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# SUSTAINABILITY

## *Participant's Booklet*



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BIOLEARN-BSB142  
ECO-CONSCIOUS MINDS TO STOP POLLUTION  
IN THE VALUABLE WETLANDS OF BLACK SEA BASIN

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# SUSTAINABILITY

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*Participant's Booklet*

Target Audience: 14+ years old

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# About The Project

BIOLEARN (Eco-Conscious Minds to Stop Pollution in the Valuable Wetlands of Black Sea Basin - BSB142), which was initiated on 01.01.2020 within the scope of the first call for proposals of “Joint Operational Programme Black Sea Basin 2014-2020” where the Directorate for EU Affairs is the national authority, is led by District Government of Enez.

Representatives of the following partners are as follows:

1. District Government of Enez-Turkey
2. Division Directorate of Edirne under First Regional Directorate under General Directorate of Nature Protection and Nature Parks of Ministry of Agriculture and Forestry - Turkey
3. Foundation Caucasus Environment - Georgia
4. Agricola NGO - Ukraine
5. Green Balkans / Stara Zagora NGO - Bulgaria
6. Management Body of Evros Delta and Samothraki Protected Areas - Greece

The overall objective of the project is to provide information, experience transfer and capacity building training between partners and develop a common environmental protection and education approach, methodology and organizing campaigns that will raise awareness in the society to reduce pollution in important wetlands in the Black Sea Basin.

**The main activities to be carried out within the scope of the 26-month project are as follows:**

1. Establishment of a total of 4 environmental protection and training centres, one of which is on the shores of Gala Lake, and providing environmental protection training to visitors and especially to students. By providing equipment for the other 6 existing centres, there will be a network of 10 activity and training centres.
2. Workshops to be held in Bulgaria and Greece, focusing on discussions about examples of

successful training and awareness-raising campaigns for the protection of wetlands, sharing experiences and preparing the materials to be used in training which will be applied in all centres. Capacity building training for trainers.

3. Organizing massive and synchronized cleaning campaigns to reduce pollution in wetlands.
4. Award-winning photo contest and exhibition focused on wetland protection.
5. Organizing a wetland pollution-based painting contest and exhibition in primary and secondary schools.

### **Outputs of the Project:**

1. “Stop Pollution” and “Save Nature” environmental education and activity centres, one of which is mobile, will be established in 5 countries and will sustainably carry out training and awareness-raising activities.
2. A report will be prepared on the nature and rate of pollutants in 5 wetlands in the Black Sea Basin.
3. A guide with examples of good practices consisting of training and campaigns focused on protecting wetlands will be prepared.
4. A wetland protection training set consisting of 12 sections will be prepared especially for students. Training sets will also be shared on the internet.
5. After 10 people from 2 each partner country received trainer’s training, they will train 25 people in each region (totally 125 people) and the sustainability of training activities will be ensured in the established centres.
6. A painting competition on environmental protection will be held in at least 15 primary and secondary schools and paintings selected by the jury will be exhibited.
7. Pictures taken in 5 regions with the participation of professional photographers will be exhibited. With the mobile ‘Stop Pollution’ vehicle, the exhibition will travel to 5 countries.
8. An environmental cleaning campaign will be held simultaneously with the participation of 1500 people in 5 regions.
9. With the international conference to be held in Georgia, the outputs of the project and future action plans will be shared with the public.

**For more information, you can visit the project website: [www.bio-learn.org](http://www.bio-learn.org)**



# Sustainability

We continue to consume the natural resources rapidly as if they are infinite. We live beyond the capacity of our planet and we exceed the limit of our planet.

## What is Sustainability?

In the last two centuries, our planet has faced rapid population growth and unprecedented resource depletion. While the world population was around 2 billion in the 1920s, it has passed 7 billion in 2011. Today, only 9 years later, more than 7.8 billion people are living across our planet. The United Nations estimates that the population will be more than 11 billion in 2100.

