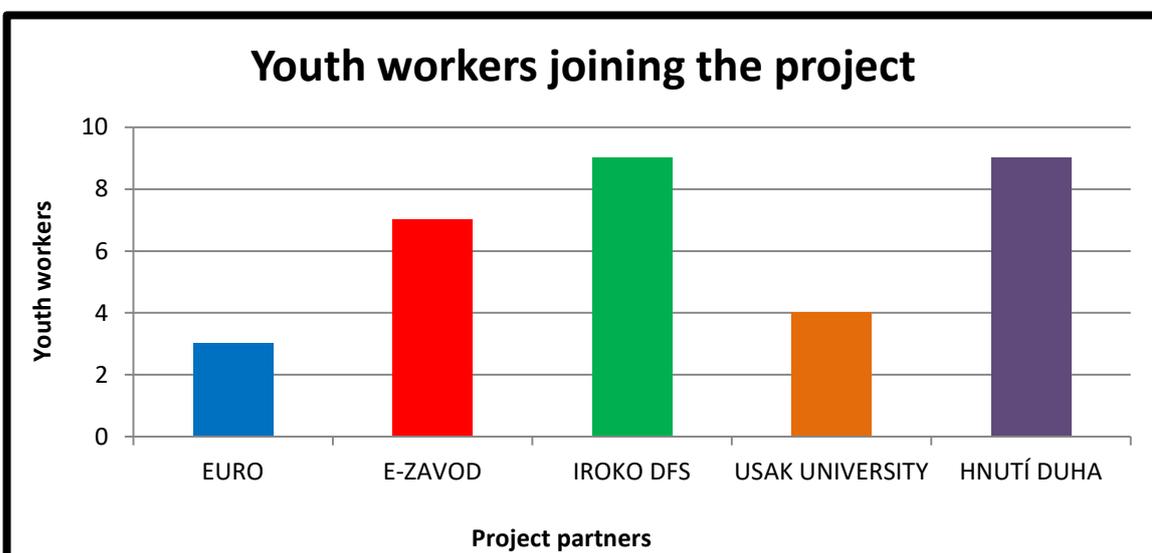
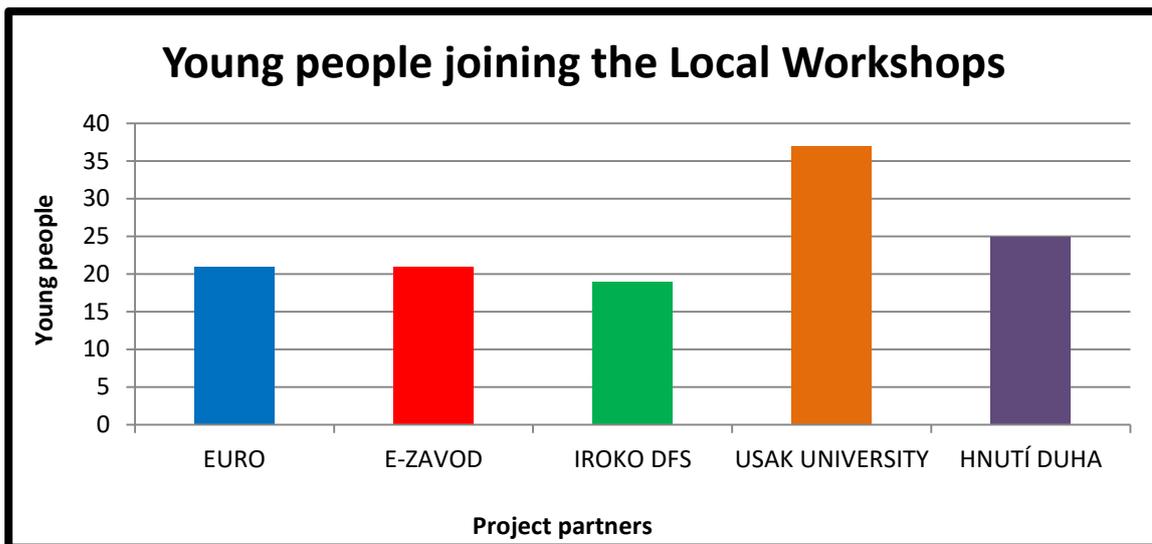
To do this, a group of youth workers from the non-formal education field elaborated environmental education activities merging forests and climate change topics.

Once training activities were developed, they were tested in local workshops with groups of youngsters aged between 18 and 30 years old.

After these local workshops, partner organisations worked in the design of this **toolkit** (for better understanding of the role of forests in fighting climate change). In this toolkit, we present:

- A **Guidebook** containing the 50 best scored activities classified in 5 different sections: a) forest strengths and weaknesses, b) general knowledge on climate change, c) the role of forests in climate change, d) forest policies and climate change, and e) climate refuges.
- A **Guidebook annex** (available just in English) containing the other 25 designed activities classified in the mentioned 5 sections.
- A **Handbook** (available just in English): a list of good practices to reduce the forest pressure in our daily life.

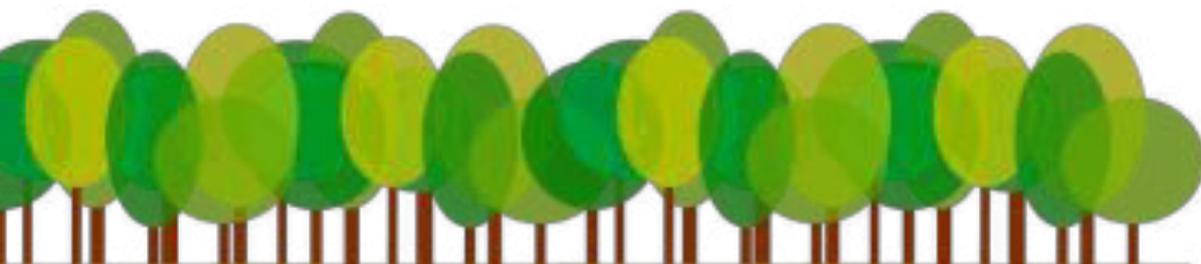




# GUIDEBOOK

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**50 ENVIROMENTAL ACTIVITIES  
FOR YOUNG PEOPLE**



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## GUIDEBOOK INTRODUCTION

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This guidebook and its annex are the result of the work of a number of youth workers and young people.

Activities you will find in the following pages are intended to be useful tools for future environmental and youth educators in order to raise awareness and knowledge on the role of forests in fighting climate change. This main topic has been structured in five different sections for an easier comprehension on how forests and climate change are related. Sections included in this guidebook are:

1. Forest strengths and weaknesses

It should be an introductory section about forests, highlighting how important they are and what threats they face. In this section, we have focused on forests, without relating them with climate change. The original design of the activities from this section has been carried out by EURO (Italy).

2. General knowledge on climate change

It should be an introductory section about climate change, highlighting its causes, effects and solutions. In this section, we have focused on climate change, without relating it with forests. The original design of the activities from this section has been carried out by E-ZAVOD (Slovenia).

3. The role of forests in climate change

Activities from this section will explain the relationship between forests and climate change. Here, lecturers will find useful activities addressing the climatic benefits of forest preservation, how climate change affects forests, some ecological relationships between forests and climate change, etc. This section tries to put together the two first ones. The original design of the activities from this section has been carried out by HNUŤÍ DUHA (Czech Republic).

4. Forest policies and climate change

In this case, we also try to put together the two first sections but under the framework of laws and policies. We have designed activities addressing different forest policies working for fighting climate change and deforestation. The original design of the activities from this section has been carried out by IROKO DFS (Spain).

5. Climate refugees

The last section is the most social-component one of this guidebook and its annex. We have tried to make visible the problem of climate and environmental refugees. Currently, we hear often about the big problem of refugees for armed, economic or political conflicts, among others. However, it is not common to know about people who are forced to leave their home

for environmental and climatic reasons. Here, lecturers will find some activities to address this problem, which will become increasingly important in the near future. The original design of the activities from this section has been carried out by USAK UNIVERSITY (Turkey).

To make this guidebook possible, project partners designed 15 activities from each section (one section per partner).

Then, we distributed these activities among partners (three different activities from each section per partner).

Activities were tested in 10 local events (two per country) in groups of at least 10 young people each. After these tests, participants in the events scored each activity following a list of indicators previously set by project partners. Participants also shared their opinions on how the activities might be improved and what weaknesses and strengths they had.

So, at the end of the testing phase, we got a certain score for each activity which was used to rank them and get the best ones. The 10 best scored activities from each section were selected to integrate the guidebook. They were improved by the feedback and suggestions participants gave us in the local events, and that is the material you will find in this guidebook.

The non-selected activities have been also included as an annex of the guidebook (available just in English). In this case, you will find the original version of the activities with a number of recommendations for improvements provided by participants in the local events.

Although guidebook is addressed to environmental and youth educators of all ages, activities included in it were primarily designed for a group of people aged between 18 to 30 years old. The activities are also meant to be conducted in groups of 10 to 20 participants but with small adjustments they can be implemented in various group sizes.

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## GLOSSARY

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**Action plan:** a detailed plan outlining actions needed to reach one or more goals. In the project framework, it is a sequence of steps that must be taken or activities that must be performed well, for a strategy to succeed.

**Activity section:** one of the five section agreed by the partners at the beginning of the project. These are: Forest Strengths and Weaknesses, General Knowledge on Climate Change, The Role of Forest in Fighting Climate Change, Forest Policies & Climate Change, and Climate Refugees.

**Adaptation:** is a response to global warming and climate change that seeks to reduce the vulnerability of social and biological systems to relatively sudden change and thus offset the effects of global warming.

**Argon:** The chemical element of atomic number 18, an inert gaseous element of the noble gas group. Argon is the commonest noble gas, making up nearly one per cent of the earth's atmosphere.

**Awareness:** may refer to public or common knowledge or understanding about a social, scientific, or political issue, and hence many movements try to foster "awareness" of a given subject, that is, "raising awareness".

**Carbon dioxide (CO<sub>2</sub>):** a colourless, odourless, non-combustible gas, present in low concentrations in the air we breathe (about four hundredths of one percent by volume). Carbon dioxide is produced when any substance containing carbon is burned. It is also a product of breathing and fermentation. Plants absorb carbon dioxide through photosynthesis. Carbon dioxide is the principal greenhouse gas that contributes to global warming.

**Carbon footprint:** the total set of greenhouse gas emissions caused by an [individual, event, organisation, product] expressed as carbon dioxide equivalent.

**Carbon sink:** an area of forest that is large enough to absorb large amounts of carbon dioxide from the earth's atmosphere and therefore to reduce the effect of global warming.

**Carbon tax:** is a tax levied on the carbon content of fuels. It is a form of carbon pricing. Since greenhouse gases emissions caused by the combustion of fossil fuels are closely related to the carbon content of the respective fuels, a tax on these emissions can be levied by taxing the carbon content of fossil fuels at any point in the product cycle of the fuel.

**Climate change:** is the long-term fluctuation in temperature, precipitation, wind, and all other aspects of the Earth's climate. It is also defined by the United Nations Convention on Climate Change as "change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods"

**Climate refugee:** are people who are forced to leave their home region due to sudden or long-term changes to their local environment which compromise their well-being or secure livelihood. Such changes are caused by a climate change process and they held to include increased droughts, desertification, sea level rise, and disruption of seasonal weather patterns such as monsoons.

**Co-creation:** an interactive approach designed to actively engage all members of a specific group in a joint creation of value that suits the preference of all involved group members.

**Decision-making process:** is the process of identifying and choosing alternatives based on the values and preferences of the decision-maker.

**Deforestation:** The conversion of forested land to non-forested land as a direct result of human activities. Deforestation refers to a non-temporary change of land use from forest to other land use or to the depletion of forest crown cover to less than 10 percent.

**Desertification:** The process of fertile land transforming into desert typically as a result of deforestation, drought, or improper/inappropriate agriculture.

**Drought:** A prolonged period of abnormally low rainfall, leading to a shortage of water.

**Earth Education:** is the process that helps people live with more joy and harmony in the natural world by understanding how ecosystems work, developing a long lasting love and respect for the Earth and its life-forms and by reducing impact on natural resources.

**Floods:** An overflow of a large amount of water beyond its normal limits, especially over what is normally dry land.

**Fire management:** involves the strategic integration of such factors as knowledge of fire regimes, probable fire effects, values-at-risk, level of forest protection required, cost of fire-related activities, and prescribed fire technology into multiple-use planning, decision making, and day-to-day activities to accomplish stated resource management objectives. Successful fire management depends on effective fire prevention, detection, and pre-suppression, having an adequate fire suppression capability, and consideration of fire ecology relationships (The Food and Agriculture Organization - FAO).

**Forest:** a portion of land bigger than half a hectare (5,000m<sup>2</sup>) with trees higher than 5 meters and a tree canopy cover of more than 10 %, or with trees that will be able to meet these criteria (The Food and Agriculture Organization - FAO).

**Forest degradation:** is the quality decrease in its condition, this being related to one or a number of different forest ecosystem components (vegetation layer, fauna, soil, ...), to the interactions between these components, and more generally to its functioning.

**Forest certification:** is a mechanism for forest monitoring, tracing and labelling timber, wood and pulp products and non-timber forest products, where the quality of forest management is judged against a series of agreed standards.

**Forest Stewardship Council (FSC):** FSC runs a global forest certification system allowing consumers to identify, purchase and use wood, paper and other forest products produced from [well-managed forests](#) and/or [recycled materials](#).

**Fossil fuel(s):** is a general term for buried combustible geologic deposits of organic materials, formed from decayed plants and animals that have been converted to crude oil, coal, natural gas, or heavy oils by exposure to heat and pressure in the Earth's crust over hundreds of millions of years.

**Guiding Principles on Internal Displacement:** issued by the Secretary General of the United Nations identify internationally recognized rights and guarantees of persons who have been forcibly displaced from their homes due to a number of factors, including natural disaster. Those who have been displaced from their homes but not crossed international borders are not refugees, but rather “internally displaced persons.”

**Global warming:** is the observed century-scale rise in the average temperature of the Earth's climate system and its related effects.

**Greenhouse gases (GHG):** are those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere and clouds. This property causes the greenhouse effect. Water vapour (H<sub>2</sub>O), carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), methane (CH<sub>4</sub>), and ozone (O<sub>3</sub>) are the primary greenhouse gases in the Earth's atmosphere.

**Illegal logging:** it refers to illegal practices related to the harvesting, processing and trade in timber and timber products. Illegal logging and the related trade occurs when national or sub-national laws are broken at any point along the supply chain, for example: logging with an illegally acquired license or in protected areas; harvesting over allowed quotas; processing of logs without the necessary licenses; non-payment of taxes; or exporting products without paying export duties.

**Intergovernmental Panel on Climate Change (IPCC):** The Intergovernmental Panel on Climate Change (IPCC) is the international body for assessing the science related to climate change. The IPCC was set up in 1988 by the World Meteorological Organization (WMO) and United Nations Environment Programme (UNEP) to provide policymakers with regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation.

**Land tenure:** is the relationship, whether legally or customarily defined, among people, as individuals or groups, with respect to land. (For convenience, “land” is used here to include other natural resources such as water and trees.) Land tenure is an institution, i.e., rules invented by societies to regulate behaviour. Rules of tenure define how property rights to land are to be allocated within societies. They define how access is granted to rights to use, control, and transfer land, as well as associated responsibilities and restraints. In simple terms, land tenure systems determine who can use what resources for how long, and under what conditions (The Food and Agriculture Organization - FAO).

**Mitigation:** is an elimination or reduction of the frequency, magnitude, or severity of exposure to risks, or minimization of the potential impact of the threat or warning. It consists of actions to limit the magnitude or rate of long-term climate change.

**Nitrous oxide:** A colourless gas with a sweetish odour, prepared by heating ammonium nitrate. It produces exhilaration or anaesthesia when inhaled and is used (mixed with oxygen) as an anaesthetic and as an aerosol propellant.

**Policy:** is a deliberate system of principles to guide decisions and achieve rational outcomes.

**Programme for the Endorsement of Forest Certification (PEFC):** it is an international non-profit, non-governmental organization dedicated to promoting Sustainable Forest Management (SFM) through independent third-party certification.

**Sustainable forest:** it is a forest that is carefully managed so that as trees are felled they are replaced with seedlings that eventually grow into mature trees. This is a carefully and skilfully managed system.

**Tide:** The alternate rising and falling of the sea, usually twice in each lunar day at a particular place, due to the attraction of the moon and sun.

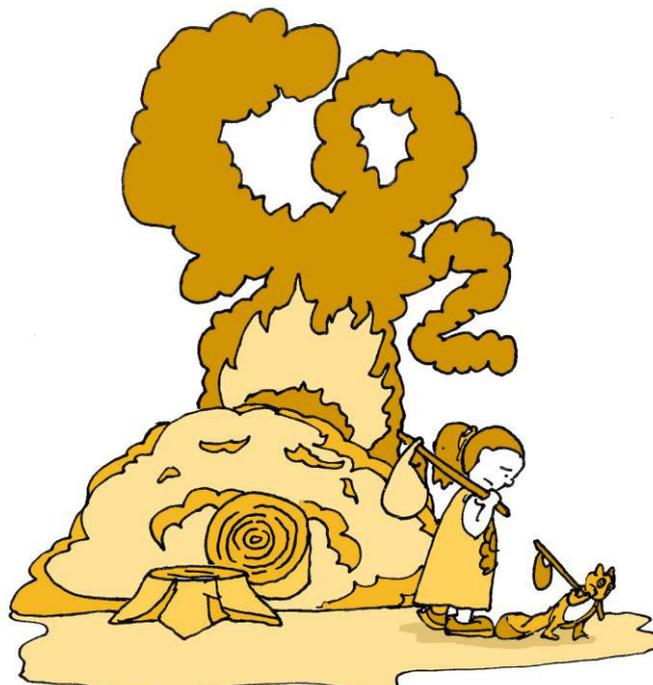
**Workshop:** is an educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.



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# Forest Strengths & Weaknesses

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# A mime for the soil

<b>Activity section:</b>	Forest Strengths and Weaknesses
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	60 minutes
<b>Materials:</b>	Cards with words, a container for the cards, clock

## LEARNING GOALS



- Educate young people on the importance of the soil and related challenges.
- Encourage knowledge sharing and discussion.
- Raise awareness on sustainable use of soil and soil challenges.

## INTRODUCTION



Soil, a thin layer on Earth surface, is the basis for plant, animal and human life and diversity. It is a pool of many nutrients and other life necessary materials. Soil is formed in a complex and long lasting earth processes. In contrast, the soil destruction and erosion is a very quick process.

Soil is a non-renewable resource exploited by humans for many activities. An increasing and unsustainable use of soil is becoming a new global phenomenon. Alongside, the effects of soil erosion are seen as an important weakness of forests.

The activity is based on cards containing the most important words/sentences related to soil usage that are mimed and identified by participants.

## ACTIVITY DESCRIPTION



One participant will be chosen to mime. From a container of cards a single card will be taken and by using pantomime shown to other members of a group. To guess the word, the group will have three minutes. The lecturer will be timing the miming process. The participant performing should not use any words but can point the items in the surrounding environment. If the word is not guessed in three minutes, another word will be chosen from the container. If the word is guessed, a short discussion on the word will be opened and next participant to mime will be elected. The game will continue in repetition of presented steps.

Workshop steps:

1. Presentation and introduction to the activity. (2')
2. A miming process for a single word. (3')
3. A short discussion on the guessed word. (5')
4. Mime repetition. (50')

## **SUGGESTIONS**



- The game can be also implemented as a competition game among participants or their groups.

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## ANNEXES

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### ANNEX 1 - Miming words

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1. Soil pollution - the presence of pathogens or toxic chemicals in soil, in high enough concentrations to pose a risk to human health and/or the ecosystem.
2. Toxic waste: chemical compounds produced by industry which, if they are ingested or breathed in by humans, can cause physiological damage.
3. Soil fertility- refers to the ability of the soil to supply essential plant nutrients and soil water in adequate amounts and proportions for plant growth and reproduction in the absence of toxic substances which may inhibit plant growth.
4. Soil Erosion - is the displacement of upper layer of soil.
5. Biodiversity loss - extinction or rapid loss of living species worldwide.
6. Earthquake
7. Floods
8. Wildfire - is a fire in an area of combustible vegetation that occurs in the countryside or rural area.
9. Timber harvesting (logging): the process, work, or business of cutting down trees and transporting the logs to sawmills.
10. Organic matter - is a large pool of carbon-based compounds found within natural and engineered, terrestrial and aquatic environments.
11. Ground water - the water beneath the surface of the ground, consisting largely of surface water that has seeped down: the source of water in springs and wells.
12. Deforestation - is the clearing of trees, transforming a forest into cleared land.
13. Desertification - the processes by which an area becomes a desert.
14. Extreme weather
15. Rain
16. Wind
17. Degradation - the process in which the beauty or quality of something is destroyed or spoiled.
18. Sustainability - development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
19. Environmental risk - Actual or potential threat of adverse effects on living organisms and environment by effluents, emissions, wastes, resource depletion, etc.

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# Artists in the Woods

<b>Activity section:</b>	Forest Strengths and Weaknesses
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	120 minutes
<b>Materials:</b>	Colourful pens, cardboards (if needed), sponges, sheets, glue, scissors

## LEARNING GOALS



- Learn the importance of recycling and sustainable development.
- Better know and observe natural elements.
- Learn the potential of waste management aspects

## INTRODUCTION



The activity aims to create unique and unrepeatable works, born from the imagination of participants, who thanks to observation and recycling of natural elements will become artists in the woods. The technique used is the mosaic. Fantasy and art will be the instruments through which introducing the subjects of recycling and sustainable development.

## ACTIVITY DESCRIPTION



Walking along the paths of the forest, participants will collect useful items for creating a mosaic. Back in the classroom, participants will be divided in groups. Let's begin the construction of artworks.

1. Brief explanation of the activity. (5')
2. Walking in nature to collect materials (20')
3. Back to classroom and creation of artworks. (30')
4. Presentation of each artwork and discussion. (20')
5. Introduction of recycling and sustainable development subjects and making a joint debate. (30')

## SUGGESTIONS

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For effective implementation:

- If possible, use internet connection search for tutorials about how to use materials you have found and to make a creative recycling.
- This activity is more appropriate for outdoor implementation.
- This activity may also be adapted to indoor implementation. The lecturer can bring some samples into the classroom environment.

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# An Appetizing Day

<b>Activity section:</b>	Forest Strengths and Weaknesses
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	110 minutes
<b>Materials:</b>	Pens, block notes (sheets), blindfolds

## LEARNING GOALS



- Arouse a sense of wonder towards the Earth.
- Emphasize the most important ecological issues.
- Propose changes in participants' lifestyle to live more harmoniously in the natural world.

## INTRODUCTION



The activity aims to raise awareness of young people and make them feel closer physically and emotionally to nature. Change mindset is key to change attitudes and behaviours to protect the environment. The activity has its own innovative path because it does not seek to involve people from the intellectual point of view, but rather aims to break the physical and psychological barriers that we all have developed towards Nature, increasingly far from the interests of the youth and the places they go. Participants will “taste” and “smell” the day.

## ACTIVITY DESCRIPTION



The activity is a slight dip in the natural environment through a walk with the Earth. It is a process implemented through small sensory activities linked together by a stream, a story skilfully told by lecturers.

The walk with Earth will allow participants to break the barriers of even the most sceptical and open to the next two activities. One is linked to the creation of a poem/ by contact with nature and the other is to the development of trust in comrades and the natural environment.

To implement the activity, the lecturers should follow the steps below:

1. Activity explanation. (10')
2. Let's go for our walk with the Earth! (30')

3. Activity in pairs: a blind participant will be guided by another participant in “tasting” and “smelling” our day. The group partners exchange the blindfolds after a while. (20’)
4. Creation of a poem/a story. (15’)
5. Reading the poems/ stories. (15’)
6. Expressing their thoughts about the poems/stories that listened during step 5. (20’)

## **SUGGESTIONS**



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This activity is quite successful in terms of understanding the other people’s feelings. Some suggestion for implementation of this activity:

- This activity is more appropriate for outdoor implementation.
- The participants who are afraid of the dark can feel uncomfortable. Thus, it is not necessary that all the group members use blindfolds. The participants who are afraid of the dark can just help her/his mate to go around the woods.
- This activity may also be adapted to indoor implementation. The lecturer can bring some samples into the classroom environment.

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# Stop Deforestation

<b>Activity section:</b>	Forest Strengths and Weaknesses
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	75 minutes
<b>Materials:</b>	Block notes, flipchart sheets (cardboards if needed), colourful pencils, markers, post its, glue

## LEARNING GOALS



- Learn how to remedy the deforestation.
- Raise awareness on environmental issues.
- Spread good behavioural practices in the family and at school/work.

## INTRODUCTION



One of the main causes of loss of animal and plant biodiversity is the destruction of forests: Millions of hectares of forests are degraded every year because of timber harvesting practices. The damage is not limited only to the loss of biodiversity. Because of the destruction of forests, huge amounts of greenhouse gases are released into the atmosphere. Scientists believe that about 20% of greenhouse gases are annually released into the atmosphere resulting from the destruction and degradation of forests and habitats. What can we do?

## ACTIVITY DESCRIPTION



Participants will be involved in a debate about the causes and possible remedies of deforestation. The lecturer will involve participants in a reflection about what each participant can do in his daily life in order to fight against deforestation and sensitize public opinion.

1. Brief explanation of the activity. (5')
2. Debate about possible remedies against deforestation (the following issues could be faced). (40')
  - encourage naturalistic aspects by promoting the knowledge of the territory
  - limiting and controlling illegal logging
  - exploiting only the forest resources that could be naturally reproduced

- reduce the exploitation of the terrain to pasture
- raising awareness on environmental issues
- spreading good behavioural practices in the family and at school / work

## **SUGGESTIONS**

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For effective implementation, the lecturer should:

- Use internet connection (if possible) search for the terms “sustainable forestry”, “cultivation” and “livestock farming”, Otherwise, having some brief information about this terms.

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# Make your video

<b>Activity section:</b>	Forest Strengths and Weaknesses
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	60 minutes
<b>Materials:</b>	Computer with internet access, block notes and pens, video camera or smartphone

## LEARNING GOALS



- Increase sensibility of young people on forest issues.
- Encourage team work.
- Encourage participants on becoming active promoters of forest conservation.
- Encourage creativity of young people.
- Develop a communication tool for easier understanding of proposed topics by young people.

## INTRODUCTION



Today's young people have grown up in a world very different from when most of the older generations were raised up. Digital media, computers, mobile phones and internet are indispensable part of most young people's upbringing. Many rely on the technology not just to keep in touch, but also as a way of developing their identities, socializing, and belonging to groups. Technology can play a positive, productive and creative part of young people's activities, development and social participation. The activity will also introduce the subject of Peer education.

## ACTIVITY DESCRIPTION



This activity is designed as a co-creation of joint promo video on the importance of forests. On the basis of desk research (articles or internet research) a draft scenario for the video will be prepared by the group. After the preparation of scenario a group will record a short forest promo video. Participants will be encouraged to use whatever approach or materials when recording the video. Afterwards, the video will be edited via free movie editing tools (e.g. Movie Maker).

Workshop steps:

1. Presentation and introduction to the activity. (2')
2. Desk research on the importance of forests. (15')

3. Design of the scenario with a group discussion. (15')
4. Preparation on and video recording. (20')
5. Video editing. (5')
6. Viewing of the video. (5')

## SUGGESTIONS



- The activity is more suitable to conduct outside as there are more diverse opportunities to film.
- The more time spent on the activity better the result.
- Participants can be encouraged to share the video in social media.

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# My friend, the tree

<b>Activity section:</b>	Forest Strengths and Weaknesses
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	45 minutes
<b>Materials:</b>	Colour paper (or old magazines), scissors, glue

## LEARNING GOALS



- Encourage team work.
- Use art as a learning and expressive instrument about the importance of forests.

## INTRODUCTION



There are many authors who are talking about trees as fundamental presence in our lives. Trees give us oxygen to breath, they purify air and they have always been a symbol of life (... think about birds, squirrels, insects, human) and least but not last, they help to create wonderful landscapes. Moreover, in Jewish tradition the Tree of Life represents the entire Creation.

## ACTIVITY DESCRIPTION



Group of participants will firstly be divided into five sub-groups. Each sub-group will represent one part of the tree: (a) roots, (b) tree trunk, (c) branches, (d) leaves, (e) natural surroundings. Afterwards, a group will watch a short motivational video (Annex 1) on the importance of trees, followed by a joint creation of a tree using collage technique. Each group will be assigned to create one part of the tree. The participants will be encouraged to discuss on the importance of the assigned tree part for life of the tree itself and wider. When the tree is completed every sub-group will present their artistic input followed by a joint discussion (Annex 2) on the importance of trees for human life.

1. Presentation and introduction to the activity. (3')
2. Dividing the group into five groups. (2')
3. Video viewing. (5')
4. Creation of the tree. (20')
5. Presentation of subgroups input and joint discussion. (10')

## SUGGESTIONS

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- The activity can be used as an introductory activity in a workshop about forest importance.
- The activity can be redesigned as an individual activity.

## ANNEXES

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### ANNEX 1 - Motivational videos

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1. How Trees Clean the Air: [https://www.youtube.com/watch?v=XVUAgcSCP\\_U](https://www.youtube.com/watch?v=XVUAgcSCP_U) (June 2017)
2. Pajerama: <https://www.youtube.com/watch?v=BFzv0UhHcS0&feature=youtu.be> (June 2017)

### ANNEX 2 - Questions for a joint discussion

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1. Why do you think trees are so important from the environment prospective?
2. How do trees help fighting climate change?
3. Which part of the tree is the most important for the reduction of GHG?
4. In what time of the year trees absorb the biggest amount of CO<sub>2</sub>?
5. Why are the leaves green?
6. How much of the country area is covered by forest?

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# The communication plan

<b>Activity section:</b>	Forest Strengths and Weaknesses
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	60 minutes
<b>Materials:</b>	Additional information on forest/natural areas, A3 pages, cardboards and colourful pencils

## LEARNING GOALS



- Improve the participants' knowledge of forest ecosystems.
- Increase emotional connection with, and sense of belonging to, nature.
- Change participant's attitudes and behaviour.

## INTRODUCTION



The value of the territory and the consequent dissemination are important tools able to consolidate and preserve a sense of belonging that allows the public opinion to understand, appreciate and respect the natural features, the local history and culture in which they live. More the public opinion knows and loves the woods and forests, more they respect them.

Participants will have the task of creating a Communication Plan focused on the wood/forest in which the activity takes place in order to make it one of the natural, tourist and cultural centre in the territory, which combines the richness of nature with a series of cultural, artistic and environmental events that may highlight the beauty and encourage its accessibility.

## ACTIVITY DESCRIPTION



The activity will bring participants to know better some forests strengths. To do this, participants will analyse three forests or natural areas and they will create an advertisement (poster, audio record, performance, etc.) highlighting the values of those areas. They will also create a list of basic rules visitors should respect in order to conserve the highest quality of the ecosystems.

1. Group formation, delivery of work material and activity explanation:

The lecturer will form 3 different groups which will work on each natural area according to the additional information they will receive on the specific areas. Before, the lecturer should have prepared this information (4-6 pages per area) by doing a research in the internet.

Material provided should also include audio-visual resources in order to get the attention of participants and to give more dynamism to the activity. (5')

2. Analysis of additional information. (15')
3. Advertisement creation. (30')
4. Advertisement presentation. (10')

## **SUGGESTIONS**



- Forests and natural areas proposed for the activity should be local or closer to the place the workshop is conducted in order to get higher levels of awareness.

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# Track seekers

**Activity section:** Forest Strengths and Weaknesses

**Type of activity:** Outdoor

**Duration:** 90 minutes

**Materials:** PC with projector and internet connection (or downloaded movie), gypsum, water, plastic bags for mixing and collecting water, stick to spread the plaster

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## LEARNING GOALS



- Discover and observe natural life.
- Take participants close to the nature and create a relationship.
- Introduce subjects such as animals and plants threatened with extinction.

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## INTRODUCTION



The activity aims is to discover nature thanks to the techniques of observation. The wood will be observed and in particular the traces left by nature on the ground. In the walk, participants will find useful tracks to make their own gypsum. The technique consists in detecting a track from the ground, thus obtaining a shape identical to the original.

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## ACTIVITY DESCRIPTION



Walking along the paths of the forest, participants will carefully observe. In groups, participants will make their plaster casts. The lecturer will point out that it will be the more and more difficult to find tracks of some animals or plants because of pollution of the habitat for different species, hunting, soil impoverishment, etc. This activity will introduce the subject of animals and plants threatened with extinction.

1. Brief explanation of the activity and watching the video "How to make plaster casts of an animal track" [15'] <https://www.youtube.com/watch?v=Y4WTmgo4zeA> (link also in the Annex 1).
2. Walking to the nature. During the walking, the lecturer will explain the context of extinction species with the focus on local issues (e.g. large carnivores) and answer the questions of the participants - free debate. The lecturer will lead the group to some tracks that he/she has

already found when prepared the activity. In groups, the creation of tracks with the instructions on the cast and with the information from the introduction video. (60')

3. Go back to the classroom and make the exhibition of the casts. Explanation what cast represents. (10')
4. Show the video UNODC "Wildlife Crime: Don't be part of it!" (Available in Annex 1). Short discussion about the issue. (5')

## **SUGGESTIONS**



- It is good to have the gypsum that hardens quickly and make the activity in the appropriate weather conditions.

## ANNEXES

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### ANNEX 1 - Video links

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- <https://www.youtube.com/watch?v=Y4WTmgo4zeA>

- [www.youtube.com/watch?v=l3jlt16LhPs](http://www.youtube.com/watch?v=l3jlt16LhPs)

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# Orienteering

<b>Activity section:</b>	Forest Strengths and Weaknesses
<b>Type of activity:</b>	Outdoor
<b>Duration:</b>	60 minutes
<b>Materials:</b>	Maps, compass, control flags, list of control flags codes, recorder, pens, whistles

## LEARNING GOALS



- Learn how to use maps and compass.
- Discover and appreciate nature.
- Put together sport and environmental education.

## INTRODUCTION



Orienteering is finding your way from one point to another, using only a map, a compass and your brains. Orienteering is done in the woods, in a park or on the mountainside. A map will be given to all participants with these locations marked. Orienteering is considered a competitive sport where the winners will be the ones who have been in all the control points in the shortest time, usually running the whole way. Orienteering is also considered a recreational and cultural activity to enjoy forests, its resources and its values.

## ACTIVITY DESCRIPTION



Participants will run an itinerary which will be marked on their map from the start, through a series of mandatory locations that must be visited in order, and then to the finish.

The start will be drawn on the map with a triangle. The mandatory locations or control points will be drawn as circles and will be numbered in the order they must be visited. The finish will be drawn with a double circle. The start, controls, and finish will be connected with lines in order to help follow the path visually.

At the location of each control, there will be a marker, called control flag, which will have a unique identification number or code. The participants will check the code against the list given to ensure it is the correct control point.

Control flags will usually have some type of device to record the participants' visit. It may be a uniquely patterned hole-punch. This is how the lecturers will ensure that participants have completed the race successfully.

The participants will choose their own route between each control.

1. Explanation of the activity. (10')
2. Participation to the race. (40')
3. Back to classroom and award of the winner. (10')

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# The treasure hunt

<b>Activity section:</b>	Forest Strengths and Weaknesses
<b>Type of activity:</b>	Outdoor
<b>Duration:</b>	110 minutes
<b>Materials:</b>	Paper, pens, the "treasure"

## LEARNING GOALS



- Promote knowledge of the forest elements.

## INTRODUCTION



The aim is to offer a funny activity in order to raise awareness on the issue of forest knowledge and about the elements that compose it.

The treasure hunt will be closely related to the place where it is organised.

## ACTIVITY DESCRIPTION



After the presentation of the activity, participants will be asked to choose whether to be a "designer/planner" of the treasure hunt or a "hunter". Depending on the number of participants, one or more teams of designers will be created, which will develop different treasure hunts. The clues offered during the hunts will be related to plants and animals that participants can find in the wood/forests where they will stay.

Other participants, in groups, (the "hunters") will test the treasure hunts and will choose the more interesting and well organised.

Each designer team will hide the riddles in the hunting area while other participants will wait in the classroom.

Finally, the first clue will be delivered to participants to start with the first treasure hunt.

At the end of the first one, after a break, the second group of treasure hunt designers will deliver their first clue and the second hunt will start.

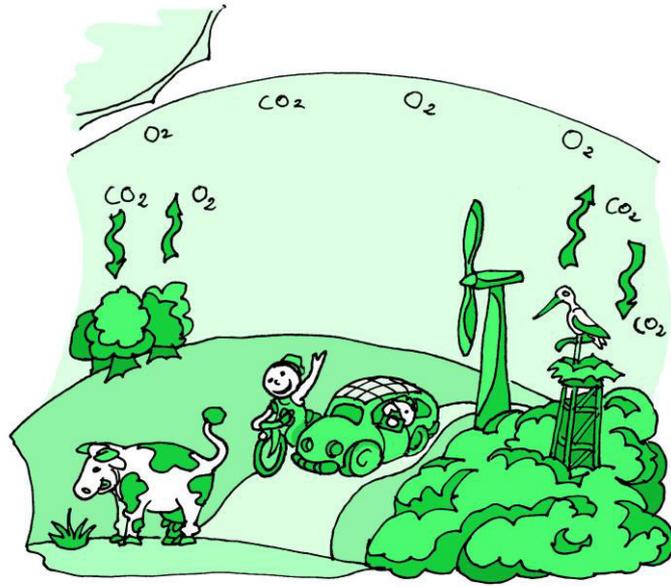
Designers and participants will be provided with a map about the hunting area.

1. Brief explanation of the activity. (5')
2. Designer team(s) develops the activity. (20')
3. Treasure hunt. (30')
4. Break. (10')
5. Second treasure hunt. (30')
6. Back to the classroom for the final award. (15')

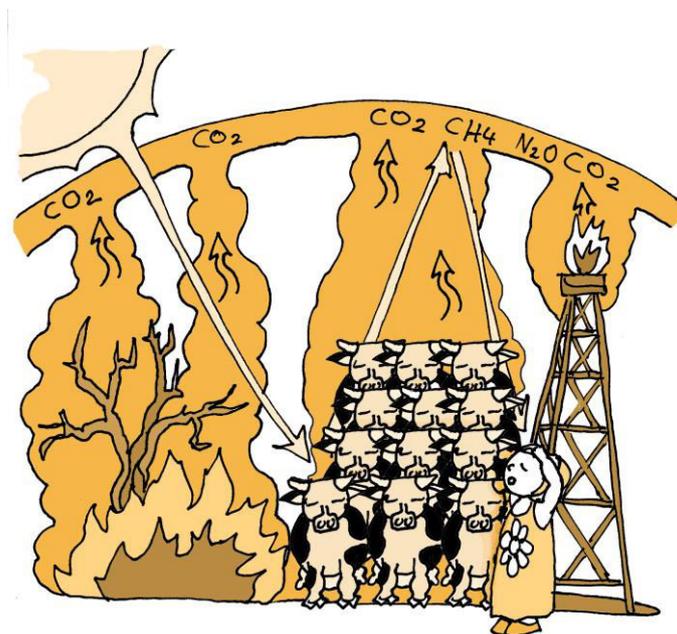
## SUGGESTIONS



- Be careful to the clues positioning; if the area is crowded, some clues could be removed by children or other people.
- Think about final awards related to nature or the forest, for example a ticket for a guided visit in a natural park.



# General Knowledge on Climate Change



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# Climate change quiz

<b>Activity section:</b>	General Knowledge on Climate Change
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	45 minutes
<b>Materials:</b>	Pencils, paper

## LEARNING GOALS



- Entertain participants and teach at the same time.
- Add climate change to people's discussions.
- Reward and highlight people's existing knowledge about climate change.

## INTRODUCTION



Education is an essential element of the global response to climate change. It helps young people understand and address the impact of global warming, encourages changes in their attitudes and behaviour and helps them adapt to climate change-related trends.

Through this quiz, participants can test their knowledge about the global warming phenomenon and be stimulated to discuss with colleagues in a fun and relaxed manner, as well as contribute to make the theme part of people's daily talks.

## ACTIVITY DESCRIPTION



In this activity, participants will be divided into groups and will have one leader whom is going to read the questions and alternative answers. The group that raised their hand first, will get to answer the question.

1. Brief explanation of the activity. (5')
2. Quiz game. Examples of questions and answers are provided in Annex 1. (30')
3. Reflection about new learnings. (10')

By the end of the activity, participants will be able to see how much they know about climate change, and will think about what they have learnt from the quiz.

## SUGGESTIONS

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- The lecturer could hand out copies of the questionnaires to the participants, so they can go over the written questions beforehand.
- An internet search could be suggested after the end of the quiz, so participants can better assimilate climate change concepts.

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## ANNEXES

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### ANNEX 1

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Climate change quiz

1. What climate changes occur when people cut down trees or use gasoline and other fossil fuels?
  - a) Carbon dioxide is released taking heat away from the Earth.
  - b) Less oxygen is in the atmosphere causing the Earth to cool.
  - c) **Carbon dioxide and other gases are released holding in heat.**
  - d) The Earth works hard to regenerate the resources used. This work creates heat.
  
2. How volcanic eruptions can affect the Earth's climate?
  - a) Ashes from the eruption blanket the Earth causing it to warm.
  - b) Mountains created by cooling lava raise to the surface of the Earth causing cooler weather.
  - c) Release of lava and heat cools the interior of the Earth causing cooler weather.
  - d) **Ashes from the eruption can block the sun's rays causing cooler weather for many years.**
  
3. What can we do to control climate change?
  - a) Deforest the Amazon jungle.
  - b) Put motors on our bikes.
  - c) **Limit our use of fossil fuels.**
  - d) Weed our gardens.
  
4. How many years has the Earth experienced climate changes of ice ages and warm, wet periods?
  - a) Thousands of years.
  - b) Hundreds of years.
  - c) 750,000 years.
  - d) **Millions of years.**
  
5. Which of the following is NOT a greenhouse gas?
  - a) Methane.
  - b) Nitrous oxide.
  - c) Ozone.
  - d) **Argon.**

6. As climates change, what may animals have to do?

- a) **Find new homes or migrate.**
- b) Reinforce the walls of their nest or lair.
- c) Change the foods they eat.
- d) Grow more food.

7. What must people do to adapt to climate change?

- a) Stock up on drinking water.
- b) Start riding bikes and walking more.
- c) Get rid of winter clothing.
- d) **Change the way they live and grow food.**

8. How does climate change affect storms?

- a) They move to different climate zones.
- b) **They become more common and severe.**
- c) They become less common and milder.
- d) They develop further south.

9. What are two things that can affect climate change on Earth?

- a) Volcanoes and hurricanes.
- b) **Tilt of the Earth's axis and volcanic eruptions.**
- c) Earth's orbit around the sun and humidity.
- d) Tidal changes and tilt of the Earth's axis.

10. Since 1900 its levels in the atmosphere have been rising causing climate change. What is it?

- a) Water vapour.
- b) Oxygen.
- c) **Carbon dioxide.**
- d) Methane.

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# Global Warming Journalists

<b>Activity section:</b>	General Knowledge on Climate Change
<b>Type of activity:</b>	Outdoor
<b>Duration:</b>	120 minutes
<b>Materials:</b>	Pencil, paper

## LEARNING GOALS



- Refresh people's prior knowledge about global warming.
- Stimulate learning through Q&A (question-answer).
- Stimulate self-expression and creativity.
- Create bonds between participants.

## INTRODUCTION



This activity will get participants to formulate general knowledge questions about climate change, and put them into practice by asking people on their surroundings.

## ACTIVITY DESCRIPTION



In this activity, participants will be divided into groups and will formulate questions about global warming. The number of questions depends on time available for the activity. The steps are provided below:

Afterwards, they will go on the streets (not necessarily far from the departing location) and will ask the planned questions to pedestrians. That will show them how much people are aware of climate change, and hopefully also affect the interviewees. The correct answers should be presented to the interviewees.

At the end, results will be presented.

1. Brief explanation of the activity. (10')
2. Formation of the groups and formulating the questions to be asked during the interview (30')
3. Afterwards, they must go on the streets (not necessarily far from the departing location) and ask the planned questions to pedestrians. That will show them how much people are aware

of climate change, and hopefully also affect the interviewees. The correct answers should be presented to the interviewees. (50')

4. Results are being presented (30")

## SUGGESTIONS



- Activity could also be performed inside the school/university/institution campus if preferred.
- Participants can use their imagination on the formulation of questions (multiple choice or not), but in order to retain interviewees, it is recommended that's they have short answers.
- It is recommended that participants agree on answers for the questions, so they can show it afterwards to the people questioned and compare.
- It is recommended for each group to create different questions and should reach different interviewees.
- The questions should be appropriate for the age group and the occupations of the interviewees (For instance, there could be more basic questions for middle/high school students).
- The questions related to Kyoto Protocol, greenhouse gases, Carbon dioxide emissions could be a little difficult for smaller age groups. Thus, they can be excluded while implementing the activity in younger age groups.

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# Impersonating climate change

<b>Activity section:</b>	General Knowledge on Climate Change
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	45 minutes
<b>Materials:</b>	Pencils, paper, a bowl or any recipient

## LEARNING GOALS



- Activate people's prior knowledge about climate change.
- Stimulate learning through relaxed discussion and activity.
- Stimulate self-expression and creativity.
- Create relationships among participants.

## INTRODUCTION



The lecturers will find an icebreaker bonding activity that joins fun with climate change knowledge.

## ACTIVITY DESCRIPTION



In this activity, each participant will write in a small piece of paper an element that is directly related to climate change (i.e. pollution, sun rays, trees, carbon dioxide, etc.). After writing, all papers will be collected and put together in a bowl or any recipient. Afterwards, each participant will pick one paper and will try to impersonate the element he/she got written on the paper for the group, who will try to guess what they are mimicking. Number of successful guesses will be registered.

1. Brief explanation of the activity. (5')
2. Mime activity. (30')
3. Reflection on learning and feelings during the activity. (10')

## SUGGESTIONS



- If time is available, participants can write and mimic more than one element.
- Participants could be divided in two or more groups.

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# My footprint

**Activity section:** General Knowledge on Climate Change

**Type of activity:** Indoor

**Duration:** 60 minutes

**Materials:** Computer with internet connection

## LEARNING GOALS



- Learn about carbon footprint.
- Know how much CO<sub>2</sub> & GHG emissions produce.
- Learn how to reduce CO<sub>2</sub> & GHG emissions.
- Learn how to prepare a presentation/report in short time.

## INTRODUCTION



Every person contributes to the CO<sub>2</sub>/GHG emissions in their everyday life. The size of impact varies from country to country and is also based on people's habits. But usually we do not know how much we influence the environment – let's measure our own carbon footprint.

**What is carbon footprint?** The total amount of greenhouse gases produced to directly and indirectly support human activities, usually expressed in equivalent tons of carbon dioxide (CO<sub>2</sub>).

\*data of GHG are usually presented as CO<sub>2</sub> equivalents - A single kilogram of methane has 25 times the global warming effect of a kilogram of carbon dioxide, and a kilogram of nitrous oxide has 298 times the global warming effect of carbon dioxide. The emissions of individual GHGs are converted into CO<sub>2</sub> equivalents and then aggregated. The use of a common unit — a kilogram of CO<sub>2</sub> equivalents — makes it possible to compare and combine the relative effect of different gases.

## ACTIVITY DESCRIPTION



This activity might be developed individually or in pairs. Each person will calculate his/her footprint with two different calculators (**Annex 1** – English, German and Italian versions), one longer one and one shorter one (or more). At the end they will convert it to the amount of trees that use a yearly dosage of CO<sub>2</sub>. Each will have to prepare 3-5 suggestions on how to reduce one's carbon footprint. Everyone will have to present very briefly (short report) which of their activity causes the most CO<sub>2</sub> emissions and some suggestions to lower the emissions.

1. Introduction to the topic and instructions. (5')
2. Calculating the footprint. (15')
3. Preparing suggestions how to reduce it. (15')
4. Preparing for a presentation. (10')
5. Presentations (3 min/group). (15')

## SUGGESTIONS



- You can try different calculators and compare them. For higher level of knowledge participants can also dig up the methodology behind the calculator.
- If there are calculators available in native language, you can include them in the activity.
- Try to find more calculators online.

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## ANNEXES

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### ANNEX 1 - Calculators

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Calculators in English:

1. <http://web.stanford.edu/group/inquiry2insight/cgi-bin/i2sea-r2a/i2s.php?page=home> – very extensive, explanatory and adjusted for students.
2. <http://footprint.wwf.org.uk/>
3. <http://www.carbonfootprint.com/calculator1.html> - estimation of energy use per household should be known or googled (average)
4. <http://www.footprintnetwork.org/resources/footprint-calculator/>
5. <https://www3.epa.gov/climatechange/kids/calc/> - interesting point of view (already incorporated measures to lower impact), only in US units.

Calculators in German:

1. <http://www.footprint-deutschland.de/inhalt/berechne-deinen-fussabdruck>
2. <http://www.mein-fussabdruck.at/>

Calculator in Italian:

1. <http://www.improntawwf.it/main.php>

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# CC-art

**Activity section:** General Knowledge on Climate Change

**Type of activity:** Indoor or outdoor

**Duration:** 80 minutes

**Materials:** Painting canvases/drawing papers, A3 pages, paints (or other art material depending on the selected art technique), papers with background information (it can be found in activity annex but just in English version)

## LEARNING GOALS



- Raise awareness on the importance of sustainable human behaviour in climate change mitigation (especially the GHG emissions).
- Develop new and attractive approaches in aware rising activities on the issue.
- Boost creativity of young people.

## INTRODUCTION



Climate change is becoming an increasingly recognized global challenge that requires a global response. One of the important factors that significantly contribute to climate change is GHG emissions, especially CO<sub>2</sub> emissions. The scientific estimation is that CO<sub>2</sub> emissions account for around 65% of current manmade GHG emissions. Therefore it is essential to change human behaviour and to enhance wider public awareness to meet the target of keeping global temperatures below 2°C.

For these reasons, new and attractive approaches in awareness raising activities should be developed and used to increase knowledge of the general public on the topic of climate change mitigation.

## ACTIVITY DESCRIPTION



With this activity, participants will represent the feelings and emotions they experience from climate change. They will create art works related to different aspects of climate change.

To implement the activity, the lecturers should follow the steps below:

1. Group formation, delivery of information and activity explanation. (5')

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Participants will be divided into groups of 3-4 people. They will be given additional information on climate change (see activity annexes). The lecturer will also explain they have to read the additional material and create art works representing what they feel from the information delivered. Participants will name their art work and answer the following questions:

- What does the work present?
  - What are the elements of climate change involved in the art work?
  - To whom should the art work “speak” the most?
  - What is the desired impact of the art work?
2. Groups will read and analyse the background information. (20’)
  3. Each group will create its art work and answer questions about it. (40’)
  4. Presentation of each art work to the rest of the participants. (15’)

## SUGGESTIONS



- Background information should include some audio-visual material in order to get a more dynamic and attractive activity.
- Background information should also include local examples in order to get higher levels of awareness among participants.

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## ANNEXES

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### ANNEX 1 - Background information to be delivered

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#### What is climate change?

Climate is usually defined as the "average weather" in a place. It includes patterns of temperature, precipitation (rain or snow), humidity, wind and seasons. Climate patterns play a fundamental role in shaping natural ecosystems, and the human economies and cultures that depend on them. But the climate we've come to expect is not what it used to be, because the past is no longer a reliable predictor of the future. Our climate is rapidly changing with disruptive impacts, and that change is progressing faster than any seen in the last 2,000 years.

According to the report, "*Preparing for a Changing Climate*", rising levels of carbon dioxide and other heat-trapping gases in the atmosphere have warmed the Earth and are causing wide-ranging impacts, including rising sea levels; melting snow and ice; more extreme heat events, fires and drought; and more extreme storms, rainfall and floods. Scientists project that these trends will continue and in some cases accelerate, posing significant risks to human health, our forests, agriculture, freshwater supplies, coastlines, and other natural resources that are vital to Washington state's economy, environment, and our quality of life.

Because so many systems are tied to climate, a change in climate can affect many related aspects of where and how people, plants and animals live, such as food production, availability and use of water, and health risks. For example, a change in the usual timing of rains or temperatures can affect when plants bloom and set fruit, when insects hatch or when streams are their fullest. This can affect historically synchronized pollination of crops, food for migrating birds, spawning of fish, water supplies for drinking and irrigation, forest health, and more.

Some short-term climate variation is normal, but longer-term trends now indicate a changing climate.

Our state and societies around the globe need to reduce human-caused greenhouse gas emissions to avoid worsening climate impacts and reduce the risk of creating changes beyond our ability to respond and adapt. Washington State is addressing this challenge and has adopted policies to reduce energy use, limit greenhouse gas emissions, and build a clean energy economy. Some changes in climate — and impacts on our state — are unavoidable, even if we reduce greenhouse gas emissions today. But we can take more actions to reduce progressively worsening impacts.

**Source:** <http://www.ecy.wa.gov/climatechange/whatis.htm>; January 30, 2017.

Earth's atmosphere is made up of oxygen, a large amount of nitrogen and a small percentage of greenhouse gases. Greenhouse gases act like a blanket around the Earth. They trap warmth from the sun and make life on Earth possible. Without them, too much heat would escape and the surface of the planet would freeze. However, increasing the concentration of greenhouse gases in the atmosphere causes the Earth to heat more and the climate to change.

This process is often called global warming but it is better to think of it as climate change because it is likely to change other aspects of climate as well as temperature, and also bring about more extreme climate events such as floods, storms, cyclones and droughts.

### **Multiple lines of evidence show climate change is happening**

There is plenty of evidence that tells us that the average temperatures of the world's atmosphere and oceans have increased over the last 150 years.

Evidence includes:

- direct temperature measurements on land
- changes in the dates when lakes and rivers freeze and their ice melts
- a reduction in the extent of snow covers in the Northern Hemisphere
- a reduction in glaciers
- extended growing seasons of plants
- changes in the heat stored in the ocean
- changes in rainfall patterns resulting in more floods, droughts and intense rain
- a number of biological changes have also been observed

These include:

- shifts in the ranges of some plant and animal species
- earlier timing of spring events such as leaf-unfolding, bird migration and egg-laying for some species

Together these indicators provide clear evidence that the climate is changing.

### **It is extremely likely that humans are the cause of recent warming**

It is true that climate change has been driven by natural causes in the past. Our climate has undergone many changes over millions of years — from ice ages to tropical heat and back again. Natural changes over the past 10.000 years have generally been gradual which has enabled people, plants and animals to adapt or migrate, although some prehistoric climate changes may have been abrupt and are likely to have led to mass extinction of species.

However, over the past 150 years there has been a marked and growing increase in greenhouse gas producing activities such as industry, agriculture and transportation. These human-induced activities are increasing the level of greenhouse gases in our atmosphere and causing the Earth not only to heat up, but to heat up at an unprecedented rate. This recent warming can only be explained by the influence of humans.

### **The levels of carbon dioxide and methane in the atmosphere are increasing**

The levels of carbon dioxide and methane in the atmosphere have increased as the result of human activities and are now higher than they have been in at least 800.000 years.

We know this from a number of ice core studies. Snow traps tiny bubbles of air as it falls and is compressed into ice. Over the years, more and more ice layers stack up on top of each other. Drilling

into ice sheets in Antarctica and Greenland provides a record of what the atmosphere was like back in time.

Direct measurements of atmospheric concentrations of greenhouse gases show how our global greenhouse gas emissions have grown in past decades.

These analyses provide very clear and consistent results that today's greenhouse gas concentrations are far higher than they were at any time during the past 800.000 years.

