



Inspiring4Biodiversity

WebQuiz about ecosystem services

A tool to introduce local and global ecosystems and biodiversity



Ecosystem services

An ecosystem is a community of living organisms in conjunction with the non-living components, interacting as a system. To learn more, test our quiz.

[GO TO QUIZ](#)

Contents

A tool to introduce local and global ecosystems and biodiversity	1
What is webquiz about ecosystem services	3
Target groups	3
Learning goal of the tool	3
Learning content	4
Technical description for creating the game	4
Questions for the web quiz	6
Impressum	21



Erasmus+

What is webquiz about ecosystem services

WebQuiz about ecosystem services – web quiz about ecosystem services will give an overview of those definitions and will also describe different examples. Web quiz will be usable at vocational schools in the classroom activities or during study trips. It will be useful also during the family trip to nature. Web quizzes about ecosystem services will be possible to enjoy on different devices like smartphones and laptops. It needs only Internet access.

Target groups

Target group of the method are:

- **Young adults.** The method involves active moving and orientation. It is also suitable for young adults with children. These are for example families where there are children 6- 16 years old. This method can be like family learning activity. Most of the target group is living in towns and they are interested in outdoor activities that are possible to do as a family. These parents have higher education and they are comfortable with technology. They are concerned about the environment.
- **Elders/seniors** – the target group includes grandparents who are interested to do something educational educative with the younger generation. The grandparents are living both in urban and country areas. They are rather well informed about the environmental things and are interested to give some advice to younger generations.

The secondary target group:

- **Environmental educational centres** – the target group who are also disseminating the games and tools and other environmental educational materials. These centres are also using these tools to organise their programmes.

Learning goal of the tool

WebQuiz about ecosystem services – webquiz about ecosystem services will give an overview of those definitions and will describe also different examples. Webquiz will be usable at schools in the classroom activities or during study trips. It will be useful also during the family trip into nature. Web quizzes about ecosystem services will be possible to enjoy on different devices like smartphones and laptops. It needs only Internet access.

The learning goal is to introduce what are ecosystem services / to make people understand the richness of the “services” that nature offers us.

- What are the main four ecosystem services:
 - **Provisioning services** are the products obtained from ecosystems such as food, fresh water, wood, fiber, genetic resources and medicines.
 - **Regulating services** are defined as the benefits obtained from the regulation of ecosystem processes such as climate regulation, natural hazard regulation, water purification and waste management, pollination or pest control.
 - **Habitat services** highlight the importance of ecosystems to provide a habitat for migratory species and to maintain the viability of gene-pools.
 - **Cultural services** include non-material benefits that people obtain from ecosystems such as health, spiritual enrichment, intellectual development, recreation and aesthetic values.

Learning content

The learning content of the tool is:

- To introduce local and global ecosystems and biodiversity / how they are interconnected.
- To introduce different ecosystems and species.
- To use different knowledge and skills to protect biodiversity and to use it environmentally friendly.
- To develop a positive vision of environmental protection and environmentally friendly consumption.

Technical description for creating the game

To create a web quiz there may be several solutions like Kahoot, Blackboard Learn, Quizizz, Poll, Schoology, Crowdprur etc. There are some free versions and some paid programmes. The weakness of these is that they are not well represented on the organisation webpage but the strength is that the other versions may be more comfortable for multipliers.

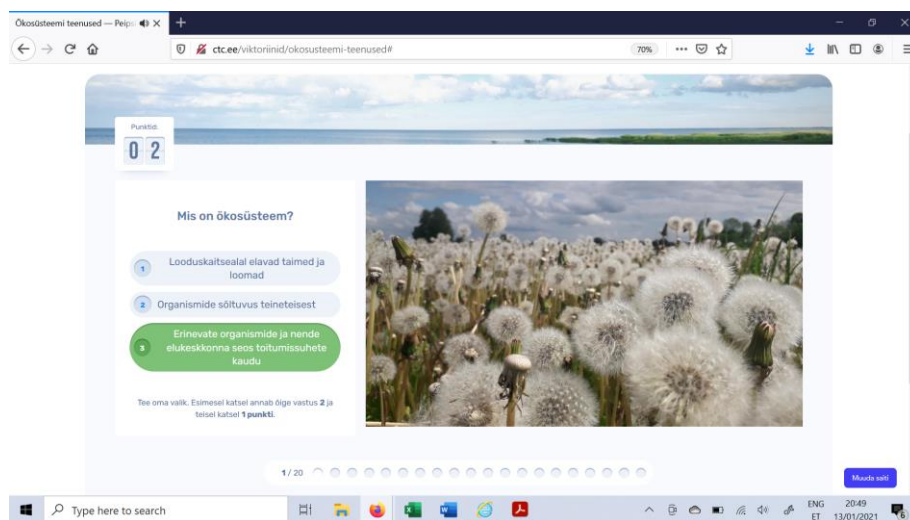
Peipsi Center for Transboundary Cooperation developed their own web solution to create quizzes. It enables to create new quizzes on different themes and these are available for end users every time. Such kind web solution to create quizzes requires extra money for creating special solution.

