

# Students Teaching Module

## Unit 3. Sustainability and SDGs



# EUSTEPs

Enhancing Universities' Sustainability Teaching  
and Practices through Ecological Footprint

KA 203, Strategic Partnership in Higher Education 2019-2022, Agreement No. 2019-1-  
EL01-KA203-062941

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



ARISTOTLE  
UNIVERSITY  
OF THESSALONIKI



Global Footprint Network®  
Advancing the Science of Sustainability



UNIVERSITÀ  
DI SIENA  
1240



universidade  
de aveiro

UNIVERSIDADE  
AbERTA  
www.uab.pt

## MATERIAL DEVELOPMENT

- **BACELAR-NICOLAU, Paula**, Universidade Aberta
- **CAEIRO, Sandra**, Universidade Aberta
- **GALLI, Alessandro**, Global Footprint Network
- **MALANDRAKIS, George**, Aristotle University of Thessaloniki
- **MAPAR, Mahsa**, Universidade Aberta
- **MORENO PIRES, Sara**, University of Aveiro
- **NICOLAU, Mariana**, University of Aveiro
- **PAPADOPOULOU, Athanasia**, Aristotle University of Thessaloniki
- **PATRIZI, Nicoletta**, University of Siena
- **PULSELLI, Federico Maria**, University of Siena
- **THEODOSIOU, Nikolaos**, Aristotle University of Thessaloniki
- **ZACHOS, Dimitrios**, Aristotle University of Thessaloniki

## COORDINATION

Aristotle University of Thessaloniki (AUTH)

### ***HOW TO CITE THIS MATERIAL***

- Moreno Pires, S., Theodosiou, N., Bacelar-Nicolau, P., Caeiro, S., Galli, A., Malandrakis, G., Niccolucci, V., Nicolau, M., Papadopoulou, A., Mapar, M., Patrizi, N., Pulselli, F.M., Zachos, D. (2020). EUSTEPs Students' teaching module. Unit 3: "Sustainability and SDGs"

# UNIT 3

## SUSTAINABILITY AND SDGs

- 1 Introduction to sustainability
- 2 Sustainable Development Goals (SDGs)
  - a. Slides
  - b. Educational videos
  - c. Homework: *Sustainability Features at HEIs*  
(see homework Guidelines)

# Before we start...

- One person can make a difference...



- And everyone should try (J F Kennedy)

# ***Sustainable Development:***

## ***Definitions and Concepts***

# What is Sustainability...?



- The **capacity** to keep up or keep going...
- The quality of being able to **continue** over **a period of time** (*Cambridge Dictionary*)

To sustain something means to enable it to continue for **a long time**

# What is Sustainable Development?

- The term “sustainable development” has become commonplace in mainstream politics and governance.
- However, not everyone is aware of what it truly means
- There is no fixed definition and each sector has used the term in various ways.



What do YOU think sustainable development is...?

# The Brundtland Definition (1987)

“Sustainable development is development that meets the **needs** of the present without compromising the ability of **future** generations to meet their own needs.”

Two key concepts in Brundtland Definition:

- The concept of ‘needs’
- The idea of **limits** to meet present and future needs

# More definitions about Sustainable Development:

- **UNDP (1994):** ... A process for realizing human development...”in an inclusive, connected, equitable, prudent and secure manner.”
- **Rio Declaration, adopted by the United Nations conference on Environment and Development in 1992:** “Human beings are at the center of concern for sustainable development. They are entitled to a healthy and productive life in harmony with nature.”
- **Soubbotina, Beyond Economic Growth, The world Bank, 2004 :**“In the final analysis sustainable development is about long-term conditions for humanity’s multi-dimensional well-being.”

## Some examples of the term “sustainable development”; used in different ways:



- In the context of forestry, sustainable development can mean the harvesting of trees and other forest products at a rate that does not exceed the **capacity** of the forest to regenerate itself.

## Some examples of the term “sustainable development”; used in different ways:

- In the context of urban planning, sustainable development can mean managing growth within the **capacity** of infrastructure to service the population.



## Some examples of the term “sustainable development”; used in different ways:

- In the context of development projects, sustainable development can mean those activities designed to protect the socio-ecological **capacity** of the community to carry on from within.



***Sustainability vs.  
Unsustainability  
worldwide***



**Which of the sustainability dimensions are lost in this picture...?**

2018... and here it is a conservation area...



Annapurna Himalaya Trekking/ Nepal

Have you ever imagined  
yourself in this situation for a  
**long period?**



Economic market at an altitude of 3000 meters...is it sustainable?



