

Food4Future_cz

Teaching materials for teachers



FoodSafety4EU

MULTI-STAKEHOLDER PLATFORM
FOR FOOD SAFETY IN EUROPE



**Funded by
the European Union**

FoodSafety4EU has received funding from the European Union's Horizon 2020 Research and Innovation programme (H2020-EU.3.2.2.2. – Healthy and safe foods and diets for all) under Grant Agreement No. 101000613. Information

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Credits

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Agency for the Promotion of European Research (APRE) Italy

Introduction

Food4Future_cz is a communication campaign developed by the EU-funded project FoodSafety4EU. The campaign aims to raise youngsters' awareness about food safety and sustainability for a conscious and considerate approach to the environment. The campaign was designed within FoodSafety4EU using the "Social Lab" method in 2021 and 2022 engaging multiple project partners from industry, academia, authorities, and consumer associations in the co-creation process.

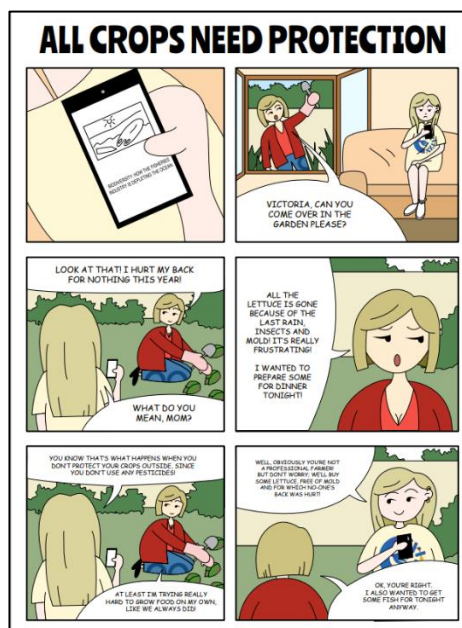
The campaign was developed by the project partners VSHCT and FFDI (Czechia) acting as pilot hosts supported by IFA (Austria), APRE and CNR-INSPA (Italy). The campaign will be launched in Czechia between October-November 2022 as a pilot communication campaign and may be extended to other project partners in the period January-December 2023. More info can be found at: FoodSafety4Eu

The teacher materials entailed here are for teachers of upper secondary education institutions (approx.. age 15-18 years) and are fit for learners with different levels of prior knowledge. The materials have been designed for the purpose of the **Food4Future_cz** campaign together with the flyer which teachers are encouraged to distribute to their class before using the materials. Other materials are also available on the campaign website and social media channels. For a full list, please visit http://www.foodnet.cz/cs/food4future_cz

The teaching materials are divided into three chapters followed by a list of exercises with indications of length connected to each chapter. The exercises are action-learning oriented focussing on fostering a participatory and learner-centered discussion about the chapter topics in class. The chapters are also available as power point presentations and can be downloaded from http://www.foodnet.cz/cs/food4future_cz.

The teaching materials are part of the **Food4Future_cz** campaign and the project partners are doing research on the effectiveness of the campaign. Therefore, we kindly ask teachers to distribute the pre- and post-questionnaires to each of your students and return them filled in through http://www.foodnet.cz/cs/food4future_cz.

Education for Sustainable Development is recognized as an integral element the Sustainable Development Goals and recognised in SDG 4 on quality education. Especially, sub-target SDG 4.7 aims at ensuring that "all learners acquire knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development".¹



Chapter 1: All Crops Need Protection

(5-10 min)

You may have seen a **food pyramid** or plate illustrating dietary guidelines. Basically food pyramids are meant to help people build a balanced and varied diet from bottom to the top. Most dietary guidelines group foods into different blocks such as fruits and vegetables; grains; protein rich foods; dairy foods; fats and oils; and foods you should eat very little of. We can basically distinguish between macronutrients (providing carbohydrates, fats and proteins) and micronutrients when speaking about food: macronutrients give us energy and micronutrients support the functioning of our body. By eating food from all blocks in the food pyramid in the right amounts, we get all the important nutrients our body needs. For example, eating enough fruits and vegetables will supply vitamin C for a healthy immune system.ⁱⁱ