The **ecosystem services webquiz** starts with the short description about the ecosystem services and quiz about technical issues.

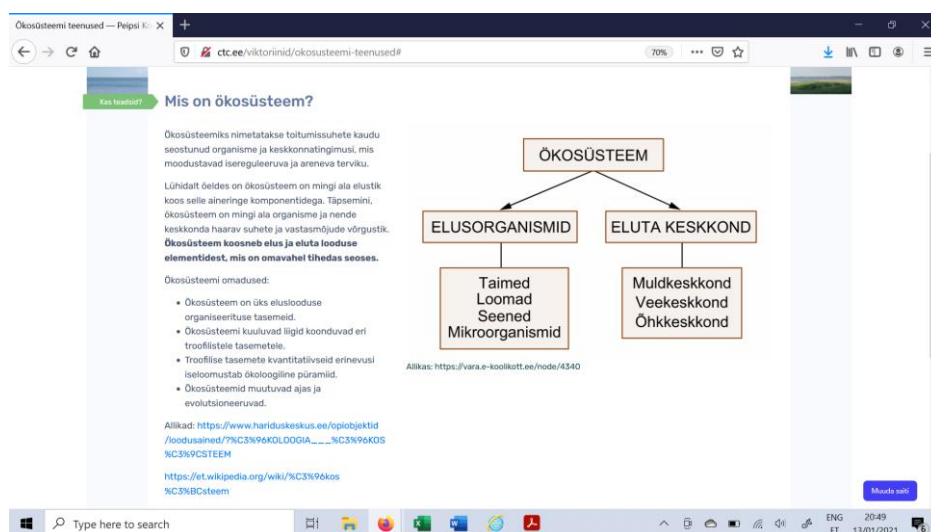
From the front page, a visitor gets to know that ecosystem services or eco-benefits Ecosystem services refer to the services and goods, or summary benefits, that each ecosystem provides to people, society and the economy. If a player wants to know

more about ecosystem services, must choose EXERCISE QUIZ: it contains questions and explanatory short stories. In the study quiz, they can try again if the answer is incorrect. If the player answers correctly in the first attempt, he or she earns 2 points, and in the second attempt earns 1 point. If you want to test your strength with a friend, choose COMPETITION QUIZ: there you have to answer 20 questions within 10 minutes. If a player finishes faster and all the answers are correct, the remaining seconds will be added as a bonus. If a player runs out of time, she or he will get points for the correct answers given within 10 minutes.

Webquiz has been published on Monday 11th on January 2021 and for 23th of September 2021 there were 92 visitors.



A question about what is an ecosystem



A description that appears after clicking on the right answer

Questions for the web quiz

Right answers are marked with green.

1. What is ecosystem?

- Animals and plants that are living on the nature protection area.
- Organism depending on each other.
- The relationship between different organisms and their habitat through dietary relationships.



Explanation:

An ecosystem consists of a community of organisms together with their physical environment, it is self-regulatory and developing itself.

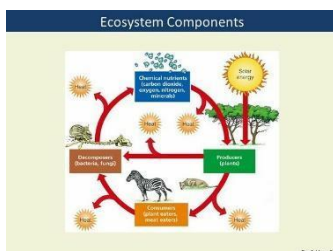
Specifically, an ecosystem is an area of organisms and a network of relationships and interactions that encompass their environment. The ecosystem consists of living and non-living elements of nature that are close to each other in connection.

Ecosystem characteristics:

- The ecosystem is one of the levels of wildlife organization.
 - Ecosystem species are concentrated at different trophic levels.
 - Quantitative differences in trophic levels are characterized by ecological pyramid.
- Ecosystems change over time and evolve.