### **The Earth's temperature is changing at a rate unprecedented in recent history**

Globally, our climate has been relatively stable for the past 10.000 years. If the world does not take action to reduce greenhouse gas emissions, the global average temperature is very likely to change more rapidly during the 21<sup>st</sup> century than during any natural variations over the past 10.000 years. This will make it difficult for plants and animals to adapt to climate change.

### **Limiting climate change will require substantial reductions of greenhouse gas emissions**

Future climate change will largely depend on the total sum of greenhouse gases emitted since the start of the industrial revolution. Greenhouse gas emissions have continued to increase over past decades and limiting climate change will mean reversing this trend.

### **The effects of climate change will continue even after emissions are reduced**

The climate system takes time to change, and human activities have already released large amounts of greenhouse gases into the atmosphere. As a result, the effects of climate change will continue even if we reduce emissions now. For example, the deep oceans take centuries to heat up when the atmosphere above them warms. This means that oceans will continue to heat up, and therefore expand causing sea-levels to rise, even if greenhouse gas concentrations in the atmosphere are no longer increasing. Although we cannot avoid climate change entirely, reducing our emissions can limit its impact.

### **The climate system is very complex and there are still uncertainties about future climate changes**

How the climate will change in the future depends on the amount of greenhouse gases we release into the atmosphere. It also depends on how the Earth responds to the increased heating. So we cannot be precise about future climate change. But we are generally sure of the direction of change (e.g., the world will become warmer and global average sea-levels will rise). We can also give plausible ranges for those changes. For example, scenarios of future climate change looked at by the Intergovernmental Panel on Climate Change (IPCC) show the world's average temperature is expected to increase by between 0,9 and 5,4 degrees Celsius at the end of the 21<sup>st</sup> century, relative to the average temperature from 1850-1900.

**Source:** <http://www.mfe.govt.nz/climate-change/overview-climate-change/about-climate-change>.

### **What are GHG emissions?**

Behind the struggle to address global warming and climate change lays the increase in greenhouse gases in our atmosphere. A greenhouse gas is any gaseous compound in the atmosphere that is capable of absorbing infrared radiation, thereby trapping and holding heat in the atmosphere. By

increasing the heat in the atmosphere, greenhouse gases are responsible for the greenhouse effect, which ultimately leads to global warming.

### **Solar radiation and the greenhouse effect**

Global warming isn't a new study in science. The basics of the phenomenon were worked out by Svante Arrhenius in 1896. His paper, published in the *Philosophical Magazine and Journal of Science*, was the first to quantify the contribution of carbon dioxide to the greenhouse effect.

The sun bombards Earth with enormous amounts of radiation, which strike the Earth's atmosphere in the form of visible light, plus ultraviolet (UV), infrared (IR) and other types of radiation that are invisible to the human eye.

About 30 percent of the radiation striking the Earth is reflected back out to space by clouds, ice and other reflective surfaces. The remaining 70 percent is absorbed by the oceans, the land and the atmosphere, according to NASA.

As they absorb radiation and heat up, the oceans, land and atmosphere release heat in the form of IR thermal radiation, which passes out of the atmosphere into space. The balance between incoming and outgoing radiation keeps Earth's overall average temperature at about 59 degrees Fahrenheit (15 degrees Celsius), according to NASA.

This exchange of incoming and outgoing radiation that warms Earth is often referred to as the "greenhouse effect" because a greenhouse works in much the same way. Incoming UV radiation easily passes through the glass walls of a greenhouse and is absorbed by the plants and hard surfaces inside. Weaker IR radiation, however, has difficulty passing out through the glass walls and is trapped inside, warming the greenhouse.

### **How greenhouse gases affect global warming**

The gases in the atmosphere that absorb radiation are known as "greenhouse gases" (sometimes abbreviated as GHG) because they are largely responsible for the greenhouse effect. The greenhouse effect, in turn, is one of the leading causes of global warming. The most significant greenhouse gases are water vapour (H<sub>2</sub>O), carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), according to the Environmental Protection Agency (EPA). "While oxygen (O<sub>2</sub>) is the second most abundant gas in our atmosphere, O<sub>2</sub> does not absorb thermal infrared radiation," Michael Daley, an associate professor of environmental science at Lasell College, told Live Science.

While some say that global warming is a natural process and that there has always been greenhouse gases, the amount of gases in the atmosphere has skyrocketed in recent history. The Industrial Revolution had a big part to play in the amount of atmospheric CO<sub>2</sub> being released. Before, CO<sub>2</sub> fluctuated between about 180 ppm during ice ages and 280 ppm during interglacial warm periods. Since the Industrial Revolution, though, the amount of CO<sub>2</sub> has dramatically increased to 100 times faster than the increase when the last ice age ended, according to the National Oceanic and Atmospheric Administration (NOAA).

Fluorinated gases — that is, gases to which the element fluorine was added — including hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride, are created during industrial

processes and are also considered greenhouse gases. Though they are present in very small concentrations, they trap heat very effectively, making them high "global-warming potential" (GWP) gases.

Chlorofluorocarbons (CFCs), once used as refrigerants and aerosol propellants until they were phased out by international agreement, are also greenhouse gases.

Three factors affect the degree to which any greenhouse gas will influence global warming:

- its abundance in the atmosphere
- how long it stays in the atmosphere
- its global-warming potential

Carbon dioxide has a significant impact on global warming partly because of its abundance in the atmosphere. According to the EPA, in 2012, U.S. greenhouse gas emissions totalled 6.526 billion metric tons of carbon dioxide equivalents, which equalled 82 percent of all human caused greenhouse gasses. Additionally, CO<sub>2</sub> stays in the atmosphere for thousands of years.

However, methane is about 21 times more efficient at absorbing radiation than CO<sub>2</sub>, giving it a high GWP rating, even though it stays in the atmosphere only about 10 years, according to the EPA.

### **Sources of greenhouse gases**

Some greenhouse gases, like methane, are produced through agricultural practices including livestock manure management. Others, like CO<sub>2</sub>, largely result from natural processes like respiration and from the burning of fossil fuels like coal, oil and gas. The production of electricity is the source of 70 percent of the United States' sulphur dioxide emissions, 13 percent of nitrogen oxide emissions, and 40 percent of carbon dioxide emissions, according to the EPA.

The second cause of CO<sub>2</sub> release is deforestation, according to research published by Duke University. When trees are killed to produce goods or heat, they release the carbon that is normally stored for photosynthesis. This process releases nearly a billion tons of carbon into the atmosphere per year, according to the 2010 Global Forest Resources Assessment.

It's worth noting that forestry and other land-use practices offset some of these greenhouse gas emissions, according to the EPA. "Replanting helps to reduce the build-up of carbon dioxide in the atmosphere as growing trees sequester carbon dioxide through photosynthesis. Atmospheric carbon dioxide is converted and stored in the vegetation and soils of the forest. However, forests cannot sequester all of the carbon dioxide we are emitting to the atmosphere through the burning of fossil fuels and a reduction in fossil fuel emissions is still necessary to avoid build up in the atmosphere," said Daley.

Worldwide, the output of greenhouse gases is a source of grave concern: From the time the Industrial Revolution began to the year 2009, atmospheric CO<sub>2</sub> levels have increased almost 38 percent and methane levels have increased a whopping 148 percent, according to NASA, and most of that increase has been in the past 50 years. Because of global warming, 2014 was the warmest year on record and 10 of the hottest years have all come after 1998.

"The warming we observe affects atmospheric circulation, which impacts rainfall patterns globally. This will lead to big environmental changes, and challenges, for people all across the globe," Josef Werne, an associate professor in the department of geology and planetary science at the University of Pittsburgh, told Live Science.

If these trends continue, scientists, government officials and a growing number of citizens fear that the worst effects of global warming — extreme weather, rising sea levels, plant and animal extinctions, ocean acidification, major shifts in climate and unprecedented social upheaval — will be inevitable. In answer to the problems caused by global warming by greenhouse gasses, the government created a climate action plan in 2013.

**Source:** <http://www.livescience.com/37821-greenhouse-gases.html>; January 30, 2017.

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# Climate change in numbers

<b>Activity section:</b>	General Knowledge on Climate Change
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	60 minutes
<b>Materials:</b>	Questionnaires, pens, PC with projector

## LEARNING GOALS



- Raise awareness about climate change using only quantitative measurements.
- Help to realize the impacts of climate change in numbers and have comparisons.
- Educate about other related topics.

## INTRODUCTION



Climate change and the level of CO<sub>2</sub> are of the most highlighted topics about environmental protection. CO<sub>2</sub> has many effects to our planet, however, the consequences cannot be experienced everywhere and every time. Coasts, icy surfaces, small islands feel its dark side much more than other areas. Because of this, it is immensely important to raise awareness to this phenomenon by showing how the effects are on different parts of the Earth.

Numbers are useful tools to express the importance or size of things and problems. Measuring the effects of Climate Change might result in a better understanding and in forecast of its tendencies.

## ACTIVITY DESCRIPTION



The Quiz's idea is very simple. The lecturers will ask a question and the participants will note down their answers (tips of numbers). The most accurate answers will get the highest score. All the questions will be related to climate change. These numbers are mostly rough estimations from different sources.

Should there be a higher number of participants, this activity can be played in teams. The answers will be noted down on paper. The quiz's question bank can be continuously expanded. Questions about climate change should be in majority, however, as speaking about nature cannot be done without system approach, other related topics can be included. As the answers are estimations, many more alternative ones can be found. This activity's goal is to raise awareness, not to give the accurate answers, that is why the winner is the one who guesses the answer from the annex 1.

1. Introduction to climate change through short lecture on the topic. Some of the possible asked data should be used into the presentation without telling participants that they will be questioned about it later. A short video can be a part of the lecture.
2. Participants will take papers and pens. The lecturer will ask questions from Annex 1 or those can be screened on the projector for better understanding. Questions are very difficult but participants will at least try to write some numbers so they could see the difference at the end and learn from it.
3. At the end the correct answers will be read and participants will check their answers and gives points for each right answer (mostly the closest one). The participant with the most correct answers will be the winner.

## SUGGESTIONS



- It is necessary to prepare the lecture before that answers could be involved.
- Also other related topics can be included in the questions. Questions can be easily modified.
- Use measurements that are understandable to participants so they can imagine them easily.
- It is good to provide examples with the answers or add some interesting facts that will be easily remembered by the participants.
- Be sure about the correct answers. It is good to know the source of the data.

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**ANNEXES**

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**ANNEX 1 - Questions for the questionnaire**

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1. . How much is a concentration of CO<sub>2</sub> in the atmosphere? (%)

0.04%, i.e. 400 parts per million (ppm)

2. What was the value of CO<sub>2</sub> in ppm in 2013 over Hawaii?

400 ppm

3. According to an estimation, the Earth's CO<sub>2</sub> emission in 2014 was about 35.669.000 kt. How much do you think China's CO<sub>2</sub> emission is?

10 540 000 kt

4. According to an estimation, the Earth's CO<sub>2</sub> emission in 2014 was about 35.669.000 kt. How much do you think the EU's CO<sub>2</sub> emission is?

3 415 000 kt

5. What would be the average temperature on Earth without GHG?

-80 °C

6. How much does Paris agree to maintain the average global temperature?

2 °C

7. The average annual temperature for the globe between 1951 and 1980 was around 14 degrees Celsius. How much higher was it in one of the hottest years (2015)?

1°C

8. How much % of the world is consisted of forests?

31 %

9. How many km<sup>2</sup> of forests disappear every year on Earth?

142,500 km<sup>2</sup>

10. How much % of the Amazon forest has disappeared in the last 50 years?

17 %

11. How many tons of oxygen produce one hectare of average deciduous forest per year?

10 tons

12. How many grams in one day will emit 1 person CO<sub>2</sub>?

650 g

13. If there are 100 million different species on our planet (as experts estimate), how many species (the maximum number) are becoming extinct each year?

It might be 10 000 species.

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# Exploring climate change

**Activity section:** General Knowledge on Climate Change

**Type of activity:** Indoor

**Duration:** 60 minutes

**Materials:** Pencil, paper, chalks and a chalkboard

## LEARNING GOALS



- Activate people's knowledge on climate change.
- Stimulate by finding connections between different activities and processes in the area of climate change.
- Stimulate learning through discussion, participation and social interaction.
- Remind participants of the importance of human behaviour and its influence on the environment.

## INTRODUCTION



The global climate change we are facing today is due to many factors, mostly human induced, but often we do not know what is the cause and what is the consequence or maybe we just do not think about it. This activity is meant to stimulate thinking about multiple connections when it comes to the environment but not to decide what is right or wrong.

## ACTIVITY DESCRIPTION



This activity will consist in discussing and identifying the (1) causes and (2) effects of, and (3) solutions to climate change. In the activity annexes you will find a list of facts that fit into one of these three categories.

Participants will divide their paper into three columns (one column for each category) and working in pairs. They will discuss the facts provided and write down in which category they belong to (see activity annexes). Sometimes there can be more than one possible option. (15')

Upon finishing, participants will share their results. Then, we will connect the different terms using colour chalks, creating a net. (45')

## SUGGESTIONS

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- The used terms should be adapted to the level of participants. The activity should include some pedagogical definitions.
- If the group of participant is not too big, it would be better if we use post-it notes instead of writing on a chalkboard.
- Another option to see the existing relation between terms is the use of a triangle. In each peak of the triangle we can set the cause, effect and solution. By doing this, we can better relate the different terms and the grade of relation between them.
- The activity would better achieve its awareness targets if it includes more solutions than causes and effects.
- It might be useful to conduct a final discussion on what solutions they would propose to fight climate change.

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## ANNEXES

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### ANNEX 1 - List of terms/facts

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- livestock increase
- climate imbalance
- deforestation
- eating healthier – less meat
- greenhouse effect
- increase of temperature
- use of environmentally friendlier energy sources
- lack of CO2 absorption
- burning fossil fuel
- extreme weather conditions
- moving to better locations (climate conditions)
- heavy industry
- air pollution
- limiting emissions
- fluorinated gases
- global warming
- climate change
- use of public transport instead of a car

### ANNEX 2 - Chart template

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Causes	Effects	Solutions

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# Guilty Plantations

<b>Activity section:</b>	General Knowledge on Climate Change
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	75 minutes
<b>Materials:</b>	Paper, pencil, product examples, computer/s (internet connection is not essential)

## LEARNING GOALS



- Educate about palm oil's effect to the planet.
- Show the relations between palm plantations and Climate Change.
- Raise awareness of products containing palm oil.
- Show the possibilities in order to avoid the support of palm plantations.
- Promote sustainable forest management in contrast to exploitation.

## INTRODUCTION



The conversion of forests to plantations by plantation companies contributes to climate change in a high volume. The draining and converting tropical peat and land forests, for instance in Indonesia, is very damaging, as these carbon sinks store an outstandingly big amount of carbon. Forest fires set to make room for these plantations are an essential source of CO<sub>2</sub> released from land clearing.

From the West African oil palm tree we can extract edible vegetable oil. It is used for snacks, ice cream, cosmetics, bio fuel, lotion, soap, etc. It is grown in tropical regions (mostly Malaysia and Indonesia). It is spreading to other continents, as well, so big areas of rainforests are cut and burnt in order to make place for this crop. As rainforests are huge carbon sinks, destroying those results in a massive release of carbon dioxide. Deforestation is the second biggest man-made source of atmospheric CO<sub>2</sub>, after fossil fuel burning.

## ACTIVITY DESCRIPTION



1. A short introduction of the topic to the participants. It should be a bit more interactive (example of a video can be found in Annex 1). (15')

Debate is encouraged.

2. Participants will write down what kind of products they buy weekly/monthly. This is supposed to be a wide list of food, cosmetics and other products. (10')
3. Product examples containing palm oil (chocolate, shampoo, etc.) will be presented and participants will check the labels. The important thing to mention is that in the vegetable oil palm oil can also be hidden. (10')
4. Afterwards, they will find out if things on their list contain palm oil or not. They can use presented examples, visit the supermarket (outdoor activity) or search the internet (computer or smartphone). After discovering how many articles contain this substance they might avoid using these products or search for substitutes (25')
5. To help them following this behaviour, the lecturers of this activity will give them some useful tips (examples from the webpage - Annex 1). (15')

After this activity, people will know much more about this culprit of climate change and will be able to find the products that are less harmful for the environment.

## SUGGESTIONS



- Possible ideas for homework – bring a commonly used product with you/find a substitute product.
- The next steps after the activity could be a debate/additional tasks (seminars)/lectures ...
- Support the content with a local example (EU/Country).
- Add additional products containing problematic ingredients (e.g. oil derivate in shampoos).
- You can search for information in your native language or use automatic translation for YouTube videos.

## ANNEXES

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### ANNEX 1 - Additional information

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Example of a video about palm oil: <https://www.youtube.com/watch?v=0o6WHN4NDTk>.

Link of products containing palm oil: <http://www.worldwildlife.org/pages/which-everyday-products-contain-palm-oil>.

Link to a useful page: [http://www.saynotopalmoil.com/Whats\\_the\\_issue.php](http://www.saynotopalmoil.com/Whats_the_issue.php).

Palm oil free products (can be outdated): <http://www.orangutans.com.au/Orangutans-Survival-Information/Helping-you-buy-responsibly-Palm-oil-free-alternatives.aspx>.

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# Red words

**Activity section:** General Knowledge on Climate Change

**Type of activity:** Indoor or outdoor

**Duration:** 60 minutes

**Materials:** Text extract from an article

## LEARNING GOALS



- Educate young people on climate change and its effects on the planet.
- Develop different and fun educational approach on the subject of climate change.
- Improve memorizing skills of participants.

## INTRODUCTION



Climate change is a phenomena already happening. Droughts, wild fires occur more frequently than ever threatening damaging and ruining the lives of millions of people. Global temperature is rising, rainfall patterns are shifting, and ice cover and icebergs are shrinking while the sea level is rising. Human activities are considered to be the greatest source of greenhouse gases - main cause of climate change. Therefore it is extremely important to pay attention to our lifestyles. Education, movies, games can be the way to rise peoples sensitivity on environmental issues and to create a base for effective and concrete mitigation actions.

This activity is designed as an interesting, easy to understand and entertaining way to raise awareness on climate change.

## ACTIVITY DESCRIPTION



This activity is designed as a telephone game. To one of the group members a text of 15 to 20 sentences will be given (Annex 1 and 2). In five minutes the participant will memorize as much of the text as possible and afterwards whisper the summary to the next group member. The second person then will whisper the heard story to the third person and so on. At the end the last group person will tell the story out loud. Afterwards, the starting member of the group will read the initial text followed by a short discussion on the differences between the initial and telephone text/story.

1. Presentation and introduction to the activity. (2')

2. Reading and memorizing the text. (5')
3. Telephone text/story telling (time depends on the number of group members). (15')
4. End discussion. (5')

## SUGGESTIONS

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- The selected text can be adjusted according to the age category of participants.

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## ANNEXES

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### ANNEX 1 - Text 1 on EU agriculture and climate change

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Agriculture is highly exposed to climate change, as farming activities directly depend on climatic conditions. But agriculture also contributes to the release of **greenhouse** gases to the **atmosphere**. However, agriculture can also help to provide solutions to the overall climate change problem by reducing emissions and by sequestering carbon while not threatening viable **food** production. According to Green House Gases (GHG) inventories of the EU-28 Member States, GHG emission in the source category agriculture accounted for a total 471 million tons of **CO2** equivalents in 2012. This represented 10.3 % of total EU-28 GHG emissions in 2012.

Depending on the relative size and importance of the agricultural sector, the share of agriculture **emissions** in total national GHG emissions varies considerably within the Member States. The share is the highest in Ireland (31 %), Lithuania (23 %) and Latvia (22 %) and the lowest in Malta (2.5 %), Luxembourg and the Czech Republic (about 6 % each).

The historical developments of agriculture GHG emissions in the EU show a rather steady downward trend on the aggregated EU-28 level of -24 %, from 618 million tons CO2 equivalents in 1990 to about 471 million tons CO2 equivalents in 2012. While EU-15 emissions decreased by 15 % (-68.4 million CO2 equivalents), in the new Member States emission decreased by 45 % (-78.8 tons CO2 equivalents) over the period 1990 to 2012.

### ANNEX 2 - Text 2 on ice melting and sea level rising

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Giant icebergs are slowing climate change, research reveals.

Giant melting icebergs may be a symbol of **climate** change but new research has revealed that the plumes of nutrient-rich waters they leave in their wake lead to millions of tonnes of carbon being trapped each year.

Researchers examined 175 satellite photos of giant icebergs in the Southern Ocean which surrounds **Antarctica** and discovered green plumes stretching up to 1,000km behind them. The greener colour of the plumes is due to blooms of **phytoplankton**, which thrive on the iron and other nutrients shed by the icebergs.

When these tiny algae - or the many creatures that eat them - die, they fall to the bottom of the ocean. This takes the carbon dioxide they have **absorbed** from the ocean surface and buries it deep below, thereby curbing the CO2 in the atmosphere and the global warming it causes.

“If giant iceberg calving increases this century as expected, this negative feedback on the carbon cycle may become more important than we previously thought,” said Professor Grant Bigg at the University of Sheffield, who led the study published in the journal *Natural Geoscience*.

Giant **icebergs**, defined as greater than 18km in length, make up half the ice floating in the Southern Ocean, with dozens present at any one time. The researchers calculated that the fertilization effect

of the icebergs in the normally iron-poor waters contributes up to 20% of all the carbon buried in the Southern Ocean, which itself contributes about 10% of the global total.

“We detected substantially enhanced chlorophyll levels, typically over a radius of at least four to 10 times the iceberg’s length,” said Bigg. The chlorophyll levels remained 10 times higher than in the surrounding ocean for at least a month and up to 200km behind the iceberg. Some increase in phytoplankton was seen as much as 1,000km behind the iceberg in a few cases.

The discovery was a surprise as previous studies of small icebergs, or using ship-based measurements, has suggested a much smaller fertilization effect. The largest iceberg analysed in the new study was more than 50km long.

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# The big C conspiracy

<b>Activity section:</b>	General Knowledge on Climate Change
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	70 minutes
<b>Materials:</b>	Colour chalks and a chalkboard

## LEARNING GOALS



- Raise awareness on the importance of climate change and global warming.
- Encourage youth on taking the active role in climate change mitigation.
- Strengthen the competences of young people in combating climate change.

## INTRODUCTION



Over the last century unsustainable activities of humans have contributed to the rise of global temperature. Today, we are facing a serious environmental challenge of climate change - a natural disaster with unpredictable consequences for our planet and its life. Large emissions of greenhouse gases are the most important factor in climate change. Negative impact of climate change is seen on the level of society and ecosystems in a broad variety of ways; alter rainfall, influence crop yields, affects human health, cause changes to forests and other ecosystems, energy supply, etc.

Climate change mitigation calls for action on global level. Every small step counts and everyone can and should participate. As young people are the future of our planet it is essential to motivate them to take active role in climate change mitigation.

For this reason it is important to equip youth with the capacity to learn and to develop transversal competences such as critical thinking, problem solving, creativity, teamwork, communication skills, etc. on the issue. The preparation of micro local Climate Change Action Plan can be the first step in taking over an active role in solving environmental challenge such as climate change.

## ACTIVITY DESCRIPTION



Through this activity we will elaborate an action plan to fight climate change. To implement the activity, the lecturers should follow the following steps:

1. Participatory introductory talk. (20')

It should be structured to answer the following questions:

- What is the difference between climate change and global warming?
  - What affect us more: climate change or global warming (tricky question)?
  - How we as a society can feel/see the effects of climate change (how our lives are affected by climate change)?
  - Is there anything we can do to stop climate change and global warming?
  - What do you think – how does your life style effect the global warming (positive or negative; with explanation)?
  - What can we, as individuals, do in climate change mitigation - concrete?
  - What would you like to do for climate change mitigation?
2. Action Plan explanation (see annexes at the end of the activity). (5')
  3. Joint elaboration of the Action Plan. (30')

The lecturer will write on the chalkboard the problem and the general goals. Then, the participants will share their opinions on what are the objectives and measures we should include in the action plan, writing them on the chalkboard. If they get blocked we can help them by using the measures from the annex of the activity.

4. Joint discussion on the process of elaboration of the Action Plan. (15')
  - Have you ever prepared an action plan?
  - What new did you learn?
  - What action set in the Action Plan is new to you in regard to climate change mitigation?
  - If we would present this Action Plan to wider public what do you think would happen? Would they join us in climate change mitigation?
  - To whom could we present this action plan?

## SUGGESTIONS



- The way we add measures to the action plan can be changed by post-it notes instead of using chalks.
- It would be useful if the lecturer talks about the problem relating it to local conditions and examples. This way, participants can feel more connected with the problem.
- In order to get a stronger interaction between the lecturer and participants, it would be useful to develop a little game or challenge to get as many measures as possible. For example, the lecturer can create 3-4 groups and propose each group gets more objectives and measures to minimize climate change effects than the other created groups.
- The next step of the activity can be the presentation of an Action plan at a higher level (e.g. headmaster of a school) and its implementation as an internal environmental quality standard.

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## ANNEXES

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### ANNEX 1 - Description of an Action Plan

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An action plan is a document that on the basis of the identified problem clearly forms the steps (actions) in overcoming it. The main focus of the action plan should be on what participants as individuals can do in climate change mitigation. The participants should be encouraged to use and share the Action plan as guidelines in taking an active role in combating climate change.

An action plan should have at least these following sections:

- description of the problem (→ global warming and climate change mitigation)
- goals and objectives (→ general goal: to make a difference and as individuals/school/etc. help in climate change mitigation; the objectives should be set in a clear and realistic way (e.g. I will turn down the computer when not in use)
- set a time line (an overall time period should be set and every action should also have timing (e.g. I will turn down the computer when not in use every day)

Climate change action plan should in one way be a statement of workshop participants on what they will do in climate change mitigation (implementation of an action plan).

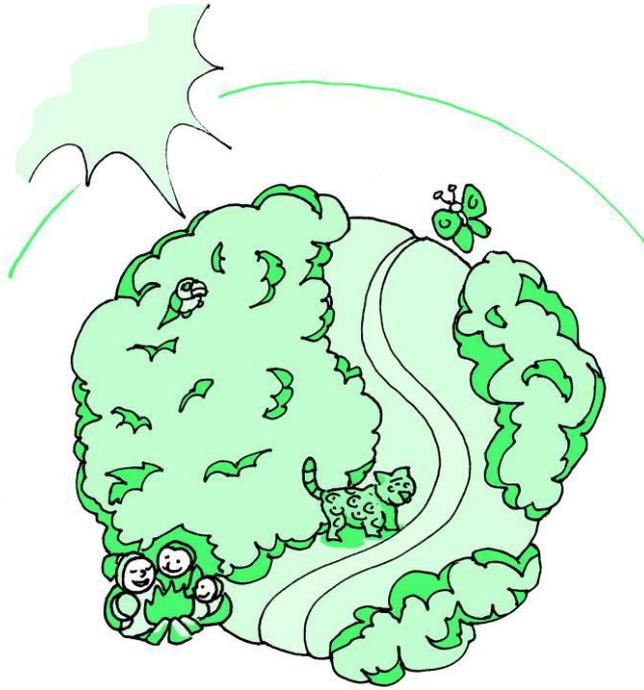
### ANNEX 2 - Measures to be included in the Action Plan

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- replace a regular incandescent light bulb with compact fluorescent light bulb (CFL) - CFLs use 60% less energy than a regular bulb
- install a programmable thermostat
- clean or replace filters on your furnace and air conditioner
- choose energy efficient appliances when making new purchases
- do not leave appliances on standby
- move your fridge and freezer far from stove, oven, dishwasher machine, washing machine, water boiler, etc.
- defrost old fridges and freezers regularly
- do not let heat escape from your house over a long period
- cover your pots while cooking
- use the washing machine or dishwasher only when they are full
- take a shower instead of a bath
- use less hot water
- use a clothesline instead of a dryer whenever possible
- insulate and weatherize your home
- be sure you're recycling at home
- recycle your organic waste
- buy intelligently: family packs, recycled products, etc.
- choose products that come with little packaging and buy refills when you can
- reuse your shopping bag
- reduce waste

- plant a tree
- switch to green power
- buy locally grown and produced foods
- buy fresh foods instead of frozen
- seek out and support local farmers markets
- buy organic foods as much as possible
- eat less meat
- reduce the number of miles you drive by walking, biking, carpooling or taking mass transit wherever possible
- do not leave an empty roof rack on your car
- keep your car tuned up
- drive carefully and do not waste fuel
- check your tires weekly to make sure they're properly inflated
- fly less
- encourage your school or business to reduce emissions
- consider the impact of your investments

Source: <http://globalwarming-facts.info/50-tips/4/>; February 3, 2017



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# The Role of Forests in Climate Change

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# Decreasing forest areas

<b>Activity section:</b>	The Role of Forest in Climate Change
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	45 minutes
<b>Materials:</b>	Pens, papers, card sets (Annex 1), flipchart/board

## LEARNING GOALS



- Know that diminishing forest areas contribute to climate change.
- Know the basic causes for diminishing of forest areas.
- Be aware of consequences of diminishing forest areas for our descendants.
- Be motivated to change participants' behaviour on behalf of forests.

## INTRODUCTION



Once, half of the earth's landmass was covered with forests. Today, this cover has been reduced to one-third. The size of a soccer pitch of forest is cut down every two seconds. A quarter of the forest lost in the last 10.000 years has been destroyed in the last 30 years.

Forest loss has a direct link to loss of biodiversity. The current extinction rate of plant and animal species is around 1.000 times faster than it was in pre-human times - and this will increase to 10.000 times faster by 2050. Scientists predict that the Earth is entering the sixth major extinction event in its history. Damage to ancient forests is not just about total deforestation. It is also about the degradation of forest to a point at which it is no longer a viable habitat for its plant and animal species.

In the tropics alone, over 5 million square kilometres of forest have been degraded by destructive logging and a further 3,5 million square kilometres have been totally deforested during the last few decades. Only intact forest landscapes of several thousands of square kilometres are large enough to sustain healthy populations of many larger forest animals like jaguars, bears, tigers and forest elephants. They are also better in adapting to the changing global climate.

## ACTIVITY DESCRIPTION



This activity's goal is to connect the topic of diminishing forest areas and climate changes. It will test participants' knowledge about the main theme.

1. The lecturer will write down questions on a flipchart, will ask participants and will write down the answers. At the end, a short summary will be made. (10')
  - What does climate change mean?
  - How do diminishing forest areas affect the climate change?
2. Group work. (15')
  - The lecturer will give participants a set of cards. Each of them will arrange cards in order, from the most to the least significant cause for diminishing of forest areas, in their opinion.
  - Afterwards they will do the same in pairs where they will discuss the differences in sequence of their cards and arrange them in order from the most to the least significant.
  - Next step will be making groups of 4 people. In groups, their task will be to choose only 6 cards and arrange them in again.
  - Then participants will make group of 8 people and they will reduce the cards to only 4 of them and repeat the arranging.
3. Summary. (5')
  - In case of bigger group than 8 participants, the lecturer will divide them into smaller ones and adjusts the size of the groups accordingly.
  - The results will be presented and put in a visible place for all (flipchart, board). The lecturer will compare the list made by the participants with relevant information and will reveal the correct answer (Annex 2).
4. For the motivational ending, the lecturer will write down these questions on flipchart. (10')
  - How diminishing forest areas affect me?
  - How diminishing forest area will affect my descendants?
  - What can we do to slow down diminishing forest area?
  - The lecturer will discuss these questions with the participants and will write down their answers on flipchart. At the end, the participants will write down the answers to the following question: What am I going to do to slow down diminishing forest area? Then, the participants will read their resolutions to the rest of the group. The participants can keep this note for themselves.
5. The lecturer will summarize the main points of diminishing forest area and climate change problematics. (5')

## **SUGGESTIONS**



- Adjust cards if you feel it is needed.
- Depending on the group type, you can choose more specific topics/measures/activities; they can also be in a sentence.
- Colour the card sets (Annex 1).

## ANNEXES

### ANNEX 1 - Card set

Deliver one for each participant (2 on a page for easier print).

<b>Tree bugs</b>	<b>Political management</b>	<b>Forest harvesting</b>
<b>Enormous consumption of wood</b>	<b>Heating by wood</b>	<b>Erosion of soil</b>
<b>Artificial planting of monocultures</b>	<b>Lack of water</b>	<b>Lack of new forest planting</b>

<b>Tree bugs</b>	<b>Political management</b>	<b>Forest harvesting</b>
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<b>Artificial planting of monocultures</b>	<b>Lack of water</b>	<b>Lack of new forest planting</b>

### ANNEX 2 - Additional information

Statistical information: <https://en.wikipedia.org/wiki/Deforestation#Causes>.

More information: <https://www.livescience.com/27692-deforestation.html>.

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# Forest functions

<b>Activity section:</b>	The Role of Forest in Climate Change
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	50 minutes
<b>Materials:</b>	Chalks, a chalkboard and those materials needed to represent the performances

## LEARNING GOALS



- Learn about the importance of forests and the connection with climatic changes and their impacts.
- Know the basic functions of the forests.

## INTRODUCTION



Theatre for social change focuses on the dynamic relationship between theatre and society and sees itself as an agent for social criticism and/or change.

Throughout the twentieth century, many developments in theatre for social change (including educative theatre, theatre of the oppressed, theatre for development, theatre in education and activist theatre) have brought attention to myriad social issues. Most recently, performances have begun addressing environmental issues as well.

The environment can be seen as a social issue that has recently begun to benefit from, and contribute to, theatre for social change. Theatre for social change can raise awareness about environmental problems we face and the potential solutions available.

This activity will use theatre for social change to explain five main forest functions, highlighting their relation with climate change.

**Source:** Raising environmental awareness through performance art, Alison Smith, 2007.

## ACTIVITY DESCRIPTION



The lecturers will represent two performances in order to show which are the forest's main functions and some of their relations with climate change.

1. Basic facts about forests. (5')

The lecturer should make an introduction about basic facts about forest (see activity annexes).

2. Performances. (5')

These performances will be acted by just one person (the lecturer), who lives firstly in a "healthy" world and then in the "unhealthy" world. Both performances will go like a monolog. All situations can be modified, but they must show people the importance of forests, highlighting their relation with climate change, and the possible negative impacts on nature. Performance scripts may be found in the annexes of the activity.

3. According to these two performances, participants will find 5 functions of forests, which were presented in the performances. One person will write them down on the chalkboard. The functions are: climatic, water board management, protective, recreational, and aesthetic. (10')

4. Participants are divided into small groups of 4-6 people. They will discuss and answer the following questions. (15')

- In your opinion, what is the most important function of forests?
- What do you think about the relation of forests with climate change?
- Do you think are there more links between forests and climate change than the represented in these performances?
- Have you ever noticed any negative impact caused by inconsiderate dealing with nature?
- How are we damaging the nature now?

5. All participants go to one circle and share their thoughts and opinions. (15')

**SUGGESTIONS**



- If the lecturers do not have the right skills to act performances, they can use both stories as two drawings where participants should find the 5 differences between both scenarios. Those differences are the 5 forest functions the activity aims to show to the participants.

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## ANNEXES

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### ANNEX 1 - Background information to introduce the activity

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Climate change: changes in meteorological patterns during a long period of time.

Main effects of climate change are air and ocean temperature rising, continental ice lost and sea level rising.

Climate change is mainly caused by Green House Gasses (GHG) emissions. Some of these gases are water vapour (H<sub>2</sub>O), nitrogen oxides (NO<sub>2</sub>), methane (CH<sub>4</sub>), carbon dioxide (CO<sub>2</sub>) and chlorofluorocarbons. When the concentration of GHG rises in the atmosphere, the greenhouse effect also rises, temperature average increasing, changing raining patterns and affecting to flora composition and diversity in forests.

It is important to difference which greenhouse effect is natural (necessary for live) and which one is human caused (due to uncontrolled GHG emissions).

Climate change can have different effects and impacts, such as:

- health: climate-related mortality increased caused by an increase of respiratory diseases
- agriculture: changes in crop yields and need for extra water supply
- water resources: less water availability and quality
- forest resources: changes in forest composition, geographical distribution of species, worse forest health and less production
- coastal areas: erosion of beaches, flooding of coastal lands, lack of protection of coastal population
- biodiversity: loss of habitats, and flora and fauna species

Deforestation pushes the loss of biological richness, reduce water availability and transfer big amounts of CO<sub>2</sub> to the atmosphere. In fact, 20 % of GHG provides from deforestation.

Forests store the equivalent of 40 % of the carbon dioxide produced by the burning of fossil fuels such as coal and oil.

A healthy forest is able to regulate global climate, to contain wide ranges of biodiversity, and to supply 2/3 of the water humans need, being crucial for the surviving of millions of people in the world.

Therefore, a reduction in forests surface will aggravate climate change effects. It is very important we conserve forests, their elements and their functionality if we want to fight climate change in an effective way.

### ANNEX 2 - Performances

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**First performance** shows a “health” world with people and nature living in harmony. The person wakes up in the morning, stands up, opens the window and breathes fresh air. Then s/he drinks water and comments on its great taste. It is because the water comes from a well in the garden.

After this situation the person looks through a window and sees his/her little fields behind the garden under a small hill. S/he comments on their good condition which is due to the forest that kept water from the rain the night before. Then s/he goes to his/her work. After s/he comes back, the person feels tired. S/he goes to the near forest for a walk to relax. And because s/he loves taking photos, s/he takes a camera to take some pictures of beauty of the forest at sunset.

**Second performance** shows an “unhealthy” world. The same person wakes up and stands up in the morning, opens the window but immediately must close it, because s/he feels polluted air which is caused by production of pollutants in a near factory. Then s/he goes out to pump up water from the well. This is so hard task, water runs low. Although the rain came night before, it did not bring anything good. But what worse, bad landslide happened on one side of the hill near the house. Forest men cut down a lot of trees some days ago. If it goes the same way in the future, weather will get worse and cottages in the valley will be in danger. The person starts to be angry because of the weather. Last week sun did not shine and today the temperature is too high and it is difficult to breath. S/he is not fancy going for a walk. S/he starts to be pessimistic.

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# Forest quiz

<b>Activity section:</b>	The Role of Forest in Climate Change
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	60 minutes
<b>Materials:</b>	Computer and projector, prepared PowerPoint presentation with the quiz, papers and pens

## LEARNING GOALS



- Learn something new.
- Motivate people to be interested into new topics.
- Cooperate in teams.

## INTRODUCTION



This activity is more like a social game which is recommended to realize in the later time of the day (the best option is evening). It is a team game where each teammate can help to the team and the role of the lector is very important, is like a moderator. He asks questions, control the time, assign points and lead the whole quiz. Topic of the quiz or questions can be easily modified.

## ACTIVITY DESCRIPTION



Only teams of participants can participate into the quiz (min. 2, max. 8 people in one quiz). First of all, teams will choose their names (let them be creative, no rules for that). Now, only papers and pencils can be on the desks and tables.

The lecturer will explain the rules of the quiz:

1. There will be two rounds of the questions (11 questions into each) which will be screened on the projector. Each round will have 2 topics (5 questions each) + there will be one “guessing questions” where there will be a very low chance that someone will know the exact answer but teams will try to be as close as possible. One quiz is in the Annex 1.
2. After, the lecturer will read a question. The teams will have approx. 1-2 minutes to discuss the answer and to write it on the paper. One paper with answers will be necessary for each round. It is recommended to explain to the participants that they should speak very quietly

(that other teams could not copy their answer) and that they can use the papers to share ideas.

3. After one round the lecturer will collect answers and assign points. Each right answer = 1 point + one point for the team with the closest answer on the guessing question. There will not be minus points so it is recommended to guess if the right answer is not known.
4. The lecturer will share the results and number of points of each team and go through the presentation with the correct answers and the second round can continue.
5. Winner will be the team with the most points. If there are more teams with the same points then the winner is the team who has more points without guessing points. After that, the winner will be the team with the less number of teammates.

## **SUGGESTIONS**



- Topic of the quiz or questions can be easily modified as well as number of rounds. In case you want to prepare your own questions please be aware that it takes a lot of time.
- Also music or sound questions can be added (with free sharing license).
- It is good to have a price for the winner team.

## ANNEXES

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### ANNEX 1

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The Powerpoint presentation with questions you can download from folder Annexes.

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# Get to know BINGO

<b>Activity section:</b>	The Role of Forest in Climate Change
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	20 minutes
<b>Materials:</b>	Printed copy of the BINGO cards for every participant (see Annex at the end of the activity) and pens

## LEARNING GOALS



- Think about the impact of people's behaviour on forests.
- Know the participants and their relationship with nature and climate changes.

## INTRODUCTION



This activity is suitable as an icebreaker for early phase of meetings, in which people meet each other for the first time. This activity helps people to know each other and get familiar with names in the group. It also allows knowing the participants' relationship with nature and climate change.

## ACTIVITY DESCRIPTION



1. The lecturer distributes BINGO cards and gives the following instructions. (5')

Every participant will go around and ask other participants questions from BINGO cards. When a person is found with positive response (Yes), s/he will write down the name of person under the question. Then s/he will go around searching for positive answers from other people. Only one question can be given in time, so participant cannot ask one person multiple questions, unless s/he got positive answer. Participants can get back to same person only when s/he got a positive response from another person. However, the maximum number of questions participants can ask the same participant during the game is up to 3 questions. When somebody gets filled one row, "MINI BINGO" should be shouted. But the game goes on. Game will end when participant gets positive answers on all the rows and columns. Then s/he shouts "BINGO" and game ends.
2. Game development: time for finding the right people. (10'-15')
3. Discussion on the process of game and its results. (5')
  - Which one of these questions was the easiest?

- On which question was difficult to get a positive answer from another participant?
- Which impacts included in BINGO cards are positives and which one are negatives? Why?

## **SUGGESTIONS**



- Questions from BINGO cards can be modified for any group, topic or environment.

ANNEXES

ANNEX 1 - BINGO cards

<p>Are you interested in news on Ecology?</p> <p>Name:</p>	<p>Have you ever picked trash? (In forest, park...)</p> <p>Name:</p>	<p>Have you ever heard about FSC? (It is a forest certification system)</p> <p>Name:</p>	<p>Have you ever been in a primeval forest? (It is a forest without human impacts)</p> <p>Name:</p>	<p>Have you ever heard a deer in rut?</p> <p>Name:</p>
<p>Have you ever walked in a forest outside the marked trails?</p> <p>Name:</p>	<p>Have you ever picked up mushrooms?</p> <p>Name:</p>	<p>Have you ever encountered a hoofed animal?</p> <p>Name:</p>	<p>Have you ever seen a forest fire or indications of one of them?</p> <p>Name:</p>	<p>Do you know any region which was a forest in the past but not anymore?</p> <p>Name:</p>
<p>Do you go to forest at least a once in a year?</p> <p>Name:</p>	<p>Are you or any of your friends, associates or family a ranger or a gamekeeper?</p> <p>Name:</p>	<p>Have you ever found in forest an anthill?</p> <p>Name:</p>	<p>Have you ever been in any forest plantation?</p> <p>Name:</p>	<p>Have you ever visited a seed nursery of forest species?</p> <p>Name:</p>

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# Deforestation

<b>Activity section:</b>	The Role of Forest in Climate Change
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	75 minutes
<b>Materials:</b>	Printed words, pencils, pens, flipchart papers

## LEARNING GOALS



- Realize about the connection between deforestation and climate change.
- Think about the state of forests/rainforests in different continents.

## INTRODUCTION



Forests cover 31% of the land area on our planet. They produce vital oxygen and provide homes for people and wildlife. Many of the world's most threatened and endangered animals live in forests, and 1.6 billion people rely on benefits forests offer, including food, fresh water, clothing, traditional medicine and shelter.

Deforestation is the removal of a forest or stand of trees where the land is thereafter converted to a non-forest use. Deforestation comes in many forms, including fires, clear-cutting for agriculture, ranching and development, unsustainable logging for timber, and degradation due to climate change. The removal of trees without sufficient reforestation has resulted in damage to habitat, biodiversity loss and aridity. The most concentrated deforestation occurs in tropical rainforests.

## ACTIVITY DESCRIPTION



1. Mind map. In the middle of the flipchart there will be a word: "Rainforest". What is in your mind if you hear it? The lecturer will write the answers on the board/flipchart. If some points can be merged into groups, the lecturer will do it and explain the reasons. E.g. monkeys, parrots, spiders... → group rainforest animals. This will allow the lecturer to map the current knowledge of the participants on the topic. The lecturer will also lead the discussion to the deforestation. (10')
2. The lecturer will put the name of a continent on each participant's forehead. They must find the people with the same continent using YES / NO / DO NOT KNOW, to questions related to the potential future climate changes on the continent. Participants will ask questions and

regarding the answers they are formed into groups - Africa, Asia, Latin America and Europe (incl. Russia). (5')

3. The group's task will be to answer: What is the state of forests / rainforest on your continent? Are there a lot of forests at the continent? In which part? Which territories are at risk of deforestation? What are the deforestation's causes in your continent?

Initially, leave 5 minutes for group discussion. Subsequently, give them supportive texts/articles on which based they will prepare a presentation on the topic of deforestation on the continent - where, when, what is doing for it? They are free to use their own Internet access to find more information. Remind participants the need for data verification and credible sources of information. Ask them to share tasks so each member can focus on another part or other subtopic. They will work on the posters. Ideally they will draw the outline of the continent and into the continent they will write the notes. In Asia's group it is also possible to mention the palm oil context. (30')

4. Presentation of the posters and lead discussion by the lecturer. (30')
  - On which continent do you think the situation is the most serious?
  - What measures to combat deforestation have you found?
  - Which ones have you find effective?
5. Can you think any others? What can happen in the future if the deforestation continues at the same scale?

## SUGGESTIONS



As supportive texts/article you can use:

- For Europe: <http://ec.europa.eu/eurostat/documents/3217494/5733109/KS-31-11-137-EN.PDF>
- For Africa: [http://www.wri.org/sites/default/files/AFR100\\_Overview\\_English\\_No\\_Annexes-Sept\\_29.pdf](http://www.wri.org/sites/default/files/AFR100_Overview_English_No_Annexes-Sept_29.pdf)
- For Asia: <http://www.asianews.it/index.php?l=en&art=5728>
- For Latin America: <http://www.unep.org/ourplanet/march-2017/articles/cutting-down-deforestation>

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# Forest problem tree

**Activity section:** The Role of Forest in Climate Change

**Type of activity:** Indoor or outdoor

**Duration:** 70 minutes

**Materials:** Flipchart sheets, clean colour papers (two different colours, one for causes and one for consequences), scissors for each group, pencils and pens, tape or glue for each group, cards with defined problems

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## LEARNING GOALS



- Identify causes and consequences of problems and link them together.
- Learn new educational method.
- Design solutions to a problem.

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## INTRODUCTION



For solving the problems we have always to define it and say what are the causes and the consequences. This is exactly what Problem tree is good for. Understanding the causes and consequences is important to solve the whole problem. Causes are often represented in a negative form, such as money or lack of knowledge. If we turn it into the positive way we can easily find many different ways to solve it. Making a problem tree helps to plan projects. It will give us a guide to solve difficult problems with many causes. It can help us to identify factors and activities which are necessary for solving the problem and make the project happen.

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## ACTIVITY DESCRIPTION



The participants will be divided into groups. The lecturer will give one problem which has an impact on forests and forest management to each group (monocultures plantations, taking old wood out of the forests, clear-cuts etc.).

Each group will get a flipchart paper, which will have their factor/problem written in the middle, two different colour papers, tape or other sticky tool and writing tools. Their task will be to think and say what are the causes of their problem and what are the consequences. They will have about 30 minutes (depends on situation) to write this on individual colour papers. They will have to stick the papers: causes at the bottom part of the flipchart and consequences at the upper half of it (and connect them with each problem – use arrow symbols “→”). If they discuss causes or consequences

that lead to another one, they can put them close to each other and again connect them with arrows.

The lecturer will go around the groups and will try to help them to be more concrete, not to stuck at one point (for example legislative cause). The lecturer will have to allow participants to look at the problem more globally and also from different points of views.

After the flipchart papers are full of coloured papers there is time for presentations of each group. Each of them has approx. 10 minutes to present their problem with all factors and also propose solutions. Other participants can ask to some additional information if something is not clear.

1. Explanation of the activity, formation of working groups and delivery of the information. (10')
2. Working in groups on causes and consequences. (30')
3. Problem tree presentations and presentation of proposed solutions. (20')
4. Thinking about learnings and feelings taken during the activity (the following questions can be answered). (10')
  - Are you satisfied with the ideas proposed by groups?
  - Do you think that solving their designed causes could eliminate the consequences? Which yes? Which not?
5. In which point it was harder to reach an agreement within the group members?

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# Adaptation and Mitigation

<b>Activity section:</b>	The Role of Forest in Climate Change
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	120 minutes
<b>Materials:</b>	Flipchart papers, pens and pencils, printed list of subjects into each group ( Annex 1) Printed adaptation strategies (EU, UN, National, ...) [optional]

## LEARNING GOALS



- Learn the differences between mitigation and adaptation and to be able to name some of the measures.
- Through the draft version of participant's forest to reflect how everything in the woods can be influenced by climate changes.

## INTRODUCTION



The main objective of adaptation and mitigation strategies to adapt to climate changes is through the proposed measures and tasks to increase preparedness for climate change - that mitigate the effects of climate change and adapting to change as much as possible, maintain welfare and to preserve and possibly enhance the economic potential for the next generations. With regard to the risk of implementation of individual sectoral adaptation measures without mutual assessment of their impact on the degree of vulnerability of other sectors, it is necessary to develop measures across sectors. One of them is forestry.

## ACTIVITY DESCRIPTION



The steps of the activity are presented below:

1. The lecturer will introduce the concepts of mitigation and adaptation in relation to climate change and will clarify what strategies and documents are related to this topic (National Strategy, United Nations Framework Convention on Climate Change, EU Adaptation Strategy etc.). The lecturer also introduces the difference between the concepts of resilience and resistance. (20')  
See some info in the Annex 1.

2. The lecturer will ask the participants what are the largest climate changes which woods are facing. He/she will write the ideas on a flipchart (a form of brainstorming). (5')
3. The lecturer will emphasize from the ideas on the flipchart, which one we will deal with in the next part of this activity. (5')
4. Participants will be divided into groups and their first task will be to draw or otherwise design their forest on a flipchart paper. The lecturer will give them the list of objects, from which, they should use at least half of them (no matter of the amount) and then what else they want. See annex 2. (30')
5. The lecturer will go from group to group and watches the process of forming forests. When it is a right time he/she will tell the group what will suddenly happen and now what they will have to face in their forest. Each group will face one accident:
  - floods (incl. flash floods)
  - overpopulation of insect pests
  - forest fires
  - extreme wind conditions - whirlwind

They should now discuss: what happened? How this can be seen in their forest? How does it affect the woods? What are the damages? How it is possible that this happened in their forest? What to do now? If there are some printed strategies available they can look into them and find some solutions. (30')

6. Presentation of each forest, causes and consequences of disasters and proposed measures to prevent them. Discussions lead by the lecturer. (30')

## **SUGGESTIONS**



- The list of objects may be printed in the form of images of mentioned terms (each term is given in large quantities) and in the group participants has to cut them and glued on the chart thereby forming its forest.
- Internet connection may be helpful in searching the terms of adaptation and mitigation.
- The participants may need more information about adaptation and mitigation (The lecturer may search additional information about adaptation and mitigation and provide more detailed information to participants if participants ask additional information).

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## ANNEXES

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### ANNEX 1 - Additional information on Mitigation and Adaptation terms

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The terms 'mitigation' and 'adaptation' refer to two different paths for dealing with climate change.

**Mitigation** deals with the causes of climate change and works to reduce man-made effects on the climate system. Climate change mitigation generally involves reductions in human emissions of greenhouse gases (GHGs) by switching to low-carbon energy sources, such as renewable and nuclear energy, and expanding forests and other "sinks" to remove greater amounts of carbon dioxide from the atmosphere. Energy efficiency may also play a role, for example, through improving the insulation of buildings. Another approach to climate change mitigation is climate engineering.

Mitigation policies can substantially reduce the risks associated with human-induced global warming.

Most countries are parties to the **United Nations Framework Convention on Climate Change (UNFCCC)**. The ultimate objective of the UNFCCC is to stabilize atmospheric concentrations of GHGs at a level that would prevent dangerous human interference of the climate system. Scientific analysis can provide information on the impacts of climate change, but deciding which impacts are dangerous requires value judgments.

In 2010, Parties to the UNFCCC agreed that future global warming should be limited to below 2.0 °C (3.6 °F) relative to the pre-industrial level. With the **Paris Agreement** of 2015 this was confirmed, but was revised with a new target laying down "parties will do the best" to achieve warming below 1.5 °C. The current trajectory of global greenhouse gas emissions does not appear to be consistent with limiting global warming to below 1.5 or 2 °C. Other mitigation policies have been proposed, some of which are more stringent or modest than the 2 °C limit.

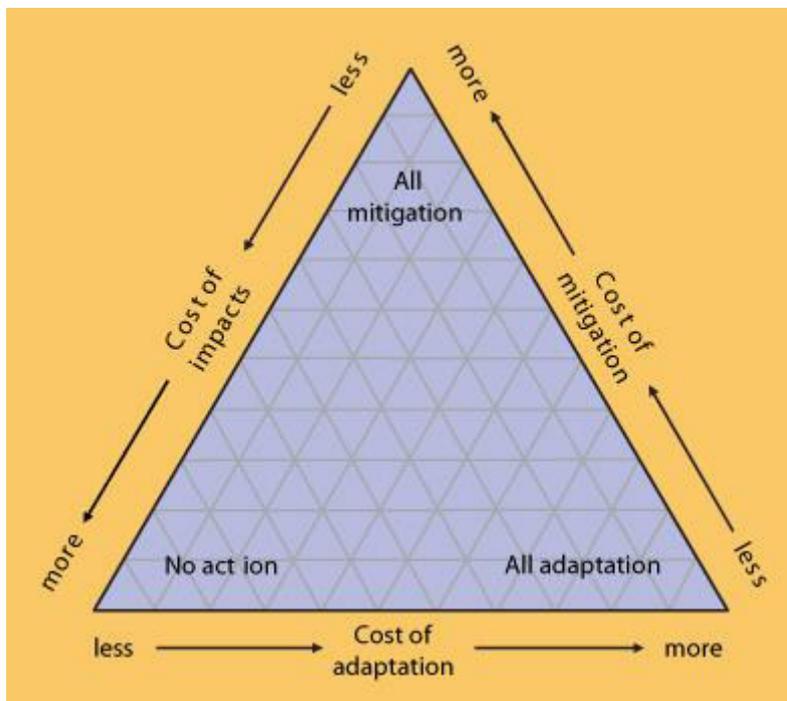
In contrast, **adaptation** makes changes to prepare for and negate the effects of climate change, thereby reducing the vulnerability of communities and ecosystems. Adaptation measures can essentially be considered as any adjustment that reduces vulnerability to the effects of climate change. Adaptation is especially important in developing countries since those countries are predicted to bear the brunt of the effects of global warming and adaptive capacity is also closely linked to social and economic development. This is an activity across sectors from the breeding of new resistant varieties in agriculture through the application of anti-erosion or water management land consolidation in our country or the purchase of snowmaking in winter recreational business. Adaptation to climate change is a social task in which primary production, scientists, public administration, the education sector and politicians need to be involved. Together, conditions must be created for effective adaptation measures based on careful planning.

#### **Is a better path of mitigation or adaptation?**

It is impossible to remove excess greenhouse gases from the atmosphere and stop the ongoing changes through mitigation. Therefore, adaptation strategies need to be developed. However, in general, both ways are needed to reduce the impact of climate change. Similarly, strategies for mitigation and adaptation to climate change need to be developed from individual, local, national and global efforts.

**Vulnerability:** In the literature of climate change, vulnerability is defined as the combined measure of threats to a particular system. Vulnerability is the degree to which a system is susceptible to or unable to cope with the adverse effects of climate change, including climate variability and extremes

By adapting to cope with the effects of climate change, communities, enterprises and institutions can build up their climate change **resilience**.