**What is your first  
impression when you  
see this pic?**

**Which dimensions of  
(un)sustainability can  
you find...?**



Suspension bridge, Annapurna, Nepal



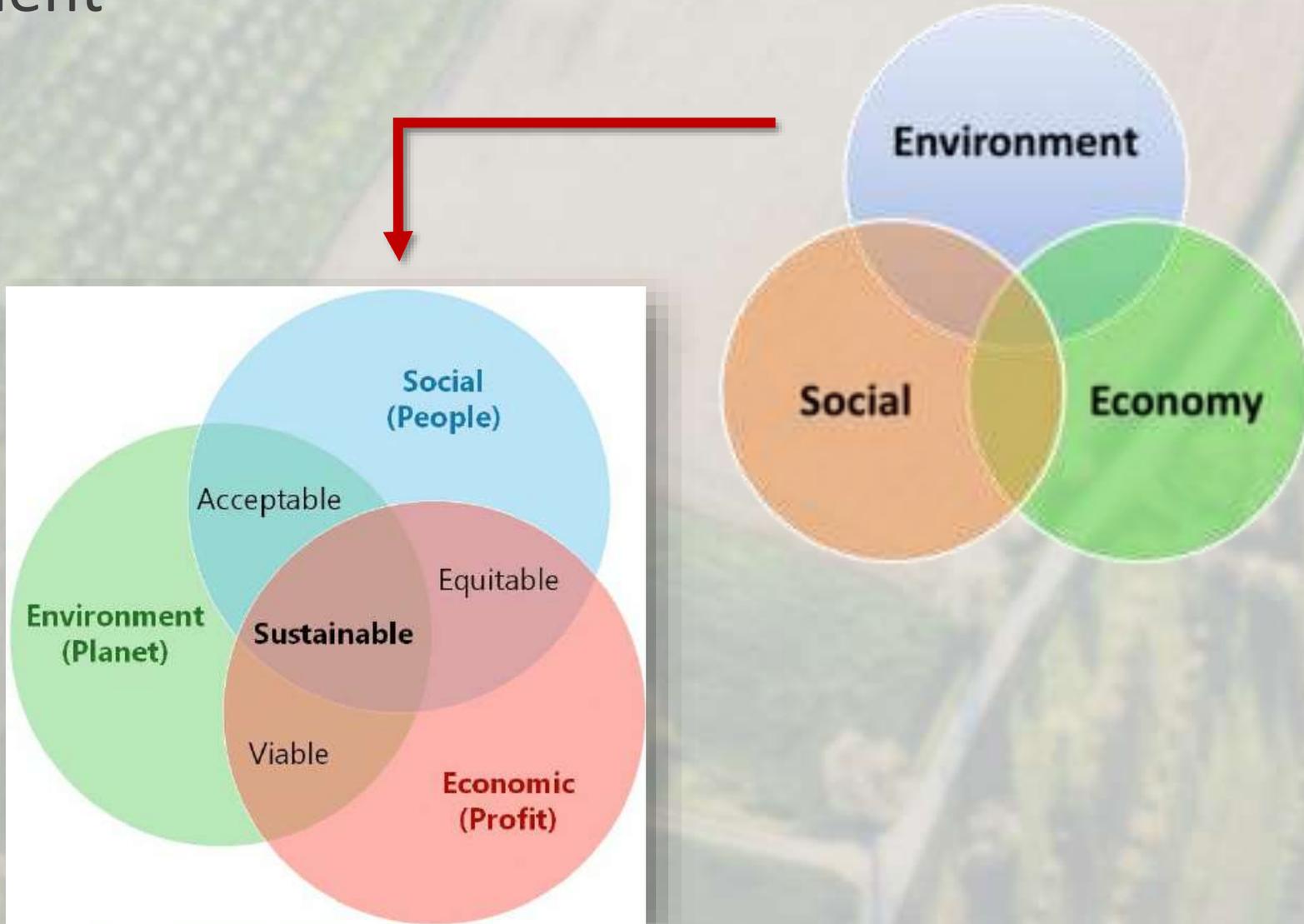
## SUSTAINABILITY VS TECHNOLOGY/MODERNISM