Source:

https://www.hariduskeskus.ee/opiobjektid/loodusained/?%C3%96KOLOOGIA__%C3%96KOS%C3%96CSTEEM
<https://et.wikipedia.org/wiki/%C3%96kos%C3%BCsteem>



2. What is an ecosystem service or eco-benefit?

- The benefits that ecosystem is providing for people and businesses.

- b. The benefits that living nature in the ecosystem is providing for people and businesses.
- c. The benefits of inanimated nature in the ecosystem is providing for people and businesses.



Explanation:

Eco-benefits mean goods and services, i.e. the benefits that ecosystem offers to individuals and businesses. More specifically, eco-benefits are all these material things and intangible phenomena that increase human well-being and business profits. The benefits, for example that the lake ecosystem offers, are actually a considerable number. For example, it supplies us with food (fish, aquatic plants, etc.), regulates water quality (cleans the lake wastewater), provides habitat for different species (fish, aquatic plants and animals) and offers people the opportunity to relax (swim, fish, watercraft move, etc.). All the things and phenomena listed above are called eco-benefits and they all increase our well-being. When impoverished and disappear ecosystems, eco-benefits will also disappear. If we want to maintain our well-being, then we need to either manage ecosystems prudently or try to find them quickly provide them with alternatives through science and technology. Why it was introduced the expression "eco-benefit"? It is hoped that by describing the ecosystems derived from it through benefits, people far from nature understand better why it is needed to preserve and protect ecosystems.

Sources:

<https://novaator.err.ee/258844/uhe-minuti-loeng-mis-on-okosusteemiteenused>



3. Most often, eco-benefits are divided into four groups: supply benefits, regulatory benefits, support benefits and... What is the fourth group?

- a. Science benefits
- b. Social benefits
- c. **Cultural benefits**



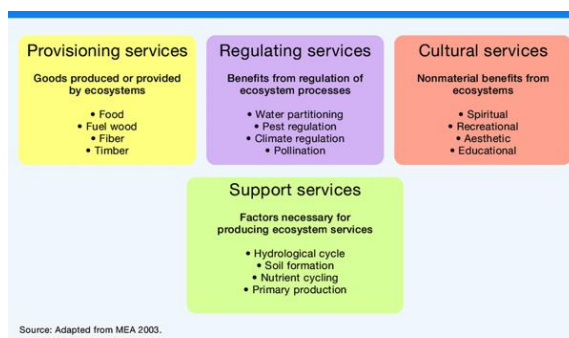
Explanation:

Eco-benefits are divided into four groups:

- Provisioning benefits/services- goods that people can consume directly. For example, food, animal feed, medicinal plants, drinking water, washing water, irrigation water, fiber, energy, wood, air, etc.
- Regulatory benefits - services that affect people in the appropriate towards climate, water, air and soil quality, water resources, floods, but also pollination.
- Support services - services from ecosystems such as metabolism, soil formation, photosynthesis, habitats.
- Cultural benefits/services - this is an opportunity to rest, relax and play sports in nature, gain new knowledge and gain inspiration to practice art.

Source:

<https://www.envir.ee/et/looduse-huved-ehk-okosusteemiteenused>



4. What ecological benefits do decaying leaves offer?

- Soil organic matter formation
- Soil anorganic matter formation
- Soil cleaning



Explanation:

Soil organic matter formation is an ecosystem benefit that belongs to the group of support benefits. Soil formation (in other words also pedogenesis) is a physical, chemical and biological processes complex in which rocks crumble and form an inorganic part of the soil and the biological material decomposes, and forms an organic part of the soil. Soil formation is mainly influenced by climate (including precipitation, temperature, wind), but also properties of source rocks, soil relief, plants, fungi and bacteria. Soil organic matter or humus is formed by a variety of deposits deposited on the ground decaying trees (thorns, leaves, cones) and plant debris, i.e. rot. Humus is food for both plants and soil biota.

Allikas: <https://www.taskutark.ee/m/mulla-teke-ja-areng/>



5. To which group of eco-benefits belong the vegetables shown in the photo next belong?

- a. Provisioning benefits/services
- b. Cultural benefits
- c. **Supportive service**

**Explanation:**

Onions and garlic belong to the group of provisioning benefits/services.

Both onions and garlic are valued worldwide vegetable plants and irreplaceable food spices..

Both vegetables' growing history is very long. Both come from ancient times, and both plants were also used as medicine. For example, the Indians used garlic as an antidote for stomach bites, the Egyptians as an infusion, the Chinese for blood pressure as a killer, and in medieval Europe it was used to even treat the plague.