The past years there has been a lot of talk about “**Sustainable Healthy Diets**” which according to the FAO and WHO “dietary patterns that promote all dimensions of individuals’ health and wellbeing; have low environmental pressure and impact; are accessible, affordable, safe and equitable; and are culturally acceptable”.ⁱⁱⁱ

In the EU, the average European eats 24.4 kg of fish or seafood per year, but there are large differences among Europeans: while Hungarians only eat 4.8 kg, Czechs eat 8,2 kg and Portuguese eat 24.4 kg per year. $\frac{3}{4}$ of the fish or seafood consumed in the EU is from **wild fisheries**, while the remaining $\frac{1}{4}$ is from **aquaculture**, which is the controlled form of fish cultivation.^{iv} While Europeans prefer tuna, cod and salmon, in 2018, around 70% of our **fish consumption** was imported from Norway, China, Russia, Ecuador, Vietnam, India and Argentina.^v **Declining fish stock due** to over-fishing/illegal fishing, unreported and unregulated fishing reduces our fish stocks, destroys marine habitats, distorts competition, puts fishermen at a disadvantage and weakens coastal communities.^{vi} In agriculture, **pest control** is used to protect plants. Pesticides is the most common type of pest control used to either kill pests or hinder their development. Depending on the pest they are intended to control, there are different kinds of pesticides: for instance, insecticides are used to control insects, herbicides to control plants, fungicides to control fungi, or bactericides to control bacteria just to name a few.



The food we eat must be **safe** and while pesticides can pose a **risk to health**, there are limits to how much pesticides farmers are allowed to use. These limits are called “**maximum residue levels**” (abbreviated MRLs) and the rules are laid down in specific regulations in the European Union and apply both to farmers in the EU as well as to imported food.^{vii} **Labels** are one way of minimizing the information gap between producers and consumers allowing producers to inform consumers about pesticide usage.^{viii} However, it is difficult for consumers to make sense of such environmental labels, such as “pesticide-free labels”, as there are more than 200 environmental labels active in the EU, and more than 450 active worldwide!^{ix}

Chapter 2: Modern Farming Focusses on Safety and Sustainability

(5-10 min)

In the **fish value chain**, depending on whether the fish is alive, fresh, frozen, dried, smoked, or canned, and depending on food safety requirements, location of the market and the value of the fish, different means of transportation is usually used, i.e. trucks, boats, ships, air. For long distance transportation, for instance to Europe from Asia or South America, refrigeration is necessary to supply consumers with safe and high quality fish.^x

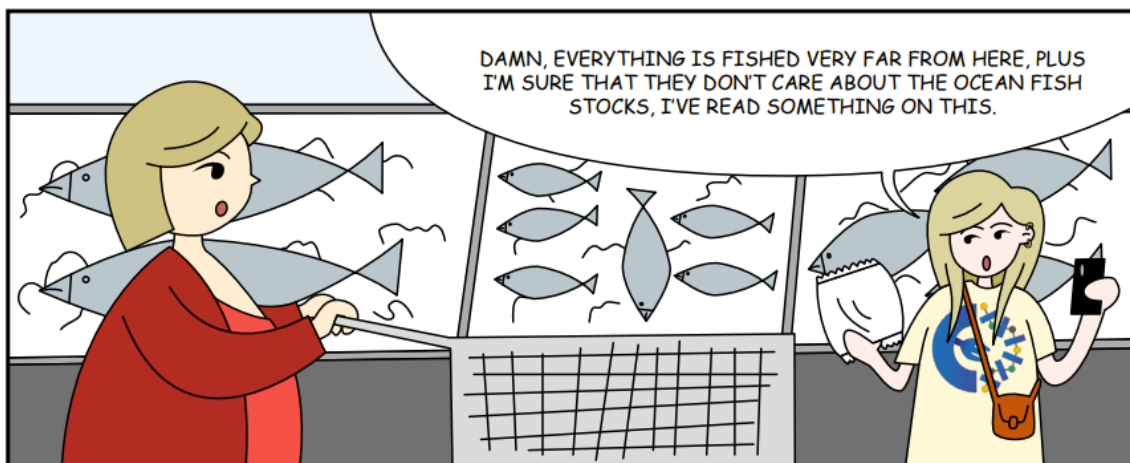
Transportation of fish from long distances by ship or air is yet a major source of greenhouse gas emission from fuels such as coal, oil, and natural gas, and is responsible for a big portion of our **carbon footprint**.^{xixii}

