



Image source: <https://www.rncm.ac.uk/rncm-innovate/the-future-is-green/>

**Sustainable Future:
Equipping Youth with
Green Skills for the
Circular Economy.**



Co-funded by the
Erasmus+ Programme
of the European Union

200
RESEARCHERS

100
PROJECTS

120
COUNTRIES

150
CONFERENCES

1,000
PUBLICATIONS

500M
MILLION FUNDING

Innovative Systems
Transformations
for Sustainable Interaction
Nature-Economy-Society

Research and Innovation Centers



ReSEES Research Laboratory -
Athens University of
Economics and Business



Stochastic Modeling and
Applications Laboratory -
Athens University of
Economics and Business



Sustainable Development Unit
- Athena Research Center



Department of Technology,
Management, and Economics -
Technical University of
Denmark

Innovation Acceleration Hubs



UN Climate Change
Global Innovation Hub



EIT Climate-KIC



Brigaid Connect



MENA Maritime
Accelerator



Black Sea Accelerator

Science - Policy Networks



Sustainable
Development
Solutions
Network (SDSN)



SDSN Global
Climate Hub



SDSN Europe



SDSN Greece



Water Europe



Nexus cluster



Earth-Humanity
Coalition (EHC)

Scientific Associations and Academies



World Council
of
Environmental
and Resource
Economists
Associations
(WCEREA)



European
Association
of Environmental
and Resource
Economists
(EAERE)



World Academy
of Art and
Science (WAAS)



Academia
Europaea



European
Academy of
Sciences and
Arts



InterAcademy
Partnership
(IAP)



Academy of
Engineering and
Technology of
the Developing
World
(AETDEW)

Thematic Priorities: Interdisciplinary & Intradisiplinary



Let's begin..

1. Climate Change and Sustainability

- ▶ How human activities have negatively contributed to climate change
- ▶ CO2 and the Carbon Footprint
- ▶ The Greenhouse Effect
- ▶ Challenges and opportunities that arise

2. Solutions

- ▶ European Green Deal
- ▶ Sustainable Development Goals (SDG)
- ▶ Green Energy
- ▶ Circular Economy and Sustainability
- ▶ Technology / Digital Skills
- ▶ Development of Green Skills



Section 1: Climate Change and Sustainability

What is climate change

It refers to long-term changes in temperature and weather phenomena, mainly due to human activities.

- Greenhouse gas emissions from the combustion of fossil fuels.
- Deforestation that reduces CO₂ absorption.
- Industrial processes that contribute to emissions.

How human activities have negatively contributed to climate change

The main greenhouse gases are carbon dioxide (CO₂) and methane (CH₄).

Burning fossil fuels (coal, oil and natural gas) produces greenhouse gas emissions.

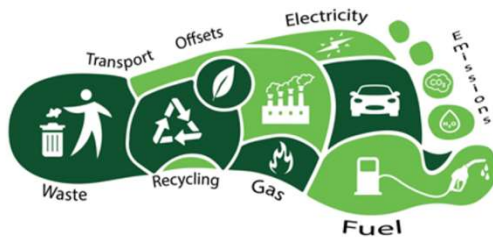
Industry, transportation, heating and building construction, agriculture and land use are all contributors to greenhouse gas emissions.



CO2 και το Ανθρακικό Αποτύπωμα

What is CO2?

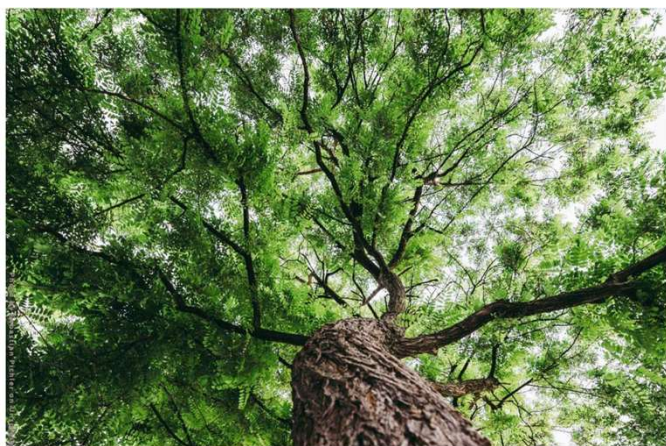
Carbon dioxide is a naturally occurring gas, but anthropogenic activities (such as burning fossil fuels and deforestation and forest fires) dramatically increase its amount in the atmosphere.



The carbon footprint represents the total amount of carbon dioxide (CO2) produced through daily activities such as those related to lifestyle. In other words, it is the negative contribution of each of us to climate change.

https://climateacademy.gr/carbon_footprint/

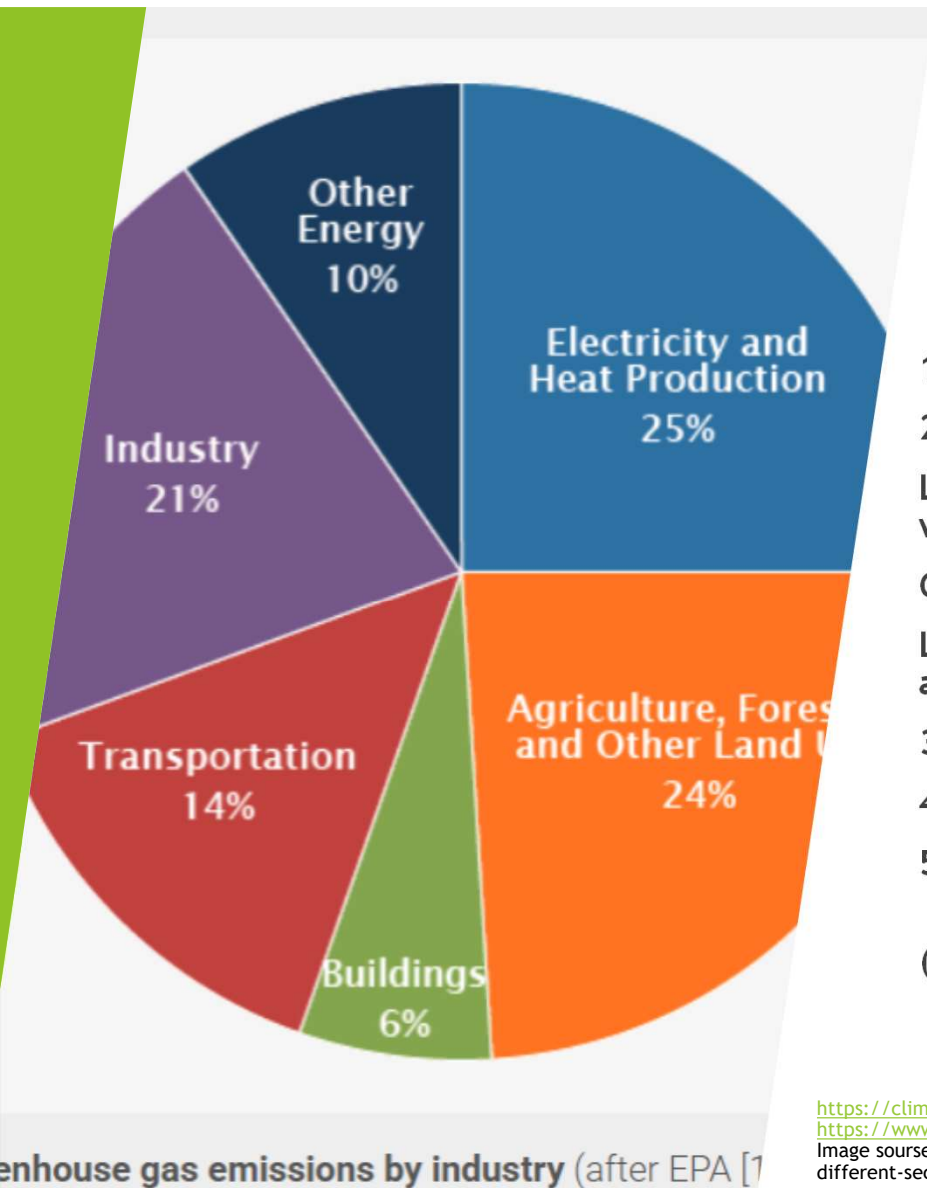
Image source: https://mahb.stanford.edu/wp-content/uploads/2018/07/MAHBBlog_EmissionsCarbonFootprint_GKuo_Jul2018.pdf



Οι βασικοί φυσικοί συλλέκτες άνθρακα είναι το χώμα, τα δάση και οι ωκεανοί. Photo: Sebastian Pichler/ Unsplash

We have increased gas emissions and at the same time...

We are destroying the carbon “storages” that are the soil, the forests and the oceans



5 largest sources of CO₂ and CH₄ emissions worldwide

1. Electricity and Heating: 1/4 of the problem

2. Agriculture and Food:

Livestock (methane emissions from digestion and animal waste)

Crop production (fertilizer use and soil management)

Land use changes (deforestation and land conversion for agriculture)

3. Industry Burning fuels

4. Car/airplane transport - tourism

5. Other Energy

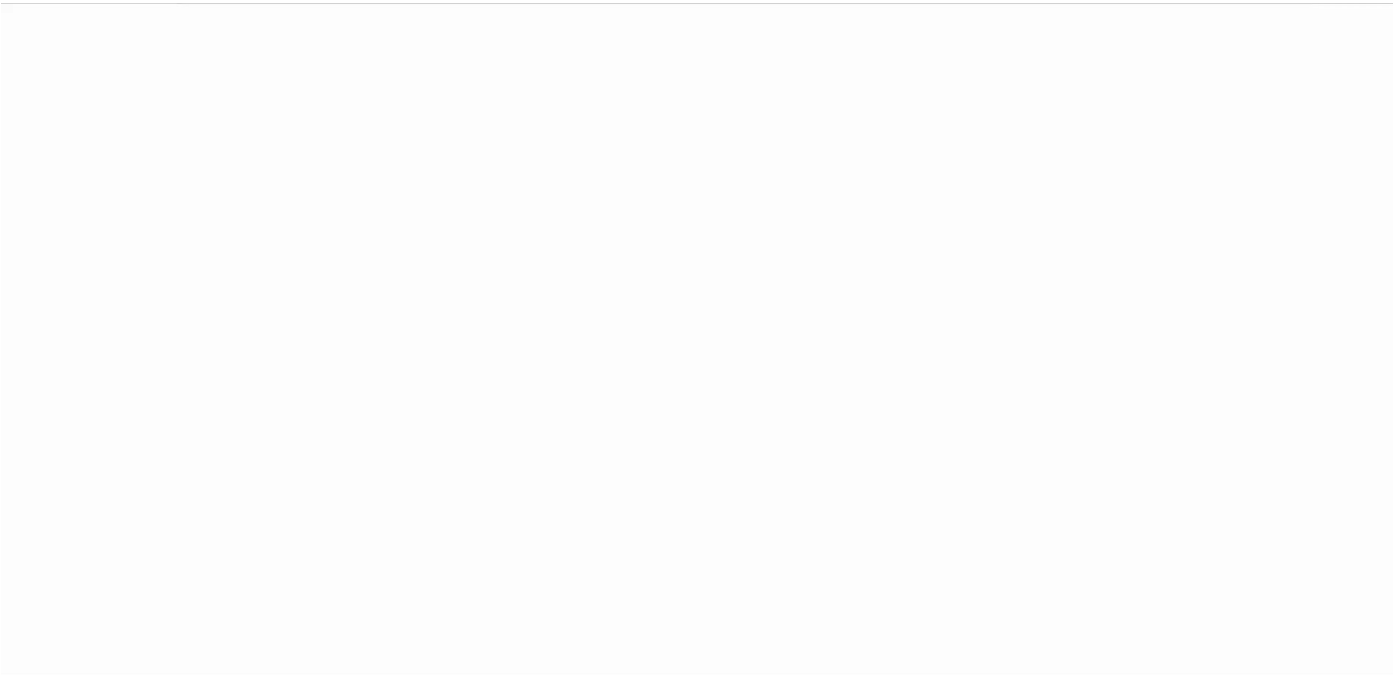
Emissions from the use of fossil fuels in various sectors (waste management)

<https://climatefactsnow.org/en/main-sources-of-emissions/>

<https://www.un.org/en/climatechange/net-zero-coalition>

Image source: https://www.researchgate.net/figure/Global-distribution-of-anthropogenic-emissions-from-different-sectors-in-relation-to-air_fig1_337252670

Carbon footprint



... So these gases collect and create the greenhouse effect

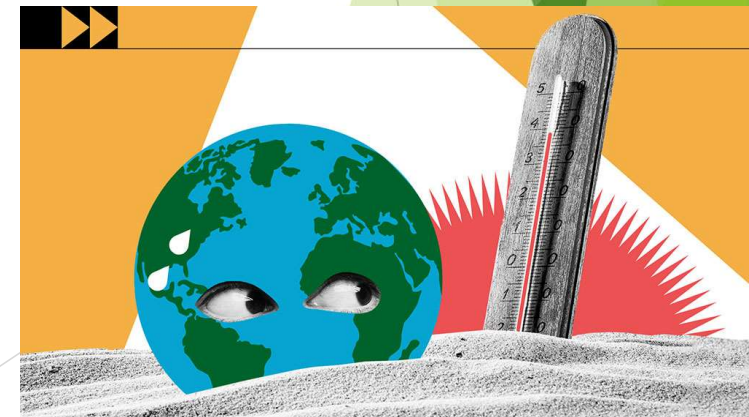


The Greenhouse Effect and the increase in the earth's temperature

- ▶ The Earth's atmosphere acts like a blanket that conserves heat.
- ▶ The greenhouse effect is essential for human life. It consists of gases such as carbon dioxide (CO₂), methane (CH₄) which absorb and return heat, preventing it from escaping completely into space
- ▶ Human activities increase the amount of greenhouse gases in the atmosphere, enhancing the phenomenon and leading to climate change.

Image source: <https://www.un.org/en/climatechange/what-is-climate-change>

<https://www.europarl.europa.eu/topics/el/article/20230316ST077629/klimatiki-allagi-ta-aeria-thermokiou-pou-prokaloun-planitiki-uperthermansi>



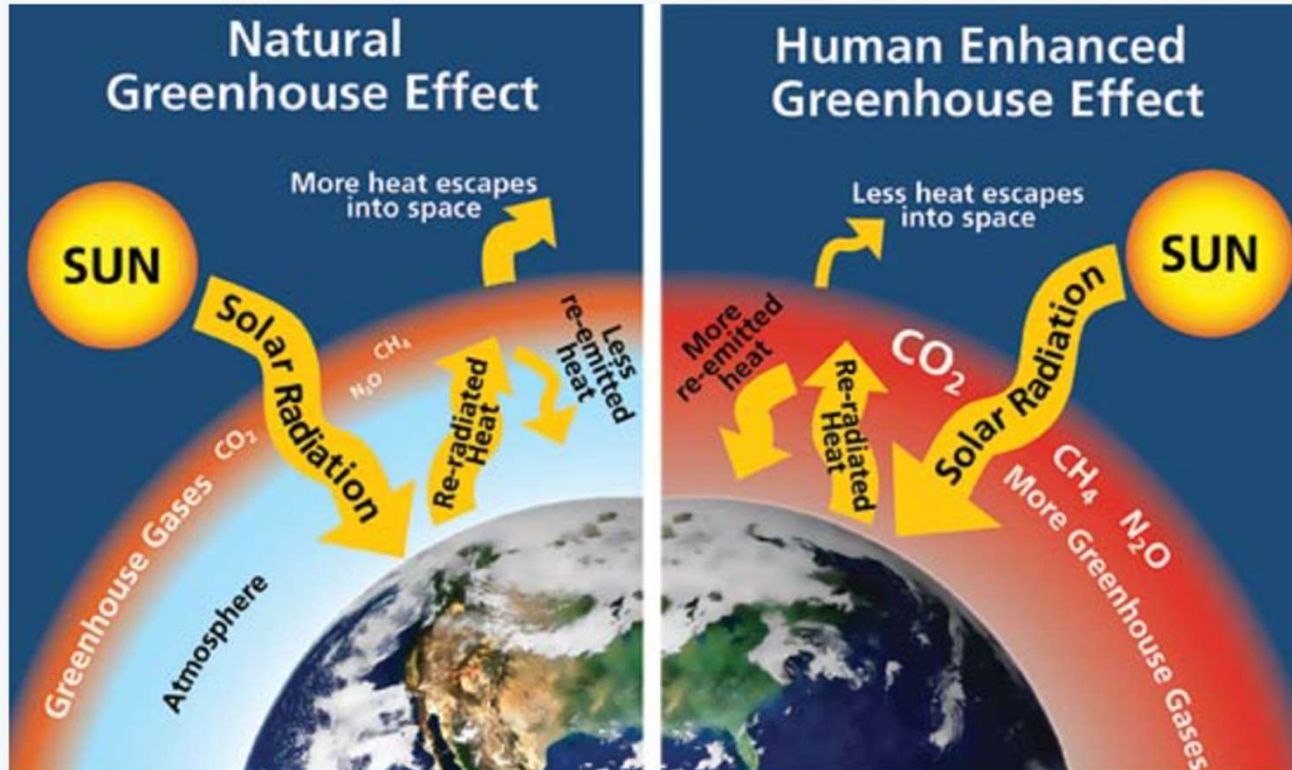
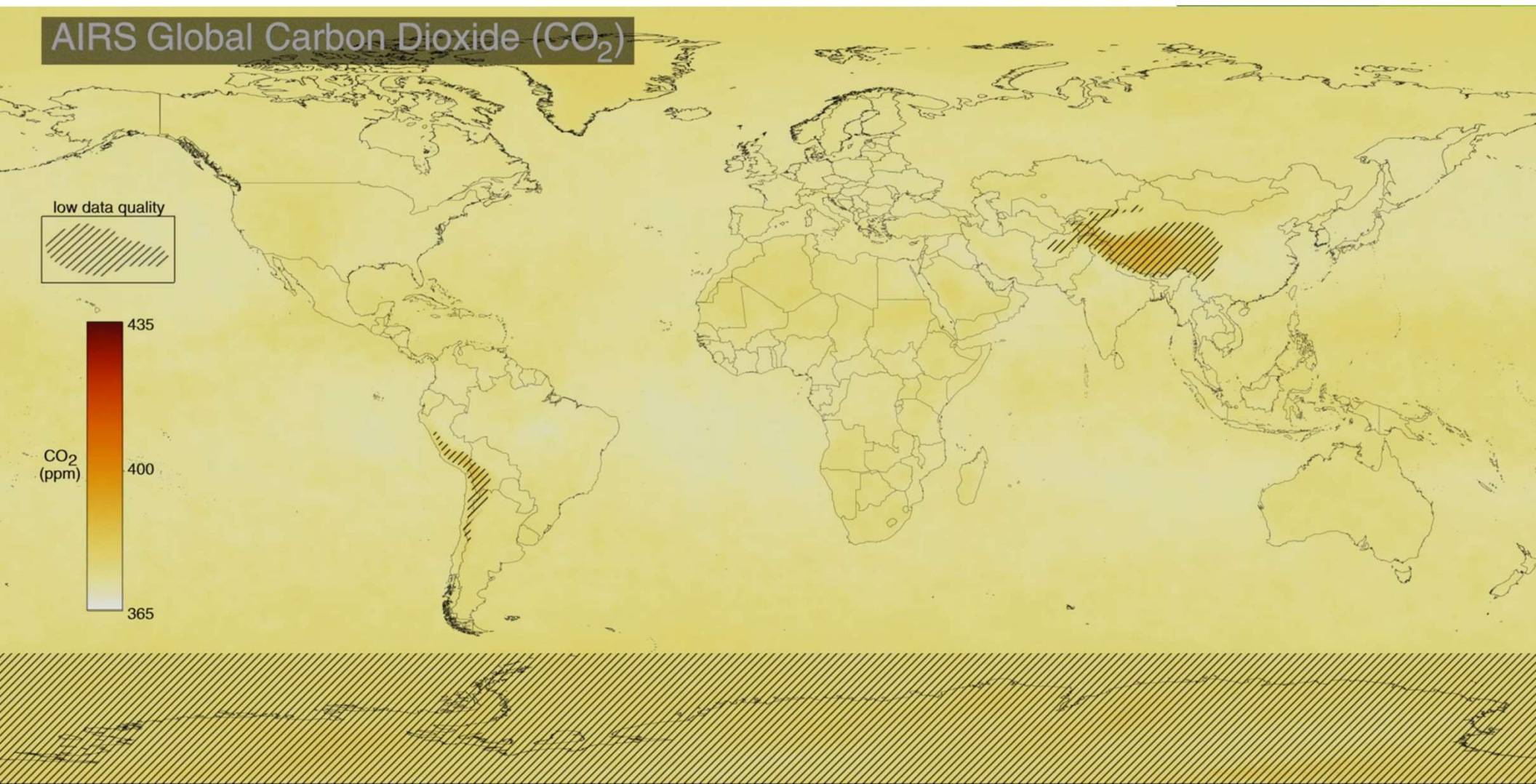
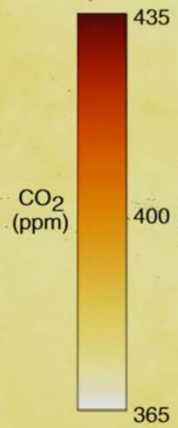


Image source: <https://life-bluenatura.eu/en/blue-carbon>

SOURCE

AIRS Global Carbon Dioxide (CO₂)

low data quality



374 ppm

Sep 2002



A horizontal bar chart showing the increase in CO₂ concentration over time. The bar starts at 374 ppm in September 2002 and extends to the right, indicating a steady rise in concentration.

600,000 Hiroshima atomic bombs exploding on Earth every day....

- ▶ "We're putting 162 million tons of global warming-causing anthropogenic pollution into that part of the sky that's blue, which is only five to seven kilometers thick. It is a very thin shell. And 162 million tons are added every day. This pollution stays there on average, with each molecule lasting about 100 years. Thus, it accumulates and traps as much extra heat each day as it would be released by 600,000 Hiroshima-type atomic bombs that explode on Earth every day" (Gore, 2023)

Challenges and opportunities for EU society

- **Challenges**

- 400 000 premature deaths per year due to pollution
- 90 000 deaths per year due to heatwave
 - 40% less water available in the southern regions of the EU
 - 2.2 million people at risk of coastal flooding every year
- €190 billion in annual financial losses

- **Emerging Opportunities**

- new, green jobs
- increasing competitiveness
- economic development
- cleaner air and more efficient public transport systems in cities
- new technologies, such as electric or hybrid cars, energy-efficient homes, or buildings with smart heating and cooling systems
- security of supply of energy and other resources – reducing Europe's dependence on imports





Image source: <https://www.un.org/en/climatechange/what-is-climate-change>

Let's talk about solutions! Sustainability

1. European Green Deal
2. SDG Sustainable Development Goals
3. Green energy sources
4. Circular economy and sustainability
5. Technology/Digital skills
6. Developing green skills

Our goal is Sustainability

- ▶ Ways to grow and improve our lives today, while ensuring that future generations can meet their needs.
- ▶ Three main areas: strengthening the economy, inclusion and protecting the environment.
- ▶ To achieve this, we must eradicate poverty by promoting equitable economic growth, creating equal opportunities for all, improving living standards, and managing our natural resources wisely.

1. European Green Deal European Green Deal



Image source: <https://www.research.org.cy/prosklisi-gia-tin-prasini-symfonia-ekdiloseis-enimerosis-kai-diktyosis/>

Goals

Emission Reduction Targets:

- A 55% reduction in emissions by 2030 (compared to 1990 levels).

Climate Neutrality by 2050

- To reduce pollution and restore a healthy balance to nature and ecosystems.



Climate neutrality

Drastic reduction of greenhouse gas emissions for the EU to become the 1st climate-neutral area in the world.



Circular economy

New economic model where products are reused, repaired and recycled, reducing waste and conserving resources.



Clean industry

Push for cleaner, more sustainable and energy-efficient industries which thrive in the EU and global markets.



Healthier environment

Plan to restore nature and work towards zero pollution to ensure a healthy environment for future generations.



More sustainable farming

Greener farming practices to protect the environment while providing healthy and affordable food.



Climate justice and fairness

Plan to make the transition fair and inclusive to help people most affected by the transition and leave no one behind.

2. Sustainable Development Goals (SDGs)



Sustainable Development Goals (SDGs)

Adoption of the 2030 Agenda

For the first time, internationally "universal" goals were set that all countries, regardless of development, are called upon to implement.

Purpose of the 2030 Agenda

Economic growth that guarantees inclusive social well-being.

Protecting the environment and natural resources for the benefit of current and future generations.



Image source: https://www.un.org/sustainabledevelopment/wp-content/uploads/2023/09/E_SDG_Guidelines_Sep20238.pdf

Interconnection of the 17 Sustainable Development Goals (SDG's)

The 17 Sustainable Development Goals (SDG's) are designed to be interconnected, creating an indivisible system.

Key Points:

Target:

Each goal can amplify or undermine others. For example, promoting sustainable farming practices (SDG 2) can help reduce poverty (SDG 1) and improve health (SDG 3).

Conflicts and Challenges:

Some actions to achieve a goal can cause negative effects on others. For example, the industrialisation of agriculture can improve productivity (SDG 2) but have negative consequences for biodiversity (SDG 15).



Consequently....

European Union and SDGs

The SDGs are a central component of the EU Green Deal with the aim of a green and sustainable recovery.