Of course, such rapid and large population growth means feeding and meeting the needs of more people. More food, more natural resource consumption or otherwise the fact of poverty... We have consumed resources equivalent to the resources consumed in the entire human history just in the last 60 years! But the truth is that we do not have more resources and a second world!

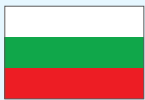
## Did you know?

If every individual on earth lived like an ordinary US citizen, we would need 5 Earths. Today, we live as if we have 1.7 Earths.



We continue to consume the natural resources rapidly as if they are infinite. We live beyond the capacity of our planet and we exceed the limit of our planet. To better reveal this situation, **World Overshoot Day** is calculated every year. It is calculated as the day in which the natural resources annually used up by humans exceed the capacity that the planet can regenerate in a year. Accordingly, the day that we exceeded the world's limit in 2020 was August 22. After August 22, we start borrowing from the next year. The overshoot day of a country gives us the day when we exceed the limit of the planet if all humanity consumes like the people in this country.

Sustainability basically means to effectively use the resources we have and to keep these resources available for future use.

Country		Overshoot Day
	Greece	May 22, 2021
	Bulgaria	June 10, 2021
	Turkey	June 16, 2021
	Ukraine	August 8, 2021
	Georgia	September 25, 2021

 Overshoot days for five countries for 2021



Increased environmental movements especially after the 1970s with the realization of the fact that the resources are not infinite led the sustainability concept to emerge. At the 1992 Earth Summit in Rio, the sustainability concept has become one of the main agendas of the international society. Sustainability basically means to effectively use the resources we have and to keep these resources available for future use. Everything we need for survival and well-being is directly or indirectly linked with our natural environment. Therefore, the fundamental principle of sustainability is to use the natural resources without damaging nature and exceeding the self-renewal capacity of Earth and to ensure that future generations can use the same resources healthily while we meet our needs. This is why humans need to act responsibly while using natural resources, watch over the effects of their behaviours on nature and sustainably use the resources to leave them for future generations.



 Fossil fuels such as coal, oil and natural gas have destructive effects on the planet.

## Sustainable Practices

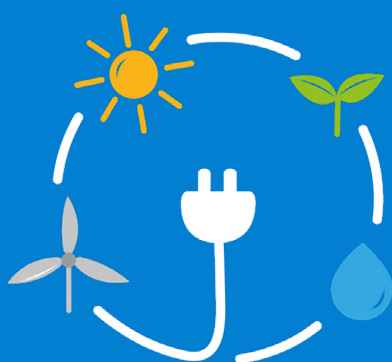
Sustainability is possible with large-scale and effective implementation. For these implementations, each actor from governments to companies and individuals has numerous tasks. The basis of sustainability is to take steps by considering the economic, social and environmental impacts of the decisions and actions.

The sustainability of energy is one of the main issues at the centre of sustainability discussions. Especially over the last 150 years, there is an incredible increase in fossil fuel consumption such as coal, oil and natural gas. These cause environ-

Sustainability  
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## Did you know?

Approximately 30% of the global electricity production is from renewable energy sources such as the sun, wind, geothermal and bioenergy. Coal and natural gas still form the majority of electricity generation with 60%.



mental problems and create discussion on the sustainability of energy resources. Because fundamentally, fossil fuels represent non-renewable natural resources and they are being depleted. The amount of usable fossil fuel is limited to the reserve we have. And it is a reality that it will be depleted one day. Moreover, the carbon emissions caused by fossil fuel consumption and the climate emergency that we face necessitate to immediately give up on these dirty energy sources. The solution is to prevent energy waste and to turn to resources that are defined as infinite and enable life on our planet for millions of years. These resources called renewable energy or alternative energy are represented with sun, wind and water power. Today, approximately 80% of global energy production is supplied from fossil fuels. Each individual's effort is required to ensure sustainability in energy by reconsidering our energy use (electricity, heat) and turning to renewable energy sources.