In December 2019, the European Commission presented and launched the “**European Green Deal**” which is a roadmap of actions to become the first climate-neutral continent by 2050 moving to a circular economy, stop climate change, turn back biodiversity loss and cut pollution. ^{xiii}

The “European Green Deal” focuses specifically on food in its **Farm to Fork Strategy** in which the challenges of a sustainable food systems are recognized and the links between healthy people, societies and our planet.

Thus in the Farm to Fork Strategy, the transition to **sustainable food systems** means ensuring that the food chain has a neutral or positive climate footprint preserving and protecting resources on land and at sea and reversing the loss of biodiversity; ensuring that everyone has access to enough, healthy and sustainable food meeting standards for safe, high quality, plant health, and animal health and welfare; and ensuring that sustainable food is affordable to everyone while fostering competitiveness, fair trade and safety of the workforce.

In the **transition to a climate-neutral European economy**, farmers, fishers and aquaculture producers are encouraged to transform their production methods and make the best use of technological and digital solutions that produce climate and environmentally friendly food, increase climate resilience and reduce and optimise the use of pesticides promoting safe alternatives of protecting plants from pests and diseases.^{xiv}



Chapter 3: Compared to Traditional Farming, Aquaponics Offers Additional Benefits

(5-10 min)

There are many issues to consider when making **sustainable food choices**: Shifting to a more plant-based diet; minimizing meat consumption, focusing on seasonal and local food, reducing food waste and selecting fish from sustainable stocks.^{xv}

Aquaponics is a **modern farming method and food production method** and is seen as an answer to meeting the growing consumer demand for fish.^{xvi}

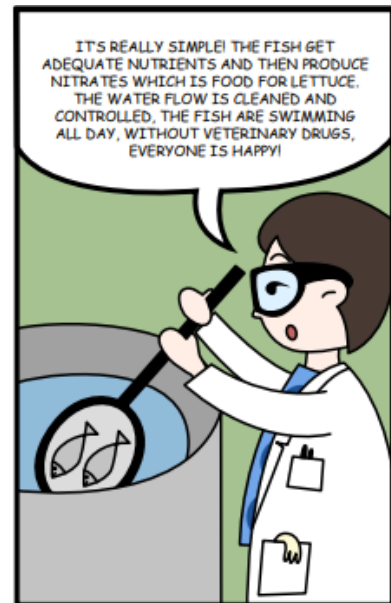
Essentially, aquaponics is a combination of raising fish (aquaculture) and growing plants (hydroponics) all year round.

It works like this: The fish waste works like a fertilizer as it is broken down by bacteria into dissolved nutrients which plants, such as salads or herbs, absorb and use to grow. Like that the plants clean the water for the fish and the farmer.



What are the **benefits for our environment**? Aquaponics as a production method means less need of land for growing plants, less water consumption; accelerated plant growth rates, and year-round production of both fish and plants meeting higher demands for food to a growing population.^{xvii}

What are the **benefits for us as consumers**? Both the fish and the plants are healthy food options as they have been grown without residues, chemical fertilizers and pesticides.^{xviii}



Exercise 1.2: Do you eat fish?

(25-30 min)

In groups of 3-5 students, reflect first individually for 5 min and then discuss in your group for 10 min:

- Do you eat fish in your household? If so, what kind of fish? how often? and how is it prepared? If not, why not?
- Do you remember if you have ever looked at the packaging to see where the fish you eat is from?

Choose a facilitator and a rapporteur who writes notes and prepares a short (2 min) oral feedback in class.