Source: Triangle diagram of IPCC

Documents:

- [The EU Strategy on adaptation to climate change](#)
- [UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE](#)
- [Strategie přizpůsobení se změně klimatu v podmínkách ČR](#)
- [Turkey's National Climate Change Adaptation Strategy and Action Plan](#)
- [STRATEGIJA PRILAGAJANJA SLOVENSKEGA KMETIJSTVA IN GOZDARSTVA PODNEBNIM SPREMENBAM](#)
- [THE SPANISH NATIONAL CLIMATE CHANGE ADAPTATION PLAN](#)
- [Strategia Nazionale di Adattamento ai Cambiamenti Climatici](#)

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## ANNEX 2 - List of objects

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- Small spruce
- 10 years old spruce
- 50 years old spruce
- Young Fir
- 200 years old fir
- Young Pine
- A hundred-year-old pine
- Guidepost
- Forest spring
- Forest playground
- Young oak
- 50 years old oak
- Young Beech
- 200 years old Beech
- Forest Road
- Deer
- Doe
- Natural trash can
- Warren tree
- Ash
- Stump
- Moss
- Information board
- Upper stream of the river

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# Forest Role-playing

**Activity section:** The Role of Forest in Climate Change

**Type of activity:** Indoor or outdoor

**Duration:** 60 minutes

**Materials:** Printed copy of the roles (see Annex)

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## LEARNING GOALS



- Realize the influence of people in relation to forests and climate changes and their diversification.
- Learn how to empathize with the situation of other people.

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## INTRODUCTION



Through the stories of four different people, participants will learn about the different views of the forest. The life of each of the roles' associated with the forest.

---

## ACTIVITY DESCRIPTION



Participants will be divided into groups of four. There will be four roles so each group will receive a different one. After study their role they will be regrouped and discuss the position of the roles.

1. Short explanation of the activity. (5')
2. Participants will be divided into groups of four people. Each person will receive the text of his/her role. There are four roles, so each person will receive a different one. Now, there is a time to read it. (10')
3. Next step will be to regroup participants. They will go around the room and find the people who read the same story. At the end, there will be 4 groups (each for one role). Participants will discuss what is going on in their story. Their task will be to identify their character and clarify how is their role related to climate changes and what is this person doing to prevent it. At the same time, the group will agree how they will explain the main point to the others, who did not read the same story. (20')
4. Now it is time to regrouping again. Participants will go back into the original groups (see step 1) and they will introduce their roles to the others (where the story takes place, who is the

main character, etc.) and share the information about how their roles prevent climate changes and how it is related to forests. (10')

5. At the end, the lecturer will lead the final discussion and s/he will try to figure out if everything has been clear and if every participant has learned what he/she should learn. The lecturer can also ask some additional questions: How can I stop CO<sub>2</sub> emission releasing from forest land? How can I use the wood to slow the return of carbon from the wood into the air? Participants can also think about the name of their roles. (10')

## **SUGGESTIONS**



- Stories can be easily edited by other factors and viewpoints to be more focused on local conditions of the climate changes and their roles in local forests.

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## ANNEXES

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### ANNEX 1 - Roles

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**ROLE 1:** I am a forester. I am responsible for taking care of the forest, where we manage in a natural way. This means that I reduce clear-cut logging (disposable removing a large number of trees from one place), in the woods I have a higher proportion of trees that are original to the type of the forest (in Central Europe it means mixed forest with a sufficient proportion of deciduous trees and firs). I leave a part of the trees and dead wood in the forest to rot. I do not use the hazardous biocides (chemicals). I cut wood and move it out gently to the forest land and surrounding landscape. This makes forest species and age diverse and resistant to strong winds, drought and pests. In my forest there are animals, but only as much as wood can feed and enable to spontaneously develop and renew. Carbon in the forest is stored both in the above-ground and also underground. It is very important to leave dead wood in the forest, because its decomposition gives nutrients to the soil and at the same time a part of the carbon still can stay in the tree roots.

**ROLE 2:** I work in the forest because of profit. Forests are wood factories in which I can earn money. In fact it is a field that is not harvested every year, but once in approx. 80 years (depending on which type of trees grows there). It means that once in a specified time I cut at about 1 ha territory with all trees that grow there and I take them out for processing. I take big flat tribes to the sawmill, branches are cut up to the smaller ones and sell for the fuel or I burn them directly in the forest. In places of clear cut I plant new trees, but in my forest there are so many animals that they graze them immediately even the rare species (e.g. deciduous trees in coniferous monoculture) so I plant the trees in the same age and same species. I choose species regarding to market demand. Now it is mostly spruce which is vulnerable to the climate change (do not like drought), but it can be sold well. Single- and same-aged vegetation are sensitive to pest outbreaks so I use chemicals. Sometime wind blows and dozens of them fall down. Then I have to quarry it. Small trees can have much less CO<sub>2</sub> that the bigger ones. Burning wood releases accumulated carbon back to the atmosphere.

**ROLE 3:** We built our house out of the wood. This is a material which is renewable. Forests grow in many places and they do not need much to grow (E.g. Unlike other materials, which are used in building industry). In the wood carbon dioxide is stored, which is released slowly. Slower than by burning the wood. Carbon is placed into biomass of woods. Trees produce their biomass through photosynthesis: they take carbon dioxide and release oxygen into the atmosphere. Forests mitigate climate changes by reducing the concentration of carbon dioxide in the atmosphere. Afforestation leads to a reduction of carbon dioxide in the atmosphere, or at least diminishes the increasing concentration of carbon dioxide in the atmosphere because carbon dioxide is bound in wood (biomass) growing trees. All wood products in our wooden house come from nearby forests. Buying wood products (chairs, beds, etc.) made by exotic trees imported by ships and trucks would not help to the nature.

**ROLE 4:** In the hills above the village a large piece of wood was cut off. Now we can see a huge clear-cut. Earlier, there was a beautiful forest full of berries that we could pick up. The families went for a walk. Sometimes I even managed to see some kind of animal, maybe a deer or a squirrel. On hot summer days, there was a very pleasant shade and the air was clean and fresh. The forest belonged

to the village, but we needed money so we sold it. They promised us to use it carefully. Then the trucks and men with saws came and took the trees. Heavy machinery damaged the soil and always when it rains, by those big grooves that had been left behind, a lot of mud and stones flow to the village. Everything sweeps through the village and the only thing which stay is a clogged brook and a view to the hill where nothing grows, because instead of forest land there is already a rock. Wells in the village gradually drying up because rainfalls which forest held and then in the form of small rivulets flow down to the village, no longer comes. Today we know that the preservation of forests brings in terms of carbon storage noticeable and predictable benefits. Therefore, I can recommend to other municipalities to take care of their forests themselves.

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# Carbon Cycle

<b>Activity section:</b>	The Role of Forest in Climate Change
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	45 minutes
<b>Materials:</b>	computer, data projector and screen, blank sheets of paper, scotch tape to attach the paper, downloaded video or its online version (Annex 1)

## LEARNING GOALS



- Realize in what ways the concentration of carbon dioxide in the atmosphere is influenced by forests.
- Be aware of the location of the largest carbon sinks.
- Be able to give advice on how people should treat forests so that they fulfil their role as carbon dioxide sinks.

## INTRODUCTION



The carbon cycle is a biogeochemical cycle by which carbon is exchanged among the Earth's biosphere, lithosphere, hydrosphere and atmosphere. Forest ecosystems are major carbon sinks and form an irreplaceable part of the global carbon cycle. By both absorbing and emitting carbon dioxide, forests regulate its balance in the atmosphere. Should the forested land be eliminated or should the forests stop functioning as carbon sinks (due to external influences) a large amount of this element would be emitted into the atmosphere, causing intensification of the greenhouse effect influencing the climate just as well.

## ACTIVITY DESCRIPTION



The methodology used for this activity will be a movie screening and the discussion around carbon cycle. To do this, we will visualize a short video about it.

1. Brief explanation of the activity. The lector will project a video called "The Carbon Cycle", at first without commentary. Participants will note key words which seem the most relevant to them. As soon as everyone finishes, the lecturer will invite them to discuss in pairs the video's content (if necessary, the video can be played again) and later finds out what they have agreed on. (20')

2. Pairs of participants will be given a task to prepare a script which could serve as the video's commentary. The script should have a catchy title and describe what happens in the video. Attention – the video is less than one minute long, it is therefore necessary to be brief. (15')
3. Then, participants will read all the suggested video titles and the lecturer asks some of the pairs to read their commentary while the video is played again. (10')
4. The remaining time will be dedicated to a discussion and potential questions. It is also possible to read the prepared annotation of the video.

### SUGGESTIONS



- If participants are totally uninformed about the carbon cycle before the activity, the lecturer can use the annotation at the beginning to explain the issue.
- Annotation: While growing, a tree absorbs carbon dioxide from the air. Carbon thus becomes a part of the living tree, including its roots. Most of the carbon remains until the tree is destroyed by fire or decay. Other plants in forests contain carbon as well (fallen leaves, dead wood). Carbon is also contained in the soil. The amount of carbon retained in a tree is equal to approximately one half of the weight of the tree after all its water has been removed.
- It is possible to choose another video explaining carbon cycle in the nature. But the length should be appropriate.

## ANNEXES

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### ANNEX 1 - Video links

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- 1. Video – to download

<http://svs.gsfc.nasa.gov/vis/a010000/a010000/a010006/index.html>

- 2. Video – to screen online

[https://www.youtube.com/watch?v=af8Lu0OSv\\_o](https://www.youtube.com/watch?v=af8Lu0OSv_o)

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# Sensual cognition of the forest

**Activity section:** The Role of Forest in Climate Change

**Type of activity:** Outdoor

**Duration:** 40 minutes

**Materials:** Shawls or scarfs to cover eyes

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## LEARNING GOALS



- Realize the diversity of nature and uniqueness of individual trees and vegetation.
- Learn how climate change can influence the appearance of forests.

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## INTRODUCTION



The aim of this activity is to realize that every organism is different and that everything is unique and unrepeatable and therefore it has its value. Species diversity, which is also very important, is endangered due to the climate changing. Climate changes and the consequent changes in natural habitats, invasive species, intensive grazing, hydrological changes, land grabbing, monoculture, excessive meat consumption, expansion of transport and unsustainable use of energy creates more pressure on biological diversity on a global scale, they lead to fragmentation of land, increase CO<sub>2</sub> and loss of natural habitats.

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## ACTIVITY DESCRIPTION



The lecturer will divide the group into pairs. There will be a starting point from which all pairs are leaving and going back. The person that leads spins the other one around multiple times, will lead them to the chosen tree and let them touch it. Then they will go back to the initial position from which the previously blindfolded sets out to find the tree they only know by touch. The leader of the pairs will have to take care of his/her colleague that no one is hurt. Finally, they will switch the roles. At the end, the lecturer will put the activity in context and let the participants exchange their opinions and share new experience.

1. Brief explanation of the activity. (5')
2. Dividing the participants into pairs, one has covered his/her eyes. Preparation of the starting point. (5')

3. One person of each pair will have their eyes closed (or they are blindfolded) and the other lead him/her from the starting point towards a tree of his/her choice without telling anything about it. "Blind person" will have some time to touch the tree, feel the structure of the trunk, touch the leaves etc. After that, he/she will be led back to the starting point. (10')
4. Now s/he ("blind person") takes off the scarf and tries to go and find the right tree. (10')
5. At the end, the lecturer will place the activity in the context of losing biodiversity and climate change and lets the participants exchange their opinions and share new experience. (10')
  - Did the tree grow naturally?
  - Do you see around some expressions of external factors?
  - Which of them are caused by climate change?

## SUGGESTIONS



- This activity can be developed when one of the pair prepares an "experience trail" for the other - e.g. a path made of cones, a small pile of blueberries or a twig with resin etc. The one who created this path will blindfold the other, lead them to the path and becomes his guide in tasting, smelling and touching the wilderness.
- Walk through a certain area barefoot so that the participants can feel everything they step on while being quiet. They can also walk slowly and with their eyes closed.
- It is true that probably participants could get more involved in enjoying the Nature than in thinking about the climate change, but these kind of activities can develop an high sense of respect to Nature and sensitize people against bad environmental habits.



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# Forest Policies & Climate Change

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# Wood traceability

**Activity section:** Forest Policies and Climate Change

**Type of activity:** Indoor or outdoor

**Duration:** 60 minutes

**Materials:** Chalk/duct tape and cards (Annex 3)

## LEARNING GOALS



- Raise awareness on the importance of the origin of the materials that we consume, in particular of the wood resources.
- Know and interact with the experiences of others to enrich knowledge and promote actions respectful for the environment and local population.

## INTRODUCTION



It is important to know the origin of the materials that we consume and use in our daily life as same as how they have been produced. In the case of wood it is interesting to know, for example, which forest the wood comes from and if the extraction of this wood is respectful with the environment and the local population. It is therefore our responsibility to consume timber that meets these conditions and also contributes to sustainability and social justice. It is also vital that companies provide information on the origin and traceability of wood products.

## ACTIVITY DESCRIPTION



Create a grid on the floor. The grid will be approximately 2 m x 2,5 m. In each box there will be a card that can be a bomb (💣) or a question (?). The numbering of the questions is to easily find an answer, the arrangement on the grid can be random (except the last question – it is at the End cell of the game, check the Annex 1).

The participants will be divided into two groups. The game will start with the first participant in the starting box. The participant will have to choose a box to move (no diagonal movement allowed). S/he will turn over the card of that box and see what kind of card it is. In case it is a question and s/he answers it correctly, s/he can continue. If her/his answer is wrong, other team is on the move. If s/he finds a bomb, s/he will stay at her/his position and the other team continues. The rest of the group can help to answer the questions.

In the ending box, the participant will find a card with a question on what FLEGT is (see annex 2 for more extended information about this mechanism).

1. Brief explanation of the activity. (5')
2. Development of the game. (35')
3. Conclusions where the lecturer will explain the FLEGT forest policy (see Annex 3). (5')
4. Joint discussion with at least the following questions answered: (15')
  - Do you think it is important to know where the timber we consume comes from? Why?
  - Do you think it is easy to control the way the timber follows until our houses? Why?
  - Have you ever thought where the timber we use in our daily life comes from?

## SUGGESTIONS



- This game may be adapted to different ages and size of the groups by changing the type of questions and/or the amount of boxes and size of the field.
- Make a competitive game – more groups.
- Try with fewer bombs.
- Add a prize for the winning team.
- The discussion can be developed during the game.

## ANNEXES

## ANNEX 1 - Example of a grid

END - ?						
		?		?		
		?		?	?	
	?	?			?	
	?			?	?	
?	?			?		
?				?		
START						

## **ANNEX 2 - Additional information about FLEGT**

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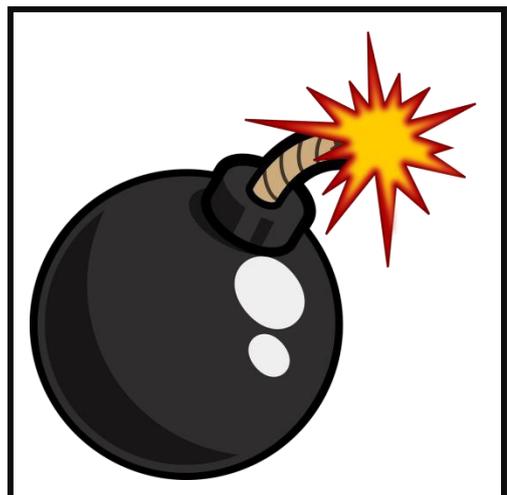
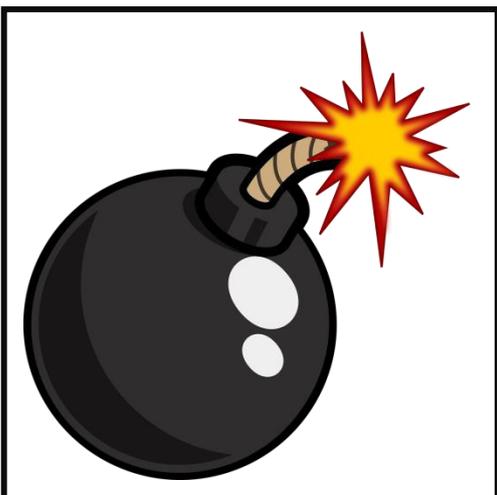
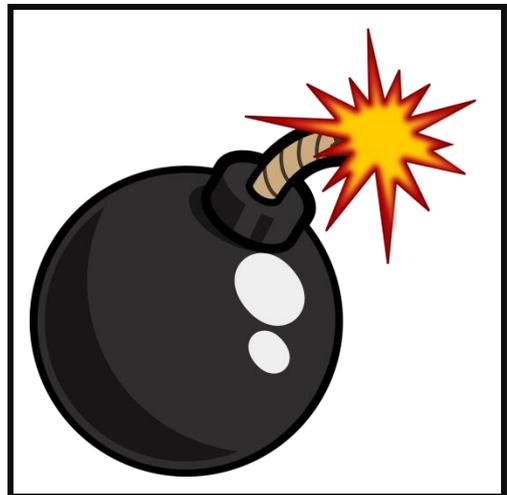
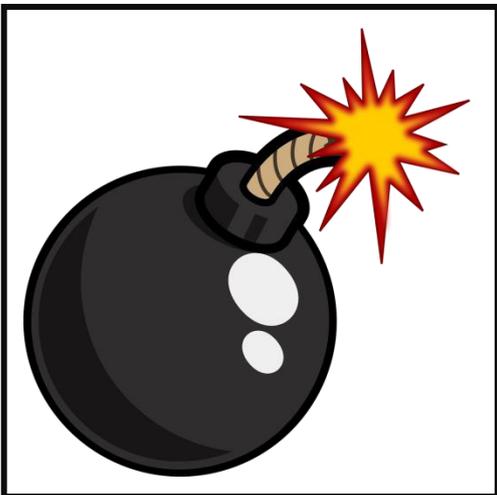
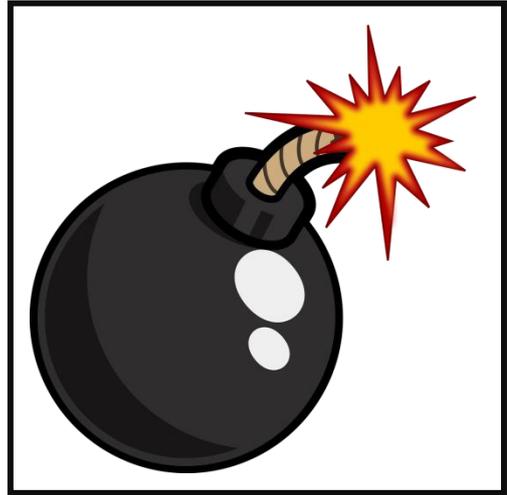
In response to the serious problem of illegal logging, in 2003 the European Commission adopted a European Union (EU) Action Plan for Forest Law Enforcement, Good Governance and Trade (FLEGT). The key regions covered by this plan account for almost 60% of the world's forests and are of great importance in the production of wood and by-products, as well as in the export of these products to the European Union. The first step of FLEGT is to guarantee the legality of the extraction and trade of wood and wood-related products. The plan focuses on public management reforms and training to export wood from the EU only from legal sources. A central element of this plan is trade agreements with timber exporting countries, known as Voluntary Association Agreements (AVA), to ensure legal timber trade and good governance of forests supported by partner countries (those AVA). Before starting to implement a FLEGT initiative, an AVA must be duly signed.

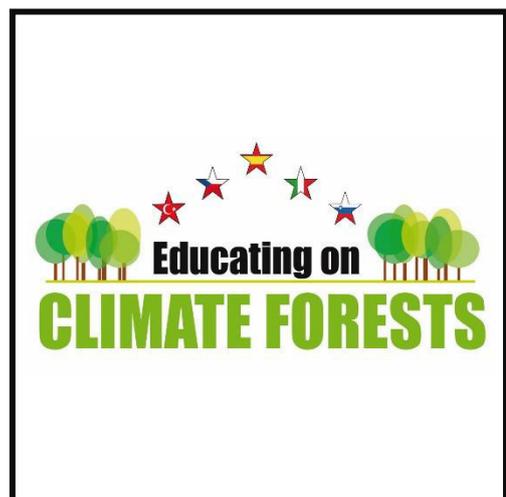
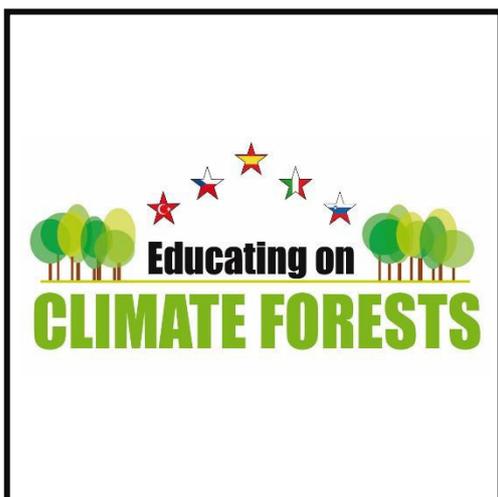
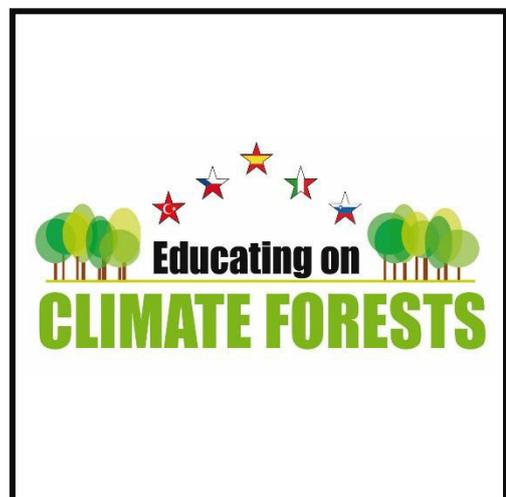
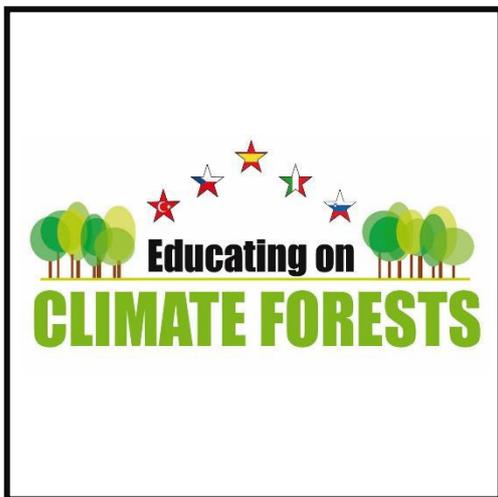
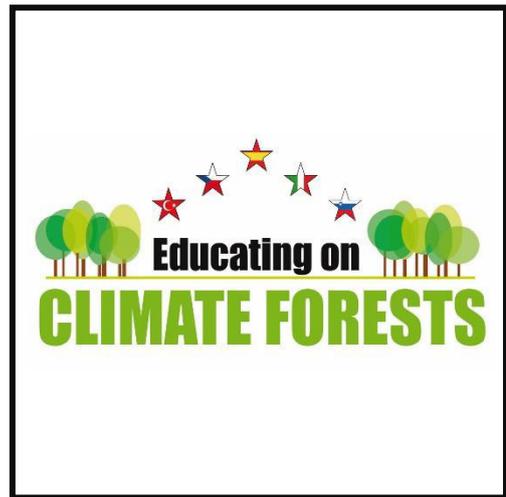
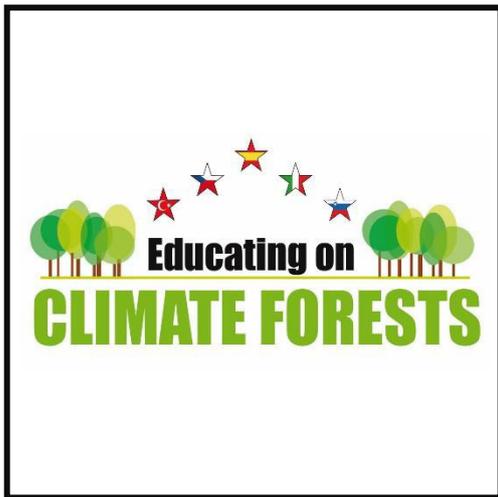
More info: <http://www.euflegt.efi.int/home/>.

## **ANNEX 3 - Question cards**

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Cards are available in the following pages.





1. What is illegal logging?

- a) It is the obtaining, processing, transport, buying or selling of timber in tropical countries.
- b) It is the obtaining, processing, transport, buying or selling of timber breaching the national and international regulations.
- c) It is the obtaining, processing, transport, buying or selling of timber following the existing legal regulation.

2. Which are the main environmental consequences of illegal logging?

- a) Deforestation, loss of biodiversity and greenhouse gases emissions.
- b) Loss of biodiversity, groundwater contamination and ozone depletion.
- c) Deforestation, loss of biodiversity and job destruction.

3. Tell us three social consequences of illegal logging:

- a) Increase of employment, better policy stability, less institutional corruption.
- b) Violence against local communities, human rights abuses, armed conflicts.
- c) Increase of poverty, corruption and family cohesion.

4. What % from all the wood traded globally is accounted by illegal logging?

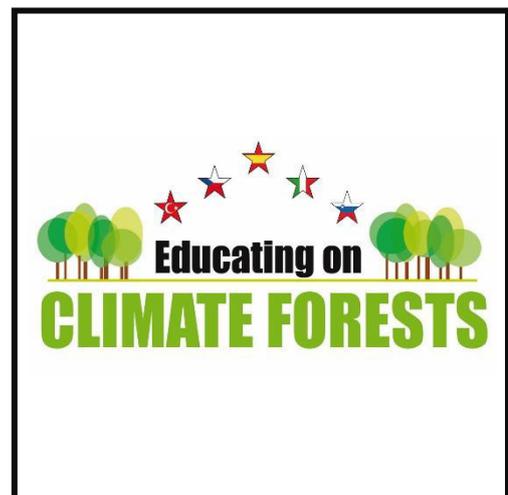
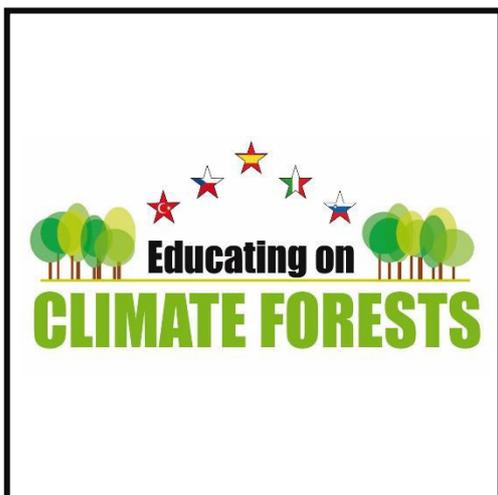
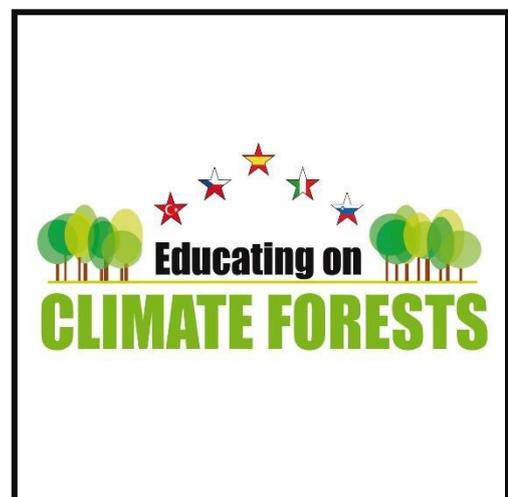
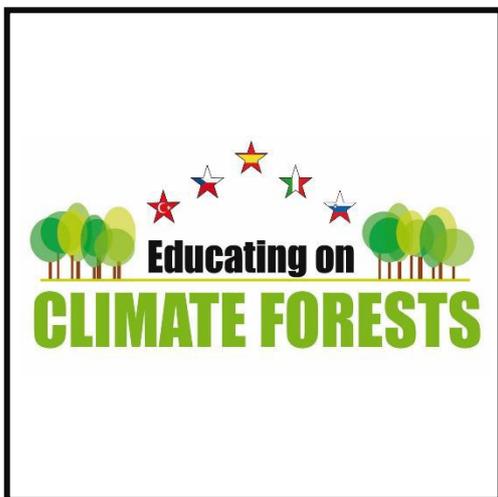
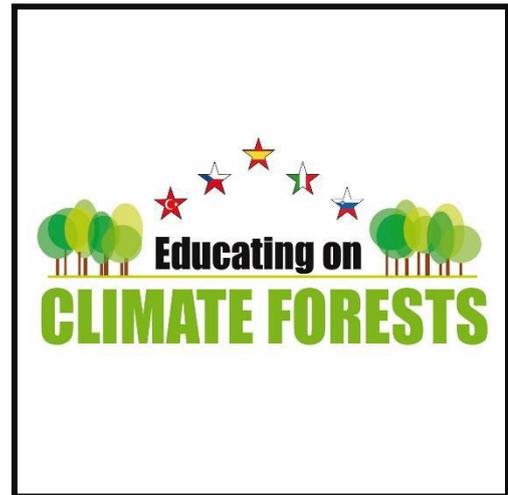
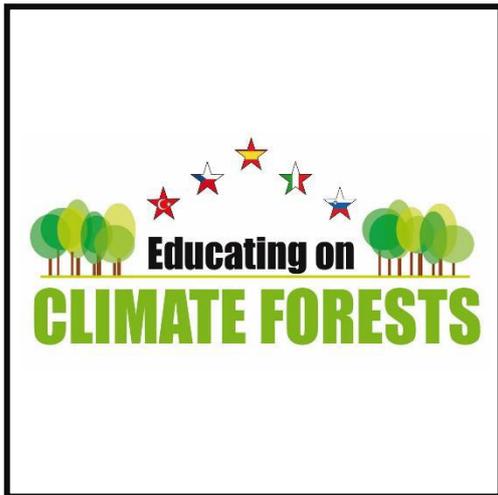
- a) 15-30%.
- b) 30-50%.
- c) 50-75%.

5. Which one is currently the most efficient mechanism that can be used to control and ensure timber legality?

- a) Genetic analyses of commercialized timber.
- b) External audits carried out by companies without any economic interest in the timber trade.
- c) Nowadays there is not any control in the timber trade.

6. Which one is the main wood products consumer in the world?

- a) Russia.
- b) European Union.
- c) USA.



7. How much of the timber consumed within the European Union is imported?

- a) 15%.
- b) 25%.
- c) 40%.

8. Which are the two countries in the tropical/temperate zone exporting more timber to the European Union?

- a) China and Brazil.
- b) China and Indonesia.
- c) Indonesia and Brazil.

9. How often do you think a person dies in the world fighting for the land (tenure) rights in connection with forest areas & natural resources?

- a) every 3 days
- b) every 27 days
- c) every 54 days

10. Which one of these options should not be a target of the timber legality control policies?

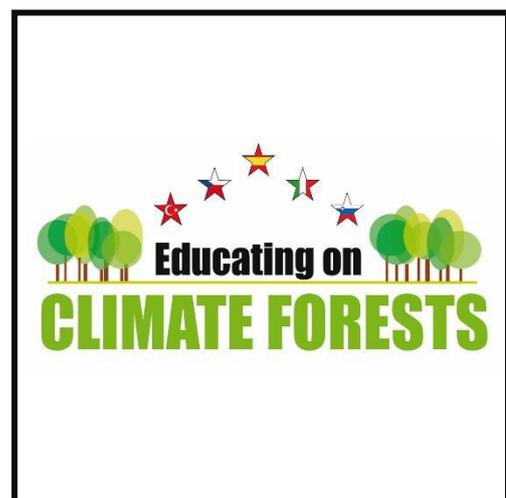
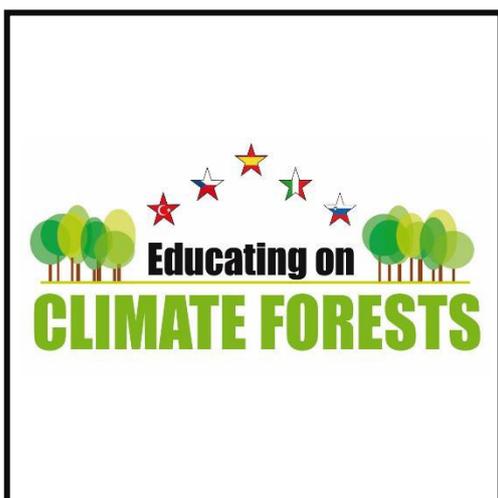
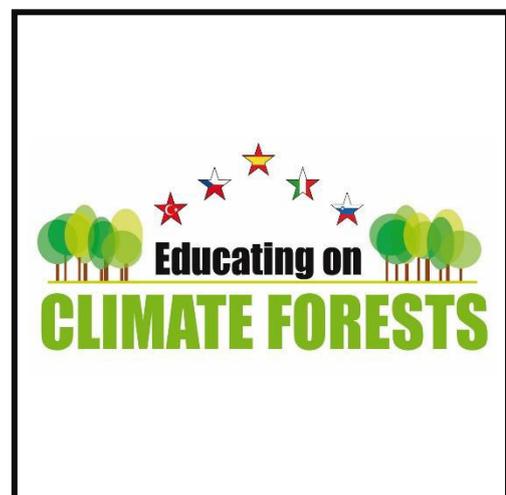
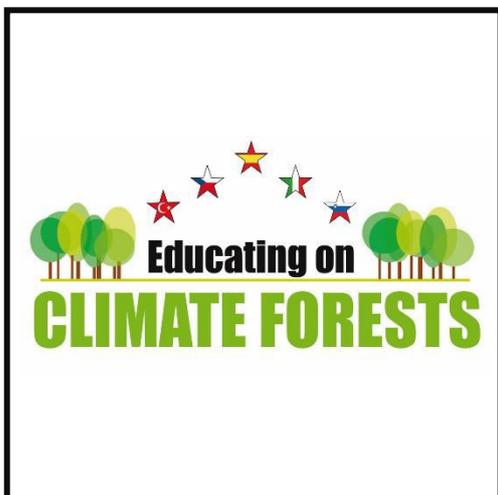
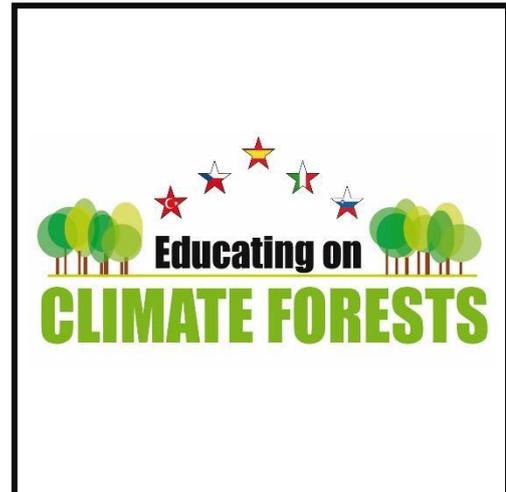
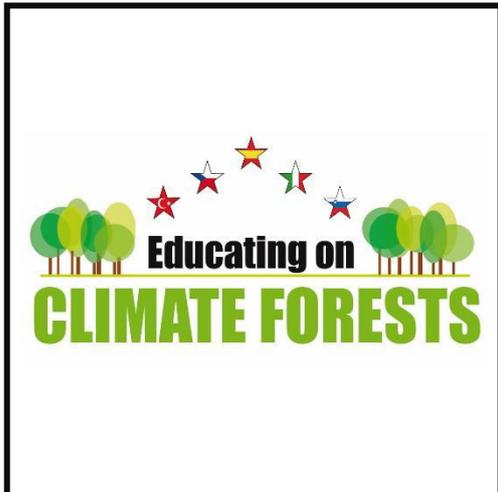
- a) To prevent the importation of illegal wood and to improve the legal timber supply.
- b) To damage the market to favour the forest policies interests.
- c) To increase the demand of timber produced in properly and sustainably managed forests.

11. What is the rank of the timber as a raw material in the global economic value?

- a) Second after oil.
- b) Third after oil and coal.
- c) Fourth after oil, natural gas and coal.

12. Which is the amount of money that you think world's illegal timber market accounts for?

- a) Between USD \$15 and \$50 billion annually.
- b) Between USD \$30 and \$100 billion annually.
- c) Between USD \$100 and \$150 billion annually.



13. Which of the following sentences is not a problem for illegal logging control?

- a) Reducing forest to expand the agricultural land for crops.
- b) Cutting forests to meet the demand of uncontrolled concessions for livestock (need for more agricultural land).
- c) Enforcement of the government's legislation and strong political determination.

14. Which one of the following reasons is not a problem to fight against the illegal logging?

- a) Lack of economic alternatives for local communities.
- b) Low demand of timber with high economic value.
- c) Widen corruption and lack of legal sanctions.

15. Which countries account the 80% of the timber global demand?

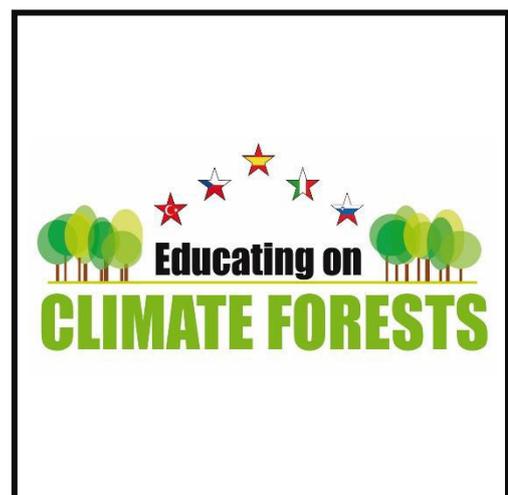
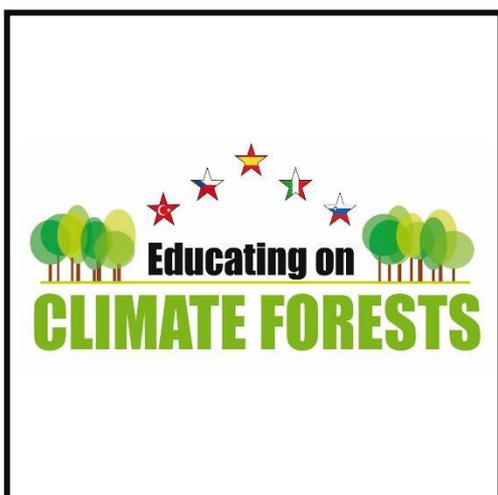
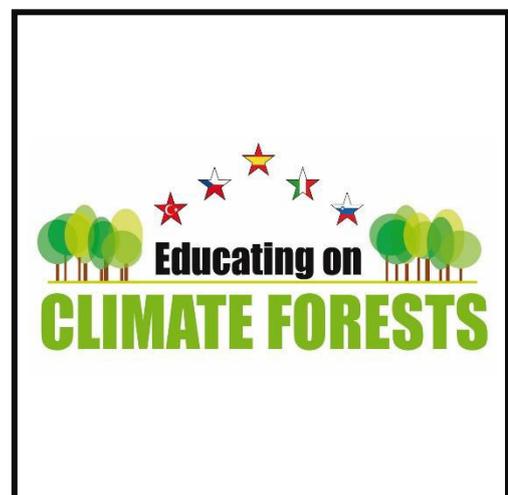
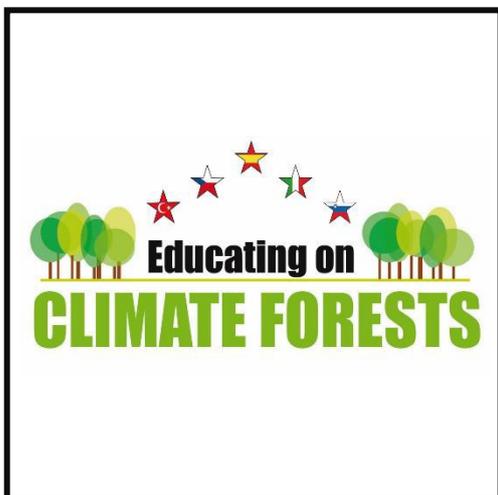
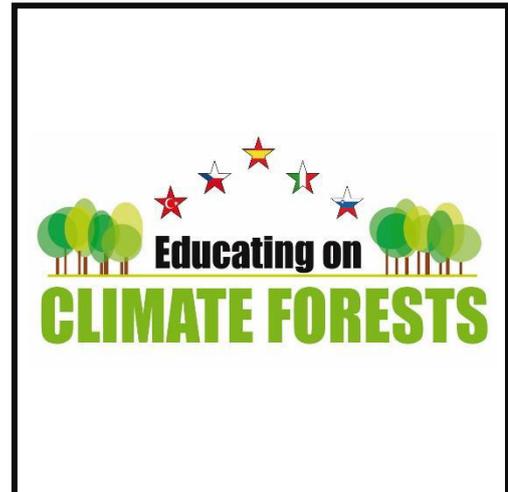
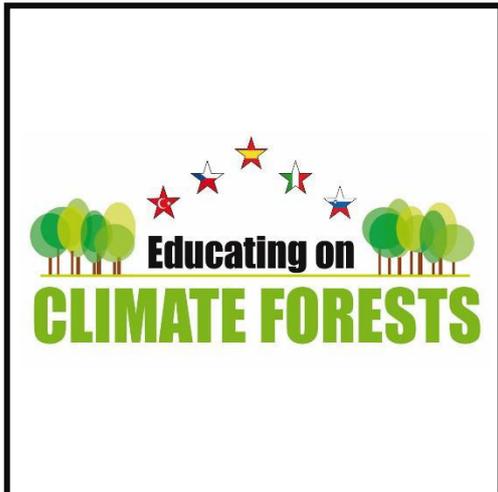
- a) USA, Canada, Japan, Vietnam, Australia and the EU.
- b) USA, Canada, Japan, South Korea, Taiwan and the EU.
- c) USA, Canada, Japan and the EU.

16. Apart from the legal regulations against illegal timber importation, which other two solutions should be taken by the governments to tackle the problem of illegal logging?

- a) To search about the way the local governments are implementing these regulations.
- b) To create laws to prioritize the needs of the private sector in order to increase the benefits from the timber trade.
- c) To work in a collaborative way both with timber traders and environmental organizations inside the timber market.

17. What does FLEGT means?

- a) Forest Livelihoods for Efficient Governance and Trade
- b) Funding for Local and Efficient Governance and Trade
- c) Forest Law Enforcement, Governance and Trade



1. What is illegal logging?

a) It is the obtaining, processing, transport, buying or selling of timber in tropical countries.

**b) It is the obtaining, processing, transport, buying or selling of timber breaching the national and international regulations.**

c) It is the obtaining, processing, transport, buying or selling of timber following the existing legal regulation.

Source: <https://www.illegal-logging.info>

2. Which are the main environmental consequences of illegal logging?

**a) Deforestation, loss of biodiversity and greenhouse gases emissions.**

b) Loss of biodiversity, groundwater contamination and ozone depletion.

c) Deforestation, loss of biodiversity and job destruction.

Source: <https://www.illegal-logging.info/>

3. Tell us three social consequences of illegal logging:

a) Increase of employment, better policy stability, less institutional corruption.

**b) Violence against local communities, human rights abuses, armed conflicts.**

c) Increase of poverty, corruption and family cohesion.

Source: <https://www.illegal-logging.info/>

4. What % from all the wood traded globally is accounted by illegal logging?

**a) 15-30%.**

b) 30-50%.

c) 50-75%.

Sources:

[http://wwf.panda.org/about\\_our\\_earth/deforestation/deforestation\\_causes/illegal\\_logging/](http://wwf.panda.org/about_our_earth/deforestation/deforestation_causes/illegal_logging/)

5. Which one is currently the most efficient mechanism that can be used to control and ensure timber legality?

a) Genetic analyses of commercialized timber.

**b) External audits carried out by companies without any economic interest in the timber trade.**

c) Nowadays there is not control in the timber trade.

Source: <http://www.economist.com/node/14492973>

6. Which one is the main wood products consumer in the world?

a) Russia.

**b) European Union.**

c) USA.

Source: <http://www.sadctrade.org/files/Wood%20and%20Wood%20products.pdf>

7. How much of the timber consumed into the European Union is imported?

a) 15%.

**b) 25%.**

c) 40%.

Source: <http://www.fao.org/3/a-ax983s.pdf>

8. Which are the two countries in the tropical/temperate zone exporting more timber into the European Union?

a) China and Brazil.

**b) China and Indonesia.**

c) Indonesia and Brazil.

Source: [https://www.cbi.eu/sites/default/files/market\\_information/researches/trade-statistics-timber-2016.pdf](https://www.cbi.eu/sites/default/files/market_information/researches/trade-statistics-timber-2016.pdf)

9. How often do you think a person dies in the world fighting for the land (tenure) rights in connection with forest areas & natural resources?

**a) every 3 days**

b) every 27 days

c) every 54 days

Source: [http://www.playgroundmag.net/noticias/actualidad/muertes-defensores-derecho-tierra-aumenta\\_0\\_1883211690.html](http://www.playgroundmag.net/noticias/actualidad/muertes-defensores-derecho-tierra-aumenta_0_1883211690.html)

10. Which one of these options should not be a target of the timber legality control policies?

a) To prevent the importation of illegal wood and to improve the legal timber supply.

**b) To damage the market to favour the forest policies interests.**

c) To increase the demand of timber produced in properly and sustainably managed forests.

Source: <https://www.youtube.com/watch?v=7MJZmzOh4Po>.

11. What is the rank of the timber as a raw material in the global economic value?

**a) Second after oil.**

b) Third after oil and coal.

d) Fourth after oil, natural gas and coal.

Source: <http://www.ecobosques.com/mercado-madera/>

12. Which amount of money do you think the world's illegal timber market accounts for?

a) Between USD \$15 and \$50 billion annually.

**b) Between USD \$30 and \$100 billion annually.**

c) Between USD \$100 and \$150 billion annually.

Source: [http://wwf.panda.org/about\\_our\\_earth/deforestation/deforestation\\_causes/illegal\\_logging/](http://wwf.panda.org/about_our_earth/deforestation/deforestation_causes/illegal_logging/)

13. Which of the following sentences is not a problem for illegal logging control?

a) Reducing forest to expand the agricultural land for crops.

b) Cutting forests to meet the demand of uncontrolled concessions for livestock (need for more agricultural land).

**c) Enforcement of the government's legislation and strong political determination.**

Source: <http://talailegal-anp.blogspot.com.es/2010/10/principales-dificultades-para-el.html>

14. Which one of the following reasons is not a problem to fight against the illegal logging?

a) Lack of economic alternatives for local communities.

**b) Low demand of timber with high economic value.**

c) Widen corruption and lack of legal sanctions.

Source: <http://talailegal-anp.blogspot.com.es/2010/10/principales-dificultades-para-el.html>

15. Which countries account the 80% of the timber global demand?

a) USA, Canada, Japan, Vietnam, Australia and the EU.

**b) USA, Canada, Japan, South Korea, Taiwan and the EU.**

c) USA, Canada, Japan and the EU.

Source: [http://www.agrobit.com/Documentos/H\\_1\\_Forestac/819\\_madera.pdf](http://www.agrobit.com/Documentos/H_1_Forestac/819_madera.pdf)

16. Apart from the legal regulations against illegal timber importation, which other two solutions should be taken by the governments to tackle the problem of illegal logging?

**a) To search about the way the local governments are implementing these regulations.**

b) To create laws to prioritize the needs of the private sector in order to increase the benefits from the timber trade.

**c) To work in a collaborative way both with timber traders and environmental organizations inside the timber market.**

Source: [http://wwf.panda.org/about\\_our\\_earth/deforestation/deforestation\\_causes/illegal\\_logging/](http://wwf.panda.org/about_our_earth/deforestation/deforestation_causes/illegal_logging/)

17. What does FLEGT means?

a) Forest Livelihoods for Efficient Governance and Trade

b) Funding for Local and Efficient Governance and Trade

**c) Forest Law Enforcement, Governance and Trade**

Source: <http://www.euflegt.efi.int/about-flegt>

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# Island Challenge

<b>Activity section:</b>	Forest Policies and Climate Change
<b>Type of activity:</b>	Outdoor
<b>Duration:</b>	85 minutes
<b>Materials:</b>	Big plastic bottles, water, chronometer, pencils, paper and chalk or rope (to draw the islands on the floor)

## LEARNING GOALS



- Raise awareness of the importance of good forest management and environmental conservation.
- Learn on the importance of teamwork to solve environmental problems.

## INTRODUCTION



Islands represent small ecosystems “isolated” from each other. In these types of environments, it may be very difficult to have access to some resources such as drinking water. In addition, it is very important that local communities properly manage natural resources, conserving and taking advantage of what they need. Community work is necessary to solve the environmental problems faced by these populations. An island is definitely a scenario where we can see more clearly what happens in the natural environment when we do not properly manage resources (water, forestry, fishing...).

## ACTIVITY DESCRIPTION



Firstly, the room should be prepared to develop the activity: a large central island and other 4 ones at the same distance from the central island (in Annex 1 the preparation of the activity scenario can be consulted).

Once ready, the lecturer will tell a story about the first inhabitants of the region that originally lived on a large volcanic island. This island experienced a huge eruption that created four new islands where new human communities started to settle.

Then, the lecturer will divide the participants into 4 groups that will occupy each of the created islands. Each group should decide a name for their island, write it on a paper and stick it on an empty big bottle. In addition, each group will think and share with the other groups the environmental

strategy they will follow to survive and how they will protect the island; for example, how they would manage the island's forests. The lecturers will be placed on the main island.

Once the rules of the game have been explained (see Annex 2), the game begins. When it finishes and it is known which island has won the game, a conflict will be proposed: one of the islands has cut down all its trees and faces a serious problem of erosion and biodiversity loss. The inhabitants of the island are in danger as they do not have enough natural resources now. All participants should work together to solve the problem. They should discuss the best strategy for recovering, preserving and managing the forest land. The lecturer will help out if participants are blocked. At the end, there will be a joint discussion about the learning and sensations obtained with the activity.

1. Preparation of the play scene, brief explanation of the activity and group formation. (15')
2. Each group names its island and thinks and shares its management strategy. (15')
3. Development of the game. (25')
4. Watering plants with the obtained water. (5')
5. Group conflict and resolution thereof. (10')
6. Joint discussion. At least the following questions must be answered. (15')
  - Have you found it easy to develop a management strategy for your island that allows a balance between consumption and conservation? Explain your impressions.
  - Do you know an example of a "collapse" in which some civilization has disappeared due to the exhaustion of its natural resources?

## SUGGESTIONS



- The lecturer can implement some questions based on the country where the activity will be implemented in. The lecturer can add more general knowledge question other than the two specific questions proposed.
- The lecturer can accept the closest answer as correct if there wasn't any other group that gave the correct response.
- This activity may be better implemented by two or three lecturers (one lecturer and two assistants etc.) in order to manage the game in a better way.

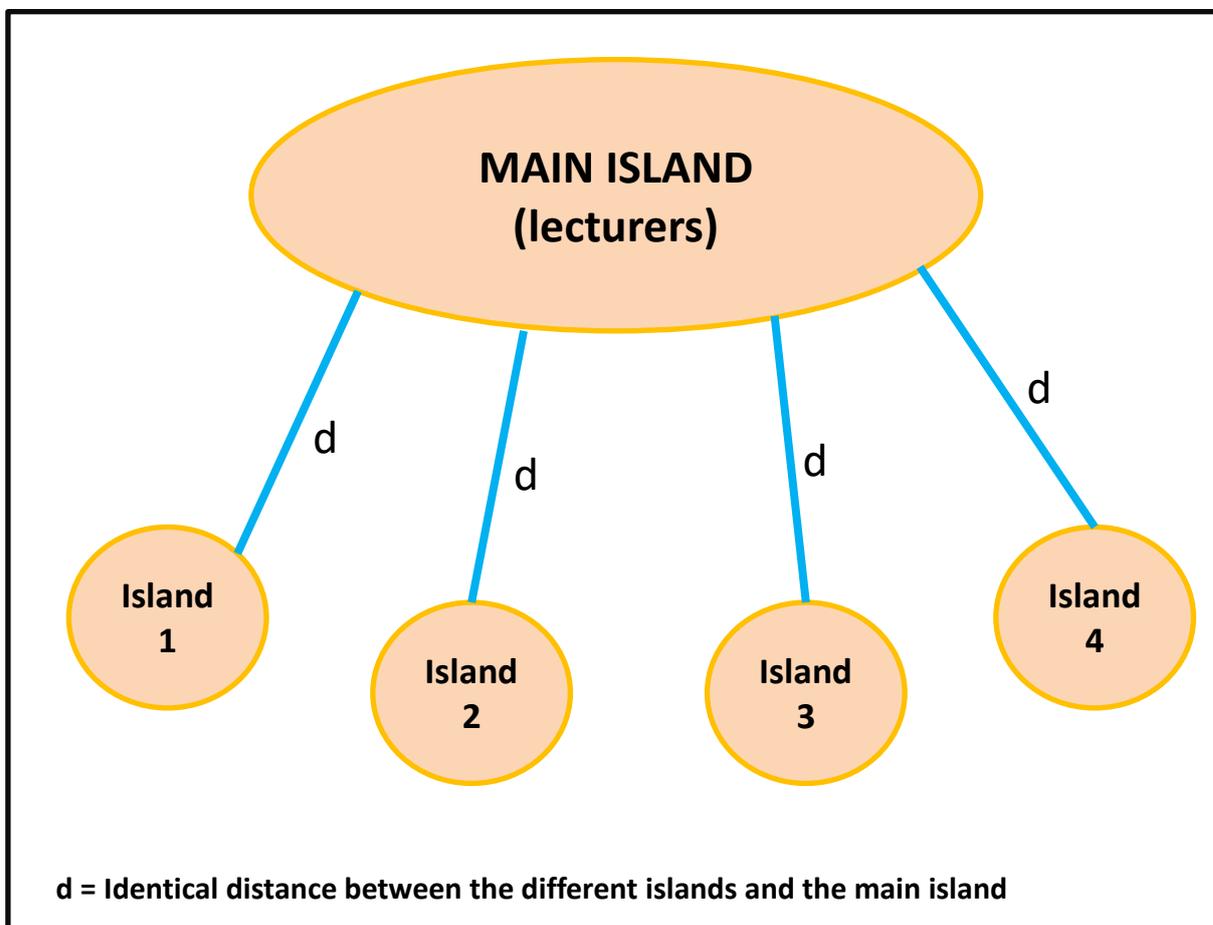
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**ANNEXES**

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**ANNEX 1 - Game scenario**

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**ANNEX 2 - Game rules**

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The objective of the activity is to get as much water as possible from the main island for your individual island. In order to obtain water, it is necessary to answer questions related to forest policies (see Annex 3). To do this, we imagine that each island has a boat and a boatman, which each group must choose. That person is the only one who can travel to the main island to answer questions and get the water. When the lecturer, from the main island, makes a question to the audience, the groups should discuss their response and when they think they know it, the boatman should run with the bottle to the main island and whisper the answer to the lecturer. If he succeeds, he will fill with water the boatman's bottle, which will return to his island. In case of not giving the correct answer, the boatman should return to the island without filling the bottle and consult again with the group to give more answers, until he gets the correct one or the time to answer the question is exhausted. In case of questions with numeric answers, the lecturer will tell the boatman "more" or "less" as an aid. Participants will have 1.5 minutes to give the correct answer. The lecturer will refill the bottles at the rate of 4 glasses for the first group who gives the appropriate response, 3

glasses for the second, 2 glasses for the third and 1 glass for the fourth. It is important that other groups do not become aware of each other's responses. In addition, the lecturer must respect the order of arrival on the main island to get a response as this will influence the order in which he gets a correct answer and therefore the amount of water that will receive each group.

