TEACHING UNITS

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AGRIPOL

Sustainability in Vocational Education

IMPRINT

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INTRODUCTION

The Erasmus+ funded project Agricultural Policy and Sustainability in Vocational Education and Training (AGRIPOL) aims to implement the UN Sustainable Development Goals in vocational schools. By designing a blended learning course, the project contributes to addressing issues such as sustainability and agricultural policy as a subject of teaching. The cooperation of organizations from the four EU countries Germany, Austria, Poland and Bulgaria opens up different perspectives on the effects of the newly adopted Common Agricultural Policy (CAP) in 2021, which are processed in suitable teaching materials. This, together with the films and video clips created in the project, is freely available for use in the classroom and will be distributed to teachers throughout the European Union.

About this document

This document has been put together by a consortium of partners from Germany, Bulgaria, Austria and Poland as part of a project - Agricultural Policy and Sustainability in Vocational Education (AGRIPOL) – within the framework of a co-funded Erasmus+ programme of the European Union. The content is prepared to be a source of reference for vocational schoolteachers, educators, instructors, and trainers as well as provide a broader context on the link between food consumption, its impact on the environment, and the EU's Common Agricultural Policy (CAP). The materials provided herein offer teachers/instructors a hands-on information pool highlighting topics including sustainability, the history of the CAP, the two pillars of the CAP, the central stakeholders in the CAP, and sustainable nutrition. This resource material is free for use and may be incorporated into lesson plans and classroom activities.

TEACHING UNIT 1
SUSTAINABILITY IN AGRICULTURE

Introduction

1. Sustainability in agriculture is considered as a specific topic of the general concept of sustainability management. When developing strategies to achieve sustainable development, the contradictions between man and other plant and animal species in nature, between different social groups in society, between the present and future generations are taken into account. The three pillars/dimensions of sustainability are considered when developing the learning units.
2. Duration: The teaching unit is represented by 4 specific topics. The three topics are distributed one in three weeks. In the fourth week, two lessons (two topics) are planned.
3. The target group includes students from vocational high schools who study the profession of "Farmer" and all others related to agricultural production. Teachers in these schools are recommended ready-to-use learning materials that enrich knowledge in all "green professions".
4. Through the learning in the Teaching unit, students will explore and analyze natural resources, their exploitation in relation to feeding the population, the relationship between modern ecologically sustainable agriculture and the realization of the potential productivity of agricultural crops.
5. Students will be engaged in interactive methods so that they develop valuable competencies related to sustainability. Teachers will follow the principles of problem-oriented learning, learning by doing and lifeworld orientation.

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6. At the end of the Teaching unit you can expect:

• students should be able to identify problems related to sustainability in agriculture;

• make the right decisions based on the main pillars of sustainability;

• to develop and demonstrate valuable competences related to sustainability - critical thinking, creativity, ability to work in a team, etc. [1]

Aims of the Teaching Unit

The training in Teaching unit 6 Sustainability in agriculture aims to:

• Acquiring knowledge and understanding of the principles of sustainability in agriculture in the context of the main pillars of sustainability;

• Encouraging innovation and creativity of students when performing agricultural practices;

• Skills to connect theoretical learning content with professional practice in real farming challenges of sustainable agriculture.

• Demonstrating a commitment to lifelong learning.[1]

Interdisciplinary Connections

The training in the Teaching unit can be defined as interdisciplinary. This type of learning is linked to one key word – in this case 'sustainability' - which is included in various subject areas. A "thematic approach" is used in interdisciplinary teaching, where the teacher uses information from different disciplines to address the key topic. In this Teaching unit, students transfer information from their core courses. The topic combines knowledge from chemistry, ecology, social sciences, political sciences, plant biology, finance, economics, climate change, agricultural sciences.[2]

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Sources of the Teaching Unit

1. (European Skills Agenda) https://education.ec.europa.eu/bg/focus-topics/improving-quality-equity/key-competences-lifelong-learning/skills-development
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3. United Nations General Assembly (1987) Report of the World Commission on Environment and Development: Our Common Future. Transmitted to the General Assembly as an Annex to document A/42/427 – Development and International Co-operation: Environment.
4. Purvis, Ben; Mao, Yong; Robinson, Darren (2019). "Three pillars of sustainability: in search of conceptual origins". Sustainability Science. 14 (3): 681-695. doi:10.1007/s11625-018-0627-5. ISSN 1862-4065
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10. Fit for 55 https://www.consilium.europa.eu/bg/policies/green-deal/fit-for-55-the-eu-plan-for-a-green-transition/
11. „Fit for 55" package https://www2.deloitte.com/lt/en/pages/consulting/topics/Fit-for-55-package.html
12. Council of the EU adopts its position on key 'Fit for 55' legislation https://dr2consultants.eu/council-of-the-eu-adopts-its-position-on-key-fit-for-55-legislation/
13. EUROPEAN CLIMATE LAW: HOW TO REACH CLIMATE NEUTRALITY? https://events.euractiv.com/event/info/european-climate-law-how-to-reach-climate-neutrality
14. The EU Adopts Ambitious Climate Law – A Prelude to a Wave of Green Regulations https://www.sidley.com/en/insights/newsupdates/2021/07/the-eu-adopts-ambitious-limate-law-a-prelude-to-a-wave-of-green-regulations
15. A new EU Strategy on Climate Change Adaptation https://www.europarc.org/news/2021/02/a-new-eu-strategy-on-climate-change-adaptation/

16. Report from the Commission to the European Parliament and the Council on the EU Strategy on Adaptation to Climate Change https://www.preventionweb.net/publication/report-commission-european-parliament-and-council-implementation-eu-strategy-adaptation
17. Biodiversity in EU agricultural landscapes goes from science to strategy, 2022 https://wle.cgiar.org/news/biodiversity-eu-agricultural-landscapes-goes-science-strategy (17)
18. Summary And Position On The 2030 EU Biodiversity Strategy And The Farm To Fork Strategy https://www.ceeweb.org/publication.php?id=718
19. EU's Farm to Fork Strategy: What's the future of Europe's ambition to transform food and land use, at home and beyond? https://www.unsdsn.org/sdsn-and-eesc-host-eu-policy-workshop-farm-to-fork-how-to-make-it-work

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Syllabus

Week 1

Lesson 1: Sustainability in Agriculture

Learning Focus	Students learn the three dimensions of the sustainability concept - Environmental, Economic and Social sustainability Students will learn what the 17 global goals of UNESCO are until 2030. They will learn to distinguish between them and to make sense of their behavior and professional appearance in their context.
Long-Term Targets	Students realize the enormous importance of knowledge and understanding of global processes related to conservation of natural resources. They perceive their role as active factors in ensuring sustainability in agriculture in their work as Farmers.
Duration	90 min
Preparation	The teacher will prepare ice breaker questions/games to get to know the students. The teacher will prepare questions related to the movie The teacher will prepare a short PP presentation on Dimensions of sustainability The teacher will prepare 17 cards for card game
Form of Assessment	Assessment of students' knowledge will be done in class, in the analysis of new knowledge compared to the lack of sufficient specific knowledge on the subject.
Materials	computer, whiteboard, whiteboard markers
Resources	Lesson _1_activity_I_Ice breaker Lesson_1_activity_II_Starter question Lesson _1_activity_III_GlobalGoals PP presentation, video (link),
Anything else	**Link to the movie [5]:** **https://www.youtube.com/watch?v=M-iJM02m_Hg** **Link to fig. 1:**

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	https://www.researchgate.net/figure/Three-Dimensions-of-Sustainable-Development_fig1_237457674

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Instructions for the lesson:

<u>Activity I:</u> Getting to know the students, ice breaker

- The teacher welcomes the students.
- He/She explains that they are going to start with a game, but before that they have to quickly answer the questions written in worksheet **Activity_I_Ice breaker** (1 min)
- Students write their answers quickly (2 min)
- The students are arranged in a circle. One of them holds a ball which he passes to another student. Everyone who gets a ball answers the following 3 questions that the teacher formulates on the board. Students respond quickly so more students can participate in 4 minutes. The same questions are also written in the Activity 1 worksheet, which they familiarize themselves with and complete before standing in a circle for the game. In the game, students try not to repeat a student. The goal is to get more students to participate (4 min)

Activity II: Starter questions

- The teacher announces that a new topic related to sustainability is due to be studied in a few hours. Before announcing the new topic, the teacher provokes the students with a question: In what context have you heard the word "sustainability" used? (In some languages the word has a different meaning in different contexts).(2 min)
- The teacher distributes the worksheets **(Activity_II_Starter question)** with the written question.
- Students work individually. They reflect their answers on the worksheets (3-4 min)
- The teacher asks about the written answers and organizes a discussion that leads to the new topic "Sustainability in Agriculture". (3 min)

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Activity III: Studying the new topic

- The students are tasked with searching the electronic sources for a definition of the term "Sustainability". The task is independent. The information and sources found are recorded in the workbook. (10 min)
- The teacher monitors the performance of the task and summarizes by offering a general definition to be analyzed in detail, for example: **"Sustainability means meeting our own needs without compromising the ability of future generations to meet their own needs."**, given by the Norwegian former president Gru Brundland in 1987. in an official report "Our Common Future" presented and considered by the UN General Assembly and adopted by it. (5 min)
- The teacher writes the definition on the whiteboard, then organizes a detailed analysis of each element of the definition.(5 min)
- The teacher makes a brief presentation of the three dimensions of sustainability using Figure 1 [4]. He/she presents it through multimedia, on a PP slide. (10 min)

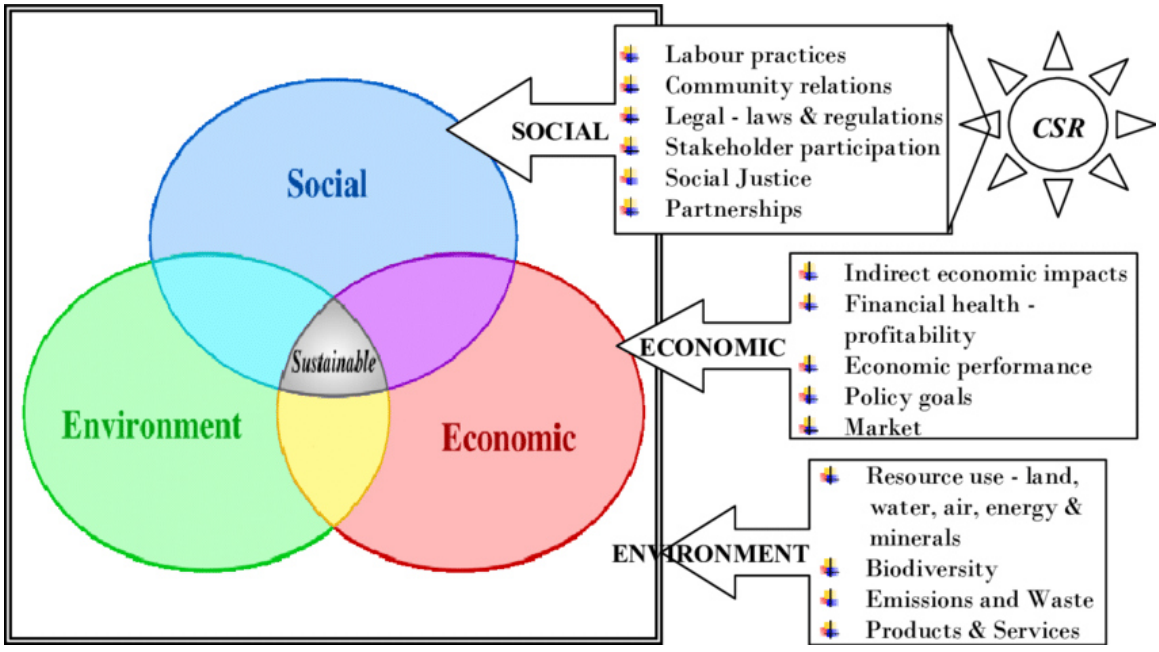

Fig. 1. Dimensions of sustainability

Source: https://www.researchgate.net/figure/Three-Dimensions-of-Sustainable-Development_fig1_237457674

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- The teacher shows a short educational film [5] that presents the main 17 sustainable development goals in an age-appropriate way for the students. (Link to the movie [5]: **https://www.youtube.com/watch?v=M-iJM02m_Hg**)
- The students are given the task, while watching the film, to answer the question: **Which goals are most closely related to the profession of a farmer?** They record their answers on a worksheet (Students follow the tasks in worksheet (**Activity_III_Global Goals**) (15 min)
- Next is a **card game.** All targets are laid out as cards using the following figure. Students choose one card each (can be grouped in pairs). They are given the challenging task of researching what needs to be done by people by 2030 to meet the goals. The game is worked on until the end of the lesson and completed as homework if needed. The cards are arranged like a puzzle as each group presents the task. (30 min)