3. From Fossil Energy to Green Energy



Why are they important



Image source:
<https://www.euractiv.com/section/eet/opinion/the-next-energy-crisis-will-be-local-how-do-we-prevent-it/>

- ▶ **The biggest problem of climate change comes from energy production because we use fossil fuel combustion.**
- ▶ **They're not sustainable, they're running out**
- ▶ **Increasing the use of renewable energy is therefore crucial for the EU to reduce greenhouse gas emissions**
- ▶ **Since the ...**
- ▶ **EU target: It aims to reduce greenhouse gas emissions by 55% by 2030 and achieve climate neutrality by 2050.**

<https://www.europarl.europa.eu/topics/el/article/20171124STO88813/ananeosimes-piges-energeias-i-europi-thetei-filodoxous-stochous>

Cleansing our energy system

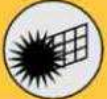


Reducing greenhouse gas emissions by at least 55% by 2030 requires higher shares of renewable energy sources and greater energy efficiency.

Image source: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/delivering-european-green-deal_el

Renewable Sources - Green Energy

Renewable energy sources, technologies and common applications

Solar energy  Source: Sun Technologies: Photovoltaics, solar thermal energy Applications: Electricity, Heating and Cooling	Wind energy  Source: Anemos Technologies: Wind turbines Applications: Electricity	Marine energy  Source: Waves, tides Technologies: Dams, tidal dams Applications: Electricity	Hydroelectric power  Source: Waters Technologies: Hydroelectric power stations Applications: Electricity	Geothermal energy  Source: Earth Technologies: Geothermal heat pumps and heat pumps Applications: Electricity, Heating and Cooling	Bioenergy  Source: Biomass, waste Technologies: Biomass combustion, biogas production units, biofuels Applications: Electricity, Heating and Cooling, Transportation
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Source: ECA.

Image source: <https://op.europa.eu/webpub/eca/special-reports/renewable-energy-5-2018/el/>

Examples of energy efficiency upgrades in Greece



Hotel with Zero Carbon Footprint

Zero Carbon Footprint Initiatives

The resort has been investing in energy efficiency upgrades since 2019 through the renovation of all its properties.

It is supplied with electricity exclusively from renewable sources

Solar Parks: Significant investments are being made in solar parks in the Sani region, which will power the facilities through a clean metering system.

Result

Carbon Neutral: In 2020, Sani Resort became the first Carbon Neutral Resort in Greece.

The logo for Sani Resort, featuring the word "SANI" in a large, serif font and "RESORT" in a smaller, sans-serif font below it, all contained within a white rectangular box. The background of the slide features a green geometric pattern on the right side and a white background on the left.

Solar panel installations



Image source: <https://sani-resort.com/gr>

Anavra Wind Park

The village managed to gain energy autonomy through a wind farm, to process its livestock waste with its own biological treatment, to build infrastructure: doctor's office, school, stadiums, cultural centre.



https://exploringgreece.tv/destinations/anavra-magnisias-to-chorio-poy-epelexe-na-zisei-allios/74941/#goog_rewarded

THE VILLAGE OF
ANAVRAS, GREECE:
SUSTAINABLE LOCAL
DEVELOPMENT FOR
JOBS AND PROSPERITY

ACTIVITIES:
sustainable local development to
create full employment and prosperity

IN WHICH SECTORS ARE JOBS CREATED?

In organic agriculture and livestock farming, in
local energy production from renewable
sources, in ecotourism

WHO IS PARTICIPATING?

The local community and local authorities,
farmers, local businesses, the local technical
school

SUCCESSIONS:

zero unemployment, larger population,
additional income for the village totaling
60,000 euros per year, new public infrastructure,
better quality of life

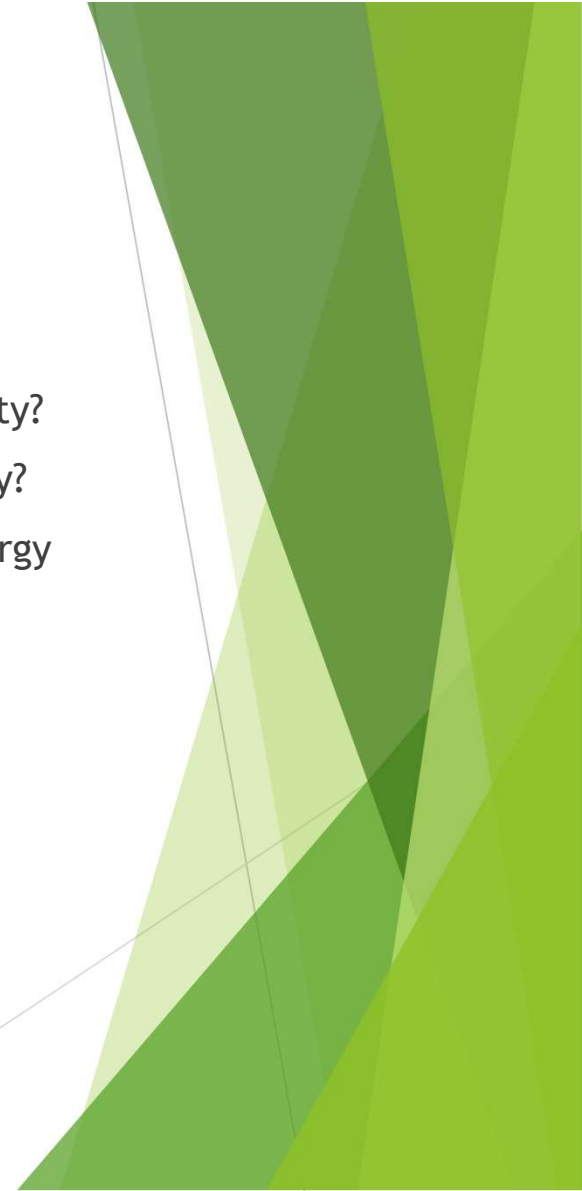
Website:
www.anavra-zo.gr/en

Copilot

Image source: https://www.greens-efa.eu/legacy/fileadmin/dam/Documents/Publications/GND/Green_jobs_EL.pdf

Let's ask ourselves...

- ▶ Can you share examples of practical renewable energy from your community?
- ▶ What challenges do you think we face in the transition to renewable energy?
- ▶ Would you be interested in gaining more skills in one of the renewable energy sources?



The circular economy model:
less raw materials, less waste, less emissions



Source: European Parliamentary Research Service



4. Circular Economy and Sustainability

Image source: <https://www.europarl.europa.eu/topics/el/article/20151201STO05603/kukliki-oikonomia-chrisimopoiise-to-xana>

Τι είναι κυκλική οικονομία

- ▶ Circular economy implies the reduction of waste to the minimum possible level.
- ▶ When a product reaches the end of its life, its manufacturing materials are kept within the economy to be used again and again, creating added value to the product



Why are we interested in the circular economy?

1. Environmental Protection:

- Reuse and recycle products to reduce the use of natural resources.
- Reduction of annual greenhouse gas emissions (9.10% from industrial processes, 3.32% from waste management).
- Producing more efficient and sustainable products to reduce energy and resource consumption.

2. Reducing Dependence on Raw Materials:

- Increasing demand for raw materials due to an increase in world population.

3. Boosting the Economy:

Job creation

Growth of up to 6% while saving resources - today, for example, 80% of products are turned into waste within the first 6 months of being placed on the market.

Circular economy

**Κάθε Ευρωπαίος πολίτης καταναλώνει
κατά μέσο όρο 14 τόνους πρώτων υλών ετησίως**

Need for evolution

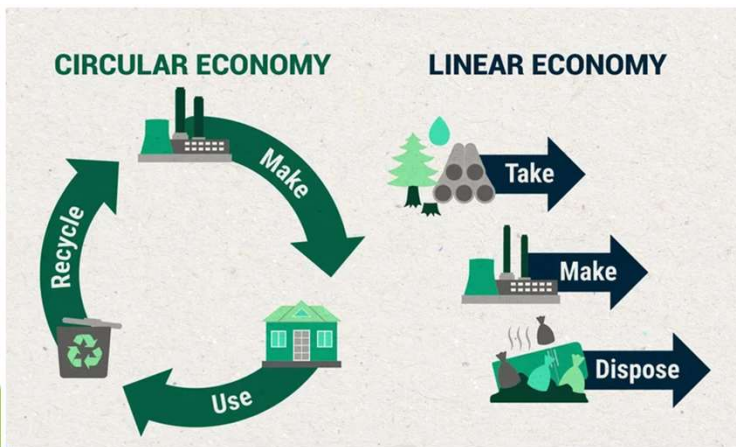
- *It is time to end the 'take, make, break and throw away' model that is so harmful to our planet, our health and our economy.*

"(Frans Timmermans 2022)



Image source: <https://www.philenews.com/eidiseis/article/513531/iparchi-ke-i-epidiorthosi/>

From linear to circular economy



Circular economy

The aim is to reduce waste and extend the life cycle of products.

Contrast with Linear Economy:

The traditional linear economy is based on "take-make-consume-throw".

The circular economy seeks to preserve materials in the economy.

LINEAR ECONOMY



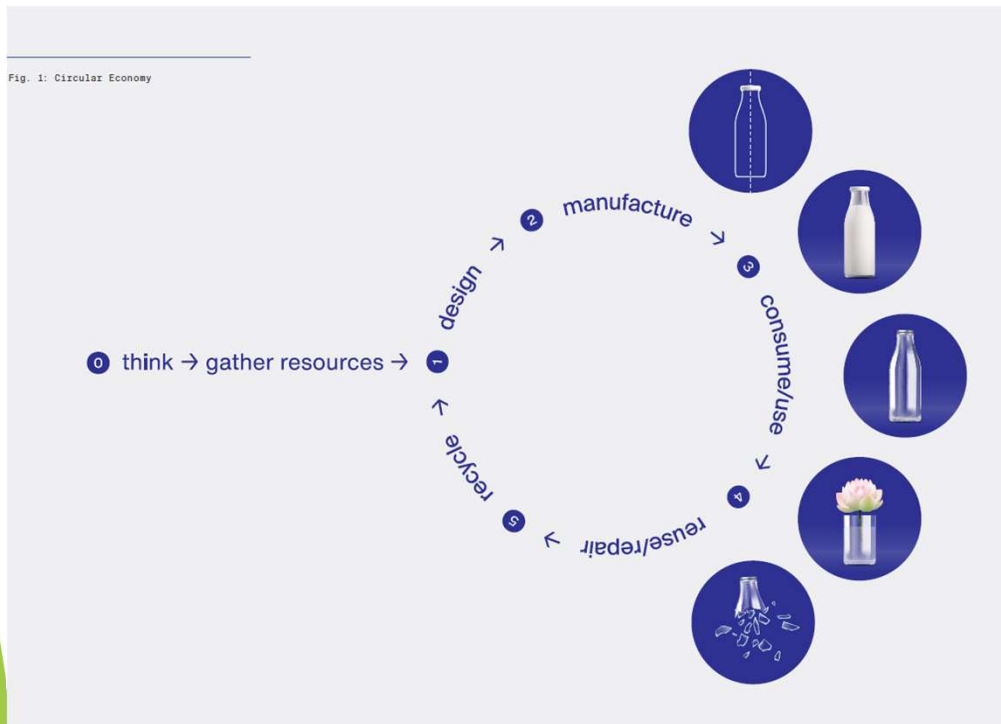
ENERGY FROM DESTINED SOURCES

CIRCULAR ECONOMY



ENERGY FROM RENEWABLE SOURCES

In conclusion



- ▶ The circular economy proposes a new approach to resource management, where raw materials are not discarded but kept in circulation for as long as possible. Instead of a linear system of production and consumption, it focuses on eliminating waste and preserving the value of products.
- ▶ This approach helps conserve primary resources, reduce waste, and create economic value, offering a sustainable solution to today's problems related to the overuse of materials and energy.

Examples of Circular Economy



Patagonia

**DON'T BUY
THIS JACKET**



Image source: <https://www.patagonia.com/our-responsibility-programs.html>
Image source: https://eu.patagonia.com/gr/en/stories/dont-buy-this-jacket-black-friday-and-the-new-york-times/story-18615.html?srltid=AfmBOoquokFAEwu17RYdC6Elj1kxqUyuVF5Fi41wV1rw2GbaEvS3b_SZ

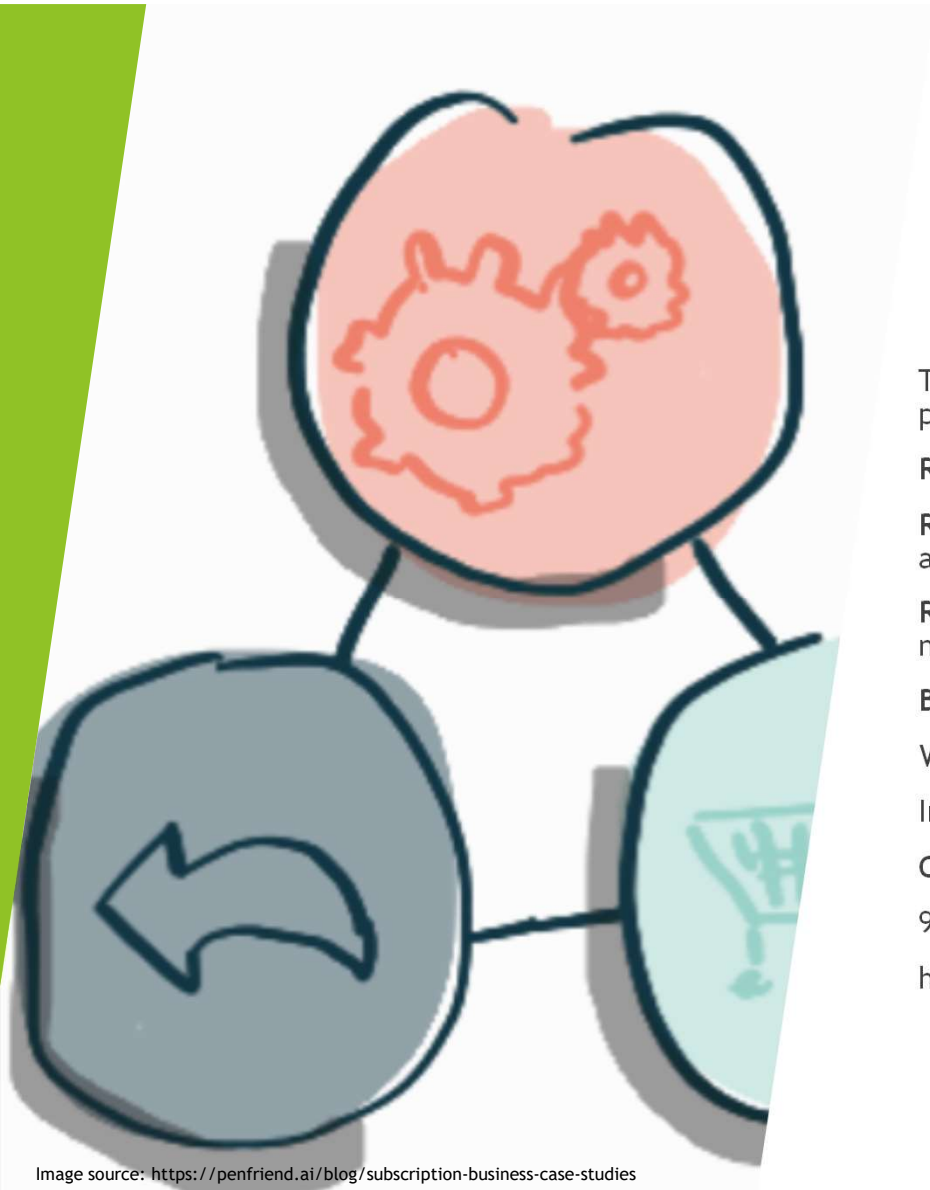


Image source: <https://penfriend.ai/blog/subscription-business-case-studies>

Worn Wear Patagonia- 0 emissions

This initiative encourages customers to repair, reuse, and recycle Patagonia products, extending their life and reducing waste.

Repair: free repairs for its products,

Resale: The company buys used items, refurbishes them and resells them at a lower price.

Recycling: When products are beyond repair, Patagonia recycles them into new fabric or products, closing the cycle of material use.

Benefits

Waste Reduction:

In 2024 -130,000 out of landfills.

Customer Loyalty:

95% of its customers reported increased brand loyalty due to the program

<https://penfriend.ai/blog/circular-economy-business-examples>

Patagonias campaign



Greek company: coffeeco

It uses espresso by-products to create ingredients for skin care products. It also recycles beer and wine waste into valuable products, and helps other businesses in the hospitality sector to adopt circularity (e.g. hotels)

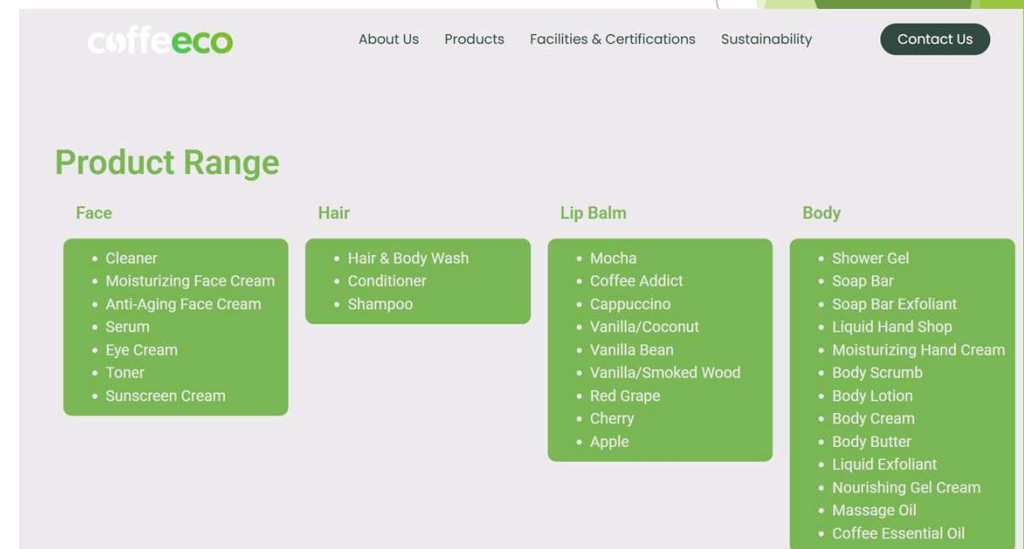
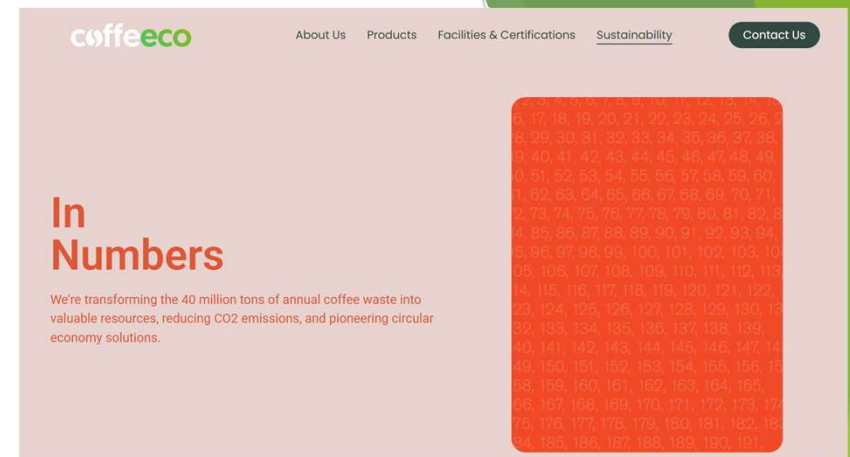


Image source: <https://coffe-eco.gr/sustainability/>



Transforming coffee waste into sustainable innovation – Coffeeco Upcycle, pioneering the circular economy since 2018.

Upcycling Potential

1.9 kg of unused raw material can produce **10 kg of upcycled coffee active ingredient** or **6.5 kg of bio-based plastic** or **1 kg of coffee exfoliant powder (scrub)**

Waste

Food waste and green represent **44% of total global waste**

Coffee Waste

40 million tons annually

Carbon Footprint

10 million tons of coffee waste equals **1.1 million tons of CO2** or **1.1 million carbon credits**. To offset this, **44 million trees** need to be planted

Sustainable Development Goals (SDGs)

Coffeeco's circular economy model contributes significantly to **SDG #9** (Industry, Innovation, and Infrastructure) and **SDG #12** (Responsible Consumption and Production)

[About Us](#)[Products](#)[Facilities & Certifications](#)[Sustainability](#)[Contact Us](#)

Bio-Based Plastics

Following the upcycled coffee extraction process, Coffeeco further process the leftover organic material into an organic fiber. The organic fiber is used as raw material to produce a sustainable plastic compound which in turn is used to produce final plastic applications with enhanced sustainability.

Our current applications are focused on non-food-based polypropylene applications. Today, 15% of the total compound is made of this coffee derived organic fiber. In other words, 15% less petrochemicals are used to produce such compounds. Our aim is to reach 40% within 2025.

Coffeeco is developing similar compounds with HDPE (High Density Polyethylene), LDPE (Low Density Polyethylene) and PET plastic compounds for both non-food and food-based applications.



Image source: <https://coffe-eco.gr/sustainability/>

Ελληνική εταιρία: KLIMIS

The image displays two overlapping web pages. The background page is the KLIMIS website, which features a dark blue header with the company logo and navigation links. The logo includes the text 'Πυρηνοκάρβουνο ΚΛΙΜΗΣ Ασβεστοποιία'. The navigation bar contains links for 'Αρχική', 'Προφίλ', 'Προϊόντα', 'Πιστοποιήσεις', 'Βραβεία', 'Νέα', 'Επικοινωνία', and 'GDPR'. A yellow dropdown menu is open under 'Προϊόντα', listing 'Πυρηνοκάρβουνο', 'Ασβεστοπολτός', 'Γεωργικός ασβέστης', and 'Οικοδομικά είδη'. The main content area shows a bag of 'ΚΑΡΒΟΥΝΟ ΚΛΙΜΗΣ' (3 kg) with the text 'Από τον πυρήνα της ελιάς' and 'BBQ BRIQUETTES MADE FROM GREEK KALAMATA OLIVE PIPS SINCE 1992'. The foreground page is a banner for the 'European Circular Economy Stakeholder Platform' with the hashtag #CEstakeholderEU. It features a yellow starburst graphic with the text 'Good Practice example of Circular Economy' and a background image of olive pits and burning briquettes.

EU Circular Economy TOP 30's EU CIRCULAR SOLUTION FOR NATURE CIRCULARY.EU EU CAP NETWORK

CIRCLE ECONOMY UPLINK-WEF

Πυρηνοκάρβουνο
ΚΛΙΜΗΣ
Ασβεστοποιία

Αρχική Προφίλ Προϊόντα Πιστοποιήσεις Βραβεία Νέα Επικοινωνία GDPR

- Πυρηνοκάρβουνο
- Ασβεστοπολτός
- Γεωργικός ασβέστης
- Οικοδομικά είδη

ΚΑΡΒΟΥΝΟ ΚΛΙΜΗΣ
3 kg
Από τον πυρήνα της ελιάς
ΑΝΑΘΥΝΕΥΟΜΕΝΟ-ΔΕΝ ΠΕΤΟΥΝ ΣΠΗΚΕΣ-ΑΚΑΤΗΓΑ & ΑΟΣΜΑ
ΧΩΡΙΣ ΧΗΜΙΚΑ-ΑΝΑΔΕΚΝΟΥΝ ΤΙΣ ΓΥΝΕΣ ΤΩΝ ΨΑΡΙΩΝ
Το προϊόν έχει παραχθεί με μεθόδους φιλικές προς το περιβάλλον
8388 kcal/kg Απορροφά τοξικά & οξέα (HUV)

**BBQ BRIQUETTES
MADE FROM
GREEK KALAMATA OLIVE PIPS
SINCE 1992**

**Good Practice
example of
Circular Economy**

European Circular Economy Stakeholder Platform
#CEstakeholderEU #circulareconomy

<https://klimiscoal.gr/index.php/en/news>

Greek company: KLIMIS





Green transition is the transition of an economy away from fossil fuels and the overconsumption of natural resources.

Green transition

- ▶ We are moving away from the use of fossil fuels, to a more sustainable and environmentally friendly model.
- ▶ Adoption of renewable energy sources
- ▶ Reducing CO2 emissions
- ▶ Promoting the circular economy, where resources are reused instead of ending up in waste.

So what can we do?

Write down 3 things you could change on a personal level, in your daily life

Can you name a way to reduce waste in your home?

How can we save water in our daily lives?

What are some easy ways to recycle?



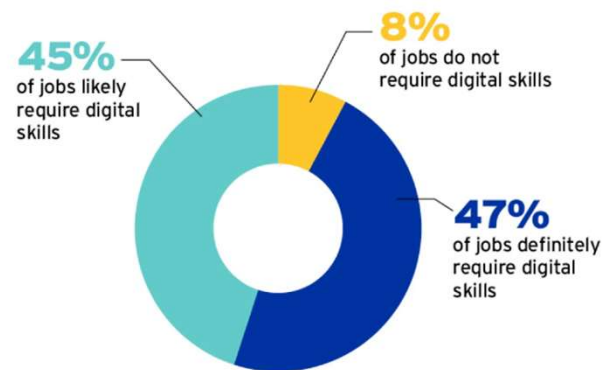


Image source:
<https://www.govtech.com/workforce/the-majority-of-jobs-now-require-digital-skills-study-finds>



90% of jobs currently require digital skills.

Image source: <https://europa.eu/europass/digitalskills/screen/home>



Source: NSC/Federal Reserve Bank of Atlanta analysis of 2021 job postings. Full report: *Closing the Digital Skill Divide*.



5. Digital Skills

Photo courtesy of National Skills Coalition.

Image source: <https://www.govtech.com/workforce/the-majority-of-jobs-now-require-digital-skills-study-finds>

Twin Skills for the Twin Transition:

It emphasizes the need to integrate climate skills and policies, focusing on green and digital skills, which are critical for climate neutrality and job recovery.