Water is among the resources that we need to use sustainably. Our water resources are very limited. Although 3/4 of our planet is covered with water, the usable freshwater is only 1%. Even today, millions of people around the world cannot access clean drinking water and many regions are struggling with long-term drought. Yet, limited water resources are used in an unsustainable way from the drip of a simple tap to wild agricultural irrigation. But it is possible to solve these problems with simple changes and to use water sustainably. For example, various methods such as changing the taps and toilets with systems that consume less water, taking short showers instead of bathing in the bathtub, using greywa-



The basis of sustainability is to take steps by considering the economic, social and environmental impacts of the decisions and actions.





ter in irrigation, cultivating plants that resist drought and do not require too much water as agricultural products, using drip irrigation rather than wild irrigation enables the sustainable use of our water.

In addition to the sustainability of energy and water, sustainability criteria must be emphasised in almost every human activity from a constructed building to a manufactured water bottle. For example, a lot of steel, concrete, wood or similar materials are used for the construction of a new bridge or road. Similarly, these waste materials are formed when old buildings are demolished. Recycling of these waste materials and constructing the new structures from these recycled materials enable these operations to be more sus-



tainable. Similarly, instead of single-use plastic products, using metal, wood or glass products with a longer life cycle and multiple-use enables sustainable use and minimises environmental damage. It is possible to make sustainable designs for new constructions by considering the choice of location, design, heating and cooling. Also, considering the sustainability of the goods from the materials of our clothes to the raw materials resources of the furniture we use plays an important role to leave the limited resources to future generations.



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## Circular Economy

When we consider the limited resources and increasing consumption, it is a necessity rather than a choice to create a sustainable life. The current functioning of the global economy is far from meeting the sustainable living goal. We need to move from a linear economy which is the system built on fossil fuel use and current consumption habits to a circular economy.

## Did you know?

Scientists estimate that by the end of 2020, the weight of human-made objects will be more than the total weight of all living beings on Earth. In other words, human-made objects such as plastic, brick and concrete on the planet will weigh heavier than all plants and animals on the planet for the first time.

For every person in the world, more than their body weight in stuff is being produced each week. In the current situation, the total weight of all human-made objects has reached approximately 1 teraton, which is 1 trillion tons.





The linear economy represents an economy where the raw materials used in the product production and all products are turned into waste after their life cycle is completed. This flow has been shaped by take-make-dispose habits that resulted in today's world. In this system, neither the producer nor the consumer cares about what will happen to the product when the product life cycle ends and they think that the necessary raw material which is the natural source for production is unlimited. On the contrary, the circular economy predicts multiple and sustainable uses of the products. This system can be applied in every field from foodstuffs to accommodation needs. It argues making glass from waste glass, repairing broken elec-

When we consider the limited resources and increasing consumption, it is a necessity rather than a choice to create a sustainable life.



tronic devices rather than buying a new one and repairing furniture instead of cutting more trees to make new ones. Thus, more raw material used for producing the new products and energy consumed for the production is prevented and also environmental damage is reduced.

The circular economy is a system which is possible with the active interaction of both producer and consumer. The consumer needs to deliver the old product to the producer when s/he buys a new one. For that, the producer must produce a new product by recycling the old one. The circular economy with successful local and regional practices will undoubtedly increase the effectiveness to create a sustainable life in the following years.

## Ecological Footprint

The ecological footprint is a method that measures the number of natural resources for individuals to sustain their lives and the impacts of consumption of these resources on nature. It makes possible the measurement of the impact of the consequences on the planet, such as the number of natural resources people use during production and the waste and carbon emissions. With ecological footprint measurement, realistic data for sustainable use and management can be obtained.



## Zero Waste

A life shaped with sustainability principles and a circular economic system aims for minimum waste and zero waste for every individual. In this sense, the zero waste approach encourages avoiding unnecessary consumption, consuming less, reusing or using for different purposes and recycling.