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Week 2

Lesson 2: Life on land and Agriculture

Learning Focus	Students will learn how the Sustainable Development Goals are related to agriculture, what are the effects of agricultural production on the environment - t**he harmful effect of animal husbandry and the harmful influence of plant breeding**
Long-Term Targets	Students must practice the profession of farmer very responsibly, with care for the planet. Developing systems thinking.
Duration	90 min
Preparation	The teacher will provide an opportunity for a student to present a poster based on a previously set task. The teacher will prepare a problem question for introduction to the new topic. The teacher will prepare a template (survey table) that will enable students to fill it in independently; The teacher prepares questions for the brainstorming session The teacher prepares sticky notes in different colors that are needed for the Activity IV.
Form of Assessment	Problem questions, discussions Questions to compare the harmful influence of animal husbandry and crop production. Students' knowledge of the subject is assessed based on their ability to identify problems on the family farm.
Materials	computer, whiteboard, whiteboard markers, sticky notes
Resources	Lesson_2_activity_I_group work Videos for objective 15: https://www.youtube.com/watch?v=xEdNS3xBg38
Anything else	

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Instructions for the lesson

<u>Activity I:</u> Making a connection with the previous topic

- The lesson begins by arranging the global goal card puzzle. Students who have a goal of 15 are given more time to present their work (on a poster, presentation or in another way). (10 min)

<u>Activity II:</u> Problem setting the topic of the lesson

- The teacher then poses a problematic question:

How do farmers contribute to environmental pollution?, which announces the new topic**: Life on land and Agriculture.**

- In a discussion with the students, the teacher leads the students to realize the huge role of agriculture. (5 min)
- As additional didactic material, the following film can be used, which presents objective 15 specifically. https://www.youtube.com/watch?v=xEdNS3xBg38 (5 min)

<u>Activity III:</u> Harmful effects of agricultural production on the environment!

- The teacher divides the class into two groups. Students work in an Internet environment. (2 min)
- The teacher sets tasks for both groups as follows:
    - the first - to study from literary sources, **what is the harmful impact of agriculture on the environment,**
    - and the second - to study what is the harmful impact of animal husbandry on the environment. Students should use the literary sources suggested in the worksheets and fill in the blank table independently. (3 min)
- The first group analyzed animal husbandry, and the second, crop husbandry (15 min)
- Students use the worksheet **„Negative impact of agricultural production on the environment"**

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- After the fixed time, the teacher leads a discussion and together with the students they fill in the blank chart. Students from both groups share what they learned from the second group. (15 min)
- The completed table has the following sample form:

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Negative impact of agricultural production on the environment	
Animal husbandry	Plant breeding
Biodiversity loss	Pollution of water sources from excessive fertilization
Deforestation	Biodiversity loss
Desertification	Excessive exploitation of water resources
Diseases	Loss of fertility/soil quality from the use of excessively heavy machinery
Emissions of greenhouse gases	Climate change
Land use	Air Pollution
Decline of the oceans	……
Pollution	……..
Overuse of resources	……..
Water shortage	……..

<u>Activity IV:</u> Brainstorming - What challenges does the farmer face? Discussion.

- Students are provided with sticky notes. Each of them should highlight at least three challenges, depending on the operation of the family farm. (10 min)
- The sheets are placed on a suitable white board. They serve as a basis for discussion. (5 min)
- • The teacher asks questions and organizes a discussion (10 min)

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- Are there common problems and challenges facing farmers?
- What is expected of young people - future farmers to meet the challenges?

- Students' knowledge of the subject is assessed based on their ability to identify problems on the family farm. At this stage, they become aware of the harms of the applied practices on the environment. By participating in the discussion, their critical thinking is provoked **(**10 min)

Week 3

Lesson 3: Good agricultural practices for sustainability

Learning Focus	The aim of this lesson is to spread the basic concepts of Good Agricultural Practices (GAP) in order to: guide the production systems towards a sustainable agriculture and ecologically safe, obtain harmless products of higher quality, contribute to food security generating income through the access to markets and improve working conditions of producers and their families.
Long-Term Targets	"GOOD AGRICULTURAL PRACTICES ARE THE RESPONSIBILITY OF EVERYBODY"
Duration	90 Min
Preparation	The teacher prepares a PP-presentation presenting good agricultural practices. In his preparation, he used Giedline (8) as a source of information.
Form of Assessment	The teacher prepares a Multi-choice quiz Research task
Materials	Notebooks
Resources	Lesson_3_activity_II_quiz Lesson_3_activity_III_BadPract Guidelines "Good Agricultural Practices for Family Agriculture" [7].

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Instructions for the lesson

<u>Activity I:</u> Introduction to the new topic (5-6 min)

- The teacher repeats the last task of the previous lesson conducted through brainstorming – **What challenges does the farmer face?**
- The teacher asks the problematic question **What should the farmer do to avoid harmful effects on the environment?**
- Students direct their answers to different possible aspects of negative impact - on the soil, on the water, on the air.
- In the discussion, the conclusion is reached that a new approach in exercising the profession of a farmer is absolutely necessary. A lot of knowledge and new skills are needed.
- Then he makes a connection with the new topic - **Good agricultural practices for sustainability.**

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Activity II: Work of the teacher and students to learn the new topic (30 min)

- The teacher explains "Good Agricultural Practices" one by one, using a PP presentation made by him
- For the preparation of presentation teacher use a source: Guidelines "Good Agricultural Practices for Family Agriculture" [8].
- The presentation may be interrupted by student questions. If necessary, the teacher gives additional examples and explanations.
- The last slide of the presentation is used to **summarize** the new topic: "GOOD AGRICULTURAL PRACTICES ARE THE RESPONSIBILITY OF EVERYBODY" (10 min)
- Students demonstrate critical thinking and reflection in their commentary on the final slide.
- To control and evaluate the acquired knowledge, the teacher uses a multy-choice quiz **(Lesson_3_activity_II_quiz)** (5 min)
- Students discuss their answers led by the teacher in discussion (5min)

Activity III: Research task. The Case-study method is used

- The teacher asks students to describe an observed case on their farm or somewhere else /a situation that contradicts good agricultural practices. The situation is described in worksheet (Lesson_3_activity_III_BadPract) (20 min).
- A few students take turns reading their situations and everyone else makes recommendations for implementing good farming practices. This concludes the lesson. (25 min)

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Week 4

Lesson 4 + 5: Green measures and sustainability

Learning Focus	Students learn about the essence of the European Green Pact, as well as the main strategies of the Union, which are about to be implemented Students become aware of the relationship between productivity, productivity factors and agricultural sustainability
Long-Term Targets	Students accept the responsibility to humanity of the planet to protect its resources, produce clean food and feed the population without damaging the environment. Students develop critical thinking
Duration	60 min +45 min
Preparation	The teacher formulates questions for discussion on sub-topic 1, which he writes sequentially one by one on a poster The teacher prepares 2-3 PP slides that support the information from his oral presentation related to the European Green Pact. The teacher prepares a presentation with brief information about the main initiatives of the Green Deal. The teacher prepares questions for summarizing discussion.
Form of Assessment	Knowledge control and assessment will be based on students' answers to the questions and participation in the discussion at the end of the lesson 5 The teacher will assess the students' knowledge based on the students' answers to the summary questions (Lesson 6)
Materials	poster sheets, paper markers, laptops, whiteboard markers
Resources	Lesson_4_activity_II_group1 Lesson_4_activity_II_group2 Lesson_4_activity_II_group3 Lesson_4_activity_II_group4

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	Lesson_4_activity_II_group5 Lesson_5_activity_II_CropPr According to Activitty I – film; https://audiovisual.ec.europa.eu/en/video/I-199819?&lg=EN
Anything else	Useful information for the teacher can be found in the following source: *European Green Deal". https://www.consilium.europa.eu/en/policies/green-deal/ [8]

Instructions for lesson 4

- The teacher prepares 2-3 PP slides that support the information from his oral presentation related to to the European Green Pact. The structure of the presentation of the new topic follows the **next sub-topics: 1. What is the European Green Deal? 2. Green Pact initiatives (**The **'Fit for 55' package ; European Climate Law; EU strategy on adaptation to climate change; EU Biodiversity Strategy 2030; "Farm to Fork" Strategy and more)** (5 min)

<u>Activity I: S</u>tudents are asked questions. A discussion is taking place.

- The teacher explains what the European Green Pact is, emphasizing the concepts of "ecological transition" and "climate neutrality". (5 min)
- In addition, it can also use a short **film –"** European Green Deal"(8)
- The teacher organizes a short discussion based on the formulated questions
    - **What do we mean by "..climate neutrality"?**
    - **What is the connection with agriculture?**
    - **Why is this important to the farmer?** (10 min)

<u>Activity II</u>: Presentation, tasks for group work

- The teacher prepares a presentation with brief information about the main initiatives of the Green Deal. He can also use the information which is involved in

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the worksheets (Lesson_4_activity_II_group1; Lesson_4_activity_II_group2; Lesson_4_activity_II_group3, Lesson_4_activity_II_group4, Lesson_4_activity_II_group5) (10 min)

- The teacher divides the students into 5 groups and sets a **task: To collect and present information about the 5 initiatives,** according to the lesson sub-topics **.** Each group should express an opinion on how the respective initiative is related to the idea of sustainability.
- **For each group, the teacher has developed separate worksheets with recommended literature**
- **Students work independently on their worksheets. A maximum of 5 people work on the same topic.** (20 min)
- The students in the group share the accumulated information on the specific task and broadcast a speaker to present in a summary the execution of the task.
- The teacher organizes a short discussion in which each group presents for two minutes (10min)

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Instructions for lesson 5

This lesson should summarize all the knowledge in the "Sustainability in Agriculture" teaching unit.

<u>Activity I:</u> Analysis of figures, discussion

- The teacher poses problem questions for generalization. The same are written on a poster or on the whiteboard.
    - **How can agriculture improve the social status of the population?**
    - **What is the relationship between agriculture and the economy, in the context of sustainable development?**
    - **How can agriculture help protect the environment?** (10 min)
- Students look at the fig. 1 on a worksheet (**Lesson_5_activity_II_CropPr)** (5 min)
- The teacher guides the discussion following the questions above.The discussion analyzes in detail the dependencies between agricultural production and the pillars of sustainable development presented in the figure [9]. (10 min)
- The impact of environmental factors on obtaining quality production is evaluated. (10 min)
- The students are then tasked with looking at fig. 2 of the worksheet. They should think about the task:
    - **Explain what innovative solutions farmers are finding for their production and their employees!**(10 min)

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Annexes - Worksheets

Lesson 1

Lesson _1_activity_I_Ice breaker

Ice breaker - Ball Game - Who's Who?

Dear students, please answer the following questions:

1. My name is .....
2. My family has a farm that deals with
   - livestock farming. Which ones?
   - growing agricultural crops. Which ones?
   - both
   - something else.....
3. My favorite activity on the farm is ……

During the game, students will line up in a circle and pass a ball to each other randomly. Each student who received the ball will have to orally answer the set questions. In the short time, no more than 8-10 students are involved in the game. For other students, the teacher will have information from the worksheets.

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Lesson_1_activity_II_Starter question

Starter question

In what context have you heard the word "sustainability" used? *

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* You can use a digital version of an interpretive dictionary, available on the Internet, through your mobile phones

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Lesson _1_activity_III_GlobalGoals

The Global Goals for Sustainable Development

Tasks:

Take a look at fig. 2. Carefully observe the teaching video presented by the teacher. Then answer the questions below.

Fig 2. The Global Goals for Sustainable Development

Source: https://en.unesco.org/sustainabledevelopmentgoals

Which goals are most closely related to the profession of a farmer Write your answer here. (15 min.)

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Card game. All Global Goals are laid out as cards using the following figure. Students choose one card each (can be grouped in pairs). They are given the challenging task of researching what needs to be done by people by 2030 to meet the goals. The game is worked on until the end of the lesson and

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completed as homework if needed. The cards are arranged like a puzzle as each group presents the task.(30 min)

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Lesson_2_activity_I_ group work

Negative impact of agricultural production on the environment

Task: Investigate what is the negative effect of animal husbandry and crop farming on the environment. Complete the table according to your task.

Use the sources below.