Once all the questions have been asked, the winner will be the island that will have obtained more water. It is important to note that the water used in the game will be used to water plants and will not be wasted. That is why each group should be careful not to throw the water away.

### **ANNEX 3 - Questions and answers**

1. How much money in US dollars it is estimated to lose annually some of the world's poorest countries because of illegal logging?

R) 15 billion dollars.

2. Which is the largest consumer of wood products in the world?

R) European Union.

3. What percentage of wood consumed by the EU is imported wood?

R) 25%.

4. Which are the 2 tropical and / or temperate countries that export more wood to the EU?

R) China and Brazil.

5. What percentage of the total forest products market do you think comes from purchases made by EU public administrations?

R) 20%.

6. How much money in euros illegal timber trade accounts for?

R) 50 billion euros.

7. How often it is estimated that a person dies in the world fighting for land rights?

R) 3 days.

8. What percentage of the world's population uses wood as its main source of energy?

R) 75%.

9. What portion of the Earth's surface is covered by tropical forests?

R) 23%.

10. What percentage of primary forests (original) it is estimated to have been lost on Earth throughout the history?

R) 80%.

11. What percentage of CO2 emissions is due to deforestation and forest degradation?

R) 20%.

12. How much time does it currently take to deforest the surface equivalent to 36 soccer fields?

R) 1 minute.

13. To the size of which country is equivalent the forest and rainforest area deforested every year?

R) Portugal.

14. What is the main cause of deforestation in the world?

R) Agriculture.

15. What percentage of the forest is currently protected in the world?

R) 11%.

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# Forest Magazine

<b>Activity section:</b>	Forest Policies and Climate Change
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	120 minutes
<b>Materials:</b>	Flipchart sheets, press articles on existing forest policies to conserve forests and mitigate climate change, markers, glue and scissors

## LEARNING GOALS



- Know the instruments and measures useful to preserve forests and mitigate climate change.
- Share opinions on the importance of these instruments and measures.
- Evaluate personal and collective influence on the success of such instruments and measures.

## INTRODUCTION



Climate change does already have dramatic effects on forests, natural resources and people's livelihoods. The forestry sector has largely been a sector neglected by government policies, and forests have been exploited in an unsustainable way throughout history. This situation has led to the disappearing of many forest regions in an alarming way.

A useful forest policy should provide guidance and a line of action that must be followed for a certain period of time. It is an agreement between organizations representing different forest interests and it has been officially adopted by one Government or the sum of several Governments.

Policies to promote the organization of forest communities, investment in scientific research and training, and support for the establishment of state-of-the-art technology are required to achieve forest wealth conservation.

## ACTIVITY DESCRIPTION



For this activity, we will make groups of 2-4 people and imagine that we are the editors of a new journal on forest policies. We have been requested to create the cover of the first issue of this magazine. To do this, we will use press and/or scientific articles that collect news on forest measures and instruments for forest conservation and climate change mitigation. We will do a little research on this information, which will be used to create the cover of the magazine. The idea is to create posters with these covers and hang them in the classroom and present them to other participants.

1. Brief introduction on forest policies, their importance and the major types of existing measures for forest conservation and mitigation of climate change (see information in annex 1). (8')
2. Explanation of the exercise and delivery of informative material. (2')
3. Cover edition. (45')
4. Presentation of the covers to the rest of participants. (15')
5. Joint discussion on the learning of the activity (questioning). (20')
  - Have you felt connected with the subject matter? How important do you consider this topic is?
  - Did you know some of the measures learned during the activity? Would you propose any improvement on these measures?
  - Have you thought about the influence we have on the implementation of these measures?
  - What do you think is your personal and collective responsibility in this regard?
  - Could you give me some examples of actions of your day to day that support these measures?

## SUGGESTIONS



- If there is enough time, between step 4 and 5 we can add other 2 steps.
  - a) Discussion in pairs on the presented cover (10')
  - b) Share the conclusions of that discussion with the rest of the participants (20')
- The lecturer should encourage the groups about choosing/finding an appropriate cover of the magazine and the content to be included in their magazine.

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## ANNEXES

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### ANNEX 1 - Information of interest

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'Forest policy' could be understood as an agreement negotiated between the government and stakeholders (those individuals who depend on or derive benefits from forests, or those who decide, control or regulate access to those resources) about the orientations and principles of actions taken by them, in harmony with existing socio-economic and environmental policies, to guide and determine decisions on the sustainable use and conservation of forest and tree resources for the benefit of society.

A forest policy is not to be imposed unilaterally by a government. Therefore, it is crucial to know who will be involved in the development of the policy. Amongst the major types of measures for forest protection and mitigation of climate change, we could mention.

- Reconversion of deforested soils.
- Containment of deforestation.
- Conservation of essential primary forest areas.
- Reconversion of degraded areas into sustainable production systems.
- Increased competitiveness and innovation in productive forests.
- Assurance of long-term physical and financial sustainability.

### ANNEX 2 - Some examples

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#### EXAMPLE 1 (REFORESTRATION)

- Cao, S., Tian, T., Chen, L., Dong, X., Yu, X., & Wang, G. (2010). Damage caused to the environment by reforestation policies in arid and semi-arid areas of China. *AMBIO: A Journal of the Human Environment*, 39(4), 279-283.  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3357704/>
- New Collaboration Launched to Restore the World's Forests  
<http://www.unep.org/newscentre/new-collaboration-launched-restore-worlds-forests>

#### EXAMPLE 2 (VALORIZATION)

- Sustainable bioenergy systems to restore and valorize degraded land  
<http://www.cifor.org/library/6062/sustainable-bioenergy-systems-to-restore-and-valorize-degraded-land/>
- New wood fibre sourcing policy to help eliminate deforestation  
<https://www.unilever.com/news/news-and-features/Feature-article/2015/New-wood-fibre-sourcing-policy-to-help-eliminate-deforestation.html>

## EXAMPLE 3 (PROTECTION)

- Tropical forests will still exist in 2100 – but they will be a sorry sight  
<http://theconversation.com/tropical-forests-will-still-exist-in-2100-but-they-will-be-a-sorry-sight-46437>
- EU must act urgently on FLEGT and deforestation  
<http://www.fern.org/node/6040>
- United Nations agencies and the private sector partner to highlight progress for REDD+ implementation in Asia  
<http://www.un-redd.org/single-post/2014/05/06/United-Nations-agencies-and-the-private-sector-partner-to-highlight-progress-for-REDD-implementation-in-Asia>
- Forest conservation policies: what works and what doesn't  
<http://www.eco-business.com/news/forest-conservation-policies-what-works-and-what-doesnt/>

## EXAMPLE 4 (NATIONAL POLICY)

- Brazilian public policy to reduce deforestation and to implement Conservation Agriculture in the Amazon  
[http://aciar.gov.au/files/node/13994/brazilianpublicpolicy\\_cordeiro\\_pdf\\_42248.pdf](http://aciar.gov.au/files/node/13994/brazilianpublicpolicy_cordeiro_pdf_42248.pdf)
- Thailand's Deforestation Solution (October 16, 2014)  
<http://www.worldpolicy.org/blog/2014/10/16/thailands-deforestation-solution>

## EXAMPLE 5 (FUNDING)

- New Funding for Climate and Forests Protection  
<http://www.worldbank.org/en/news/press-release/2013/01/10/new-funding-for-climate-forests-protection>
- Reforestation pilot in China is earning carbon credits  
<http://www.worldbank.org/en/news/press-release/2012/12/28/reforestation-pilot-in-china-is-earning-carbon-credits>
- Financial leaders call for investor-friendly forest-carbon market  
<http://vea.gov.vn/en/icooperation/Projects/Pages/Financialleaderscallforinvestor-friendlyforest-carbonmarket.asp>

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# Logging Season

<b>Activity section:</b>	Forest Policies and Climate Change
<b>Type of activity:</b>	Outdoor
<b>Duration:</b>	60 minutes
<b>Materials:</b>	Candies (different kinds represent different wood types. E.g., pine, juniper etc.)

## LEARNING GOALS



- Understand in a practical way the social, environmental and climatic benefits resulting from the application of forest policies.
- Assess the degree of restriction of forest policies.

## INTRODUCTION



Policies that regulate the use of forest resources and permit the conservation of forests must have an initial research process for their correct planning. To this end, it must be developed a comprehensive forestry policy framework that is compatible with the socioeconomic, cultural, political and environmental conditions of the area where they are applied. In addition, they will be integrated into general sustainable land use forest programs and will involve stakeholders.

Sometimes these policies are not welcome as they tend to restrict the use of forest resources. However, taking care of the participation of a wide range of stakeholders involved from their initial planning, and supporting them with robust educational and awareness programs, these policies will have a greater probability of success.

## ACTIVITY DESCRIPTION



For this activity, participants will take the role of timber entrepreneurs from a little town in a rural area. The main purpose will be to get as much wood as possible (1 candy = 1 ton of wood) within 1 minute and under restriction levels (forest policies) given by different scenarios to be proposed during the activity. In scenario 1, there will not be restrictions and the participants can get as many tons of wood as possible (pick up all the possible candies); in Scenario 2, only 3 tons of wood can be obtained per participant; and in scenario 3, only up to 2 tons of wood of the species indicated by the lecturer can be obtained (each candy flavour will be a species).

Once the game ends, we will comment on what has been observed in each scenario.

1. Hide/spread candies through the space without being seen by the participants. (5')
2. Explain scenario 1 and begin logging. (2')
3. Hide/spread candies through the space without being seen by the participants. (5')
4. Explain scenario 2 and begin logging. (2')
5. Hide/spread candies through the space without being seen by the participants. (5')
6. Explain scenario 3 and begin logging. (2')
7. Joint discussion comparing the scenarios and sensations of the participants (questioning). (20')
  - When there were no restrictions, have you personally applied some kind of control to logging?
  - What are the advantages and disadvantages you observe in each scenario?
  - Do you think of any kind of scenario that is more beneficial from an environmental and climatic point of view? And from a social one?

## SUGGESTIONS



- Another possible scenario that could be included would be to add other kind of groups that take advantage of the forests and have different technical and economic capacities to the entrepreneurs/loggers. Based on that difference, they will have benefits or damages looking for candies (logging). For example, a multinational timber company will start looking for candies 5-10' before, and a neighbourhood community will look for candies jumping to the lame paw, etc.
- Using different type of candies may be more entertaining (each type of candy represents a different type grown in the area that the activity is implemented).
- The lecturer(s) should hide the candies before the participants reach the area.
- The lecturer(s) should be aware of that in 2<sup>nd</sup> and 3<sup>rd</sup> rounds of the game the participants will be in the area. Doing so, it may be a little difficult to hide candies.

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# The birthday party

<b>Activity section:</b>	Forest policies and climate change
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	45 minutes
<b>Materials:</b>	Pen, paper, cards with materials for sale [The list of materials, with their prices and certification status, can be found in Annex 1]

## LEARNING GOALS



- Know what forest certification is.
- Discuss the usefulness of forest certification and the sustainability of our daily purchases of products from forests.

## INTRODUCTION



It is estimated that 50% of tropical timber and 25% of Russian timber imported into the European Union is illegal. This implies breach of laws, falsification of documents and laundering of timber, theft of land, logging on public lands and/or processing of illegal timber from deforestation. Some woods are even accused of being involved in violence and intimidation, including death threats and corruption.

In the world there are initiatives and instruments to avoid the consumption of illegal wood. One example is forest certification. Forest certification ensures that the management of a forest or plantation is carried out in compliance with sustainability criteria. This is a voluntary process involving accreditation by an independent entity (certifying entity). These entities establish the requirements that the organization must meet in all its products from the origin to the final consumer. The organization can be any entity that cultivates, transports, manipulates or processes forest products at any stage.

Its goal is for the world's forests to meet the social, ecological and economic rights and needs of present generations without compromising those of the future ones.

## ACTIVITY DESCRIPTION



It is the birthday of a kid close to you and you are going to give him/her a surprise by celebrating a party in a park with all his/her friends. For the celebration you must buy the necessary products to

make it a birthday that s/he does not forget. To do this, the participants will go to the market to buy these products. They have 30€ of budget to prepare the event.

Each product and its price will be written on one side on paper cards and on the other side we will find out if the product has a forest certificate or not. The products will be upside down at a table and the buyers will point them on a sheet as they buy them but will not pick them up to not know if they are forest certificated or not. At the end of the purchase, we will analyse the purchased products, the impact of each of them and whether each purchase could be improved from the point of view of forest conservation.

1. Brief explanation of the activity. (5')
2. Purchases. (10')
3. Analysis of the purchases. (15')
4. Reflection on learning and feelings during the activity (the following questions should be answered). (15')
  - Would you spend more money on products certified for sustainability?
  - Do you think there are more economic and sustainable ways to celebrate the birthday?
  - Do you think that society is aware of the use of forest certificates?

## ANNEXES

## ANNEX 1 - List of products

Products	Price	Certificate
Confetti of pastel colours	0,90€/bag	No
Confetti of intense colours	1,50€/bag	yes
Bendable animals garlands	13,50€	yes
Bendable Disney garlands	10,90€	No
Posters of African animals	10,90€	No
Posters of wild animals	13,50€	yes
Paper letters of one colour	0,50€/unit.	No
Paper letters of many colours	0,75€/unit.	yes
Masks of Disney tales	0,50€/unit.	No
Masks of Disney Films	0,75€/unit.	yes
Origamis	6€	No
Assorted Origamis	8€	yes
Origami's planes	7,50€	No
Origami's Second World War planes	10€	yes
Napkins with drawing cakes	2,70€	No
Napkins with drawing balloons	3,50€	yes
Superhero pignata	3€	No
Animals pignata	5€	yes
Cutlery of white wood	4,5€	No
Cutlery of dark wood	6,5€	yes
Dishes of white paper	2,50€	No
Dishes of matte paper	3,50€	yes
Colour sheets	0,10€/unit.	yes
Papier-mâché	0,20€/unit.	yes
Glasses of laminate paper	1,95€	No
Glasses of laminate paper with hearts	2,75€	yes
Paper trumpet with blue streamer	0,75€/unit.	No
Paper trumpet with yellow streamer	1€/unit.	yes
Gift wrap of animals	0,80€/roll	No
Gift wrap of trees	1,50€/roll	yes
Paper tablecloths with cakes	3,95€/metre	No
Paper tablecloths with animals	4,50€/metre	yes

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# The pollsters

**Activity section:** Forest Policies and climate change

**Type of activity:** Indoor and outdoor

**Duration:** 120 minutes

**Materials:** Pens, paper

## LEARNING GOALS



- Know the level of knowledge that society has about forest certification.
- Explore existing communication channels on forest certification.
- Propose new alternatives to publicize forest certification among society.
- Determine the number of initiatives that the society incorporates in its day to day to reduce the impact that it has on the conservation of forests.

## INTRODUCTION



Forest certification is useful not only to reduce deforestation on the planet, but also to add value to the products extracted from forests and to multiply the economic opportunities of those areas. However, it is estimated that a great majority of the population does not know what forest certification is, and much less they buy wood products or wood-related products that fulfil criteria of a sustainably-managed forest. Given this situation, we should ask ourselves, is there insufficient publicity about forest certification and its benefits? Are the appropriate media used to reach consumers? Is the society interested and/or prepared enough about environmental problems, specifically forest conservation and climate change, as to receive the message of forest certification? These and other questions we will try to solve during the present activity.

## ACTIVITY DESCRIPTION



During this activity we will become pollsters to determine what knowledge society has about forest certification and whether it incorporates criteria of forest sustainability in their daily purchases.

We will create a questionnaire among all of us to see the degree of knowledge about forest certification (what it is, what types of certificates there are, where to find them, what products they carry, etc.), the impact we have on our forests (illegal logging problems, provenance of wood,

consumption in the world, Europe, etc.) and what actions we incorporate in our day to day to reduce the impact on forests (buying certified products, reducing paper consumption, etc.).

Then we will interview several people near the workplace (classroom). We will do this in pairs.

Finally, we will return to the workplace to share the results and our personal experiences and opinions.

1. Brief explanation of the activity. (5')
2. Creation of the questionnaire (in Annex 1 you can find some example of questions). (20')
3. Conducting surveys. (60')
4. Report results. (20')
5. Reflection on learning and feelings during the activity (the following questions should be answered). (15')
  - Do you think that society is sufficiently familiar with forest certification?
  - Do you think media is making enough publicity about the types of initiatives (i.e. buying certified products) that society can take to reduce the impact on forests?
  - Would you propose any alternative to improve the knowledge that society has about forest certification?

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## ANNEXES

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### ANNEX 1 - Examples of questions for the questionnaire

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1. Do you know the concept of "forest certification"? Yes/No.
2. Could you name some forest sustainability certification entities? Yes/No.
3. Do you know what FSC and PEFC are? Yes/No.
4. Do you know what a sustainability certificate is? Yes/No.
5. If yes, what type of sustainability certificates do exist?
6. Do you know products that incorporate the forest certificate? Yes/No.
7. Do you know the shops where you can find this type of products? Yes/No.
8. If yes, can you name one?
9. Do you buy these types of products in your day to day? Yes/No.
10. Do you carry out any kind of measures to reduce the pressure on forests and their effect on climate change in your life? Yes/No.
11. If Yes: can you give me an example?
12. If you have answered No: In the case of knowing practices against the pressure of forests and their effect on climate change, would you carry them out? Yes/No.
13. Would you know the difference between legal and illegal logging? Yes/No.
14. If yes, what is the difference?
15. Do you know where the bulk of the wood we consume comes from in the EU? Yes/No.
16. Which of the following countries do you think are the main wood producers for the EU? Indonesia, United Kingdom, Russia, Democratic Republic of Congo. (Here we might explain a little the main countries that export wood to the country where the activity is done).
17. From this amount, how much tropical wood do you think comes from illegal logging? 20%, 10%, 50% (this is the real one).
18. How much knowledge do you think society has in general about forest certification? Low / High / Medium / I do not know, no answer.
19. How much knowledge do you think society has about the impact we have on forests? Low / High / Medium / I do not know, no answer.
20. How important is the conservation of forests from 0 to 10? Being 0 nothing important to you and 10 very important.

21. How important is the fight against climate change? The same, 0 nothing important to you and 10 very important.

22. For people who find it important: what do you do in your day to day to contribute in this fight?

23. For people who doesn't find it important: what would make these problems more important in your life? More information / Make it easier to change behaviour by more respectful habits / Nothing, I'm not interested in the subject.

24. Do you think it is important that actions such as "forest certification" exist to halt deforestation in the world? Yes/No.

25. Has this survey helped you to become more aware of the origin of wood resources and their problems? Yes/No.

26. Were you aware of this problem before starting the survey? Yes/No.

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# Forest in a fishbowl

<b>Activity section:</b>	Forest Policies and Climate Change
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	90 minutes
<b>Materials:</b>	Role cards (Annex 1), newspaper articles, paper, pens, bowl ("fishbowl"), chairs

## LEARNING GOALS



- Encourage critical thinking on the benefits and risks of forest preservation.
- Encourage discussion on forest management from different perspectives and interests.

## INTRODUCTION



One of the main reasons for deforestation in the world is the change in the use of land. Numerous and important forests are cut down to allow economic activities other than forestry. Some of these activities are intensive monoculture farming (soybean, palm oil, etc.), extensive cattle ranching, mining or indiscriminate logging to produce timber or timber-related products.

In contrast, there are other more sustainable and forest-friendly practices that can benefit climate change mitigation. These activities are agroforestry, beekeeping, sustainable logging (selective logging), ecotourism, exploitation of natural fibres, etc.

Therefore, an adequate forest management can achieve significant results in reducing deforestation. It is necessary for governments to act in a sustainable way to conserve forests. However, many types of interests are involved and will try to stop the development of good economic forestry practices in favour of more profitable and short term ones that have greater negative impacts on our forests.

## ACTIVITY DESCRIPTION



This activity is based on a fishbowl technique. First, the group will be divided on four sub-groups (three to five participants). Each group will be given a role with different interests on forests management (Annex 1). In addition, newspaper articles with different economic practices carried out in forests (i.e. intensive monoculture farming, organic farming, beekeeping, extensive livestock farming, selective logging, indiscriminate cutting, etc.) will be provided. Each sub-group will read the same articles and will prepare the baseline (questions, doubts, suggestions, arguments etc.) for a

latter discussion and in accordance to the given role. Also, the lecturer should prepare some baselines for latter guided discussion (Annex 2). In the next step, all the cards created will be thrown into a "fishbowl" and the fishbowl discussion can begin (rules for the discussion are written in Annex 3).

1. Brief explanation of the activity, formation of working groups and assignment of roles. (5')
2. Reading and analysis of the delivered information. (30')
3. Creation of discussion baselines. (10')
4. Discussion. (55')
5. Reflection on learning and feelings during the activity; Annex 4. (10')

## **SUGGESTIONS**



- For a better understanding and discussion, articles on local issues/challenges should be used.
- Participants could be given an opportunity to choose the role they want to argue.
- The initial topic for the discussion could be presented differently (e.g. video, presentation, other).

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## ANNEXES

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### ANNEX 1 - Role cards

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#### **(a) Role 1: Member of an agricultural cooperative.**

Interests:

- Contribute to improve agricultural production, the social and economic level of farmers, rural communities and production systems to make them more environmentally sustainable.
- Double the yield of crops.
- Improve the genetic resources used by the primary sector.

#### **(b) Role 2: Representative of an environmental organization devoted to sustainable development**

Interests:

- Ensure human and labour rights as well as the implementation of good working practices in the agricultural and forestry sectors.
- Demand sustainable environmental business practices from the private sector.

#### **(c) Role 3: President of the association of food and health.**

Interests:

- Improve the quality of life of consumers by promoting a healthy lifestyle.
- Ensure the quality and safety of food products marketed.

#### **(d) Role 4: Executive director of a multinational corporation with suspicious practices.**

Interests:

- Use solid and innovative scientific knowledge and a responsible and effective management to offer high quality products that benefit his/ her company's customers.
- Maximize the benefits of the company regardless of the environmental and/or social impact that derives from his/ her actions.
- Control the strategic sectors of the society (i.e. energy, agriculture, water, food, etc.).

## ANNEX 2 - Questions for a joint discussion

1. The positive impact of soybean cultivation on job creation, food supply and the economy compensates the negative impact of deforestation.
2. Soy has only beneficial effects on health.
3. Soy as a staple food in the world is the solution to the problem of deforestation as we would reduce logging for livestock production.

## ANNEX 3 - Discussion rules

- 4 chairs (if there are 4 groups) are placed in the centre facing each other (see figure 1).
- The rest of chairs are placed in a circle around the 4 central chairs, surrounding them.
- One member of each group will sit on the 4 central chairs. The rest of the group will sit on the back chairs behind their leaders.
- Only people sitting on the central chairs can intervene in the discussion.
- Questions, doubts or suggestions to discuss will be taken from the "fish bowl" (from the cards that were created in the first phase of the activity).
- When a member of each team becomes blocked and without arguments to continue the discussion, some of his/her teammates will touch his/her shoulder and replace him/her in the central chair, exchanging seats.
- Each group has to discuss about the corresponding issue from the position that represents their role previously assigned.
- The lecturer should moderate the discussions so that they do not become too long and cumbersome. In addition, s/he should seek to encourage the participation of all members of the group.

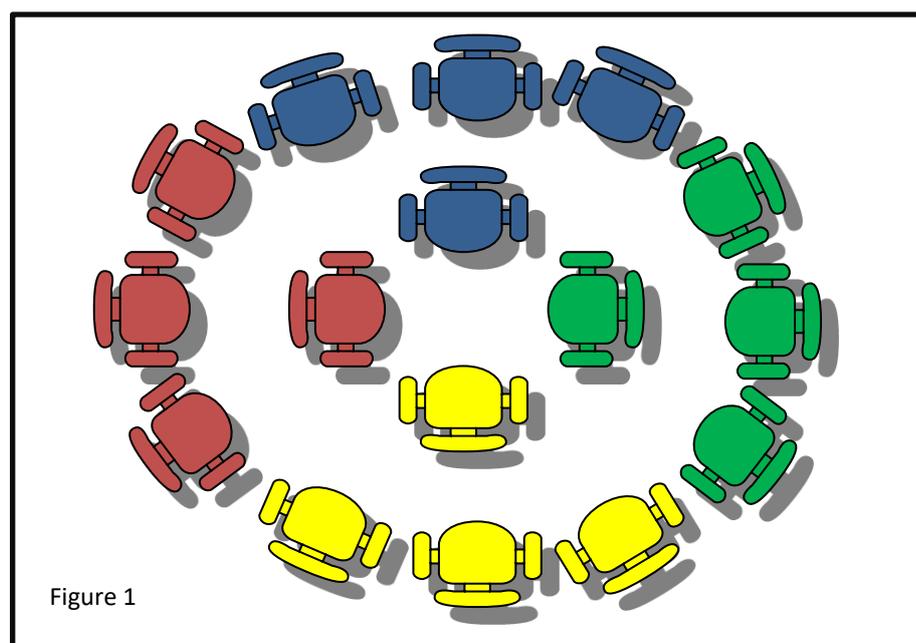


Figure 1

**ANNEX 4 - Questions to reflect about the activity**

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1. How comfortable have you felt discussing about the role assigned? Why?
2. Do you understand better the difficulties of preserving forests as a result of the different conflicts of interest?
3. What activities analysed do you consider to be more friendly to forest conservation?
4. What activities analysed do you consider to be the best contributors to the fight against climate change?

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# REDD+ cinema

<b>Activity section:</b>	Forest Policies and Climate Change
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	35 minutes
<b>Materials:</b>	A computer with internet connection, a slide projector and speakers

## LEARNING GOALS



- Know the mechanism for the mitigation of climate change, REDD+.
- Assess the risks arising from wrong implementations, especially violations of land rights of people living in forests.

## INTRODUCTION



REDD+ (**Reduced Emissions from Deforestation and forest Degradation**) is one of the most interesting international tools, but also the most controversial. The concept is simple: governments, companies or forest owners in Southern countries should be rewarded economically for maintaining their forests rather than logging them.

It is estimated that approximately 20% of total greenhouse gas emissions are produced by logging. The objective of this program is to combat these emissions through the development of sustainable forest management programs, putting in value the goods and services that forests add to the regions where they are and to their countries, focusing on communities and forest users.

REDD+ may entail some risks and drawbacks if it is not properly implemented, especially the violation of the land rights of people living in them.

## ACTIVITY DESCRIPTION



The methodology used for the development of this activity will be the discussion around the REDD+ mechanism. To do this, we will visualize two short videos about it (you can find links to these videos in the activity annex). Through the first one, we will learn in a very simple way what REDD+ consists of and through the second one we will know some of the risks that this mechanism involves if it is not implemented in the proper way. Afterwards, the visualization of each video will create a guided discussion in which participants should share their feelings and opinions about REDD+.

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The lecturers should follow the following steps:

1. Brief explanation of the activity. (5')
2. View of video 1: Introduction to REDD+. (4')
3. Discussion on the REDD+ mechanism. (10')
  - Did you know about the REDD+ mechanism? Do you know of any other similar mechanism?
  - Do you see the feasibility of REDD+ implementation? Do you think REDD+ can be an effective solution against climate change?
  - Can you think of any social and/or environmental risks that may arise from the application of REDD+?
4. View of video 2: The story of REDD+. (6')
5. Discussion on the REDD+ risks. (10')
  - Do you think REDD+ is currently being applied properly?
  - What instruments do you propose to ensure rights of local populations regarding their forests?
  - After watching this latest video, do you think REDD+ could be an effective solution to climate change?

## SUGGESTIONS



- Discussions can be replaced by a SWOT analysis. The lecturers can draw a table on a chalkboard and complete the analysis together with participants.

## ANNEXES

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### ANNEX 1 - Video links

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#### Video 1: Introduction to REDD+

- Spanish version: <https://www.youtube.com/watch?v=04TJh1hFXPg>
- English version: <https://www.youtube.com/watch?v=D0WeGw3h2yU>
- French version: [https://www.youtube.com/watch?v=4-su0\\_OMlyI](https://www.youtube.com/watch?v=4-su0_OMlyI)

#### Video 2: The Story of REDD: A real solution to deforestation?

- Spanish version: <https://www.youtube.com/watch?v= U6y-NPP2XU&t=1s>
- English version: <https://www.youtube.com/watch?v=7MJZmzOh4Po>

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# The REDD+ game

**Activity section:** Forest Policies and Climate Change

**Type of activity:** Indoor or outdoor

**Duration:** 90 minutes

**Materials:** Game board, 1 dice, 5 different tokens, 5 cards with different roles and their corresponding interests, cards with 4 types of tests (quiz, taboo, drawing, mime), 5 numbered cards with a conflicting question, 1 hourglass, paper and pencil (materials can be found in activity annexes)

## LEARNING GOALS



- Acquire new concepts on forests and REDD+ through the game.
- Check closely what interests are flying over a REDD+ initiative.
- Know the consequences derived from the decision-making process of the implementation of REDD+.

## INTRODUCTION



REDD+ is a United Nations mechanism designed to mitigate climate change through the reduction of deforestation and forest degradation. This mechanism involves a large number of different stakeholders from their planning to their evaluation and monitoring.

By involving such a broad range of interests, REDD+ can result in a variety of scenarios with better and worse consequences for social rights, environmental quality and climate objectives pursued by the program. Currently, there are studies comparing several ongoing REDD+ initiatives. These determine that the implementation processes and the results obtained by these initiatives vary depending on many factors such as: the type of previous use of REDD+ forests, the type of organization that implements the REDD+ mechanism (companies with Non-profit NGOs or the public sector) or the type of funding (public funds, philanthropy or private funds).

## ACTIVITY DESCRIPTION



For this activity we will play a board game in which participants will have to make decisions about conflicts that arise from the implementation of a REDD+ initiative. Once the game is finished, we will open a discussion that analyses the learning and sensations of the activity.

To do this, we will divide the group of participants into 5 teams of 2-5 players. Randomly, they will be given a role card based on which they will make decisions during the game. The team with role number 1 will start and the order will be clockwise. Each team will advance according to the value of each dice roll. When falling in boxes the team will be submitted to a test that must not exceed in the maximum time of 30 seconds (using a little hourglass). If they pass the test, they will throw the dice again and a new test will take place. The maximum number of throws per team is 2 per turn.

If a team falls or goes through a conflict-box, all teams must make a decision based on the interests marked by their role-card. The answer to the conflict will add up to a number of points indicated. In this way, each team will get a number of different points depending on the decisions made during the game. Based on these points, the goal achieved will be one type of scenario or another. When teams make a decision, they have to say what their roles are and why they have chosen the selected option. Each conflict question will be formulated to participants just once, when the first team falls or goes through the corresponding conflict-box.

The idea is not to obtain a winner but to transmit to the participants that depending on the interests of each actor and the decisions made during the implementation of a REDD+ initiative, the results will be very different.

1. Playing the board game. (70')
2. Discussion of experienced sensations and scenarios resulting from decision-making during the game. (20')
  - Did you feel identified with your role? Why?
  - Do you understand better the reasons for the decisions that key stakeholders can make in a REDD+ process?
  - Do you think that instruments could be created to cover the greatest number of interests raised during the game?

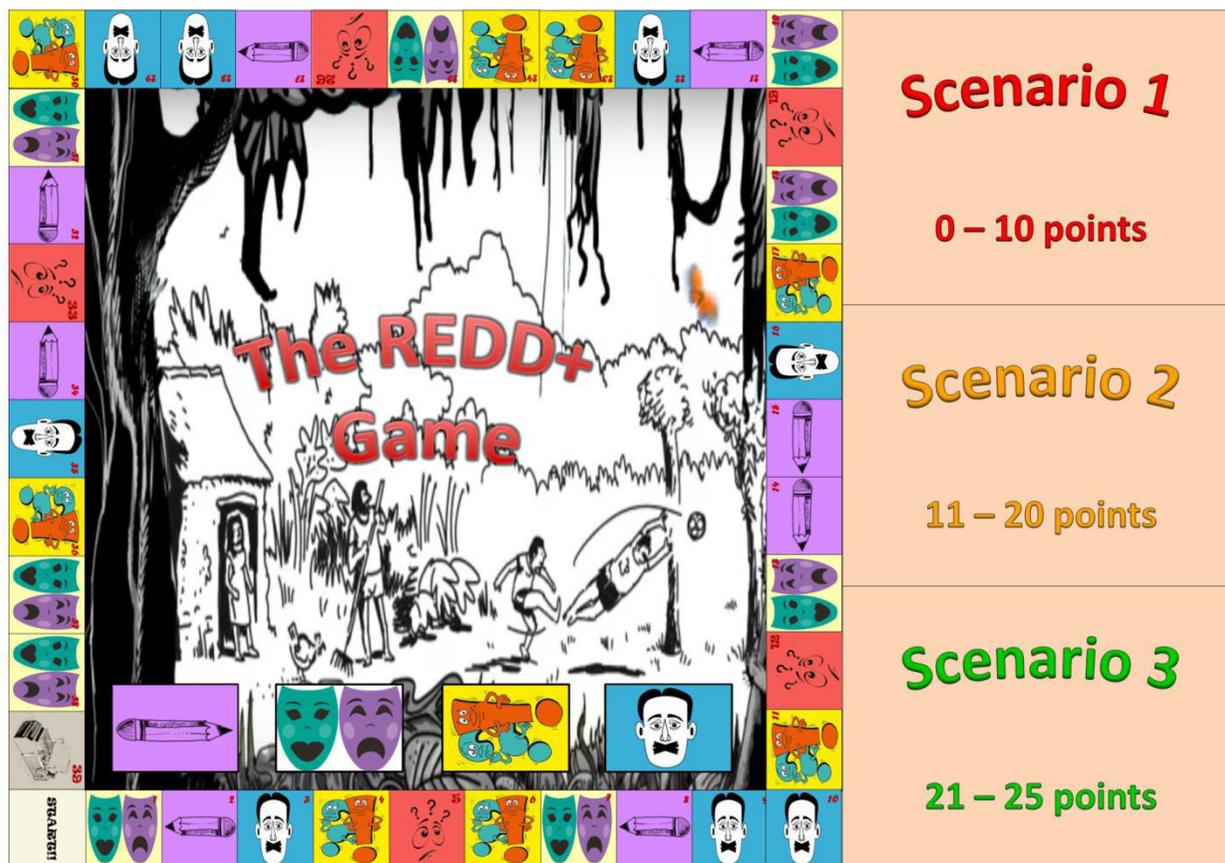
## SUGGESTIONS



- This activity should be carried out after conducting the activity “REDD+ Cinema”.
- If the number of participants is very low, scientific and activist roles can be removed in that order.
- It might be useful not to explain the role so much. By this way, participants can choose the aptitude of their roles.
- It could be interesting to add a global scenario with the sum of all points. Depending on the total amount of points, the whole REDD+ process will achieve different results.

ANNEXES

ANNEX 1 - Game board (65 cm x 45 cm)



## ANNEX 2 - Game tokens



## ANNEX 3 - Scenarios

**Scenario 1:** Integration of the ecological value of the forests and the green social policy

- reduction of deforestation and forest degradation
- increase of carbon stocks
- mitigation of climate change
- participation of all the interested parties in a REDD+ process
- equitable and fair distribution of REDD+ benefits
- conservation of the biodiversity and ecosystem dynamics
- respect for the rights of the local populations that lives in/from the forests

[21-25 points]

**Scenario 2:** Forest and governability: the oblivion of the climate change

- reduction of deforestation and forest degradation
- increase of carbon stocks
- mitigation of climate change
- unrepresentative participation of the interested parties in a REDD+ process
- inequitable and unfair distribution of REDD+ benefits
- some indications of institutional corruption

[11-20 points]

**Scenario 3:** Forest and Economic Growth: the climate change trap

- reduction of deforestation and forest degradation
- increase of carbon stocks
- mitigation of climate change
- process planned by few stakeholders
- unfair distribution of REDD+ benefits
- widespread corruption

[0-10 points]

**ANNEX 4 - Roles**

**Role 1:** The leader of an indigenous group of the region affected by the REDD+ process.

Interests:

- protect the ancestral knowledge of her community and neighbours
- secure the sustainability of forest resources in order to be used by future generations
- reduce the presence of foreign capital in the area
- minimize influence of the private sector over the indigenous communities on the area, including her own one
- show the role of her community in the forest conservation
- encourage the participation of all the indigenous people in all measures or policies concerning their lands
- fight for the land tenure rights that should have the indigenous people living in this forest since immemorial times

**Role 2:** Representative of an environmentalist organization from an industrialized country.

Interests:

- protect the green values and biodiversity of the forest or any other natural ecosystem
- fight for the sustainable development of the local communities that lives in the forests
- guarantee the access of local communities to basic infrastructures
- encourage the use of fair and transparent practices by the government

**Role 3:** Corrupt leader of the local government.

Interests:

- get enough reputation among the local population in order to win the next elections
- obtain funds for her election campaign
- secure the quality of life (present and future) of his family
- implement actions from the government that become inexpensive in the short run
- maintain a closed system of making decisions in which experts and public leaders have the final decision

**Role 4:** Scientist specialized in mitigation of climate change.

Interests:

- progress in the fight against climate change as a main goal
- minimize the CO2 deforestation emissions
- improve the reservations of forest that better works as a carbon stock
- climate change is the bigger problem that society has to face, and we must sacrifice things in order to fight against it

**Role 5:** Executive director of an international corporation with suspicious practices.

Interests:

- priority number 1 = to minimize costs, to maximize benefits
- REDD+ is an opportunity to make business
- if we plan our strategy well, the REDD+ mechanism can position us as a corporation engaged against the climate change
- any action is acceptable as long as allow us to have more economic control and influence on the region
- big experience in carbon markets in previous initiatives (before REDD+)

## ANNEX 5 - Example of role cards

**LEADER OF AN INDIGENOUS GROUP  
OF THE REGION AFFECTED BY THE  
REDD+ PROCESS**



INTERESTS:

- \* To protect the ancestral knowledge of her community and neighbors.
- \* To secure the sustainability of forest resources in order to be used by future generations.
- \* To reduce the presence of foreign capital in the area.
- \* To minimize influence of the private sector over the indigenous communities on the area, including her own.
- \* To show the role of her community in the forest conservation.
- \* To encourage the participation of all the indigenous people in all measures or policies concerning their lands.
- \* To fight for the land tenure rights that should have the indigenous people living in this forest since immemorial times.

**REPRESENTATIVE OF AN ENVIRON-  
MENTALIST ORGANIZATION OF DE-  
VELOPMENT COOPERATION FROM AN  
INDUSTRIALIZED COUNTRY**



INTERESTS:

- \* To protect the green values and biodiversity of the forest or any other natural ecosystem.
- \* To fight for the sustainable development of the local communities that lives in the forests.
- \* To guarantee the access of local communities to basic infrastructures.
- \* To encourage the use of fair and transparent practices by the government.

### CORRUPT LEADER OF THE LOCAL GOVERNMENT



#### INTERESTS:

- \* To get enough reputation among the local population in order to win the next elections.
- \* To obtain funds for her election campaign.
- \* To secure the quality of life (present and future) of his family.
- \* To implement actions from the government that become inexpensive in the short run.
- \* To maintain a closed system of making decisions in which experts and public leaders have the final decision.

### SCIENTIST SPECIALIZED IN MITIGATION OF CLIMATE CHANGE



#### INTERESTS:

- \* To progress in the fight against climate change as a main goal.
- \* To minimize the CO2 deforestation emissions.
- \* To improve the reservations of forest that better works as a carbon stock.
- \* Climate change is the bigger problem that society has to face, and we must sacrifice things in order to fight against it.

### EXECUTIVE DIRECTOR OF AN INTERNATIONAL CORPORATION WITH SUSPICIOUS PRACTICES



#### INTERESTS:

- \* Priority number 1 = to minimize costs, to maximize benefits.
- \* REDD+ is an opportunity to make business.
- \* If we plan our strategy well, the REDD+ mechanism can position us as a corporation engaged against the climate change.
- \* Any action is acceptable as long as allow us to have more economic control and influence on the region.
- \* Big experience in the carbon markets in previous initiatives (before REDD+).

## ANNEX 6 - Content of test cards

### Mime:

Leaf, photosynthesis, land tenure, exclusion, assembly, mushroom, corn, environment, root, home, forest policy, climate change, negotiation, worm, nuts, resin, medicinal plants, berries, path, indigenous people, jungle, honey...

### Drawing:

Storm, to burn, coffee plant, solar radiation, wildfire, extinction, human rights, pollen, Machu Picchu, global warming, biodiversity, walnut, worm, rotting, emission, crust, cork, isolation, participation, influences...

### Taboo (forbidden words are between brackets):

palm (date, coconut, tree, monkey, tropical), mosquito (bite, scratch, repellent, spiral, insect), fire (burn, put out, fire, light, firefighter), mud (rain, soil, water, silt), fire (match, lights, bonfire, burn, firewood), oxygen (breath, air, atmosphere, hydrogen, gas), arrow (arch, feather, throw, crossbow, indigenous), forest (plants, trees, animals, wood, jungle), ant (insect, eat, garden, plants, line), antecedent (family tree, descendant, families, grandfather, ancestor), pollen (flowers, bee, butterfly, plant, dust), coffee (cup, bean, grind, black, filter), walnut (fruit, tree, Christmas, almond, hazelnut), association (club, group, organization, society, company), nature (air, green, animals, mountains, trees), activist (politician, supporter, right, student, protest), seed (plant, irrigate, soil, flower, grown), firewood (fireplace, smoke, fire, wood, burn), water (liquid, drink, take, thirst, bottle), landscape (travel, field, panorama, horizon, view), tree trunk (tree, firewood, wood, branch, limb), scientist (discovery, experiment, laboratory, microscope, pipe), wood (log, trunk, carpenter, trees, felling)...

### Quiz (right answer bolded):

1. Most part of the forestry fires are caused by:

a) Natural perturbations / b) Meteorological conditions / c) **Human being**

2. ¿What's the percentage of population using wood as principal energy source?

a) 55% / b) **75%** / c) 86%

3. ¿What portion of the Earth's surface is covered with tropical forest?

a) 12% / b) **23%** / c) 39%

4. ¿What's the percentage of primary forest (original) that has been lost on Earth throughout history?

a) 35% / b) 60% / c) **80%**

5. ¿What's the percentage of CO2 emissions due to deforestation and forest degradation?

a) 10% / b) **20%** / c) 35%

6. ¿How much time is currently taking to deforest the surface equal to 36 football camps?

a) **1 minute** / b) 10 minutes/ c) 1 hour

7. ¿To the size of whom country equivalent the portion of forest and jungle deforesting each year?

a) **Portugal** / b) Spain / c) Italy

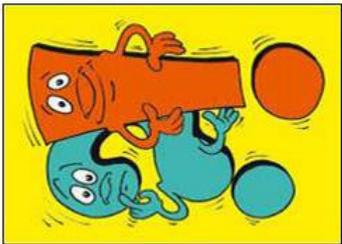
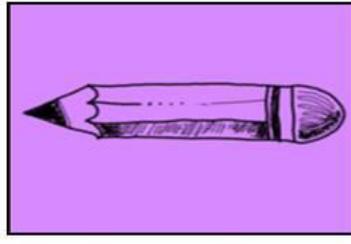
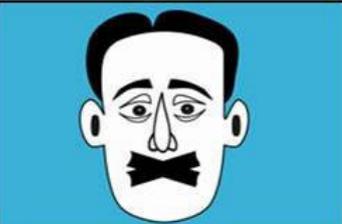
8. ¿What is the main cause of deforestation in the world?

a) Farming / b) paper industry / c) **Agriculture**

9. ¿What percentage of forest is currently protected in the world?

a) **11%** / b) 21% / c) 31%

### ANNEX 7 - Example of test cards

<p>What percentage of forest is protected in the world at this moment?:</p> <p>a) 11%</p> <p>b) 21%</p> <p>c) 31%</p>		<p><b>CORK</b></p>	
<p><b>NUT</b></p> <p><b>FRUIT</b></p> <p><b>TREE</b></p> <p><b>CHRISTMAS</b></p> <p><b>ALMOND</b></p> <p><b>HAZELNUT</b></p>		<p><b>LEAF</b></p>	

## ANNEX 8 - Conflictive questions

**Conflict 1:** A work meeting with a round table is going to be organized in order to explain and plan ahead a REDD+ process that is starting in your region. You are the person in charge of the diffusion of the event between a sort of groups and areas. To whom you will send the invitation?

- a) I will send the invitation to the greatest number of representatives in order to cover a large rank of organizations that may be interested, including public and private stakeholders and local groups and defenders of environmental and human rights in the region. I will also invite to academics of the universities and local institutes experts in climate change and biological conservation. [5 points]
- b) I will invite to representative of a large rank of sectors but I will avoid some timber corporations that have degraded our forests in recent years. [4 points]
- c) I will invite to representative of various sectors but giving importance to the private sector because is the one that has more financial resources. [3 points]
- d) I will invite to representatives of every sector that has traditionally cooperated with us or share our interests, and for that reason they will be easily influenced. [1 point]

**Conflict 2:** The REDD+ process is being organized and is the moment to plan how its actions are going to benefit the different sectors.

- a) The local population will have economical choices of exploitation of the forest in order to stop the deforestation, such as the use of fruits or medicinal plants. Regarding private corporations that operate in the region, they will receive trainings and incentives to improve the technology they use and change their productive models to other more sustainable ones. A payment wallet for ecosystem services will be created and will compensate to the families that reduce their incomes as a result of the cease of deforestation. [5 points]
- b) Benefits will be shared with all the interested parties but a dense bureaucratic system will be created in exchange. This will allow a bigger fund collection by the public administration even when this will reduce the final incomes that populations living in the forest would receive and complicate the REDD+ process. [3 points]
- c) Benefits will be focused on the sale of emission rights by the big corporations that will pay to certifying authorities of suspicious partiality in order to declare the REDD+ process social and environmentally managed. Most part of the funds will be received by non-local intermediates and the greatest benefit will be for the corporations that sell emission rights. [1 point]

**Conflict 3:** The decision-making of REDD+ process is a key aspect. How do you want it to be made in your region?

- a) The decision-making will be done in a horizontal way, through the organization of regular meetings in order to monitor the process. Three working groups will be made and they will deal separately

with economic, environmental and social aspects. The decisions of each working group will have the same importance in order to guarantee the best integration of the REDD+ process. [5 points]

b) The decisions will be made by the proper public administration because they have already been chosen democratically by the local population. This will guarantee a bigger representation. [3 points]

c) The decision making will be done by experts in climate change in order to get that REDD+ process guarantee the reduction of emissions and the production of the greatest number of emissions rights. The experts and scientists groups can be employed by third parties. [1 point]

**Conflict 4:** A zone of the forest that the REDD+ process will protect is occupied by a non-contacted indigenous ethnic that carries out non-compatible practices with REDD+. How will you include this area in the REDD+ actions?

a) I will try to move this ethnic group to a similar area because the REDD+ benefits is bigger for a bigger number of people than the damage that this action may cause in this little number of people. [1 point]

b) I will encourage the discussion with the leaders of this ethnic group in order to change their ancestral practices of forest exploitation to include this area in REDD+ reservation. [2 points]

c) Contact an ethnic group that doesn't want to be contacted is a deprivation of rights. There will be a reconsideration of the strategy and possibly dismiss this area. [5 points]

**Conflict 5:** Recent inventories show that other areas, different of those chosen in our region for REDD+, have more biodiversity and have more complex ecosystem functionalities. However, these areas have a considerably lower amount of carbon compared to the ones that we selected in our REDD+ process. Do you think it is better to reconsider the delimitation of the forest we are protecting by REDD+?

a) The main objective of REDD+ is to reduce climate change and for that, we need to distrain the larger quantities of carbon concentrate as possible. The REDD+ areas will remain the same. [1 point]

b) We should make a study of the cost of protecting each type of area and if it is worthwhile to protect these areas with more biodiversity. Then, we can review the REDD+ protection area. [2 points]

c) REDD+ must contain environmental safeguards and avoid the escapes, meaning that protecting a forest does not mean to increase the pressure over another one. If it happens, we have to be sure that we are minimizing the deforestation as well as preserving the largest number of species. We should review the studies and try to reach a balance that would allow us to protect the areas with more biodiversity and better capacity of atmospheric carbon retention [5 points]

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# Political salad

<b>Activity section:</b>	Forest Policies and Climate Change
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	25 minutes
<b>Materials:</b>	108 cards (see Annex 1), container/box, pencils and paper

## LEARNING GOALS



- Learn forest policy concepts actively and creatively.
- Learn the importance of teamwork.

## INTRODUCTION



The subject of Forest Policies and Climate Change may be new for a large number of people. To carry out some conclusive activity that allows reviewing the concepts learned during the previous ones is vital to strengthen them and to have a more real perception of the treated topic. To do this, we bring as the last activity "Political Salad", which is nothing more than a flurry of words and concepts learned to refresh the participants' memory to the workshops on Forest Policies and Climate Change.

## ACTIVITY DESCRIPTION



The lecturer will explain the importance of reviewing the lessons learned in the subject "Forest Policies and Climate Change". S/he can use the introduction of this activity. The participants will be placed in 2 circles around a table with a salad bowl containing cards with words that have been mentioned in previous activities in the section "Forest Policies and Climate Change". A circle of participants will be placed around the table and facing back to it. The other circle of participants will be placed around the first circle and facing it, so the participants will be faced in pairs. The game consists of 2 sets of 3 rounds. Each round lasts 1,5 minutes. The game development would be as follows:

Set 1, round 1 = people in the inner circle will be picking up cards and describing them to their classmates without mentioning the word in question or any of the same family. At the end of time or after finishing the cards, they will be counted in order to know which pair has won and cards are returned to the salad bowl.

Set 1, round 2 = the inner circle will rotate a bit so that new pairs are formed. In this round, people in the inner circle will pick up cards trying to make their companions guess the words through an explanation of a single word in three attempts. Those words that are not guessed will be returned to the salad bowl. At the end of time or after finishing the cards, they are counted to know which pair has won and cards are returned to the salad bowl.

Set 1, round 3 = the inner circle will rotate another bit so that new pairs are formed again. In this round, people in the inner circle will pick up cards and try to explain the words through a drawing. At the end of time or after finishing the cards, they are counted to know which pair has won and cards are returned to the salad bowl.

For set 2, people who made up the inner group will move to the outside and vice versa. The procedure is the same, trying to form at all times different pairs.

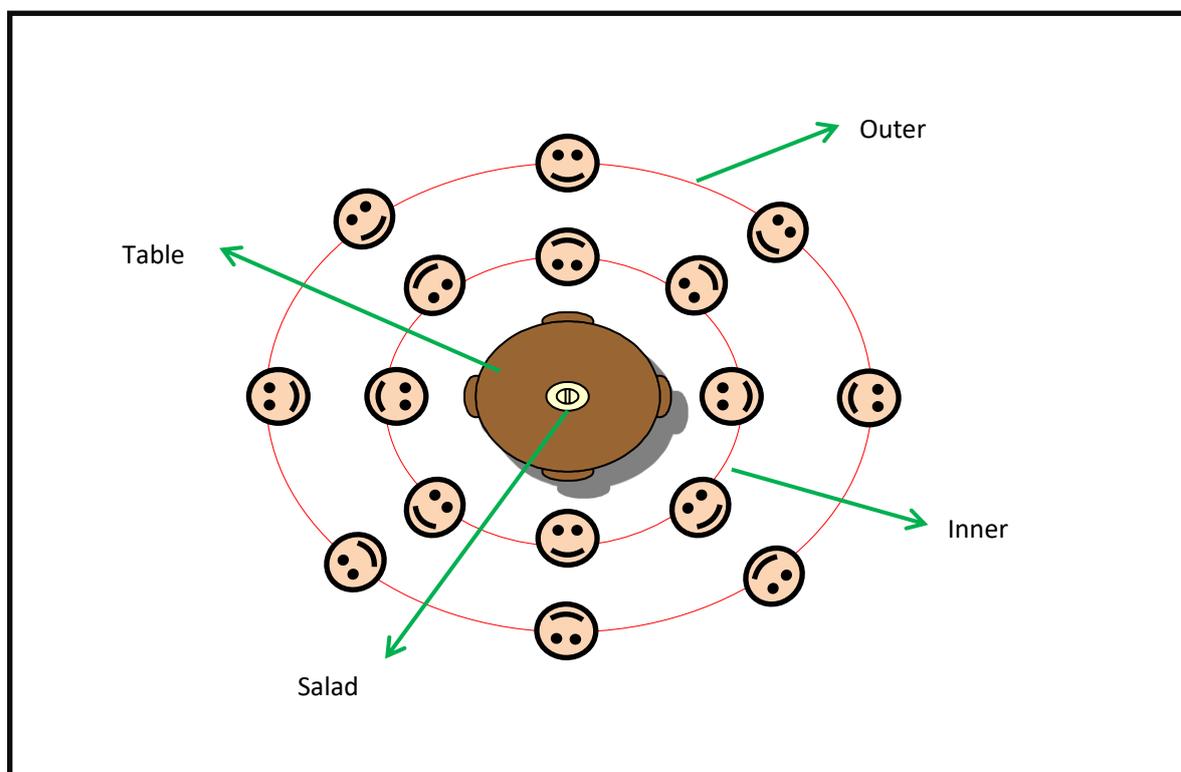
1. Introduction. (5')
2. Development of the game. (20')

## ANNEXES

### ANNEX 1 - Words for cards

Forest / Tree / Wood / Climate Change / Sustainability / Conservation / Forest Policy / Certificate / Ecosystem / Food Chain / Empowerment / Erosion / Forest Fruits / CO2 / Roots / Leaf / Animal / Fungi / Bacteria / Water / River / Mountain / Law / Social Community / Land Rights / Solidarity / Cooperation / Climate Refugee / Tropical Forest / Logging / Deforestation / Mediterranean Forest / Carbon Footprint / Flowers / Wood Traceability / Illegal Wood Trade / Pollination / Protected Area / Wildfire / Litter / Bee / Fragmentation / Pollution / Wind / Habitat / Soil / Organic Matter / Native People / Land Expropriation / Mineral / Education / Natural Resources / Agreements / Government Policies / European Union / Public Management / Legal Wood Trade / Forest Exploitation / Forest Degradation / Emission Reduction / Greenhouse Gases (GHG) / Stakeholders / Environmental Education / Environmental NGO / Grants / Partners / Scientific Research / Training / Urban Forest / Development / Temperature Rising / Extraction / Awareness / Water Supply / Carbon Sink / Ranger / Adaptation / Mitigation / Action Plan / Ancestral Knowledge / Carbon Stock / Corporation / Corruption / Culture Loss / Desertification / Decision-making Process / Drought / Flood / Fossil Fuel / Goal / Instrument / Measure / Plantation / Opinion / People's Livelihood / Public Sector / Private Sector / Rainforest / Society / Solution / Waste Management / Welfare / Human Being / Ecology /

### ANNEX 2 - Game positions





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# Climate Refugees

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# Government roles

**Activity section:** Climate Refugees

**Type of activity:** Indoor

**Duration:** 90 minutes

**Materials:** Computer with internet connection, paper, magazines, scissors, pens, glue (creating posters)

## LEARNING GOALS



- Increase participants' awareness about the political, economic, social and environmental implications that are introduced along with climate change for both host countries' governments and displaced peoples' governments.
- Develop a wider perspective in assessing government's roles.
- Be able to seek for collaboration in order to solve the problem of displacement.

## INTRODUCTION



Day by day, the numbers of people who need to flee their homes increase. According to UNCHR report (Global Trends: Forced Displacement in 2014), there are 59,5 million people who are at risk of displacement. This kind of displacement introduces new problems for both, governments of host countries and displaced nation's own governments.