Huawei, AE4RIA, and UNFCCC Global Innovation Hub



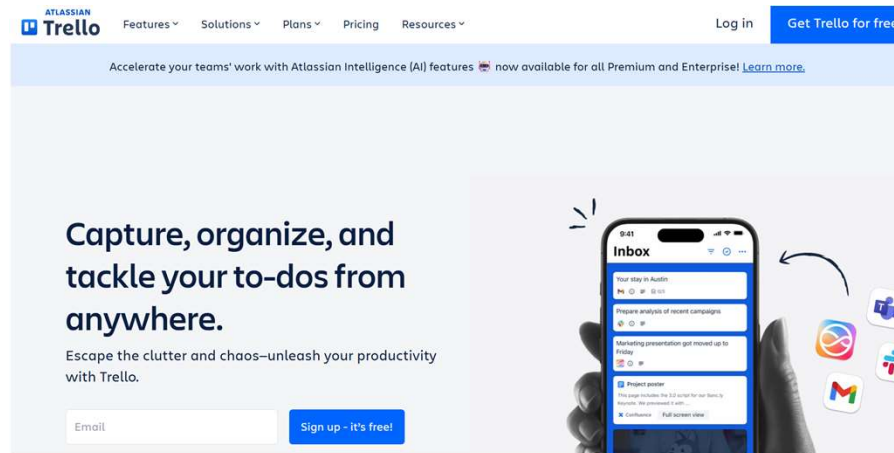


Image source: <https://trello.com>



Image source: <https://thriveagency.com/digital-marketing-services/google-analytics-services/>

How digital tools can support sustainable projects

- ▶ **European Green Deal: Emphasis on the use of technology for sustainable development.**
- ▶ **Examples:**
- ▶ **Data Analysis Tools: Google Analytics to track resource consumption**
- ▶ **Project Management Software: Trello or Asana for efficient planning and execution of sustainable projects.**

Harnessing AI for Environmental Responsibility and Efficiency

- ▶ Persefoni and IBM's Environmental Intelligence Suite are AI tools that monitor CO2 emissions in detail
- ▶ They help in knowledge and compliance with strict climate regulations
- ▶ They provide reliable information on carbon reduction.



Image source: <https://www.persefoni.com/>



Image source: <https://www.ibm.com/training/badge/data-science-professional-certificate>



PERSEFONI

Products ▾

PersefoniAI

Customers

Pricing

Resources ▾



Request demo

Sign up free

Corporate Email*

Revenue*

Phone Number

Country/Region*

Industry*

Why are you interested in Persefoni?*

Please Select

I'm interested in measuring and managing my carbon footprint.

I'm a financial institution interested in measuring and managing my financed emissions.

Other

Image source: <https://www.persefoni.com/>

Using Artificial Intelligence to Monitor and Analyze Land Use

Rainforest Connection and FlyPix AI

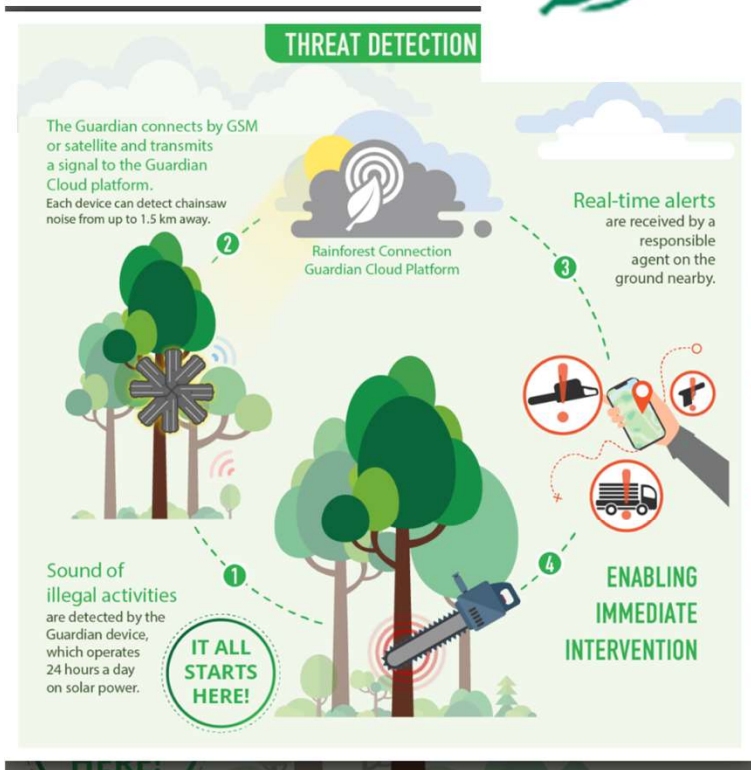
- facilitate remote monitoring and analysis of land use
- They promote biodiversity conservation and responsible resource management.
- Data collection offers visibility into their environmental impact



Image source: <https://rfcx.org/>



Image source: <https://flypix.ai/>



Our Guardian Platform enables the protection of forests and wildlife from illegal activities, like illegal logging and poaching. Part of this system is the Guardian device, a solar-powered acoustic streaming device that is placed high in tree-top canopies.



Image source: <https://rfcx.org/>

Cooperation and Transparency in the Energy sector

- ▶ AI encourages collaboration across sectors by standardizing and verifying data for global initiatives such as carbon offsets and energy resource management. Tools like Sylvera and Vortexa offer transparency in the energy sector, ensuring that businesses make informed decisions about a cleaner planet.

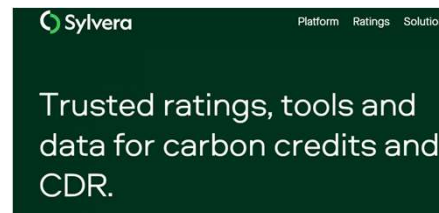


Image source: <https://www.sylvera.com/>



Image source: <https://www.vortexa.com/>



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[Get in touch](#) →

Confidence to drive your carbon strategy forward.

[Request a demo](#) →

**Set standards that matter –
Make confident project choices
with clear benchmarks**

**Access to 20K+ projects –
Gain visibility into thousands of
carbon projects**

**Transparent market insights –
Reliable insights into available
credits and pricing.**

Benefits of Environmental Monitoring Systems - Long- Term Planning

- ▶ Artificial Intelligence tools
- ▶ They analyze historical data and
- ▶ They provide for climate patterns.
- ▶ Result: Helps companies adapt to future challenges

Digital tools and marketing

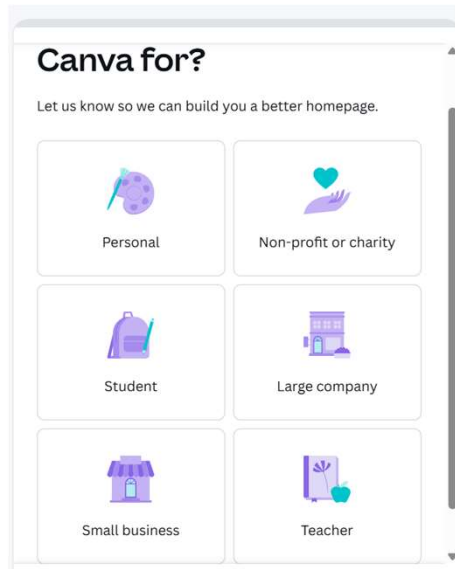


Image source: <https://www.canva.com/>



Image source: <https://www.wix.com/>



Image source: <https://wordpress.com/el/>

- **Website Builders:** Platforms like WordPress or Wix that enable the creation of eco-oriented websites.
- **Graphic Design Software:** Tools like Canva for designing promotional materials for eco-friendly campaigns.
- **Significance:** Digital trust enables individuals and organizations to share sustainable practices and initiatives effectively.

<https://www.wix.com/blog/ecommerce/2022/08/sustainable-ecommerce>

Or start from a designer-made template

Pick from 900+ free [website templates](#), fully customizable and tailored to any business type.

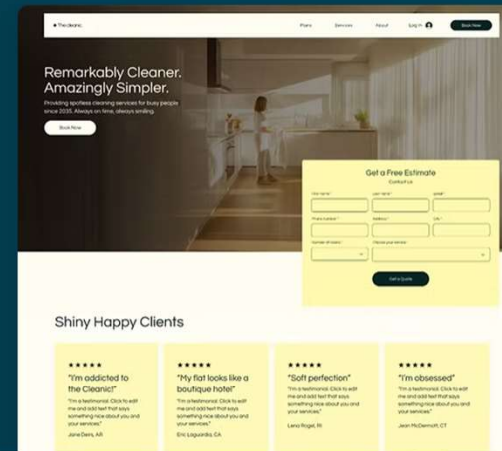
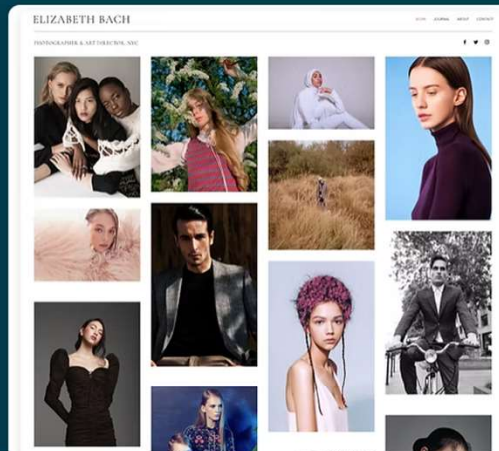
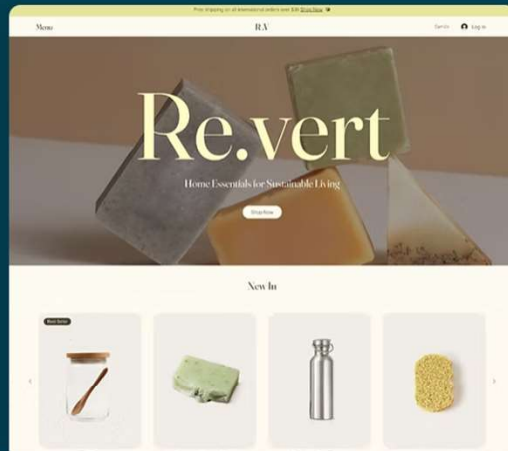
[Get Started](#)



Image source: <https://venngage.com/templates/infographics/social-media-infographic-bb4a7bd4-68b7-4846-b651-71d93882004c>

Social Media to Promote Business Ideas

- **LinkedIn:** Ideal for networking and sharing sustainability-related professional achievements.
- **Instagram:** Ideal for visual storytelling about eco-friendly products and initiatives.

So why use digital platforms?

- 1. Economic Dimension: Optimization and Efficiency**
- 2. Social Dimension: Empowering Human Resources**
- 3. Environmental Dimension: Saving Resources and Reducing Waste**

Substantial changes

Image/reliability and loyalty of the company/services

Measurable progress towards their sustainability goals



6. Green skills

WHAT ARE GREEN SKILLS?



Green transition is the transition of an economy away from fossil fuels and the overconsumption of natural resources.



Green skills are the skills that can help economies in their green transitions.



Green job is a job that requires at least one green skill.

Source: The World Bank

Image source: <https://www.lifegate.it/clima-scuola-istruzione>

General Green Skills and Specific Green Skills

- ▶ **Ecosystem and Biodiversity Protection:** Acquiring skills to protect ecosystems and conserve biodiversity through standards and processes.
- ▶ **Resource Management:** Focus on reducing energy, materials, and water consumption through effective management practices.
- ▶ **Sustainable Practices:** Understanding and implementing sustainable practices in sectors such as agriculture, industry, and urban planning.

Highly Specialized Green Skills

Green Technology Development:

- Renewable energy sources (solar, wind, geothermal).
- Wastewater treatment technologies that minimize environmental impact.
- Recycling processes that enhance resource recovery and reduce the use of landfills.



Image source: https://m.rastro.com/aviso_12104790-pulverizacion-de-cultivos-cultidrone.html



Image source: <https://www.wiesbaden.de/rathaus/karriereportal/ausbildung-studium/fk-kreislauf-und-abfallwirtschaft>

Occupations

Environmental Technologist for Recycling and Waste Management

Training in agricultural drones

Product Life Cycle Assessment

Geographic Information Systems (GIS) Specialist

Forest Protection Specialist

Curator-Guide of National Parks and Recreation Areas

Executives of Mild Forms of Agrotourism

Gas Fuel - Natural Gas Technician

Organic-Ecological Agriculture Technician

Industrial and Work Environment Control Technician

Pollution Control and Anti-Pollution Facilities Technician

Agricultural Economics Specialist

Farm Manager

Figure 2. Important occupations for the green transition (selected sectors, expert estimates)



Source: Cedefop perspectives on green skills in cities, waste management, agri-food and the circular economy.

Image source: https://www.cedefop.europa.eu/files/9189_el.pdf



SUSTAINABLE AGRICULTURE FOR THE FUTURE

Agriculture

Image source: <https://www.journalismonline.com/wendy-gady-of-hawaii-discusses-sustainable-agriculture-and-environmental-initiatives-in-hawaiian-farming/>

Contents

1. Key EU objectives.
2. Common Agricultural Policy (CAP): Farm to Fork
3. Rural circular economy
4. Green Skills in Agriculture
5. Composting
6. Examples of Sustainable Crops



Image source: <https://regenx.ag/blog/eu-green-deal-agriculture/>

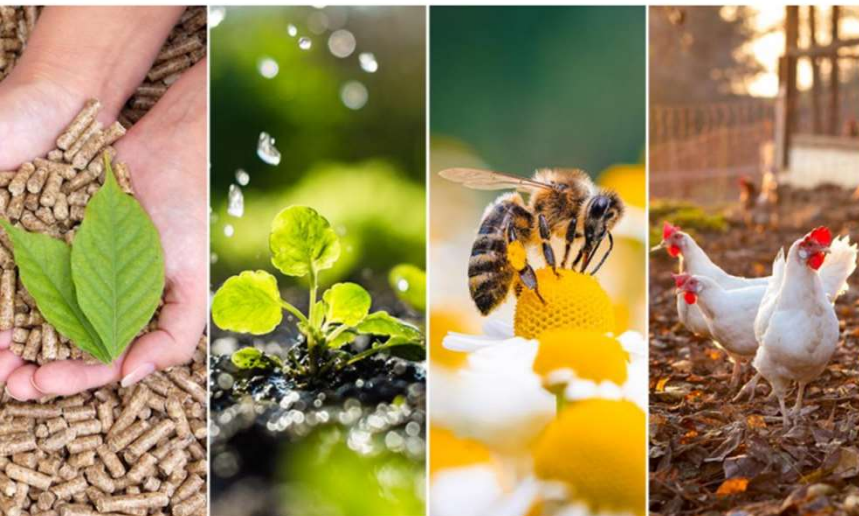


Image source: https://agriculture.ec.europa.eu/cap-my-country/sustainability/environmental-sustainability/sustainable-agricultural-practices-and-methods_el

Key objectives of the EU.

1. Reducing the greenhouse effect

Reducing Methane and Carbon Emissions

- Livestock farming, especially cattle, is a major source of methane, a potent greenhouse gas. Dietary changes to reduce livestock and crops.

Carbon farming

- This approach involves practices such as agroforestry, catch crops, and cover crops to increase carbon absorption in the soil.

<https://regenx.ag/blog/eu-green-deal-agriculture/>

Key objectives of the EU. 2. Biodiversity Enhancement

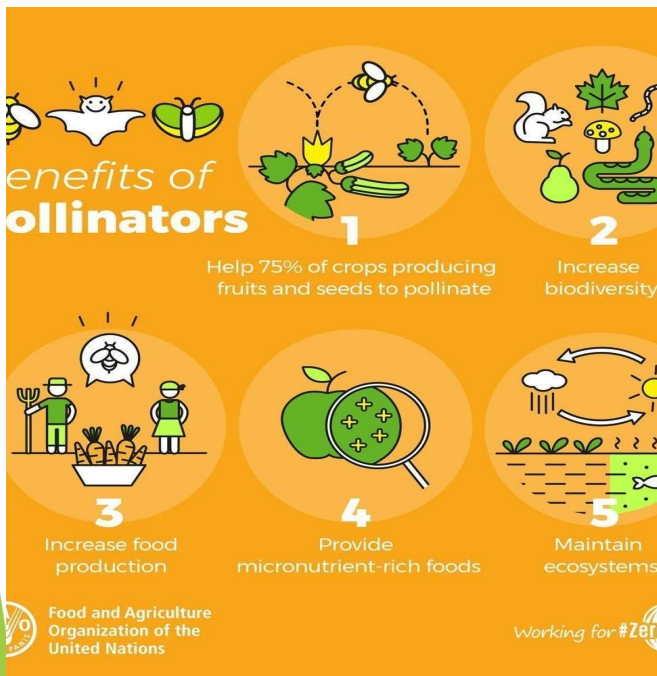


Image: Food and Agriculture Organization of the United Nations

- Crop rotation: Promoting organic production and crop diversification, for the benefit of the soil and the ecosystem.

Biodiversity includes fauna. Pollinators, such as bees, are critical for agricultural productivity.

The decline in their population is worrying. Measures to reduce the use of pesticides that threaten these specialties, with the aim of reducing by 50% by 2030.

Revival of Wetlands and Forests:

Wetlands and forests act as natural dams and help manage floods, also acting as carbon stores.

Key objectives of the EU.

3. Sustainable Land Use and Soil Health:

Conventional agriculture, with its heavy reliance on chemical fertilizers, has led to soil degradation.

1. Soil as a Coal Storage

Healthy soils are productive and act as important carbon stores.

The European Green Deal encourages practices that increase organic matter in soil to harness this carbon capture capacity and reduce the effects of climate change.

2. Water Conservation:

Water is a vital resource for agriculture, but it is threatened by climate change and overuse.

The European Green Deal promotes efficient irrigation methods, rainwater harvesting, and sustainable water management practices to ensure that European farms remain productive under changing climate conditions.

<https://regenx.ag/blog/eu-green-deal-agriculture/>

The largest interactive bee garden in Greece, the Bee Spot



Σχεδίαση: The Bee Camp

Image source: <https://sani-resort.com/gr>

Common Agricultural Policy (CAP)

- ▶ It plays a key role in managing the transition towards a **sustainable food system** and in strengthening the efforts of European farmers to contribute to the EU's climate and environmental objectives.

https://agriculture.ec.europa.eu/cap-my-country/sustainability/environmental-sustainability/sustainable-agricultural-practices-and-methods_el#ref-%CF%80%CE%B1%CF%81%CE%B1%CE%B4%CE%B5%CE%AF%CE%B3%CE%BC%CE%B1%CF%84%CE%B1-%CE%B3%CE%B5%CF%89%CF%81%CE%B3%CE%B9%CE%BA%CF%8E%CE%BD-%CF%80%CF%81%CE%B1%CE%BA%CF%84%CE%B9%CE%BA%CF%8E%CE%BD

Image source: <https://www.minagric.gr/the-ministry-2/agricultural-policy/koinagrotpolitik>



Goals

Its main objective is to boost organic production to occupy 25% of agricultural land in the EU by 2030.

The main objectives of the 2030 strategy:

- 50% reduction in the use and risk of chemical pesticides
- at least 20% reduction in fertilizer use
- 50% reduction in sales of antimicrobials used for farmed animals and aquaculture
- 25% of agricultural land used for organic farming

<https://www.consilium.europa.eu/el/policies/the-common-agricultural-policy-explained/>

<https://www.consilium.europa.eu/el/policies/from-farm-to-fork/>

Image source <https://www.europarl.europa.eu/topics/el/article/20200519STO79425/oikodomisi-enos-viosimou-sustimatos-trofimon-i-stratigiki-tis-ee/>

Shift towards a sustainable food system model.

- Ensuring adequate, affordable and nutritious food
- Halving the use of pesticides and fertilizers, as well as sales of antimicrobials
- Increase in areas available for organic farming
- Promoting more sustainable food consumption and healthy diets
- Reducing food loss and waste
- Combating fraud in the food supply chain
- Improvement of animal welfare

Sustainable food system

Ensure sustainable food production.

Ensure sustainable food security.

To promote sustainable practices in processing, wholesale, retail, hospitality and food services.

Support sustainable food consumption and facilitate the transition to healthy and sustainable diets.

Reduce food loss and waste.

Fight food fraud during the supply chain.

The slide features a white background with large, abstract green geometric shapes on the left and right sides. These shapes include triangles and polygons in two shades of green, with thin white lines intersecting them.

From farm to fork

A typical example of the CAP strategy is the Farm to Fork Programme

"From Farm to Plate"



The example of the Metaxa Hotel



<https://www.metaxahospitality.gr/about/sustainable-hotel-farming>

"From Farm to Fork" a regenerative, healthy and environmentally friendly food system.

Optimal Resource Management:

- ▶ Efficient use of water, energy and food raw materials.
- ▶ Promoting soil health and effective organic waste management.

Regenerative Agriculture:

First Hotel Group in Europe to manage 1,963.72 acres of certified land under EU Regulation 2018/848.

Implementation of practices from the Organic Regenerative Agriculture Standard of the Institute of Ecological Agriculture DIO.

Four Pillars of Commitment:

Energy & Soil Management

Reducing the carbon footprint through the non-use of synthetic fertilizers and pesticides.

Enhancing the concentration of organic matter and carbon sequestration in the soil.

Self-Production of Food:

Cultivation of organic herbs, nuts, fruits and vegetables in hotel gardens.

Priority is given to local plant varieties and seasonal crops.

Production of 6.8 tons of organic products in 2024.

Regenerative Landscape Management:

Practices certified in accordance with the European Regulation EU 2018/848.

Use of organic fertilizers and establishment of zones of non-human intervention.

Water-saving practices and on-site composting.

Training & Communication:

Promoting a new concept of agriculture in hotels and its role in food production.

Commitment to educating employees, visitors, partners, and suppliers on sustainable practices.



So we are leading to a circular and sustainable economy program



Agriculture and circular economy

Circular Agriculture

We need to reduce costs, losses, waste and natural resources such as water and energy.

We must Recycle the waste and seeds resulting from fruits.

Reuse the land, exchanging crops and residues, turning them into compost or animal feed.

Farmers practice green skills by using organic farming methods, minimizing pesticide use, and implementing techniques like crop rotation to maintain healthy soil

<https://plantae.garden/en/sustainable-circular-agriculture/>

Circular economy in Agriculture 1

Benefits of a Circular Economy



www.biotechfarms.com

- **Regeneration of Natural Systems:**
- **Improving Ecosystem Health:** Using cover plants like clover to improve soil fertility.
- **Habitat Protection:** Creating buffer zones around natural water sources to protect biodiversity.
- **Combating climate change:**
- **Reduction of CO2 emissions by 49% by 2050:** Use of Composting to utilize organic waste.
- **Waste Recycling:** Converting fruit peels into organic fertilizers.
- **Improving Access to Nutritious Foods:**
- **Building resilience in the food system:** Establishing local producer networks that provide fresh produce to the community.
- **Supporting local markets:** Organizing local markets that promote direct sales from farmers to consumers.



Circular economy in Agriculture 2

Supporting Local Communities:

- **Maintaining Livelihoods for Local Farmers:** Supporting training programs for young farmers.
- **Connecting with Local Markets:** Establishing agricultural processing centres that promote the use of local products.

<https://biotechfarms.com/sustainability-from-farm-to-plate-with-circular-economy/>

80% of Food Will Be Consumed in Cities by 2050: Transforming City Food Systems | The Food Initiative



Green Skills in Agriculture

- ▶ **Agriculture and Soil Management:** Sustainable farming practices that reduce the environmental footprint. Knowledge of Organic Farming
- ▶ **Waste Management:** Reducing waste generation and promoting recycling, supporting circular economic practices
- ▶ **Water Management:** Efficient use of water resources, especially in areas with water scarcity.
- ▶ **Environmental Conservation:** Protecting biodiversity and ecosystems through sustainable practices.
- ▶ **Transportation:** Utilizing sustainable transportation methods in the agricultural sector, such as electric vehicles and optimizing supply chains.
- ▶ **Training in the Use of Technology:** Integration of digital technologies drones, AI (satellite imagery and geotagged photos)
- ▶ **Collaborations and Networking:** Creating collaborative networks between farmers, researchers, and organizations to share know-how

Circular economy in practice

[Home](#)[ELEONAS Project](#)[The Team](#)[Financing](#)[Communication](#)

ELEONAS Project

The "ELAIONAS Project" was created thanks to the partnership between: University of the Aegean, Hellenic Mediterranean University, the Petra Agricultural Cooperative, Mr. Kokkinelis and the Association of Graduate Environmentalists of Greece.

It concerns a collective project to address critical environmental problems arising from the inability to manage olive production residues, strengthening the country's Circular Economy. Specifically, the purpose of this action is to utilize olive cultivation residues and olive mill wastewater for the production of soil conditioners, which will then be distributed to olive groves to increase soil fertility.