Especially in recent years, the zero waste approach is tried to be applied at a large scale from government institutions, the private sector, local administrations to individuals. The responsibilities of numerous stakeholders in this process might differ.

The zero waste approach encourages avoiding unnecessary consumption, consuming less, reusing or using for different purposes and recycling.

## Did you know?

Every year, 2 billion tons of waste on average is generated around the world. This corresponds to 0.7 kg of waste per person per day. But not all individuals generate the same amount of waste. For example, high-income countries corresponding to 16% of the world population are responsible for 34% of total waste.

At the government and local administration level, these responsibilities include working to generate less waste collectively and increasing the recycling rate by separating waste. To do that, methods such as taxation of wastes, pricing of the use of plastic bag use, placing suitable storage containers for different wastes in public areas can be followed. In addition to these, awareness and training practices play an important role to expand the zero waste approach. Related public institutions, local administrations and NGOs take a role in the planning and implementation of these efforts.



In the private sector, a zero waste approach can be an opportunity to minimise costs. If the amount of waste during manufacturing is low, this is defined as an operation of an efficient production system. Because each waste means money lost in business. Choosing recycled materials as raw materials, production systems aimed at minimizing waste during production stages and more effective product designs are some of the important steps in this sense.

Lastly, individual efforts are necessary. Zero waste both aims to reduce individual wastes and to minimise the costs in eco-

Zero waste both aims to reduce individual wastes and to minimise the costs in economic terms.





nomic terms. It is a beneficial approach from all perspectives. Of course, decision-making and planning are necessary to reach this goal. Changing consumption habits in daily life, not buying the products we do not need, avoiding unnecessary expenses, consuming less, choosing reusable products, reusing the resources we have or using them for different purposes are the main principles to help you to reach your zero waste goal.





# Worksheets

## ZERO WASTE STEPS

*Number the mixed zero waste steps based on their importance and put them in the correct order.*

<b>REDUCE</b>	<p>Before buying a product, you can ask yourself whether you really need it. In this way, you will buy less and generate less waste.</p> <ul style="list-style-type: none"> <li>• Change your buying habits. Ask yourself whether the product you want to buy is a need or a want.</li> <li>• Use your notebooks and pens/pencils until they are finished.</li> <li>• Instead of packed food, carry your food in steel or glass containers.</li> </ul>
<b>REFUSE</b>	<p>This is the most important step in zero waste. You can refuse to buy products that will cause waste.</p> <ul style="list-style-type: none"> <li>• Say no to the single-use bags, plastic bottles, straws, cups, promotion products and flyers even if they are free.</li> <li>• Take your cloth bag to the market. Refuse plastic bags.</li> </ul>
<b>RECYCLE</b>	<p>This step must be your final resort. If you have waste, you can correctly separate your waste and help them to be recycled.</p> <ul style="list-style-type: none"> <li>• Throw waste such as paper, plastic, metal, glass, batteries into recycling bins.</li> <li>• Throw electronic waste into e-waste bins instead of garbage bins.</li> </ul>
<b>REUSE</b>	<p>Instead of buying a new product, you can reuse the product you have or repair it if it is broken.</p> <ul style="list-style-type: none"> <li>• Choose reusable items instead of disposable items. Carry your water with you in a glass or steel bottle.</li> <li>• Reuse the jars. You can use them in a variety of ways such as food storage, pen holder, vase.</li> <li>• Do not throw away the products you do not use. Give them to someone who needs them and help to reuse the products.</li> </ul>

