



Teaching Unit 4

Guiding Document



Ecological-economic perspectives of sustainability in vocational training

EcoGreen aims to support teachers at vocational schools in implementing the topic of sustainable economic education. Our strategy strengthens the professional Profile of teachers and supports their students in acquiring ecological skills.

Teaching material for use in vocational training:

Module: **Green Strategies for the sector of forestry**

Our Consortium:



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SamiEDU



Voca Train



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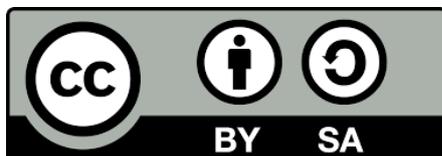
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IMPLEMENTATION MANUAL FOR TEACHERS

Introduction

Following document contains a step-by-step plan to implement all the activities previewed in the Learning Module about Green Strategies for the sector of forestry. The Green Strategies for the sector of forestry learning module is about the rational handling and sustainable conservation and use of forests. Three worksheets are designed to address the contradiction between using forests and preserving them for as long as possible.

The phases represent different working steps that the students should do in order to complete the module. In this document the worksheets can be found from page 8. On page 11 and 13 teachers can find solutions to the previous exercises.

Content

Introduction	4
Phase 1 Ecological production – Sustainable forest management	5
Phase 2 Efficiency in transport and production	7
Phase 3 Green Marketing	8
Worksheets:	10
Worksheet 1	10
Activity 1: Transport in forestry, efficiency.....	10
Activity 2: Green Strategies for the Sector of Forestry	10
Worksheet 2	13
Activity 1: Sustainable forestry - definition.....	13
Activity 2: Transport efficiency in forestry	15
Worksheet 3	16
Activity 1: Transport in forestry, efficiency.....	16

Phase 1 Ecological production – Sustainable forest management

Activity 1

Watch the following video: (4) What is Sustainable Forest Management? - YouTube

Activity 2

Present the presentation (3)

Activity 3

Distribute worksheet no 1 (page 8-10) (for the teachers 1T – answer key on page 11)

Activity 4

Ask students to go to <https://wordwall.net/pl/resource/64216568> and submit their answers; this way they can check their ideas of activity 3

Activity 5

Divide the students into 3-4 groups and encourage them to justify the need for rational management of forest resources

Here are some arguments justifying the need for rational management of forest resources in accordance with the principles of sustainable forest management and nature protection:

Forests are not only a source of wood, but also perform many other ecological, social and economic functions, such as: producing oxygen, absorbing carbon dioxide, regulating climate, protecting soil and water, maintaining biodiversity, providing recreation and education. Irrational forest management may lead to the degradation or loss of these functions, which in turn negatively affects the quality of people's lives and the condition of the natural environment.

Forests are a renewable, but not infinite resource. Their regeneration takes time and appropriate conditions. The predatory exploitation of forests, especially primary forests, leads to their shrinkage and fragmentation, which threatens their durability and ability to regenerate.

Sustainable forest management involves adapting the intensity and method of wood harvesting to the production and regeneration capabilities of forests, so as not to disturb their natural structure and dynamics.

Forests are part of the global ecological system and influence processes occurring throughout the planet. Deforestation is one of the main causes of climate change because it reduces the ability of forests to absorb carbon dioxide

and increases greenhouse gas emissions. Deforestation also affects the water cycle, leading to droughts, floods, soil erosion and water pollution. Sustainable forest management helps protect the climate and water resources, improving the health and safety of people around the world.

Activity 6

What should be done? Work on the article; you can do it on paper - distribute worksheet 2 (for the teachers worksheet 2T – answer key), or online [ht https://wordwall.net/pl/resource/64213631](https://wordwall.net/pl/resource/64213631)
<tps://wordwall.net/pl/resource/64213631>

Activity 7

Based on previous exercises make students prepare a short presentation of one chosen action to be done to use forests in a sustainable way. Try to connect it to specific needs of your local/regional environment. Discussion and reflections are the conclusion of the lesson.

Phase 2 Efficiency in transport and production

Activity 1

Present definition of efficiency in forest transport and production; e.g.