Time to complete the task – 15 min

Negative impact of agricultural production on the environment	
Animal husbandry I group	Plant breeding II group

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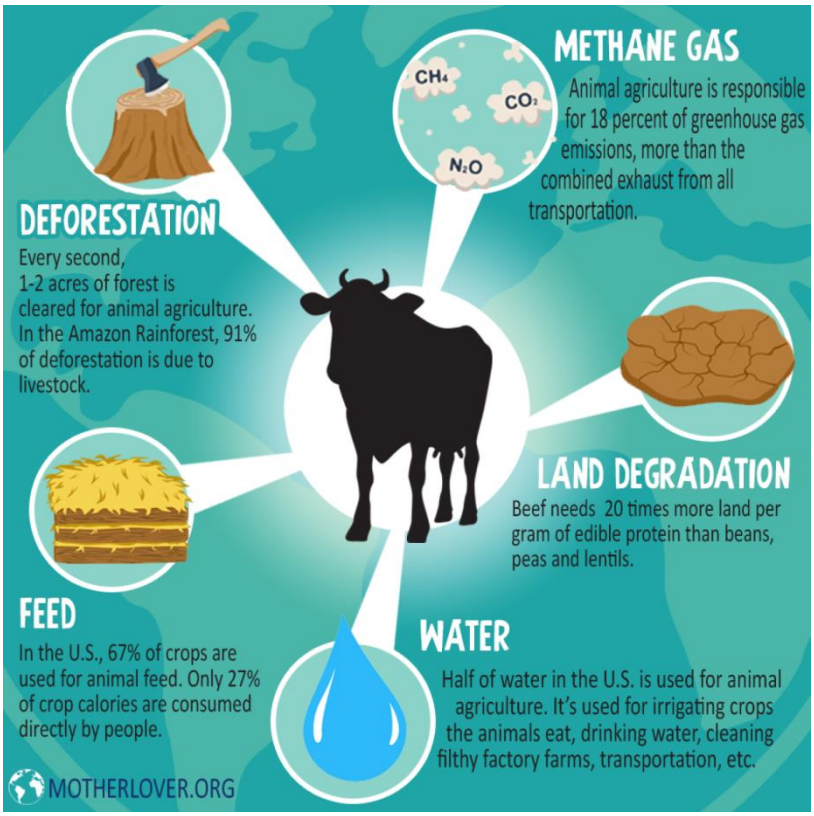

Picture1. Effects of Agriculture on Environment,

Sourse: https://detoxenvi.com/effects-of-agriculture-on-environment/cher:

Picture 2. Negative Effects Of Agriculture On The Environment

https://cropforlife.com/negative-effects-of-agriculture-on-the-environment/

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Lesson_3_activity_II_quiz

Quiz & Worksheet – Sustainable agriculture

1. What is the approximate definition of sustainable agriculture?
   a) A type of agriculture that focuses on producing long-term crops and livestock while having minimal effect on the environment.
   b) A type of agriculture that focuses on producing crops and livestock while having minimal effect on the environment.
   c) A type of agriculture where crops are rotated and only planted every other year.
   d) A type of agriculture that focuses on producing long-term crops while having minimal effect on the environment

2. Which of the following is NOT a farming method that is used to make agriculture sustainable?
   a) Conserving water
   b) Limiting fertilizer use
   c) Limiting pesticide use
   d) Growing one type of crop

3. Which of the following is an environmental benefit of sustainable agriculture?
   a) More fossil fuel use
   b) Soil quality is maintained
   c) Increase in erosion
   d) Decreased biodiversity

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Lesson_3_activity_III_BadPract

Bad agricultural practices

Task: Look at the pictures. They will tell you about various examples of bad farming practices. Below, describe a case of bad farming practice that you have observed. Comment and analyze!






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Lesson_4_activity_II_group1

Ist group: Fit for 55' package

Task: Look for information on the "Fit for 55' initiative. How does this initiative relate to the idea of sustainability?

Start with this:

The **'Fit for 55' package** aims to translate the ambitions of the Green Deal into law.

The package is a set of proposals to revise climate-, energy- and transport-related legislation and put in place new legislative initiatives to **align EU laws with the EU's climate goals. (8)**

Other recommended sources:

Fit for 55 https://www.consilium.europa.eu/bg/policies/green-deal/fit-for-55-the-eu-plan-for-a-green-transition/ (10)

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„Fit for 55" package

https://www2.deloitte.com/lt/en/pages/consulting/topics/Fit-for-55-package.html (11)

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Council of the EU adopts its position on key 'Fit for 55' legislation

https://dr2consultants.eu/council-of-the-eu-adopts-its-position-on-key-fit-for-55-legislation/ (12)

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IInd group: European climate law

Task: Look for information on the European climate law initiative. How does this initiative relate to the idea of sustainability?

Start with this:

European climate law

The European climate law regulation turns the political ambition of reaching climate neutrality by 2050 into a **legal obligation** for the EU.

By adopting it, the EU and its member states committed to cutting net greenhouse gas emissions in the EU by **at least 55% by 2030**, compared to 1990 levels. This target is legally binding and based on an impact assessment carried out by the Commission. (8)

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Other recommended sources:

EUROPEAN CLIMATE LAW: HOW TO REACH CLIMATE NEUTRALITY?

https://events.euractiv.com/event/info/european-climate-law-how-to-reach-climate-neutrality (12)

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The EU Adopts Ambitious Climate Law – A Prelude to a Wave of Green Regulations

https://www.sidley.com/en/insights/newsupdates/2021/07/the-eu-adopts-ambitious-climate-law-a-prelude-to-a-wave-of-green-regulations (13)

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Group 3: EU strategy on adaptation to climate change

Task: Look for information on the EU strategy on adaptation to climate change . How does this initiative relate to the idea of sustainability?

Start with this:

In June 2021, EU environment ministers approved conclusions endorsing the new EU strategy on adaptation to climate change. The strategy outlines a long-term vision for the EU to become a **climate-resilient society** that is fully adapted to the unavoidable impacts of climate change by 2050. (8)

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Other recommended sources:

A new EU Strategy on Climate Change Adaptation https://www.euro-parc.org/news/2021/02/a-new-eu-strategy-on-climate-change-adaptation/ (15)

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Report from the Commission to the European Parliament and the Council on the EU Strategy on Adaptation to Climate Change https://www.preventionweb.net/publication/report-commission-european-parliament-and-council-implementation-eu-strategy-adaptation (16)

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Lesson_4_activity_II_group4

Group 4: EU biodiversity strategy for 2030

Task: Look for information on the EU biodiversity strategy for 2030. How does this initiative relate to the idea of sustainability?

Start with this:

The EU biodiversity strategy for 2030 aims to help **recover Europe's biodiversity by 2030**. This would bring benefits for people, the climate and the planet. (8)

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Other recommended sources:

Biodiversity in EU agricultural landscapes goes from science to strategy, 2022 https://wle.cgiar.org/news/biodiversity-eu-agricultural-landscapes-goes-science-strategy (17)

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Summary And Position On The 2030 EU Biodiversity Strategy And The Farm To Fork Strategy https://www.ceeweb.org/publication.php?id=718 (18)

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Lesson_4_activity_II_group5

Group 5: 'Farm to fork' strategy

Task: Look for information on the Farm to fork' strategy. How does this initiative relate to the idea of sustainability?

Start with this:

The Commission's 'farm to fork' strategy aims to help the EU achieve climate neutrality by 2050, by shifting the current EU food system towards a **sustainable model**.(8)

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Other recommended sources:

EU's Farm to Fork Strategy: What's the future of Europe's ambition to transform food and land use, at home and beyond? https://www.unsdsn.org/sdsn-and-eesc-host-eu-policy-workshop-farm-to-fork-how-to-make-it-work (19)

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Summary And Position On The 2030 EU Biodiversity Strategy And The Farm To Fork Strategy https://www.ceeweb.org/publication.php?id=718 (18)

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Lesson_5_activity_II_CropPr

Fig1.

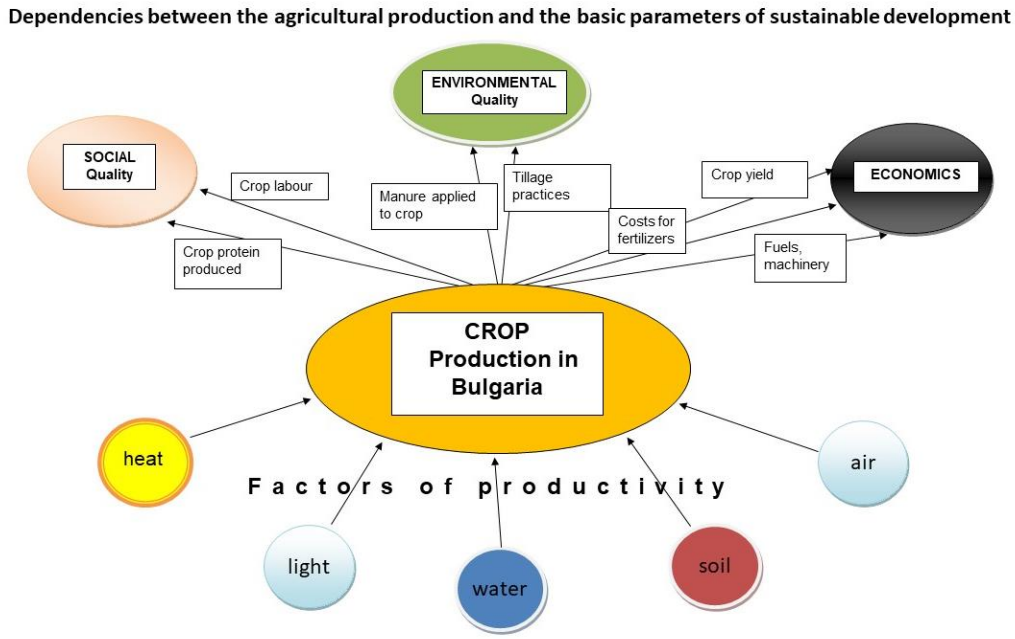
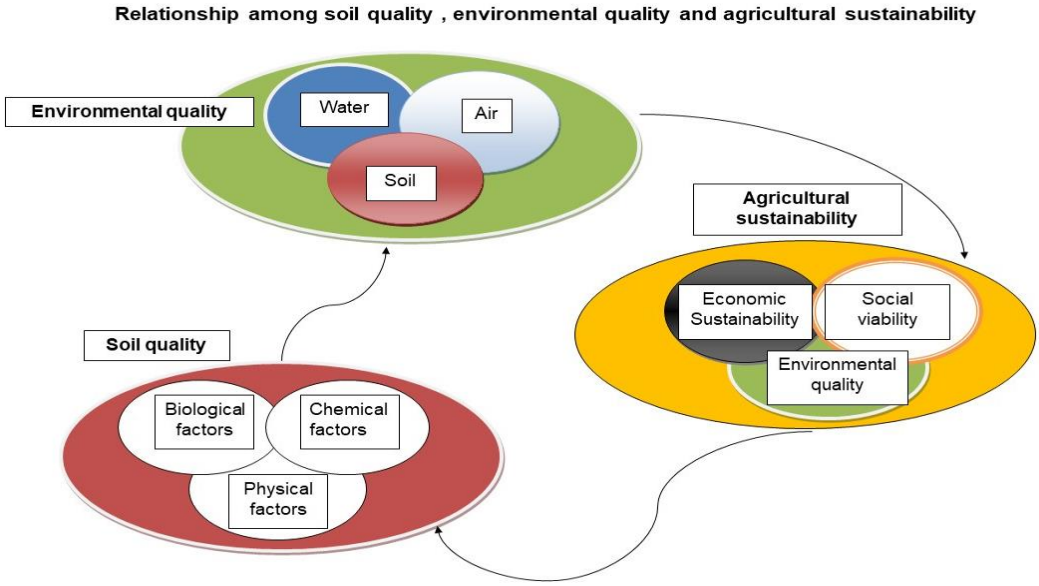


Fig 2.



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TEACHING UNIT 2
CONSUMERISM IN CONNECTION TO COGNITIVE DISSONANCE AND SUPPLY CHAINS

Introduction

Nowadays the concept of sustainability is dominating nearly every area of our lives. While the ecological movement has been around for over 50 years, the urgency of the topic has only entered the mainstream discussion in the past few years. While countries are slowly implementing policies to combat climate change many activists and scientists are criticizing that these policies are not radical enough and that the whole process is taking too long. Many countries but also companies are emphasizing that individual need to change their habits, something that needs to happen as well but is not enough. Because the lifestyle that we have grown accustomed to is a result of our economic system. Our current capitalist economy plays a large role in how resources are used, products are being consumed but also how they are disposed. Our economic system is orientated towards excessive consumption and rapid growth and has achieved this at the expense of our environment. The consequences are visible everywhere in the world from extreme weather phenomena, droughts, loss of biodiversity, etc. and are harming especially low-income persons as well as the population of the global south.