**Answer Key:** 1. Refuse, 2. Reduce, 3. Reuse, 4. Recycle

# ECOLOGICAL FOOTPRINT TEST

## FOOD

- Which best defines your diet?
  - I eat meat in every meal (20)
  - I eat meat in some meals (10)
  - I rarely eat meat (5)
  - I don't eat meat (0)
- How often do you eat outside (restaurant/cafe/online food order)?
  - Every day (20)
  - Few times a week (10)
  - Once a month (5)
  - None (0)
- How much of your food do you waste?
  - More than half (20)
  - A quarter (10)
  - One tenth (5)
  - None (0)
- How much of the food that you eat is locally grown?
  - I don't know and I don't care (20)
  - Some (10)
  - Most (5)
  - All (0)
- How much of the food that you eat is packed?
  - All (20)
  - Half (10)
  - A quarter (5)
  - None (0)

**Total Points:**

## HOUSE

- What kind of house do you live in?
  - 2-3 storey detached house (20)
  - 1 storey detached house (10)
  - Apartment / Flat (5)
- How many rooms per person do you have?
  - 4 or more (30)
  - 3 (20)
  - 2 (10)
  - 1 (5)

**Total Points:**

## WATER

- How long do you take shower per day?
  - More than 15 minutes (30)
  - 11-15 minutes (20)
  - 6-10 minutes (10)
  - 1-5 minutes (5)
- Do you turn off the tap while brushing your teeth?
  - No (10)
  - Yes (0)
- How do you wash the dishes?
  - By hand, under running water (10)
  - In the dishwasher (5)
- How often do you use the dishwasher per week?
  - More than 7 times (20)
  - 4-7 times (10)
  - 1-4 times (5)
  - None (0)
- How often do you use the washing machine per week?
  - More than 4 times (20)
  - 3-4 times (10)
  - 1-2 times (5)
  - None (0)

**Total Points:**

## TRANSPORTATION

- How do you travel most?
  - By car (20)
  - By motorcycle (10)
  - With public transport (5)
  - None - I walk or ride a bicycle (0)
- How many hours do you spend in your car or motorcycle?
  - More than 1 hour (20)
  - Half - 1 hour (10)
  - Less than half an hour (5)
  - Never (0)
- How many hours do you spend on public transport?
  - More than 1 hour (20)
  - Half - 1 hour (10)
  - Less than half an hour (5)
  - Never (0)
- How many times do you fly each year?
  - 4 or more times (20)
  - 2-3 times (10)
  - 1-2 times (5)
  - None (0)

**Total Points:**



STUFF
1. How many electronic devices do you have in your house? a. 10 or more (20)   b. 5-10 (10)   c. 1-5 (5)   d. 0 (0)
2. How many clothes do you buy in a year? a. More than 8 pieces (30)   b. 5-7 pieces (20)   c. 2-4 pieces (10)   d. 1 piece (5)
3. How much trash do you generate in a day? a. More than 1L jar (20)   b. 1L jar (10)   c. 0.5L jar (5)   d. None (0)
4. Do you throw products such as glass, metal and paper into recycling bins? a. No (20)   b. Yes (5)
<b>Total Points:</b>
ENERGY
1. Do you use energy-saving light bulbs at home? a. No (10)   b. Yes (5)
2. Where do you dry your clothes? a. In dryer (10)   b. On a hanger outside or at home (0)
3. Do you use energy-efficient products at home (A+ refrigerator, washing machine, etc.)? a. No (10)   b. Yes (5)
4. Do you turn off lights and electronic devices when not in use? a. No (10)   b. Yes (0)
5. Which temperature range do you keep in your house in winter? a. Above 21°C (hot) (20)   b. 18-21°C (warm) (10) c. 14-17°C (cool) (5)      d. Below 14°C (cold) (0)
<b>Total Points:</b>
<b>Grand Total Points:</b>

Sum the scores from all categories. Learn your ecological footprint according to the result.

### Less than 70 points 🌍

Great! Your ecological footprint is low. If everyone in the world lived like you, the Earth would continue to exist sustainably. Share your environmentally friendly choices in your daily life and inspire people.

### 70-120 Points 🌍 🌍

You are trying to be careful about your lifestyle. But your lifestyle still has an impact on the planet. If everyone in the world lived like you, we would need one more Earth. You can search for what you can do to lessen your impacts on nature.