Today, onions and garlic are used in popular medicine mainly for the treatment of colds or the relief of respiratory ailments.

Source:

<https://kodus.ee/artikkel/siiruviruline-sibul-millist-kasvukeskkonda-eelistab-harilik-sibul>

<https://tervisliktoitumine.ee/kuuslauk-on-kulluslik-imetoit/>



6. Fish belongs to the group of provisioning benefits. What activities are decreasing the fish stocks in the world?

- a. Overfeeding
- b. **Overfishing**
- c. Overconsumption



Explanation:

A third of commercial fish stocks are being harvested at [biologically unsustainable levels](#) and 90 percent are fully exploited, according to the UN Food and Agriculture Organization. The population of Pacific bluefin tuna, for instance, has plunged 97 percent from historic levels due to rampant overfishing of one of the ocean's most ecologically and economically valuable top predators.

Source:

<https://www.nationalgeographic.com/science/article/sea-running-out-of-fish-despite-nations-pledges-to-stop>



7. To which group of eco-benefits does recreational fishing belong?

- a. Provisioning benefits/services
- b. Regulatori benefits
- c. Cultural benefits



Explanation:

Recreational fishing is an hobby for many, it is the best possible way to spend a holiday. It is a hobby that can only be practiced in nature, on or near a body of water. It is important to know where, when, and by what means a recreational fisherman may fish. Catches from recreational fishing may not be sold or bought. The fish caught are intended only for the catcher's table. Recreational fishing is generally chargeable.

More information:

<https://www.keskkonnaamet.ee/et/eesmargid-tegevused/kalastamine/harrastuspuuk>



8. Cranberry belongs to the group supplying ecological benefits. However, to which group of eco-benefits belongs walking in a swamp on picking cranberries?

- a. It is not an ecological benefit
- b. Supportive service
- c. Cultural service



Explanation:

Cranberry walking is no longer just about picking berries. If necessary, buy berries from the market or store. Cranberry procession is something much more than that. It is on the one hand a self-test as you go to the swamp - a completely different place from everyday life. This is an opportunity to stay alone or with good companions outside your usual routine. It is time for yourself. Opportunity to take time off and calm your nerves for free color, aroma, and ozone therapy. As a bonus, you will do moderate exercise.



9. The power produced by rivers by falling or fast-running water belongs to the group of supplying ecological benefits. How is it called?

- a. Healingpower
- b. Hyperpower
- c. Hydropower



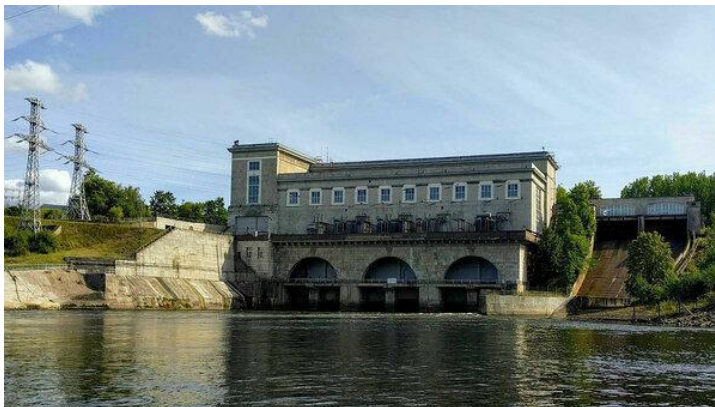
Explanation:

Hydropower is also known as **water power**, is the use of falling or fast-running water to produce electricity or to power machines. This is achieved by converting the gravitational potential or kinetic energy of a water source to produce electrical or mechanical power. Hydropower is a method of sustainable energy production.

Since ancient times, hydropower from watermills has been used as a renewable energy source for irrigation and the operation of mechanical devices, such as gristmills, sawmills, textile mills, trip hammers, dock cranes, domestic lifts, and ore mills. A Trompe, which produces compressed air from falling water, is sometimes used to power other machinery at a distance.

Hydropower is now used principally for hydroelectric power generation, and is also applied as one half of an energy storage system known as pumped-storage hydroelectricity.