## ACTIVITY DESCRIPTION



We will create two big groups. One group will represent hosting country's government and the other group will represent the displaced peoples' government. Define the case – it is different if you have island country with rising sea level or country affected by drought. Each group will be divided in smaller groups to discuss political, economic, social and environmental implications that their government will face with displaced people as a result of climate change. (Give them cards with ideas about what the government covers – see Annex 2). After that the Group will brainstorm about how to handle the points and who is responsible for handling the situations. Guide the debate also to responsibility - richer countries produce far larger amounts of GHG and are less affected than the poorer (also because of the enough money to mitigate the changes). The groups will chose their dissemination strategy (visual in form of poster or oral) and prepare a presentation how to handle

the points they covered, after every group will show their presentations and finally all the groups will discuss together about collaboration between the two governments' policies.

1. A brief introduction about the activity (about the displacement as a result of climate change – see Annex 1). (10')
2. Creation of 2 groups. (3')
3. Each group will be divided into smaller groups to discuss the points below (2')
  - Political
  - economic
  - social and
  - environmental implications
4. Group work/brainstorming. (20')
5. Groups will prepare a presentation. (20')
6. They will present their presentations. (25')
7. Whole group discussion. (10')

## **SUGGESTIONS**



- Try to maintain the emphatic aspect, especially when it is about the culture of newcomers (mantra “they should respect our culture” is usually understood/meant as “they should adapt to us” instead of “let’s respect all the cultures”).
- You can add additional guidelines on what to think when dealing with topics as a government.
- Interesting intro to the topic can be clips from the movie “The day after tomorrow”. See Annex 3.
- Suggest participants to see a documentary Climate Refugees (2010) from director Michael P. Nash (<http://www.imdb.com/title/tt1273201/>).

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## ANNEXES

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### ANNEX 1 - Additional information

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#### Information about climate refugees:

- <http://www.unhcr.org/climate-change-and-disasters.html>
- [https://en.wikipedia.org/wiki/Environmental\\_migrant](https://en.wikipedia.org/wiki/Environmental_migrant)
- <http://www.internal-displacement.org/global-report/>

#### References and ideas to guide the discussion on the government roles:

- <https://www.italki.com/entry/641788>
- <https://blog.oup.com/2014/07/government-adaptation-climate-change/>

### ANNEX 2 - Information on the government role

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#### Government roles

Think about the role of government in the case of displaced people and discuss the points below as a government's representatives:

- political
- economic
- social and
- environmental implications.

#### Some expressions that can help you:

Education, greenhouse gas emissions, raising awareness, responsibility, insurance, economic development, renewable energy sources, protection measures, new technologies, access to resources, spatial planning, adapting to changes, the ownership of resources, migrations, equality ...

### ANNEX 3 - Video links to the movie "The day after tomorrow"

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For a start, you can play 3 sections (in a row) of a movie "The day after tomorrow" and afterwards ask the participants, what they think they will talk about in this activity.

- [https://www.youtube.com/watch?v=Ku\\_IseK3xTc&index=1&list=PLX3Y-bJnb-8\\_GTIWL2C6SWCSVXfpDuPyz](https://www.youtube.com/watch?v=Ku_IseK3xTc&index=1&list=PLX3Y-bJnb-8_GTIWL2C6SWCSVXfpDuPyz)
- [https://www.youtube.com/watch?v=yyD\\_67t7mI0&index=2&list=PLX3Y-bJnb-8\\_GTIWL2C6SWCSVXfpDuPyz](https://www.youtube.com/watch?v=yyD_67t7mI0&index=2&list=PLX3Y-bJnb-8_GTIWL2C6SWCSVXfpDuPyz)
- [https://www.youtube.com/watch?v=RVNFYB75Tyg&list=PLX3Y-bJnb-8\\_GTIWL2C6SWCSVXfpDuPyz&index=3](https://www.youtube.com/watch?v=RVNFYB75Tyg&list=PLX3Y-bJnb-8_GTIWL2C6SWCSVXfpDuPyz&index=3)

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# Islands in Oceania

<b>Activity section:</b>	Climate Refugees
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	60 minutes
<b>Materials:</b>	Role cards (Annex 1), cardboards, colour pens, newspaper articles on the topic or computer with internet access

## LEARNING GOALS



- Define the challenges of the Islands in Oceania due to climate change.
- Encourage empathy in regards to people living in Oceania and their problems.
- Increase awareness on the challenges of Oceania Islands.
- Present the importance of coral reefs in climate change mitigation.
- Present new term such as coral bleaching, ocean acidification, changing fish migration, etc.

## INTRODUCTION



Oceania or “Liquid Continent” stretches from North America’s West Coast, East and Southeast Asia, and—for the more bold—the Western countries of Latin America. It is also called the Pacific Rim. It is the largest continent, larger than all the landmass in Earth put together. Oceania has three sub-regions: Melanesia, Micronesia, and Polynesia. There are many small island nations within this continent. Tuvalu and Kiribati are island nations that are facing disappearance due to rising sea level.

## ACTIVITY DESCRIPTION



This activity was designed to increase participants’ awareness about vulnerable islands that are going to disappear due to rising sea levels. The first step will be to divide the participants into two sub-groups and to assign them a specific role: the island and the islander (Annex 1). The next step is a desk research on the topic with special attention on the inclusion of the above mentioned terms. Every sub group should prepare a poster on the role given and think on a strong promo message. Afterwards, every sub-group will present their work to all participants. At the end, a joint discussion is opened to bring together two different aspects of the topic (Annex 2).

1. Short introduction of the activity and topic. (5’)
2. Division of the group into two sub-groups and role assignment. (5’)

3. Desk research and preparation of the poster. (35')
4. Presentation of posters and joint discussion. (15')

## SUGGESTIONS

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- The activity can also finish with a short knowledge test on the topic.

## ANNEXES

### ANNEX 1 - Role cards

#### (a) The role of an island

The role of an island – a piece of land completely surrounded by water

In your research, try to find answers to the following questions:

- (a) What dangers are you as an island facing because of rising sea level?
- (b) Are there many islands facing the same dangers?
- (c) What is the role of coral reefs in fighting climate change?
- (d) What means the ocean acidification and how this affects you as an island?
- (e) Is your diversity of plants and animals disappearing?
- (f) What does coral bleaching mean and how does it affect you as an island?
- (g) What changes did you as an island face in the last 100 years?

When preparing the poster, try to identify your biggest challenges, the causes for them and try to find solutions.

When presenting your point of view as the island, try to formulate your message to the World to activate it to take appropriate actions in climate change mitigation and preservation of islands.

#### (b) The role of an islander

The role of an islander – a person, living on the island and facing disappearance due to climate change

In your research, try to find answers to the following questions:

- (a) What are the main difficulties you were facing in the last years?
- (b) How do they affect your daily life?
- (c) How many islanders or islands are facing the same problems?
- (d) Does the disappearance of coral reefs affect you and how?
- (e) How do you deal with the loss of arable land and drinking water?
- (f) Are there any health issues among your population?

When preparing the poster, try to identify your biggest challenges, the causes for them and try to find solutions.

When presenting your point of view as the islander, try to formulate your message to the World to activate it to take appropriate actions in climate change mitigation and preservation of islands to stay a quality place to live on.

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## ANNEX 2 - Questions for a joint discussion

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1. What kind of effect does loss of coastal land and infrastructure due to erosion, inundation and storm surges has on an island and people living on them?
2. What kind of effects does an increasing frequency and severity of cyclones have on human life, health, homes and communities?
3. How does the loss of coral reefs will impact on the sea eco-systems affects the livelihood of islanders?
4. Changes in rainfall patterns, with increased droughts in some areas, and more rainfall with flooding in other areas. What does that mean regarding to the global society?
5. If drinking water is not available and the transport infrastructure is not well developed, what are the possible solutions for islanders living on such island?
6. If arable land is lost due to salt water intrusion, how can you grow your food?
7. How are the islander's new challenges affecting their health?
8. How are the people feeling on the disappearing islands?
9. What kind of measures should be kept in mind to help the islanders, and the island itself, in combating these issues?
10. Who is more affected by climate change: the island itself or the islanders?

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# Lawless refugees

**Activity section:** Climate Refugees

**Type of activity:** Indoor

**Duration:** 70 minutes

**Materials:** Role cards (Annex 1), press releases (Annex 2), A3 pages, cardboards and colourful pencils

## LEARNING GOALS



- Understand the legal uncertainty that climate refugees face.
- Understand the dilemmas of the term “climate change”.
- Increase awareness about different views of refugees.
- Increase their ability to find evidences for their claims.
- Respect different viewpoints.

## INTRODUCTION



Even refugees are under the legal protection of 1951 Geneva Refugee Convention, there is no such convention for climate/environmental refugees. Thus, current international law does not provide climate-induced migrants with mechanisms to secure resettlement rights or financial assistance (McAnaney, 2012). Accordingly, some use “migrant” or “displaced person” terms for defining the persons who are forced to leave their home countries because of extreme conditions including hurricanes, floods, droughts, desertification, and sea level rise.

## ACTIVITY DESCRIPTION



Thanks to this activity participants will better understand the reality that climate refugees are facing in their daily life. To do this, we will play a role game using a conflict based on the legal vacuum around the term “climate refugee”. The lecturer will introduce the activity presenting the above introduction. Then the lecturer will split the group of participants in six different pairs or groups and s/he will deliver one role card per group. Each group should represent a role with some kind of relation with the legal vacuum around the term “climate refugee”. The conflict will be address from different points of views. Each group shall read its role to other participants.

The lecturer will also provide some press releases to support the getting of arguments and evidences in the topic. Links to these releases can be found in the annexes of the activity.

Once the groups have been formed, the material has been delivered and the roles have been assigned, groups of participants will get evidences and arguments for their roles to make a dissemination strategy and putting in common in a final discussion.

At the end the whole group will try to achieve a joint decision. The presentations will be interactive, so other roles can intervene in the middle of each strategy presentation. The order to present strategies is: refugee, judge, technicians, activists, politician and citizen.

1. Activity introduction. (5')
2. Activity explanation and group creation. (5')
3. Analysis of additional information and role cards. (10')
4. Getting evidences and arguments which support the role point of view. (10')
5. Preparation of the dissemination strategy (poster). (25')
6. Presentation of the dissemination strategy. (10')
7. Final joint discussion and achievement of agreements. (5')

## **SUGGESTIONS**



- The inclusion of press releases on personal stories from real climate refugees can help the role of climate refugee to get better evidences and arguments.

## ANNEXES

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### ANNEX 1 - Role cards

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- **Human Rights Activist:** As a human right activist, I believe that 1951 Refugee Convention should be expanded and include the “climate/environmental refugees” term. The Convention’s categories of persecution are incomplete and have the effect of locking some of the world’s most indigent and at-risk people in their circumstances. Those who lose their homes in earthquakes, for example, and whose countries cannot help them rebuild, are not refugees. People starving to death in abject poverty are usually not eligible to be refugees either, because so many of their countrymen tend to suffer the same way.

- **UNHCR officer:** I am concerned about the current definition of “refugee”. If the current definition is expanded, it would cause erosion in valid international refugee protection regime. It would also cause a dilemma in the politics and may lower protection standards of current refugees.

- **Politician:** If the environmental displaced people are included in 1951 Refugee Convention, what would happen to political and war refugees? Political and war refugees are victims of their home state and conflicts in their home states and they are not responsible for their difficulty.

- **A judge from New Zealand:** I rejected an appeal to our home country because I saw no legal basis to grant that person refugee status in New Zealand. The person, who appealed for asylum in New Zealand, should be sent back to his home country. Traditionally, a refugee is fleeing his own government or a non-state actor from whom the government is unwilling or unable to protect him. And the claimant does not fit the standards that “refugee” term meets.

- **A person who supports the judge’s decision:** I believe this is the right thing to do. Accepting climate change refugees would open the door to “millions of people who are facing medium-term economic deprivation”.

- **A climate refugee:** I cannot grow any vegetable on the soil because it is too salty and vegetables doesn’t grow properly anymore compared to 30 years ago. I am not responsible for climate change and my government is not able to finance and implement adaptation programs. Why would developed countries, which are mainly responsible for climate change, fear to offer the same protection as political refugees to us?

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## ANNEX 2 - Links to some examples of press releases

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### Examples in English:

- Where will the climate refugees go?

<http://www.aljazeera.com/indepth/features/2015/11/climate-refugees-151125093146088.html>.

- Turning the Tide: Recognizing Climate Change Refugees in International Law:

<http://onlinelibrary.wiley.com/doi/10.1111/j.1467-9930.2008.00290.x/full>.

- “Climate refugees”? Addressing the international legal gaps:

<https://www.ibanet.org/Article/NewDetail.aspx?ArticleUid=b51c02c1-3c27-4ae3-b4c4-7e350eb0f442>.

### Examples in Spanish:

- Los parias del calentamiento global:

<http://blogs.periodistadigital.com/creyentes-y-responsables.php/2017/04/20/los-parias-del-calentamiento-global>.

- Refugiados del cambio climático, el lado más débil:

<http://www.agorarsc.org/refugiados-del-cambio-climatico-el-lado-mas-debil/>.

- Reconocer y proteger a los refugiados climáticos:

[http://internacional.elpais.com/internacional/2015/10/26/actualidad/1445872107\\_049759.html](http://internacional.elpais.com/internacional/2015/10/26/actualidad/1445872107_049759.html).

- “Refugiados climáticos”, las víctimas silenciosas del calentamiento global:

<http://www.compromisoempresarial.com/rsc/2016/08/refugiados-climaticos-las-victimas-silenciosas-del-calentamiento-global/>.

- Los refugiados climáticos se quedarán sin estatus legal:

<http://www.ipsnoticias.net/2014/08/los-refugiados-climaticos-se-quedaran-sin-estatus-legal/>.

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# Sides in climate refugees

<b>Activity section:</b>	Climate Refugees
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	60 minutes
<b>Materials:</b>	Role cards, papers and pens

## LEARNING GOALS



- Empathize different sides in the climate refugee situation.
- Understand the feelings of different sides.

## INTRODUCTION



An important problem that comes along with climate change is climate induced displacements. Every year, millions of people are being forced to move or flee due to natural hazards such as droughts or floods in their home country and extreme weather conditions. On one hand, these kinds of catastrophic events, make people to forced migration, on the other hand, there are different stakeholders involved in the situation. Thus, it is a necessity to feel what “others” really feel.

## ACTIVITY DESCRIPTION



This is a role-playing activity. This activity aims to increase participants’ awareness about what different stakeholders really “feel”. Therefore, we constructed role cards (Annex 1). In these cards, there are some characteristics of each participant. Each role has different perspectives about stakeholders in climate refugee situation. First, we will create groups and give a role card to each of the group. We will ask them to write down how they feel when they see for the first time, a person in the role cards and how they imagine this person in more detail. After that, we want them try to feel like the persons in the role cards and act like them. After the activity, we will discuss different roles as whole classroom activity. Thus, we will able to see how “others” feel. All participants will make a circle and under the guidance of a lecturer, they will play to dress in their new role. This will encourage greater interconnection with the role. Now each group find its place and discuss more detailed their role. The lecturer gives them more detailed characteristics of the role (Annex 2), but still there are lot of things to discuss; what is his/her name? How he/she spend its childhood? Does he/she have children? Etc. Afterward the participants will prepare a profile of the role which will be later presented. All participants will make a circle again and under the guidance of the lecturer they

will start playing they are going away from their role and they can be again in their own skin. The lecturer will lead a discussion and will summarize the activity.

1. Short introduction about the climate refugees - who are they, where are the problems they are facing, refugee law protection, etc. (15')
2. Explanation of the activity and creating groups, giving the cards to the groups (Annex 1). Each group has one role. (2')
3. Prepare a profile of the role. (15')
4. Each group will express how they feel if they were the person in the role card aloud. (20')
5. Participants will go back again to their selves roles. (3')
6. Summary and short discussion led by the lecturer. (5')

## **SUGGESTIONS**



- After the activity it could be nice to show some examples of real refugees, which could show an even greater closeness to reality.
- It allows people to realize how stereotyped we sometimes think.

## ANNEXES

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### ANNEX 1 - Roles

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- UNHCR OFFICER.
- A LOCAL WHO WELCOMES NEW "COMERS".
- A LOCAL WHO IS AGAINST NEW "COMERS".
- JUDGE WHO REJECTED MIGRATION CLAIM
- POLITICIAN.
- CLIMATE REFUGEE.

### ANNEX 2 - Role background

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United Nations High Commissioner for Refugees (UNHCR-Officer)

Male, 45 years old, well-educated



Climate refugee,

Female, 30 years old with two kids



Politician,

Male, Married, 40 years old,



A judge from New Zealand who refused (contextual background: Kiribati man Ioane Teitiota has just lost his appeal to the New Zealand Supreme Court, to be recognised as the world's first climate refugee-Herald Sun, October 15th, 2016)

Male, 50 years old



A local volunteer who works for charity organization for helping homeless

22 years old, college student,



A local who is against of "climate refugees"

60 years old, retired fire fighter



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# Different countries, similar problems?

<b>Activity section:</b>	Climate Refugees
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	60 minutes
<b>Materials:</b>	Computer with internet connection, colourful pencils

## LEARNING GOALS



- Understand this issue is a global problem, not just a problem of some specific countries, is for millions of people affected by the consequences of climate change.

## INTRODUCTION



According to the report of the Intergovernmental Panel on Climate Change (IPCC), three consequences of global warming appear to be key potential causes of forced migration. If no effort is made to protect the groups of people at risk, then they have no alternative but to emigrate. The reasons:

- Hurricanes, torrential rains and floods.
- Rising sea levels.
- Drought and desertification.

Yemen, some regions in China, Louisiana (USA), Tuvalu, Kiribati, Bangladesh, Morocco, Tunisia, Libya, Egypt, Turkey, Vietnam, Niger, Ghana, Ecuador, some regions in Mexico, and Argentina are reported to be more exposed to the risk described above if global warming continues.

## ACTIVITY DESCRIPTION



We will choose several countries all around world. We will create groups and will assign a country to each group. After that, an investigation phase will begin. All the groups will search the countries' problems related with climate change and environmental refugee situation. Groups will prepare brochures, posters in order to present the situations of the countries assigned.

The steps are provided below:

1. Information about the activity and creation of the groups. (5')

2. Participants will choose one country. (5')
3. Internet search within groups for additional information about countries and preparing the posters about climate change. (30')
4. Presenting the information provided by groups. (20')

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# Meaning of “climate refugee”

<b>Activity section:</b>	Climate Refugees
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	40 minutes
<b>Materials:</b>	Pencils, colourful cardboard

## LEARNING GOALS



- Get acknowledged about the term “climate refugee”.
- Create mental models about the term “climate refugee”.
- Share opinions about the definition of “climate refugee”.

## INTRODUCTION



According to Internal Displacement Monitoring Centre 2015 report, more than 19 million people from 100 countries were forced to flee their homes in 2014 because of natural disasters. The people who are displaced across borders as a result of climate change may not meet the “refugee” term (The UN Refugee Agency). Thus, climate refugee/environmental refugee are not classified as legal categorizations because of Determining whether a person is fleeing their home because of an environmental disaster, lack of work, or the established, long-term impacts of climate issues like drought or rising sea levels are quite difficult.

## ACTIVITY DESCRIPTION



For this activity, we will create small groups of participants which will discuss about some questions and then will introduce their ideas by using the cardboards and pencils. Then, each group will present about their ideas. In this activity, we will not intervene or give clues about the terminology. We want them to freely express what comes to their minds when they have heard of environmental/climate refugee term. Thus, we will be able to understand about their schemas about the term. The steps are provided below:

1. Creation of groups and provide materials. (5')
2. Brainstorming activity of each group about the questions. (15')
  - Have you ever heard of the term “environmental/Climate refugee”?
  - What do you think about this term?

- What could it be related with?
  - What comes to your minds when you have heard of this term?
3. Expression of their ideas in the cardboards by using the materials. (10')
  4. Presentation of each groups' ideas in the cardboards to other groups. (10')

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# What to do?

<b>Activity section:</b>	Climate Refugees
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	60 minutes
<b>Materials:</b>	Computer or mobile phones (with internet connection)

## LEARNING GOALS



- Propose precautions which prevent the effects of climate change.
- Realize that some precautions have temporary effect.
- Suggest some precautions which have long-term effects.

## INTRODUCTION



The effects of climate change are more pronounced in coastal communities. According to International Organization for Migration report (2009), a rough estimated 200 million people in coastal communities could be displaced by 2050 because of climate change. People are taking precautions to prevent the effects of climate change in their community. Some of these precautions are temporary and some of them have more deep impact on preventing the effects of climate change.

## ACTIVITY DESCRIPTION



In this activity, we aim to increase the participants' awareness about the precautions (temporary and long-term effect) for preventing the effects of climate change. For his aim, we will have a brief introduction about how are the people living in places which face the impact of climate changes, try to prevent them. We want our participants to think their own ways as well as search information about how these people deal with the issue. Is become a climate refugee the only choice that people have? Or could it be prevented and people get used to live with the situation changed by the climate change?

1. A brief introduction about the activity (about the effect of climate change and how it will create climate refugees. (5')

2. A power-point presentation about how people live with the changes that climate changes has brought into their lives. The power-point presentation can be prepared by using the Annex 1. (5')
3. Creation of groups. (5')
4. Group work/Brains-storming about possible solutions which have temporary and long-term effect. (10')
5. Internet search. (10')
6. Proposing their long term/short term solutions. (10')
7. Groups will try to show/explain how their solution will be effective. (15')
8. Whole group discussion. (15')

## **SUGGESTIONS**



- The lecturer should manage the whole group discussion writing each group's long and short-term solutions on the board and persuade participants to understand "others" solutions.

## ANNEXES

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### ANNEX 1 - Internet resources

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The lecturer can use the documents given below in order to provide some brief information about climate refugees.

- Climate refugees in the 21st century  
<http://acuns.org/wp-content/uploads/2013/01/Climate-Refugees-1.pdf>
- Environmentally induced migration and displacement: a 21<sup>st</sup> century challenge  
<http://www.refworld.org/docid/49997bbb0.html>
- Where will the climate refugees go?  
<http://www.aljazeera.com/indepth/features/2015/11/climate-refugees-151125093146088.html>
- Climate Change and Disasters  
<http://www.unhcr.org/climate-change-and-disasters.html>
- Climate Refugee  
<https://www.nationalgeographic.org/encyclopedia/climate-refugee/>

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# True or false?

<b>Activity section:</b>	Climate Refugees
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	120 minutes
<b>Materials:</b>	A data projector with internet connection, pencil, paper, the articles provided in Annex 2, internet search

## LEARNING GOALS



- Empathize the different sides in Climate refugee situation.
- Try to understand different feelings of different sides.
- Respect to different viewpoints.

## INTRODUCTION



An important problem that comes along with climate change is climate induced displacements. Every year, millions of people are being forced to move or flee due to natural hazards such as droughts or floods in their home country and extreme weather conditions. Thus, the term “refugee” has gained a new direction for defining those who move because of new situations and circumstances that climate change has introduced. People who claim to be climate refugees insist that there are extensive rises in the sea levels or high salinization in the soils they use to live in or extreme droughts or floods in their homeland. While some scientists agree with those, some disagree about the conditions.

## ACTIVITY DESCRIPTION



In this activity, we basically aim to increase participants’ awareness about that not all people believe in with idea of climate refugees. Thus, we want to create an argumentation session to discuss the issue. With this aim, we created the two groups: Supporters/Dissidents. First, we will choose the group members by lot. Then, all the groups will watch two videos (both videos are in English. So, they needed to have subtitles in your native language (see Annex 1 for the links).

After this video watching, each group will receive materials including newspaper articles, some scientific paper cuts (all the documents which will be given to participants are presented below). After that, we want them to collect evidence from different sources to justify their claims. They will decide how to disseminate their views (posters, oral, or visual). At the end, we will create a whole group discussion (a round table discussion) to present their claims, and evidences. Each group will try

to persuade other group by using the evidences they will submit. Moreover, the reliability of the source of information is also a matter to consider. So, we aim our participant to consider the reliability of the sources and keep this in their mind while making decisions.

The steps are provided below:

1. A brief introduction about the activity. (5')
2. Creation of two groups (supporters vs. dissident) and naming the groups. (5')
3. Video watching. (15')
4. Discussion within groups, handling additional sources and brain storming within the groups about how they will support/ opposed the idea of climate refugees. (20')
5. Collecting data (In this step, they can use internet search or the documents provided). (20')
6. They will choose one dissemination strategy to present their perspectives. (10')
7. Each group will present their views about the issue. (10')
8. Whole group discussion (each group will try to persuade other groups by using the evidences). (30')

## SUGGESTIONS



- All the Annexes provided are in English so the lecturer could prefer to use similar documents in his/her native language.
- A brief introduction about the term of “Climate Refugees” will be helpful for more in-depth discussions.
- Creating an argumentative environment can be a bit challenging because the participants may not like criticizing their own thoughts about climate refugee situation.
- The lecturer should be aware that there is no clear-cut resolution in the existence of climate refugee situation. There will be some supporters for each side. The main point is to respect what “others” believed or thought.
- The lecturer should not help any of the groups.

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## ANNEXES

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### ANNEX 1 - Videos used in the activity

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The videos that are used in the activity are presented below (The videos are also downloadable by using various download programs:

- <https://www.youtube.com/watch?v=b6QEDbI5zrg> (Climate Refugee-support-5 min.)
- <https://www.theguardian.com/environment/video/2015/aug/06/climate-refugees-the-communities-displaced-by-global-warming-video> (additional video-4.5 mins.)
- <https://www.youtube.com/watch?v=LmFp3lrGrmY> (opponents of climate refugees- 7 mins.)

### ANNEX 2 - Additional resources

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Opponent Articles:

- About Those Non-Disappearing Pacific Islands  
<http://climatechangedispatch.com/about-those-non-disappearing-pacific-islands/>
- Multi-decadal shoreline changes in response to sea level rise in the Marshall Islands  
[https://www.researchgate.net/profile/Paul\\_Kench/publication/284123363\\_Multi-decadal\\_shoreline\\_changes\\_in\\_response\\_to\\_sea\\_level\\_rise\\_in\\_the\\_Marshall\\_Islands/links/5685f58608ae1e63f1f37295/Multi-decadal-shoreline-changes-in-response-to-sea-level-rise-in-the-Marshall-Islands.pdf](https://www.researchgate.net/profile/Paul_Kench/publication/284123363_Multi-decadal_shoreline_changes_in_response_to_sea_level_rise_in_the_Marshall_Islands/links/5685f58608ae1e63f1f37295/Multi-decadal-shoreline-changes-in-response-to-sea-level-rise-in-the-Marshall-Islands.pdf)
- The dynamic response of reef islands to sea-level rise: Evidence from multi-decadal analysis of island change in the Central Pacific  
[https://www.researchgate.net/publication/222397422\\_The\\_dynamic\\_response\\_of\\_reef\\_islands\\_to\\_sea-level\\_rise\\_Evidence\\_from\\_multi-decadal\\_analysis\\_of\\_island\\_change\\_in\\_the\\_Central\\_Pacific](https://www.researchgate.net/publication/222397422_The_dynamic_response_of_reef_islands_to_sea-level_rise_Evidence_from_multi-decadal_analysis_of_island_change_in_the_Central_Pacific)

Supporting articles:

- Climate refugees in the 21<sup>st</sup> century Report  
<http://acuns.org/wp-content/uploads/2013/01/Climate-Refugees-1.pdf>
- Environmentally induced migration and displacement  
<http://www.refworld.org/pdfid/49997bbb0.pdf>
- Where will the climate refugees go?  
<http://www.aljazeera.com/indepth/features/2015/11/climate-refugees-151125093146088.html>

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# Climate change & refugees

<b>Activity section:</b>	Climate Refugees
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	50 minutes
<b>Materials:</b>	Information cards (see annex at the end of the activity), cardboards and colourful pencils

## LEARNING GOALS



- Understand the connection between climate change and migration.
- Increase the awareness about climate refugee.
- Understand the reasons of migration as a result of climate change.
- Increase participants' knowledge about climate refugee.

## INTRODUCTION



There is no generally accepted term or definition about the phenomenon of climate refugees. Climate refugees are people who are forced to leave their home country because of the changes in their local environment. These changes comprise a wide range of issues including hurricanes, droughts, desertification, and sea level rise.

## ACTIVITY DESCRIPTION



For this activity, we will split the group of participants in three main groups which will prepare posters about the general topic of climate refugees.

The specific topics we will give to the groups are: a) climate change for group 1, b) refugees for group 2, and c) climate change and refugees for group 3.

We will handle 3 information cards (one per group) with information related to their specific topics. Based on these cards, groups will create their posters. Once posters have been created, they will be presented and participants will find connections between the different topics.

After finding connections between topics, groups will upgrade their posters.

At the end of the activity, posters will be hanged in the classroom in order to be reviewed by all participants. For a right implementation of the activity, the lecturers should follow the steps below:

1. Activity explanation and group creation. (3')
2. Delivering information cards. (1')
3. Reading the cards and discussion within groups about information presented in posters. (5')
4. Poster preparation. (15')
5. Poster presentation. (10')
6. Looking for connections between posters. (10')
7. New information addition. (5')
8. Poster exhibition. (1')

## SUGGESTIONS



- The inclusion of personal stories from real climate refugees can achieve higher levels of awareness among participants.

## ANNEXES

### ANNEX 1 - Information card 1: climate change

Some number facts about Climate change

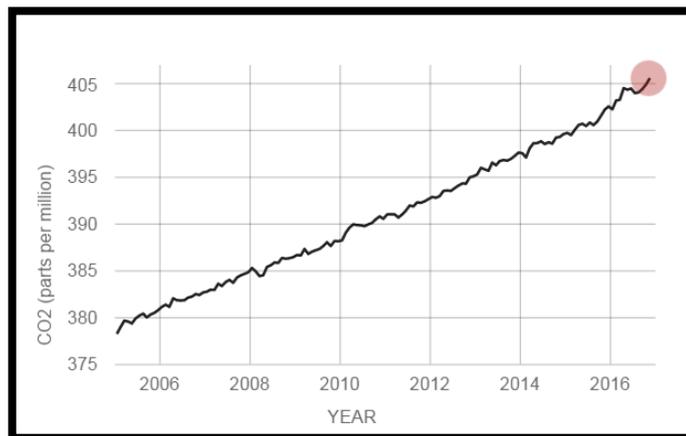
Let's talk about some facts about climate change:



Earth-orbiting satellites and other technological advances have enabled scientists to see the big picture, collecting many different types of information about our planet and its climate on a global scale. This body of data, collected over many years, reveals the signals of a changing climate.

#### CO2 levels

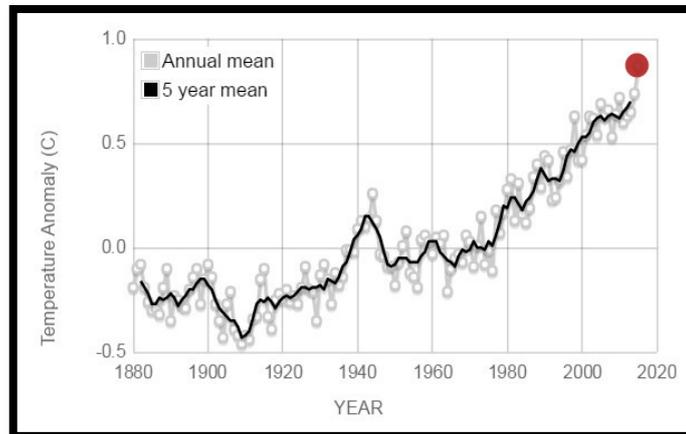
According to NASA data, Carbon dioxide levels in the air are at the highest peak in 650,000 years.



Carbon dioxide (CO<sub>2</sub>) is an important heat-trapping (greenhouse) gas, which is released through human activities such as deforestation and burning fossil fuels, as well as natural processes such as respiration and volcanic eruptions. The chart above shows CO<sub>2</sub> levels in recent years, with average seasonal cycle removed.

## Global temperature

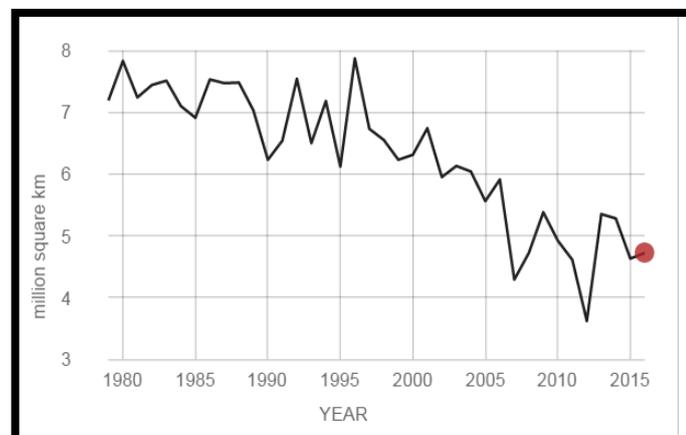
Since 2000, nine of the 10 warmest years have recorded.



This graph illustrates the change in global surface temperature relative to 1951-1980 average temperatures. The 10 warmest years in the 136-year record all have occurred since 2000, with the exception of 1998. The year 2015 ranks as the warmest on record. (Source: NASA/GISS).

## Arctic Ice Minimum

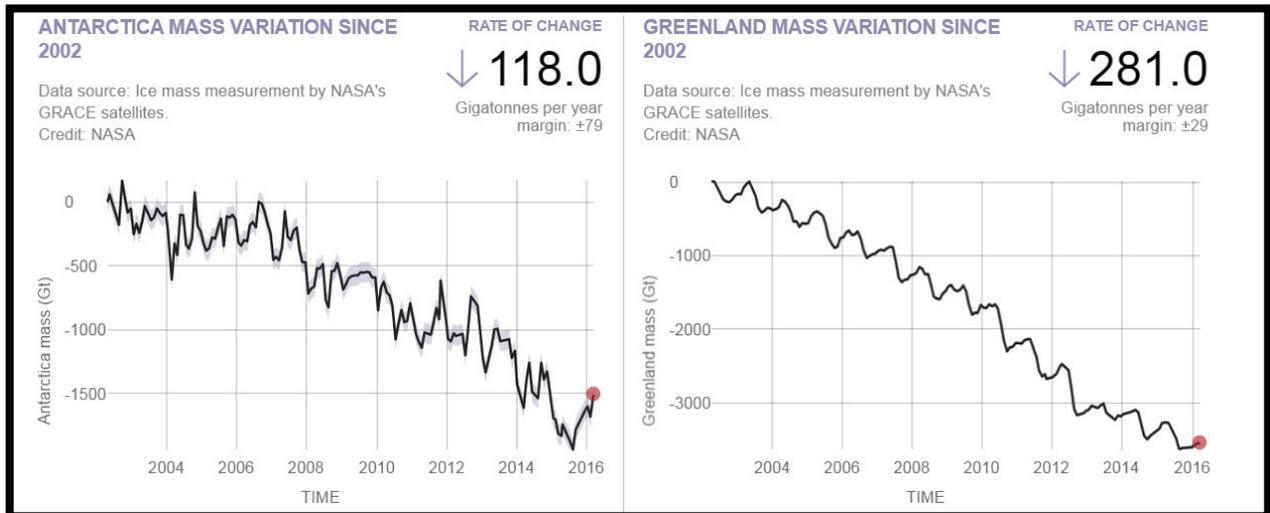
In 2012, Arctic summer sea ice shrank to the lowest extent on the record



Arctic sea ice reaches its minimum each September. September Arctic sea ice is now declining at a rate of 13.3 percent per decade, relative to the 1981 to 2010 average. The graph above shows the average monthly Arctic sea ice extent in September since 1979, derived from satellite observations. The 2012 extent is the lowest in the satellite record.

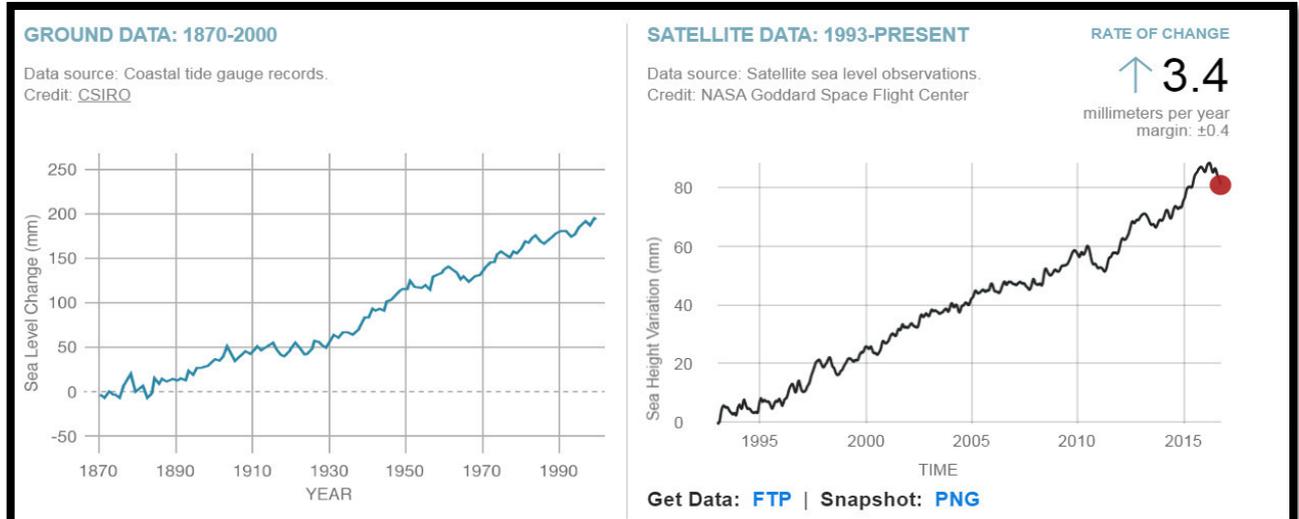
Land Ice

Greenland ice loss doubled between 1996 and 2005:



Data from NASA's GRACE satellites show that the land ice sheets in both Antarctica and Greenland are losing mass. The continent of Antarctica (left chart) has been losing about 134 gigatonnes of ice per year since 2002, while the Greenland ice sheet (right) has been losing an estimated 287 gigatonnes per year. (Source: GRACE satellite data)

Sea level



Sea level rise is caused primarily by two factors related to global warming: the added water from melting land ice and the expansion of sea water as it warms. The above chart, derived from coastal tide gauge data, shows how much sea level changed from about 1870 to 2000.

Sources:

<http://climate.nasa.gov/evidence/>

<http://climate.nasa.gov/>

## ANNEX 2 - Information card 2: refugees

### Who is called as “Refugee”?

According to UN Refugee Agency, a refugee has a well-founded fear of persecution for reasons of race, religion, nationality, political opinion or membership in a particular social group. Most likely, they cannot return home or are afraid to do so. War and ethnic, tribal and religious violence are leading causes of refugees fleeing their countries.

Refugees are people who flee conflict or persecution. They are defined and protected in international law, and must not be expelled or returned to situations where their life and freedom are at risk. Around 20 million people around world are facing with being refugees.



### Who is an asylum seeker?

When people flee their own country and seek sanctuary in another country, they apply for asylum – the right to be recognized as a refugee and receive legal protection and material assistance. An asylum seeker must demonstrate that his or her fear of persecution in his or her home country is well-founded.

### What is the 1951 Refugee Convention?

The 1951 Geneva Convention is the main international instrument of refugee law. The Convention clearly spells out who a refugee is and the kind of legal protection, other assistance and social rights he or she should receive from the countries who have signed the document. The Convention also defines a refugee’s obligations to host governments and certain categories or people, such as war criminals, who do not qualify for refugee status. The Convention was limited to protecting mainly European refugees in the aftermath of World War II, but another document, the 1967 Protocol, expanded the scope of the Convention as the problem of displacement spread around the world.

### Sources:

<http://www.unhcr.org/refugees.html>

<http://www.unrefugees.org/what-is-a-refugee/>

### ANNEX 3 - Information card 3: climate change & refugees

Sinking islands in the Pacific, drowning deltas in South and Southeast Asia, desertification across the West African Sahel and Mexico, and extreme weather events occurring with increasing frequency around the World climate change-driven natural hazards are displacing millions of people each year. Thus, a new terminology called "climate/environmental refugee" has been born. The term "environmental refugees" was first coined in 1985 as a report title for the United Nations Environment Programme (El-Hinnawi, 1985). It has since been widely diffused in both political and academic circles (Castles, 2002). This growing concern of the international community about the consequences of migration resulting from environmental deterioration was reinforced in 1990 by the publication of the first UN intergovernmental report on climate change which stated that "The gravest effects of climate change may be those on human migration as millions will be displaced" (Intergovernmental Panel on Climate Change 1990, 2007).

As Lonergan notes (1998), five groups of factors can be singled out as environmental push elements that might lead to migration: a) natural disasters; b) development projects that involve changes in the environment; c) progressive evolution of the environment; d) industrial accidents (Bhopal, Chernobyl, Fukushima...); and e) environmental consequences due to conflicts.

Three consequences of climate warming, as forecast in the latest report of the IPCC for the end of the 21<sup>st</sup> century, appear to be the most threatening potential causes of migrations (Intergovernmental Panel on Climate Change, 2007):

- the increase in the strength of tropical hurricanes and the frequency of heavy rains and flooding, due to the rise in evaporation with increased temperatures
- the growth in the number of droughts, with evaporation contributing to a decrease in soil humidity, often associated with food shortages
- the increase in sea levels resulting from both water expansion and melting ice

Hurricanes and floods: It is much easier to see the impacts of displacement as a result of hurricanes and floods. Approximately the number of persons affected by flooding worldwide (106 million, on average, between 2000 and 2005 according to the International Disaster Database), and by hurricanes (38 million)

Drought and desertification: In the recent past, the number of persons affected by drought has been comparable to that of victims of hurricanes and floods (146 million, on average, between 2000 and 2005 according to the EM-DAT). The latest report of the IPCC predicts increased water shortages in Africa (74 to 250 million people affected in 2020) and Asia.

Rising sea levels: this issue when compared to others (hurricanes, drought, and desertification) is irreversible and affects nations over a long period of time. If any precaution for decreasing the CO<sub>2</sub> emissions as fossil fuel use are taken, it is expected to see an increase of 0,3 to 0,8 meters of the oceans by 2300 (Intergovernmental Panel on Climate Change, 2007).

#### Sources:

- Climate Change 2007: Synthesis Report:

[https://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4\\_syr\\_full\\_report.pdf](https://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_full_report.pdf)

- Climate Change: The IPCC Impacts Assessment (1990):

[https://www.ipcc.ch/ipccreports/far/wg\\_II/ipcc\\_far\\_wg\\_II\\_full\\_report.pdf](https://www.ipcc.ch/ipccreports/far/wg_II/ipcc_far_wg_II_full_report.pdf)

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# Different roles in Handling Climate Refugees

<b>Activity section:</b>	Climate Refugees
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	120 minutes
<b>Materials:</b>	Computers with internet connection, flipchart papers, pens

## LEARNING GOALS



- Increase awareness about the cluster approach in finding a solution about current climate refugee situation.
- Increase awareness about multifaceted actions to be solved during climate refugee situation.
- Get to know which organizations (Inter-Agency Standing Committee (IASC), UNHCR- The UN's refugee agency, UNICEF and OHCHR) are responsible in managing the displacement issues.

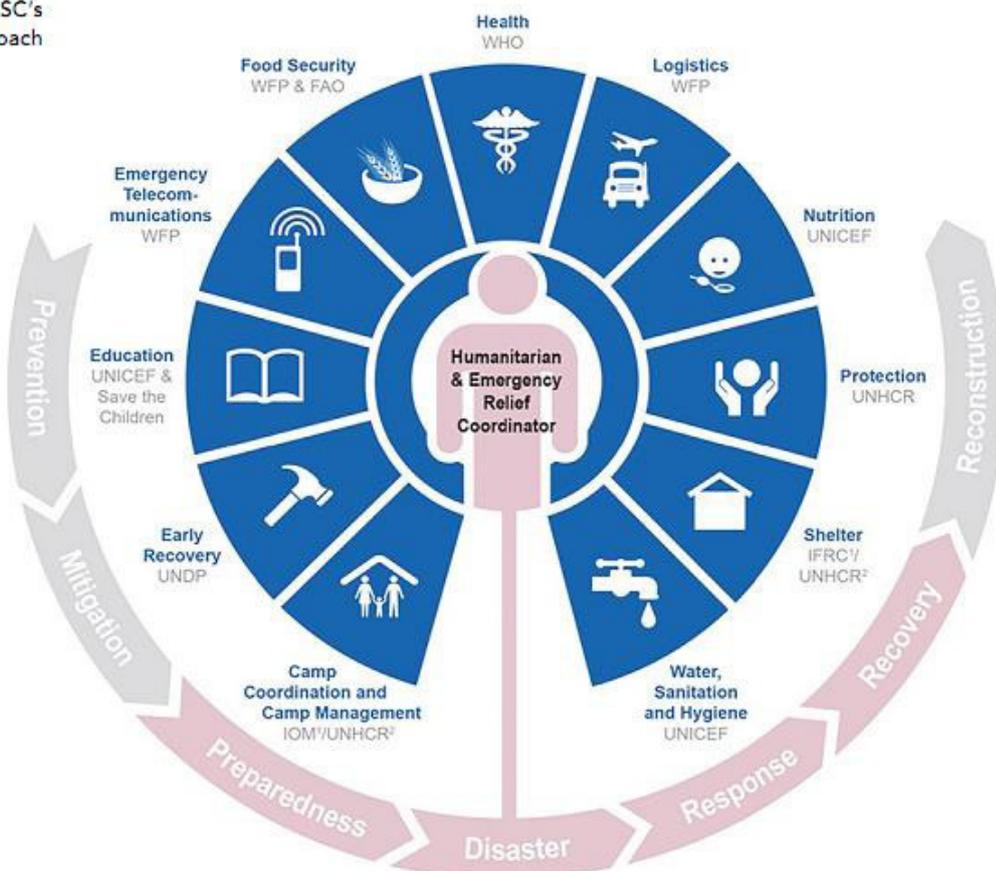
## INTRODUCTION



People who are displaced within their own country are legally protected by international humanitarian and human rights law, as reflected in the Guiding Principles on Internal Displacement; in the case of Africa, by the African Union Convention for the Protection and Assistance of Internally Displaced Persons in Africa (the Kampala Convention). Internally displaced persons – whether they return to their homes, settle elsewhere in the country, or try to integrate locally where they are displaced – usually face continuing problems and risks, and require support beyond the acute crisis period of a disaster. Achieving a solution is therefore a gradual and complex process requiring timely and coordinated efforts to address humanitarian, development and human rights concerns, including measures to prepare for or prevent further displacement.

In case of displacement (climate refugee situation), there are a lot of needs to take multifaceted actions:

Figure 3: IASC's cluster approach



## ACTIVITY DESCRIPTION



In this activity, we aim to increase participants' awareness about the multifaceted actions that need to be taken during displacement issues as a result of climate change and the organizations that are responsible for these actions. We will use the chart presented above and will create groups to discuss the points presented in the blue part (camp coordination and camp management, early recovery, education, emergency telecommunication, food security, health, logistics, nutrition, protection, shelter, water sanitation). Each group will have one or two points (depending on the number of participants) to think how to manage the situation. Altogether, with whole group discussion, participants will realize which needs have to be in coherence in the actions and a holistic approach in resolving the problems.

1. A brief introduction about displacement people, refugees and climate refugees and explanation of the activity. (20')
2. Creation of the groups, dividing topics. They are listed also in the Annex 2. It is possible to print them, cut them and let participants to choose a card with a theme from the box.

Camp coordination and camp management; early recovery; Education; Emergency telecommunication; Food security; Health; Logistics; Nutrition; Protection; Shelter; Water sanitation. (5´)

3. Groups will chose their dissemination strategy (visual, poster or oral) and prepare a presentation about how to handle the points they covered. There is more detailed information in the Annex 3. They will also add short information about the organization which is in the charge of the topic to the final presentation. Participants will look for the information on the internet. (30´)
4. Presentations. After each group presentation, there will be a space for additional questions and a short discussion. (60´)

### SUGGESTIONS



- Use this activity with the participants who are able to work with English resources. Most of the information regarding the topic of climate refugees is in English.
- It takes a lot of time to prepare all presentations and then to listen and participate at the discussions. It can be very exhaustive.

## ANNEXES

### ANNEX 1 - Sources

IASC Framework on Durable Solutions for Internally Displaced Persons, April 2010, available at <http://www.unhcr.org/50f94cd49.html>.

UNCHR The Environment & Climate Change Report, 2015, available at <http://www.unhcr.org/540854f49.pdf>.

### ANNEX 2 - Topics to be divided into groups

Camp coordination and camp management

Early recovery

Education

Emergency telecommunication

Food security

Health

Logistics

Nutrition

Protection

Shelter

Water sanitation

### ANNEX 3 - Roles

In a camp, there should be coherence between the teams in managing the camp and the life in the camp. Thus, each group should think about what they could do for supporting the roles below.

**Role 1:** Camp coordination and camp management: refers to standardized coordination mechanisms that may be applied to refugee situations. This mechanism ensures that services are delivered efficiently and that populations' concern is protected in camp or camp-like settings. The standard model involves three coordination mechanisms, plus representative community governance structures for persons' concern. Each has specific roles and responsibilities. To avoid confusion and gaps in camp-based responses, it is important to clearly distinguish and agree the roles and responsibilities of particular actors. The three standard roles are:  
 Camp Administration (CA): This role is usually assumed by national or local authorities. It involves the overall supervision of a camp response, including security of the persons of concern.

Camp Coordination (CC): This role is usually assumed by UNHCR in refugee emergencies and in complex (conflict-related) emergencies. It involves overall strategic and inter-camp operational coordination, covering issues such as setting strategy, setting standards, contingency planning, and information management.

Camp Management (CM): This role is usually assumed by a NGO partner or by national or local authorities. Where capacity is limited, UNHCR may also support or take on this role. It involves camp service's coordination and maintenance of infrastructure.

As a group think about how your team can manage a camp by considering the points above.

**Role 2:** Early recovery: is an approach that addresses recovery needs that arise during the humanitarian phase of an emergency; using humanitarian mechanisms aligned with development principles. It enables people to use the benefits of humanitarian action to seize development opportunities, build resilience, and establish a sustainable process of recovery from a crisis.

Early Recovery is both an approach to humanitarian response which, through enhanced coordination, focuses on strengthening resilience, re-building or strengthening capacity, and contributing to solving rather than exacerbating long standing problems which have contributed to a crisis; and also a set of specific programmatic actions to help people to move from dependence on humanitarian relief towards development.

It aims to generate self-sustaining, nationally owned, resilient processes for post crisis recovery and to put in place preparedness measures to mitigate the impact of future crises.

As a group think about how your team can manage early recovery in a camp by considering the points above.

**Role 3:** Education: In times of displacement, education is crucial. It can foster social cohesion, provide access to life-saving information, address psychosocial needs, and offer a stable and safe environment for those most in need. It also helps people to rebuild their communities and pursue productive, meaningful lives.

The factors that negatively affect the learning environment in camps:

1. Some families expect to return home after just a short time in the camp which might be a disincentive for parents to send their kids to school.

2. Some students do not want to go to school. For instance, in case of Syrian refugee students, they say, the main reasons for not going to school (or dropping out) are violence and harassment on the way to and from school, between students at school (especially among boys), verbal abuse and corporal punishment in the classroom by hosting country's teachers and Syrian assistant teachers, insecurity about leaving their family even for a few hours, having to help at home or work to earn money, the distance to school and the lack of appropriate toilets.

3. The teachers in the camps also face constraints: For instance in case of Syrian camps in Jordan; Some report that they do not feel safe working in the camp (the camp name is Za'atari) and that transportation to the camp is costly and difficult. Often they are inexperienced because many of them have only recently graduated. For every two Jordanian teachers, there is approximately one Syrian assistant teacher. Syrian teachers are frustrated because they are only allowed to work as assistants in Za'atari camp although they are fully qualified teachers.

As a group think about how your team can manage education problems in a camp by considering the

points above.

**Role 4:** Emergency telecommunication: Communicating with communities is vital to all aspects of an emergency response, from assessment, through response planning, program design and implementation, to monitoring results and impact.

Two-way communication: ‘Two-way communication’ (rather than ‘mass information’) should always be adopted when is necessary to communicate with many people. It ensures that persons of concern are not treated as passive agents who simply receive information from aid agencies. Two-way communication is widely recognized to be a good practice.

Respectful, coordinated, and purpose-oriented mass communication: Modern tools and technology make it possible to communicate efficiently and fast on a large scale (for example using SMS blast systems or social media). However, if audiences are swamped by messages, or the information they receive is inconsistent or contradictory, they may become irritated or confused and ignore future messages.

As a group think about how your team can manage telecommunicate with the world in a camp by considering the points above.

**Role 5:** Food security and nutrition: food security is a problem in many camps. For instance, the refugee diet is monotonous and does not meet the full micronutrient needs of the population. Almost 90 per cent of the refugees have been living in Ethiopia for more than 15 years, and these protracted refugees depend fully on food aid, which means they have been receiving the same kind of food commodities all this time: cereals (wheat and/or maize), vegetable oil, salt and sugar

(Together amounting to 1750 to 2100 kcal/day/person).

Second, the dietary diversity is very poor; due to lack of affordable fresh foods (which are also scarce in the region). UNHCR is not able to provide fresh vegetables in many refugee camps, while the hosting government’s current land policy does not allow the refugees to cultivate crops themselves outside the camps. Third, it was found that children and pregnant women are especially vulnerable. Anaemia rates among children and women of childbearing age are high.

Although these rates were reduced, they are still too high and a public health concern. Based on these findings, in August 2007 WFP started to provide a more diversified food ration, including pulses and fortified corn-soya blend (CSB). UNHCR decided to provide peanut butter (50g), tomato paste (70g) and lentils (50g) for pregnant women and children aged 6-24 months.

Infant Feeding: Natural disasters and emergencies have a devastating impact on people’s lives. The effect on women can be particularly severe, both mentally and physically.

Some women may become malnourished, while others can lose the confidence or strength to breastfeed their infants. With support networks shattered, there may be even more demands on a mothers time to get food for her family, find shelter and plan for an increasingly insecure future.

Our teams at UNHCR work hard to ensure that children and their mothers receive nutrition and care in times of crisis.

Micronutrients: Micronutrient deficiencies represent a largely invisible but often crippling form of malnutrition, affecting birth and maternal outcomes and child development and learning potential.

Iron deficiency anaemia and vitamin A deficiency are amongst the most visible forms of micronutrient deficiencies in refugee populations, but these are just the tip of the iceberg and in reality, the refugee populations, often suffer from multiple micronutrient deficiencies.

The High Commissioner for Refugees has put a high priority on improving the nutritional status of refugee populations and decreasing the burden of anaemia and other micronutrient deficiencies.

As a group think about how your team can solve food security and nutrition problems in a camp by considering the points above.

**Role 6: Health:** The overall aim of any public health intervention is to prevent and reduce excess mortality and morbidity. In the first phases of an emergency, the public health response focuses on identifying and addressing life-saving needs. The best outcome is to provide refugees with full access to essential health services and wherever possible to ensure access to national services.

Among forcibly displaced populations in developing countries, the top five killers of children under the age of five are malaria, malnutrition, measles, diarrhoea and respiratory tract infections. UNCHR and supporter organizations priorities, at the start of an emergency are: measles immunization, nutritional support, control of communicable diseases and epidemics, implementation of the reproduction health measures and public health surveillance. As the situation stabilizes, these services are enlarged. In more developed and urban settings, public health priorities among adults shift toward cardiovascular and chronic diseases and cancers.

The group who will propose solutions should think about:

To ensure that refugees enjoy access to health services that are equivalent to the services enjoyed by their host population; in all circumstances, these services must meet minimum humanitarian standards.

To ensure public health interventions save lives and address the most urgent survival needs. Implementation should start at the earliest possible stage. When existing services, such as those provided by the Ministry of Health, are insufficient or do not exist in the area of displacement, UNHCR and its partners must provide the core services outlined above.