Major Idea and Central Question

But despite all the media attention around this topic, there has been very little change. In the course of these lessons participants will learn about how consumption ties into the current debate around sustainability and how this ties into supply chains. It targets the central question on how my personal habits con-

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tract with the global impacts of consumerism. By focusing on both the individual and the global level, students adapt circumstances of their own personal life with global mechanisms when it comes to consumerism – the unit is therefore lifeworld-oriented and simultaneously problem-oriented through raising the issues of the global impact of e.g. supply chains.

Aims of the Teaching Unit - Overall Learning Objectives:

The overall learning objectives of this unit are the understanding of what "Consumerism"," Consumption" and „Cognitive Dissonance" means as well as the connection and interdependence between consumption, cognitive dissonance and supply chains. Furthermore, the understanding of the relationship between personal resource consumption and the global impact is another of the main objectives.

Duration of the unit, no. of sessions and target group

The unit consists of three lessons á 45 minutes and can be adapted to the specific needs of individual target-groups, to whom the project is also addressed: Vocational schoolteachers of the subjects politics and horticulture, agriculture or similar subjects as well as interdisciplinary applications. The course is also suitable for CLIL-Teaching (content and language integrated learning) in English language, principals at vocational schools, students with the aim of obtaining a vocational school teaching qualification (e.g. subjects such as politics, horticulture), trainers in companies. The course is also suitable for youth, general education, and adult education

Interdisciplinary Connections:

Within the unit, connections between different disclipines as citizenship education, ecology, ecoscience, personality formation, psychology, environmental education can be found and elaborated.

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Sources of the Teaching Unit

Footprint - Der ökologische Fußabdruck (no date). Available at: https://www.mein-fussabdruck.at/ (Accessed: 25 November 2022).

Hochschule für Agrar- und Umweltpädagogik (no date). Available at: https://fortbildung.haup-lp.at/ (Accessed: 25 November 2022).

How many planets does it take to sustain your lifestyle? (no date). Available at: https://www.footprintcalculator.org/ (Accessed: 25 November 2022).

Is It Too Late To Stop Climate Change? Well, it's Complicated. (2020). Available at: https://www.youtube.com/watch?v=wbR-5mHI6bo (Accessed: 25 November 2022).

Kognitive Dissonanz: Warum wir uns selbst betrügen - [GEO] (no date). Available at: https://www.geo.de/wissen/gesundheit/18160-rtkl-kognitive-dissonanz-warum-wir-uns-so-leicht-selbst-betruegen (Accessed: 25 November 2022).

Kurs: AGRIPOL (2022). Available at: https://fortbildung.haup-lp.at/course/view.php?id=4501 (Accessed: 25 November 2022).

Open Data Platform (no date). Available at: https://data.footprintnet-work.org/?_ga=2.118043725.593631481.1665415599-753835133.1665415599#/). (Accessed: 25 November 2022).

Warum wir uns so leicht selbst betrügen (no date) geo.de. Available at: https://www.geo.de/wissen/gesundheit/18160-rtkl-kognitive-dissonanz-warum-wir-uns-so-leicht-selbst-betruegen (Accessed: 25 November 2022).

Was ist kognitive Dissonanz? | Sozialpsychologie mit Prof. Erb (2017). Available at: https://www.youtube.com/watch?v=HRJQHgFBzrI (Accessed: 25 November 2022).

You Can't Save the Planet by Yourself (no date). Available at: https://jacobin.com/2019/09/cli-mate-crisis-ethical-consumption-greta-thunberg-environment (Accessed: 25 November 2022).

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Syllabus

Week 1

Lesson 1: What is Consumerism?

Learning Focus	The aim of this unit is to introduce participants to the concept of consumerism.
Long-Term Targets	Building on pre-existing knowledge participants should be able to form a critical perspective on their current consumption behaviors as well as global trends.
Duration	45 Minutes
Preparation	none
Form of Assessment	Group reflection/discussion
Materials	index cards + pens
Resources	

Instructions for the lesson

Activity I: Reflecting on existing knowledge on "Consumerism" (15 min)

Teacher asks the partcipants what they know or associate with the topic of consumerism/consumption. All the inputs are noted down on index cards. The students comment on their input while the teacher group the cards together accordingly on a pinboard. The activity ends with a summary of the pre-existing knowledge.

Note: There are no right or wrong answers! The aim is to activate pre-existing knowledge but also see what students associate with the topic/terms.

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Activity II: Reflecting personal consumption habits (15 min**)**

Individual

Participants individually reflect on consumption behavior by trying to remember and note down what they have consumed in the past 48 hours on index cards.

the participants sort everything according to priority and reflect on what is truly necessary or what alternatives exist.

Activity III: Group Discussion (15 min**)**

In the plenum everyone shares their results and discusses similarities and differences. What alternatives are there for especially wasteful habit? Are some choices absolute necessary?

To ensure that the results are kept the teacher, or a student draws a mind map during the plenum discussion on a whiteboard or flipchart. The mind-map can include content that has come up during the first two activities (e.g. the index-cards) as well as open questions that were raised during the learning process. Optional: a photo could be taken and provided to the students.

Lesson 2: A jungle of Options

Learning Focus	Consumerism, Cognitive Dissonance, (Global) Supply Chains The aim of this unit is to understand why despite of the global outcry little actions have been taken to fight climate change by focusing the topics consumerism, cognitive dissonance and global supply chains and how they are intertwined.
Long-Term Targets	Participants should be able to understand the connection between cognitive dissonance and consumerism and how (global) supply chains tie into this issue.

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Duration	45 minutes
Preparation	Prior information or knowledge needed
Form of Assessment	Group reflection/discussion
Materials	Laptop, projector
Resources	-https://youtu.be/wbR-5mHl6bo -https://jacobin.com/2019/09/climate-crisis-ethical-consumption-greta-thunberg-environment - https://youtu.be/HRJQHgFBzrI - https://www.geo.de/wissen/gesundheit/18160-rtkl-kognitive-dissonanz-warum-wir-uns-so-leicht-selbst-betruegen - https://www.psycom.net/cognitive-dissonance (*Kognitive Dissonanz: Warum wir uns selbst betrügen - [GEO]*, no date) (*Warum wir uns so leicht selbst betrügen*, no date) (*Was ist kognitive Dissonanz? | Sozialpsychologie mit Prof. Erb*, 2017) (*Is It Too Late To Stop Climate Change? Well, it's Complicated.*, 2020) *Is It Too Late To Stop Climate Change? Well, it's Complicated.* (2020). Available at: https://www.youtube.com/watch?v=wbR-5mHl6bo (Accessed: 25 November 2022).

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	Kognitive Dissonanz: Warum wir uns selbst betrügen - [GEO] (no date). Available at: https://www.geo.de/wissen/gesundheit/18160-rtkl-kognitive-dissonanz-warum-wir-uns-so-leicht-selbst-betruegen (Accessed: 25 November 2022). *Kurs: AGRIPOL* (2022). Available at: https://fortbildung.haup-lp.at/course/view.php?id=4501 (Accessed: 25 November 2022). *Warum wir uns so leicht selbst betrügen* (no date) *geo.de*. Available at: https://www.geo.de/wissen/gesundheit/18160-rtkl-kognitive-dissonanz-warum-wir-uns-so-leicht-selbst-betruegen (Accessed: 25 November 2022). *Was ist kognitive Dissonanz?	Sozialpsychologie mit Prof. Erb* (2017). Available at: https://www.youtube.com/watch?v=HRJQHgFBzrI (Accessed: 25 November 2022). *You Can't Save the Planet by Yourself* (no date). Available at: https://jacobin.com/2019/09/climate-crisis-ethical-consumption-greta-thunberg-environment (Accessed: 25 November 2022).

Instructions for the lesson

Activity I: What is "Cognitive Dissonance" (10 min)

In small groups participants research the topic of "cognitive dissonance" and come up with (*Warum wir uns so leicht selbst betrügen*, no date)examples from their own lives.

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Possible sources to support the research:

Youtube Videos:

Was ist kognitive Dissonanz? | Sozialpsychologie mit Prof. Erb: https://youtu.be/HRJQHgFBzrI (German)

Cognitive Dissonance Theory: A Crash Course: https://youtu.be/9Y17YaZRRvY (English)

Text:

https://www.geo.de/wissen/gesundheit/18160-rtkl-kognitive-dissonanz-warum-wir-uns-so-leicht-selbst-betruegen (German)

https://www.psycom.net/cognitive-dissonance (English)

Activity II: Video (20 min**)**

Watch the video "Is It Too Late To Stop Climate Change? Well, it's Complicated." by Kurzgesagt-In a Nutshell.: https://www.youtube.com/watch?v=wbR-5mHI6bo

After the Video there is time for open questions by the participant about the content, the intention and the issues raised in the video.

Activity III: Small Group Discussion (15 min**)**

In groups of 3-4 students read the article "You Can't Save the Planet by Yourself" by Philipp Chmel. They should discuss their key take aways from the article and any open questions.

Option Homework: Reflect on your personal contribution to sustainable consumerism. Give an example for your personal cognitive dissonance around this

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topic. Explain ways to solve your dissonance. What can you do, which ways can you choose?

Lesson 3: Individual Change and Beyond when it comes to consumption

Learning Focus	Reflecting on and learning about Sustainable Consumption
Long-Term Targets	Building on the knowledge of the previous lessons the goal of this unit is to provide participants an opportunity to reflect on their own consumption habits while also understanding that there is also a need of a systemic and collective change.
Duration	45 minutes
Preparation	In the previous lessons, participants should collect information regarding the categories and information that is used in several ecological footprint calculators.
Form of Assessment	Group reflection at the end of the lesson
Materials	laptop/smart phone
Resources	https://www.mein-fussabdruck.at; https://www.footprintcalculator.org/home/en
Anything else	There is a variety of Footprint calculators online. Before using them in the teaching lessons check which detailed grade of information is needed to feed the calculator. Examples for footprint calculators: - https://www.footprintcalculator.org/home/en - https://footprint.wwf.org.uk/#/ - https://www.carbonfootprint.com/calculator.aspx

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Instructions for the lesson

Activity I: Calculating ecological footprint + Reflection on habits (30min)

Investigate different footprint calculator in small groups. Try to figure out how deep the impact is when you feed them with different figures. What results in big changes? What can you decide individually? Where do you have less influence? Every person calculates their ecological footprint.

In smaller groups the participants discuss their results. Are they surprised by their results? Is there something particularly shocking? Is there an area where everyone has similar habits?

Note: Persons with a low income background are often discriminated if their consumption isn't sustainable, as they often do not have a choice or even the possibility to live sustainably; Also young people who live with their parents usually have no say in regards to energy consumption. This can be addressed during the discussion.

Activity II: Why individual action is good but not enough - Input & group discussion (15min)

The teacher provides a background informationon global consumption habits as well as CO2 emissions, e.g. by drawing data from: *https://data.footprintnetwork.org/?_ga=2.118043725.593631481.1665415599-753835133.1665415599#/*).

Leading from this participants should discuss things that need to be changed, not only individual level but also on a systemic level, using the results of their ecological footprint but also other concrete examples. The discussion should end with a group reflection on the topics covered.

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Suggestion: Discussion in the plenary, led by teacher: Reflecting on the individual footprints you have calculated: which of the contributions lie in your hand? What can you hardly influence? The so-called "gray footprint" includes those areas over which we have no direct influence. Try to find such areas (tipp: communal facilities such as swimming pool, roads, public transport, sports fields, goods transport, street lighting...) Is there a possibility to take direct influence on this area? If not, is there a way to get involved in reducing the gray footprint in this area?

Find at least 3 possibilities each to reduce the ecological footprint

- in your personal area

- in your community, where you can have a direct impact

- where you have no direct influence, but can exert influence through civil engagement via politics and professional associations, societies, or NGOs

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TEACHING UNIT 3
ANIMAL PROTECTION AND WELFARE

Introduction

Major idea: This teaching unit is about bringing the possibilities of animal-friendly meat production closer to the students. Since meat consumption plays a very central role in society, the students should be taught how to pay more attention to reducing the amount of meat per person and what to pay attention to when keeping fattening animals. Examples of this are that the animals are kept in a species-appropriate manner, thereby increasing animal welfare. The focus of this unit should therefore be placed on animal welfare and measures for species-appropriate husbandry. The central question is therefore: How can a barn be designed for species-appropriate husbandry? The basis for this unit should be basic knowledge about the natural behavior/ethology of animals. This knowledge can then be used to ensure species-appropriate husbandry, for example, so that the animals can feel comfortable.

Duration:
The unit lasts about 3 hours to get an general overview about animal welfare.

The target group are vocational school students with ready-to-use-teaching materials for those teaching students in this field of education with a special focus on the "green professions" such as gardening or other environmental and agricultural areas.