### 121-200 Points 🌍 🌍 🌍

Watch out! You have a lifestyle that causes consumption of most of the planet's resources. If everyone in the world lived like you, we would need three Earths. Let's take a step before it is too late for our planet and start reducing your ecological footprint.

### More than 200 points 🌍 🌍 🌍 🌍

Oops! Your ecological footprint is huge! If everyone in the world lived like you, we would need four Earths. Start taking steps for the planet before it is too late!



# Notes



# References

BBC News Türkçe. (2020, December 10). Antroposen Çağı: İnsan yapımı nesnelerin ağırlığı dünyadaki tüm canlıların ağırlığını aştı.

<https://www.bbc.com/turkce/haberler-dunya-55252792>

C2ES. (2020, April 27). Renewable Energy. Center for Climate and Energy Solutions.

<https://www.c2es.org/content/renewable-energy/>

Country Overshoot Days 2020. (2020, December 11). Earth Overshoot Day.

<https://www.overshootday.org/newsroom/country-overshoot-days/>

Ekolojik Ayak İzi. (2019). In Lise TEMA Eğitim Programı Öğretmen Rehberi (pp. 59–64). TEMA Vakfı.

Fisher, M. R. (n.d.). 1.3 Environment & Sustainability – Environmental Biology. Pressbooks.

<https://openoregon.pressbooks.pub/envirobiology/chapter/1-3-environment-sustainability/>

How many planets does it take to sustain your lifestyle? (n.d.). Footprint Calculator.

<https://www.footprintcalculator.org/>

Liu, S. (2017). Chapter 14 - Sustainability: Humanity Perspective. In Bioprocess Engineering (2nd ed., pp. 829–870).

<https://doi.org/10.1016/B978-0-444-63783-3.00014-9>

Material Economics. (2018). The Circular Economy: A Powerful Force for Climate Mitigation.

<https://europeanclimate.org/wp-content/uploads/2019/12/25-09-19-the-circular-economy-a-powerful-force-for-climate-mitigation-full-report.pdf>

Meadowcroft, J. (n.d.). Sustainability | Description, Theories, & Practices. Encyclopedia Britannica.

<https://www.britannica.com/science/sustainability>

Renewables – Global Energy Review 2020 – Analysis. (n.d.). IEA.

<https://www.iea.org/reports/global-energy-review-2020/renewables>

T.C. Çevre ve Şehircilik Bakanlığı. (n.d.). Sıfır Atık. Sıfır Atık.

<https://sifiratik.gov.tr/#>

Trends in Solid Waste Management. (n.d.). World Bank.

[https://datatopics.worldbank.org/what-a-waste/trends\\_in\\_solid\\_waste\\_management.html#:~:text=The%20world%20generates%202.01%20billion,from%200.11%20to%204.54%20kilograms.](https://datatopics.worldbank.org/what-a-waste/trends_in_solid_waste_management.html#:~:text=The%20world%20generates%202.01%20billion,from%200.11%20to%204.54%20kilograms.)

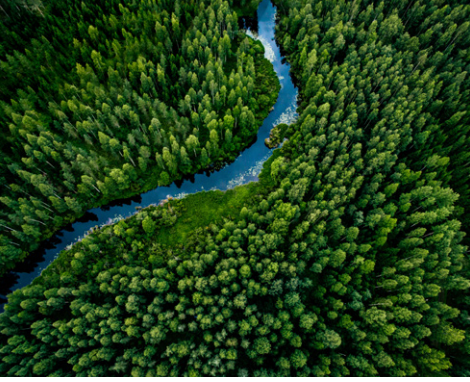
WWF Footprint Calculator. (n.d.). WWF Footprint Calculator.

<https://footprint.wwf.org.uk/#/>

Zero Waste. (2020, November 25). Zero Waste Europe.

<https://zerowasteurope.eu/>





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