Next time you eat fish, try to look for information about where the fish is from, where you bought it and consider how it was processed (is it canned? frozen? fresh?) and how it was transported before it ended up on your plate. Discuss it in class!

Individual reflection:

Group reflection (for rapporteur):

Exercises Chapter 2

Exercise 2.1: Calculate your carbon footprint

(25-30 min)

Show the [video](#). In groups of 3-5 students, reflect first individually for 5 min:

- Think about your daily life: how do you get to and from school (walk, bicycle, bus, car, train) to activities after school?; what and where do you eat?; where is your clothes from? how is your house heated? How often do you shower? etc. Which of these daily activities do you think have the largest carbon footprint? Write a list and number those activities with the highest carbon footprint.

Discuss in your group for 10 min:

- Compare your activities and those you think have the largest carbon footprint
- Brainstorm on activities you think you and your family can change in you lifestyle to lower your carbon footprint.

Choose a facilitator and a rapporteur who writes notes and prepares a short (2 min) oral feedback in class.

List of daily activities:

Group reflection (for rapporteur):

Exercise 2.2: Class Challenge

At home, show your list to your parents and discuss what your family can change in your lifestyle to lower your carbon footprint.

When you have listed the activities you have selected to lower your family carbon footprint, set a time period in which you want to meet your goals, track your progress (e.g. by keeping a video diary) and update your class at the end of the challenge.

You could even try to calculate your own and your household's carbon foot print on the [Consumer Footprint Calculator](#)!^{xix}

List of family activities:

Exercise 2.3 Produce a list of FAQ

Based on your own experiences of activities you changed in your family to lower your carbon footprint, produce in class a list of FAQ (Frequently Asked Questions) or a webpage to help fellow students make informed choices when shopping. Ask some of your friends to test the FAQ and ask them if it helped them change their habits?

Questionnaires

Thank you for taking a few minutes to fill in this questionnaire and give your say on the campaign Food4Future_cz! Your responses are entirely anonymous and confidential, but very valuable to us as we are doing research on the effectiveness of the campaign message. Please return the filled in questionnaire to your teacher, thanks!

1. Tell us about yourself!

1.1	How old are you?			
1.2	What is your gender?	Female	Male	Don't want to tell
1.3	How many people live in your household?			

2. Tell us about your eating habits!

2.1	Do you sometimes go food shopping?	Yes		No	
2.2	If yes, how often per week?	Once	Twice	Three times	More
2.3	With whom do you go food shopping?	Mum	Dad	Other	Alone
2.4	Do you eat fish in your home?	Yes		No	
2.5	If yes, how often per week?	Once	Twice	Three times	More
2.6	How often do you eat lettuce per week?	Once	Twice	Three times	More
2.7	Have you ever heard of aquaponics?	Yes		No	

3. What matters to you when you go food shopping?

When going food shopping alone or with someone from your household, which of the following criteria are important to you? (please put a cross for each criteria taste, quality etc.)

	(1) not at all important	(2) low importance	(3) slightly important	(4) neutral	(5) fairly important	(6) important	(7) very important
Taste							
Quality							
Food safety							
Price							
Convenience							
Nutrition and health							
Animal welfare							
Environmental impact							
Fair-trade							
In season							
Locally produced							
Organic or certified							

4. Tell us what you think of the Food4Future campaign!

4.1	Have you seen the Food4Future flyer?	Yes			No		
4.2	Are you likely to share the flyer with members of your household (mum, dad, siblings) or friends?	Mum	Dad	Siblings	Friends	Other	
4.3	Are you following the Food4Future_cz campaign on social media?	Yes			No		
4.4	If yes, on which social media channels?	Tik Tok		Instagram		Facebook	

5. How would you rate the quality of the materials?

	Extremely high	High	Neutral	Poor	Very poor	Don't know
Flyer						
Videos						
Exercises in class						

6. In a few sentences, please describe what you learned in class?

Thank you for your valuable contribution and please don't forget to return the questionnaire to your teacher!

Further materials

Further materials Chapter 1

EUFIC (2020). Food Pyramids, Plates and Guides: Building a Balanced Diet, available [here](#).