1. Production efficiency in forestry is the practice of creating and marketing forest products on the basis of their actual ecological sustainability.
2. Efficiency in forestry production refers to the ability to successfully complete tasks without wasting time or energy. It is important to focus on cost drivers and sources such as labour and fleet size, fuel burn per square meter, quality losses from felling and log making. The goal is to increase productivity and reduce emissions.

Source: [Collins English Dictionary \(collinsdictionary.com\)](https://www.collinsdictionary.com)

3. Transportation efficiency in forestry is the practice of creating and managing transportation systems that are economical, efficient and environmentally friendly.

Activity 2

Factors on which production efficiency depends

Go to <https://wordwall.net/pl/resource/64540631>

Activity 3

Benefits of increased efficiency

Go to <https://wordwall.net/pl/resource/64539903>

Activity 4

Show and discuss the presentation: **How to improve efficiency in forest operations (Presentation (4))**

Activity 5

Hand out worksheet 1: **Your experiences with transport in forestry.**
– individual work

Activity 6

Hand out worksheet 2: **Positive and negative effects of efficiency in forestry** and after completing it

go to <https://wordwall.net/resource/64548827> to check the answers

Activity 7

Assign students or pair of students to discuss the selected effect

Activity 8

Invite students to share their results with the rest of the class.

Facilitate the discussion and feedback among the groups, and summarize the main points and lessons learned from the efficiency in forestry.

Phase 3 Green Marketing

The entire phase is presented in the form of presentation (5):

Activity 1

Watch a film – presentation slide 2

Activity 2

On the basis of the film discuss the definition of Green Marketing then use presentation slide 3

Activity 3

Watch the film - presentation slide 4

Discuss examples of Green Marketing presented in the film

Activity 4

Present rules of Green Marketing (presentation slides 5-15) stopping at each one for the explanation

Activity 5

Discuss negative effects of Green Marketing (slides 16-19)

Activity 6

Present definition of Green Marketing in forestry, e.g.

1. Green marketing in forestry is the application of marketing principles and strategies to promote the environmental and social benefits of forest products and services.
2. It is a way of communicating the positive impacts of forest management and use on the environment and society.

3. Green Marketing in forestry can be defined as "the development and communication of product and service offerings that minimize negative environmental impacts and/or improve environmental quality, and which satisfy consumer and organizational objectives".
<https://fao.org/forestry/trade/en>

Slides 20-21

Activity 7

Brainstorm – Benefits and challenges of Green Marketing and then **go to** <https://wordwall.net/resource/64638826>

Slide 23

Activity 8

Hand out the worksheets to the students; Green Marketing strategy – worksheet 1
Group work

Activity 9

Invite students to share their results with the rest of the class.
Facilitate the discussion and feedback among the groups, and summarize the main points and lessons learned from the green marketing strategies.

1. _____

A forest's biodiversity, including its water resources, soils, plant species, and animal population, must be conserved. This means that forest managers minimize erosion and protect waterways; avoid the use of chemical pesticides; properly dispose of waste; conserve native tree species and maintain genetic diversity on their land; set aside part of their properties as protected areas where logging is prohibited (including forestland that is steeply sloped, provides habitat for critical wildlife species, and/or serves a culturally or spiritually significant function in the local community); and take other steps to ensure the integrity of the forest.

2. _____

It is required that forest managers protect natural forests against deforestation, reduce the risk of fires, and take particular care to protect "high conservation value forests." The latter term is used to describe forests that contain significant concentrations of biodiversity; are located in or include rare or endangered ecosystems; are critical providers of ecosystem services; or are fundamental to meeting the basic needs or defining the cultural identity of forest communities.

3. _____

Logging activities can take many forms, from selective harvesting to limited, small-scale clear-cutting, which, in temperate forests, can mimic natural disturbances such as fires or landslides. Forestry operations must put into place a clearly mapped management plan that specifies the number of trees that can be harvested, and the frequency at which this can occur, based on the growth and regeneration rates of the species found in that ecosystem. The goal is to harvest in such a way that allows these species the chance to regenerate, and ensures that the forest's overall ecological health is maintained, restored, or even enhanced.