To respect the right to health.

As a group think about how your team can solve health problems in a camp by considering the points above.

**Role 7: Logistics:** The first task of a logistician in refugee camp is to assist in the flow, storage and distribution of fundamental resources for life such as food, water, hygiene and cleaning kits, clothes and shoes for those who live there. It is initial priority structuring, or in some cases, the restructuring of the stock to avoid disruption in the supply of victims and aid facilities such as those for health care that work in the camps and / or hospitals that are deployed with the purpose of meeting all the victims.

As a group think about how your team can solve health problems in a camp by considering the points above.

**Role 8: Protection:** UNCHR promotes refugee protection include:

Promoting accession to different Convention on Refugees.

Assisting States to enact or revise national refugee legislation, including administrative instructions and operational guidelines, and to implement national refugee status determination procedures.

Strengthening relevant administrative and judicial institutions, training staff of government and non-governmental agencies, and liaising with relevant human rights bodies.

As a group think about how your team can solve protection problems in a camp by considering the points above.

**Role 9: Shelter:** Shelter is a vital survival mechanism in times of crisis or displacement. It is also key to restoring personal security, self-sufficiency and dignity. Over 2.6 million refugees currently live in camps worldwide and have been displaced for over five years, some, for over a generation. While camps can be practical, particularly during emergencies, encampment results in a range of problems, including aid dependency and isolation.

As a group think about how your team can solve shelter problems in a camp by considering the points above.

**Role 10: Water sanitation:** In a refugee camp, Access to Clean Water is not just “what” but also “how” we provide this life sustaining resource. This is as important as the availability of water itself.

1. Adequacy and equity of water distributed: Sufficient supply for basic needs for each and every person throughout the camp, including school and health units.
2. Acceptability and safety of water supplied: Potable and palatable in terms of appearance, taste and odour. Water quality is monitored regularly for faecal contamination and water safety plans are in place
3. Social costs (burden) on the users: Facilities located centrally and not too far from the dwellings, with minimum waiting time, and safe and user-friendly designs.
4. Physical safety of the users: Facilities located in a secure physical environment; water distribution time and duration planned according to users’ convenience and cultural habits, and limited to day-light hours.
5. Reliability of supply: There needs to be continuous maintenance of the water supply system as well as adequate water storage at the family and community level in case of interruptions.
6. Environmental concerns/hazards: Sustainable exploitation of water sources, waste water management, improved drainage for storm water to avoid water-induced hazards etc.
7. Efficiency of supply: Avoiding water wastage during fetching from tap stands and other system losses.
8. Participation of stakeholders: Refugees and other sectors (health, physical planner, sanitation) involved in water system development and operation as well as maintaining a good rapport with the host community.

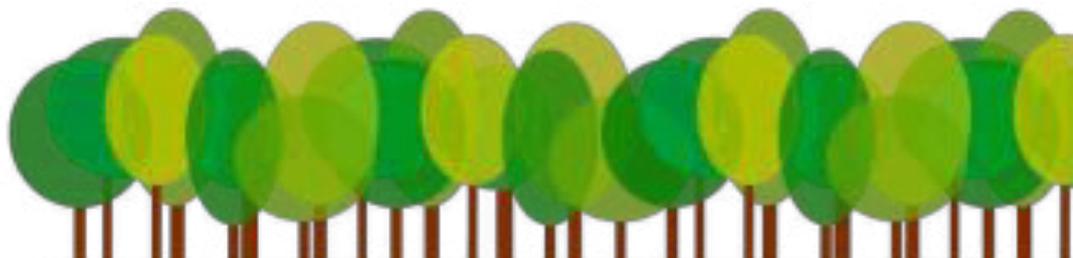
As a group think about how your team can solve water sanity problems in a camp by considering the points above.

# GUIDEBOOK

# ANNEX

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**25 ENVIROMENTAL ACTIVITIES  
FOR YOUNG PEOPLE**

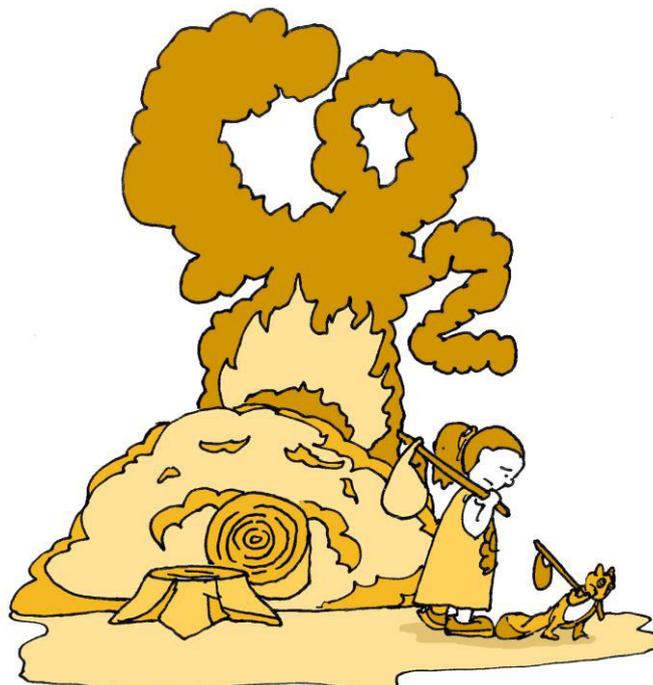




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# Forest Strengths & Weaknesses

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# Earth Education

<b>Activity section:</b>	Forest Strengths and Weaknesses
<b>Type of activity:</b>	Outdoor
<b>Duration:</b>	90 minutes
<b>Materials:</b>	Prepared "experience spots" by the lecturer

## LEARNING GOALS



- Help people understand how the basic ecological systems work.
- Let people experience a deep contact with nature and fall in love with it.
- Offer instruments to re-educate people about nature.

## INTRODUCTION



Earth education is a fascinating methodology invented by Prof. Steve Van Matre focused on environmental awareness path sensory appearance, on the transmission of a sense of wonder towards our planet.

For this reason the Earth education is not a type of Environmental Education, but it is a real alternative to it. The Earth education is the process that helps people live with more joy and harmony in the natural world. If today we look carefully to the conditions of the earth and its life systems, it is clear that we are in trouble. There is an urgent need to re-educate people, to help them understand how the basic ecological systems work, but above all let them experience a deep contact with nature and fall in love with it.

## ACTIVITY DESCRIPTION



A walk with the earth is a simple touch of nature, a new way of looking at things and also an interesting approach to the unknown. The methodology of interpretation is adopted: The lecturers will lead the group in the forest, like real performers, making people live magical adventures, starting from their daily experiences and inviting participants to make their own experience.

1. Introduction about Earth education and Steve van Matre and activity explanation. (15')
2. Let's go walking with the Earth! (60')

Walk consists of several stops full of experiencing in pairs. E.g.:

- o Snow field. Crossing the snow and listening to the sounds of the steps and also the sounds of steps of the other people.
  - o The mystery is going under the stones. Putting hands in the ice water crossing the conformal zone and submerging hands under the surface and turning the stones if they find something under them (maybe hidden crayfish, the stumps etc.)
  - o Tree perception. Participants lie on the fallen tree and feeling its energy.
  - o ...etc. depending the place, weather and possibilities.
3. Joint debate and sharing experiences and feelings. (15')

## SUGGESTIONS



- Preparations of this activity are necessary. The lecturer has to study materials about Steve van Matre and his style of teaching. It is also recommended to go around the place and choose some appropriate "experience places" to carry out the activity.
- Some participants may not feel comfortable in pairs, because some of the activities seem to be too intimate and they would rather do them alone.

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# Inspectors of connections

<b>Activity section:</b>	Forest Strengths and Weaknesses
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	60 minutes
<b>Materials:</b>	Pens, block notes and a flip chart

## LEARNING GOALS



- Present the role of UNICRI in fighting Earth's crimes.
- Learn how much interests are involved in an environmental problem.

## INTRODUCTION



It is important to understand that also little things we do could cause a horrible disaster. Every time we intervene on a part of this network, we end up also affecting other parts. It is important to remember: nobody could ever just do one thing.

Together we will understand how all living elements are connected together in the great network of life and how a simple gesture like removing weeds with the herbicide may cause consequences also very far away from us.

## ACTIVITY DESCRIPTION



A premise can be made on the Earth's resources about the consideration that they are not unlimited highlighting the weaknesses and fragility of natural ecosystems.

A role play will be created: participants will be invited to carry out simulation exercise on environmental law court case under the following theme: pollution in water wells by a newly established factory.

1. Introduction about Earth's crimes. (5')  
This introduction can be based in the information provided in activity annexes.
2. Activity explanation. (5')
3. Role play based in the methodology presented in activity annexes. (30')
4. The work group presents arguments on flip chart before the Court. (10')

5. Final discussion on activity learnings. (10')

## SUGGESTIONS

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- If the lecturer uses a real and local example, the activity can achieve higher levels of awareness. If this is done, at the end of the activity, the lecturer can explain what happened in the real life.
- It would be useful to provide a more extended description on the roles so the participants can have a better understanding.
- In general, this activity does not have any relation with its section. If the lecturers want to conduct it under the topic forests strengths and weaknesses, they will have to change the main topic of the role game. Some examples of more related topics are illegal logging, biodiversity loss, forest fires, etc.

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## ANNEXES

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### ANNEX 1 - Information on Earth's crimes

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UNICRI considers environmental crime, including its links with other forms of crime, a serious and growing danger for development, global stability and international security.

Since 1991, UNICRI has combated crimes against the environment and related emerging threats through applied research, awareness, and capacity-building initiatives. Today, countering environmental crime is an emerging priority for UNICRI work.

#### Transnational threat of Environmental Crimes

Environmental crimes encompass a broad list of illicit activities, including illegal trade in wildlife; smuggling of ozone-depleting substances (ODS); illicit trade of hazardous waste; illegal, unregulated, and unreported fishing; and illegal logging and trade in timber. On one side, environmental crimes are increasingly affecting the quality of air, water and soil, threatening the survival of species and causing uncontrollable disasters. On the other, environmental crimes also impose a security and safety threat to a large number of people and have a significant negative impact on development and rule of law. Despite these issues, environmental crimes often fail to prompt the appropriate governmental response. Often perceived as 'victimless' and incidental crimes, environmental crimes frequently rank low on the law enforcement priority list, and are commonly punished with administrative sanctions, themselves often unclear and low.

The involvement of organized criminal groups acting across borders is one of many factors that have favoured the considerable expansion of environmental crimes in recent years. Led by vast financial gains and facilitated by a low risk of detection and scarce conviction rates, criminal networks and organized criminal groups are becoming increasingly interested in such illicit transnational activities. These phenomena fuel corruption and money-laundering, and undermine the rule of law, ultimately affecting the public twice: first, by putting at risk citizens' health and safety; and second, by diverting resources that would otherwise be allocated to services other than crime.

The level of organization needed for these crimes indicates a link with other serious offences, including theft, fraud, corruption, drugs and human trafficking, counterfeiting, firearms smuggling, and money laundering, several of which have been substantiated by investigations. Environmental crimes therefore today represent an emerging form of transnational organized crime requiring more in-depth analysis and better-coordinated responses at national, regional and international levels.

#### Role of UNICRI in supporting Member States and the International Community in preventing and countering Environmental Crimes

UNICRI has been actively involved in the field of environmental crime and justice research and training since 1991, issuing various publications on the topic. The first research projects were aimed at environmental law, especially exploring the limits and potentials of applying criminal law in crimes related to environment. In June 1998, UNICRI organised in Rome a seminar on International

Environmental Conventions and the Administration of Criminal Law. Since then, UNICRI has focused on the involvement of organized criminal groups in environmental crime.

UNICRI also has built a strong international network of experts from major international organisations active in the field, including international and national NGOs as well as well-known researchers from academia.

To increase awareness of the threat of environmental crime, UNICRI contributed to the organization of a conference in Rome in December 2011 entitled “Illicit Trafficking in Waste: A Global Emergency”, with the participation of the Ministry of the Environment of Italy, parliamentarians, international partners such as the International Criminal Police Organization (INTERPOL), and stakeholders involved in countering trafficking in and dumping of toxic waste. To enhance understanding of the dynamics of environmental crime, the Institute is currently implementing a research and data collection project in the domain of environmental crime, with a specific focus on the dumping of illegal waste and hazardous materials, including e-waste, and its relation with organized crime. The research methodology follows the one applied by the Institute with success in other fields related to organised crime (such as counterfeiting, for example), and can be utilised to investigate different areas of environmental crime in the future.

In partnership with several research institutes, civil society organizations, and municipalities, UNICRI has launched a process for consultation at the international level on the involvement of organized crime in environmental crime, with a view to identifying a set of recommendations for more effective policies and action at the national, regional and international levels. To that end, the Institute, in partnership with the United Nations Environment Programme, has organized an international conference in Italy on 29 and 30 October 2012.

In preparation for the Conference, the Institute has carried out preliminary in-depth data collection and analysis of cases involving trafficking in and dumping of toxic and e-waste.

In parallel, UNICRI has elaborated a number of applied-research project proposals covering different aspects of environmental crime aimed at shedding light on aspects not yet fully explored by the international community, including the intersection between counterfeiting and waste management or transnational environmental crime and corruption. In addition, another set of proposed activities looks at environmental crime from a multi-sectorial perspective, targeted at exploring the dimension and scope of environmental crime in Europe as well as proposing a set of tools and instruments to assess and monitor environmental crime across the region.

#### **UNICRI major activities:**

**UNICRI International Conference on Environmental Crime** - Convening key IGOs, NGOs, major LEAs, academia and scholars (October 2012, Rome - Italy).

**Research** - Data collection and mapping of illicit trafficking cases of waste, analysis of international legislation and relevant application, and identification of risk factors linked to organized crime.

**Outreach activities** – Conferences, capacity building for law enforcement, awareness workshops, and seminars for general public.

## ANNEX 2 - Role game methodology

The group is instructed to have the following categories of 10 people as part of the investigative team:

- at least two eye witnesses or providers of the initial report/information
- two Environmental inspectors; one designated environmental inspector and one police officer, who would carry out the investigation and institute charges
- two owners of the factory
- two analysers of evidence submitted (lab analysis, expert witnesses)
- one prosecutor to approve the charges to be laid and to present evidence in court
- one factory lawyer

The residents of a village fetch their water from the valley well. Six months ago some investors built a factory and started making cooking oil and washing soap. It has been three months since the residents of Kawempe village noted that the color and smell of the water in the well had changed. There is also an oily film on top of the water.

Commence investigations leading to prosecution.

### Group Discussion

#### MAJOR ISSUES

- A factory has recently been constructed
- People of the village begin to notice a change in their water.

#### CHRONOLOGY

Plain statements at Police → Visit the scene → More information obtained from Environment Officer → Sketch plan drawn → Photographs taken → Water sample collected → Results from the Government Chemist obtained → Visit factory → Management interrogated for Environmental Inspector → Observation made to check how effluent is discharged → Sample the effluent → Court.

Remedies: a) compensation; b) restoration; and c) improvement notice

#### LIST OF WITNESSES

- Mr. A, a villager “reporter”
- Mr. B another villager original users of the water
- Mr. C Police Officer
- Mr. D Scene of crime officer
- Mr. E, Environmental officer/inspector

The work group presents arguments on flip chart before the Court.

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# The 4R rule

<b>Activity section:</b>	Forest Strengths and Weaknesses
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	40 minutes
<b>Materials:</b>	A copy of "Unscramble" game per each participant (available in activity annexes), pens and block notes

## LEARNING GOALS



- Know useful information about the “4 R” rule: Reduce, Reuse, Recycling, and Recovery.
- Share opinions about the importance to take on socially responsible behaviours in everyday life.
- Introduce the subject of Social Responsibility.

## INTRODUCTION



The 4R responsibilities for environmental sustainability should be applied in all personal and business aspects of life. This rule provides an ecological and environmental friendly approach to minimizing and managing waste and waste streams. The success of a strategy to reduce waste is largely dependent upon the adoption of a philosophy to embrace resource conservation efforts. Everybody has to do something with commitment and spirit of collaboration: institutions, companies, individual citizens.

## ACTIVITY DESCRIPTION



Every action counts. Through this activity, we will explain the impact of these actions.

1. Activity explanation and short introduction about the 4R rule approach. (15')  
The lecturers can prepare the short introduction based in the document linked in activity annexes.
2. Unscramble game: the lecturers should deliver a piece of paper with the game "unscramble". (10')

3. Final discussion on activity learnings. (15')
  - o Why reduce? What can I reduce?
  - o Why reuse? What can I reuse?
  - o Why recycle? What can I recycle?
  - o Why recover? What can I recovered?

## SUGGESTIONS

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- In the final discussion, the activity should include a question on how participants would implement the 4R rule in their daily life.
- Unscramble game might be deleted from the activity because in practice it does not meet its learning goals.
- In general, this activity does not have any relation with its section, so if the lecturers want to conduct it under the topic forests strengths and weaknesses, they will have to change the activity approach.



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# The double interview

<b>Activity section:</b>	Forest Strengths and Weaknesses
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	60 minutes
<b>Materials:</b>	Block notes, pens, printed examples of questions/answers (Annex 1)

## LEARNING GOALS



- Think about the forest fires in the context of causes and prevention.
- Share opinions about the topic.
- Raise awareness about fire management in forests and nature.
- Raise awareness about damages caused by men.

## INTRODUCTION



The double interview is offered as a pedagogical tool to stimulate the reflection and induce participants to externalize their point of view and their knowledge about the topic of forest fire. Starting from a double interview about methods of prevention of forest fires, participants are requested to give their opinion and thoughts in order to foster debate in the classroom. In the final discussion, the lecturer explains how fire management in forests and nature works in real life and gives some specific examples.

## ACTIVITY DESCRIPTION



Depending on the number of participants, different double interviews will be held at the same time, each composed by 3 participants (2 interviewees + 1 interviewer/journalist). Participants will answer one after another according to their knowledge of the subject. One interviewee will be a Forest ranger's son/daughter who loves nature and is a responsible and prepared person (about 20 years-old), very sensitive to the environmental issues. The other one will be a young persona passionate about outdoor activities, who loves adrenaline, a bit selfish person and he/she is not interested in any damages that can be done on the nature. The journalist can choose the media (local newspapers, radio, TV) which he/she represents. At the end, the final discussion will follow in the classroom.

1. Brief explanation of the activity, role distribution and dividing into group. (5')

2. Preparation for the interview - each person will be alone trying to prepare a more detailed profile of the role, preparing the positions and opinions about attitude to the nature and forest fires and the journalist will prepare questions. The only thing that the interviewees will know is that the topic of the interview will be nature and forest fires. (5-10')
3. Interviews. (10 -15')
4. Final discussion, sharing of new knowledge and skills. The lecturer will lead the final discussion and will explain what it is necessary. (20')
5. Reflection on learning process and feelings during the activity (the following questions should be answered). (10')
  - o In your opinion, did you know enough about forest fires before this activity?
  - o Do you think your knowledge about this topic increased?
  - o What is the most interesting feature/topic you learned during this activity?

## SUGGESTIONS



- The lecturer must be sufficiently familiar with the subject of fire management so that he/she can put everything in the final discussion in order to correct the mistakes and myths. The final discussion is the most important part of the activity which brings news/learnings for the participants.

**ANNEXES**

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**ANNEX 1 - Examples of answers for the interviews/journalist**

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1. Do you know what the role of the Forest Rangers is?
2. What is it and how to do the prevention of forest fires?
3. Which are in your opinion the preventive actions focused to the forests?
4. Which are in your opinion the preventive actions focused to Man?
5. Which are in your opinion the predisposing factors and causes of fire?
7. How could the fire be extinguished?
8. Forest fires can be classified into different categories depending on the causes that generate them. What are in your opinion these causes?
9. What are the causes of natural fire?
10. Are they frequent in your opinion?
11. What are the causes of involuntary fire?
12. What are the differences with voluntary fires?
13. Did you know the existence of doubts fires?
14. Which are the major environmental damages caused by the fires?

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# The water sommelier

<b>Activity section:</b>	Forest Strengths and Weaknesses
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	60 minutes
<b>Materials:</b>	Pens, block notes and a flip chart

## LEARNING GOALS



- Know useful information about the water cycle.
- Share opinions about the importance of not wasting water.
- Understand the import role of forests in the whole life of the planet.

## INTRODUCTION



Participants will find the presentation of the “water sommelier” job interesting and starting from this issue the subjects of the water cycle will be introduced. The water cycle has been working for billions of years and the whole life on Earth depends on it.

Forests and trees represent a crucial part of the water cycle. The soil absorbs precipitation that falls from the clouds, and trees draw water from the soil into their roots to support all of their life major processes such as growth, reproduction, and maintenance. As water travels from the roots out to the leaves, water is lost through tiny pores, in a process called transpiration. Transpiration and evaporation together comprise total evapotranspiration, the amount of water returned to the atmosphere as vapour to continue the water cycle. Forests use more water than lower-growing types of vegetation, and also produce lower surface runoff, groundwater recharge, and water yield. Tree species and age, forest structure, and harvest patterns influence the amount of water a forest requires. Young trees require more water than older trees. Thinning out a forest can help to reduce the water demand by the trees, but increases erosion and produces holes in the canopy which removes shade and shelter for other forest species. Maintaining a developed understory layer to protect soil moisture reduces the water requirements of forests, even if many trees are cut down to reduce water demands by trees.

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## ACTIVITY DESCRIPTION



An introduction showing how a "water sommelier" works by learning to recognize the various types of water. From this starting point, the participants will discover the importance of forests in the water cycle and how we are all protagonists of this cycle.

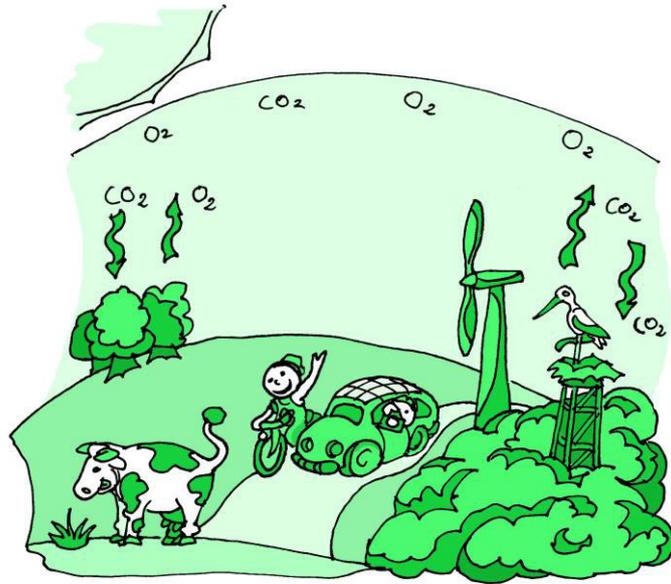
1. Show the video: The water sommelier (<https://vimeo.com/184406194>). (10')
2. Joint debate about the video. (15')
  - o Have you ever heard about water sommelier?
  - o Why do we care so much about water?
  - o How does this relate to forests?
3. Introduction about the subject of water cycle. (15')
4. Joint debate. (20')
  - o Are you aware about the impact of human activities on the water cycle?
  - o In your opinion, what are the main actions impacting on the cycle water?
  - o What do you think is your personal and collective responsibility about this issue?
  - o Could you give us any example of actions in you daily life that you could implement to support the learned issues?

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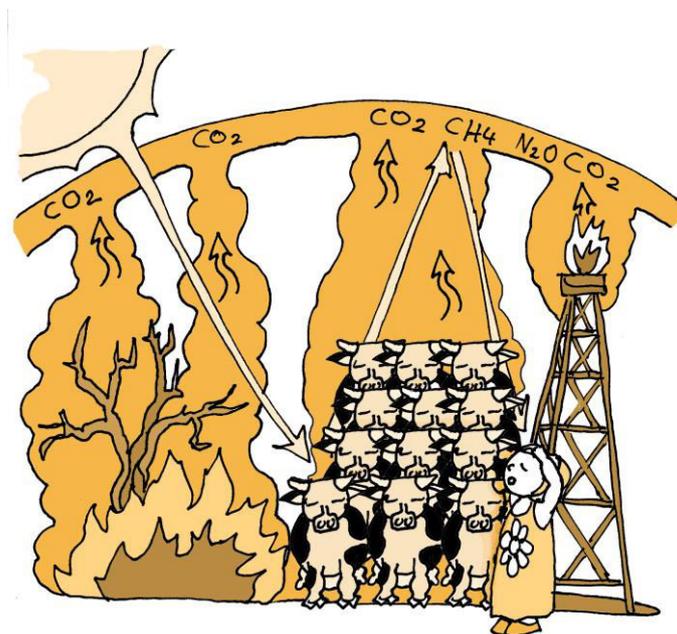
## SUGGESTIONS



- The video has been replaced with a shorter one in native language, because the original one was too long and the language too difficult for the participant.
- The duration is excessive: in total the activity could be developed in 30 minutes.



# General Knowledge on Climate Change



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# Flying eyes

<b>Activity section:</b>	General Knowledge on Climate Change
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	60 minutes
<b>Materials:</b>	Computer with installed free source program, internet connection

## LEARNING GOALS



- Understand the principles of remote sensing.
- Introduce the MODIS device and vegetation index.
- Become familiar with a free Geographic Information System: QGIS.
- Detect changes in an area.

## INTRODUCTION



The disappearance of forests and rainforests contributes significantly to climate change. The felling and burning of trees releases CO<sub>2</sub> into the environment, and leaves fewer trees to absorb carbon. Deforestation is one of the major global problems that will affect everyone.

[Remote sensing](#) (mostly red and near infrared wavelengths) is a really useful tool for monitoring vegetation cover at a global level. It can make the invisible become visible because changes in vegetation can be observed. Images are taken from the same position over time using the same satellite. These images are comparable and can help make decisions that influence our environment. These images have a long history (compared to other kinds of remotely sensed data), so comparisons can be made over a long time period. The most common vegetation indexes are the [NDVI](#) (Normalized Difference Vegetation Index) and the [EVI](#) (Enhanced Vegetation Index). These are available for free (medium spatial resolution) for educational and scientific purposes, making it easy to get a good understanding of an area's vegetation. One of the most common devices used for vegetation monitoring is [MODIS](#) (Moderate Resolution Imaging Spectroradiometer) which is capable to give us a 16-day composite image with a spatial resolution 250 meters.

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## ACTIVITY DESCRIPTION



The goal of this activity is to educate people about the use of remotely sensed data and about the way we can detect changes in particular area.

Using satellite images of the same location from different years, participants will detect the changes in vegetation cover over time. This can be done using projector so that multiple people can work together, or individually on computers, as the software and data are free. It will be necessary that the participants understand the basic theoretical background of remote sensing before commencing this activity.

The results will need to be analysed and further consequences discussed by the participants. A step by step tutorial can be found in the Annex 1.

In order to see the images clearly, you will need to have a good quality projector. Results can be overlaid onto a base map for better visualization. The source of raw data can be found here: <https://earthexplorer.usgs.gov/>.

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## SUGGESTIONS

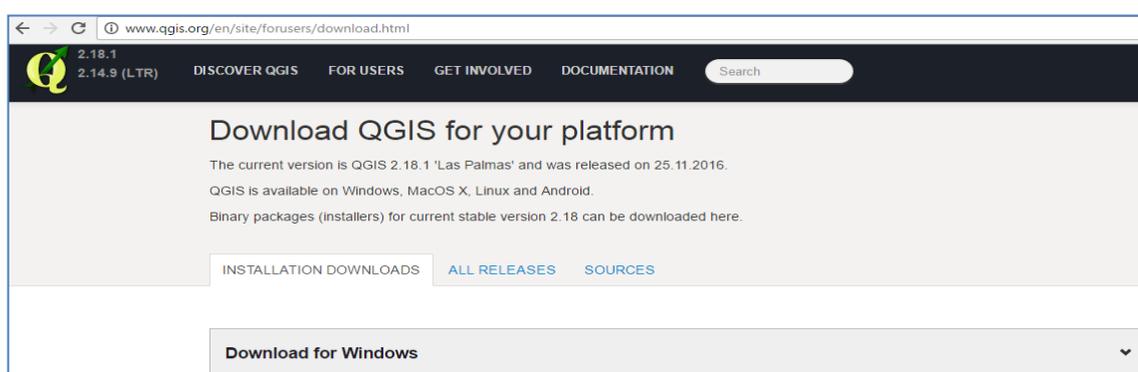


- Conduct this activity only if you have sufficient knowledge of remote sensing.
- You can adjust this activity so that you only explain the process and show the end results (several examples can be found online), but you do not do the calculation.

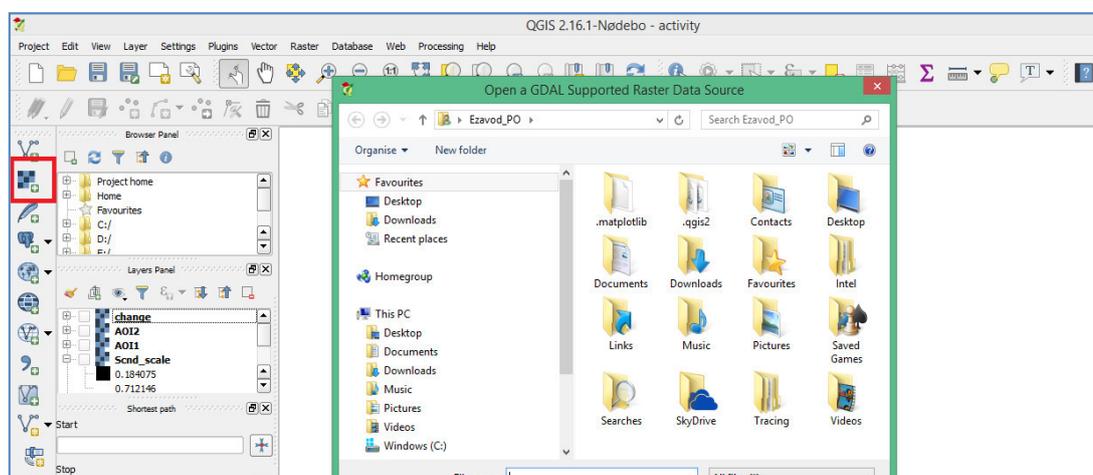
## ANNEXES

### ANNEX 1 - Tutorial for detecting vegetation change

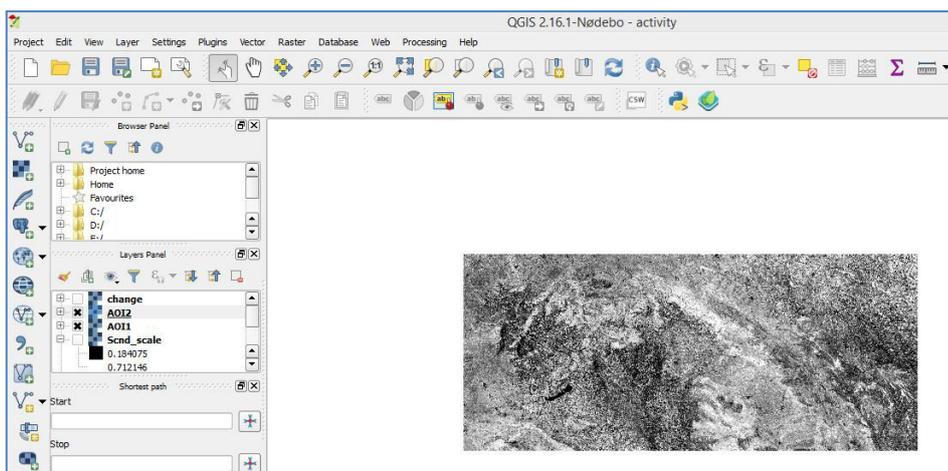
1. Download QGIS (for free) which contains all the necessary tools. We will use free MODIS satellite imagery to get vegetation data but such data is available on the internet from other sources. It needs some time to download; meanwhile let's take a look at the links on the first page.



2. We have two vegetation index data sets (Enhanced vegetation index). This value in land is usually between 0 and 0.8 (0 pixels are water and 0.8 are pixels of dense vegetation.) The bigger the value, the denser the vegetation is. This data is already downloaded and can be found in **ANNEXES folder** (files are available separately of this booklet, just in English). These are two raster maps (AOI1 and AOI2). There is exactly one year between their shot.
3. Open them with QGIS! If you cannot see them, right click (on the layer on the left) and zoom to layer.



4. If everything goes well, you should see this:



5. We have finished with the first part. Let`s see if we can detect a change. To do so, we simply have to subtract the two maps` values (pixel by pixel). AO11 was made earlier (2014) and AO12 more recently (2015).

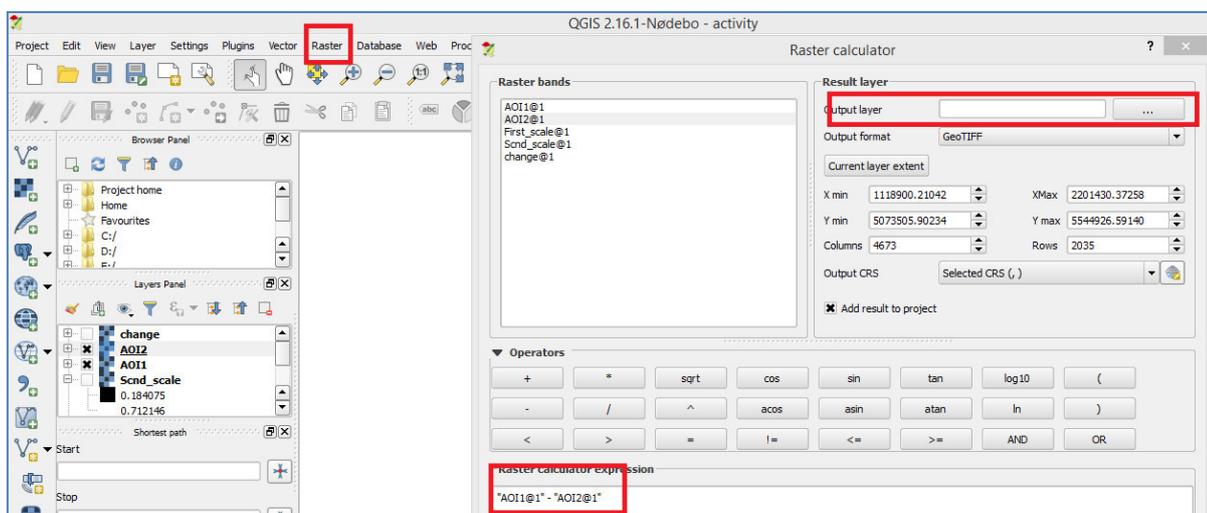
What will these results tell us?

**If: AO11 – AO12 = 0      NO CHANGE**

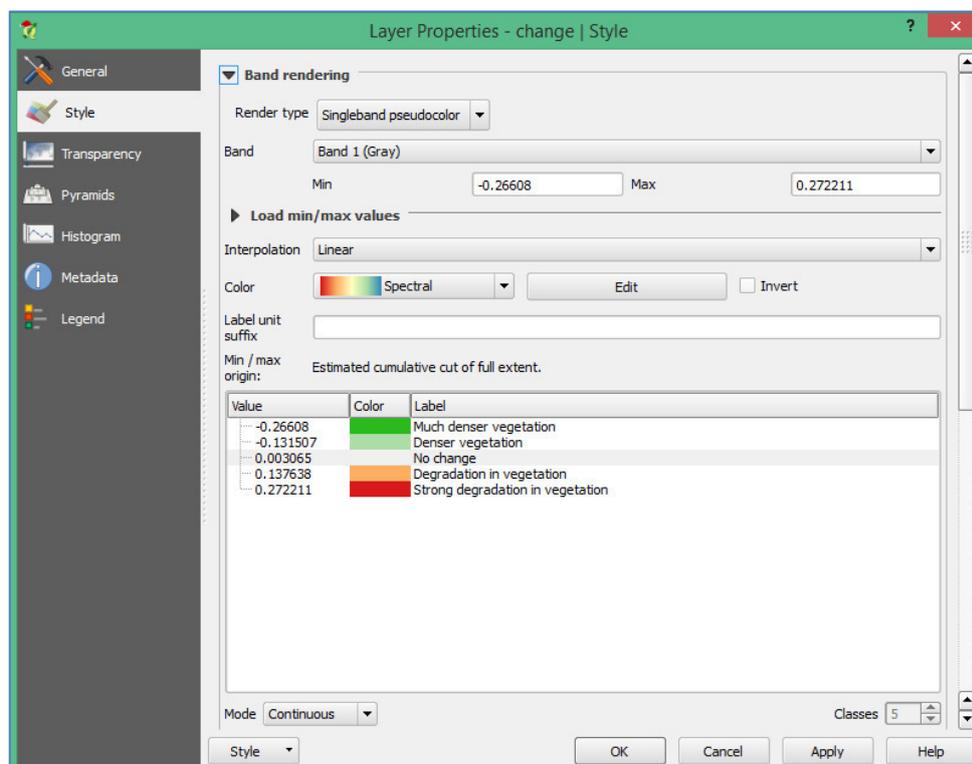
**AO11 – AO12 = negative number      GROWTH IN VEGETATION**

**AO11 – AO12 = positive number      DECREASE IN VEGETATION**

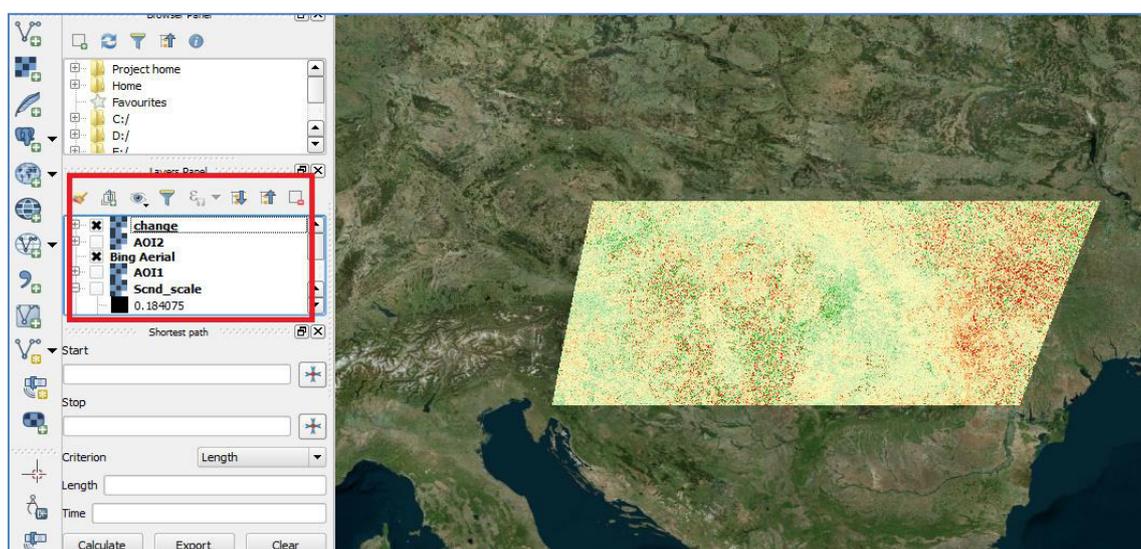
To do so click to Raster/Raster calculator to make the subtraction! Type (double click to the layers) AO11 - AO12, and save the output layer that will contain our results (just pick a name)!



- Now, open your change file if it is not added automatically to the screen. Right click to the layer and Properties/Style. Set Render type: Singleband pseudocolor and classify the pixels of your image like this! You can add different colours. Apply it and check the results! (If you cannot see the classes, just change Mode or Colour and undo. This will refresh the box.)



- To see where we are on the Earth click Web/Openlayers (this is a module that must be installed separately by Plugins, search: Openlayers and install). After installing, add Bing maps/Bing Aerials to see this view! The change layer must be above the base map in the Table of Contents! Internet connection is necessary for the base map!



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# C-Movie

<b>Activity section:</b>	General Knowledge on Climate Change
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	135 minutes
<b>Materials:</b>	Pencil, paper, smart phones or cameras (for every participant), computer, internet connection, data projector, box with props (optional), background papers and presentation sheets of the topic of climate change and forests

## LEARNING GOALS



- Encourage young people to become active actors in aware raising activities on the issue
- Boost creativity of young people

## INTRODUCTION



Climate change is an undisputed environmental and global issue. Humans have a major role in contributing and combating climate change. Especially after the Industrial revolution, human activities, such as burning of fossil fuels and unsustainable land management, have contributed significantly to the shift in the climate. The consequences of our own actions are seen in the warming of global temperatures, observable not just in the melting of the ice bergs, but also in the extinction of plants and animals. Nevertheless, the awareness on the importance of human activities in mitigating climate change and vice versa is not sufficiently understood by the general public.

New and smart awareness raising approaches need to be developed and implemented not just as a communication tool, but also to support policy development, and as a tool in achieving the global goal of lowering carbon emissions and preserving biodiversity.

## ACTIVITY DESCRIPTION



Before the workshop with the participants, the lecturer will prepare an overview on the topic climate change (Annex I). The aim of this presentation should be to make participants aware of the importance of climate change mitigation for the future of our Planet.

The steps are provided below:

1. The workshop will start with the welcome speech and overall presentation of the workshop. (5')
2. Presentation of the overall topic of "climate change" to the participants and the distribution of an information paper on the topic. The presentation should be interactive so as to involve participants and enable them to share their existing knowledge on the topic. This should be followed by a short group discussion on the topic (Annex II). (20')
3. The lecturers will split the whole group of participants in smaller groups which will prepare a baseline story scenario with the goal of making an awareness raising video on the presented topic. After the scenario is complete it should be divided into five parts and each part given to one or two participants to work on. (30')
4. Every participant will prepare a 2 minute video for his/her part of the scenario; there is no right or wrong way to shoot the video. In the preparation of videos, the participants will have flexibility to choose his/her way of filming as long as the content part of the story will be presented. A workshop leader can decide to encourage the creativity of the participants by preparing the surprise prop box (props not really connected to the topic). (40')
5. Each group will prepare the final video combining all the short videos using free web Apps (e.g. Movie Maker). (20')
6. Each group will present their video to everyone. (20')

## SUGGESTIONS



- Participants should be encouraged to publish and share the final version of the video on social media and other web channels to broaden the awareness raising effect.
- Translating all the documents presented in the Annex I can be time consuming. Alternatively, the lecturers can use the information provided in their native language.
- Preparing the final videos may require much more time if the participants have no prior experience in preparing videos by using apps.
- We suggest having a technology expert to be present during the video preparation phase as some of participants will need support in merging their video parts.
- A computer with internet connection will be useful in helping the participants to merge their video parts.
- Shooting video uses a lot of battery power, additional sockets would be useful.

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## ANNEXES

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### ANNEX 1 - Background information

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(A) What is climate change?

(A.a) Climate is usually defined as the "average weather" in a place. It includes patterns of temperature, precipitation (rain or snow), humidity, wind and seasons. Climate patterns play a fundamental role in shaping natural ecosystems and the human economies and cultures that depend on them. But the climate we've come to expect is not what it used to be, because the past is no longer a reliable predictor of the future. Our climate is rapidly changing with disruptive impacts, and that change is progressing at the fastest rate in the last 2,000 years.

According to the report 'Preparing for a Changing Climate', rising levels of carbon dioxide and other heat-trapping gases in the atmosphere have warmed the Earth and are causing wide-ranging impacts, including rising sea levels; melting snow and ice; more extreme heat events, fires and drought; and more extreme storms, rainfall and floods. Scientists project that these trends will continue and in some cases accelerate, posing significant risks to human health, forests, agriculture, freshwater supplies, coastlines, and other natural resources that are vital to Washington State's economy, environment, and our quality of life.

Because so many systems are tied to climate, a change in climate can affect many related aspects of where and how people, plants and animals live, such as food production, availability and use of water, and health risks. For example, a change in the usual timing of rains or temperatures can affect when plants bloom and set fruit, when insects hatch or when streams are their fullest. This can affect the historically synchronized pollination of crops, food for migrating birds, spawning of fish, water supplies for drinking and irrigation, forest health, and more.

Some short-term climate variation is normal, but longer-term trends now indicate a changing climate.

Our state and societies around the globe need to reduce human-caused greenhouse gas emissions to avoid worsening climate impacts and reduce the risk of creating changes beyond our ability to respond and adapt. Washington State is addressing this challenge and has adopted policies to reduce energy use, limit greenhouse gas emissions, and build a clean energy economy. Some changes in climate — and impacts on our State — are unavoidable, even if we reduce greenhouse gas emissions today. But we can take more actions to reduce progressively worsening impacts.

Source: <http://www.ecy.wa.gov/climatechange/whatis.htm>; 30. January 2017

A.b) The earth's atmosphere is made up of oxygen, a large amount of nitrogen and a small percentage of greenhouse gases.

Greenhouse gases act like a blanket around the Earth. They trap warmth from the sun and make life on Earth possible. Without them, too much heat would escape and the surface of the planet would freeze. However, increasing the concentration of greenhouse gases in the atmosphere causes the Earth to heat more and the climate to change.

This process is often called global warming but it is better to think of it as climate change because it is likely to change other aspects of climate as well as temperature, and also bring about more extreme climate events such as floods, storms, cyclones and droughts.

### **Multiple lines of evidence show climate change is happening**

There is lots of evidence that tells us the average temperatures of the world's atmosphere and oceans have increased over the last 150 years.

Evidence includes:

- direct temperature measurements on land
- changes in the dates when lakes and rivers freeze and their ice melts our text goes here
- a reduction in the extent of snow cover in the Northern Hemisphere
- a reduction in glaciers
- extended growing seasons of plants
- changes in the heat stored in the ocean
- changes in rainfall patterns resulting in more floods, droughts and intense rain

A number of biological changes have also been observed. These include:

- shifts in the ranges of some plant and animal species
- earlier timing of spring events such as leaf-unfolding, bird migration and egg-laying for some species

Together these indicators provide clear evidence that the climate is changing.

### **It is extremely likely that humans are the cause of recent warming**

It is true that climate change has been driven by natural causes in the past. Our climate has undergone many changes over millions of years — from ice ages to tropical heat and back again. Natural changes over the past 10,000 years have generally been gradual which has enabled people, plants and animals to adapt or migrate, although some prehistoric climate changes may have been abrupt and are likely to have led to mass extinction of species. However, over the past 150 years there has been a marked and growing increase in greenhouse gas producing activities such as industry, agriculture and transportation. These human-induced activities are increasing the level of greenhouse gases in our atmosphere and causing the Earth not only to heat up, but to heat up at an unprecedented rate. This recent warming can only be explained by the influence of humans.

### **The levels of carbon dioxide and methane in the atmosphere are increasing**

The levels of carbon dioxide and methane in the atmosphere have increased as the result of human activities and are now higher than they have been in at least 800,000 years.

We know this from a number of ice core studies. Snow traps tiny bubbles of air as it falls and is compressed into ice. Over the years, more and more ice layers stack up on top of each other. Drilling into ice sheets in Antarctica and Greenland provides a record of what the atmosphere was like back in time.

Direct measurements of atmospheric concentrations of greenhouse gases show how our global greenhouse gas emissions have grown in past decades.

These analyses provide very clear and consistent results that today's greenhouse gas concentrations are far higher than they were at any time during the past 800,000 years

### **The Earth's temperature is changing at a rate unprecedented in recent history**

Globally, our climate has been relatively stable for the past 10,000 years. If the world does not take action to reduce greenhouse gas emissions, the global average temperature is very likely to change more rapidly during the 21st century than during any natural variations over the past 10,000 years. This will make it difficult for plants and animals to adapt to climate change.

### **Limiting climate change will require substantial reductions of greenhouse gas emissions**

Future climate change will largely depend on the total sum of greenhouse gases emitted since the start of the industrial revolution. Greenhouse gas emissions have continued to increase over past decades and limiting climate change will mean reversing this trend.

### **The effects of climate change will continue even after emissions are reduced**

The climate system takes time to change, and human activities have already released large amounts of greenhouse gases into the atmosphere. As a result, the effects of climate change will continue even if we reduce emissions now. For example, the deep oceans take centuries to heat up when the atmosphere above them warms. This means that oceans will continue to heat up, and therefore expand causing sea-levels to rise, even if greenhouse gas concentrations in the atmosphere are no longer increasing. Although we cannot avoid climate change entirely, reducing our emissions can limit its impact.

### **The climate system is very complex and there are still uncertainties about future climate changes**

How the climate will change in the future depends on the amount of greenhouse gases we release into the atmosphere. It also depends on how the Earth responds to the increased heating. So we cannot be precise about future climate change. But we are generally sure of the direction of change (e.g., the world will become warmer and global average sea-levels will rise). We can also give plausible ranges for those changes. For example, scenarios of future climate change looked at by the Intergovernmental Panel on Climate Change (IPCC) show the world's average temperature is expected to increase by between 0.9 and 5.4 degrees Celsius at the end of the 21st century, relative to the average temperature from 1850-1900

Source: <http://www.mfe.govt.nz/climate-change/overview-climate-change/about-climate-change>

## (B) Climate change

Climate change is one of the major challenges of our time and adds considerable stress to our societies and to the environment. From shifting weather patterns that threaten food production, to rising sea levels that increase the risk of catastrophic flooding, the impacts of climate change are global in scope and unprecedented in scale. Without drastic action today, adapting to these impacts in the future will be more difficult and costly.

### **The human contribution to greenhouse gas emissions**

Greenhouse gases occur naturally and are essential to the survival of humans and millions of other living things, by keeping some of the sun's warmth from reflecting back into space and making Earth liveable. A century and a half of industrialization, including clear-felling forests and certain farming methods, has driven up quantities of greenhouse gases in the atmosphere. As populations, economies and standards of living grow, so do the cumulative level of greenhouse gases (GHGs) emissions.

There are some basic well-established scientific links:

- the concentration of GHGs in the earth's atmosphere is directly linked to the average global temperature on Earth
- the concentration has been rising steadily, and mean global temperatures along with it, since the time of the Industrial Revolution
- the most abundant GHG, carbon dioxide (CO<sub>2</sub>), is the product of burning fossil fuels

### **The UN Intergovernmental Panel on Climate Change (IPCC)**

The Intergovernmental Panel on Climate Change (IPCC) was set up by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) to provide an objective source of scientific information. The year 2013 provided more clarity about human-generated climate change than ever before. The UN Intergovernmental Panel on Climate Change (IPCC) released its Fifth Assessment Report which looked at the science of climate change. It is categorical in its conclusion: climate change is real and human activities are the main cause.

#### **Fifth Assessment Report**

The report provides a comprehensive assessment of sea level rise, and its causes, over the past few decades. It also estimates cumulative CO<sub>2</sub> emissions since pre-industrial times and provides a CO<sub>2</sub> budget for future emissions to limit warming to less than 2 °C. About half of this maximum amount was already emitted by 2011. Thanks to the IPCC, this is what we know:

From 1880 to 2012, the average global temperature increased by 0.85 °C.

Oceans have warmed, the amounts of snow and ice have diminished and the sea level has risen. From 1901 to 2010, the global average sea level rose by 19 cm as oceans expanded due to warming and ice melted. The sea ice extent in the Arctic has shrunk in every successive decade since 1979, with  $1.07 \times 10^6$  km<sup>2</sup> of ice loss per decade.

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Given current concentrations and ongoing emissions of greenhouse gases, it is likely that the end of this century will see a 1–2° C increase in global mean temperature above the 1990 level (about 1.5–2.5° C above the pre-industrial level). The world’s oceans will warm and ice melt will continue. Average sea level rise is predicted to be 24–30 cm by 2065 and 40–63 cm by 2100 relative to the reference period of 1986–2005. Most aspects of climate change will persist for many centuries, even if emissions are stopped.

There is alarming evidence that important tipping points, leading to irreversible changes in major ecosystems and the planetary climate system, may already have been reached or passed. Ecosystems, as diverse as the Amazon rainforest and the Arctic tundra, may be approaching thresholds of dramatic change through warming and drying. Mountain glaciers are in alarming retreat and the downstream effects of reduced water supply in the driest months will have repercussions that transcend generations.

Source: <http://www.un.org/en/sections/issues-depth/climate-change/index.html>

## **ANNEX 2 - Questions**

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- What is climate change?
- How is Planet Earth affected by climate change?
- How are our lives affected by climate change?
- What are the main causes of climate change?
- Is climate change something that does not affect us?
- Do you think that people know enough about climate change?
- What information, in your opinion, should be presented to the wider public to raise awareness on the topic?

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# Emissions

<b>Activity section:</b>	General Knowledge on Climate Change
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	30 minutes
<b>Materials:</b>	Computer, pencil, pens

## LEARNING GOALS



- Be familiar with the influence of different sectors and industries on climate change.
- See how people's perceptions can be different from the real data.
- Think about which sectors are the most important ones to regulate.

## INTRODUCTION



A greenhouse gas (GHG) is a gas in the atmosphere that absorbs and emits radiation within the thermal infrared range. This process is the fundamental cause of the greenhouse effect.

The primary greenhouse gases in Earth's atmosphere are water vapor, carbon dioxide, methane, nitrous oxide, and ozone. Without greenhouse gases, the average temperature of Earth's surface would be about  $-18\text{ }^{\circ}\text{C}$  instead of present average of  $15\text{ }^{\circ}\text{C}$ . It is important to know which sectors produce the most of Green House Gases so that the mitigation measures are proportional and targeted to the right industry/sector.

\*data of GHG are usually presented as CO<sub>2</sub> equivalents - A single kilogram of methane has 25 times the global warming effect of a kilogram of carbon dioxide, and a kilogram of nitrous oxide has 298 times the global warming effect of carbon dioxide. The emissions of individual GHGs are converted into CO<sub>2</sub> equivalents and then aggregated. The use of a common unit — a kilogram of CO<sub>2</sub> equivalents — makes it possible to compare and combine the relative effect of different gases.

## ACTIVITY DESCRIPTION



The participants will be divided into groups, preferably two people per group. Each group will think about how much GHG emissions (in percentage) comes from different industries and sectors (list is in annex 1; adjusted according to data source). Afterwards, the predictions will be checked with provided statistical data (annex 2) and the participants will discuss which ones they think are the most important ones to fight the climate changes (the ones with the biggest impact).

1. Giving instructions, introducing the concept of emissions, and dividing into groups. (10')
2. Discussing and allocating emissions to different sectors. (5')
3. Checking the answers and a short debate. (15')

## **SUGGESTIONS**



- For advanced groups (and with internet connection), participants can use the internet to search the data for themselves from different sources and compare them.

## ANNEXES

### ANNEX 1 - List of different industries and sectors

Estimate the distribution of GHG emissions (in %) by below listed sectors for an EU average and your country.