Source: <https://en.wikipedia.org/wiki/Hydropower>



10. Nature is often a source of inspiration. What group of eco-benefits does inspiration from nature belong to?

- a. Supportive service
- b. Cultural benefits/service
- c. Provisioning benefits/services



Explanation:

Getting inspiration from nature belongs to the ecosystem group of cultural goods. The natural environment is very closely linked to visual culture. Photo artist Maiu Kurvits has written in Nature Friend No. 3 of 2003: "Nature has always been the greatest source of inspiration of any kind for the creators of visual culture. All kinds of initial pulses usually come from nature. Rural people are united by a similar background and connection with nature. If they later settling in cities and spending most of their time indoors, they are extremely busy and reserved. However, they have a memory of nature. If they occasionally get back into nature, they try to do it as much as possible, save and store a lot for themselves. A photo is the first option for this purpose. "(Ref.)

Source: http://vana.loodusajakiri.ee/loodus/artikkel299_294.html



11. Cultural benefits are generally defined as the opportunity to relax in nature, get inspiration, and gather new knowledge. Which of the following benefits belongs to this group?

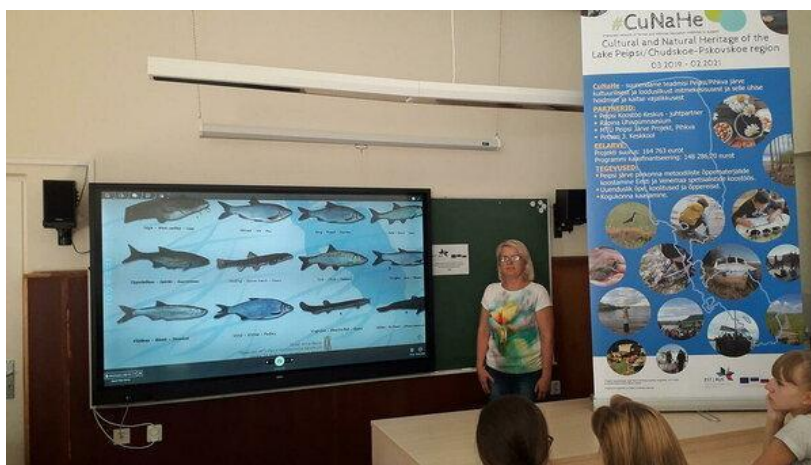
- a. Learning and doing research
- b. Growing onions and garlic for sale
- c. Mining of lake mud for SPA mud baths



Explanations:

The group of cultural eco-benefits is very wide. These include nature intangible benefits such as recreation in nature, aesthetic pleasure, sports, and mental health development, mental experiences, incl. inspiration collection for art creation, research, and learning. Nature is all of humanity has been associated with culture, been a source of inspiration, influenced throughout history language, art, and religion.

Allikas: Cultural Ecosystem Services / IUCN



12. There are many different eco-benefits in forests. When talking about a habitat service, whose place of residence is meant?

- a. Human habitat
- b. The habitat of wildlife, including man
- c. **Wildlife habitat excluding human**



Explanation:

Ecosystems provide plants and habitats for animals. There are an extraordinary number of species in some habitats that make them genetically more diverse than others; they are called biological diversity. Tropical, temperate and Boreal forests offer a great deal to plants, animals and microorganisms diverse habitats. In many poorer countries, forests provide more than 10% GDP The tree shown in the photo offers itself habitats for various birds and animals, mosses and lichens, insects and their larvae, fungi and bacteria, etc.

Source: <http://www.fao.org/ecosystem-services-biodiversity/background/supporting-services/en/>



14. The causes of climate change are both natural and increasing levels of anthropogenic greenhouse gases (GHGs) in the atmosphere. Which of these gases is not GHG?

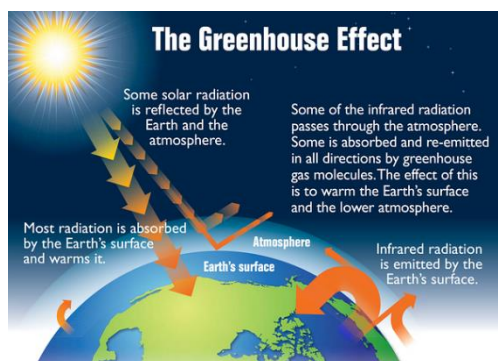
- a. O₃
- b. N₄
- c. H₂O



Explanations:

Greenhouse gases (GHGs) are gases in the Earth's atmosphere that do not or only slightly absorb short-wave solar radiation and absorb long-wave thermal radiation, and cause the greenhouse effect by preventing heat energy from leaving the Earth and entering the atmosphere in the form of long-wave thermal radiation. The thermal radiation emitted from the Earth's surface is absorbed in the atmosphere by greenhouse gases and re-emitted in the atmosphere. This is how the part circulates from long-wave radiant energy between the ground and the atmosphere, energy transfer from the planet decreases, and the temperature of the atmosphere increases. 99.5% of the atmospheric gases are three gases, nitrogen (N₂), oxygen (O₂) and argon (Ar), which do not cause a greenhouse effect. Earth greenhouse gases in the atmosphere are in order of importance: water vapor (H₂O), carbon dioxide (CO₂), laughing gas (N₂O), methane (CH₄) and ozone (O₃).