In these units, two aspects are considered in detail. Observing the animals and getting to know the natural behavior of animals that are kept on farms. Through these observations, diseases and problems are discovered more

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quickly and a lot can be done within the framework of animal protection for the well-being of the animals, for example by optimizing animal husbandry.

With these tasks, the students should get to know the behaviour of different farm animals and learn from this how to draw conclusions about keeping them and thus also about animal welfare.

Areas of the teaching unit including recommended literature:
1. Livestock behavior - livestock ethology Ed. Steffen Hoy; Assessment of Animal Welfare Measures for Dairy Cattle, Beef Bulls und Veal calves- Welfare Quality Reports No. 11 edited by B. Forkman, L. Keeling; Current Research in Applied Ethology

Routine tasks:

Observing the animals to identify problems and thus stress in the group. With the help of an observation sheet, the students can carry out these observations and note or then determine what behavior occurs within the observation phases.

Solutions such as:

- if necessary, veterinary treatment and separation of stressed animals (due to illness, etc.) in the group
- Creation of space (feeding and watering places) for low-ranking/injured animals
- Collection of ideas for a possible design of the barn and to increase animal welfare

Explain to people the problem of animal husbandry that is not appropriate to the species and thereby also reduce meat consumption or consciously choose meat that meets certain animal welfare standards. By reducing the

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amount of meat, it would then also be possible to use meat with a higher price.

Central question for the students: "What measures can I take as a farmer to ensure animal welfare?"

Examination/learning objectives: Creation and correct implementation of an animal observation and thus conclusions about the state of health and the husbandry of the animals. With the basic knowledge of the ethology of the animals, one can recognize behavioral deviations very well and, in the best case, counteract them or initiate improvements in the stable.

Knowledge transfer takes place through reading the above-mentioned books and the summary of the texts or practical applications in the field of animal observation.

At the end, the students should create a presentation and thus go into more detail about animal protection and the species-appropriate husbandry of animals.

Quote: "Like humans, animals experience joy and pain, happiness and unhappiness; they are affected by the same emotions as we are."
(Charles Darwin)

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Sources of the Teaching Unit

European Commission (n.d.): 40 years of Animal Welfare. Available online at: 02_06-FINAL (europa.eu), last accessed on: 21.10.2022

European Commission (n.d.): Animal Welfare. Available online at: Animal welfare (europa.eu), last accessed on: 29.10.2022

La Fondation Droit Animal, Éthique et Sciences (n.d.): Simonin D./Gavinelli A: The European Union legislation on animal welfare: state of play, enforcement and future activities. Available online at: The European Union legislation on animal welfare: state of play, enforcement and future activities (fondation-droit-animal.org), last accessed on: 21.10.2022

European Food Safety Authority (n.d.): Animal Welfare. Available online at: Animal welfare | EFSA (europa.eu), last accessed on: 21.10.2022

EUR-Lex (n.d.): Council Directive 98/58/EC of 20 July 1998 concerning the protection of animals kept for farming purposes. Available online at: EUR-Lex - 31998L0058 - EN - EUR-Lex (europa.eu), last accessed on: 28.10.2022

European Commission/Audiovisual Service (2021): How sustainable farms in Italy are improving animal welfare and our food system. Available online at: EC AV PORTAL (europa.eu), last accessed on: 29.10.2022

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Syllabus

Week 1

Lesson 1: Introduction to Animal Welfare

Learning Focus	Students reflect on their influence on animal welfare and their amount of meat consumption.
Long-Term Targets	Student get a greater awareness of the importance of animal welfare and its implantations on farms but also how each one of them can influence the system with their shopping behaviour.
Duration	50 minutes
Preparation	Teacher prepares the starter questions on a poster or in a digital way. The teacher makes sure the video works on the class computer. The teacher copies the worksheet "5 Freedoms" for the students.
Form of Assessment	The assessment will be carried out in class when the students have to compare their knowledge in the plenum together with the teacher.
Materials	Computer, poster with starter questions
Resources	Lesson_1_activity_I_animal facts Lesson_1_activity_I_starter questions Lesson_1_activity_II_timeline Lesson_1_activity_II_5freedoms

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Anything else	-

Instructions for the lesson

Activity I: Getting into the topic

- The teacher welcomes the students (2min)
- The teacher tells the students that they are going to start a new topic today. In order to get into the topic the students have to do the following activity. Without telling the students the new topic, the teacher shows the students the starter questions and explains them to write down their answers on a sheet. This is something the students have to do individually. (3min)
- Students write down their answers. (5min)
- The teacher asks the students about their answers and leads them into a discussion. The discussion could contain the fact how much meat they consume, what point they pay attention to when buying something. If it isn't brought up by the students, the teacher asks them if they care about the animals and the way they are kept. The teacher has to control and lead the discussion, making sure it doesn't turn into students blaming each other for their diet (e.g. vegetarian/vegan vs. "meat eater") (10min)
- The teacher stops the discussion and shows the students the video clip "Video Kühe HL". (3min)
- After the video, the teacher asks the students about their impressions and what the message of the video could be. The students give their answers and the teacher tells them the topic "Animal Welfare" of this and the upcoming hours. The teacher asks the students about their understanding about animal welfare. (5min)

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- To show the students how important species-appropriate husbandry and generally animal welfare is, the teacher shows them the graphics "animal facts" and discusses the amount of animals kept for farming. (2min)

Activity II: European directive on animal welfare – Five Freedoms

- To get directly into the topic the teacher tells the students that laws about animal welfare have been enforced in the EU since about 40 years and get constantly adjusted. The graphic "timeline" is shown to the students and discussed. (3min)
- To get into the next activity the students the teacher hands the students the worksheet "5 Freedoms" and explain that they have to find the hidden words in order to fill the empty lines. The words can be found in each direction, some of them are backwards. (2min)
- The students try to find the words and fill the empty lines. If necessary, the teacher helps them by giving hit about the words. (10min)
- The solution will be figured out in the plenum. The teacher than asks the plenum if somebody has a suggestion. (5min)

Week 2

Lesson 2+3: Content of the European Directive on Animal Welfare

Learning Focus	Students get to know the content of the Council Directive concerning the protection of animals kept for farming purposes.
Long-Term Targets	Student get a greater awareness of the importance of animal welfare and its implantations on farms but also how each one of them can influence the system with their shopping behaviour.
Duration	100 minutes (2x 50 minutes)

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Prepara-tion	Teacher copies the text for the group work Teacher prepares the cards to divide students into groups
Form of Assess-ment	Students show their knowledge during the "expert"-presenta-tions in their group and in lesson four during their presentation in front of the teacher and the entire class
Materials	Pencils, crayons, poster paper, index cards, laptops, tape
Resources	Lesson_2_activity_I_division into groups Lesson_2_activity_I_text for group work
Anything else	The text for the group work is available in different languages at: EUR-Lex - 31998L0058 - EN - EUR-Lex (europa.eu)) The group work is planned for maximal 20 students, if there are more students in the class another letter and therefore text can be added (e.g. national law on animal welfare)

Instructions for the lesson

Activity I: Group work "expert" – Part 1

- The teacher welcomes the students (2min)
- The teacher lets the students draw a card and notes down which student has which letter-number- combination (just in case a student loses their card). Each student should have a card. (3min)
- The teacher tells the students first part has to be done individually (each student has to work alone, no groups are formed yet). Based on the letter on their card each student gets a text. The teacher tells the students to read the text and note down important information. The student should be able to explain the text based on their notes only. (2min)
- Students read the text and take notes. (10min)

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- Now the teacher tells the students to form groups based on the letter on their card, e.g. on group with the letter A and so on. After this, all students in one group should have had the same text. The students should take the text and their notes with them. The teacher explains to the students that now they have time to discuss their text, exchange their notes and eventually explain things to one another. (5min)
- Students discuss the text, their notes and their understanding of the text with each other. (10min)

Activity II: Group work "expert" – Part 2

- The teacher gives the students the following instruction: The students build groups based on the number on their card. Meaning all students with number one build a group and so on. After this progress in each group are four students and each student had a different text. Therefore, each student is the "expert" of their topic. The students have to present and explain their topic to the rest of the group only using their notes. (5min)
- The students explain the text to their group members. (10min)
- In order to make sure the students actually fulfilled the activity and explained the texts to each other, the teacher picks a student from each group and asks them questions about the texts. (10min)

Activity III: Group work "expert" – Part 3- presentations

- The teacher tells the students to go back into the groups with the same letter and explains them the next task: each group has to prepare a short presentation about their topic (maximal 5 minutes long). Each group has to prepare a poster and during the presentation their only allowed to use keywords written on index cards. (3min)
- The students spent the remaining time preparing their presentation. If they aren`t able to finish it in class, they have to finish it at home.

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Week 3

Lesson 4: Animal Behaviour as a Control Point

Learning Focus	Students understands that animal behaviour can give us clues about their wellbeing and about the welfare quality of their husbandry
Long-Term Targets	Student get a greater awareness of the importance of animal welfare and its implantations on farms but also how each one of them can influence the system with their shopping behaviour.
Duration	50 minutes
Preparation	Teacher makes sure the video works on the class computer.
Form of Assessment	Students show their knowledge during their presentation in front of the teacher and the entire class. The content of the presentations can be part of the next exam or the teacher starts the next lesson with a few questions about it (e.g. with kahoot). The knowledge about animal behaviour can be tested in an actual scenario. (see note at the end of lesson 4)
Materials	Students need their presentation
Resources	Video: EC AV PORTAL (europa.eu) Lesson_4_activity_II_observations sheet
Anything else	The video is available in different languages.

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Instructions for the lesson

Activity I: Presentations from the previous lesson

- The teacher welcomes the students (2min)
- The students have their presentation. After each presentation, if necessary, the teacher adds information the students forgot to mention in their presentation or corrects things the students presented wrongly. (20min)

Activity II: *Animal behaviour*

- The teacher tells the students that they are getting into a new topic about animal welfare and in order to start with the topic they are going to watch a video. The teacher tells the students to pay attention to what is said about animal welfare and how it can be traced. The students are also told to look closely at the animals. (2min)
- Students watch video (4min)
- The teacher and the students discusses the video in plenum and the teacher links the things said in the video to the "5 Freedoms" mentioned in lesson1. (5min)
- The teacher points out that it was mentioned that the animals should be able to express their natural behaviour. The teacher asks the students what behaviour of the pigs they saw and if they got the impression the pig were "happy" (2min)
- Students give their answers and discuss them in plenum. (5min)
- The teacher tell the students one tool to check the animal welfare is to watch and evaluate the behaviour of the animals. This can be done with an observations sheet. The teacher shows the students the example and discuss it with them. To end the class the teacher tells the students their homework. (10min)

Homework: Pick a farm animal and research what are examples of natural behaviour. Note down your results.

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Note: When possible the students should get the chance to observe farm animals in real life and use the observation sheet for it.