	Europe average (%)		Your country (%)	
	Your prediction	Data from year 20..	Your prediction	Data from year 20..
Energy Industries (electricity, heat production)				
Manufacturing Industries and Construction				
Transport				
Industrial processes and product use				
Agriculture				
Waste management				
Other sectors				
Fugitive emissions from fuels and indirect CO <sub>2</sub>				
TOTAL	100 %	100 %	100 %	100 %

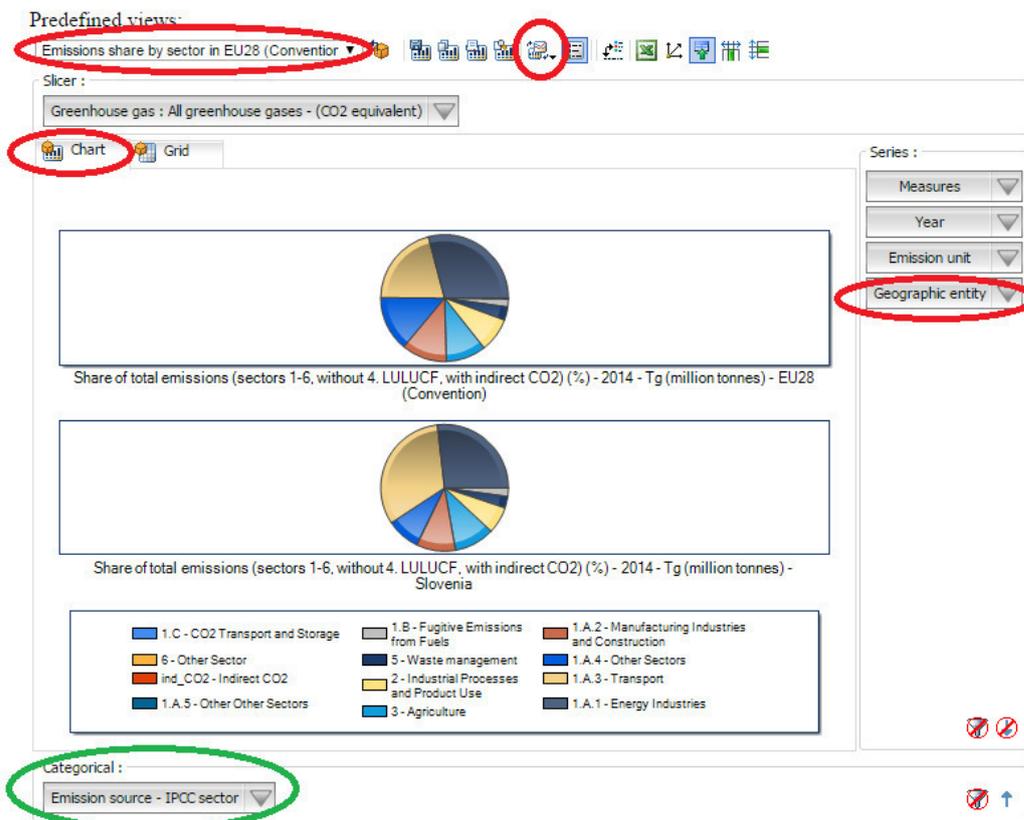
### ANNEX 2 - Statistical data

For each country, the data is available for download here <http://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer> - Choose Emissions share by sector in EU28 - Mark your country in the table (or more) and change chart type into pie chart.

It is tricky which categories to show, because calculations are quite complex. It is advised to search your country's statistical office and/or environmental agency and try to find some nice pie charts. More articles about statistics and pie-chart for EU level are available on [http://ec.europa.eu/eurostat/statistics-explained/index.php/Greenhouse\\_gas\\_emission\\_statistics](http://ec.europa.eu/eurostat/statistics-explained/index.php/Greenhouse_gas_emission_statistics).

Example from European Environmental Agency

(also you can download excel and join % and pie chart, but you have to choose the right emission sources – IPCC sector to get 100 % - but then the explanation is quite hard)



If you want to use EEA, choose in Emission source –IPPC sector (marked vertically):

Due to rounding the numbers, small changes can occur in total 100 % (cca. 0,1 % +/-)

Predefined views:

Emissions share by sector in EU28 (Convention)

Slicer :  
Greenhouse gas : All greenhouse gases - (CO2 equivalent)

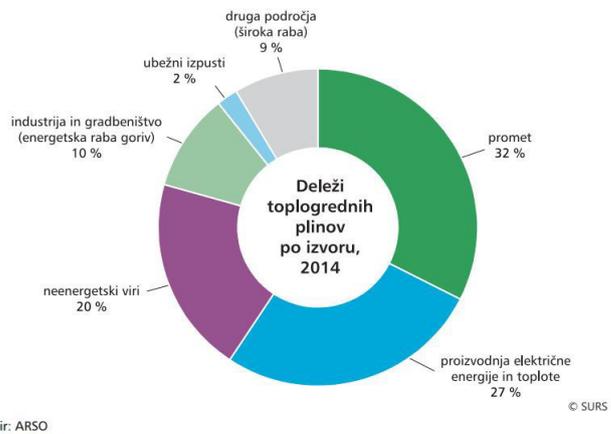
Chart Grid

Series :  
Measures  
Year  
Emission unit  
Geographic entity

Share of total emissions (sectors 1-6, without 4. LULUCF, with indirect CO2) (%)			
2014			
Tg (million tonnes)			
	EU28 (Convention)	Slovenia	
1.C - CO2 Transport and Storage	0.0%		0.0%
6 - Other Sector	0.0%		0.0%
ind_CO2 - Indirect CO2	0.1%		0.0%
1.A.5 - Other Other Sectors	0.2%		0.0%
1.B - Fugitive Emissions from Fuels	2.0%		2.2%
5 - Waste management	3.4%		3.0%
2 - Industrial Processes and Product Use	8.7%		6.8%
3 - Agriculture	10.2%		10.2%
1.A.2 - Manufacturing Industries and Construction	11.5%		9.9%
1.A.4 - Other Sectors	14.1%		8.5%
1.A.3 - Transport	20.8%		32.5%
1.A.1 - Energy Industries	29.1%		26.8%

Categorical :  
Emission source - IPCC sector

Example from publication of Slovenian Statistical Office



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# Fatty tree

<b>Activity section:</b>	General Knowledge on Climate Change
<b>Type of activity:</b>	Outdoor
<b>Duration:</b>	45 minutes
<b>Materials:</b>	Pens, papers, measurement tape, background papers and methodology of the calculation and calculators

## LEARNING GOALS



- Raise awareness of the importance of forests ecosystem in climate change mitigation.
- Generate new knowledge and skills on the local CO<sub>2</sub> cycle.
- Encourage young people to be more sensitive in their way of living in the context of tree preservation.

## INTRODUCTION



Forests play important role in climate change mitigation, especially in reducing carbon emissions. They have the potential to absorb about one-tenth of global carbon emissions produced in the first half of this century. To be more accurate, forests absorb 2.6 billion tons of carbon dioxide each year that is about one-third of carbon dioxide released from the burning of fossil fuels. When trees are cut down, the process reverses, and carbon dioxide is released back in the atmosphere. As carbon dioxide is one of the most important greenhouse gases, it is essential to raise the awareness of the general public about the importance of trees in combating climate change, and to encourage behavioural change towards sustainable forest management. In addition, it is important to sensitize young people on the carbon footprint of an unsustainable lifestyle and importance of forest preservation.

Therefore it is important to share knowledge and awareness on not just calculating the CO<sub>2</sub> emissions produced by person's lifestyle, but to raise awareness on the whole CO<sub>2</sub> cycle at the micro and macro environment level, with close connection to forest ecosystem and climate change.

## ACTIVITY DESCRIPTION



The educational workshop will start indoors (a meeting room) with the presentation of the workshop steps:

1. Introduce the topic: what is CO<sub>2</sub>, why it is important in climate change, the carbon cycle, the role of trees in reducing greenhouse gas emissions, the methodology of the calculation (Annex 1) and an explanation of the activity. (10')
2. Walk to a nearby forest, park or a tree and divide participant in working pairs/groups. (5-10')
3. Take measurements and calculations (each pair chooses its own tree, preferably different tree species). (10')
4. Group work: discuss the results with connection to the local carbon cycle, tree species and personal lifestyle (Annex 2). (15')

## SUGGESTIONS



- It is important to explain to the participants for what these measurements are for and be prepared to explain also other calculation formulas that are missing in the methodology (Annex 1)
- It would be nice to have comparisons to better understand the numbers.
- Notes: Results are not comparable with the footprints of daily activities.

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## ANNEXES

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### ANNEX 1 - Methodology for calculating CO2 intake by trees

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This calculating method shows how much CO<sub>2</sub> a single tree has potentially sequestered over its life.

Calculation method:

(a) Determination of the tree species;

(b) Determination of the tree diameter and height:

→ the tree diameter is measured by measuring the trunk of the tree at approximately 1 meter from the ground. Final measurement should be converted into inches;

→ The height of the tree can be determine as an estimate. Final measurement should be converted into inches.

(c) Determination of the green weight of the tree:

→ wood is measured in cords and an estimation of how many potential cords are in your existing tree should be made (a cord is harvested wood stacked to occur a volume of 4 inch high by 4 inch wide and deep; 4 x 4 x 4).

(d) Determination of the dry weight of the tree:

→ to calculate the dry weight the green weight should be multiplied with the factor 0,725 (in lbs).

(e) Calculation of weight of carbon in a tree:

→ to calculate the carbon in a tree dry weight should be multiplied with the factor 0,5 (in lbs).

(f) Calculation of weight of CO<sub>2</sub> in a tree:

→ to calculate the weight of CO<sub>2</sub>, the weight should be multiplied with the factor 3,6663 (atomic weights of carbon, oxygen and carbon dioxide calculated on the ratio of CO<sub>2</sub> to carbon).

(g) As carbon sequestration is measured in metric tons the unit conversion is necessary.

Source of information: <https://www.sanjoseca.gov/DocumentCenter/View/31716>; December, 2016

## ANNEX 2 - The Carbon Footprint of Daily Activities

Carbon footprint of some daily activities on annual level:

Daily Activity on the annual level	Carbon footprint per year (metric tons)	Possible sustainable behavior
Using the dryer (Drying one load of laundry a week)	0.1	Outside clothes drying.
Eating a steak (eating 444 calories a day of red meat)	0.8	Including more poultry, eggs, or vegetable in the diet.
Working out (running on a treadmill for 30 minutes three times a week)	0.07	Outside sport activities.
To phone (using a mobile phone just for 2 minutes per day)	0.047	Walk with a friend in a park.

---

# Transportation

<b>Activity section:</b>	General Knowledge on Climate Change
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	135 minutes
<b>Materials:</b>	Computer with internet connection, pencil, paper, pocket calculator (optional), cardboards', colourful pencils

## LEARNING GOALS



- Be familiar with different modes of transport and options for road transportation.
- Know how much each transport option contributes to emissions of CO<sub>2</sub> and GHG.
- Be able to calculate the savings made by using public transportation.
- Learn to work as a team and how to present results in the most efficient way.

## INTRODUCTION



Transport represents almost a quarter of Europe's greenhouse gas emissions and is the main cause of air pollution in cities. The transport sector has not seen the same gradual decline in emissions as other sectors. Within this sector, road transport is by far the biggest emitter, accounting for more than 70% of all GHG emissions from transport in 2014.

Data of GHG (Green House Gases) are usually presented as CO<sub>2</sub> equivalents - A single kilogram of methane has 25 times the global warming effect of a kilogram of carbon dioxide, and a kilogram of nitrous oxide has 298 times the global warming effect of carbon dioxide. The emissions of individual GHGs are converted into CO<sub>2</sub> equivalents and then aggregated. The use of a common unit — a kilogram of CO<sub>2</sub> equivalents — makes it possible to compare and combine the relative effect of different gases.

## ACTIVITY DESCRIPTION



The steps are provided below:

1. The group of participants will be split in equal groups, preferably at least 2-3 people/group (time includes instructions of the assignment). (15')
2. Each group will receive a topic which they have to research. Topics can be divided randomly or by particular interest of teams. (60')

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The topics are (Questions and additional information are provided in Annex 1):

- transport & CO2
  - transport & cities
  - comparison of personal transport options
  - car vs. electric car
3. At the end, groups will present their findings to other participants (5 min presentation/group). (30')
  4. Discussion of each topic with other groups. (15')

## SUGGESTIONS



- Depending on the size of group, age and knowledge of participants, the main questions can be altered. Also, if there is less/more time, the activity can be adjusted (for shorter activity there can be fewer questions).
- Encourage participants to make their calculations/research detailed and precise. You can also provide links to different corresponding sites in native language (statistics, calculations).
- If you have additional questions that you find interesting, you can add them or even whole topic.
- Translating all the documents presented in the Annex II before the activity implementation can be time consuming. As an option, the lecturers can use the information provided in their native language.
- The duration of the activity can exceed the proposed time, as the groups can create posters in order to present their findings about the topics to be discussed.
- A discussion about the topics covered by each group will be effective in order to understand possible transportation issues with respect to climate change.

## ANNEXES

### ANNEX 1 - Questions

#### 1. Transport & CO<sub>2</sub>:

- Your how much CO<sub>2</sub>/GHG (share - % and net value) is released via transport?
- What is the amount of released CO<sub>2</sub>/GHG for different categories of transport on EU/country level?
- Which transportation type emits the most CO<sub>2</sub>/GHG?
- Compare transport of goods with transport of people.
- Can you think about and suggest solutions for lowering the emissions?
- Do you know any successfully implemented solutions?

#### 2. Transport & cities:

- How does traffic influence cities?
- What are the consequences for air quality (e.g. cities in China)? How do countries deal with it (e.g. France)?
- How can public transport help?
- How much CO<sub>2</sub>/GHG can one average person save if they use public transport?
- What forms of public transport are available in your country?
- How many people use it?
- Can you provide some suggestions for how to make public transport more popular and appealing to people (can be a promotion, new schedule, no restrictions regarding ideas!)

#### 3. Comparison of personal transport options:

- The costs of having a car compared to costs for public transport.
- What is the difference considering CO<sub>2</sub>/GHG emissions? (possible comparison to second group)
- How much you save/spend if you use public transport and do not own a car (do not forget to include insurance, maintenance costs, occasional rent-a-car for people without one etc.)
- You can compare also people living in the city with those from rural areas.
- How many trees would you have to plant for one year of driving a car?

#### 4. Car vs. Electric car:

- What is the difference when it comes to emissions?
- What is the price difference (include also the average maintenance costs)?
- Do you think it is worth it?
- What about air quality? How do cars influence it (e.g. cities in China)?
- What is the number of cars per inhabitant in your country – compare it with other European and global countries.
- Can you get data for the share of electric vehicles?
- Are subsidies for buying electric cars available in your country (include also possibility of free fuelling)?
- Research how to drive so you emit less CO<sub>2</sub>/GHG (eco driving).

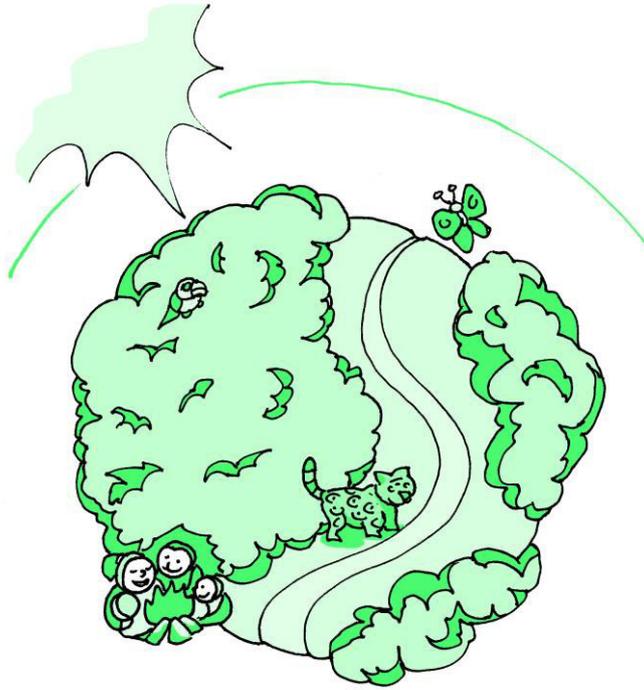
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## ANNEX 2 - Additional information

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Additional information about the topics can be downloaded from sources provided below:

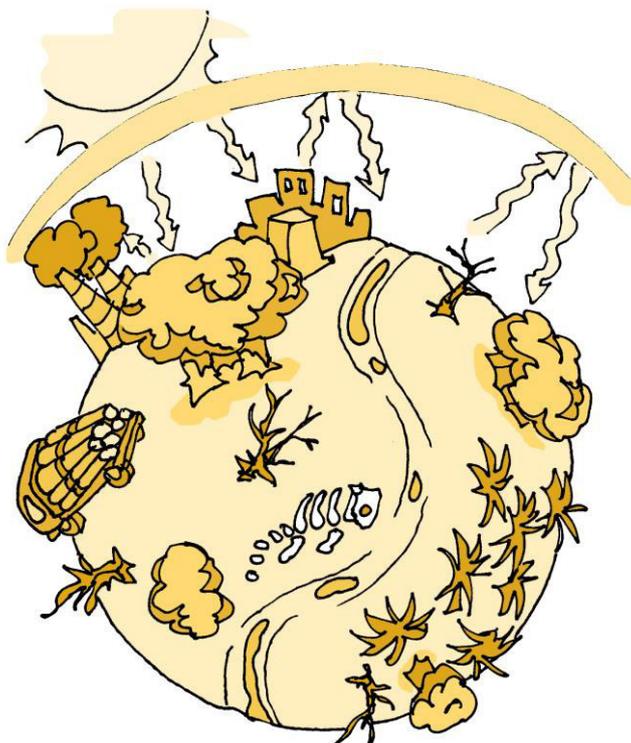
- [https://ec.europa.eu/clima/policies/transport/vehicles\\_en](https://ec.europa.eu/clima/policies/transport/vehicles_en)
- <http://www.eea.europa.eu/themes/transport/electric-vehicles>
- <http://www.eea.europa.eu/publications/electric-vehicles-in-europe>
- <http://www.eea.europa.eu/themes/transport/speed-limits>
- <http://www.energysavingsecrets.co.uk/publictransportvsprivatetransportthedebate.html>
- Quick calculation for US [http://publictransport.about.com/od/Transit\\_Funding/a/Transit-101-Is-It-Cheaper-To-Take-Transit-Or-Drive-A-Car.htm](http://publictransport.about.com/od/Transit_Funding/a/Transit-101-Is-It-Cheaper-To-Take-Transit-Or-Drive-A-Car.htm)
- <http://www.mirror.co.uk/money/personal-finance/commuting-costs-how-much-your-1760975>
- <http://www.independent.co.uk/news/world/europe/paris-public-transport-free-air-pollution-spike-a7460191.html>
- <http://www.eea.europa.eu/soer-2015/countries-comparison/transport>
- <http://www.eea.europa.eu/soer-2015/europe/transport>



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# The Role of Forests in Climate Change

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# Through the woods

<b>Activity section:</b>	The Role of Forest in Climate Change
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	75 minutes
<b>Materials:</b>	Printed articles, coloured pencils, scissors, glue, magazines (creating posters)

## LEARNING GOALS



- Learn a new method in work with text.
- Visualize new findings.
- Compare different perspectives on forests.

## INTRODUCTION



To know how to work with text is important part of educational process. This activity brings a method how to understand text and make marks in the text what is new, what is well known and what information are unknown, and how to work with it.

## ACTIVITY DESCRIPTION



For this activity the task of participants will be to read an article and then create a poster to capture content, context and relations in the article.

Everybody will have to carefully read an article and mark on the edges of the paper, the following symbols:

- +** If they find new information
- If an information is against their perception or against their knowledge
- ?** If information is new for them, but they would like to know more about it or they do not understand it

Choose an article in your native language, dealing with forests and climate changes (how they mitigate them, how deforestation is influencing it, etc.). Make sure that the article is non-technical enough and not too long (more than 3-4 A4 pages is too much).

1. Brief introduction of the method, distribution of the articles. Making groups (similar number of members). (5')
2. Reading the article. Choose the length of an article according to the participants. It should not be too long. (15')
3. Discuss the information with the marked symbols within the group. Groups should together identify the actors/subjects in an article and their relations. (15')
4. Make a poster which express relations, causes, results and outcomes described in an article. If groups do not know how to do it, they can make a poster invitation for a public discussion with on the same topic. (20')
5. Presentation of the posters. (20')

## SUGGESTIONS



- Posters can be designed with the condition of no letters.
- Different article can be used to be more focused on local conditions and local forest problems.
- The method of dealing with text could be used for all generations.

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# Forest activities

<b>Activity section:</b>	The Role of Forest in Climate Change
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	45 minutes
<b>Materials:</b>	Cards (Annex 1), stopwatch (smartphone)

## LEARNING GOALS



- Think about the context and concepts of human behaviour with regard to the impact on climate and forests.
- Express concepts differently, to improve the ability of expression.

## INTRODUCTION



It is a motivational game where participants can think and learn about connections between different concepts and elements which influence forests and climate change in a fun way. Participants are supposed to express the terms on one card verbally, via drawings or pantomime, depending on the sign on the back of the card. Through this they can understand other contexts and perspectives of the issue.

## ACTIVITY DESCRIPTION



The lecturer will explain all the rules, check the time during the game; he/she will be also the referee (writing points). All cards (Annex 1) will be situated in the middle of the table divided into three piles. On each card there will be a word or term linked to the forest protection, staying in the nature and about the effects of climate change on forest ecosystems. The cards will be divided into three groups according to three different rounds - cards for verbal description, drawing and pantomime. The team that has the youngest participant starts.

1. Participants will be divided into groups, ideally min. 3 players in a group and no more than 4 groups in total. If there are a lot of participants, the lecturer can make two or more separate games simultaneously. Teams choose their name. (5')
2. The lecturer explains the rules. (10')

The team that starts the game will choose one member who will be the first to represent them (in the next rounds all participants will be in that position). First player will take one

card from the top of the first pile so his/hers teammates cannot see the card. Now he will have about 10 seconds to think how to present the word/term and 1 minute (stopwatch) to present it to the others. His teammates will guess what the term is. If they succeed in a 1 minute, 1 point for them. The lecturer will write it on the blackboard (flipchart). If not, they do not gain anything and second team is playing. Even if they gain a point, the next team plays.

In first round participants will have to verbally explain the term. But they may not use the word itself or parts of it or derived forms. When all teams go through the descriptive round, the drawing round continues.

For the drawing of the word, the participant will have to be silent and cannot gesticulate. They can nod his head if the answer is right or not. Drawings may not contain any letters or numbers.

For the word/term shown with pantomime, the player may not speak or make any noises; he/she may not use any objects or point them. However, he/she may point to a part of his/hers own body.

3. Playing the game, rounds are going again and again (verbal, drawing, pantomime) until one team reaches 10 points. (30')

## SUGGESTIONS



- At the end of the game teams can write a story that will be meaningful and will include all of the guessed words.
- Make a discussion about the words and terms that came up.

**ANNEXES**

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**ANNEX 1 - Cards**

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Cards can be downloaded in a pdf file separately from folder ANNEXES

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# Forest excursion

<b>Activity section:</b>	The Role of Forest in Climate Change
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	40 minutes
<b>Materials:</b>	Text/article about nature

## LEARNING GOALS



- Develop the imagination of the participants and the ability to visualize.
- Go through new experiences with already known topic.

## INTRODUCTION



The lecturer chooses the appropriate text related to the wilderness. It can be scientific or belletristic. Genre and the length are not important. The important is that the text is opening some questions and push people to ask more and more questions and be curious. The lecturer is reading or telling a part of the story. Guessing the results or what is going to happen next is on the participants. The lecturer can be inspired for the text by local surroundings or publications of the organization.

## ACTIVITY DESCRIPTION



It is important the lecturer chooses the appropriate text which is related to the wilderness or non-intervention forest before. The lecturer will ask participants to find a comfortable position (sitting on the chair, on the carpet, on the meadows, moss ...) and close their eyes. It will help them to unbind from reality and where they are and help them to be more creative. The lecturer will start reading the text. If the activity is carry out in the room it can be accompanied by sound of the wood, forest animals, etc.

After finishing he/she will let the participant enjoy the moment and think about the text quietly. After that, participants will be asked to come back to the reality and slowly open their eyes. They will be led to think about the continuation of the story; they are finding the answer for the questions of the lecturer. If the text was written by an expert they are trying to deduce some resume. Who wants to speak can speak and there is a joint discussion.

1. Brief explanation of the activity. (5')
2. Reading the article, visualization (15')

3. Joint discussion reflecting on learning and feelings during the activity. (20')

What do you think about the article? Who is/was the writer? What is his position into the issue of the protection of forests? Does he agree with the current situation? What would happen if ....

## SUGGESTIONS



- The chosen text can be very suggestive and inspire and makes a real experience from the wilderness
- It is possible to choose also poetry or any philosophical text to make the experience from the nature deeper.
- If participants know each other well, they can help to choose the text and read it together (each participant a part of it).
- Online sounds can be used for free from this website:  
[https://www.noisli.com/?utm\\_source=mail&utm\\_campaign=b25daae06e-adam%252Bprosinec&utm\\_medium=email&utm\\_term=0\\_3a571fa34d-b25daae06e-103095481](https://www.noisli.com/?utm_source=mail&utm_campaign=b25daae06e-adam%252Bprosinec&utm_medium=email&utm_term=0_3a571fa34d-b25daae06e-103095481)

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# Soil troubles

<b>Activity section:</b>	The Role of Forest in Climate Change
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	60 minutes
<b>Materials:</b>	Printed cards and worksheets (Annex 1 and 2), pens

## LEARNING GOALS



- Think about the ability of the soil to infiltrate water.
- Know what diversity is in forest soil and the soil in the open countryside and the differences in facing climate changes and unexpected weather conditions.

## INTRODUCTION



The soil forms the uppermost layer of the earth's crust. It is steeped in water, air and organisms. Its origin is very long. There is a gradual decomposition of residues bodies of plants and animals that are associated with tiny particles of minerals and rocks. Soil provides the basic living conditions mainly plants, but not animals, including us - people - we could not have done without it. Perhaps most importantly for human fertile land, mainly agriculture, on which they can grow, in addition to field crops, forests and other ecosystems. Healthy soil is essential to a healthy landscape. The soil is undermined and pollution. Another risk is reducing the amount of organic matter returned to the soil and further deterioration of the natural fertility of the soil.

As a result of climate change, also unforeseen weather conditions occurs, and soil has to face them and deal with them in different ways. This activity refers to it.

## ACTIVITY DESCRIPTION



1. Introduction into the activity, description of the steps. (5')
2. First, it is necessary to divide participants into pairs. To be totally random pair, each participant will receive a card and his task is to look for his/her pair. Each card will be always closely linked to another one e.g. Global Warming (See Annex 1). (5')
3. Now get a pair worksheet (Annex 2) and compare open countryside and forest environment in terms of soil from drying out or drift, in terms of runoff rainwater etc. (20')

4. After pairs are ready, the lecturer will show the right answers and there will be a discussion of the usefulness of the forests in the connection to the unexpected weather events. Do not forget to mention also improper interventions in the woods or inappropriate composition of the forest. (30')

## ANNEXES

### ANNEX 1 - Pair cards

Acid	Rains
Carbon	Dioxide
Sea level	Rise
Climate	Change
Global	Warming
Zero	Waste

### ANNEX 2 - Worksheets

	Open landscape	Forest
		
1 How quickly the soil dries out here?		

2 How the wind blows here?		
3 Is there a new soil formed?		
4 What are the temperature differences? Summer / Winter? Day / night?		
5 What is the level of air humidity here?		
6 How is the soil protected against wind and blowing the soil away?		

7 How quickly rainwater drains away?		
8 Are there filtration and purification of the water?		
9 How is the soil protected against water leaching?		

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# The photographer

**Activity section:** The Role of Forest in Climate Change

**Type of activity:** Outdoor

**Duration:** 40 minutes

**Materials:** None

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## LEARNING GOALS



- Remember beautiful and untouched places, or the opposite, places which are harmed.
- Think about influences on the locations and how they change environment.
- Realize how places can adapt to the climate change.

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## INTRODUCTION



This activity is suitable for a trip or outdoor activities. Rules are explained at the beginning of the trip. Around half the way, the lecturer announces changing of roles, and after everybody has returned back, photography exhibition is held. The roles can be changed anytimes regarding the decision of the lecturer, time he/she has and the conditions of the surrounding area.

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## ACTIVITY DESCRIPTION



Participants form a pairs, in whose one person will represent photographer and another one camera. Camera will be blindfolded (hands over the eyes) and led by photographer around terrain, until photographer finds a charming location, which he/she would like to capture. It is also possible to focus on places which are harmed by human activity. Photographer will set up camera and click the shutter = camera open eyes for a few seconds. Taking picture can be repeated several times. Photographer and camera will change their roles after the lecturer's announcement, in the half way. At the end of activity, the lecturer will organize "exhibition of photographs", where cameras (participants who were leading) will share what they captured, and photographers will explain why they captured the pictures (what was interesting for them in given location).

1. Brief explanation of the activity and making pairs. (5')
2. Walking trip and making pictures. (20')
3. After coming back joint discussion. (15'): Participants in the role of camera explaining to the others:

- What pictures they took.
- How the pictured place could look twenty years ago.
- What factors influence the place? Which one positively and which one negatively?
- How the pictured place adapts to influences?

## SUGGESTIONS



- It would be useful to provide participants with old pictures from the place we develop the activity to compare it with the past and evaluate how the change has happened.
- It would also be useful to include old data from the place we develop the activity.
- In order to get a better understanding of the study place and how it has change with time, it would be advisable to develop a previous analysis on the place, reviewing all data and then conduct the activity the photographer.



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# Forest Policies & Climate Change

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# Do you agree?

<b>Activity section:</b>	Forest Policies and Climate Change
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	45 minutes
<b>Materials:</b>	Rope or something similar to divide the space

## LEARNING GOALS



- Promote thinking process among the participants in relation with the forest exploitation.
- Introduce the collective forest management as a solution of illegal logging issue.

## INTRODUCTION



The increasing worries about forests conservation opened important dilemmas in the discussion about the economic development perspectives and about the usefulness of public policies or market instruments implementation to solve these problems.

A proposed solution is the collective forest management. But we must put in clear some previous questions about the use of this management system, like the following ones:

- To obtain a short term welfare against long term forest management.
- Collective forest management against individual welfare.
- Possibility of benefits accumulation being marginal with respect to the big markets.
- Formal forest management against informal local management.
- Forestry modernization and focus on productivity against territorial management.

This activity will allow us to know the opinion of the participants about these questions and to analyse those activities able to generate conflicts.

## ACTIVITY DESCRIPTION



Through this activity the participants will share their opinions about statements related with collective forest management. The lecturer will put the rope in the middle of the room along a line, the lecturer will say the statements out loud (you can find it in Annex 1). Participants will then decide if they agree with it or not and step on the one or the other side of the rope.

After that, the lecturer will ask each group of participants why they chose their positions, starting a short discussion about the issue. The lecturer will emphasize all the issues on which participants agree and will try to find the reasons for disagreements with other statements.

1. Short explanation of the activity and room preparation. (5')
2. Reading of the statements, sharing of opinions and discussion. (40')

## **SUGGESTIONS**



- You can make this activity shorter and choose only some of the questions or create your own.

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## ANNEXES

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### ANNEX 1 - Statements

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1. Families from the settlements closer to forests reach a better welfare because they exploit their resources (forest).
2. Forest conservation does not contribute in an effective way to make the local communities go out of the poverty.
3. Regions with richer forest resources allow their people to make more profitable economic activities.
4. The only way to make forest management profitable is to do manage and use relatively large areas.
5. There must be proper rotation cycles to allow forest regeneration.
6. To reach a collective forest management, the local forest communities do not need any economic or social capacity (support in different forms – incentives, education ...).
7. To carry on with a collective forest management, we need to keep clear rules about the access to collective lands.
8. The distribution of the resources coming from the collective forest exploitation must be equitable for all the participants.
9. In the collective forest management we should not allow the families to make a particular/individual use of the forest.
10. The forest resources' market is nowadays monopolized and it harms those local communities that try to live from forest resources.
11. Every forest practice should be a part of the legislation to ensure the implementation of good management practices.
12. Governments should reduce the taxes and fees to those local communities living from forest resources to promote the sustainable collective exploitation.
13. To improve the productivity of forest management, the communities should improve the organization of their production.
14. Modern forestry techniques are always more productive than the traditional ones.
15. Forest management decisions must be taken on a local level.

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# The Ranger

**Activity section:** Forest Policies and Climate Change

**Type of activity:** Indoor or outdoor

**Duration:** 30 minutes

**Materials:** A rope

## LEARNING GOALS



- Review the knowledge about deforestation, indiscriminate logging and the role of the forest rangers.
- Check how the pressure on forests is reduced thanks to the efforts dedicated to their control and management.

## INTRODUCTION



There are a number of measures to prevent deforestation and all of them can be implemented in different scales. From an individual point of view we can reduce our paper consumption filling both sides of the sheet, while in a collective way we can implement correct forest policies. These policies can be addressed to very different issues like community education, timber market control, forests conservation or the creation of incentives to good forest managers. While we aware the society about these issues, governments should state control and vigilance policies avoiding indiscriminate ongoing deforestation.

Thanks to this activity, we will easily understand, in a simple and useful way, the benefits coming from a correct control and use of our forests.

## ACTIVITY DESCRIPTION



The participants are divided in three groups with their different roles: forest rangers, illegal loggers and trees. This division must be carried out in a balanced way, being more illegal loggers than forest rangers.

At the starting point, the illegal loggers will have 30 seconds to touch (touch is equivalent to log) the trees. When the trees have been logged they must lie on the floor. The role of the forest rangers will be to make a human barrier to protect the trees or to touch the fallen trees to become new planted trees. Once the trees have been touched by the forest ranger they must slowly stand up again in a

progressive way. It means at the beginning they will keep sited, then lying on their knees and at the end standing like new grown trees. While the trees are growing they can be logged again by the illegal loggers. After 30 seconds we will take note of how many trees were fallen having a single forest ranger. Then we will introduce a new forest ranger and, after the game, we will take note of how many trees have fallen with these two rangers. You can repeat the activity many times, depending of the number of participants.

At the end we will comment the forest rangers role to avoid the indiscriminate logging (See Annex 11).

When checking the notes of the activity we will see how the logged trees were less as the number of rangers increases and they were able to protect the trees or to plant new ones after logging.

1. Brief explanation of the activity. (5')
2. Repeat the game at least 2 times. (10')
3. Explanation of the following concepts: indiscriminate logging, deforestation and the role of the forest rangers. (5')
4. Lead discussion about learnings and feelings of the participants during the activity (the following questions should be answered). (10'):
  - Do you think that the forest control and vigilance are the only ways to solve deforestation?
  - Can you suggest other actions?
  - Do you think that mass media provide enough information to the society about other type of initiatives they can take to reduce its impact on forests (i.e. acquisition of certified products)?

## SUGGESTIONS



- It is not about learning something new but about realizing what we already know.
- Suitable to use as "energizer".
- We can add a third ability for the forest rangers; it is the recruitment of illegal loggers as new forest rangers. If one of the rangers touches a illegal logger s/he will become a new ranger and forest defender.
- It could be done more detailed. E.g.: illustrate the activity on the real examples.
- There could be also a scenario of forester that may behave considerably for example traditional one would run and the considerate just walk.

## ANNEXES

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### ANNEX 1 - Useful information about forest rangers

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Functions: to control and to protect the forests and the protected forest environments. Rangers should ensure compliance of the laws and rules in areas under their jurisdiction. Their main role is to supervise the compliance with the measures defined in the laid down forest policies.

Social component: to control and supervise the human activities affecting the stability and natural evolution of the forest ecosystems.

Ecological component: to control and supervise the areas under their jurisdiction to stop and avoid any event or process that could be the origin of an environmental or ecological damage, whatever cause or agent origins it.

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# The campaign

<b>Activity section:</b>	Forest Policies and Climate Change
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	120 minutes
<b>Materials:</b>	Flipchart papers, pens, materials about campaign topics, question-guides to create campaign

## LEARNING GOALS



- Learn about the most basic steps to create a public campaign.
- Learn how to formulate efficient objectives in a campaign focused on forest policies.

## INTRODUCTION



The communication of public policies in general, but about forest policies in particular, is basic to involve people in decision-taking processes. It is fundamental to communicate in a proper way, making it easy to understand for the whole society. The communication is also a social phenomenon, a human need and a public service. However, many times the communication techniques are not enough well designed to reach a wide spectra of the society. It is important to use an everyday and simple language and to define the ideas in a clear way.

To evaluate the difficulties of the communication about forest policies and forest management we will develop a short campaign to involve the common people and to push the local governments to adopt the measures we are suggesting.

## ACTIVITY DESCRIPTION



The participants will be divided into 3 groups, each one of them will design its own dissemination campaign (one per group) about forest policies and climate change mitigation. They must be clear and attractive (e.g. FSC certificate, non-intervention areas, protection of the local forest, National Action Plan on the adaptation on climate changes, etc.). The target of theses campaigns will be to reach the maximum number of people with the aim to pressure our local governments and force them to adopt actions about these issues. All the participants will receive articles and materials related with the topic to be more educated about it.

On the basis of answering leading questions (Annex 1) and SMART strategy (specific, measurable, achievable, relevant, and timely - Annex 2) their first task is to prepare the strategy of the campaign. Groups will have the information from Annex 1 to help them. After that they will prepare the presentation for the others about their campaign. If there were enough time they can prepare also one concrete and creative step to be part of the campaign (theatrical performance, poster, song, etc.).

1. Explanation of the activity, dividing working groups and delivery of the information with the guided lecturer. [15'] Because topics are quite complex and hard to understand for the people who have never heard before, each group had its own guide (one of the organizer) who introduce the topic more in deep and help them to be more oriented into the topic. Also each group will receive articles and brochures regarding the topic.
2. Studying materials, preparing the SMART answers (on questions in the Annex 1). (45')
3. Campaign presentation creation. (30')
4. Campaign plan presentation. (30')

After each presentation there will be short a discussion to understand everything well. Also the following questions should be answered: Are you satisfied with the ideas proposed by your group? Do you think that these campaigns would be successful? In which point it was harder to reach an agreement?

## SUGGESTIONS



- At the beginning of each presentation it should be the introduction of their topic; E.g.: not everybody knows what is FSC.
- It would be nice to have an example campaign as an inspiration.
- There could be more time for discussions after each presentation.

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## ANNEXES

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### ANNEX 1 - Questions

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#### ☰ Questions for the First phase:

Before to start with your dissemination campaign designing you will need to answer the following questions:

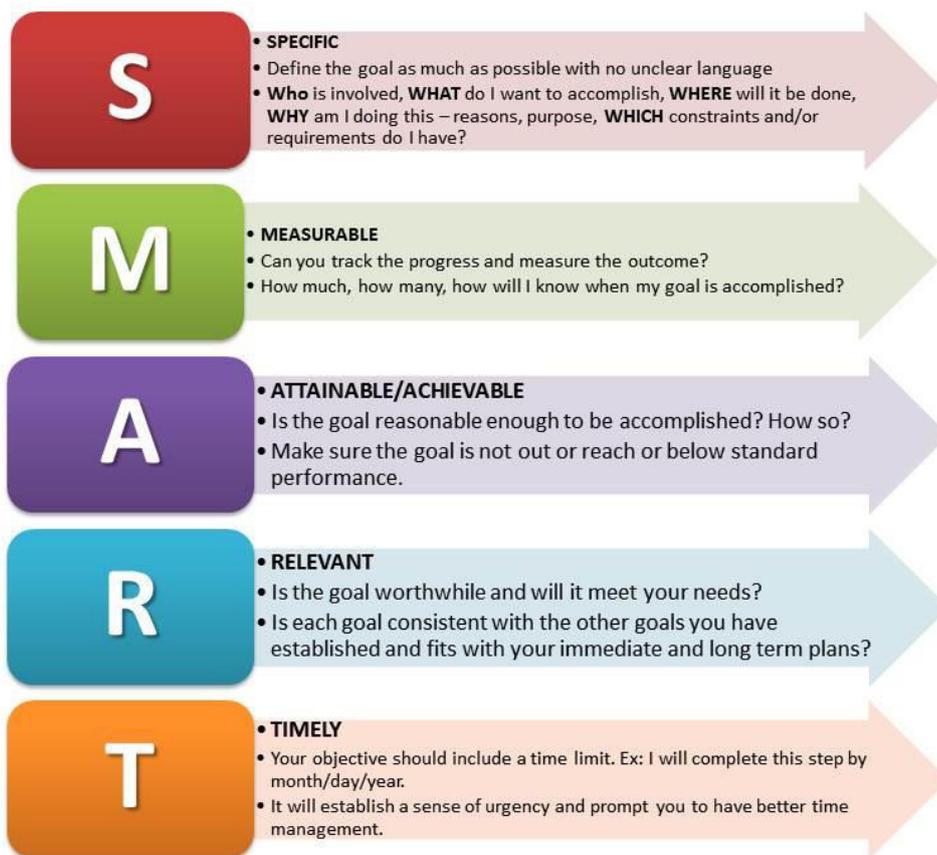
- 1) What is the main target of your campaign? Why do you think it is important?
- 2) Who do you think you must influence in your city to obtain his/her support to reach your general targets? Why these persons?
- 3) What do you need from this people to reach your general target? Make a list of specific, measurable, reachable, realistic and adjusted in time actions you will accomplish.

#### ☰ Questions for the Second phase:

To continue with the design of your dissemination campaign it is necessary to answer the following questions:

- 1) How would you influence to your target group?
- 2) Which ones are your most important arguments to convince them?
- 3) Which actions would you carry out for your arguments to be listened by them?
- 4) Draw a chronogram of your actions. When do you pretend to do what?

## ANNEX 2



Source: <https://www.minutemovement.com/wp-content/uploads/2014/12/SMART-Goals.jpg>

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# Negotiations

<b>Activity section:</b>	Forest Policies and Climate Change
<b>Type of activity:</b>	Indoor or outdoor
<b>Duration:</b>	120 minutes
<b>Materials:</b>	Role cards (see Annex 1), City story (Annex 2), papers, pens, ball, rope or blanket

## LEARNING GOALS



- Learn how to reach beneficial agreements for the parties involved in a conflict.
- Solve conflicts of interests.
- Empathize with positions away from our goal.

## INTRODUCTION



This activity will highlight the challenges of negotiations where agreements in any policy have been reached by governs and society. On this occasion we want to see the importance of these negotiations to reach agreements that benefit forest management and climate change. We are aware of the restrictions of these agreements in many cases, but we must also bear in mind that the negotiation processes are tedious because each participant has its own objectives. Therefore, reaching agreements that are beneficial to the greatest number of parties is often the main common objective to the detriment of individual requirements.

## ACTIVITY DESCRIPTION



1. Before starting the activity, we will perform a dynamic to observe the importance of teamwork. For that, we will use a rope. All the participants take the rope forming a circle and someone gets inside of this circle. S/he will try to "catch" the participants. They must release the rope to save themselves, but always be aware that the rope cannot fall completely to the ground, at least one person should be holding the rope. (10')
2. After this phase, participants will be divided into four equal groups. The story of the conflict will be read (see Annex 2). After that, each group will take a card with the explanation of the role of their collective, the goals to be achieved, the restrictions and the level of attainment of the goals. 10 minutes will be given to understand what role they will play in this dynamic. (10')

3. A period of negotiations in pairs will be opened, where all the groups will be able to meet at least once with each one. If any refuses to meet with the group that requests it, it may have another meeting with another group. Each group has to ask for the meeting and refusing the meeting is possible; meeting cannot take more than 10 minutes and it is recommended to write the results of the meetings - just notes (to have evidence for the possible next meeting with the group). (75')
4. After the negotiation period, the results will be shared with the assistant and the following questions will be answered jointly: How did you feel negotiating? What has been the most difficult thing to you? And the simplest? Have you achieved the goals you have set? If not, why? Has the game helped you to understand the dynamics that can be given at summits or meetings to reach agreements on a problem? What was your previous opinion about the agreements reached at summits like those that fight against climate change? And now? Do you think it could be done more than what it does? (10')

## **SUGGESTIONS**



- More information about the city should be delivered as for example other economical possibilities (i.e. industry, tourism; level of unemployment, etc.).
- It would be better not to set up the level of compliance and just let the groups to find the compromise by themselves.

ANNEXES

ANNEX 1 - Role cards

NEGOTIATION	<b>Trees Host Life</b>	
	<p><b>INTRODUCTION:</b>                  You are activists of this association that is based in Ceruelo. Its mission is to protect the legendary forest of Ceruelo, not only for its ecosystemic value, but also for its importance in the culture and history of the town. The sawmill "Ceruelo's Woods" intends to expand the cuttings of the forest. You think it is a threat to forest systems and their dynamics. However, you are also aware of the social reality of the people, where the sawmill has an important role in the economy.</p>	
	<p><b>GOALS:</b></p> <ul style="list-style-type: none"> <li>• To avoid the increase of the forest exploitation 25% demanded by "Ceruelo's Woods"</li> <li>• The operating conditions of "Ceruelo's Woods" can not be changed in a period of ten years.</li> <li>• The government should declare a forest area of 25% free of logging and for recreational use, controlling visits per year</li> </ul>	<p><b>RETRACTORS</b></p> <p>Ceruelo's Woods                  Civil society in unemployment                  Ceruelo Town Hall</p>
<p><b>Degree of compliance:</b> No agreement will be reached above 15% of forest exploitation, below eight years of period to change the conditions of exploitation of the forest, and will not be lower than 18% of the protected area of forest clearing.</p>		

NEGOTIATION	<b>Ceruelo Town Hall</b>	
	<p><b>Introduction:</b> We are part of the current government of Ceruelo. Our policies are aimed at favoring the economic increase of the town. We want to create jobs, increase the revenues of the town hall to allocate them to other types of goods and services. One of the most profitable activities of Ceruelo is the logging carried out by "Ceruelo's Woods". However, we take into account other social realities more sensitized with the ecological and cultural value of the forest. Today we charge a carbon tax to that company.</p>	
	<p><b>GOALS</b></p> <ul style="list-style-type: none"> <li>• Increase by 10% the carbon tax to "Ceruelo's Woods" (at this moment it is 20%)</li> <li>• Increase employment by 10%</li> <li>• Reduce debt of the consistory.</li> <li>• Regarding the protection of the forest, we will keep 15% without exploitation. The conditions of exploitation of the forest will be renegotiated every four years with "Ceruelo's Woods"</li> </ul>	<p><b>RETRACTORS</b></p> <p>"Ceruelo's Woods"</p> <p>Civil society against forest exploitation</p> <p>Civil society in unemployment</p> <p>Opposition in government</p>
	<p><b>Level of compliance:</b> No agreement will be reached below 5% of the carbon tax increase, below 7% of job creation in the sawmill, a maximum of 20% in the protected area, and the operation conditions will be renewed, at most, every five years.</p>	

NEGOTIATION	<b>Opposition to the government of Ceruelo</b>	
	<p><b>Introduction:</b> We are the political party of the opposition of the Town Hall of Ceruelo. One of our rules is based on the socio-cultural and environmental protection of the Ceruelo forest, considering that the current exploitation of "Ceruelo's Woods" is at the limit of the exploitation capacity of the ecosystem. Therefore, we propose a system of economic development of the area based on values respectful with the environment and that favors social welfare. Thus, we want to increase quality and alternative employment, together with fiscal policies adjusted to the profits obtained by the sawmill.</p>	
	<p><b>GOALS</b></p> <ul style="list-style-type: none"> <li>• Increase by 15% the carbon tax to "Ceruelo's Woods" (at this moment it is 20%)</li> <li>• Increase employment by 10%</li> <li>• To conserve the Ceruelo forest in 30% without exploitation and to renegotiate the conditions of exploitation of the forest every ten years with "Ceruelo's Woods"</li> </ul>	<p><b>RETRACTORS</b></p> <p>"Ceruelo's Woods"</p> <p>Civil society in unemployment</p> <p>Government of the Town Hall</p>
	<p><b>Level of compliance:</b> No agreement will be reached below 8% of the increase in the carbon tax, below 7% in job creation (alternative sectors), below 20% of the protected area and below seven years to renew the operating conditions of the sawmill.</p>	

NEGOTIATION	<b>Ceruelo's Woods</b>	
	<p><b>Introduction:</b> We are Ceruelo's sawmill. In the last years we have considered the possibility of increasing the cuttings of Ceruelo forest. Our studies support us in the sustainability of this proposal. In addition, our activities have a beneficial impact on the community of Ceruelo, guaranteeing employment and the economic wealth Town Hall with the carbon tax, and the opposition of the Town Hall as they want to prevent our business development with their measures. In case of not being able to increase the sawmill, we will have to reconsider the viability of our operations in the zone, which will entail an increase of the unemployment.</p>	
	<p><b>GOALS</b></p> <ul style="list-style-type: none"> <li>• Prevent increases in the carbon tax (currently 20%)</li> <li>• Increase the exploitation of Ceruelo forest by 25%.</li> <li>• Increase job contracts by 5%.</li> <li>• Prevent the intangible area from exceeding 15%.</li> <li>• Encourage negotiations on operating conditions to be carried out every three years</li> </ul>	<p><b>RETRACTORS</b></p> <p>Ceruelo Town Hall                  Opposition of Ceruelo City Council                  Civil society against forest exploitation</p>
	<p><b>Level of compliance:</b> An agreement will not be reached above 10% of the increase of the carbon tax, above 8% of new job contracts, above 20% of the protected area, and over six years in the renewal of the conditions of exploitation of the sawmill.</p>	

NEGOTIATION	<b>Ceruelo's Story</b>
	<p>Ceruelo is a town located to the north of the Iberian peninsula. One of its main environmental and cultural attractions is the Ceruelo forest, made up of species typical of the Atlantic forest. In addition, historically the forest served as a refuge during the war battles that lashed the area in the past.</p> <p>Despite being of great ecological and sociocultural importance, Ceruelo forest is not exempt from exploitation. "Ceruelo's Woods" has been exploiting these forests for more than thirty years. Its activity is an important source of income and jobs for the inhabitants of the town. Today the company is considering increasing by 25% the cuttings that is currently made of the forest. Based on his studies and forecasts, it wants to start this increase as soon as possible. In addition, it has guaranteed that it will hire more people from Ceruelo. Today Ceruelo lives the same reality that many rural areas of the country: due to scarce job opportunities, many people decide to leave the town to the city. That's why this proposal is welcomed by the society. However, part of the civil society of the people is against increasing exploitation of the forest, as this would endanger not only the diversity of the forest but its sociocultural value. "Trees Host Life" is an association that wants not only to avoid increasing exploitation, but also to obtain a figure of protection against logging for the forest. Despite their environmental goal, they are also aware of the social reality of the people by supporting economic alternatives that do not harm the forest. Both positions are known by the current Town Hall which has policies to promote employment and collects carbon taxes, and also by the opposition party which is more leaned towards environmental and social policies. The results of the next elections, it will depend on how this dispute is managed.</p>

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# Monopoly of fire

**Activity section:** Forest Policies and Climate Change

**Type of activity:** Indoor or outdoor

**Duration:** 80 minutes

**Materials:** 1 game board, 8 game tokens, 26 Title Deed cards, 16 Chance cards, 16 Community Chest cards, 8 registration templates for Money and Forest Management surface, 66 Level labels, 2 dices and pencil or pens. All materials can be found in the annexes of the activity

## LEARNING GOALS



- Introduce in a fun way different concepts and measures of forest fire management.
- Classify the importance of measures of forest fire management through games.

## INTRODUCTION



Forest fire protection is a complex, cross-sectorial administrative responsibility that requires a high degree of coordination.

There are a large number of measures that can be implemented in a forest fire management plan. These measures will have very different results depending on the economic, social and environmental context of each particular case.

In addition, there are measures that can be very useful in fire risk reduction strategies but are very unpopular among society.

Through this activity we intend to bring participants closer to the forest fire management and show them some of the main measures that can be taken to combat this phenomenon of great impact for both forests and climate change.

## ACTIVITY DESCRIPTION



Through MONOPOLY OF FIRE we will put the participants in the skin of a forest manager who faces the hard task of managing a forest against fire. In the game they will buy different measures to fight fires and will rent their rights of use. In this way they will obtain benefits with the objective of reaching a certain extent of forest to manage.

Starting from the “GO” box, participants will move their token around the board according to the score they get in the dice. When they fall on a measure that no one has yet, they will be able to buy it from the Patent Center.

If they decide not to buy it, the Bank sells it by auction to the highest bidder. Participants who own measures charge a rent to the other players who fall in them for rights of use. To increase the level of the measures that are possessed, it increases considerably the rent that must be paid, reason why it is very convenient to raise as many levels as possible.

If they need to make more money, the Patent Center can temporarily buy the rights to the measures that each player has.

Finally, always follow the instructions that indicate the letters of the community box and luck. In Annex 6 you can consult the detailed rules of the game.

1. Brief explanation of game rules and preparation of the game. (10')
2. Board game. (60')
3. Group discussion. At least the following questions should be answered: (10')
  - Did you have the opportunity to learn new concepts about forest firefighting?
  - Do you think there are measures that are more important than others? Why?

## SUGGESTIONS



- The activity is designed for a maximum of 8 participants. In case the number of participants is greater, they will join to play in pairs or 3 and make the decisions of the game together.
- Fire stations might be changed by more “chance” and “community chest” boxes in order to get more knowledge about the importance of different measures.
- For a better understanding of the different measures against forest fires, lecturers should add a short description in the back of each Title Deed card. Then, when a player buys a measure, s/he must read the description of the measure to other players.
- The game should end at the time lecturers say at the beginning or when the first player gets 10.000 ha of forests.
- Each measure should have a number of points depending on its importance. In this case, the winner will be the person with more points summing up the points of measures and forests (e.g.: 1 points each 100 ha of forest).
- Lecturers should include quiz questions in chest and community chest cards. The answer of these questions should be included in the description of each measure (in the measure cards).
- It is advisable to laminate the cards of the game for a longer life.