4. _____

Sustainable forestry focuses on keeping natural forests standing. However, the establishment of plantations on already deforested or degraded land can improve the health of an ecosystem and help to meet some of the demand for forest products, taking pressure off of natural forests. Proper plantations must operate according to a management plan that promotes the protection, restoration, and conservation of natural forests.

5. _____

Many people associate logging with the image of a bulldozer leaving behind a denuded landscape, but it is possible to harvest timber without causing collateral damage to other parts of a forest. Reduced-impact techniques allow loggers to fell and extract trees in a manner that reduces damage to other trees in the stand. This approach also minimizes erosion, waste, and carbon emissions.

6. _____

A forestry business that does not protect its workers is not only unethical, but also unsustainable. Well-trained and healthy employees are essential to ensuring that these enterprises function safely and efficiently. In an examination of community-run forestry businesses, certified enterprises did a far better job of protecting their workers than their

noncertified peers. Members of certified enterprises were four times more likely to have taken part in a safety course; 94 percent of these businesses offered regular medical exams to their workers; and 100 percent—four times as many as noncertified enterprises—offered medical attention to their employees when they were injured on the job.

7. _____

For forestry businesses to be sustainable, they must operate in harmony with their surroundings. This means more than just the natural ecosystems in which they are located; it also applies to the human neighbours with which they co-exist. It means that a sustainable business must contribute to the social and economic development of a community by offering its members opportunities for employment and compensating indigenous groups for the traditional knowledge that they share regarding forest species and operations. These are not only socially responsible steps, but they also benefit the environment. Providing jobs to local people, for example, can eliminate the incentive to engage in profitable but destructive activities such as wildlife poaching and illegal logging.

8. _____

Sustainable forestry should have a positive economic impact on its practitioners. The steps are the same that require the active management of its forestland, teach employees how to work safely and efficiently, and reduce staff turnover, so it's no surprise that these steps can also lead to economic growth.

Source: [What is Sustainable Forestry? | Rainforest Alliance \(rainforest-alliance.org\)](http://rainforest-alliance.org)

Worksheet 1T

Activity 2: Green Strategies for the Sector of Forestry

Solutions for teachers:

1 A

2 G

3 E

4 F

5 B

6 C

7 H

8 D

Worksheet 2

Activity 1: Sustainable forestry - definition

Task 2: Based on the presentation, the video and your own ideas create the definition of sustainable forest management.

Then complete the sample definition using the key words:

a range of functions
benefit
biodiversity
future generations
needs of nature
timber

Sustainable management is to balance people and the economy. The most important condition placed on forests is that they fulfil, including ecological, economic, social, for the of present and Sustainable forest management should ensure that forests are used, includingharvesting, in such a way that their resources are not diminished while maintaining

Worksheet 2T

Activity 1: Sustainable forestry – definition

Solutions for teachers:

Sustainable management is to balance **needs of nature**, people and the economy. The most important condition placed on forests is that they fulfil **a range of functions**, including ecological, economic, social, for the **benefit** of present and **future generations**. Sustainable forest management should ensure that forests are used, including **timber** harvesting, in such a way that their resources are not diminished while maintaining **biodiversity**.

positive

negative

1

increasing risk of damage to trees

2

increasing work efficiency

3

reducing the risk of fires and forest pests by enabling quick intervention and monitoring of the forest condition.

4

destroying and fragmenting forest habitats, leading to the loss of species and functions of forest ecosystems.

5

polluting the air, water and soil with exhaust fumes, noise, waste and erosion, which negatively affects human and animal health and biodiversity.

6

improving the safety and working conditions of foresters, lumberjacks and other forest workers.

7

reducing transport costs

8

enabling access to remote forest areas, which increases the possibilities of forest management, nature conservation, tourism and ecological education.

9

facilitating the transport of wood and other forest products, which contributes to the economic and social development of forest regions.

10

reducing transport time

11

increasing employee safety

12

increasing risk of accidents

13

increasing risk of damage to the natural environment

14

changing the forest landscape, which may affect the aesthetic, cultural and historical values of the forest.

15

increasing pressure on forest resources, which may lead to over-logging, degradation and loss of forests.