Source: <https://et.wikipedia.org/wiki/Kasvuhoonegaasid>



Source:

https://www.google.com/url?sa=i&url=https%3A%2F%2Fclimatemed.com%2F2020%2F06%2F02%2Fthe-concepts-related-to-the-climate-science-explained-as-simply-as-possible-series-concept-no1-the-greenhouse-gas-effect%2F&psig=AOvVaw3t9_w_WHWNaj884LiZWgQ&ust=1629352275515000&source=images&cd=vfe&ved=0CAoQjRxqFwoTCPjs-LHwufICFQAAAAAdAAAAABAD

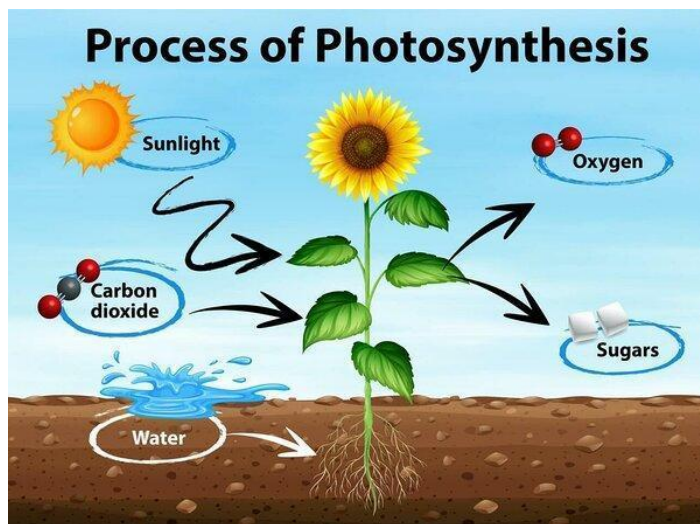
15. Forests sequester carbon dioxide (CO₂), which is one of the greenhouse gases. What is the process by which growing plants sequester CO₂?

- Photo effect
- Photosynthesis
- Photodegradation



Explantion:

Photosynthesis belongs to the group of support benefits. Green plants get the organic matter they need for their lives synthesize the substance itself. They use carbon dioxide (CO₂) and water (H₂O). Plants receive CO₂ from the air and water through their roots from the ground. The energy needed for synthesis is obtained from the sun and chlorophyll or the plant pigment, which contributes to the absorption of light, is present in the plants themselves. The equation describing the process of photosynthesis is as follows: $6\text{CO}_2 + 12\text{H}_2\text{O} = \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 + 6\text{H}_2\text{O}$



Source: <https://www.science-sparks.com/what-is-photosynthesis/>

16. Which of our activities contributes the most to greenhouse gas emissions?

- a. Combustion of fossile fuels
- b. Deforestation
- c. Waste of food



Fossil fuels are non-renewable mineral resources such as oil, natural gas, oil shale, peat, etc. Burning fossil fuels for energy is released atmospheric carbon that would otherwise have been deposited in fossil fuels mineral resources. Estonia is a major emitter of greenhouse gases oil shale. Oil shale is one of the energy sources used so far in Estonia the main which is why we are also the world's largest emitter of CO₂ in the forefront.

More information: <https://www.kliimamuutused.ee/pohjused-ja-tagajarjed/pohjused/fossiilkutuse-poletamine>

Impressum

Inspiring for Biodiversity (Inspiring4Biodiversity) is a project funded with support from the European Commission. The European Commission support for the production of this publication does not constitute an endorsement of the contents, which reflects the views only of the authors, and the Commission cannot be held responsible for any use, which may be made of the information contained therein.



Project code: 2019-1-DE02-KA204-006510

Authors / Project partners

Ederi Ojasoo and Margit Säre (Peipsi Center for Transboundary Cooperation)

PEIPSI KOOSTÖÖ KESKUS / PEIPSI CENTER FOR TRANSBOUNDARY COOPERATION

Puistee 71a, 51009 Tartu

56636264

www.ctc.ee

<https://www.facebook.com/peipsicenter/>