ANNEXES

ANNEX 1 - Game board (60 cm x 60 cm)

**MONOPOLY DEL FUEGO**

**Educating on CLIMATE FORESTS**

<p><b>A DESCANSAR</b></p>	<p><b>MERENDEO</b></p> <p>PRECIO = 220€</p> <p>CAMPAÑAS DE USO RACIONAL DEL FUEGO</p> <p>CONCEPCIÓN SOCIAL</p>	<p><b>¡¡SUERTE!!</b></p> <p>PRECIO = 220€</p> <p>SEÑALIZACIÓN PREVENTIVA EN BOSQUES</p> <p>CONCEPCIÓN SOCIAL</p>	<p>PRECIO = 240€</p> <p>TALLERES SOBRE IMPORTANCIA FORESTAL</p> <p>CONCEPCIÓN SOCIAL</p>	<p>PRECIO = 200€</p> <p>ESTACIÓN DE BOMBEROS NORTE</p>	<p>PRECIO = 260€</p> <p>MEDIDAS DE PREVENCIÓN CONTRAFUEGOS Y PISTAS FORESTALES</p>	<p>PRECIO = 260€</p> <p>MEDIDAS DE PREVENCIÓN FRANJAS CON ESPECIES POCO COMBUSTIBLES</p>	<p>PRECIO = 100€</p> <p>AMPLIACIÓN DEL BOSQUE</p>	<p>PRECIO = 280€</p> <p>MEDIDAS DE PREVENCIÓN QUEMAS PRECISAS Y CONTROLADAS</p>	<p><b>A PRISIÓN</b></p>
<p>PRECIO = 200€</p> <p>ASRORQUECIAMIENTO</p> <p>MEDIDAS LEGISLATIVAS</p>	<p>PRECIO = 180€</p> <p>ASRORQUECIAMIENTO ENERGÉTICO DE MADERA</p> <p>MEDIDAS LEGISLATIVAS</p>	<p>PRECIO = 180€</p> <p>ASRORQUECIAMIENTO</p> <p>MEDIDAS LEGISLATIVAS</p>	<p>PRECIO = 200€</p> <p>ESTACIÓN DE BOMBEROS OESTE</p>	<p>PRECIO = 160€</p> <p>SELECCIÓN ADICIONA DE SEMILLAS</p> <p>MEDIDAS DE ADAPTACIÓN</p>	<p>PRECIO = 140€</p> <p>TORNOS E INTERROGANTES FORESTALES ADICIONADOS</p> <p>MEDIDAS DE ADAPTACIÓN</p>	<p>PRECIO = 100€</p> <p>AMPLIACIÓN DEL BOSQUE</p>	<p>PRECIO = 140€</p> <p>CLAREOS EN REGENERACIONES</p> <p>MEDIDAS DE ADAPTACIÓN</p>	<p>PRECIO = 300€</p> <p>EQUIPOS TERRESTRES ANTI-INCENDIOS</p> <p>MEDIDAS E INFRAESTRUCTURAS</p>	<p>PRECIO = 300€</p> <p>DEPÓSITOS DE AGUA</p> <p>MEDIDAS E INFRAESTRUCTURAS</p>
<p>SIGUE INSTRUCCIONES DE CARTA COMUNIDAD</p> <p>CAJA DE COMUNIDAD</p>	<p>PRECIO = 180€</p> <p>ASRORQUECIAMIENTO</p> <p>MEDIDAS LEGISLATIVAS</p>	<p>PRECIO = 200€</p> <p>ESTACIÓN DE BOMBEROS ESTE</p>	<p>PRECIO = 350€</p> <p>CUERPO DE GUARDABOSQUES</p> <p>CONTROL POLICIAL Y JUDICIAL</p>	<p>PRECIO = 300€</p> <p>EQUIPOS AEROS ANTI-INCENDIOS</p> <p>MEDIDAS E INFRAESTRUCTURAS</p>	<p>PRECIO = 200€</p> <p>ESTACIÓN DE BOMBEROS ESTE</p>	<p>PRECIO = 400€</p> <p>ENURECIMIENTO DE PENAS POR INCENDIOS</p> <p>CONTROL POLICIAL Y JUDICIAL</p>	<p>PRECIO = 200€</p> <p>IMPUESTO AMBIENTAL</p>	<p>PRECIO = 350€</p> <p>CUERPO DE GUARDABOSQUES</p> <p>CONTROL POLICIAL Y JUDICIAL</p>	<p>PRECIO = 400€</p> <p>ENURECIMIENTO DE PENAS POR INCENDIOS</p> <p>CONTROL POLICIAL Y JUDICIAL</p>
<p><b>SÓLO VISITAS</b></p>	<p>PRECIO = 120€</p> <p>INVESTIGACIÓN FRENTE A PLAGAS</p> <p>GESTIÓN FORESTAL A LARGO PLAZO</p>	<p>PRECIO = 100€</p> <p>DIVERSIDAD GENÉTICA MÁXIMA</p> <p>GESTIÓN FORESTAL A LARGO PLAZO</p>	<p>PRECIO = 100€</p> <p>DIVERSIDAD EN LOS "TIPOS DE POBLACIÓN"</p> <p>GESTIÓN FORESTAL A LARGO PLAZO</p>	<p>PRECIO = 200€</p> <p>ESTACIÓN DE BOMBEROS SUR</p>	<p>PAGAR 10% o 200€</p> <p>IMPUESTO CAPITAL</p>	<p>PRECIO = 60€</p> <p>LABORES SELVÍCOLAS: DESBROCE</p> <p>MEDIDAS DE MANTENIMIENTO</p>	<p>SIGUE INSTRUCCIONES DE CARTA COMUNIDAD</p> <p>CAJA DE COMUNIDAD</p>	<p>PRECIO = 60€</p> <p>CONTROL DE ESPECIES INVASORAS</p> <p>MEDIDAS DE MANTENIMIENTO</p>	<p><b>SALIDA</b></p> <p>COBRA 20€ CADA VEZ QUE PASES POR AQUÍ</p>

ANNEX 2 - Examples of Title Deed Cards

<b>CONTROL OF INVASIVE SPECIES</b>	
PRICE = €60	RENTAL = €5
<hr/>	
LEVEL 1	€20
LEVEL 2	€90
LEVEL 3	€250
<hr/>	
LEVEL RISE	= €80
SALE OF RIGHTS	= €30

<b>FORESTRY WORK: SLASHING</b>	
PRICE = €60	RENTAL = €10
<hr/>	
LEVEL 1	€40
LEVEL 2	€180
LEVEL 3	€450
<hr/>	
LEVEL RISE	= €80
SALE OF RIGHTS	= €30

<b>DIVERSITY IN THE "TYPES OF POPULATION"</b>	
PRICE = €100	RENTAL = €15
<hr/>	
LEVEL 1	€60
LEVEL 2	€270
LEVEL 3	€550
<hr/>	
LEVEL RISE	= €80
SALE OF RIGHTS	= €50

<b>MAXIMUM GENETIC DIVERSITY</b>	
PRICE = €100	RENTAL = €15
<hr/>	
LEVEL 1	€60
LEVEL 2	€270
LEVEL 3	€550
<hr/>	
LEVEL RISE	= €80
SALE OF RIGHTS	= €50

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**ANNEX 3 - Examples of “CHANCE” & “COMMUNITY CHEST” cards**

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A great landowner is delighted with the anti-fire management that you do and has left you 3.000 hectares of forest.

**CHANCE**

A fire breaks out due to the negligence of a visitor. If you have some **measure of social awareness** you will lose 500 hectares of forest. Otherwise you lose 2.500Ha.

**COM  
MUNI  
TY  
CHEST**

## ANNEX 4 - Level labels

Level 1	Level 1	Level 1
Level 2	Level 2	Level 2
Level 1	Level 3	Level 3
Level 2	Level 1	Level 1
Level 3	Level 2	Level 2
Level 1	Level 3	Level 3
Level 2	Level 1	Level 3
Level 3	Level 2	Level 3

## ANNEX 5 - Game rules

### PREPARATION

1. Place the board on a table and put the Chance and Community Chest cards face down on their allotted spaces on the board.
2. Each player or groups of players choose one token to represent him/her while traveling around the board.
3. The activity facilitator performs the functions of the Patent Center. These are:
  - Give each player a template with 2.000€ and 5.000Ha of forests to manage. These templates will record the accounts related to the gains and losses of both money and forest.
  - Review each player's accounts.
  - Save the Firefighting Measures Cards until the players buy them.
  - In the case of auctions, it also performs the functions of Auctioneer.
4. Players throw both dice. The player with the highest score is the first and the turn moves to the left.

### THE GAME

When it's your turn, place your token on the corner marked "GO," throw the dices and move your token in the direction of the arrow the number of spaces indicated by the dices. After you have completed your play, the turn passes to the left. The tokens remain on the spaces occupied and proceed from that point on the player's next turn. Two or more tokens may rest on the same space at the same time.

The box on which you drop will determine what you should do.

**Doubles:** If you throw doubles, you move your token as usual, the sum of the two dice, and are subject to any privileges or penalties pertaining to the space on which you land. Retaining the dice, throw again and move your token as before. If you throw doubles three times in succession, move your token immediately to the space marked "In Jail" (see JAIL).

**"GO":** Each time a player's token lands on or passes over GO, whether by throwing the dice or drawing a card, the Patent Center pays him/her a €200 salary.

The €200 is paid only once each time around the board. However, if a player passing GO on the throw of the dice lands 2 spaces beyond it on Community Chest, or 7 spaces beyond it on Chance, and draws the "Advance to GO" card, he/she collects €200 for passing GO the first time and another €200 for reaching it the second time by instructions on the card.

**BUYING Fire Fighting MEASURES:** Whenever you land on an unowned measure you may buy that measure from the Patent Center at its printed price. You receive the Title Deed card showing ownership; place it face up in front of you. If you do not wish to buy the measure, the Patent Center sells it at auction to the highest bidder. The buyer pays the Patent Center the amount of the bid in

cash and receives the Title Deed card for that measure. Any player, including the one who declined the option to buy it at the printed price, may bid. Bidding may start at any price.

**PAYING RENT:** When you land on a measure owned by another player, the owner collects rent from you in accordance with the list printed on its Title Deed card.

If the rights of use have been temporarily sold to the Patent Center no rent can be collected. When a measure rights have been sold, its Title Deed card is placed face down in front of the owner.

It is an advantage to hold all the Title Deed cards in a color-group because the owner may then charge double rent for unimproved measures in that color-group. This rule applies to measure with unsold rights even if another measure rights in that color-group have been sold.

It is even more advantageous to have levels up on measures because rents are much higher than for unimproved measures

The owner may not collect the rent if he/she fails to ask for it before the second player following throws the dice.

**“FOREST ACQUISITION”:** when you fall into one of these boxes, you have the possibility to expand the extension of forests that you manage. The amount you can buy will depend on the dice roll with which you have reached the box. In this way, you must multiply the number of roll by 100Ha and thus you will get the extension that you can add to your forests. As 100Ha of forest cost €100, the extension you can add will also be the price you pay for it. Example: If you take a 7 and you fall in the FOREST ACQUISITION box, you have the opportunity to extend  $7 \times 100\text{Ha} =$  up to 700Ha of forest. As the price of 100Ha is 100€, the cost will be up to 700€. In this way you will increase the extension of the forests that you manage to reach the goal of the game: manage 20.000Ha of forest. If you decide not to buy, the turn will pass to the next player.

**“CHANCE” AND “COMMUNITY CHEST”:** When you land on either of these spaces, take the top card from the deck indicated, follow the instructions and return the card facedown to the bottom of the deck.

The "Get Out of Jail Free" card is held until used and then returned to the bottom of the deck. If the player who draws it does not wish to use it, he/she may sell it, at any time, to another player at a price agreeable to both.

**TAX BOXES:** When you fall into these boxes, simply pay the amount that the box indicates.

**PICNIC AREA:** A player landing on this place does not receive any money, property or reward of any kind. This is just a "free" resting place.

**JAIL:** You land in Jail when: (1) your token lands on the space marked "Go to Jail"; (2) you draw a card marked "Go to Jail"; or (3) you throw doubles three times in succession.

When you are sent to Jail you cannot collect your €200 salary in that move since, regardless of where your token is on the board, you must move it directly into Jail. Your turn ends when you are sent to Jail.

If you are not "sent" to Jail but in the ordinary course of play land on that space, you are "Just Visiting," you incur no penalty, and you move ahead in the usual manner on your next turn.

You get out of Jail by: (1) throwing doubles on any of your next three turns; if you succeed in doing this you immediately move forward the number of spaces shown by your doubles throw; even though you had thrown doubles, you do not take another turn; (2) using the "Get Out of Jail Free" card if you have it; (3) purchasing the "Get Out of Jail Free" card from another player and playing it; (4) paying a fine of €50 before you roll the dice on either of your next two turns.

If you do not throw doubles by your third turn, you must pay the €50 fine. You then get out of Jail and immediately move forward the number of spaces shown by your throw.

Even though you are in Jail, you may buy and sell measures, buy and sell measure levels and collect rents.

**IMPROVING MEASURES:** When you are the owner of all the Measures of the same color-group, you can raise their levels and place the corresponding label on those boxes. This increases the rent that you can charge to the managers who fall into them. The price of each level is indicated on the Title Deed card. You can raise levels on your turn or between the turns of other players, but you must do it uniformly: you cannot raise a second level of a Measure until you have the First level in all Measures of the same color-group, and thus up to a maximum of three levels per Measure. The sale of the levels should also be done in a uniform way. You can buy or sell at any time, and you can go up as many levels as your judgment and your financial situation allows you. Levels cannot be raised if any Measure right of the same color-group is sold. If you own a whole color-group and only one or two of them have been raised, you can continue to charge double rent as long as another player falls into the Measure on which the level has not been raised.

**SALING MEASURES:** Unimproved measures and fire stations may be sold to any player as a private transaction for any amount the owner can get; however, no measure can be sold to another player if it has been leveled up on any measure of that color-group. Any level must be sold back to the Patent Center before the owner can sell any measure of that color-group.

Levels may be sold back to the Patent Center at any time for one half the price paid for them.

All level on one color-group must be sold one by one, evenly, in reverse of the manner in which they were bought.

**TEMPORARILY SALE OF RIGHTS:** Rights from unimproved measures can be sold to the Patent Center at any time. Before than rights from an improved measure can be sold, all the levels on all the measures of its color-group must be sold back to the Patent Center at half price. The value of the sale of rights is printed on each Title Deed card.

No rent can be collected on sold measure or fire station rights, but rent can be collected on unsold measures and fire station in the same group.

In order to repurchase the measure rights, the owner must pay the Patent Center the amount of the sale of rights plus 10% interest. When all the measures rights of a color-group are no longer sold, the owner may begin to buy back levels at full price.

The player who sells measure rights retains possession of it and no other player may secure it by buying those rights from the Patent Center. However, the owner may sell this measure with sold rights to another player at any agreed price. If you are the new owner, you may repurchase the measure rights at once if you wish by paying off the value of the sale of rights plus 10% interest to the Patent Center. If the rights are not repurchased at once, you must pay the Patent Center 10% interest when you buy the measure and if you buy the rights later you must pay the Patent Center an additional 10% interest as well as the amount of the value of the sale of rights.

**BANKRUPTCY:** You are declared bankrupt if you owe more than you can pay either to another player or to the Patent Center. If your debt is to another player, you must turn over to that player all that you have of value and retire from the game. In making this settlement, if you own measure levels, you must resold these to the Patent Center in exchange for money to the extent of one-half the amount paid for them; this cash is given to the creditor. If you have measures with sold rights you also turn this measure over to your creditor but the new owner must at once pay the Patent Center the amount of interest on the sale of rights, which is 10% of the value of the measure. The new owner who does this may then, at his/her option, pay the principal or hold the measure until some later turn, then repurchases the measure rights. If he/she holds measures in this way until a later turn, he/she must pay the interest again upon repurchasing the measure rights.

**NOTES ON THE GAME:** If you owe more rents than you can pay in cash, you can pay your creditor a part in cash and another with the Measures (these should not have levels raised). In this case, the creditor may choose to accept certain Measures (even if they have the rights sold) in exchange for much more of their printed value, with the intention of obtaining additional Measures or to prevent another player from taking control of that Measure. Owners of the Measures must be aware to collect the rents of these Measures. Only the Patent Center can lend money to players, by selling rights to their Measures. No player may lend or borrow from another player.

**THE WINNER:** The first player who achieves to manage an extension of 20.000Ha of forest, or the last remaining player in the game, wins the game.

**Note:** as the game may be longer than the time available for the activity, it is advisable to determine a playing time at the beginning of the game. In this way, the player who manages a greater extension of forest when the game time is over will be proclaimed the winner.



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# Climate Refugees

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# Sea level rising

**Activity section:** Climate Refugees

**Type of activity:** Indoor or outdoor

**Duration:** 90 minutes

**1<sup>st</sup> experiment:** water bottles (1/group), black, white & yellow colour paint, brushes, lamp/sun, ruler, hollow glass tube/straw, thermometer

**Materials:**  
**2<sup>nd</sup> experiment:** ice blocks, two identical clear food storage boxes (medium size) for each group, sticks of classroom modelling clay (a few sticks) for each group, lamp/sun, water

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## LEARNING GOALS



- Understand how rising sea level is associated with heat.
- Understand the thermal expansion.
- Understand the differences between melting land-based ice and ice already in the sea.

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## INTRODUCTION



Volume of a material increases as it gets warmer. For example, water generally expands as it is heated, causing each drop of water to increase in size. In the ocean, thermal expansion is one cause of the sea level rise. Melting of ice is also a contributor but it is not the same if it melts the land-based ice or ice already floating in the water.

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## ACTIVITY DESCRIPTION



Activity consists out of two experiments: in the first part, the participants will learn that heat water causes sea level to rise through a process called thermal expansion. In the second part, they will perform an experiment to learn that melting land-based ice contributes to greater sea-level rise than melting sea ice.

Steps of the **1st experiment:**

1. Make small groups of 2-4 people and give instructions. (5')
2. Dye the plastic bottles with the colours (each group will dye with a different colour). (10')



3. Make a hole in the lid of the bottle and place the hollow glass tube/straw inside. Put similar amount of water in each bottle. (5')
4. Turn on the lamp/put in the sun. Observe the temperature and water level rise every 15 minutes (5 measurements in 1 hour). (60')

	Measurement #	Temperature (C°)	Water level (cm)
1			
2			
3			
4			
5			

5. Compare your results with other groups which dyed their bottles in different colours. (10')

**Important note:** The lecturer should ensure that the groups discuss how different colours influenced the water rise.

Steps of the 2<sup>nd</sup> experiment:

1. Explanation and instructions. (10')
2. Create two symbolic islands with modelling clay using clear food storage boxes as an ocean space. Name the islands as "Ice on Land" and "Floating Ice". (10')
3. Place as many ice cubes as possible on the level place formed in the first island and place the



- same number of ice cubes next to the clay in the second box. (5')
4. Pour water in both boxes making the levels (not amounts) of water the same. (5')
  5. Measure the rise in the water level at the beginning and every 5 minutes (4 measurements in 15 minutes). Record the measures on your data sheet. (15')

Minutes	Measurement for "Ice on land"	Measurement for "Floating ice"
0		
After 5 min		
After 10 min		
After 15 min		

6. What did you observe? Compare the water rise in two situations (floating ice vs. ice on land). (5')
7. Whole group discussion. (10')

Conduct the second experiment in the time of the measurements of the first one.

**Important note:** Scientific knowledge that the lecturers should use in the explanation part: When ice cubes sitting on the modelling clay melt, the water runs off and adds to the volume of water in the "ocean." On the other hand, floating ice is already taking up space in the water—displacing a mass of water that is equivalent to the mass of the ice. When the ice melts, the water fills that existing space.

## SUGGESTIONS



- Refresh the knowledge of physics so you can feel more competent to answer questions.

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# Culture loss

<b>Activity section:</b>	Climate Refugees
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	75 minutes
<b>Materials:</b>	Printed article (Annex 1) or PC with internet connection

## LEARNING GOALS



- Increase participants' awareness about the culture loss of people who are forced to migrate from their homeland.
- Realize that climate refugees are not just people who live in poverty.

## INTRODUCTION



The effects of climate change in coastal communities around the world are excessively felt all around world. According to International Organization for Migration report (2009), a rough estimated 200 million people in coastal communities could be displaced by 2050 because of climate change. However, the only problem that those displaced people face with is not just losing their homelands, but losing their culture as well.

## ACTIVITY DESCRIPTION



In this activity, we aim to increase the participants' awareness about the culture loss of people who are forced to migrate from their homeland. They are facing, not just with losing their homes; they are losing their cultures and traditions. For this aim, first, we want the groups will discuss what might be the culture loss mean for people who are displaced. After discussing the possible culture loss, we will handle a reading passage (<http://news.nationalgeographic.com/2016/05/160525-isle-de-jean-charles-louisiana-sinking-climate-change-refugees/>) -if there is limited internet connection, you can use the reading passage (attached in the Annex 1) which we shortened the original version published in nationalgeographic.com. After reading story, we will discuss how they feel, what is really lost with the coastal lines' lost.

1. Creation of the groups and naming the groups by this way: there are cards with unique "tribes" names written on the small cards. Each participant will hose one paper. Then their task is to find their group by using only body language and not speak any words. (5')

2. Giving information about the aim of the activity. (5')
3. Brain storming about what each group thinks when they first think of "culture loss" and how it is related with climate refugee context. (5')
4. Whole group discussion about culture loss. The lecturer should lead the whole group discussion by writing the ideas covered by the groups. (10')
5. Reading passage about Native tribes In US who are facing with coastal line loss. (10')
6. Group discussion about the passage given. (10')
7. Whole group discussion. The lecturer should lead the whole group discussion by writing the new ideas which the participants came up with at the end of reading text. (10')
8. Comparing before and after thoughts. (5')
9. Discussing what would other nations encounter with respect to culture loss. The lecturer should emphasize the other countries (e.g. Bangladesh, Indonesia, Kiribati, Tuvalu) are also facing this culture loss. Are all countries facing similar culture loss? Differences/Similarities should be included in the discussion. (15')
10. Final words-wrap up.

## SUGGESTIONS



- It would be interesting to have the testimonies of people affected by the massive loss of culture on the basis of climate changes.
- Use more concrete material / stories.

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## ANNEXES

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### ANNEX 1 - Article

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#### The First Official Climate Refugees in the U.S. Race Against Time

A Native American tribe struggles to hold on to their culture in a Louisiana bayou while their land slips into the Gulf of Mexico.



Since 1955, the Isle de Jean Charles band of the Biloxi-Chitimacha-Choctaw tribe has lost 98 percent of its land to the encroaching Gulf waters. Of the 22,400-acre island that stood at that time, only a 320-acre strip remains. The tribe's identity, food, and culture have slowly eroded with the land.

"We don't have time," tribal chief Albert Naquin, who spent the last 15 years advocating to relocate his people, said. "The longer we wait, the more hurricane season we have to go through. We hate to let the island go, but we have to. It is like losing a family member. We know we are going to lose it. We just don't know when."

The Biloxi-Chitimacha-Choctaws are receiving funding, but the fight to save their culture is not over. The federal grant will help save the tribe from the eroding landscape, but addressing the effects of cultural erosion is far more difficult.

"Once our island goes, the core of our tribe is lost," said Chantel Comardelle, the deputy tribal chief's daughter. "We've lost our whole culture—that is what is on the line."

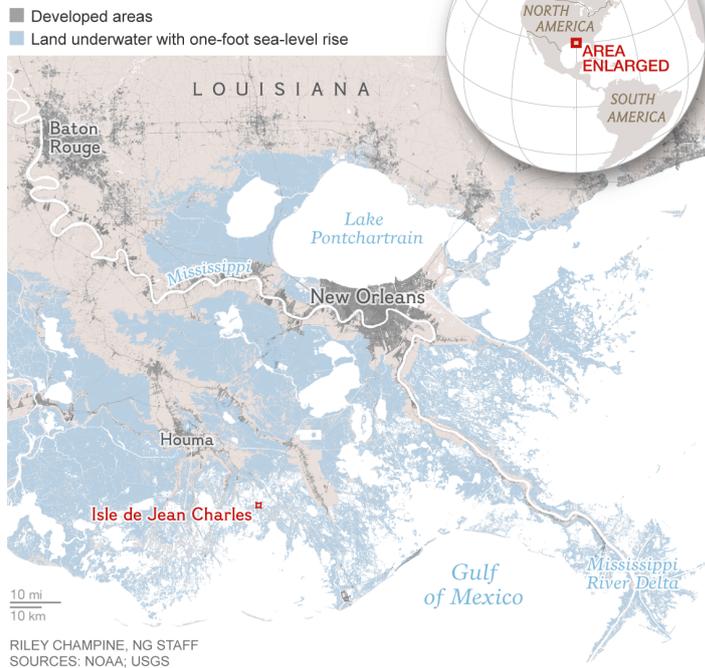
According to JR Naquin, a member of the tribe, the island once housed about 300 people, but only about 60 remain today. Much of the tribe's heritage and traditions have faded away because the people have been scattered by land loss and rising waters. The Biloxi-Chitimacha-Choctaws haven't been able to hold a powwow since before Hurricane Katrina hit over 10 years ago.

The land is disappearing into the Gulf because of a combination of coastal erosion, rising sea levels, lack of soil renewal, and shifting soil due to dredging for oil and gas pipeline placement. The soil that remains is nutrient-depleted because the protective marshlands that once served as the first line of

defense against saltwater intrusion for the Louisiana coastline are disappearing at a rate of the area of a football field an hour.

**Disappearing Land**

Huge swaths of coastal Louisiana would be inundated at high tide by a one-foot increase in sea level.



Many of the tribal members who remain on the island despite the rising waters are those who can't afford any other option. Most of those who have left the island remain in the tribe but are spread throughout Louisiana.

“The tribe has physically and culturally been torn apart with the scattering of members,” the resettlement proposal submitted to the Department of Housing and Urban Development’s National Disaster Resilience Competition states. “A new settlement offers an opportunity for the tribe to rebuild their homes and secure their culture on safe ground.”

Reference:

<http://news.nationalgeographic.com/2016/05/160525-isle-de-jean-charles-louisiana-sinking-climate-change-refugees/>

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# Digital Storytelling

**Activity section:** Climate Refugees

**Type of activity:** Indoor

**Duration:** 135 minutes

**Materials:** Computer with internet access, mobile phones with internet and camera and computer program (Photostory 3-optional), data projector

## LEARNING GOALS



- Increase participants' awareness about climate refuges by creating a digital video.
- Increase public awareness about climate refuges via social media (Facebook, Instagram, Tumblr, twitter).

## INTRODUCTION



Major extreme weather conditions affect the vulnerable population who do not have enough resources to fight the effects of climate change. As a result, a significant number of people have to migrate due to these effects of climate change. These people are names as “climate refugees”. Climate refugees are people who are forced to leave their home country because of the changes in their local environment. These changes comprise a wide range of issues including hurricanes, droughts, desertification, and sea level rise.

## ACTIVITY DESCRIPTION



In this activity, we aim to increase both the participants' awareness and the public's awareness about climate refugees. For this aim, the participants will create their own digital stories. Each digital story should have:

- A perspective about climate refugee situation
- A dramatic question that will lead the story.
- Emotional component
- Voice component
- Music component
- The appropriate length (not too short or too long)

- A coherence in the story

For this aim, we will have a brief introduction about how the people living in places which faces with the impact of climate changes. Our participants will create their own digital stories by focusing on some aspects of in the climate refugee situation which will increase their own awareness as well as the increase the public attention.

The steps are provided below:

1. A brief introduction about the activity (about the effect of climate change and how it will create climate refugees. (5')
2. A power-point slides about how people live with the changes that a climate change has brought into their lives. See Annex I. (5')
3. A Brief introduction about "Photostory 3" which will be used for creating digital stories (15')
4. Creation of groups. (5')
5. Group work/Brains-storming about possible solutions which have temporary and long-term effect. (10')
6. Groups will choose their context to prepare their digital stories with appropriate messages. (5')
7. They will create their scenarios. (10')
8. Internet search for the appropriate photos, digital images, voices. (10')
9. Preparing the digital story by using the programs. (35')
10. Each group will show their own digital story and explain their aims. (15')
11. Uploading their videos through social media accounts.

## SUGGESTIONS



- The lecturer should explain how the Photostory 3 program works for creating digital stories
- Other free programs (movie maker or power point) could be used as alternative to Photostory 3 program.
- For effective implementation, each group should have a computer with internet access.
- Before the activity implementation, presenting a few digital story examples may be useful for participants who have no prior knowledge how to create an effective digital story.
- Prior information about 'Climate refugees' is important in order to create an effective digital story about climate refugees.
- Some participants can have difficulty in both creating and editing a digital story. The lecturer(s) should help the groups who have difficulty.
- As creating a digital story requires technique, the lecturers should mix in the groups people with experience in this kind of software and people without.

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## ANNEXES

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### ANNEX 1 - Information about climate refugees

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The lecturer can use the information provided below in order to create a power-point presentation about climate refugees.

- The Challenge of Climate Change:

The climate change problem continues rising, and now there is any country exempt from registering and experiencing its effects. The economic, environmental, social, and political implications of climatic change are widely recognized and documented, providing a basis for the negotiation of national, regional, and global mitigation efforts (e.g., Stern 2007; Intergovernmental Panel on Climate Change (IPCC) 2008a; and more generally Monbiot 2006; Lynas 2007)

- Climate Change and Climate Refugees

The link between climate change and environmental vulnerability has now been well established and can be evidenced by, inter alia, the increased incidence of droughts, desertification, rising sea levels, and extreme weather patterns (IPCC 2008b).

- Climate Refugees:

Even refugees are under the legal protection of 1951 Geneva Refugee Convention, there is no such convention for Climate/environmental refugees. Thus, Current international law does not provide climate-induced migrants with mechanisms to secure resettlement rights or financial assistance (McAnaney, 2012).

Accordingly, some use “migrant” or “displaced person” terms for defining the persons who are forced to leave their home countries because of extreme conditions including hurricanes, floods, droughts, desertification, and sea level rise.

The latest figures from the Internal Displacement Monitoring Centre 2015 report show that more than 19 million people from 100 countries were forced to flee their homes in 2014 because of natural disasters. Within that, national responses to disasters have been fragmented and systems that pre-empt consequences of environmental phenomena, less than adequate.

The consensus among scientific organisations, including those represented on the Intergovernmental Panel on Climate Change (IPCC), is that the impact of human-induced greenhouse gas emissions visible today is unprecedented. Oceans have warmed and risen, massive glaciers and ice sheets have diminished and extreme events, like drought and tropical cyclones, some scientists say, have become more intense or more frequent in certain regions.

Sea level could creep to anywhere between about one metre, or three feet, up to three metres, or nearly 10 feet, by the year 2100, depending on CO<sub>2</sub> concentrations in the air and the rate of melting that occurs in the Polar regions, among other factors.

This means that the melting of ice sheets in West Antarctica and Greenland could lead to a potentially two-metre - six-foot - sea level rise in major cities such as New York. Increases in temperature could make places like Abu Dhabi, Dubai and Qatar uninhabitable by 2071.

## **ANNEX 2 - Digital storytelling**

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Additional information about Digital Storytelling can be found the link presented below:

- <http://digitalstorytelling.coe.uh.edu/page.cfm?id=27&cid=27>

## **ANNEX 3 - Additional resources**

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- UNCHR The Environment & Climate Change Report, 2015  
<http://www.unhcr.org/540854f49.pdf>
- Where will the climate refugees go? Al Jazeera English, 22 December, 2015  
<http://www.aljazeera.com/indepth/features/2015/11/climate-refugees-151125093146088.html>
- Williams, A. (2008). Turning the tide: Recognizing climate change refugees in international law. Law & Policy, 30(4), 502-529.  
[http://archives.cerium.ca/IMG/pdf/Turning\\_the\\_Tide-\\_Recognizing\\_Climate\\_Change\\_Refugees\\_in\\_International\\_Law.pdf](http://archives.cerium.ca/IMG/pdf/Turning_the_Tide-_Recognizing_Climate_Change_Refugees_in_International_Law.pdf)
- Glahn, B. (2009). 'Climate refugees'? Addressing the international legal gaps  
<https://www.ibanet.org/Article/NewDetail.aspx?ArticleUid=B51C02C1-3C27-4AE3-B4C4-7E350EB0F442>
- Glahn, B. (2009). 'Climate refugees'? Addressing the international legal gaps-PART II  
<https://www.ibanet.org/Article/NewDetail.aspx?ArticleUid=3E9DB1B0-659E-432B-8EB9-C9AEEA53E4F6>

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# Who is the most vulnerable?

**Activity section:** Climate Refugees

**Type of activity:** Indoor

**Duration:** 100 minutes

**Materials:** Press releases on the topic "climate change & gender inequality" (see annexes), colourful pencils, scissors, glue, colourful papers and colourful cardboards

## LEARNING GOALS



- Assess how gender mainstreaming can be considered in the planning and implementation of policies and programs that affect this large and vulnerable group.
- Explain why gender consideration is necessary in climate refugee situations.

## INTRODUCTION



It's already well known that climate change is not an equal-opportunity threat, with its impacts on food production, severe storms, and drought, among others, hitting the world's poorest nations the hardest. And as we've learned, global warming isn't gender-blind either: Women are especially vulnerable to its effects, making up a shocking 80 percent of climate refugees. Female climate refugees also face unique dangers, including sexual violence and pregnancy-related morbidity and mortality. And in the chaos of displacement, child abuse and neglect, intimate partner violence, and exploitation and trafficking typically spike. Following the Mt. Pinatubo eruption in the Philippines, Hurricane Mitch in Nicaragua, and the Loma Prieta Earthquake in the U.S., the WHO reported that rates of intimate partner violence increased significantly. Likewise, reports from the Sri Lanka and Indonesia following the Asian Tsunami focused on concerns over the protection of women from sexual violence.

## ACTIVITY DESCRIPTION



Through this activity we will analyse information relating the topics of climate change, refugees and gender inequality. Participants will create a dissemination strategy (video, audio, poster, performance, etc.) explaining the topic. To implement the activity, the lecturers should follow the steps below:

1. A brief introduction about the gender differences in climate change. (15')

2. Creation of 3 groups. (5')
3. Each group will investigate about gender differences using the provided press releases. (20')
4. Group work: Each group will discuss their findings and ideas. (20')
5. Groups will choose their dissemination strategy (visual, poster or oral) and will prepare a presentation to handle the points they have covered. (10')
6. They will give their presentations. (20')
7. Groups will make a brain storming about gender differences and gender problems. (10')

## **SUGGESTIONS**



- The topic of this activity is very interesting but it is still hardly known by most of the people. Its understanding is a little bit difficult so the lecturers should provide easier material than the one they will find in the annexes.
- The activity should be more dynamic to maintain the attention of the participants.
- At the end of the activity we should ask participants what we can do to solve the problem of gender inequality. What action will we assimilate in our daily life to solve it.

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## ANNEXES

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### ANNEX 1 - Sources

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- <https://publichealthwatch.wordpress.com/2015/09/29/5-things-you-should-know-about-climate-refugees/>
- <http://iopscience.iop.org/article/10.1088/1748-9326/7/2/025601/pdf>
- <http://www.prb.org/Publications/Articles/2012/environment-gender.aspx>
- <http://www.tandfonline.com/doi/abs/10.1080/19480881.2010.536669>
- [http://www.un.org/womenwatch/feature/climate\\_change/](http://www.un.org/womenwatch/feature/climate_change/)
- [http://www.preventionweb.net/files/45069\\_proceedingsthirdunitednationsworldc.pdf](http://www.preventionweb.net/files/45069_proceedingsthirdunitednationsworldc.pdf)
- <http://www.spiegel.de/international/world/gender-and-climate-change-poor-women-bear-brunt-of-global-warming-a-662401.html>

### ANNEX 2 - Links to press releases

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- Gender and climate change-induced migration: proposing a framework for analysis:

<http://iopscience.iop.org/article/10.1088/1748-9326/7/2/025601/pdf>

- "Gender and climate change": from impacts to discourses:

<http://www.tandfonline.com/doi/full/10.1080/19480881.2010.536669?src=recsys&>

- Women, Gender Equality and Climate Change:

[http://www.un.org/womenwatch/feature/climate\\_change/downloads/Women and Climate Change Factsheet.pdf](http://www.un.org/womenwatch/feature/climate_change/downloads/Women_and_Climate_Change_Factsheet.pdf)

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# Dealing with displacement

<b>Activity section:</b>	Climate Refugees
<b>Type of activity:</b>	Indoor
<b>Duration:</b>	100 minutes
<b>Materials:</b>	Computer with internet access, mobile phones, colourful pencils, scissors, glue, colourful papers and colourful cardboards

## LEARNING GOALS



- Know which organizations (The primary mechanism for the coordination of humanitarian assistance for internally displaced persons is the Inter-Agency Standing Committee (IASC), (UNHCR- The UN's refugee agency, UNICEF and OHCHR- Office of the United Nations High Commissioner for Human Rights) are responsible in managing the displacement issues.
- Get acknowledged about the main responsibilities of Inter-Agency Standing Committee (IASC), (UNHCR- The UN's refugee agency, UNICEF and OHCHR- Office of the United Nations High Commissioner for Human Rights).
- Propose new international organizations which can combine the responsibilities of above mentioned organizations.

## INTRODUCTION



Internally displaced persons – whether they return to their homes, settle elsewhere in the country, or try to integrate locally where they are displaced – usually face continuing problems and risks, and require support beyond the acute crisis period of a disaster. Achieving a solution is therefore a gradual and complex process requiring timely and coordinated efforts to address humanitarian, development and human rights concerns, including measures to prepare for or prevent further displacement.

## ACTIVITY DESCRIPTION



In this activity, we aim to increase participants' awareness about the international organizations and their roles about handling the displacement issue that is introduced with climate change. Thus we will create 4 groups (IASC, UNHCR, UNICEF and OHCHR) who will investigate the responsibilities of these organizations. After internet search, each group will prepare a hand-out (poster) in order to present their findings about organizations to other groups. After this step, we want them to discuss

whether they really need these separate organizations or could create a new organization that will be more powerful and have more impact on creating awareness.

Steps are provided below:

1. A brief introduction about the activity (which organizations are responsible that can take action in handling displaced people as a result of climate change).
2. Creation of groups. (5')
3. Each group will search some responsibilities of the organizations presented below:
  - IASC,
  - UNHCR,
  - UNICEF and
  - OHCHR
4. Group work/ investigate the roles and responsibilities of their organization and how their organization is handling the displaced people. (20')
5. Groups will chose their dissemination strategy (visual, poster or oral) and prepare a presentation about the points they have covered. (15')
6. They will give their presentations. (20')
7. Whole group discussion about whether these organisations really need. (10')
8. Groups will do brainstorming about creating a “new organization” which will be more “powerful” in handling the displaced people and their problems. (15')

In this step, new groups can be created in order to propose a more powerful organization in handling displaced people and their problems.
9. Groups will present their “new” organizations working flowchart and explain its roles. (15')

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## ANNEXES

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### ANNEX 1 - Sources

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- <https://interagencystandingcommittee.org/about-iasc>
- <http://www.unhcr.org/about-us.html>
- [https://en.wikipedia.org/wiki/United\\_Nations\\_High\\_Commissioner\\_for\\_Refugees](https://en.wikipedia.org/wiki/United_Nations_High_Commissioner_for_Refugees)
- [https://www.unicef.org/about/who/index\\_introduction.html](https://www.unicef.org/about/who/index_introduction.html)
- <https://en.wikipedia.org/wiki/UNICEF>
- <http://www.ohchr.org/EN/AboutUs/Pages/WhoWeAre.aspx>
- [https://en.wikipedia.org/wiki/Office\\_of\\_the\\_United\\_Nations\\_High\\_Commissioner\\_for\\_Human\\_Rights](https://en.wikipedia.org/wiki/Office_of_the_United_Nations_High_Commissioner_for_Human_Rights)

### ANNEX 2 - Additional Information

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For the partners who do not have internet access can use the information provided below:

(All the information can be found in your native language through websites of IASC, UNICEF, UNCHR or OHCHR. For instance, UNICEF has Spanish language support).

**The Inter-Agency Standing Committee (IASC)** is the primary mechanism for inter-agency coordination of humanitarian assistance. It is a unique forum involving the key UN and non-UN humanitarian partners. The IASC was established in June 1992 in response to United Nations General Assembly Resolution 46/182 on the strengthening of humanitarian assistance.

#### Primary Objectives

The overall objective of the IASC is to improve delivery of humanitarian assistance, including the protection of the rights of affected people. The primary objectives of the IASC in complex and major emergencies are as follows:

- to develop and agree on system-wide humanitarian policies;
- to allocate responsibilities amongst agencies in humanitarian programs;
- to develop and agree on a common ethical framework for all humanitarian activities;
- to advocate common humanitarian principles to parties outside the IASC;
- to advocate for the full respect for the rights of the individual in accordance with the letter and spirit of the relevant bodies of law (i.e. international human rights law, international humanitarian law and refugee law);
- to identify and address areas where gaps in mandates or lack of operational capacity exist;
- to resolve disputes or disagreements about and amongst humanitarian agencies on system-wide humanitarian issues.

#### Key Principles

In so doing, the following key principles will be observed:

- **Respect for Mandates:** that decisions of the IASC will not compromise organizations with respect to their own mandates
- **Ownership:** that all organizations have an equal ownership of the Committee and its subsidiary bodies
- **Overall Objective:** that the ultimate objective is to support effective humanitarian action  
Relevance to field operations: that members recognize the criticality of ensuring relevance to field operations and of input by field operations
- **Subsidiarity:** that decisions will be taken at the most appropriate level as agreed by IASC Principals
- **Impartiality of the Secretariat:** that the IASC will be serviced by a Secretariat that does not represent the interests of any one organization.

Source: <https://interagencystandingcommittee.org/>

### UNHCR The office of the United Nations High Commissioner for Refugees (UNHCR)

UNHCR, the UN Refugee Agency, is a global organisation dedicated to saving lives, protecting rights and building a better future for refugees, forcibly displaced communities and stateless people.

UNHCR was established on 14 December 1950 and succeeded the earlier United Nations Relief and Rehabilitation Administration. The agency is mandated to lead and co-ordinate international action to protect refugees and resolve refugee problems worldwide. Its primary purpose is to safeguard the rights and well-being of refugees. It strives to ensure that everyone can exercise the right to seek asylum and find safe refuge in another state, with the option to return home voluntarily, integrate locally or to resettle in a third country.

UNHCR's mandate has gradually been expanded to include protecting and providing humanitarian assistance to whom it describes as other persons "of concern," including internally displaced persons (IDPs) who would fit the legal definition of a refugee under the 1951 United Nations Convention Relating to the Status of Refugees and 1967 Protocol, the 1969 Organization for African Unity Convention, or some other treaty if they left their country, but who presently remain in their country of origin. UNHCR presently has major missions in Lebanon, South Sudan, Chad/Darfur, Democratic Republic of Congo, Iraq, Afghanistan as well as Kenya to assist and provide services to IDPs and refugees in camps and in urban settings.

UNHCR maintains a database of refugee information, ProGres, which was created during the Kosovo War in the 1990s. The database today contains data on over 11 million refugees, or about 11% of all displaced persons globally. The database contains biometric data, including fingerprints and iris scans and is used to determine aid distribution for recipients. The results of using biometric verification has been successful. When introduced in Kenyan refugee camps of Kakuma and Dadaab in the year 2013, the UN World Food Programme was able to eliminate \$1.4m in waste and fraud.

To achieve its mandate, the UNHCR engaged in activities both in the countries of interest and in countries with donors. For example, the UNHCR hosts expert roundtables to discuss issues of concern to the international refugee community.

The UNHCR works in different regions of the world to raise awareness about the refugee crisis and the needs of these refugees.

Since 2009, the UNHCR acknowledged a large presence of migration and refugees in the Caribbean, where the refugee crisis remained largely unreported. Many refugees in search for asylum in the United States are unable to reach their destination and end up in the Caribbean. However, migrant laws in most of these nations lacked any protections for asylum-seekers, even the ability to be recognized as a refugee or asylum seeker itself. The UNHCR organized talks with these nations in Costa Rica in 2009, in an effort to bring forward the lack of protections for refugees, who are often labeled as "illegal" and prosecuted as unauthorized migrants.

Source: <http://www.unhcr.org/turkey/home.php?lang=en&page=53>

### **UNICEF (The United Nations Children's Fund)**

The United Nations International Children's Emergency Fund was created by the United Nations General Assembly on 11 December 1946, to provide emergency food and healthcare to children in countries that had been devastated by World War II. The Polish physician Ludwik Rajchman is widely regarded as the founder of UNICEF and served as its first chairman from 1946. On Rajchman's suggestion, the American Maurice Pate was appointed its first executive director, serving from 1947 until his death in 1965. In 1950, UNICEF's mandate was extended to address the long-term needs of children and women in developing countries everywhere. In 1953 it became a permanent part of the United Nations System, and the words "international" and "emergency" were dropped from the organization's name, making it simply the United Nations Children's Fund, retaining the original acronym, "UNICEF".

UNICEF works in 190 countries and territories to protect the rights of every child. UNICEF has spent 70 years working to improve the lives of children and their families. Defending children's rights throughout their lives requires a global presence, aiming to produce results and understand their effects.

UNICEF promotes the rights and wellbeing of every child, in everything we do. Together with our partners, we work in 190 countries and territories to translate that commitment into practical action, focusing special effort on reaching the most vulnerable and excluded children, to the benefit of all children, everywhere.

In all of its work, UNICEF takes a life-cycle based approach, recognizing the particular importance of early childhood development and adolescence. UNICEF programmes focus on the most disadvantaged children, including those living in fragile contexts, those with disabilities, those who are affected by rapid urbanization and those affected by environmental degradation.

UNICEF was created with a distinct purpose in mind: to work with others to overcome the obstacles that poverty, violence, disease and discrimination place in a child's path. We advocate for measures to give children the best start in life, because proper care at the youngest age forms the strongest foundation for a person's future.

We promote girls' education – ensuring that they complete primary education as a minimum – because it benefits all children, both girls and boys. Girls who are educated grow up to become

better thinkers, better citizens, and better parents to their own children. We act so that all children are immunized against common childhood diseases, and are well nourished: no child should suffer or die from a preventable illness. We work to prevent the spread of HIV/AIDS among young people because it is right to keep them from harm and enable them to protect others. We help children and families affected by HIV/AIDS to live their lives with dignity.

We involve everyone in creating protective environments for children. We are present to relieve suffering during emergencies, and wherever children are threatened, because no child should be exposed to violence, abuse or exploitation.

UNICEF upholds the Convention on the Rights of the Child. We work to assure equality for those who are discriminated against, girls and women in particular. We work for the Millennium Development Goals and for the progress promised in the United Nations Charter. We strive for peace and security. We work to hold everyone accountable to the promises made for children.

We are part of the Global Movement for Children – a broad coalition dedicated to improving the life of every child. Through this movement, and events such as the United Nations Special Session on Children, we encourage young people to speak out and participate in the decisions that affect their lives.

Source: <https://www.unicef.org/about-us>

### **The Office of the United Nations High Commissioner for Human Rights (OHCHR)**

The Office of the United Nations High Commissioner for Human Rights (OHCHR) represents the world's commitment to universal ideals of human dignity. We have a unique mandate from the international community to promote and protect all human rights.

The High Commissioner heads OHCHR and spearheads the United Nations' human rights efforts. We offer leadership, work objectively, educate and take action to empower individuals and assist States in upholding human rights.

We also support the work of the United Nations human rights mechanisms, including the treaty bodies established to monitor State Parties' compliance with the core international human rights treaties and the [Special Procedures](#) of the Human Rights Council. We promote the right to development, coordinate United Nations human rights education and public information activities, and strengthen human rights across the United Nations system. We work to ensure the enforcement of universally recognized human rights norms, including through promoting both the universal ratification and implementation of the major human rights treaties and respect for the rule of law.

The Office of the United Nations High Commissioner for Human Rights:

- Promotes universal enjoyment of all human rights by giving practical effect to the will and resolve of the world community as expressed by the United Nations.
- Plays the leading role on human rights issues and emphasizes the importance of human rights at the international and national levels.
- Promotes international cooperation for human rights.
- Stimulates and coordinates action for human rights throughout the United Nations system.

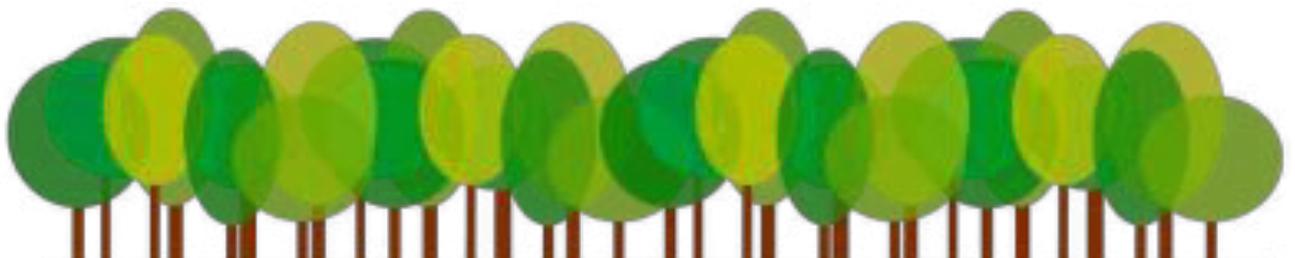
- Promotes universal ratification and implementation of international standards.
- Assists in the development of new norms.
- Supports human rights organs and treaty monitoring bodies.
- Responds to serious violations of human rights.
- Undertakes preventive human rights action.
- Promotes the establishment of national human rights infrastructures.
- Undertakes human rights field activities and operations.
- Provides education, information advisory services and technical assistance in the field of human rights.

Source: <http://www.unhcr.org/about-us.html>

# HANDBOOK

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**GOOD PRACTICES TO APPLY IN  
OUR'S DAILY LIFE TO RESPECT FORESTS**





Reducing the use of forests can go a long way in mitigating problems associated with climate change and ecosystem destruction. One of the most important functions of forests is to convert carbon dioxide into oxygen and retain carbon in their wood, thus reducing the amount of CO<sub>2</sub> in the atmosphere. Forests serve numerous other functions, such as preventing flooding and conserving topsoil and water. Because these functions are all so critical, preserving forests and making a sustainable management of them is crucial.

This handbook we present brings you some tools and actions you can incorporate to your daily life to reduce the pressure society put on forests. Information you will find here is a compilation of our previous knowledge on this topic and additional resources we have found in the Internet. At the end of the document, you will find some links to websites where you can extend this information.

### 1. Reduction on paper and wood consumption

Logging companies are cutting down some of the most endangered forests on the planet to make wood and paper products.

You can help reduce the pressure on our remaining forests by taking simple steps to reduce your own wood and paper use. For example, use both sides of each piece of paper, use your own cloth bags at



the grocery store, use cloth napkins and towels, and avoid disposable paper plates and cups.

Make sure that the forest-derived products you buy are made from 100 percent post-consumer content materials.

Choose tree-free paper alternatives if possible. Tree-free paper is made from agricultural products like waste straw and hemp, so not a single tree is cut down for its production.

If you are building a house or adding on to your home, utilize wood efficient building techniques and avoid old growth wood products.

We can remember that wood and paper are not just “stuff”: they are made from the living fabric of our planet, home to myriad creatures.

If you think it is not possible to reduce your paper and wood consumption, you should take a look to the next alternative.

## 2. Consumption of independently certified forest products - Eco forestry

The use of a global forest certification system allows consumers to identify; purchase and use wood, paper and other forest products produced from well-managed forests and/or recycled materials.

With good Eco forestry, the forest will yield more timber of higher commercial value over the long term, while protecting the forest's ecosystem. Therefore, when you buy certified forest products you are helping to ensure our forests are alive for the generations to come.



## 3. Reduction on oil consumption

Oil exploration projects lead to toxic pollution and massive deforestation, posing a threat to pristine ecosystems and indigenous cultures worldwide.

You can help alleviate oil's impact on the environment by reducing your own oil and gas consumption. The next time you purchase a car, choose one that gets good gas mileage and avoid gas guzzling sports utility vehicles. If you drive somewhere regularly, start a carpool. Whenever possible, leave your car at home and instead walk, ride your bike, or take local mass transportation. Support funding for mass transportation and bike lanes -options that will serve our transportation needs and our planet much better in the long run than an ever-expanding maze of roads and highways.



## 4. Reduction on beef consumption

Reducing your consumption of beef will reduce demand for it, cutting back on pressure to clear more forests for cattle.

A vegan, who eats no meat, fish, or dairy products, needs 1/6<sup>th</sup> of an acre for his or her annual food needs. A vegetarian needs half an acre. A meat-eater needs three acres, and increasingly, some of this comes from cleared rainforests.

### **5. Boycott to environmentally and socially irresponsible companies**

Corporations need to know that the public will hold them accountable for business practices that are socially or environmentally destructive. If you feel that a company's business practices are environmentally irresponsible, send the company a letter expressing your concern, or organize a boycott of the company.

Buy from companies that have a commitment to reducing deforestation through forest-friendly policies.



### **6. Support for an organisation protecting forests**

There are many organisations working for the conservation of forests. There also are many ways to support them. You can join their activist campaigns, pay a quote for a membership, work as a volunteer or disseminate them. When more people work together, the impact is greater.

Without activism, nothing happens. The destructive logging continues, and the world's forests continue to fall.

### **7. Spreading the message**

Make a conscious effort to share information with others on deforestation and its' effects. Educate your friends, family, and community about how our everyday actions can impact forests around the world.

Some of your friends may laugh at you and say it is silly to think that you can solve problems like this. But that is OK, things work better when responsible people don't give up. Stand up for what you believe in.

## 8. Respect of the rules in forests

When you are visiting a forest, be careful to respect the rules you will find to avoid your impact in the ecosystem.

Some of these rules are usually related to camping, sanitation, campfires, vehicle operation, pets and animals, wildlife, fireworks and public property.

### Sources:

- Adventure Life: <http://www.adventure-life.com/>.
- Earth Future: <http://www.earthfuture.com/default.asp>.
- FSC: <http://www.fsc-uk.org/en-uk>.
- Recreation in USA: <https://www.recreation.gov/>.
- Greenpeace: <http://www.greenpeace.org/international/en/>.
- Sciencing: <http://sciencing.com/>.

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## PARTNER ORGANISATIONS & CONTACTS



The **Educating on “Climate Forests”** project ([www.climateforests.org](http://www.climateforests.org)) has been possible thanks to the work of five organisations from countries belonging to the Erasmus+ Programme. Below, we present these organisations and provide useful contact information from them.

### 1. Asociación IROKO Desarrollo Forestal Sostenible (IROKO DFS - Coordinating Organisation)

IROKO DFS is a non-profit NGO founded in 2007 by an open group of students and experts from the Forestry field.

Its main goal is to promote a sustainable development among disadvantaged people communities from tropical countries by the implementation of good practices on the management of their forest resources. Moreover, the organisation carries out other types of projects with the mentioned communities of people, such as the building of basic infrastructure to provide them with sanitation systems and potable water supplies.



IROKO DFS is also part of FSC-Spain (Forest Stewardship Council) as member from its Board. FSC is the main organisation which encourages a responsible forest management by the use of a forest certification.

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**Tel.:** +34 644 983 900

**Contact person:** Miguel A. Vega Ruiz

**Website:** [www.iroko.org.es](http://www.iroko.org.es)

### 2. E-ZAVOD

E-ZAVOD (E-Institute) is a non-profit research and development institute working in multidisciplinary fields including sustainable development, innovation and business support.



The mission of E-ZAVOD is to support integration of European policies and improve quality of citizens' life through practical implementation of the projects. Main focus is on supporting sustainable economy, innovation, energy efficiency, renewable energy, environmental protection and balanced rural development.

E-ZAVOD follows world main trends, selects the ones who can positively contribute to society or business and transfers them to Slovenian territory.

E-ZAVOD is coordinator of smart city Maribor Cluster and initiator of triple helix for support of smart city.

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**Tel.:** +38 627 493 225 / +38 627 493 227

**Contact person:** Mateja Koler

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### 3. Hnutí DUHA - Friends of the Earth Czech Republic

Hnutí DUHA - Friends of the Earth Czech Republic is one of the largest and best-known Czech non-governmental environmental organizations. With more than 25 years of experience, Hnutí DUHA successfully promotes environmental solutions to ensure a healthy and clean environment.



Hnutí DUHA advocates for better environmental policies, works with the public, policy makers, experts and journalists. It actively motivates people to make changes that limit pollution and conserve nature. It has significantly influenced debate about several policies with excellent results.

Hnutí DUHA focuses especially on the fields of energy and climate protection, resources and nature protection.

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**Contact person:** Gabriela Šťastná (Benešová)

**Website:** [www.hnutiduha.cz](http://www.hnutiduha.cz), [www.ceskadivocina.cz](http://www.ceskadivocina.cz)

### 4. Uşak Üniversitesi (Usak University)

Usak University is a young and active university founded in 2006. The academic staff is working both in lecture and researching fields. The main goal of the university is to be a reputable university under the light of science and wisdom.

Project based learning (PBL) is one of the biggest aspects of education within the university. The academic staff is well equipped with project management skills. The project coordination department of university arranges in-service training courses for academic staff in the field of PBL.



The Faculty of Education of Usak University have pre-school, primary and science education departments which have environmental education courses within their curricula. Besides, the Faculty organizes activities with The Turkish Foundation for Combating Soil Erosion for Reforestration and the Protection of Natural Habitats (TEMA) reforestrating in Usak city as wells as other activities such

as seminars for increasing the awareness of forests, nature walks or meetings about the biodiversity and the importance of forests in Turkey.

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## 5. Associazione EURO

EURO (Research Centre, Promotion and EU Initiative) was founded in 1996 with the aim of promoting and implementing local development projects in the Region of Sicily. The organization works towards establishing and maintaining cooperative relationships with Public and Private Institutions both in Italy and abroad.



EURO is responsible of the services of the Oriented Natural Reserve of Alcamo.

EURO promotes and implements a comprehensive and updated program of Environmental Education and Earth (programs, scientific workshops, outdoor activities, excursions) in favour of school children of primary school of first and second degree students of secondary school level.

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A graphic featuring two clusters of stylized trees with green and yellow foliage and brown trunks. Between the trees are five stars of various colors and patterns, including a red star with a white crescent and star, a white star with red and blue stripes, a yellow star with a red border, a green star with a white border, and a white star with blue and red stripes.

# Educating on CLIMATE FORESTS

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