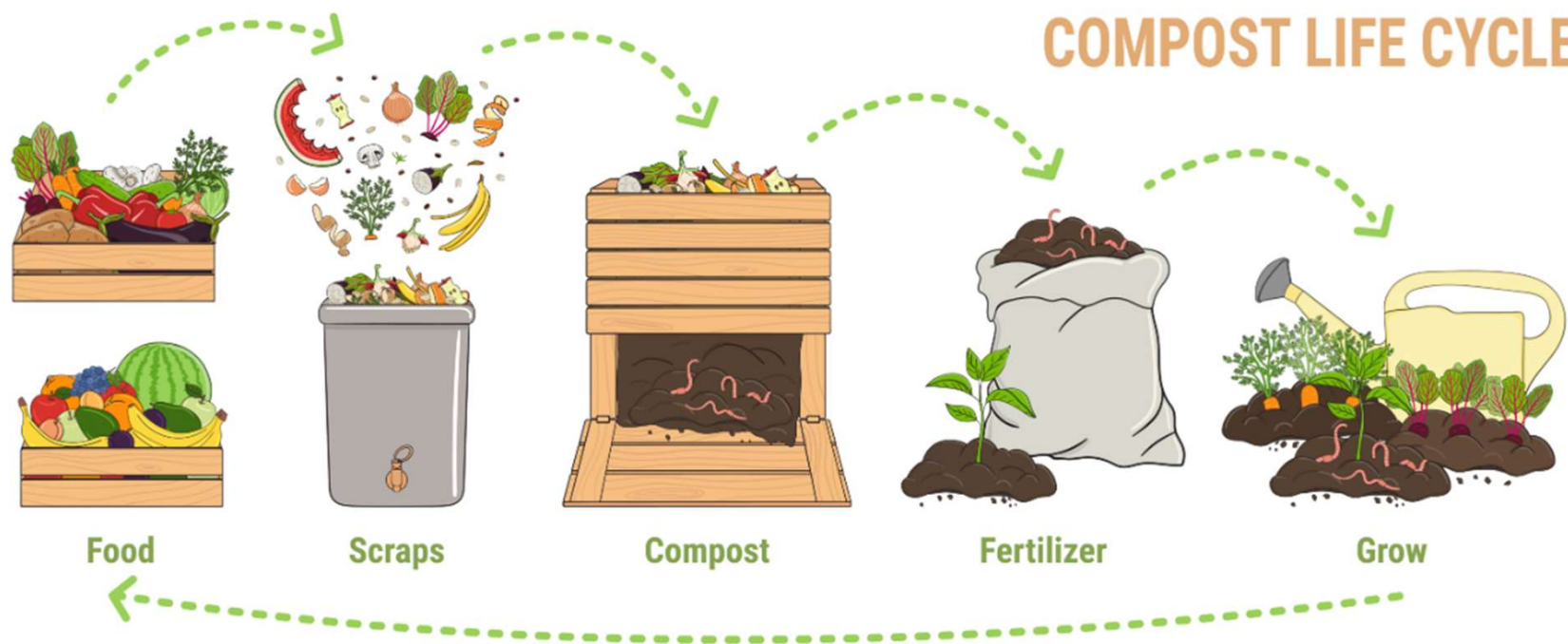


Image source: <https://www.alexandriava.gov/waste/backyard-composting-0>

Composting

- ▶ Composting is defined as the biological process of degradation of organic materials by microorganisms, in the presence of oxygen and under controlled conditions (especially temperature and humidity), the end product of which is compost.
- ▶ Compost can be used to improve the quality of degraded soils, as well as a fertilizer for the production of many different plant varieties.



Composting skills



Important Skills for Composting

Knowledge of Materials:
Suitable and unsuitable residues for composting

Process Management:
Adjusting compost aeration through regular stirring to maintain proper temperature and humidity.

Soil Analysis:
Conducting analyses to determine the nutritional value of the soil and the appropriate amount of compost.

Waste Management:
Collection of organic waste from local markets for composting.

Education and Awareness:
•Organize workshops for the community on the benefits of composting.

Technological Skills:
•Use of electronic devices to monitor the temperature and humidity of the compost.

<https://www.alexandriava.gov/waste/backyard-composting-0>

Image source: <https://directcompostsolutions.com/>

Types of Composting

Small-Scale Composting Methods

Open Composting (Hot Composting)

Direct Composting (Composting in the Soil)

Composting with Worms (Vermicomposting)

Composting on a Wheel

Composting EMO (Active Microorganisms)

Large-Scale Composting Methods

Mechanical Composting

Composting in Airtight Piles

Windrow Composting

Composting in Containers

Composting in Long Lines (Windrow Composting)

<https://www.texasdisposal.com/blog/types-of-composting/>

Images source: <https://www.texasdisposal.com/blog/types-of-composting/>



Images source: <https://www.texasdisposal.com/blog/types-of-composting/>

Examples of Composting

1. **Aerobic Composting:** *Very widespread due to its efficiency in the rapid breakdown of organic materials and the production of high-quality compost.*
2. **Composting in Layers:** *Popular for maintaining nutrient balance, as it alternates between nitrogen-rich (green) and carbon-rich (brown) materials.*
3. **Composting with Box (Bokashi):** *It is gaining traction for its ability to compost animal products and its efficiency in smaller spaces.*
4. **Trench Composting:** *It is used by gardeners and small farmers, particularly in areas with limited space, as it utilizes existing soil for decomposition*

Examples of sustainable farms

- ▶ **Organic Farming:** Using Natural Farming Methods Without Chemical Fertilizers and Pesticides
- ▶ **Crop Rotation:** Alternate different crops in each season to avoid soil depletion.
- ▶ **Precision Agriculture:** Utilizing technologies and digital tools to monitor and optimize production processes.
- ▶ **Agroecology Systems:** Integrating Agricultural and Ecological Practices to Create Sustainable Ecosystems

Key Features of Organic Farming



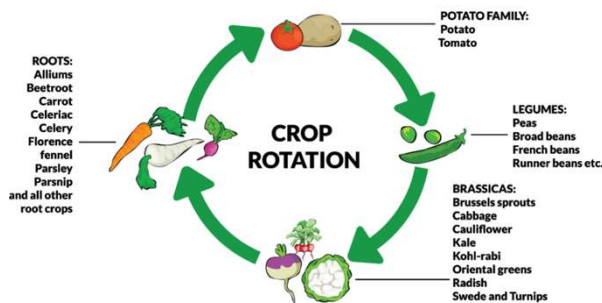
Λογότυπος της ΕΕ για τα βιολογικά προϊόντα

Organic farming is an agricultural method that aims to produce food using natural substances and processes, limiting environmental impact. The main objectives include:

- Responsible use of energy and natural resources.
- Biodiversity conservation.
- Maintaining ecological balances.
- Improving soil fertility.
- Maintaining water quality.

In addition, the rules on organic farming promote high standards for animal welfare.

Crop rotation: from one crop to multiple to maintain the health of the earth



Crop rotation is the agricultural practice of planting different crops successively on the same area of land. This method enhances soil health, optimizes nutrient availability, and aids in pest and weed management. For example, beans can be planted after corn to restore nitrogen to the soil, which consumes corn.

Benefits of Crop Rotation

Soil Health: Different crops use various nutrients, preventing the depletion of specific nutrients in the soil. Crop rotation helps maintain a balanced nutrient profile in the soil.

Pest and Disease Management: By altering the crop planted in a specific area, farmers can disrupt the life cycles of pests and diseases that thrive on specific crops, reducing the need for chemical treatments.

Increased Yields: Research shows that crops grown in rotation can yield up to 10% more than monocultures and up to 25% more during droughts.

Reduction of Chemical Inputs: Crop variety reduces reliance on fertilizers and pesticides, thereby lowering costs and environmental burden.

Precision agriculture

Precision agriculture (PA) is an innovative approach that uses various technologies and is designed to:

- Optimise farming practices

- It enhances productivity while minimizing costs and environmental impact.

- The aim is to improve crop yield and environmental quality.

- It focuses on the implementation of the "5 R's":

- Right Dose, Right Time, Right Method, Right Source, and Right Location, which helps in the efficient use of resources.



Image source: <https://regen.co.za/blog/overcoming-barriers-to-the-adoption-of-technology-in-agriculture/>

K. Nithinkumar, Y. Yernaïdu (2023)

https://www.researchgate.net/profile/Kadagonda-Nithinkumar/publication/376853087_Precision_Agriculture_A_Modern_Technology_for_Crop_Management/links/658c63ba0bb2c7472b156379/Precision-Agriculture-A-Modern-Technology-for-Crop-Management.pdf?origin=publication_detail&_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InB1YmxpY2F0aW9uIiwicGFnZSI6InB1YmxpY2F0aW9uRG93bmhvYWQILCJwcmV2aW91c1BhZ2U0iJwdWJsaWNhdGlvbiJ9fQ&__cf_chl_tk=5QTFOVqFDpV_kVobboRJY59cZUDJQk6aAxreQdddHh4-1748163673-1.0.1.1-EG51hC4lo7._pC7HXkqTNT3GBAqSp2WcRP2dptvukBU

Importance of Precision Agriculture

- **Efficient Use of Resources:** Technologies like GPS and sensors accurately monitor soil fertility and crop health.
- **Maximum Crop Yield:** Nutrients are applied exactly when needed, enhancing nutrient utilization efficiency.
- **Cost Reduction:** Farmers apply inputs only where necessary, reducing the overall cost of farming.
- **Environmental Protection:** Reduces the use of excessive pesticides and fertilizers, thereby minimizing pollution.
- **Proactive Crop Health Monitoring:** Early detection of issues such as nutrient deficiencies and pest infestations helps maintain higher crop quality.

https://www.researchgate.net/profile/Kadagonda-Nithinkumar/publication/376853087_Precision_Agriculture_A_Modern_Technology_for_Crop_Management/links/658c63ba0bb2c7472b156379/Precision-Agriculture-A-Modern-Technology-for-Crop-Management.pdf?origin=publication_detail&_tp=eyJjb250ZXh0Ijp7ImZpcnNOUGFnZSI6InB1YmxyY2F0aW9uIiwicGFnZSI6InB1YmxyY2F0aW9uRG93bmxyYWQjLCJwcmV2aW91c1BhZ2UiOiJwdWJsaWNhdGlvbiJ9fQ&__cf_chl_tk=5QTF0VqFDpV_kVobboRJY59cZUDJQk6aAxreQddHh4-1748163673-1.0.1.1-EG51hC4lo7._pC7HXkqTNT3GBAqSp2WcRP2dptvukBU

Main Tools in Precision Agriculture

- **Remote sensing:** Determination of vegetation indicators. Estimation of agricultural production based on data analysis.
- **GIS (Geographic Information Systems) Systems:** Used for geographic data analysis and crop mapping.
- **Global Positioning System (GPS):** For accurate tracking of farmland.
- **Variable Dose Technology:** For the precise application of fertilizers and pesticides.
- **Automated Machinery:** Machines that can perform cultivation tasks with high precision, such as seeding and spraying.
- **Management Applications and Softwares:** Tools that allow farmers to monitor and analyze data about their crops and activities.
- **Computer Irrigation Systems:** Automated systems that regulate irrigation according to the needs of crops.



Image source: <https://myhelis.com/>.

<https://www.geoanalysis.gr/tomeis-drastiriotitas/tilepiskopisi/>

https://www.researchgate.net/profile/Kadagonda-Nithinkumar/publication/376853087_Precision_Agriculture_A_Modern_Technology_for_Crop_Management/links/658c63ba0bb2c7472b156379/Precision-Agriculture-A-Modern-Technology-for-Crop-Management.pdf?origin=publication_detail&_tp=eyJjb250ZXh0IjpbImZpcnN0UGFnZS16InB1YmxpY2F0aW9uIiwicGFnZS16InB1YmxpY2F0aW9uRG93bmxyVWQlLCJwcmV2aW91c1BhZ2U0IiJwdWJsaWNhdGlvbiJ9fQ&__cf_chl_tk=5QTFOVqEDPpV_kVobboRJY59cZUDJQk6aAxreQdddHh4-1748163673-1.0.1.-EG51H4c1o7_pC7HXkqTnt3GBAqSp2WCRP2dptvukBU

https://ec.europa.eu/programmes/erasmus-plus/project-result-content/65bcd88e-efcf-4159-867f-a3a864ce8437/IO1_PreAgri_handbook-EL.pdf

AI Agriculture

► Terrain Analysis with Artificial Intelligence



► Soil Analysis: Using AI for insights into carbon levels and nutrient   content.

► Remote sensing and satellite imagery: Monitoring soil health and land   use.

► Trend Analysis: Monitoring changes in soil quality over time  .

► Supporting Carbon Credits: Verification of carbon credits through soil carbon   measurement

<https://www.unite.ai/el/best-ai-tools-for-environmental-monitoring/>
<https://getfarmlab.com/>



Image source: <https://getfarmlab.com/>



Image source: <https://getfarmlab.com/>

FUTURE FARMS

small and smart

SURVEY DRONES

Aerial drones survey the fields, mapping weeds, yield and soil variation. This enables precise application of inputs, mapping spread of pernicious weed blackgrass could increase wheat yields by 2-5%.

FLEET OF AGRIBOTS

A herd of specialised agribots tend to crops, weeding, fertilising and harvesting. Robots capable of microdot application of fertiliser reduce fertiliser cost by 99.9%.

FARMING DATA

The farm generates vast quantities of rich and varied data. This is stored in the cloud. Data can be used as digital evidence reducing time spent completing grant applications or carrying out farm inspections saving on average £5,500 per farm per year.

TEXTING COWS

Sensors attached to livestock allowing monitoring of animal health and wellbeing. They can send texts to alert farmers when a cow goes into labour or develops infection increasing herd survival and increasing milk yields by 10%.

SMART TRACTORS

GPS controlled steering and optimised route planning reduces soil erosion, saving fuel costs by 10%.

Biosolids in Northern Greece promotes sustainable practices

Carbon Farming: It aims to capture carbon dioxide from the atmosphere and store it in the soil through natural processes such as crop rotation and the use of plant cover.

Regenerative Agriculture: Focuses on restoring soil fertility and increasing biodiversity, reducing the need for synthetic fertilizers.

Composting: Transforms organic waste into a valuable soil conditioner, enhancing soil microbial activity.

Water Management: Techniques such as rainwater harvesting help in the efficient utilization of water resources.

Circular Economy: Integrates waste recycling into useful resources, minimizing environmental impact.



Let me reflect ...

- ▶ From what I heard, what impressed me the most and why?
- ▶ Who could I work with in my community to create something new?
- ▶ In which field would I be interested in starting some training, developing new technical skills



Χρήσιμοι Σύνδεσμοι

- ▶ Training in precise technologies in agriculture <https://agropro-drone.eu/wp-content/uploads/2025/02/AgroPro-Curriculum-v.1.2-GR.pdf>
- ▶ XERIKOS ELEONAS PILOT FARM <https://regenerativefarminggreece.org/el/olives-grazing-pilot-farm/>
- ▶ Education and work <https://ecogenia.org/>
- ▶ Composting in Greece https://ypen.gov.gr/wp-content/uploads/2025/03/b_odigos.pdf
- ▶ Practical guide <https://www.incommon.gr/praktikos-odigos/kleise-ton-kyklo-2/>

Greek AgriTech Startups

Augmenta :

- ▶ It develops hardware+software (multispectral camera + AI) that adapts to tractors for targeted application of fertilizers/plant protection.
- ▶ Reduces pesticide use by up to 40-60%
- ▶ It stood out with €2.3 million in funding and an acquisition by CNH Industrial for \$110 million.
- ▶ It was created by two students in Volos, Giorgos Varvarelis and Dimitris Evangelopoulos and is a system based on AI and multispectral cameras, which is placed on the tractor cabins and determines in real time the needs of each part of the field

EdenCore

Spin-off of AUA, with the "Viewer" radar and cameras that scan crops (e.g. vines, stone fruits).

- ▶ It reduces pesticide/fertilizer use by up to 25%, with a harvest accuracy of >90% up to 3 months in advance.

▶ Agroverse (Thessaloniki)

Development of an electric robot-tank to automate tasks in the field.

▶ Terra Robotics

Creates electrically powered robots for agricultural work, focused on sustainability.

▶ AgroApps / myAgroApp

Platform that combines AI, satellite & meteorological data for intelligent crop management.

Received €1,275 million in funding through a partnership with Space Hellas

Ελληνικά AgriTech Startups

- ▶ Agritrack
- ▶ Traceability & digitization of supply chain with IoT, blockchain and ML.
- ▶ Records all production phases in real-time, ensuring food quality
- ▶ Wikifarmer
- ▶ Marketplace & educational platform for farmers.
- ▶ With over 9 million. users, enhances the implementation of sustainable farming practices
- ▶ Biocos
- ▶ • DNA traceability – ensures the authenticity of plant products from the field to the shelf
- ▶ Farmvent / Growie
- ▶ • Dedicated to vertical farming: automated production of aromatic plants/vegetables with AI and robotics

▶ Airbots

- Uses drones, IoT and robotics to detect and treat diseases in vineyards

En Agris

Drone-based solutions for precision in irrigation, water management, and crop monitoring.

These were some key companies but there are many more (AGENSO, NEUROPUBLIC, Gaiatron...)

- ▶ All of the above startups contribute to the field of Agriculture in various ways:
- ▶ Optimization of inputs (fertilizers, water, plant protection).
- ▶ Real-time crop health monitoring.
- ▶ Traceability and transparency in the supply chain.
- ▶ Training farmers through modern digital tools



Waste management

Image source: <https://wastedirect.co.uk/guides/recycling-symbols/>

Contents

1. European Green Deal (EGD) and Waste Management
2. Waste Hierarchy
3. Framework Directive
4. EU Waste Management and Circular Economy
5. Green Skills in Waste Management
6. Greece's Goals - New Projects
7. Packaging

Waste management

5 tons of
waste
produced by the average
European every year

Only 38%
waste recycling in the
EU

Over 60%
household waste still
ends up in landfills in
some EU countries

European Green Deal (EGD) and Waste Management



Image source: <https://www.resonanceglobal.com/blog/recycling-and-the-circular-economy>

Perception of Waste as a Resource:

- EGD emphasizes the importance of treating waste as a resource.
- Waste prevention as the best management option, followed by reuse, recycling and other forms of recovery.
- Waste disposal, such as landfill, is the least preferred option

Circular Economy Action Plan:

- Resources used in production processes should be used and reused in the EU economy for as long as possible.

<https://www.consilium.europa.eu/en/policies/waste/>

EU waste management practices

1. **Waste Recovery** ♻️: Using waste in various ways, such as recycling, backfilling or incineration for energy production.
2. **Recycling** ♻️: Waste Separation and Waste Conversion into New Materials or Products.
3. **Backfill** 🌱: Excavation, construction and demolition waste can be recycled, used for backfilling.
4. **Incineration process** 🔥: Incineration of waste for energy production (electricity or heat). Waste to Energy
5. **Landfill** 🗑️: Reduction of total waste ending up in landfills.

Waste Hierarchy

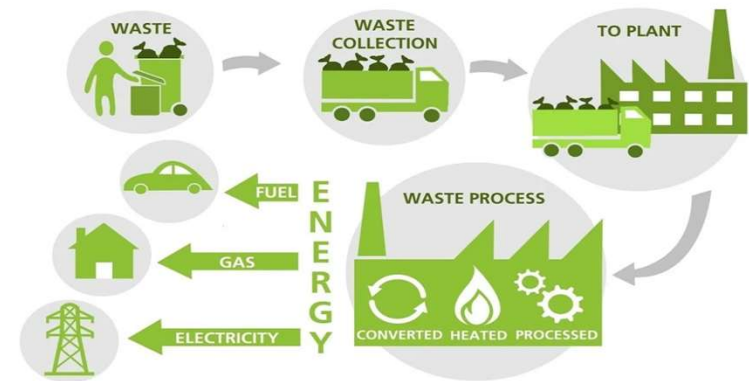
In waste prevention and management legislation and policy, the following waste hierarchy applies as a priority



Image source: <https://www.consilium.europa.eu/el/policies/packaging/im>

'The modern European legislation on waste Framework Directive'

It defines the types of waste and hazardous waste.
It explains when waste ceases to be waste and is converted into secondary raw materials



"Directive": Important principles governing waste management:

1. Waste management obligation:

Waste must be managed in a way that does not harm the environment or human health.

2. Waste Hierarchy:

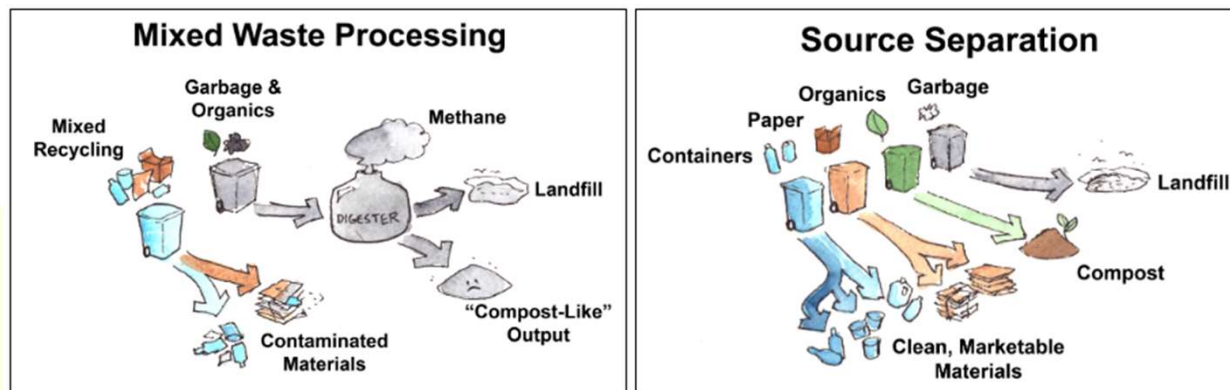
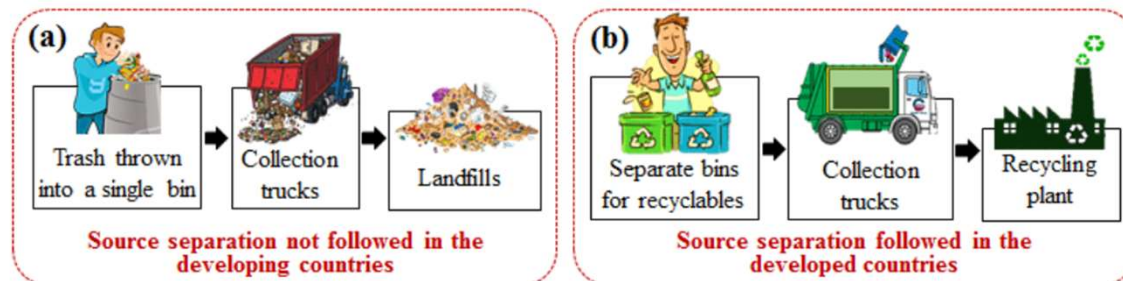
To encourage the prioritization of waste. This hierarchy helps reduce the amount of waste that ends up in landfills.

3. 'The polluter pays' principle:

According to this principle, the cost of disposing of waste must be borne by the holder. This encourages producers to design products that produce less waste and take responsibility for their environmental impact.

<https://eur-lex.europa.eu/legal-content/EL/TXT/?uri=celex%3A32008L0098>

Source separation and Recycling



- Source separation collects paper and containers separately, while single stream mixes them.
- Single flow is more convenient, but leads to contaminated materials.
- Some cities have switched to source separation, while others are burying recyclables.

EU Waste Management and Circular Economy



- Targets for the recycling of municipal and packaging waste.
- Binding landfill targets below a maximum threshold.
- Measures to reduce food and marine litter.

Green Skills in Waste Management

- ▶ Knowledge of waste management systems and circular economy principles.
- ▶ Techniques for the Reduce, Reuse and Recycling of materials.
- ▶ Effective waste management and recycling practices are essential for a sustainable and efficient society.



Greece's Goals - New Projects

Today in Greece a recycling reform is being carried out

All regional plans are being drawn up, and all the actions included document that from 20% in recycling we will go to 60%, by 2035, while the projects will have secured funding

(Grafakos, 2025)

Waste Management in Greece

- **Current Situation:** Greece ranks low in the EU when it comes to municipal waste management, with over 80% of waste ending up in landfills.
- The actual recycling rate is only 16%

The priorities are the Solid Waste Management Bodies (FODSA)

- New job opportunities
- Strengthening recycling
- Utilization of secondary products
- Energy recovery and separate collection of waste
- Emphasis on the management and utilization of biowaste.

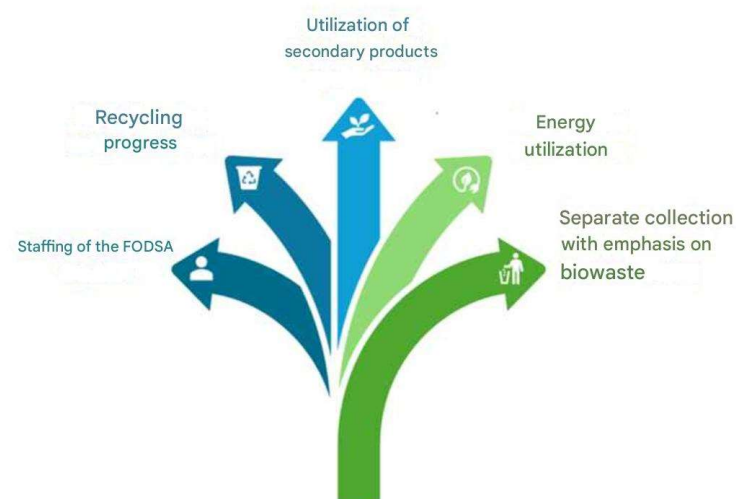


Figure 4: Key areas of intervention to strengthen the FODSA

 Waste Landfill Reduction	 Municipal Waste Recycling and Source Separation	 Package Management	 Bio-waste	 Circular Economy and Prevention
Reducing municipal waste landfilling to less than 10% by 2030. Mandatory treatment of all waste before burial. "Ban on landfilling separately collected waste by 2030." "Development of alternative management methods, such as the energy utilization of alternative (secondary waste) fuels and waste processing residues."	*55% preparation for reuse/recycling of municipal waste by 2025. *60% preparation for reuse/recycling of municipal waste by 2030. Mandatory sorting into four streams (paper, glass, plastic, metal). *Separate collection textile d hazardous household waste (from 1 January 2025) 77% separate collection for PET bottle recycling by 2025 and 90% by 2029 "Creation of Units" Recycling Recovery (MAA/RRF) and upgrading of the Units Waste Treatment (WTP), for the sorting of recyclable materials.	-65% overall packaging recycling by 2025. 70% overall packaging recycling by 2030. Analytical objectives for packaging materials: Glass: 70% (2025), 75% (2030). Plastics: 50% (2025), 55% (2030). Paperboard: 75% (2025), 85% (2030). Ferrous metals: 70% (2025), 80% (2030). Aluminum: 50% (2025), 60% (2030). Wood: 25% (2025), 30% (2030).	"Mandatory separate biowaste collection in all municipalities by 2024. -Recycling or composting 50% of biowaste by 2030. Creation of biowaste processing infrastructure (composters, biogas plants).	Increasing the use of secondary raw materials and reuse in the context of the circular economy. "Implementation of actions" awareness and education on waste reduction.