UN Nutrition (2021). The role of aquatic foods in sustainable healthy diets, available [here](#).

European Commission: Consumption Ocean and Fisheries, available [here](#).

European Commission (2018). The EU Fish Market, available [here](#).

European Environment Agency (2021). Heavy Precipitation in Europe, available [here](#).

EURACTIV (2021): Black Sea facing ecological disaster due to overfishing, available [here](#).

EFSA. Pesticides, available [here](#).

Farias, P. (2020). Promoting the Absence of Pesticides through Product Labels: The Role of Showing a Specific Description of the Harmful Effects, Environmental Attitude, and Familiarity with Pesticides. *Sustainability* 12, 8912; [doi:10.3390/su12218912](https://doi.org/10.3390/su12218912)

European Commission. Initiative on substantiating green claims. Available [here](#).

Further materials Chapter 2

FAO. Food Loss and Waste in Fish Value Chains. Available [here](#).

FootPrint. Climate-Friendly-Seafood – Is There Such A Thing? Available [here](#).

European Union (2021). How to reduce my carbon footprint. Available [here](#).

European Commission (2019). Press Release: The European Green Deal sets out how to make Europe the first climate neutral continent by 2050 boosting the economy, improving people's health and quality of life, caring for nature, and leaving no one behind. Available [here](#).

European Commission (2020). Farm to Fork Strategy. Available [here](#).

European Union. Consumer Footprint Calculator. Available [here](#).

FAO. Food-based dietary guidelines. Available [here](#).

The Learning Corner – Ready for the Green Challenge (European Commission) provides a list of various learning activities (quizzes, games etc.) to be used in class (available [here](#).)

Further materials Chapter 3

European Environment Agency (2016). Seafood in Europe: A food system approach for sustainability. Available [here](#).

The Fish Site. Aquaponics Explained. Available [here](#).

FAO. Small scale aquaponic food production. Integrated fish and plant farming. Available [here](#).

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- ⁱⁱ EUFIC (2020). Food Pyramids, Plates and Guides: Building a Balanced Diet, available [here](#).
- ⁱⁱⁱ UN Nutrition (2021). The role of aquatic foods in sustainable healthy diets, available [here](#).
- ^{iv} European Commission: Consumption Ocean and Fisheries, available [here](#).
- ^v European Commission (2018). The EU Fish Market, available [here](#).
- ^{vi} EURACTIV (2021): Black Sea facing ecological disaster due to overfishing, available [here](#).
- ^{vii} EFSA. Pesticides, available [here](#).
- ^{viii} Farias, P. (2020). Promoting the Absence of Pesticides through Product Labels: The Role of Showing a Specific Description of the Harmful Effects, Environmental Attitude, and Familiarity with Pesticides. *Sustainability* 12, 8912; [doi:10.3390/su12218912](https://doi.org/10.3390/su12218912)
- ^{ix} European Commission. Initiative on substantiating green claims. Available [here](#).
- ^x FAO. Food Loss and Waste in Fish Value Chains. Available [here](#).
- ^{xi} FootPrint. Climate-Friendly-Seafood – Is There Such A Thing? Available [here](#).
- ^{xii} European Union (2021). How to reduce my carbon footprint. Available [here](#).
- ^{xiii} European Commission (2019). Press Release: The European Green Deal sets out how to make Europe the first climate neutral continent by 2050 boosting the economy, improving people’s health and quality of life, caring for nature, and leaving no one behind. Available [here](#).
- ^{xiv} European Commission (2020). Farm to Fork Strategy. Available [here](#).
- ^{xv} FAO. Food-based dietary guidelines. Available [here](#).
- ^{xvi} European Environment Agency (2016). Seafood in Europe: A food system approach for sustainability. Available [here](#).
- ^{xvii} The Fish Site. Aquaponics Explained. Available [here](#).
- ^{xviii} FAO. Small scale aquaponic food production. Integrated fish and plant farming. Available [here](#).
- ^{xix} European Union. Consumer Footprint Calculator. Available [here](#).