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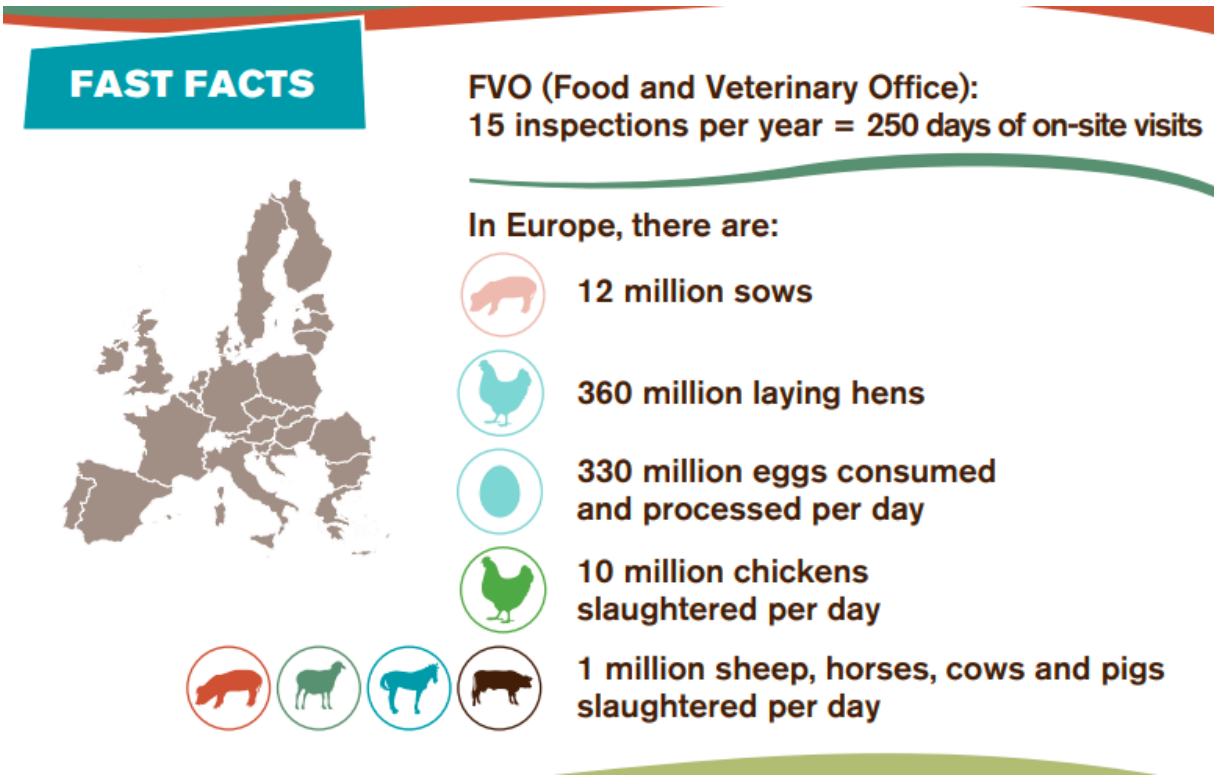
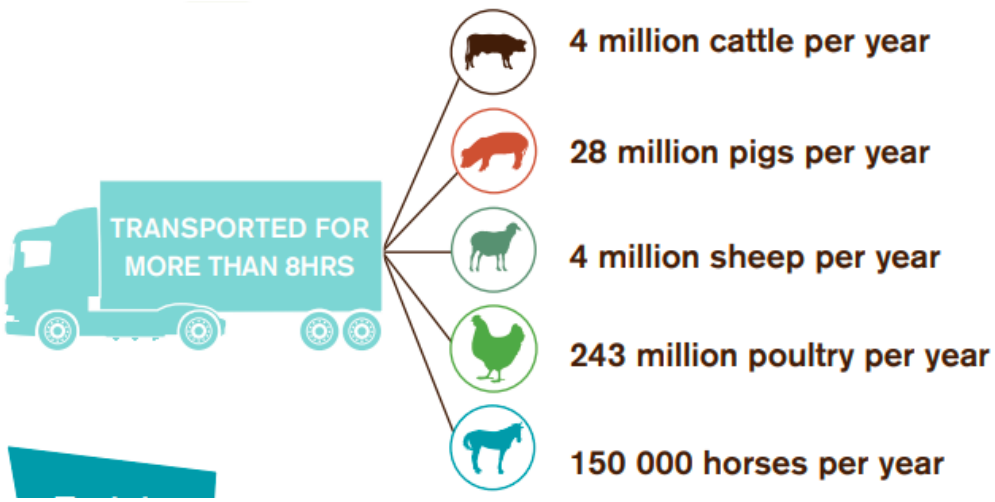
Lesson 1

Animal facts



Source: European Commission: 40 years of Animal Welfare 02_06-FINAL (europa.eu)



Source: European Commission: 40 years of Animal Welfare 02_06-FINAL (europa.eu)

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Starter questions:

- How often do you eat meat or products containing meat (e.g. sausage)? How often per day/week?
- What products/meals containing meat do you usually eat?
- Are you paying attention to any aspects when buying the product/meal?
- If you are not the one who buys the products/meat (e.g. your parents is doing all the shopping): do you know if they pay heed to something?

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“Five Freedoms”

The European rules for protection of animals kept for farming purposes are based on “Five Freedoms”. Four of these “freedoms” describe situations and states animals should not experience and one “freedom” describes what they should be free to do every day to have a good and species-appropriate life.

Try to find the nine missing words and write them down on the lines.

M	T	T	G	G	T	N	D	Z	Y	B	W	B	N	B	C	Q
J	S	G	J	E	G	G	H	F	E	A	R	D	R	V	I	R
X	R	W	G	W	R	K	M	H	Y	S	O	H	G	D	X	B
H	I	X	I	G	M	N	S	Q	D	F	H	U	S	A	Z	D
E	H	V	Y	R	U	J	N	I	C	E	F	N	G	U	N	K
F	T	H	Y	V	M	C	J	O	E	Q	M	G	E	D	W	W
G	R	T	R	M	C	T	I	H	W	E	U	E	G	B	O	M
P	P	M	N	R	H	M	L	Z	N	V	S	R	I	D	E	D
Y	V	F	I	S	L	J	U	E	Q	L	Y	N	K	I	R	Q
N	F	S	M	U	C	Y	B	Z	G	Y	E	M	G	S	F	O
G	T	K	A	V	K	I	B	R	P	A	I	N	S	T	U	F
V	P	Q	F	W	J	E	O	H	Y	H	S	P	W	R	H	E
O	B	E	H	A	V	I	O	U	R	U	F	T	I	E	T	N
X	D	I	S	E	A	S	E	B	F	V	S	F	W	S	L	U
D	I	S	C	O	M	F	O	R	T	N	A	J	F	S	D	D
O	W	V	K	O	H	I	Y	I	Q	U	H	T	P	B	H	E
D	O	Y	N	V	R	B	V	W	W	H	K	P	Q	R	Q	G

Freedom from _____ and _____

Freedom from _____

Freedom from _____, _____ and _____

Freedom to express normal _____

Freedom from _____ and _____

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Solution:

M	T	T	G	G	T	N	D	Z	Y	B	W	B	N	B	C	Q
J	S	G	J	E	G	G	H	F	E	A	R	D	R	V	I	R
X	R	W	G	W	R	K	M	H	Y	S	O	H	G	D	X	B
H	I	X	I	G	M	N	S	Q	D	F	H	U	S	A	Z	D
E	H	V	Y	R	U	J	N	I	C	E	F	N	G	U	N	K
F	T	H	Y	V	M	C	J	O	E	Q	M	G	E	D	W	W
G	R	T	R	M	C	T	I	H	W	E	U	E	G	B	O	M
P	P	M	N	R	H	M	L	Z	N	V	S	R	I	D	E	D
Y	V	F	I	S	L	J	U	E	Q	L	Y	N	K	I	R	Q
N	F	S	M	U	C	Y	B	Z	G	Y	E	M	G	S	F	O
G	T	K	A	V	K	I	B	R	P	A	I	N	S	T	U	F
V	P	Q	F	W	J	E	O	H	Y	H	S	P	W	R	H	E
O	B	E	H	A	V	I	O	U	R	U	F	T	I	E	T	N
X	D	I	S	E	A	S	E	B	F	V	S	F	W	S	L	U
D	I	S	C	O	M	F	O	R	T	N	A	J	F	S	D	D
O	W	V	K	O	H	I	Y	I	Q	U	H	T	P	B	H	E
D	O	Y	N	V	R	B	V	W	W	H	K	P	Q	R	Q	G

Freedom from hunger and thirst

Freedom from discomfort

Freedom from pain, injury and disease

Freedom to express normal behaviour

Freedom from fear and distress

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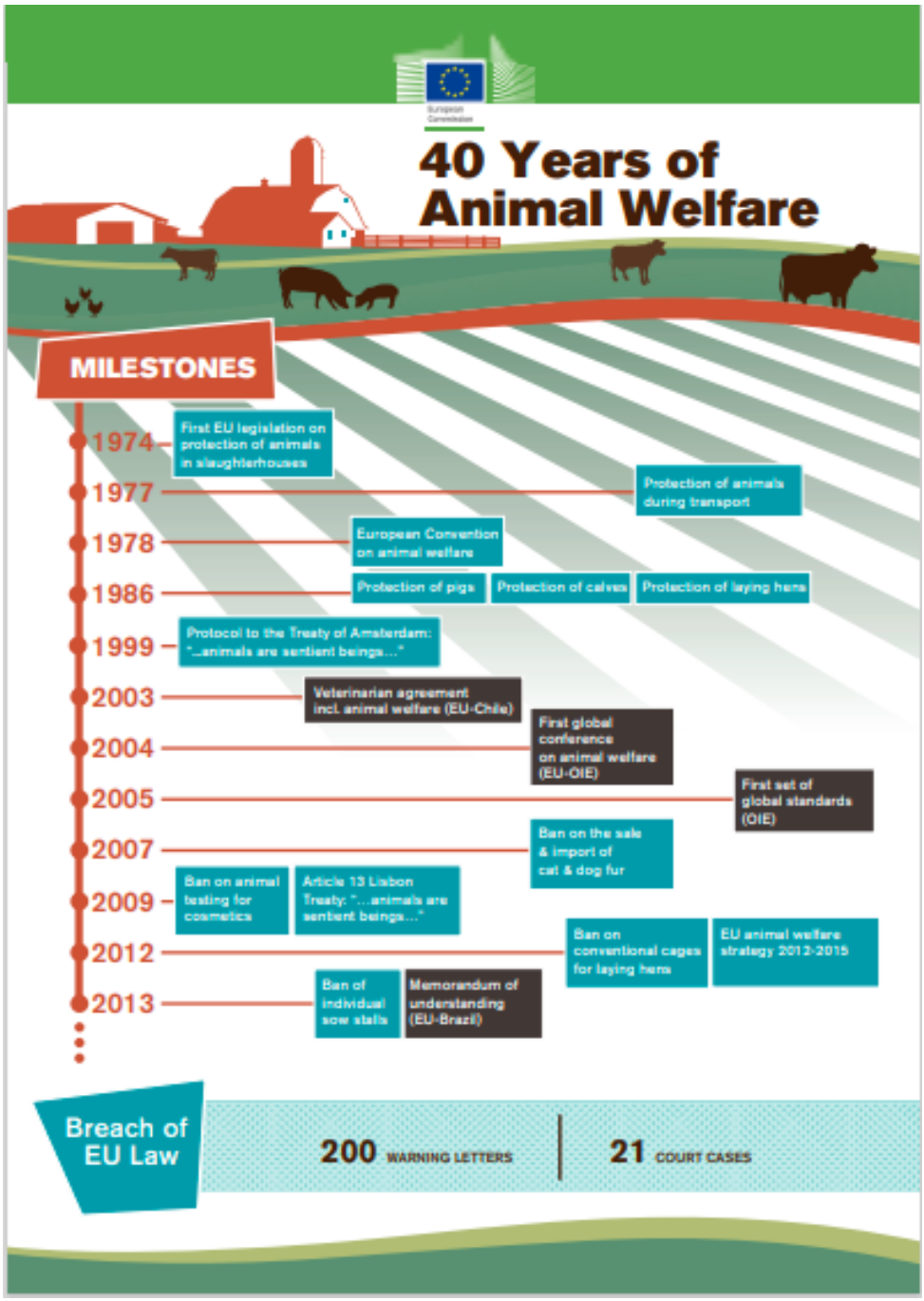
Timeline of the European law for animal protection/welfare



Source: European Commission: 40 years of Animal Welfare 02_06-FINAL (europa.eu)

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Group activity – division into groups

In order to divide the students, each student has to draw one card.

The following table needs to be cut into single cards (e.g. A 1) and each card should be folded at least once. The folded cards can be put into a box or a hat or something similar for students to draw out.

A 1	B 1	C 1	D 1
A 2	B 2	C 2	D 2
A 3	B 3	C 3	D 3
A 4	B 4	C 4	D 4
A 5	B 5	C 5	D 5

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Group A:

"Staffing

1. Animals shall be cared for by a sufficient number of staff who possess the appropriate ability, knowledge and professional competence.

Inspection

2. All animals kept in husbandry systems in which their welfare depends on frequent human attention shall be inspected at least once a day. Animals in other systems shall be inspected at intervals sufficient to avoid any suffering.

3. Adequate lighting (fixed or portable) shall be available to enable the animals to be thoroughly inspected at any time.

4. Any animal which appears to be ill or injured must be cared for appropriately without delay and, where an animal does not respond to such care, veterinary advice must be obtained as soon as possible. Where necessary sick or injured animals shall be isolated in suitable accomodation with, where appropriate, dry comfortable bedding.

Record keeping

5. The owner or keeper of the animals shall maintain a record of any medicinal treatment given and of the number of mortalities found to each inspection.

Where equivalent information is required to be kept for other purposes, this shall also suffice for the purposes of this Directive.

6. These records shall be retained for a period of at least three years and shall be made available to the competent authority when carrying out an inspection or when otherwise requested."

Source: EUR-Lex (n.d.): Council Directive 98/58/EC of 20 July 1998 concerning the protection of animals kept for farming purposes. Available online at: EUR-Lex - 31998L0058 - EN - EUR-Lex (europa.eu), last accessed on: 28.10.2022

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Observation sheet:

Date:.....

Observation time:.....

Animal species:.....