Draft Proposal for an Integrated Package of Measures to ensure the operational operation of Solid Waste Management Bodies (FODSAs) | 1st Edition - February 2025, No.02/2025

New Solid Waste Management Policy in Greece

National Waste Management Plan

2020-2030:

Policy Objectives:

- Transition to sustainable material management, environmental protection and public health.
- **Reducing the landfill of Municipal Solid Waste (MSW) below 10% by 2030.**
- Focus on preparing for reuse and creating jobs.
- Measures are introduced to prevent waste generation and strengthen recycling.

Implementation Strategies:

- **"Pay As You Throw": Implement a policy that links costs to the amount of waste generated.**
- **Strengthening of the Waste Management Centre: Upgrading of Recyclable Material Sorting Centres for better waste management.**

New Solid Waste Management Policy in Greece

- **Hazardous Waste Management:**
 - The National Hazardous Waste Management Plan ensures the protection of the environment and public health.
 - A hierarchy is applied to waste management, with priority given to prevention and recycling.
- **Important Benefits:**
 - Avoidance of financial sanctions by the EU for non-compliance.
 - Enhancing the circular economy and sustainability in waste management

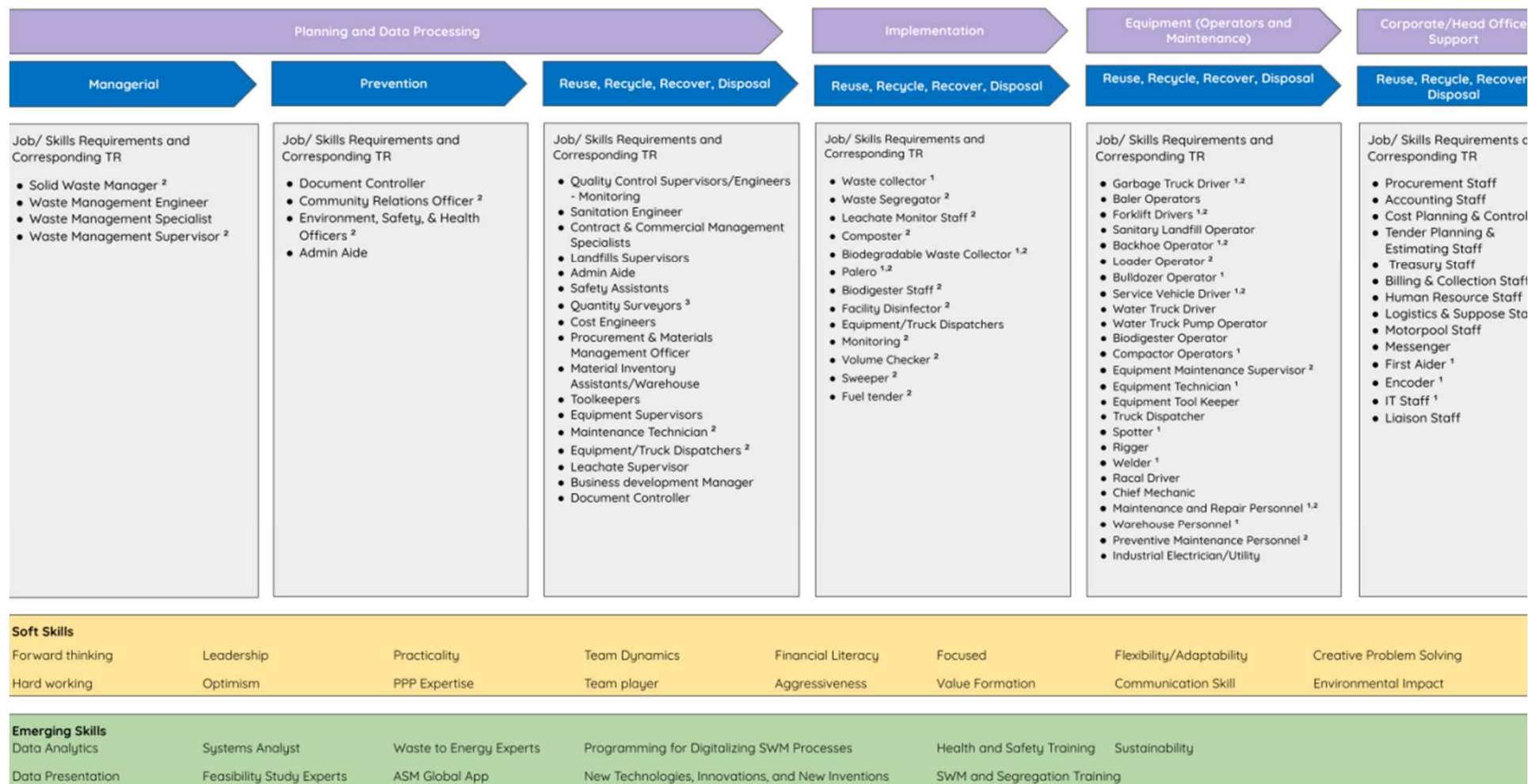


Image source: https://tesda.gov.ph/Uploads/File/LMIR/2023/23.03.06_LMI%20on%20SWM.pdf

Job positioning

Management

Waste Management

Waste Management Engineer

Waste Management Specialist

Waste Management Supervisor

Prevention

Document Manager

Public Relations Officer

Environmental, Health and Safety Executives

Insurance Administration

Application

Quality Advocates

Sanitary Engineers

Inspectors and Commercial Administrators

Landfill Managers

Equipment (Operations and Maintenance)

Waste Supervisors

Equipment Operators

Truck Operators

Maintenance and Repair Employees

Office/Company Support

Procurement Staff

Accounting Officer

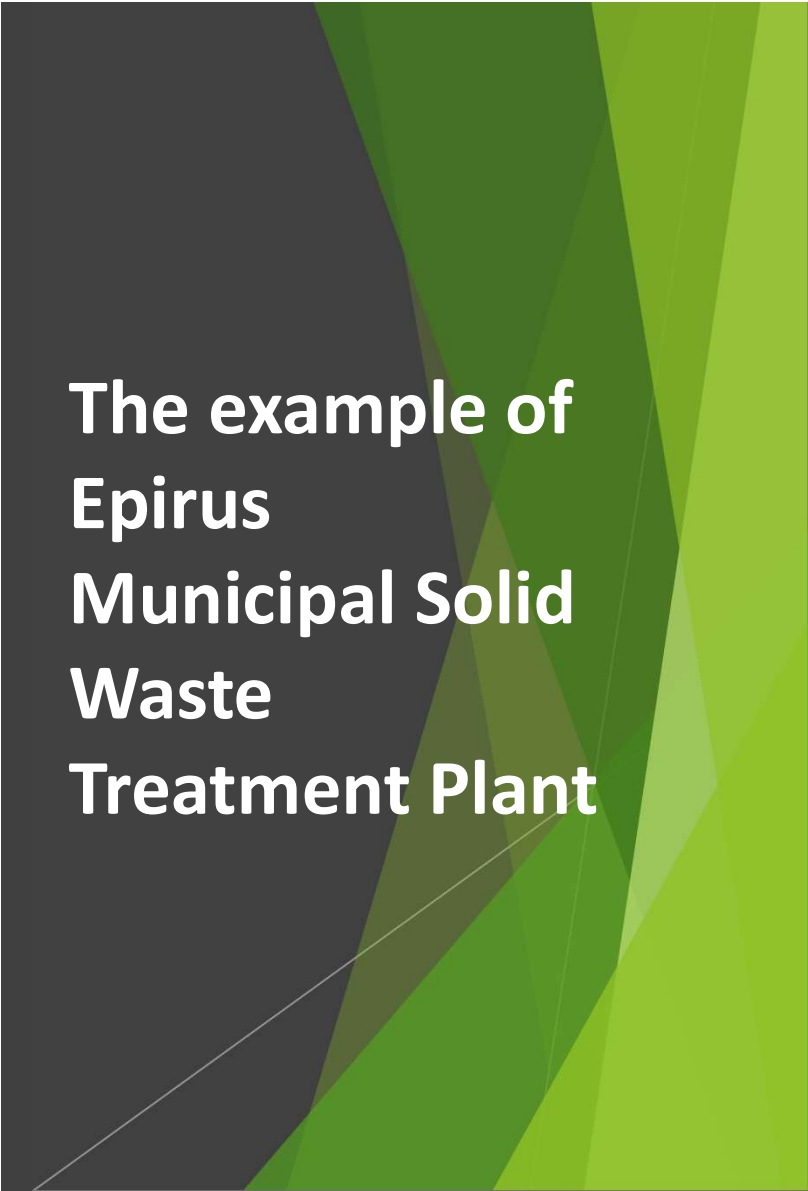
Technical Services Employees



Image source: https://tesda.gov.ph/Uploads/File/LMIR/2023/23.03.06_LMI%20on%20SWM.pdf

In Eleftherochori, Dodoni, an example of integrated waste management.

- ▶ This is an innovative "green" project with multiple benefits for the ecosystem, the economy and the upgrading of the quality of life of people in the Region of Epirus. It is one of the most modern waste treatment plants in Europe and was put into operation in March 2019, while it was awarded as Project of the Year in 2018.



The example of Epirus Municipal Solid Waste Treatment Plant

New Waste Management Plans in Greece

DEH-Mytilineos

- **Energy Recovery of Waste:**
 - DEH and Mytilineos cooperate for the development of waste-to-energy recovery units in Western Macedonia and Aspra Spitia, Boeotia.
 - Six units in Kozani, Ptolemaida, Rodopi, Peloponnese, Attica and Crete.
- **Combustion Technology:**
 - Aim to limit the volume of waste going to landfill to less than 10%.
 - Advantages of combustion include high efficiency, low environmental impact, and small area required for the plant.
- **Estimated Quantities of Secondary Fuels:**
 - 1.2-1.3 million tons of secondary fuels are expected annually by 2030.
 - A part can be used by the cement industry, while the rest of the tons will be directed to the energy recovery plants.

TERNA ENERGY: Installation of a Municipal Solid Waste Treatment Plant in the Region of Epirus



ΤΕΡΝΑ ΕΝΕΡΓΕΙΑΚΗ
ΟΜΙΛΟΣ ΓΕΚ ΤΕΡΝΑ

Management of the residues of the olive growing and olive oil production process. Circular Economy Example



1. The liquid waste from the olive mills after sedimentation will be used to regulate the humidity in the compost piles.
2. The sludge from the settling tank at the olive mill will be co-composted with the olive leaves, to produce excellent quality compost that will also be available for crops.
3. Biochar, the residue of the charcoal production process from the coarse wood of the olive tree, will be used as a soil conditioner and will enhance soil fertility.

Figure 1. Integrated management system for the residues of the olive growing and olive production process with the aim of utilizing them for the production of soil conditioners (compost, carbon) that are returned to the olive grove.



Packaging

How to reduce packaging waste in the EU?

What is Packaging;

- Products used to contain, protect, handle, deliver or present goods

- 2021 Every European throws away around 190 kg of packaging
- Parcels for online shopping
- Wrapping from film or aluminium foil to...
- Cups and capsules for coffee, etc.

<https://www.europarl.europa.eu/topics/el/article/20231109ST009917/pos-na-meiosete-ta-aporrimmata-suskeuasias-stin-ee-grafimata>

Packaging waste in the EU

Kilos per person



Source: Eurostat [env_waspac] - latest available data (2021)



Image source: <https://www.europarl.europa.eu/topics/el/article/20231109ST009917/pos-na-meiosete-ta-aporrimmata-suskeuasias-stin-ee-grafimata>

The 1/3

of municipal solid waste comes from packaging

image source: <https://www.consilium.europa.eu/el/policies/packaging/>



40%

of plastics that
used in the EU are found in
packaging



1/2

of marine litter comes
from packaging



186,5 kg

of waste generated in the
EU per person in 2022

Non-recyclable packaging

- ▶ Many Member States struggle to meet EU recycling targets.
- ▶ One of the causes is non-recyclable packaging or a lack of proper management infrastructure.

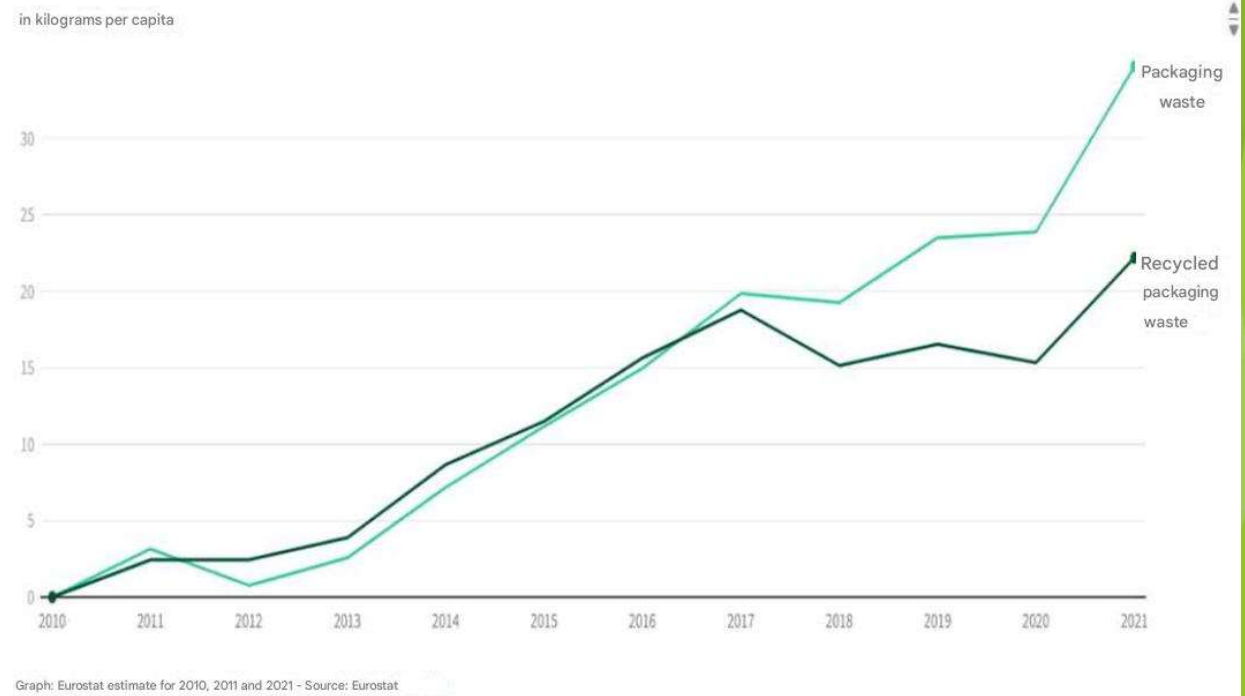
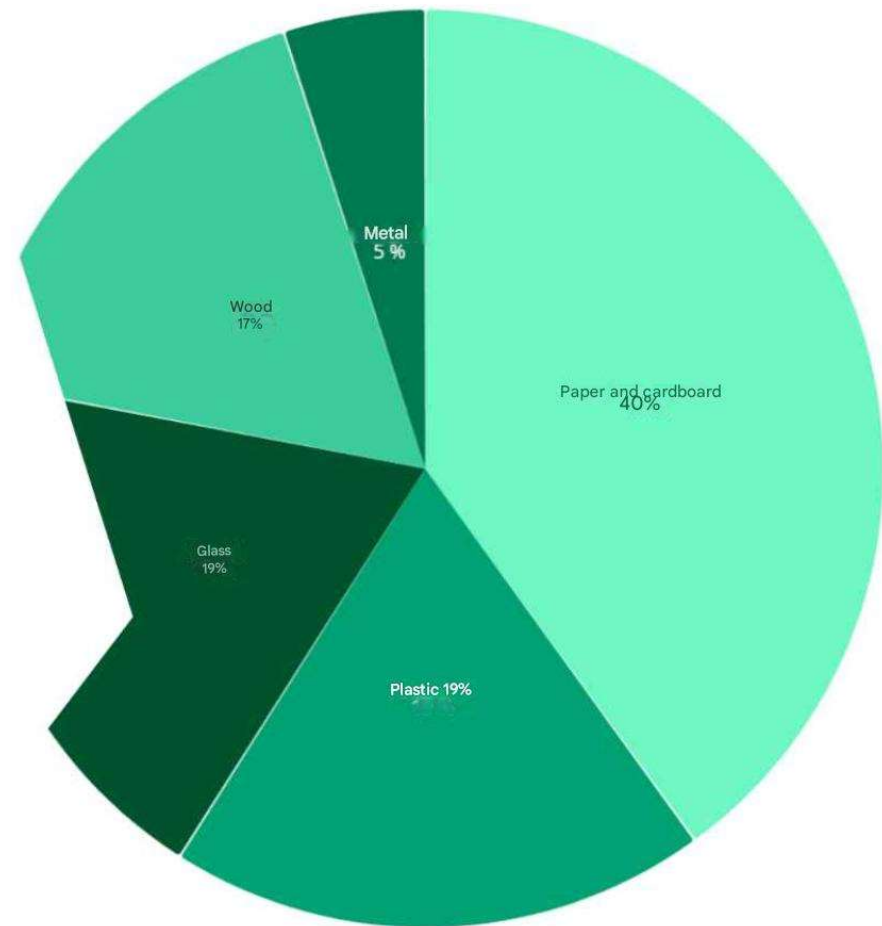


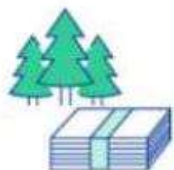
Image source: <https://www.consilium.europa.eu/el/policies/packaging/>

Total Packaging Waste Generation Cardboard

- Increase in packaging waste in the EU (2021):
 - The largest increase in 10 years.
- Total Packaging Waste Generation:
 - 84 million tons in 2021.

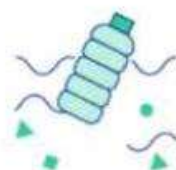


Environmental impact of packaging



Use of natural resources

50% of the paper used in the EU is for packaging.



Pollution

Packaging makes up about half of marine litter; packaging also pollutes soil and fields.



Climate change

CO2 emissions from packaging are equal to the emissions of a small to medium-sized EU country.

EU targets: prevention, reuse, recycling

What We Can't Avoid, We'll Reduce.

Ban on Single-Use Packaging: Some types of single-use packaging will be banned, such as:

- Packaging for items consumed in restaurants and cafes.
- Small packaging for sanitary ware in hotels.

Minimizing Packaging Material:

Promoting the reuse of packaging to reduce the need for new packaging.

REDUCE
ΜΕΙΩΣΗ

REUSE

Image source: <https://kalamatajournal.gr/messinia/kalamata/item/21419-h-protash-ths-periballontikhsh-%E2%80%93-politistikhs-enwshshs-th-diacheirish-twn-aporrimmatwn-sth-messhnia>

Packaging Recycling and New EU Rules



© Getty Εικόνας, curtoicurto

Image source:
https://environment.ec.europa.eu/topics/waste-and-recycling/packaging-waste_en?prefLang=el&trans=el



A general (and widespread) symbol that indicates that the packaging (or sometimes product itself) is recyclable.

Mobius Loop (with percentage)



Indicates that the packaging is recyclable, but also the percentage that has been made from recycled material.

1. Labels for Sorting:

- The new labelling rules will make it easier for consumers to sort packaging waste by providing information on:
 - They require all packaging to be recyclable.
 - Impose clearer labels for recycling.
 - Indicate the amount of recycled content.

2. Some single-use plastic packaging will be banned from 1 January 2030

<https://www.consilium.europa.eu/el/policies/packaging/>

Image source: <https://www.gwp.co.uk/guides/recycling-symbols-on-packaging/>

What is sustainable packaging

Definition: Selection of eco-friendly materials and production practices throughout the life of the packaging.



Elements of Sustainable Packaging:

Use of renewable, recyclable and compostable materials.

Minimizing Environmental Impact through Optimized Manufacturing Processes.



Image source: <https://www.tesseractproducts.com/viodiaspomena-proionta-syskevasias-logoi-na-ta-epilegete/>
<https://www.consilium.europa.eu/el/policies/packaging/>
Image source:
<https://kiosplast.gr/el/%CF%80%CF%81%CE%BF%CE%B9%CE%BF%CE%BD%CF%84%CE%B1/%CE%B2%CE%B9%CE%BF%CE%B4%CE%B9%CE%B>

Top Sustainable Packaging Materials



1. Biodegradable Plastics:

These plastics decompose naturally, offering a significant advantage over traditional ones, which take hundreds of years to break down.

2. Plant-Based Packaging:

Innovative solutions such as mushroom, seaweed and sugarcane packaging, which can be composted and degraded without harmful residues.

3. Recycled Materials:

Using recycled materials such as paper, cardboard and some plastics for packaging, which reduces the demand for primary materials and reduces waste and energy consumption.

Benefits of Sustainable Packaging

- **Reduced Carbon Footprint:**
 - Use of recycled and biodegradable materials that help reduce greenhouse gas emissions.
- **Waste Reduction:**
 - Strategies that prioritize reusable, recyclable, or compostable materials, reducing the volume of waste.
- **Brand Loyalty and Image:**
 - Companies that adopt sustainable practices often benefit from increased loyalty to environmentally conscious consumers.

Direction at the moment

Examples



Products will be labeled clearly indicating which bin they should go into.



The label will list the materials used in the packaging.



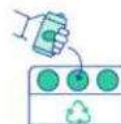
Hotels will use refillable cosmetic containers.



Consumers, when purchasing packaged goods, will use refillable containers.



Packaging will be minimized to avoid unnecessary waste of resources.



Cash-back systems will be established for certain single-use containers.

The Switch to Sustainable Packaging: **A GUIDE FOR YOUR BUSINESS**



Image source: <https://meyers.com/meyers-blog/guide-to-sustainable-packaging-for-business/>

- Over 60% of global consumers consider the environmental impact when purchasing products

<https://meyers.com/meyers-blog/guide-to-sustainable-packaging-for-business/>



Strategies for Sustainable Packaging Business

1. Reduction of Materials and Waste.

- **Reduce Package Size:** Use the minimum size needed for packaging.
- **Waste Reduction with Virtual Samples:** Sephora "Virtual Artist", where users can try on makeup products digitally through their app, before purchasing. This strategy enhances the customer experience and reduces the need for physical samples.

2. Use of Sustainable Materials.

- **Source Renewable Materials:** Choose materials from renewable sources.

PLA (Polylactic Acid), which is a biodegradable plastic derived from renewable sources, such as corn or sugar. Like food bags and containers, Vegware offers packaging and products made from PLA that are ideal for restaurants and cafes.

1. Local bakeries, such as "Christos Bakery", paper or biodegradable bags for their bread and sweets.
2. "Organic Grocery" offer organic products and use compostable bags for bulk products.
3. Clothing Boutiques: Small fashion boutiques, such as "EcoFashion", focus on reusable fabric bags for shopping.



Image source: <https://www.vegware.com/uk-en/>



Image source: <https://swati91-0711.medium.com/can-artificial-intelligence-make-us-more-beautiful-34a1d1c4466d>

Image source: <https://www.mooseymoose.com.au/pages/sustainability>

<https://www.sourceful.com/blog/how-to-make-packaging-more-sustainable>



HOW TO PREPARE THE MATERIAL FOR RECYCLING

This section tells you how to get items ready to be recycled.

WHAT IS IT MADE OF?

This section lists what the material is made from.

WHAT PART IS RECYCLABLE?

This section helps identify what part of the packaging is recyclable.



CAN THIS BE RECYCLED?

This lets you know if an item is widely recycled or not.



WIDELY ACCEPTED



STORE DROP-OFF



NOT YET RECYCLABLE

WANT TO LEARN EVEN MORE?

Visit how2recycle.info to learn more about these labels and how they're being implemented.

Strategies for Sustainable Packaging Business

3. Consciousness and Return.

- Offer Return and Reuse Options: Encourage customers to return or reuse packaging.
- Provide Reuse Inspiration: Provide ideas on how to reuse packaging.

Example: An accessory business may offer boxes that can be converted into storage containers.

4. Update and Ease of Recycling.

- Clearly Visible Signage for Recycling: Use clear signage for easy recycling.

Example: A clothing company may have labels that show how to recycle materials.

<https://www.sourceful.com/blog/how-to-make-packaging-more-sustainable>

Image source:
https://www.reddit.com/r/mildlyinteresting/comments/yddts2/box_made_to_convince_people_to_recycle/

Image source: <https://blog.blueapron.com/how-to-recycle-earth-911/>

The use of recycled aluminium

Cans of Soft Drinks, Beer and Other Beverages

Four leading aluminium rolling industries and members of the European Aluminium Packaging Group (EAPG) - Constellium, Elval, Novelis and Speira—

The aim is to maximise the recycled content in aluminium cans for the packaging of soft drinks, beer and other beverages, with the aim of significantly reducing carbon dioxide emissions.

Purpose of the Project

The use of recycled aluminium reduces CO2 emissions and saves 95% of energy compared to the primary production of aluminium from bauxite.

The ultimate goal is to develop an aluminium box that can be produced with up to 100% recycled used boxes.



Let's reflect...

- ▶ **Where should old batteries be recycled?;**
 - ▶ In the trash can
 - ▶ In a sealed bag on the recycling bins for the driver to collect for special recycling
 - ▶ In special battery recycling centres
- ▶ **Where to recycle e-waste, such as old TVs, computers, and CDs;**
 - ▶ In the black bin
 - ▶ On the sidewalk
 - ▶ Deliver items to a special e-waste recycling bin
 - ▶ All the above options

Packaging companies in Greece

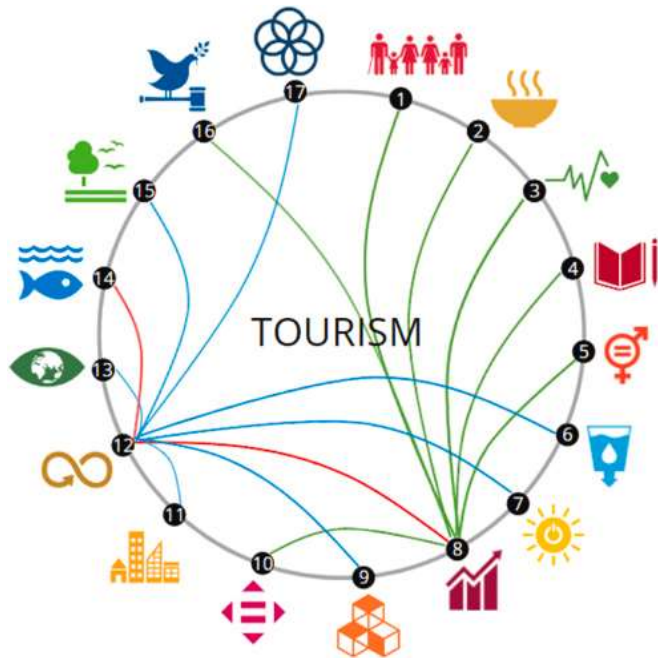


- ▶ <https://www.tesseractproducts.com/vi-odiaspomena-proionta-syskevasias-logoi-na-ta-epilegete/>
- ▶ <https://greek.biobagcompostable.com/supplier-4417047-compostable-bin-liners>
- ▶ <https://hatzopoulos.gr/packaging-solutions/#>

Let me reflect...

- ▶ I throw a lot of food in the trash?
- ▶ I throw away a lot of disposable bags after my purchases?
- ▶ I have old furniture and clothes that I don't need anymore?



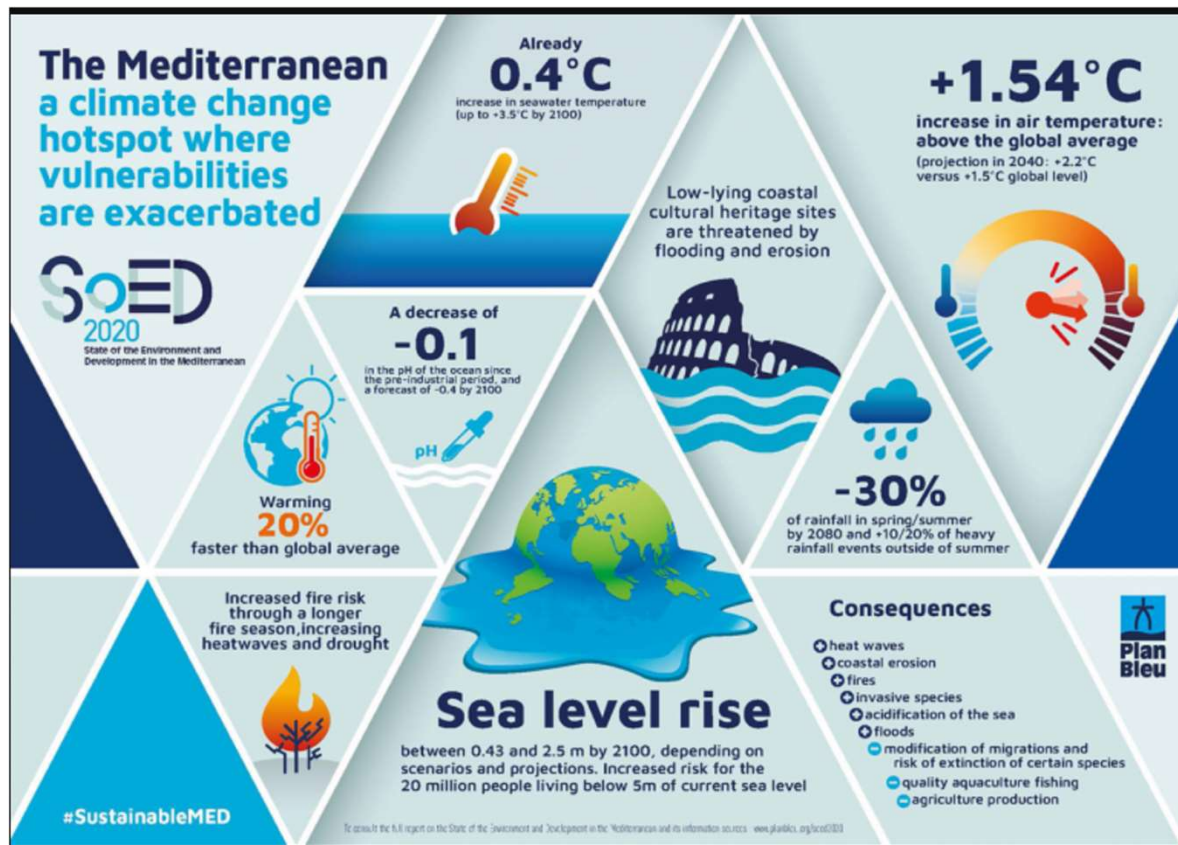


Tourism Circular Economy and Sustainability

Image source: https://www.researchgate.net/figure/SDGs-interaction-with-CE-in-the-tourism-sector-Note-The-red-lines-directly-connect-SDG_fig2_383638901

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5. Food waste in tourism
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7. Glasgow Declaration for Action against Climate Change in Tourism
8. Circular Economy of Plastics
9. Ability to Manage Waste, Wastewater, Recycling and Composting
10. Entrepreneurship and tourism
Examples



Does Climate Change Affect Tourism or Vice Versa?

Image source: <https://www.unep.org/unepmap/resources/factsheets/climate-change>

Climate Change and Tourism

- Heatwaves: Increased frequency and intensity.
- Coastal Erosion: A Threat to Cultural Heritage Near the Sea.
- Fires: More frequent and intense. Drought.
- Lowering the pH Value: Harmful to Marine Life.
- Changes in Rainfall:
 - -30% in rainfall in spring/summer by 2080.
 - +10 to +20% in heavy rainfall outside of summer.
- Flood Modifications: Changes in Patterns Affecting Ecosystems.
- Aquaculture Quality: Potential Degradation of Fisheries Quality.
- Reducing visitors to popular destinations.
- Employment Opportunities: limited employment opportunities in the sector.
- Loss of Revenue in the national and local economy from industry.

How the Travel Industry Contributes to the Climate Crisis

Tourism is responsible for about 8% of global CO2 emissions.

- From flights and sea transport to souvenirs and accommodation, various activities contribute to the carbon footprint of tourism.
- The majority of this footprint comes from visitors to high-income countries, with American travelers topping the list. As the number of people who can afford travel increases, so will the environmental footprint of tourism.

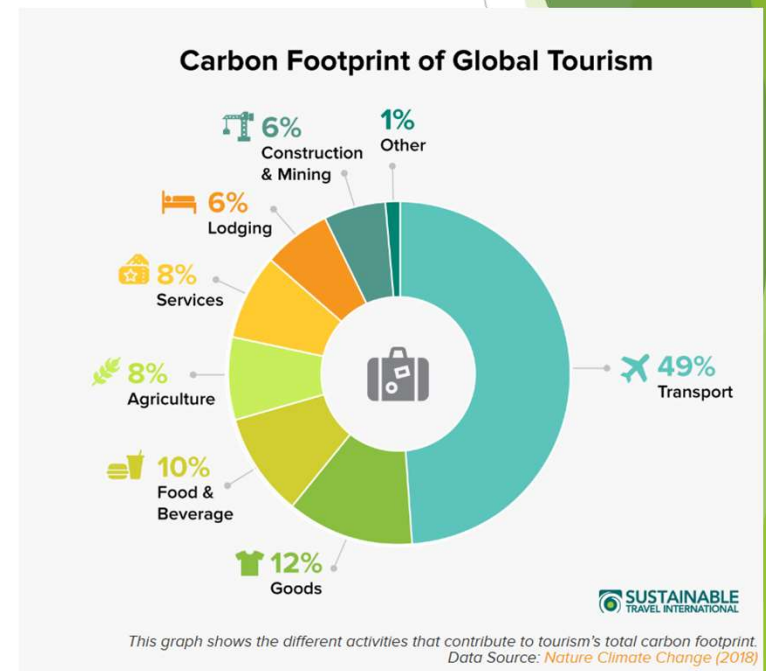


Image source: <https://sustainabletravel.org/issues/carbon-footprint-tourism/>

Main points

450-800

liters of water per day is the average tourist consumption

Holiday resorts must commit to strict water management procedures if they want to reduce their environmental impact.

41.5%

plastic packaging waste in the EU was recycled in 2018

It takes 450 years for the ocean to break down plastic. Beach holidays can only be sustainable if we reduce the plastic waste that harms marine life and pollutes our oceans and rivers.

more than 60%

of chemical products placed on the EU market are dangerous to human health and/or the environment

Choose tourist accommodations that reduce the use of chemicals and pesticides by purchasing EU Ecolabel certified products.

Energy and Accommodation co2

The tourism sector is the second largest energy consumer in the tertiary sector, after shopping malls and hospitals.

Emissions :

- Hotels, rental venues and hostels produce CO2 emissions from energy use.

Heating & Air Conditioning:

- Many stays use heating and air conditioning systems.

Hot Water:

- Water heaters for showers, swimming pools, and spas also contribute to emissions.

Electrical energy:

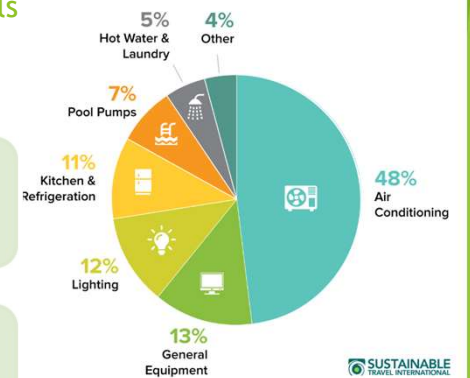
- Energy for lighting, televisions, refrigerators, and washing machines is a major source of emissions, especially in areas with outdated or inefficient systems.

Emissions by Accommodation Type:

- Emissions are typically higher at resorts and large hotels, while shorter stays, such as hostels, have lower emissions.

<https://sustainabletravel.org/issues/carbon-footprint-tourism/>

Energy Use in Hotels in Barbados



Data Source: Caribbean Hotel Energy Efficiency Action Program (2012)

Image source
<https://sustainabletravel.org/issues/carbon-footprint-tourism/>

Transport and Tourism

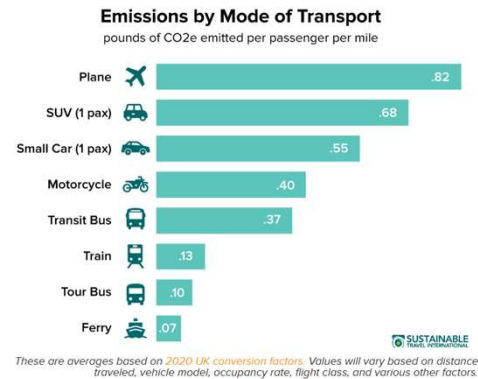


Image source: <https://sustainabletravel.org/issues/carbon-footprint-tourism/>

Moving from one point to another is the most basic element of tourism. Planes, cars, trains, ships and even hot air balloons allow us to explore destinations around the world. However, all these movements entail a significant carbon footprint.

- By 2030, transport-related CO₂ emissions in tourism will increase by 25% compared to 2016 levels. This increase will account for 5.3% of all anthropogenic emissions in 2030.
- Transportation-related emissions from international tourism are expected to increase by 45% from 2016 to 2030. Emissions from domestic tourism are expected to increase by 21% over the same period.

<https://sustainabletravel.org/issues/carbon-footprint-tourism/>

[https://www.unwto.org/sustainable-development/tourism-emissions-climate-change#:~:text=Transport%2Drelated%20emissions%20from%20international%20tourism%20are%20expected,458%20Mt%20CO2%20to%20665%20Mt%20CO2\).&text=Transport%2Drelated%20CO2%20emissions%20of%20the%20tourism%20sector,support%20the%20implementation%20of%20a%20high%2Dambition%20scenario.](https://www.unwto.org/sustainable-development/tourism-emissions-climate-change#:~:text=Transport%2Drelated%20emissions%20from%20international%20tourism%20are%20expected,458%20Mt%20CO2%20to%20665%20Mt%20CO2).&text=Transport%2Drelated%20CO2%20emissions%20of%20the%20tourism%20sector,support%20the%20implementation%20of%20a%20high%2Dambition%20scenario.)

Food waste in tourism

- **Greenhouse Gas Emissions:**
 - Food production is responsible for about 25% of global greenhouse gas emissions.
 - Energy-intensive processes include cultivation, processing, transportation, packaging, refrigeration, and cooking.



<https://sustainabletravel.org/issues/carbon-footprint-tourism/>

Food waste in tourism

Transport Emissions:

- The farther food travels, the more emissions are produced. Transporting food to isolated islands often involves long distances.

Excessive Portions:

- Buffets with "as much as you want" and large portions in restaurants contribute to significant food waste in tourism.

Necessary Emissions:

- Food waste means that emissions from their production were unnecessary.

Composting Practices:

- Globally, less than 50% of hotels compost their food.

Methane Emissions:

- The residues produce methane, which is 21 times more potent than carbon dioxide.

One Planet: Promoting Sustainable Development in Tourism



Image source: <https://www.unwto.org/sustainable-development/one-planet>

- **SCP Agenda:**
 - One Planet sets agenda for sustainable consumption and production (SCP) in tourism.
- **Sustainable Development Goals(SDGs):**
 - Supports the implementation of SDG 12 (Responsible Consumption and Production).
 - Moves on to connected goals, such as:
 - **SDG 13: Climate action.**
 - **SDG 14: Protection of marine ecosystems.**
 - **SDG 15: Protection of terrestrial ecosystems.**

One planet



Areas of Intervention:

1. Climate Action:

Target to reduce emissions by 50% by 2030 and net zero by 2050.

2. Circular Economy of Plastics:

Initiative to reduce plastic pollution in tourism.

Commitments to eliminate problematic plastics and work with suppliers.

3. Transforming Food Chains:

Roadmap to Reduce Food Waste. Sustainable and circular food management

Glasgow Declaration for Action against Climate Change in Tourism



1. **Emission Reduction:** Commitment to Reduce CO2 Emissions and Achieve Net Zero.
2. **Action Plans:** Creating and implementing strategic climate action plans within a certain timeframe.
3. **Overall Cooperation:** Promoting cooperation between tourism organizations and bodies to achieve common goals.
4. **Transparency and Reporting:** Reporting progress on goals and actions on an annual basis.
5. **Education and Awareness:** Promoting education and awareness around sustainable practices in tourism.

Roadmap to Reduce Food Waste

1. Prevention:

The main strategy is to avoid.

2. Redistribution:

Surplus food must be reallocated to feed people, with a second priority being their use for animal feed or reuse in the materials industry.

3. Circular economy:

Disposal in landfills or at sea, through circular economy processes such as composting and energy recovery.

-Approach "Aim - Measure - Act"

The Roadmap promotes the "Aim - Measure - Act" approach, encouraging actors to set goals, measure progress and act to reduce food waste.

<https://www.unwto.org/sustainable-development/food-waste-reduction-in-tourism>



Image source:
<https://www.unwto.org/sustainable-development/food-waste-reduction-in-tourism>

Circular Economy of Plastics



Global Tourism
Plastics Initiative

1. Eliminate unnecessary plastic packaging and items.

2. Plastic Packaging Management:

Aim for 100% of plastic packaging to be reusable, recyclable or compostable.

3. Increase Recycled Content:

Actions to increase the percentage of recycled material in all plastic packaging.

4. Cooperation and Investments:

Cooperation to increase recycling rates and Composting.

<https://www.unwto.org/sustainable-development/global-tourism-plastics-initiative>

Also...

Ability to Manage Waste, Wastewater, Recycling and Composting

- **Waste Management in Tourist Destinations:**
 - It is necessary to collect, transport, treat and dispose of municipal solid waste in an environmentally safe and cost-effective way.
- **Management Proposals and Training:**
 - Knowledge- and Skills-Based Measures for Reuse, Recycling and Composting in Accommodation, Restaurants and Offices.
- **Necessary Skills:**
 - Skills are required to perform these tasks by all workers, not only by maintenance personnel, but also by suppliers and cleaning services.
- **Waste Reduction in Restaurants:**
 - They can minimize waste through portion control, composting, and waste reduction processes, increasing profitability.

In Conclusion: Circular Tourism Economy Reduce, Reuse, Recycle

1. **Waste Reduction-Avoidance:** Implementation of practices that minimize waste generation throughout the tourism process.
2. **Energy Efficiency:** Using Renewable Energy Sources and Optimizing Energy Consumption in Tourism Activities.
3. **Sustainable Sourcing:** Prioritizing Local Products and Services to Support the Local Economy and Reduce Transportation Emissions.
4. **Business Models:** Developing new models that align with circular principles.
5. **Community Involvement:** Involving local communities in tourism planning and management to ensure that their needs are met and benefits are shared.

Entrepreneurship and Tourism Examples

- ▶ Agro tourism
- ▶ Eco-tourism
- ▶ Skills and Food and Waste Management - Composting
- ▶ Renewable energy sources
- ▶ Transportation



Tourism - Actions



Environmental Management and Operations.

- **Environmental Management System (EMS):**
 - It reflects the organisational structure, responsibilities, practices and resources for the implementation of environmental policy.
 - It is linked to voluntary certifications and environmental standards (ISO 14001, ISO 14000, EU Ecolabel, Travelife, Green Globe 21, Green Key, Green Business Scheme).
- **Importance of ISO 14000 Standards:**
 - They cover topics such as product packaging, energy and water use, production processes, product sales, consumer safety, CO2 emissions, and waste disposal.



Green Key Criteria

Image source: <https://green-tt.org/green-key/>

Ecotourism Sustainability

- They support the preservation of natural areas as ecotourism attractions through:
- Creating economic benefit for the services and management bodies.
- Income promotion for local communities and alternative employment opportunities.
- Raising awareness of the conservation of natural and cultural resources.

BENEFITS

from the development of ecotourism
in protected areas

- ✓ Financial contribution to the protection of nature and cultural heritage
- ✓ Contribution to local society and regional development
- ✓ Creating multiple opportunities for environmental education
- ✓ Contribution to population containment and the creation of a healthy social structure and life
- ✓ Growing public awareness of the environment
- ✓ Treating the environment as "usable capital for speculative activity"

The MASTICULTURE tourist agency in Mesta, Chios, specializes in eco-tourism. In addition to the basic services of finding accommodation and travel facilities, MASTICULTURE offers the possibility of participating in experiential activities, such as demonstrations of mastic production and fig distillation, hiking, dance lessons, basketry, cooking and many more. In this way, the traditional economy of the island is supported both ethically and financially. MASTICULTURE is in the process of certifying its environmental performance with the "Eco-Responsibility Label" provided by the University of the Aegean as one of the "Environmentally Responsible Enterprises of the North Aegean".

www.masticulture.com



Agrotourism

Contributes:

1. Supplementing and improving agricultural income.
2. Improving the quality of life and work of the rural population.
3. Retaining the rural population in their place of residence.
4. Improvement and distribution of local agricultural and craft products.
5. Environmental protection.
6. Preservation, promotion and utilization of architectural and cultural heritage.
7. Strengthening entrepreneurship.

<https://familyhotelsgreece.com/room-type/fab-farms/>

<https://www.minagric.gr/for-farmer-2/agrotourism/94-agrotourism>

Image source: <https://familyhotelsgreece.com/room-type/fab-farms/>



Agrotourism



HELLENIC REPUBLIC Ministry of
Rural Development and Food

Experiential agrotourism

the activity
incorporates and enhances the
comparative
advantages of the area
where the business plan is
implemented

- ✓ **Interface**
of supported tourist activity with local businesses and organizations, etc.
- ✓ **Promotion of local gastronomy**
thematic workshops on local gastronomy, connecting agri-food with the culinary habits of the region, joint actions with local businesses in the catering industry, etc.
- ✓ **Promotion of local cultural heritage**
through agricultural activities, participation in production and processing activities of the primary sector, wine festivals, tasting festivals, etc.



All Αράχωβα Αργολίδα Αρκαδία Αχαΐα Γρεβενά Δωδεκάνησα Ευρυτανία Εύβοια Ζάκυνθος Ηλεία
 Ηράκλειο Θάσος Ιωάννινα Κέρκυρα Καστοριά Κορινθία Κυκλάδες Λάρισα Λέσβος Λήμνος Λακωνία
 Λασιθί Λευκάδα Μεσσηνία Πέλλα Πήλιο Πιερία Ρέθυμνο Σέρρες Σαμοθράκη Σποράδες Τζουμέρκα
 Φθιώτιδα Φωκίδα Χίος Χαλκιδική Χανιά



Image source: <https://www.agrotourismos.gr/>



Epirus Women's Agricultural Cooperative of Ioannina (G.I.S.)

Vigla Women's Agricultural and Home-Technical Cooperative

Women's Agrotourism Association of Portaria, Pelion

Women's Agrotourism Cooperative of Zagora

Home Craftsmanship Association of Geraki, Laconia

Image source: <https://www.minagric.gr/for-farmer-2/agrotourism>

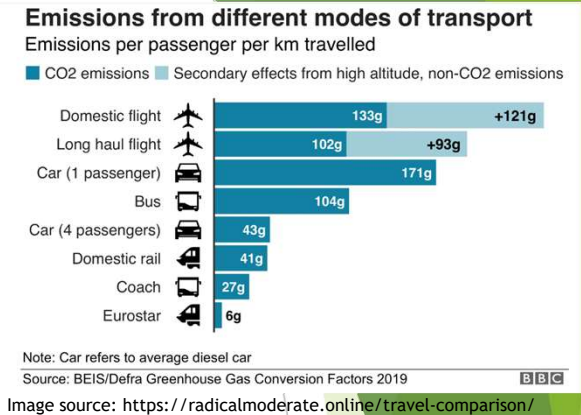
Women's agritourism cooperatives are excellent examples of green entrepreneurship, as they combine the exploitation of local products produced using organic methods with gentle processing, which does not harm the environment. Some successful examples of cooperatives:

- An agrotourism cooperative of women from the Mesotopos of Lesvos. It was founded in 1998 by 26 women in the Mesotopos of Lesvos and produces traditional sweets and other products, such as pasta, olive oil cheese, packaged edible olives and handicrafts. In a short period of time, its products began to be in great demand and it soon evolved into a modern production unit with the ability to support the catering of large events.
- Women's agricultural cooperative of Kokkinogeia, Drama. Founded in 1998 by women of the village with the aim of producing and promoting traditional products of the region, such as Pontic pasta, sweets, jams and liqueurs.
- Women's agrotourism cooperative of N. Artaki. Founded by women of N. Artaki in Evia and creates macaroons, pastries and pasta. It has been certified with an ISO 14001 environmental management system and has a visitable workshop for processing agricultural products. Its special feature is the elaborate decoration of the pastries that transforms them into works of art.

Image source: <https://www.ggb.gr/sites/default/files/basic-page-files/%CE%95%CE%93%CE%A7%CE%95%CE%99%CE%A1%CE%99%CE%94%CE%99%CE%9F%20-%20%CE%A0%CE%A1%CE%91%CE%A3%CE%99%CE%9D%CE%97%CE%A3%20%CE%95%CE%A0%CE%99%CE%A7%CE%95%CE%99%CE%A1%CE%97%CE%9C%91%CE%A4%CE%99%CE%9A%CE%9F%CE%A4%CE%97%CE%A4%CE%91%CE%A3%20%CE%93%CE%99%CE%91%20%CE%9C%9C%CE%95.pdf>

Promoting Environmentally Friendly Transportation

- **Sustainable Transportation Strategies:**
 - Sustainable transportation methods (green travel) are defined as traveling that uses low-emission means of transportation for the main part of the journey, such as cycling, busing, training, or car-sharing.
 - There is a growing need for alternative forms of transport, with the aim of reducing CO2 emissions (UNWTO & ITF, 2019).
 - **Training Tourism Executives:**
 - Tourism managers and staff need to be trained in sustainable mobility and tourism.
 - Sustainable transport needs to be promoted and vehicle emissions must be reduced.
- <https://www.unwto.org/sustainable-development/tourism-emissions-climate-change>



Calculate Your Travel Carbon Footprint
Use our carbon footprint calculator to calculate your travel emissions and purchase carbon offsets.

Know your metric tons or purchase amount?
Offset by Amount

Trip Details

☒ Flight ☐ Hotel ☐ Car ☐ Boat

☒ One Trip ☐ Multiple Trips ☐ Private Jet

Round Trip Economy

Where From? ↔ Where To?