Eg: Observe the animals for about 30 minutes and describe all distinguishable forms of behaviour so precisely that even a non-participant can imagine something from your description (every behaviour that is observed - assignment to functional group/s) Then observe the entire Group at least 30 minutes and record the frequency of the different behavioural elements in a tally.

behaviour element	Frequency/ Tally	functional circle of behaviour	Conclusions on the husbandry and animal welfare

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TEACHING UNIT 4
PLANT PROTECTION

Introduction

Plant protection is that particular area of agricultural practice in which a number of decisions and choices have to be made. Not only plant health and the economic effect depend on them, but also the safety of the treatments performed for humans, animals and the environment. Despite the development of various plant protection methods, chemicals are still the most important tool in reducing the population of organisms harmful to crops. The widespread use of pesticides in agriculture has made it possible, in the last few decades, not only to better use and stabilize the yielding potential of more and more efficient plant varieties, but also to identify threats and take measures to minimize the negative effects of these agents. One of such activities is the implementation of the principles of **good plant protection practice.**

Good Plant Protection Practice provides for the performance of treatments with the use of plant protection products in accordance with the recommendations for their use, so as to ensure the assumed effectiveness at the minimum necessary dose, taking into account local conditions and the possibility of combating by mechanical and biological methods.

This unit focuses on general presentation of Good Plant Protection Practice. Its aim is increasing awareness of the need to protect plants using methods that take into account the principles of sustainable development and the aspect of environmental protection.

The unit includes three 45 minute-lessons aimed at vocational school students. They will be provided with the knowledge that can be especially useful for green field professions such as agriculture, horticulture, or forestry.

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The students are aware of the risk and professional responsibility for activities in plant production, especially in the field of plant protection, influencing the state of the natural environment.

The lessons are to support students in self-analysis problems affecting food production and quality, health animals and people, the state of the natural environment. Students will also try to assess strengths and weaknesses of actions taken to solve the existing professional problems.

Aims of the Teaching Unit - Overall Learning Objectives

Completing the course should give students an answer to the question "What is good plant protection practice". We expect the students to be aware that protecting plant health is all about preventing the spread of weeds, pests and disease agents. The issue of plant protection involves two activities, similar to that of a doctor: diagnosis and treatment. The diagnosis of diseases, deficiencies and pests is a prerequisite for their successful control.

After completing the teaching unit, students should be aware that plant protection is a must. However, it should be discussed how this is happening now and what the room for improvement is. By developing a critical approach to the positive and negative impacts on the environment and the agricultural sector, students will learn what good plant protection practice is all about.

Lessons will provide information on plant protection methods and learners are asked to present the basic methods and their advantages and disadvantages. Then, students learn about the use of plant protection products and assess their environmental impact, including on pollinating insects. Ultimately, students evaluate plant protection processes with sustainability in mind and discuss their application from the perspective of producers and consumers.

Students are to develop an opinion on the methods of plant protection and their impact on the environment and the agricultural sector. In addition, they are encouraged to develop ideas for changes and the improvement of good

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plant protection practices. The knowledge and skills acquired in this field can be applied both locally and globally.

Interdisciplinary Connections:

The module deals with the basic principles of responsible plant protection policy. It is about making informed decisions about local activities that may affect the environment globally. This means that such skills can also be transferred to other areas of human activity for example time and work management, regularity of actions or long life learning. Therefore, the subject of the module has interdisciplinary applications not only in the field of vocational training, but also in politics, economy and civic education. The module content can also be introduced into language teaching, discussion practice, sustainable development and environmental management.

Sources of the Teaching Unit

Kloc, E. (2017). English for students of horticulture. wyd. Uniwersytetu Rolniczego, Kraków,

Praczyk, T., Kierzek, R. (2020). Kodeks dobrej praktyki ochrony roślin. PIB, Poznań

Pruszyński, S. and others (2016) Metody ochrony w integrowanej ochronie roślin. CBR, Brwinów

https://www.youtube.com/watch?v=vHpmTruQ4qQ&ab_channel=BayerGlobal

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Syllabus

Week 1

Lesson 1: Introduction to Plant Protection

Learning Focus	Students are introduced to plant protection and learn about the need to protect plants
Long-Term Targets	Students develop an increased understanding of plant health protection and its primary aim of preventing the spread of weeds, pests and disease agents .
Duration	45 minutes
Preparation	The teacher prints copies of the text worksheets, The teacher readies the set of questions prepared the text The teacher ensures that the link to the prepared quiz (on quizlet.com) is functioning
Form of Assessment	The students will take a short quiz based on a list of key words put together on Quizlet
Materials	Laptop, projector, interactive monitor, mobile phones or tablets
Resources	Lesson 1_activity I_ plants damaged by insects_picture Lesson 1_activity I _ plants damaged by diseases_picture Lesson 1_activity I_ plants damaged by animals_picture Lesson 1_activity I_ field damaged by animals_picture Lesson 1_activity I_Why Do We Need to Control Weeds _podcast https://www.youtube.com/watch?v=vHpmTruQ4qQ&ab_channel=BayerGlobal

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	Lesson1_activity II_ Fighting the Enemies_worksheet Lesson1_activity II_ Fighting the Enemies_answers Lesson1_activity II_ Fighting the Enemies_comprehension questions Lesson1_activity III_ Quizlet quiz key words https://quizlet.com/pl/741054184/agripol-plant-protection-flash-cards/ Lesson1_activity III_ Quizlet quiz key words_ answers
Anything else	Students can also take the quiz using their mobile phones

Instructions for the lesson

Activity I: Why do we have to protect plants?,(15 minutes)

- The teacher welcomes the students and introduces the structure of the day's lesson.
- The teacher displays pictures presenting damaged plants. (on the screen)
- The teacher asks the question: "Why do we have to protect plants?"
- The teacher suggests the answers by pictures on the board,
- The teacher presents the podcast
- The teacher divides the class into 2-3 groups.
- The students discuss in groups and write down their ideas on reasons of controlling weeds on a piece of paper

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- The students are asked to create the diagram of factors contributing to the protection of plant health

Activity II: Prevention is the best way, worksheet completing, reading comprehension -answering the questions (20 minutes)

- The teacher hands out a text "Fighting the Enemies" to the students.
- The teacher asks the students to read the text individually and identify the steps of "fighting the enemies of plants".
- Students are asked to complete the worksheet – they have to match the headings with parts of the text.
- The students have to answer the questions – reading comprehension.
- The teacher asks the students to voluntarily present their answers.

Activity III: Vocabulary exercises (10 minutes)

- The teacher hands out the list of the key words of plant protection created on Quizlet.
- Students are asked to read the English words and their explanations
- Students do the quiz on Quizlet on their mobile phones (or alternatively on the sheet of paper) - revision of the concepts and vocabulary
- To do the quiz, the teacher has to generate a game PIN using the link https://quizlet.com/pl/741054184/agripol-plant-protection-flash-cards/
- Once the teacher open the link, has to click **Classic Live** and choose the way they want to play
- Finally the teacher obtains a game PIN or a QR code – they can be displayed on the monitor or send via FB to the students
- The students go to www.quizlet.live and submit the game code

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Week 2

Lesson 2: Methods of Plant Protection

Learning Focus	Students get to know basic methods of plants protection.
Long-Term Targets	Students know the advantages and disadvantages of these methods and their impact on the environment.They also earn to identify the methods and when to apply them.
Duration	45 minutes
Prepara-tion	The teacher prints copies of 3 worksheet The teacher ensures that the links to the prepared exercises (on wordwall.net) are functioning
Form of Assess-ment	The assessment will be made during the discussions on the les-son. The acquired knowledge will be assessed in the next lesson in the form of an interactive game
Materials	board, mobile phones, interactive monitor
Resources	Lesson 2_activity I_Plant Protection Methods_worksheet Lesson 2_activity I_wordwall_Plant Protection Methods_work-sheet Lesson 2_activity I_wordwall_Plant Protection Methods_game https://wordwall.net/pl/resource/37535943 Lesson 2_activity I_wordwall_Plant Protection Methods -exam-ples_worksheet

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	Lesson 2_activity I_wordwall_Plant Protection Methods -examples_game https://wordwall.net/pl/resource/37537327 Lesson 2_activity III_Advantages and disadvantages_worksheet Lesson 2_activity III_Advantages and disadvantages answers_worksheet
Anything else	Online exercises can be done with an interactive monitor, students' mobile phones or can be printed as a worksheet

Instructions for the lesson

Activity I: Methods of plants protection - descriptions (20 minutes)

- The teacher welcomes the students and introduces the structure of the day's lesson
- Students are asked to verbally name the most popular methods of prevention against diseases and pests they know
- The teacher hands out the Methods of plant protection worksheet to the students and encourage students to create short descriptions of the methods. Students work in pairs.
- The students have to match methods and their descriptions using their mobile phones https://wordwall.net/pl/resource/37535943 -
- The teacher tells them to bring out their mobile phones
- The teacher presents the game PIN on the board
- This task can be done on the interactive monitor

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Activity II: Methods of plants protection – examples of actions (10 minutes)

- The teacher tells the students to bring out their mobile phones
- The teacher presents the game PIN on the board https://word-wall.net/pl/resource/37537327
- In the task the students have a list of possible actions and their task is to classify them into the appropriate column with the name of the method
- The teacher explains the concepts that were difficult for students.

Activity III: Advantages and disadvantages of the discussed methods (15 minutes)

- The teacher divides the students into 2-3 groups
- The teachers provides each group with a table
- The teacher asks students to search for advantages and disadvantages of the methods online
- The students work in groups to discuss advantages and disadvantages of the known methods
- Each group is asked to write down the list of possible answers and then present it
- The teacher provides the students with a table with possible answers
- The students compare the answers they have written down with the provided possible answers

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Week 3

Lesson 3: The main principles of Good Plant Protection Practice

Learning Focus	The students learn about the basic principles of Good Plant Protection Practice.
Long-Term Targets	The lesson provides the basis for the proper and appropriate use of plant protection products.The students broaden their knowledge about the protection of plants using the principles of sustainable development.
Duration	45 minutes
Preparation	The teacher prints copies of the document **"Good Plant Protection Practice"** The teacher ensures that the link to the prepared test (on wordwall.net) is functioning The teacher prints the copies of the test
Form of Assessment	The test revising three lessons of the unit.
Materials	Pens, tablets, mobile phones, projector, interactive board
Resources	Lesson 3_activity I _Presentation:

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	https://www.canva.com/design/DAFQnhi4dj0/CuE2-eTQRKGAx8VshbGZKQ/edit?utm_content=DAFQnhi4dj0&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton Lesson 3_activityII_ Good Plant Protection Practice_worksheet Lesson 3_activity III_test_worksheet Lesson 3_activity III_Wordwall_test_ https://wordwall.net/pl/resource/37600043
Anything else	

Instructions for the lesson

Activity I: Factors contributing to the protection of plant health (15 minutes)

- The teacher welcomes the students and introduces the structure of the day's lesson
- The teacher shows the presentation "**Plant Health Protection**"
- The teacher asks the student questions to explain how they understand each slide that shows a factor contributing to the plant protection

Activity II: General principles of Good Plant Protection Practice (20 minutes)

- The teacher writes on the board main principles of GPPP:
  1. Prevention first.
  2. Methods of plant protection - determining the need, planning the method and the safe use of measures.
  3. Protection of people and the environment.
- The teacher divides the students into 2 or 3 groups
- Each group is provided with the copy of the text worksheet
- The students work on the text to determine its principles.

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- The teacher asks students to classify the principles from the text into 3 main groups on the board

Activity III: General Knowledge Test (10 minutes)

- The students do the test online (alternatively can be printed)
- Instructions to the test:
  go to the link https://wordwall.net/pl/resource/37600043
  answer the questions
  submit your answers

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Lesson 1_activity I_ plants damaged by insects_picture

Lesson 1_activity I _ plants damaged by diseases_picture

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Lesson 1_activity I_ plants damaged by animals_picture

Lesson 1_activity I_ field damaged by animals_picture

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FIGHTING THE ENEMIES

(DISEASE AND PEST MANAGEMENT)

1. **Choose the most suitable heading from the list (A-F) for each part of the article (1-5). There is one extra heading you do not need to use.**
   - **A. Find a source of trouble.**
   - **B. The last resort – chemical control.**
   - **C. Forestall the enemy.**
   - **D. Don't be afraid of new methods of treatment.**
   - **E. Don't put all your eggs in one basket.**
   - **F. Cooperate with Mother Nature.**

Looking after plants requires broad knowledge and is definitely a full time occupation. Without help and routine care, crop plants are not able to grow and develop properly because crop plants are constantly subjected to a full-scale attack from disease, pests and weeds. Having that in mind, farmers and gardeners have to fight a fierce battle and keep a lookout otherwise, given the opportunity, enemies regroup and launch a strike reducing not only the yield but its quality as well.

How to fight a war and win it

Step 1. _____

You do not always have to resort to chemicals to overcome problems. Apply as many methods of fighting the enemy as possible. Remember that integrated pest and disease management is the best solution because one method complements the other and together they produce beneficial effects.

Step 2. _____

Provide optimum conditions for your plants (favourable temperature, humidity and soil acidity, enough light and nutrients). Strong and well-fed plants are more resistant and when the attack occurs, they are more likely to survive it.

It goes without saying that prevention is the best remedy therefore one should not forget about:

- disinfection of tools
- removal and destruction of alternative hosts
- crop rotation (some pathogens and pests may vanish from the doil within 1-3 years)
- growing pest-resistant varieties

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Step 3. _____

If your plants do not thrive, find the culprit. Before you take any steps, determine whether the plant's poor condition is due to environmental factors, injury, improper care, disease or pest damage. Diseases are caused by viruses, bacteria and fungi. Plants can be attacked by pests such as slugs, snails, aphids, red spiders and nematodes, to mention but a few.

Step 4. _____

Use biological methods. Don't forget that all pests have their natural enemies. For instance, larvae of ladybirds or syrphids can help to reduce the population of aphids, whereas *Bacillus thuringiensis* is very effective against various caterpillars.

Step 5. _____

Chemical control includes seed treatment or application in the form of spray or dust on growing plants. In greenhouses fumigants can be used. The most popular groups of chemicals are: pesticides (e.g. insecticides, fungicides), chemical repellents and attractants. Repellents are used to keep the insects away from plants, whereas attractants make them fall into different kinds of traps.

source: Kloc, E. (2017). English for students of horticulture. wyd. Uniwersytetu Rolniczego, Kraków,

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Lesson1_activity II_ Fighting the Enemies_comprehension questions

Reading comprehension **"Fighting the Enemies"**

According to the text:

1. Explain the term "integrated pest management"
2. Name the most popular methods of prevention against diseases and pests.
3. Specify what may cause poor plant's condition.
4. Name the groups of chemicals used in disease and pest management.
5. Give English definitions of the following words: pests, insecticides, pesticides, fungicides.

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Lesson1_activity III_ Quizlet quiz key words_ answers

1. weed: any plant that competes with crops

2. pest: any organism that damages valuable crops

3. disease: An abnormal state in which the body is not functioning normally

4. soil: A mixture of mineral particles and organic material that covers the land, and in which terrestrial plants grow.

5. nutrients: a substance that provides nourishment essential for growth and the maintenance of life.

6. crop rotation: The practice of rotating use of different fields from crop to crop each year, to avoid exhausting the soil.

7. viruses: tiny particles, smaller than bacteria and other pathogens, which must invade living cells in order to reproduce; when they invade, the cells are damaged or destroyed in the process releasing new particles to infect other cells

8. fungi: A kingdom made up of nongreen, eukaryotic organisms that have no means of movement, reproduce by using spores, and get food by breaking down substances in their surroundings and absorbing the nutrients

9. Pesticides/Herbicides: chemicals used in the field to decrease destruction caused by insects and fungus

10. fungicide: substance that kills fungi or inhibits their growth

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Lesson1_activity II_ Fighting the Enemies_answers

Step 1. ____E_____

Step 2. _____C_____

Step 3. _____A_____

Step 4. _____F_____

Step 5. _____B_____

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Lesson 2_activity I_Plant Protection Methods_worksheet

Plant protection methods

Method	Description
biological	
physical	
chemical	
mechanical	
agrotechnical	
integrated	

Source: Pruszyński, S. and others (2016) Metody ochrony w integrowanej ochronie roślin. CBR, Brwinów

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General principles of integrated pest management

Appendix I

1. The prevention and/or suppression of harmful organisms should be achieved or supported
among other options especially by:
— crop rotation,
— use of adequate cultivation techniques (e.g. stale seedbed technique, sowing dates and densities, under-sowing, conservation tillage, pruning and direct sowing),
— use, where appropriate, of resistant/tolerant cultivars and standard/certified seed and planting material,
— use of balanced fertilisation, liming and irrigation/drainage practices,
— preventing the spreading of harmful organisms by hygiene measures (e.g. by regular cleansing of machinery and equipment),
— protection and enhancement of important beneficial organisms (e.g. by adequate plant protection measures or the utilisation of ecological infrastructures inside and outside production sites).

2. Harmful organisms must be monitored by adequate methods and tools, where available. Such adequate tools should include observations in the field as well as scientifically sound warning, forecasting and early diagnosis systems, where feasible, as well as the use of advice from professionally qualified advisors.

3. Based on the results of the monitoring, the professional user has to decide whether and when to apply plant protection measures. Robust and scientifically sound threshold values are essential components for decision making. For harmful organisms threshold levels defined

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for the region, specific areas, crops and particular climatic conditions must be taken into account before treatments, where feasible.

4. Sustainable biological, physical and other non-chemical methods must be preferred to chemical methods if they provide satisfactory pest control.

5. The pesticides applied shall be as specific as possible for the target and shall have the least side effects on human health, non-target organisms and the environment.

6. The professional user should keep the use of pesticides and other forms of intervention to levels that are necessary, e.g. by reduced doses, reduced application frequency or partial applications, considering that the level of risk in vegetation is acceptable and they do not increase the risk for development of resistance in populations of harmful organisms.

7. Where the risk of resistance against a plant protection measure is known and where the level of harmful organisms requires repeated application of pesticides to the crops, available anti-resistance strategies should be applied to maintain the effectiveness of the products. This may include the use of multiple pesticides with different modes of action.

8. Based on the records on the use of pesticides and on the monitoring of harmful organisms the professional user should check the success of the applied plant protection measures.

Source: *S.I. 155 of 2012 - The European Communities (Sustainable Use of Pesticides) Regulations 2012 (Ref. Regulation 15)* ***"Good Plant Protection Practice"***

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TEACHING UNIT 5
SOCIAL SUSTAINABILITY IN THE CAP

Introduction

This unit deals with the Common Agricultural Policy (CAP) connected to the vital role of stakeholders in ensuring social sustainability and improving the working conditions of farmers. It will discuss the importance of the newly adopted Social conditionality and stakeholder engagement, analyze the challenges faced by farmers, and explore the ways in which CAP addresses these issues in the context of joint European decision making.

Major theory: "The Common Agricultural Policy (CAP) has to create a synergy between ecological AND social sustainability in order to reach its goals."

Aims of the Teaching Unit - Overall Learning Objectives:

By the end of this unit, students will be able to:

- Understand the concept and objectives of the Common Agricultural Policy (CAP).
- Identify key stakeholders involved in the agricultural sector.
- Analyze the challenges and working conditions faced by farmers.
- Explore the role of CAP and the Social Conditionality in addressing social sustainability and improving working conditions.
- Discuss the importance of stakeholder engagement in shaping CAP policies.
- Evaluate the role of consumer awareness and activism in promoting positive change.

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Duration of the unit, no. of sessions and target group

The unit consists of three lessons á 45 minutes and can be adapted to the specific needs of individual target-groups, to whom the project is also addressed: Vocational schoolteachers of the subjects politics and horticulture, agriculture or similar subjects as well as interdisciplinary applications. The course is also suitable for CLIL-Teaching (content and language integrated learning) in English language, principals at vocational schools, students with the aim of obtaining a vocational school teaching qualification (e.g. subjects such as politics, horticulture), trainers in companies. The course is also suitable for youth, general education, and adult education

Interdisciplinary Connections:

Within the unit, connections between different disclipines as citizenship education, ecology, ecoscience, personality formation, psychology, environmental education can be found and elaborated.

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Syllabus

Week 1

Lesson 1: Introduction to CAP

Learning Focus	The aim of the lesson is to get a general understanding of the CAP
Long-Term Targets	Understanding the the mechanisms behind the the CAP and itse relevance within the system of EU politics
Duration	45 Minutes
Preparation	Providing access to the internet for all students (Computer Room, Smartphones). If this is not possible the students can also do activity I as homework)
Form of Assessment	Group Work / Discussions
Materials	Websites, videos as suggestions Whiteboard
Resources	https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/cap-glance_en https://fortbildung.haup-lp.at/course/view.php?id=4501&section=12#tabs-tree-start https://www.youtube.com/watch?v=HKPGiPtS0Ms https://www.youtube.com/watch?v=ranzxkS8fbU https://www.youtube.com/watch?v=0JNqQuOL7cg https://www.youtube.com/watch?v=JOZCk1DdDR0

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Instructions for the lesson

Activity I: "Doing Research" (30 min)

The teacher asks the students to do research on the main aspects of the CAP in groups or individually. It is important to Provide access to the internet for all students (Computer Room, Smartphones). If this is not possible the students can also do activity I as homework). The teachers can also suggest the above mentioned sources.

Activity II: "Mind Map" (15 min)

The teacher starts a Mind Map on the Whiteboard, writing the term "CAP" in the center. All students are asked to contribute with the results of their research

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Lesson 2: Social Sustainability

Learning Focus	Learning about Social Sustainability as one of the main aspects of Sustainability
Long-Term Targets	Students should get into the position of having a complete picture about the complex term "sustainability" and should understand the importance of the social aspect
Duration	45 minutes
Preparation	Thinking about what sustainability might be from the perspective of students and find connections to the topic of the lesson
Form of Assessment	Group reflection/discussion
Materials	Worksheet Social Sustainability Whiteboard
Resources	

Instructions for the lesson

Activity I: Mind Map Sustainability (15 Min)

The teachers moderates the creation of a Mind Map on the term "Sustainability".

Activity II: Elements of Sustainability (30 Min)

The teachers hands out the worksheet Social Sustainability in which the students are asked to fill out the blank spaces for the section of social sustainability. Afterwards the teachers moderates a group discussion on the relevance of the aspects in the context of the other elements "economy" and "environment"

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Lesson 3: The CAP, Social Sustainability and European decision making

Learning Focus	Getting an understanding on the way social sustainability is discussed within the CAP of the European Union
Long-Term Targets	Building on the knowledge of the previous lessons the goal of this lesson is to provide an understanding which interest groups and stakeholders are taking part in the political work towards social sustainability in the CAP of the EU.
Duration	45 minutes
Preparation	The room should be prepared so that the students can sit in a big circle. The teachers should also think about a way of dividing the class into three groups.
Form of Assessment	Political Simulation / Roleplay
Materials	Laptop/Smartphone for the students Invitations (in the annex)
Resources	
Anything else	

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Instructions for the lesson

Activity I: Roleplay game of a simulated debate in the European Commission

In this final activity of the teaching unit the students take over the role of a stakeholder discussing the future development of the CAP. The commission wants to hear the opinion of experts and stakeholders to decide if the sustainability strategy of the CAP should focus on economic, social or environmental aspects.

All students receive an invitation letter which explains the goals of the event.

The class is divided into three equal groups, each representing stakeholders for economic, social or environmental aspects.

Afterwards the students fill out the fields in the invitation and get together in their groups.

In their group they discuss about their strategy for the discussion and how they can convince the commission (represented by the teacher) that their aspect of sustainability is most important.

After 10 Minutes of preparation the teacher opens the debate, giving each group 2 minutes to introduce themselves and formulate an opening statement.

Afterwards the discussion is open for 15 Minutes and concludes with a final statement of each group (2 Minutes).

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Annexes - Worksheets

Lesson 2

Worksheet Social Sustainability

- Economic Growth and Resilience
- Affordability
- Energy Security
- Process Efficiency
- Outputs of Desired Products

- Water Quality and Quantity
- Soil Quality
- Air Quality
- Greenhouse Gas Emissions
- Biodiversity and Wildlife

- ?
- ?
- ?
- ?
- ?
- ?
- ?

Source: https://www.energy.gov/eere/bioenergy/sustainability

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Worksheet Social Sustainability – Solutions

- Economic Growth and Resilience
- Affordability
- Energy Security
- Process Efficiency
- Outputs of Desired Products

- Water Quality and Quantity
- Soil Quality
- Air Quality
- Greenhouse Gas Emissions
- Biodiversity and Wild-life

- Jobs and Workforce Development
- Health and Well-Being
- Food Security
- Social Acceptability

Source: https://www.energy.gov/eere/bioenergy/sustainability

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Letter of Invitation

Dear Sir or Madam,
We invite you to the Europeans Commissions debate on the future of the sustainability strategy of the CAP.

Please fill in your information below and present this document at the entrance.

Your Name: _____

Your field of expertise (please select one)
O Economical Aspects O Social Aspects O Environmental Aspects

Your Organisation/Company: _____

We are looking forward to you participation.
Directorate-General for Agriculture and Rural Development
European Commission, Rue de la Loi 130/Wetstraat 130
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