CALCULATE



Image source: <https://www.automation.com/en-us/articles/december-2023/net-zero-transportation-co2-derived-e-fuels>



Image source: <https://www.sierraclub.org/minnesota/zero-waste>

Strategic Objectives of Sani/Ikos Group

- **Net Zero by 2030:** Goal for a Zero Carbon Footprint, Implementing Sustainable Practices and Investing in Renewable Energy.
- **Zero Single-Use Plastics:** Commitment to the complete elimination of single-use plastics in all service and support areas.
- **Zero Waste in Landfills:** Strategy for the complete elimination of waste that ends up in landfills, through recycling and composting.

<https://www.newmoney.gr/roh/palmos-oikonomias/epixeiriseis/simantikes-protovoulies-apo-ton-omilo-sani-ikos-gia-tin-proothisi-tou-viosimou-tourismou/#:-:text=%C2%AB%CE%92%CE%B1%CF%83%CE%B9%CE%BA%CF%8C%CF%82%20%CE%BC%CE%B1%CF%82%20%CF%83%CF%84%CF%8C%CF%87%CE%BF%CF%82%20%CE%B5%CE%AF%CE%BD%CE%B1%CE%B9%20%CE%B7%20%CE%BC%CE%B5%CE%BB%CE%AD%CF%84%CE%B7%20%CF%84%CF%89%CE%BD,%CE%BA%CE%B1%CE%B9%20%CF%84%CE%B7%CF%82%20%CF%83%CF%85%CE%BC%CE%B2%CE%BF%CE%BB%CE%AE%CF%82%20%CF%84%CE%BF%CF%85%20%CF%83%CF%84%CE%BF%CE%BD%20%CE%BC%CE%B5%CF%84%CF%81%CE%B9%CE%B1%CF%83%CE%BC%CF%8C%20%CF%84%CE%B7%CF%82.>

Long-Term Commitment to the Environment

Sani/Ikos Group

- ▶ All Sani and Ikos resorts are already carbon neutral and source 100% of their electricity from renewable sources.
- ▶ All resorts reuse 100% of their water for garden irrigation, using water treatment plants.
- ▶ The Group's circular economy practices include the composting of organic waste, artificial intelligence (AI) applications to reduce food waste in kitchens, and the recycling of more than 20 different materials, such as coffee capsules, candles and textiles, with the aim of expanding to other hotel operations.

SANI
RESORT

ikos[™]
RESORTS

Sani and Ikos carbon neutral 100% renewable

(ISO 14064-1:2018, ISO 50001:2018).

Group's Carbon Footprint Strategy:

- **Set of Initiatives:** Includes investments in renewable energy sources, energy-saving systems, electrification of facilities and fleet.
- **Photovoltaic Park:** Creation of a new photovoltaic station in Kos to provide "green" energy to Ikos Aria.
- **Collaboration with the Forest Research Institute:** A project started to assess the carbon sink of the Sani forest in Halkidiki and study ways to increase it.

Image source: <https://sani-resort.com/sustainability>

<https://money-tourism.gr/omilos-sani-ikos-simantikes-protovoylies-tin-prostasia-apokatastasi-topikon-mesogeiakon-oikosystematon/>

Image source: <https://www.powergame.gr/epichirisi/5381> / <https://www.sani-ikos-afximena-esoda-alla-kai-zimies-sta-xenodocheia-tou-andrea-andreadi/>



Our commitment to sustainability has been recognized with various environmental awards and certifications, from the Green Key and ISO 14001:2018 certification for our hotel's environmental management to the Blue Flag certifications for our world-class beaches.



Community Support

Over 56% of the produce used in our resorts today comes from local or indigenous farmers, small businesses and cooperatives. We partner with local restaurants, offer innovative education, and invite guests to explore them through the Local Discovery experience.



Inspirational Collaborations

We are proud to partner with local and national non-profit organizations to protect and conserve the environment. Our partnerships contribute to marine and wetland protection, environmental conservation, and animal welfare through grants, bird censuses, and educational programs. We support over 40 organizations annually, including local schools, hospitals, refugee shelters, and cultural associations.

Image source: <https://ikosresorts.com/el/sustainability/>

Sani/ikos Projects





Zero Waste HoReCa



Golden Zero Waste HoReCa
Award for the overall
performance of Kallichoron
Art Boutique Hotel in the
4 areas: Waste,
Energy, Water and Supplies, from the
Coca Cola Foundation platform within the
framework of the company's global vision "For a
World Without Waste".

Green Awards 2020



Double distinction
with the gold award in
**Green
Accommodation**

Service category and the platinum in the
Green Services pillar at the Green Awards 2020 for the hotel's
sustainable operation program
"Kallichoron Goes Green", which has been successfully
implemented since 2015.

Green Key

Certification with the international
ecological quality mark Green Key
Eco Label, for the environmental
policy we follow.



Green Key

[kallichoron.gr/to-kallichoron/vraveia-pistopoiiseis](https://www.kallichoron.gr/to-kallichoron/vraveia-pistopoiiseis)

Promoting Eco-Friendly Products and Services: Awareness and Image

Explore Sustainable Experiences



Image source : <https://a8inea.com/bravenewhospitality-me-protagonisti-ti-viosimotita/>

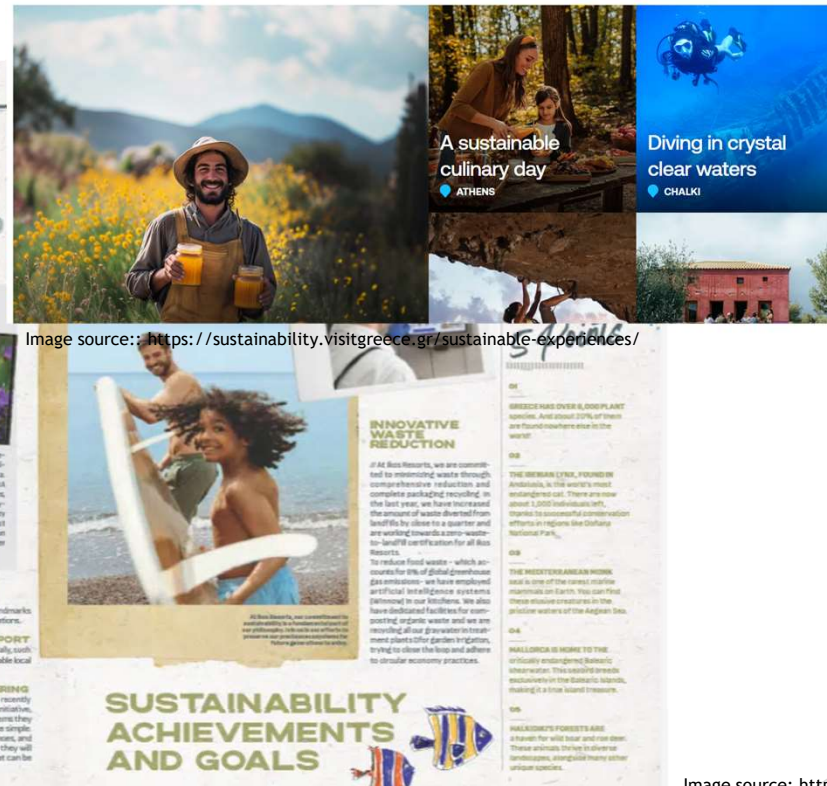
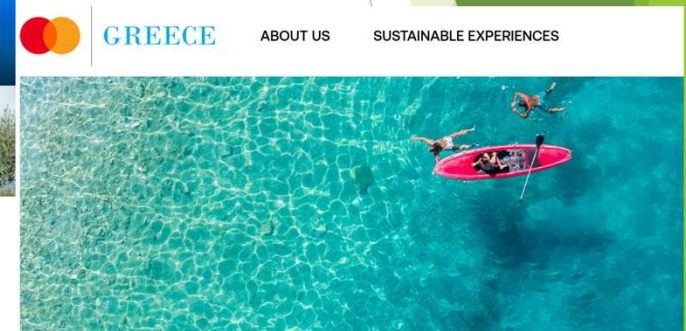


Image source : <https://sustainability.visitgreece.gr/sustainable-experiences/>



[Homepage](#) / [Sustainable Experiences](#) / [Discovering Paxos Island With Kayak](#)

Discovering Paxos Island with Kayak

Image source : <https://sustainability.visitgreece.gr/sustainable-experiences/discovering-paxos-island-with-kayak/>

Image source : <https://ikosresorts.com/el/news/110052-2/>

Let me reflect ...

From what I heard, what impressed me the most and why?

Who could I work with in my community to create something new?

In which area would I be interested in starting some training, developing new technical skills?





Image source: <https://freedomforgoaching.com/mission>



Image source <https://dcba.lacounty.gov/financial-empowerment-tips/>

Section 2: Personal and Professional Actions

Contents

1. What can I do in my daily life?
2. Calculate your carbon footprint
3. Green Sustainable Entrepreneurship
4. How to Create a Business Plan: A Step-by-Step Guide
5. Make your canvas
6. CV
7. Tips for a Successful Interview
8. Funding in the EU
9. Crowdfunding
10. Legal context

What of these do I do in my daily life?

► Food

- Consume local and seasonal produce (e.g. no strawberries in winter!);
- You have limited your consumption of meat, especially beef;
- For your shopping, use bags made from recyclable materials and avoid products with excessive plastic packaging;
- Try to buy only what you need, so you don't throw away food;

► Clothing

- Take care of your clothes, process;
- Swap clothes, lend your own, or borrow or buy used.
- Buy clothes that have been made responsibly, e.g. from recycled material or with an eco-label.

What can I do in my daily life?

- ▶ **Transport**
- ▶ Use your bike or public transport.
- ▶ Think smart: when and how you drive.
- ▶ Try the train for your next vacation.
- ▶ **Electricity and E-Waste**
- ▶ Lower the heating by 1°, even that will make a difference.
- ▶ Don't sit in the shower for too long.
- ▶ Turn off the water when brushing your teeth or washing dishes.
- ▶ Unplug electrical appliances and do not let your phone charge when the battery is full.
- ▶ Don't store unnecessary data in the cloud (find out about your digital footprint!).
- ▶ Choose energy-efficient products with the 'A' mark (EU energy label).
- ▶ Limit your trash and learn to recycle it.

- Refuse:** to buy products that you don't really need.
- Reduction:** Use fewer products.
- Reuse:** Use again, exchange, think of different ways to use, avoid single-use products.
- Recycling:** Recycle, buy products made from recycled materials.
- Recover value-Composting:** Make your own fertilizer, do composting.

THE WASTE HIERARCHY

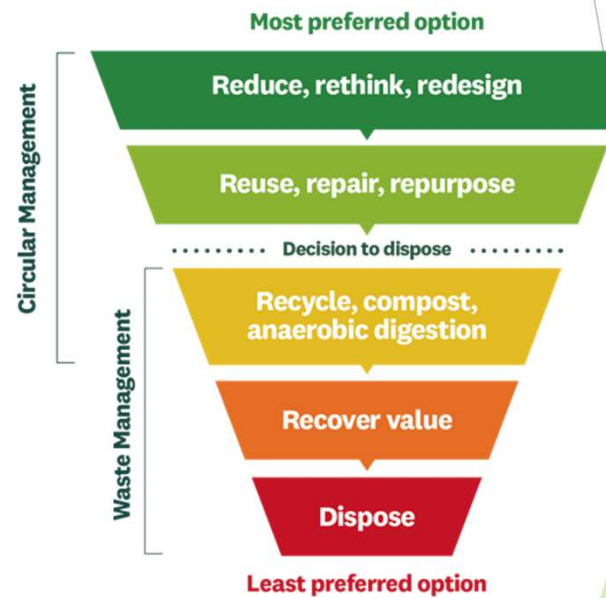


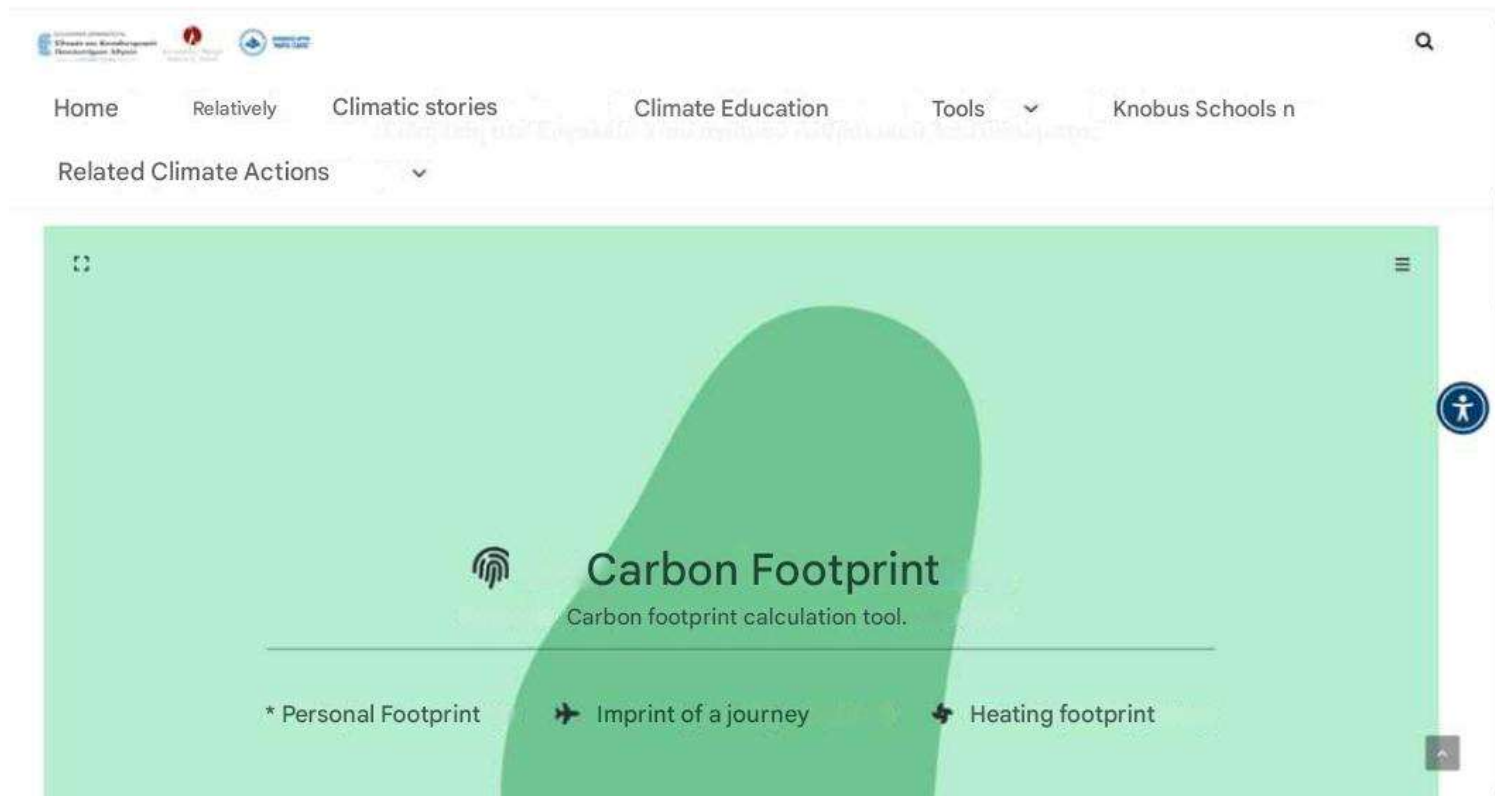
Image source: <https://www.wastenothing.co.nz/our-zero-waste-journey/waste-hierarchy/>

Ένας χρήσιμος οδηγός
με πρακτικές,
καθημερινές λύσεις

/



Calculate Your Carbon Footprint



https://climateacademy.gr/carbon_footprint/

Green Sustainable Entrepreneurship

It preserves and protects the environment and natural resources.

At the same time, it ensures the financial viability of the business.

Key Points on Economic Sustainability and Green Practices:

1. **Financial Sustainability:** Monitoring developments and adaptability are critical for financial sustainability. Loan approval is influenced by sustainable practices.
2. **Image Improvement:** Green practices improve the image of the business to consumers, creating a sense of empathy.
3. **Employee Loyalty:** Sustainable practices enhance employee safety and pride, turning them into advocates for the business.
4. **Innovative Solutions:** The search for sustainable practices leads to innovation and new solutions in the market.
5. **Continuous Social Responsibility:** Corporate social responsibility must be integrated into core business processes, adopting permanent green practices.
6. **Reduction of Production Costs:** Green entrepreneurship reduces energy consumption, leading to lower production costs.

How to Create a Business Plan: A Step-by-Step Guide

1. Evaluate your business idea
2. Research Your Industry
3. Analyze Your Competition
4. Define Your Target Market
5. Create Your Business Model

Choose the right business structure (e.g., sole proprietorship, LLC).

Value Proposition: Identify the value you offer. https://www.doola.com/el/blog/how-to-create-a-business-plan/?htrafficsource=Blog&el=Blog_social_marketing



Image source: <https://enna.org/adhd-and-career-resolutions-setting-goals-that-work-for-you/>

Πώς να δημιουργήσετε ένα επιχειρηματικό σχέδιο: Ένας οδηγός βήμα προς βήμα

6. Develop Your Financial Plan

7. Describe your product and services

8. Describe Your Business Structure

9. Outline Your Marketing Plan

10. Write your summary

-Business Overview: Clearly present your business and products/services.

-Financing Projects: Information on financing needs.

11. Execute Your Business Plan

-Composition: Combine all of the above and create the design.

-Execution: Begin the processes for implementing your plan.

https://www.doola.com/el/blog/how-to-create-a-business-plan/?htrafficsource=Blog&el=Blog_social_marketing



Image source: <https://orcabaytrading.com/blogs/testing/>

Sustainable business models

Look for ways to implement sustainable changes that don't require you to completely change your business model.

Sustainable packaging

Utilization of carbon offsets

Circular economy: Recycling program for the proper disposal of your products

Prioritize Efficient Delivery

Choose eco-friendly packaging

Reduce returns by informing audiences with details

End-of-Life Programs

Implementing recycling or reuse initiatives

- Ensuring that the disposal is environmentally friendly

<https://www.wix.com/blog/ecommerce/2022/08/sustainable-ecommerce>

<https://qualityinspection.org/design-make-eco-friendly-products/>

25 Green Business Ideas

<https://www.doola.com/el/blog/green-business-ideas/>

Sustainable Fashion Store

Converting or Selling E-Bikes

Organic Smoothie Bar

Ecological Cleaning Company

Bicycle Rental Service

Green Dry Laundry

Organic Tea or Coffee

Installation or Repair of Solar Panels

Plant-Based or Vegan Restaurant

Organic Lawn Care Service

Green Business Consulting

Sustainable Beauty Salon

Electrical Landscaping Service

Sustainable Pet Suppliers Company

Ecological Home Renovation

Reusable Bottles Company

Creation of an Environmental Support Group

Ecotourism

Website on Environmental Concerns

Sustainable Toy Store
(Κατάστημα Βιώσιμων Παιχνιδιών)

Green Product Reviews Website or App

Composting Service

Electronics Recycling

E-Scooter Sales and Repairs

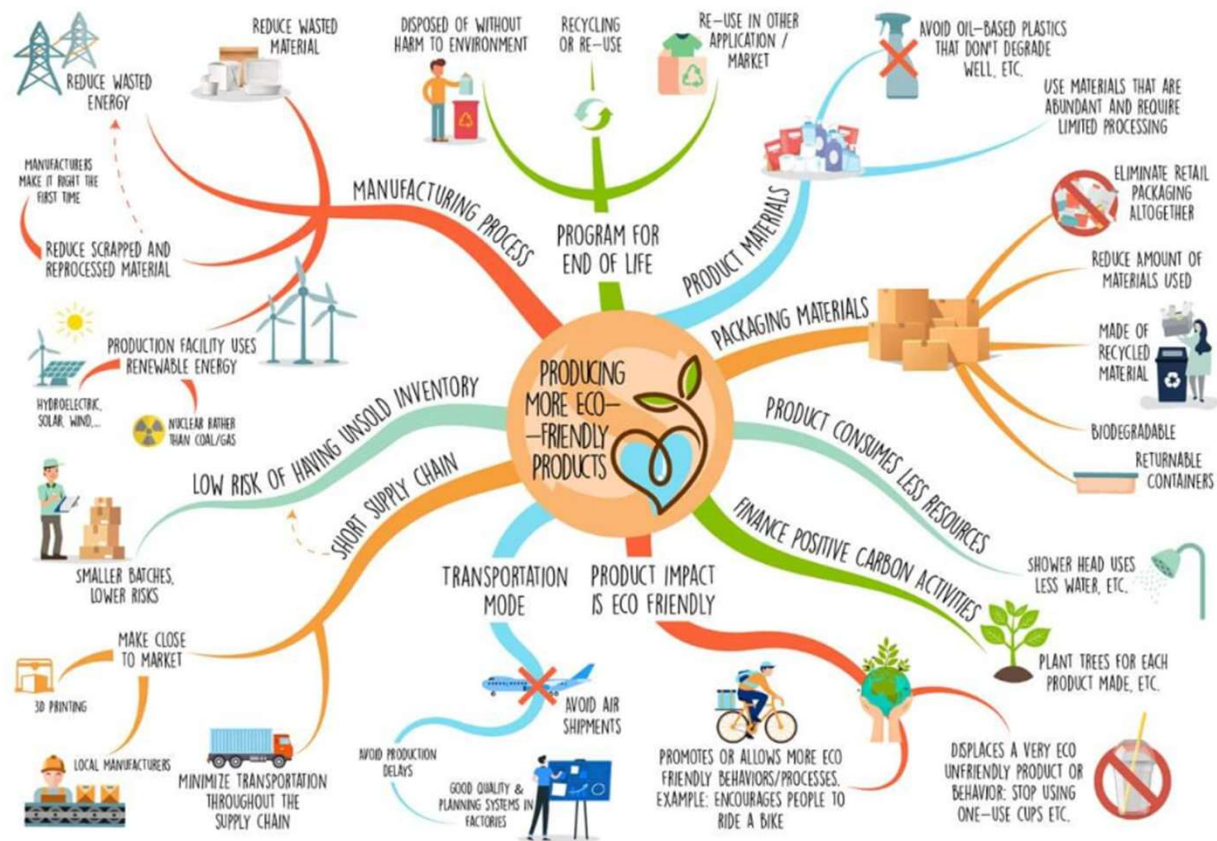
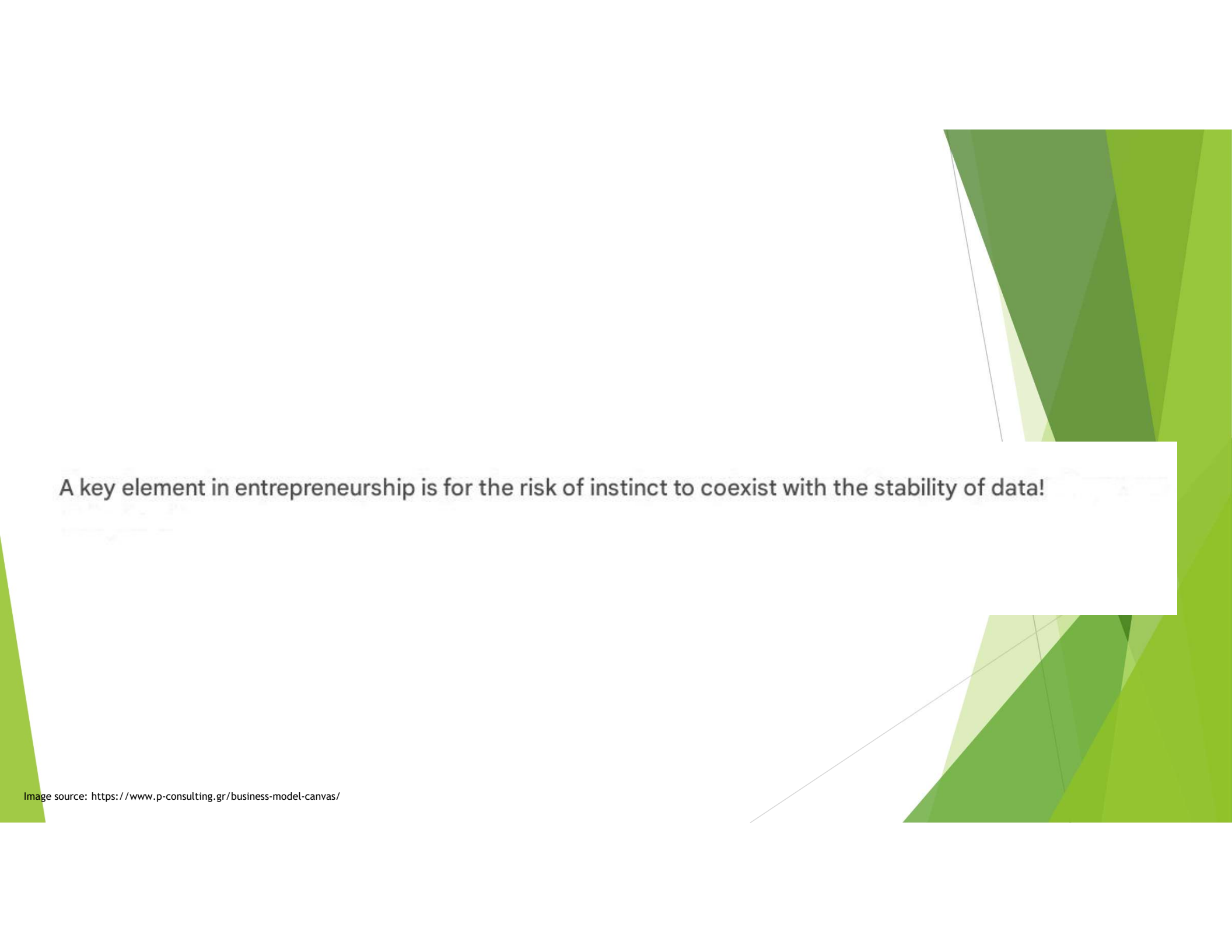
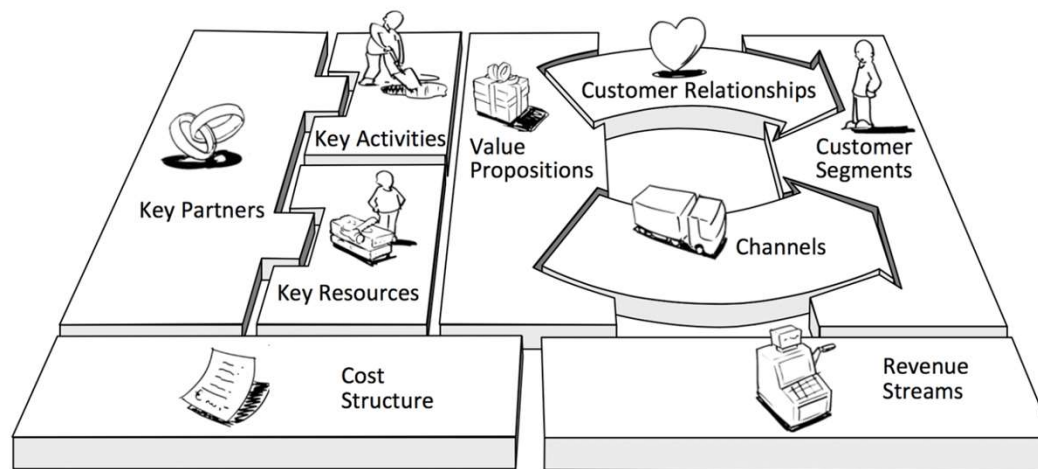


Image source: <https://qualityinspection.org/design-make-eco-friendly-products/>

The background of the slide is composed of several overlapping, semi-transparent green triangles and polygons of various shades, creating a modern, abstract geometric pattern. The colors range from a light lime green to a darker forest green.

A key element in entrepreneurship is for the risk of instinct to coexist with the stability of data!

Make your Canvas



Business Model Canvas



Image source: <https://www.p-consulting.gr/business-model-canvas/>

1ov: Value Propositions (Differentiation Element)

- What value do we provide to each customer group?
- What problem do we help solve for each customer group?
- What product and/or service bundles do we offer to each customer group?
- What needs of each customer group do we satisfy?
- What is the "minimum viable" product?

2ov: Customer Segments (Customers)

- For which customer groups do we create value?
- Who are our most important customers?
- How do demographics and psychographics differ?

3ov: Channels (Networks)

- Through which channels do our customers want us to reach them?
- How do other companies approach them?
- Which channels are more efficient? At what cost?
- How do they relate to customer habits?

4ov: Customer Relationships (Customer Relations :-))

- How do we manage customer outreach, acquisition, service growth and loyalty?
- How do they interconnect with the other elements of the business model?
- How expensive are they?

5ov: Revenue Streams

- What delivered value are customers willing to pay for?
- What do they buy and what/how do they pay for it today?
- How would they prefer to pay?
- How do individual revenues contribute to total revenue per revenue stream?

6Ov: Key Resources

- What main resources/means do they require:
- The suggested value?
- The communication and distribution channels?
- Customer relations:
- Revenue streams:

7ov: Key Partners

- Who are our main partners?
- Who are our main suppliers?
- What important resources do we obtain from our partners?
- What main activities do our partners perform?

8ov: Key Activities

- What key internal corporate processes require:
- The suggested value?
- Communication and distribution channels:
- The revenue streams?

9ov: Cost Structure (Main Expenses)

- What are the most important costs of our business model:
- Which of the required resources are the most expensive:
- Which of the required internal processes are the most costly?

Let's get started

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
Who are our main partners? Who are our main suppliers? What important resources do we obtain from our partners, What main activities do our partners perform?	What are the key internal corporate issues? processes require The suggested value Communication and distribution channels, The revenue streams?	What value do we provide to each customer group, What problem do we help solve for each customer group? What product and service bundles do we offer to each customer group, What needs of each customer group do we satisfy? What is the "minimum viable" product?	How we manage customer outreach, acquisition, service growth and loyalty, How do they interconnect with the rest of the business model elements: How expensive is it,	For which customer groups do we create value? Who are our most important customers? How do demographics and psychographics differ?
	Key Resources		Channels	
	What main resources do they require? The suggested value? The communication and distribution channels, Customer relations, Revenue streams,		Through which channels do our customers want us to reach them? How do other companies approach them, Which channels are most efficient? At what cost, How do they relate to customer habits,	
Cost Structure			Revenue Streams	
What are the most important costs of our business model? Which of the required resources are the most expensive, Which of the required internal processes are the most costly?			What delivered value are customers willing to pay for? What do they buy and what/how do they pay for it today? How would they prefer to pay, How individual revenues contribute to total revenues per revenue stream.	

CV: Introduce yourself

[My CVs](#) **Untitled CV** [Write](#) [Templates](#) [Import](#) [Download](#)

General Information

CV Language ⓘ

🇬🇷 Greek

🇩🇰 Danish

🇳🇴 Norwegian

🇨🇪 Czech

🇬🇷 Greek

🇧🇬 Bulgarian

🇸🇮 Slovenian

 [Add a photo](#)

Last Name

e.g. Manet

Phone Number

e.g. (020) 1234 5678

✓ 997 034 1478
✉ your.email@example.com
📅 05 67 8456
📅 7/77/91
📄 linkedin.com/in/your-name

Δεξιότητες
Δεξιότητα 1
Δεξιότητα 2
Δεξιότητα 3

Γλώσσες
Γλώσσα (BG)
Γλώσσα (GR)

Ενδιαφέροντα
ταξίδι ενδιαφέροντος

Όνομα Επίθετο
Τίτλος θέσης εργασίας
Σύντομη περιγραφή του υπόθετου και του επαγγελματικού σας εγχειρίδιου. Παράδειγμα τίτλου από πάνω από 5 χρόνια εμπειρίας στις πωλήσεις στον τομέα του πολιτισμού και προ-ενημέρωσης...

Ιστορικό εργασίας
Τίτλος θέσης εργασίας
Όνομα εταιρείας, πόλη
Οι κύριες αποστολές σας που ολοκληρώθηκαν κατά τη διάρκεια αυτής της εργασίας, οι οποίες θα μπορούσαν να προκαλέσουν ενδιαφέρον στον μελλοντικό σας εργοδότη.
Ευχαριστώ και αποσπασματικά που επισυνάψτεται.

Εκπαίδευση
Όνομα του διπλώματος / εκπαίδευσης
Όνομα του εργοδότη / διπλώματος, Πόλη
Ολοκληρωμένα τμήματα σχετικά με τη ζητούμενη θέση
Επίσης, διαπιστώσεις

<https://makemycv.com/>

<https://rise-club.org/viografiko/>

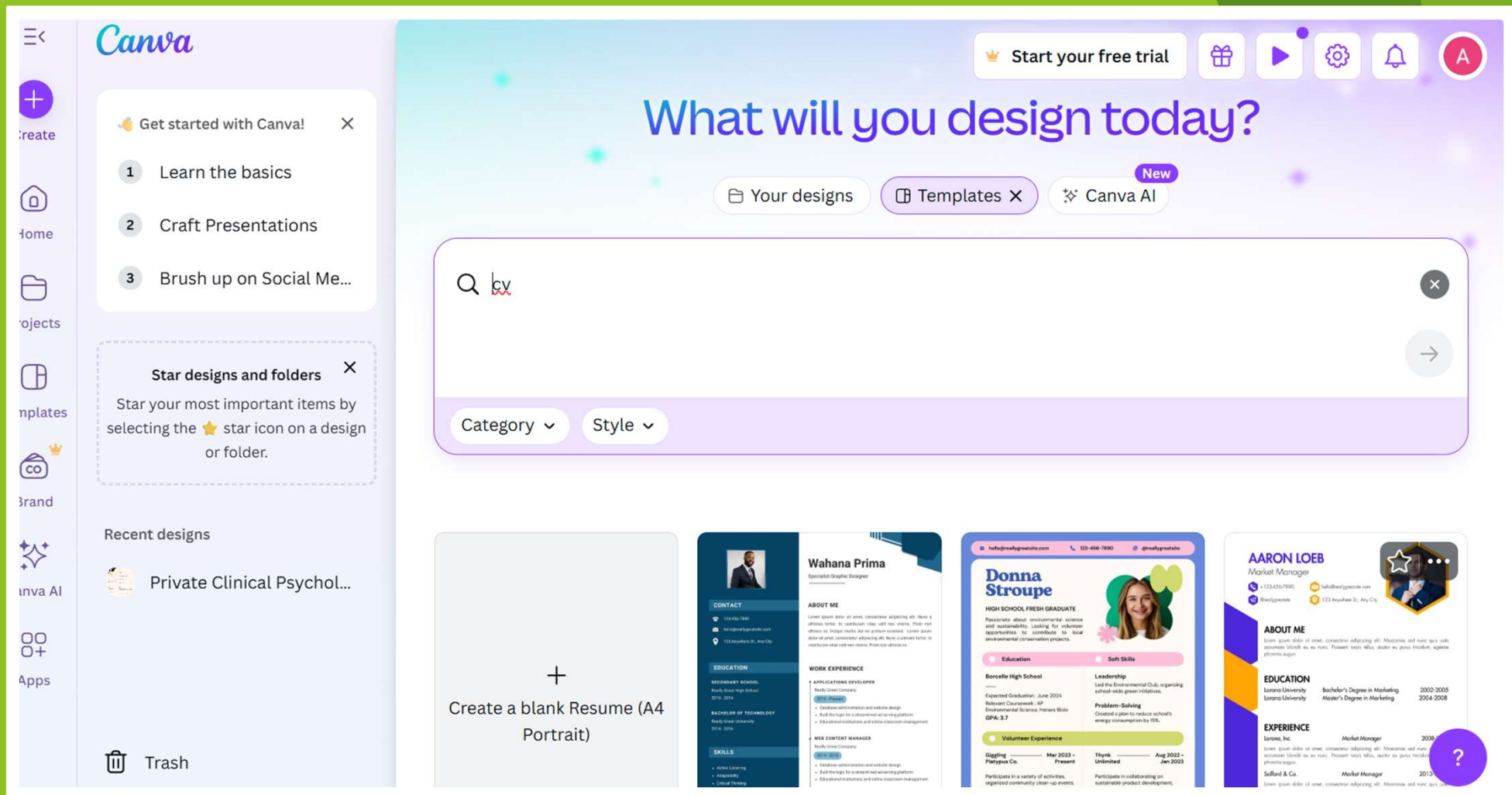


Image source: <https://www.canva.com/s/templates>

Tips for a Successful Interview



Image source: <https://www.esafety.gov.au/educators/toolkit-for-schools/prepare>

1. Preparation

- ▶ For any company that will call you to interview you, you need to do some research.
- ▶ Go to the site and learn about the company and see what unites you with the subject of the company that has invited you and why you would specifically like to work there.

Tips for a Successful Interview

► 2. Clothing

An interview is an invitation!



Business Casual Examples for Women



Image source: <https://www.xixspecials.shop/?ggcid=1649989>

Tips for a Successful Interview

► 3. Consistency

In every interview, you need to be ahead of the time you've been told. This is an indication of how consistent you are and how you will be in the case of your collaboration



Tips for a Successful Interview



► 4. Positive energy/mood

It is very important to bring your smile and good mood to the interview! This is because one of the most hidden advantages of a person is to make you feel good. On the other hand, it is unbearable to have to work with a toxic person. So put on your most beautiful smile and bring your good mood to your meeting

Tips for a Successful Interview

► 5. Good manners

Small things make a big difference: a strong handshake. A warm smile. Not interrupting the other person when he speaks. The mobile phone should be on the quite mode in the bag as well. Don't talk more than necessary. Make polite eye contact.

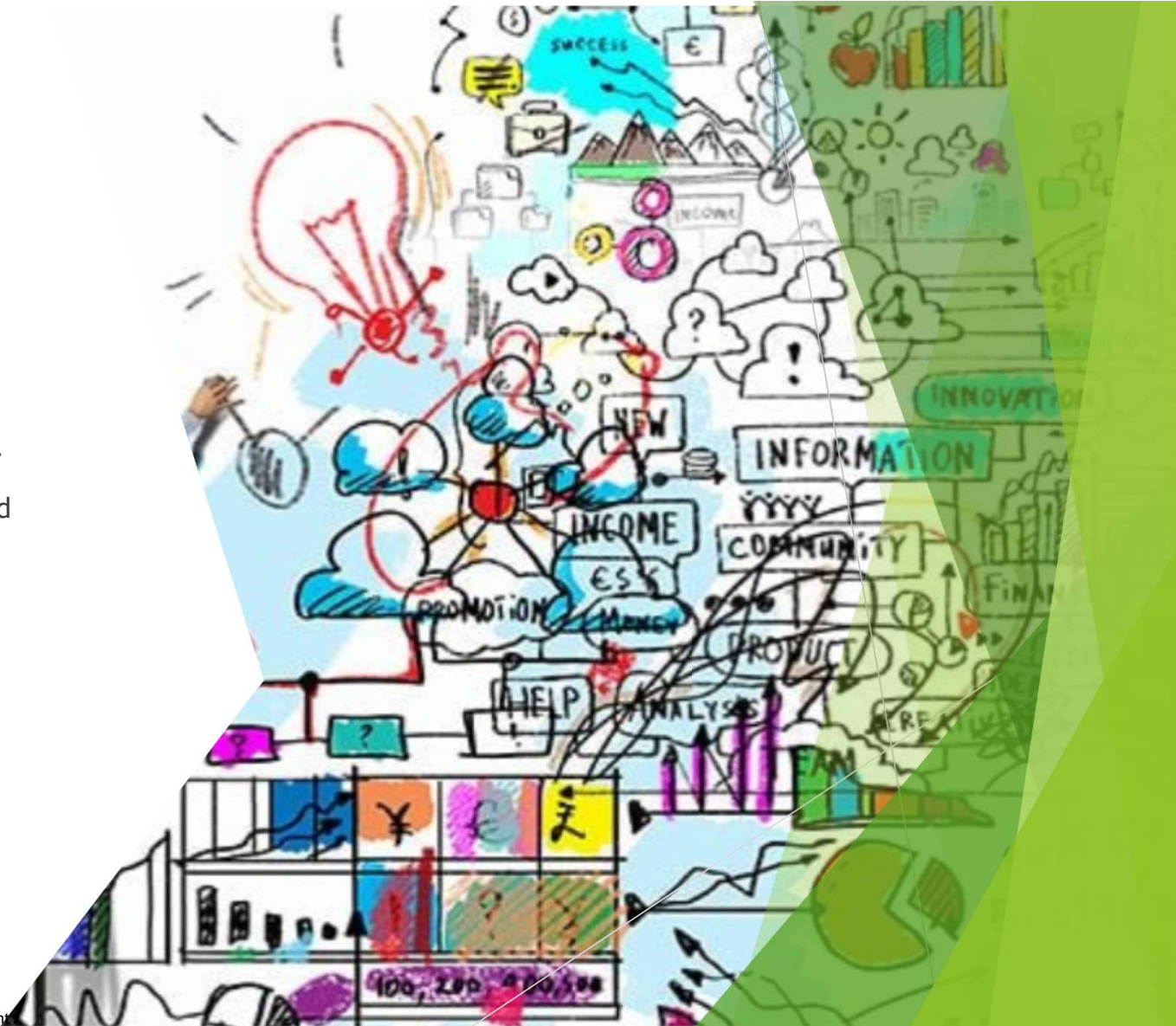


Tips for a Successful Interview

► 6. Willingness to work

Experience is built, but motivation is not. You want to show that even if you don't know the job very well, you are not afraid to work hard.

You will do your best to do well, for you and the company you work for.



Tips for a Successful Interview

- ▶ 7. Honesty - authenticity
- ▶ You need to be honest. The market is small, the people interviewing are experienced and it will be seen, either before or along the way, if something you say is not true this can have a negative impact on your later career.



Tips for a Successful Interview

► 8. Know your self, your strengths and weakness

Think objectively about what you are good at and what you are not, what you like and what you don't, and what your strengths and weaknesses are.

It is good to know how to communicate your strengths more intensely and to honestly communicate your weaknesses without giving them much weight



Tips for a Successful Interview

9. A warm thank you

- An invitation to an interview is not a given. It means that the people of the company bothered to read your CV and devoted time to your discussion. It would be appreciated when the interview is over, to say a "thank you very much" for today's interview and that it will be a great pleasure for you to work together



Image source: <https://www.perdikis.gr/eyxetiries-kartes/39898-karta-eyxetiria-fun-creations-bright-eyxaristo-sb119-5297083901194.html>

kariera.gr

<https://resources.kariera.gr>

Financing

1. **National Programs:**

Visit the website of the Ministry of Development and Investment, where financing programs for small and medium-sized enterprises are often announced.

2. **European Funds:**

See the programs of the European Union, such as the NSRF (National Strategic Reference Framework) that offers subsidies for sustainable business activities.

3. **Consulting Services:**

Contact local development companies or chambers as they offer advice and information on financing.

4. **Online Platforms:**

Use platforms such as "crowdfunding" that gather information on grants and funding.

5. **Participation in Events:**

Attend seminars, exhibitions, and events related to green entrepreneurship, as information on available subsidies is often provided.

6. **Networking:**

Build networks with organisations working on the green economy to exchange information and experiences.



LIFE Program of the European Union



Green Fund

Image source <https://circulargreece.gr/el/etairoi/prasino-tameio/>

EU funding can take many different forms

- ▶ grants — usually, individuals apply for grants by presenting their project ideas following a 'call for proposals'»
- ▶ επιδοτήσεις τις οποίες διαχειρίζονται οι εθνικές και περιφερειακές αρχές
- ▶ loans, guarantees and equity in the form of financial assistance to support EU policies and programmes.
- ▶ loans to EU Member States and third countries.
- ▶ prizes to winners of Horizon Europe competitions.
- ▶ European Regional Development Fund - regional and urban development.
- ▶ Cohesion Fund - for less developed regions.
- ▶ European Social Fund+ - social inclusion and good governance.
- ▶ Just Transition Fund - supports regions most affected by the transition towards climate neutrality.
- ▶ European Agricultural Fund for Rural Development.
- ▶ European Maritime and Fisheries Fund.
- ▶ National websites ('single portals') for shared management funds.
- ▶ Regional and national funding authorities.

https://european-union.europa.eu/live-work-study/funding-grants-subsidies_el#:~:text=%CE%94%CE%B9%CE%B1%CF%87%CE%B5%CE%AF%CF%81%CE%B9%CF%83%CE%B7%20%CF%84%CF%89%CE%BD%20%CF%87%CF%81%CE%B7%CE%BC%CE%B1%CF%84%CE%BF%CE%B4%CE%BF%CF%84%CE%AE%CF%83%CE%B5%CF%89%CE%BD%20%CF%80%CE%BF%CF%85%20%CF%87%CE%BF%CF%81%CE%B7%CE%B3%CE%B5%CE%AF%20%CE%B7%20%CE%95%CE%95,%CE%AE%20%CE%B5%CE%BA%CF%84%CF%8C%CF%82%20%CF%84%CE%B7%CF%82%20%CE%95%CE%95%20%CE%B4%CE%B9%CE%B1%CF%87%CE%B5%CE%B9%CF%81%CE%AF%CE%B6%CE%BF%CE%BD%CF%84%CE%B1%CE%B9%20%CF%84%CE%B7%20%CF%87%CF%81%CE%B7%CE%BC%CE%B1%CF%84%CE%BF%CE%B4%CF%8C%CF%84%CE%B7%CF%83%CE%B7

Finance, online platform



Image source <https://www.flickr.com/photos/183401634@N06/49912056746/>

How to Create a Crowdfunding Page

1. Create a Crowdfunding Plan.

- **Define Your Needs:** Explain in detail why you need money. How much money do you need for your energy? Make a realistic estimate.

2. Set Rewards for Investors.

- **Δωρεές:** Δωρητές σας δίνουν χρήματα χωρίς αναμονή επιστροφής.
- **Donations:** Donors give you money without waiting for a refund.
- **Loans:** Investors provide loans with a fixed interest rate and time duration.**Μετατρέψιμα Securities:** Loans that can be converted into shares.
- **Rewards or Compensation:** Offer products or services in return.

<https://whydonate.com/en/crowdfunding/>

How to Create a Crowdfunding Page

3. Crowdfunding Platform Selection.

- Choose the platform that best suits your purpose. Consider the crowdfunding model, the amount required, the duration of the campaign, and the industry.

4. Creating a Good Story

- A short and meaningful story is important to attract donations and investments. Explain what your idea is and what problems it solves. Use Engaging Visuals and Videos.

5. Mobilizing Your Network.

- Inform your existing network about the launch of the campaign. Create ambassadors and collect promises.

6. Start the Campaign.

- Your campaign begins! Use every opportunity to showcase your campaign online and offline and show your commitment.

7. Keep in Touch with Donors and Investors.

- At the end of the campaign, thank the donors and let them know about the results. Stay in touch and keep them informed about the progress of your activities.

Legal context

1. Legislation Research:

1. Visit the website of the Ministry of Environment and Energy for information on environmental regulations and laws concerning green businesses.
2. Consider the legal framework related to sustainability, renewable energy, and recycling.

2. Business Registration Process:

2. Contact the General Commercial Registry (GEMI) for the registration procedures of your business.
3. Select the legal form of the business (e.g. sole proprietorship, general partnership, limited liability company, sa).

3. Licensing and Certifications:

3. Check what permits are required to operate your business, such as environmental permits or operating permits.
4. Consider Obtaining Certifications for Sustainable Practices (π.x. ISO 14001).

4. Support and Counseling:

4. Contact organizations that provide support to green businesses, such as the Hellenic Development Bank or the Athens Chamber of Commerce and Industry.
5. Consult with legal or environmental experts to ensure compliance with the law.

5. Information on Subsidies and Funding:

5. Consider subsidy or financing programs for green businesses through government programs or European Funds.



ΔΥΠΑ e-Services

WAKE UP

Greece 2.0

With funding from the European Union

Open-Programs

Benefits-Assistance

Important-Announcements

See-jobs-positions

Post-jobs

Applications begin for the 2nd cycle of the employment action in fire-stricken Municipalities of Attica

The beneficiaries will be employed for 12 months, with a gross monthly salary of €1,200.

See the Press Release here

Quick Search

I am...

I'm looking for...

Where do I belong...

Frequently Asked Questions

The Appointment (KPA)

myDYPAlive

from JOBmatch

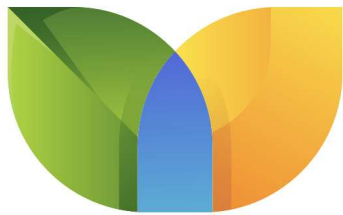
The e-Group Counseling Workshops

The Social Security Program Providers

Welcome to DYPAlive, how can I serve you?

<https://www.dypa.gov.gr/>

Follow us!



SUStainable
FUTure

EMPOWERING YOUTH WITH GREEN SKILLS FOR THE CIRCULAR ECONOMY



<https://www.linkedin.com/company/106969828/>



<https://www.facebook.com/share/1C9wtbfwGE/>

Useful resources

- ▶ **Eco Village Farm** <https://dio-pigadia.com/el/%CE%BA%CE%B1%CE%BB%CF%8E%CF%82-%CE%AE%CE%BB%CE%B8%CE%B1%CF%84%CE%B5-%CF%83%CF%84%CE%B1-%CE%B4%CF%8D%CE%BF-%CF%80%CE%B7%CE%B3%CE%AC%CE%B4%CE%B9%CE%B1/>
- ▶ https://circulartourism.eu/wp-content/uploads/2021/05/GREEK-Handbook-CE-Transition-for-Tourist-Providers_GR.pdf
- ▶ <https://circulargreece.gr/el/etairoi/>
- ▶ **Education – Upskilling and retraining programs in high-demand sectors with an emphasis on digital and "green" skills. (For the unemployed)** <https://eyklidis.gr/index.php/courses/programmata-anavathmisis-dexiotiton-kai-epanakatartisis-se-kladous-ypsilis-zitisis-me-emfasi-stis-psifiakes-kai-prasines-dexiotites/>
- ▶ **Education, tourism and nutrition** <https://elde.gr/prasines-dexiotites-anergon-400/>
- ▶ **Financing** https://greece.representation.ec.europa.eu/epiheiriseis-kai-hrimatodotisi/hrimatodotisi-kai-epihorigiseis_el
- ▶ **Home Composting** https://ypen.gov.gr/wp-content/uploads/2021/09/Manual-for-home-composting-leaflet-with-rules_EL_combined.pdf
- ▶ **Green Entrepreneurship Handbook for Small and Medium Enterprises** <https://www.ggb.gr/sites/default/files/basic-page-files/%CE%95%CE%93%CE%A7%CE%95%CE%99%CE%A1%CE%99%CE%94%CE%99%CE%9F%20-%20%CE%A0%CE%A1%CE%91%CE%A3%CE%99%CE%9D%CE%97%CE%A3%20%CE%95%CE%A0%CE%99%CE%A7%CE%95%CE%99%CE%A1%CE%97%CE%9C%CE%91%CE%A4%CE%99%CE%9A%CE%9F%CE%A4%CE%97%CE%A4%CE%91%CE%A3%20%CE%93%CE%99%CE%91%20%CE%9C%CE%9C%CE%95.pdf>
- ▶ **Sustainable Development** https://youth.europa.eu/get-involved/sustainable-development/articles_el
- ▶ <https://www.agreco.gr/organic-farm.html>
- ▶ <https://makemycv.com/>
- ▶ <https://rise-club.org/viografiko/>