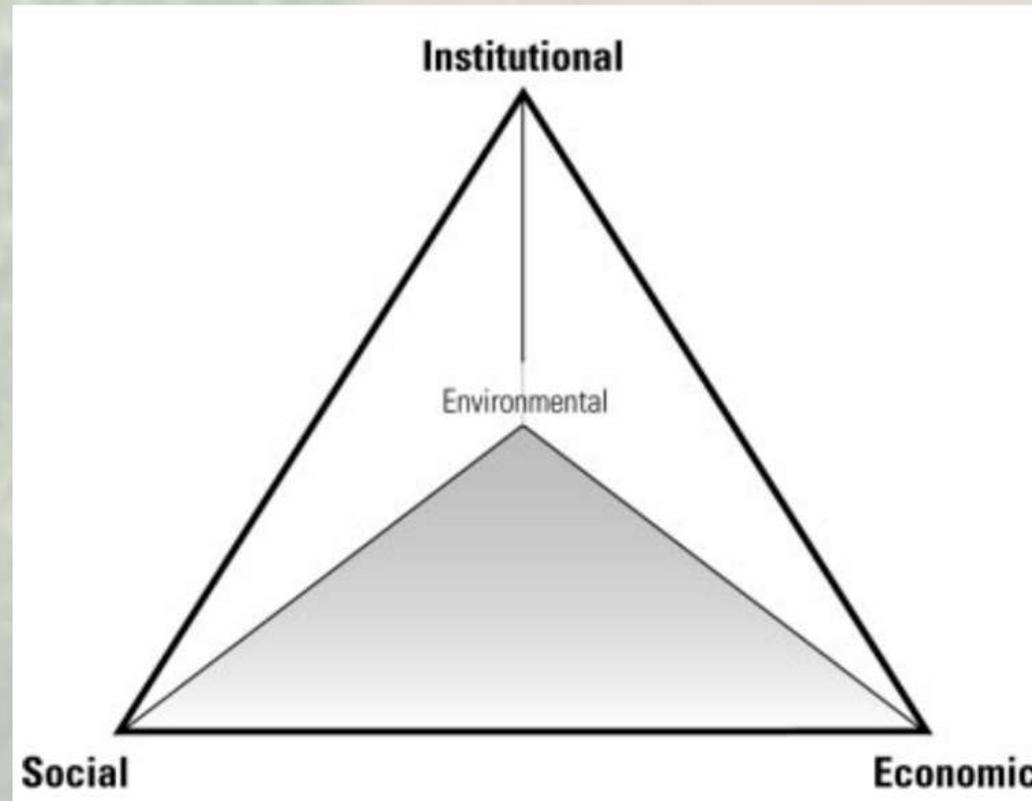
Palm Jumeirah, Dubai, Emirates

# *Sustainability Pillars*

# Interdependent and mutually reinforcing pillars of sustainable development

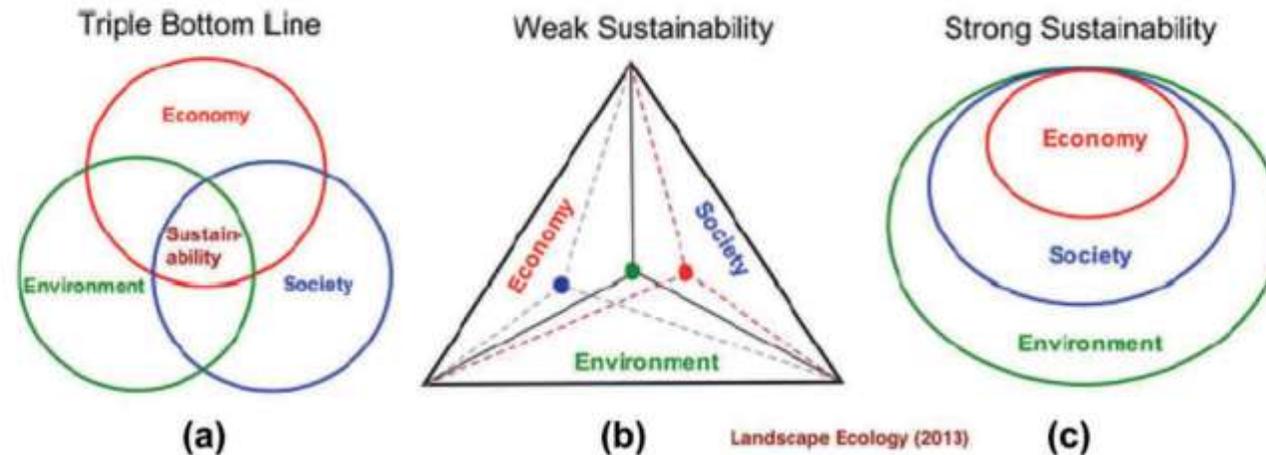


# Adding one more pillars...?



**Institutions (confusingly called ‘social capital’) are the result of inter- personal processes, such as communication and co-operation, resulting in information and systems of rules governing the interaction of members of a society.**

# Weak Sustainability vs Strong Sustainability



**Figure 1.** From Wu (2013): 'Illustration of the triple bottom line definition of sustainability (a) and weak sustainability (b) versus strong sustainability (c). The three situations in b are equally sustainable because weak sustainability allows for substitutability as long as the total capital (i.e., the sum of environmental, economic, and social capital) does not decrease.

# The main approach towards sustainability...

- The approach towards sustainable development should encompass all aspects and take into consideration the fact that **everything is connected**:

- ❖ across **generations**
- ❖ and across **countries**
- ❖ across **communities**

The principle is to look at everything as a part of the whole!

# What is different about sustainable development?



Development is essential, but it must be a different 'quality' of development, organized differently - one that takes environment into account.

# ***UN-Agenda 2030***

## ***The Sustainable Development Goals (SDGs)***

***Brief history and 17 SDGs***

# History of Sustainability

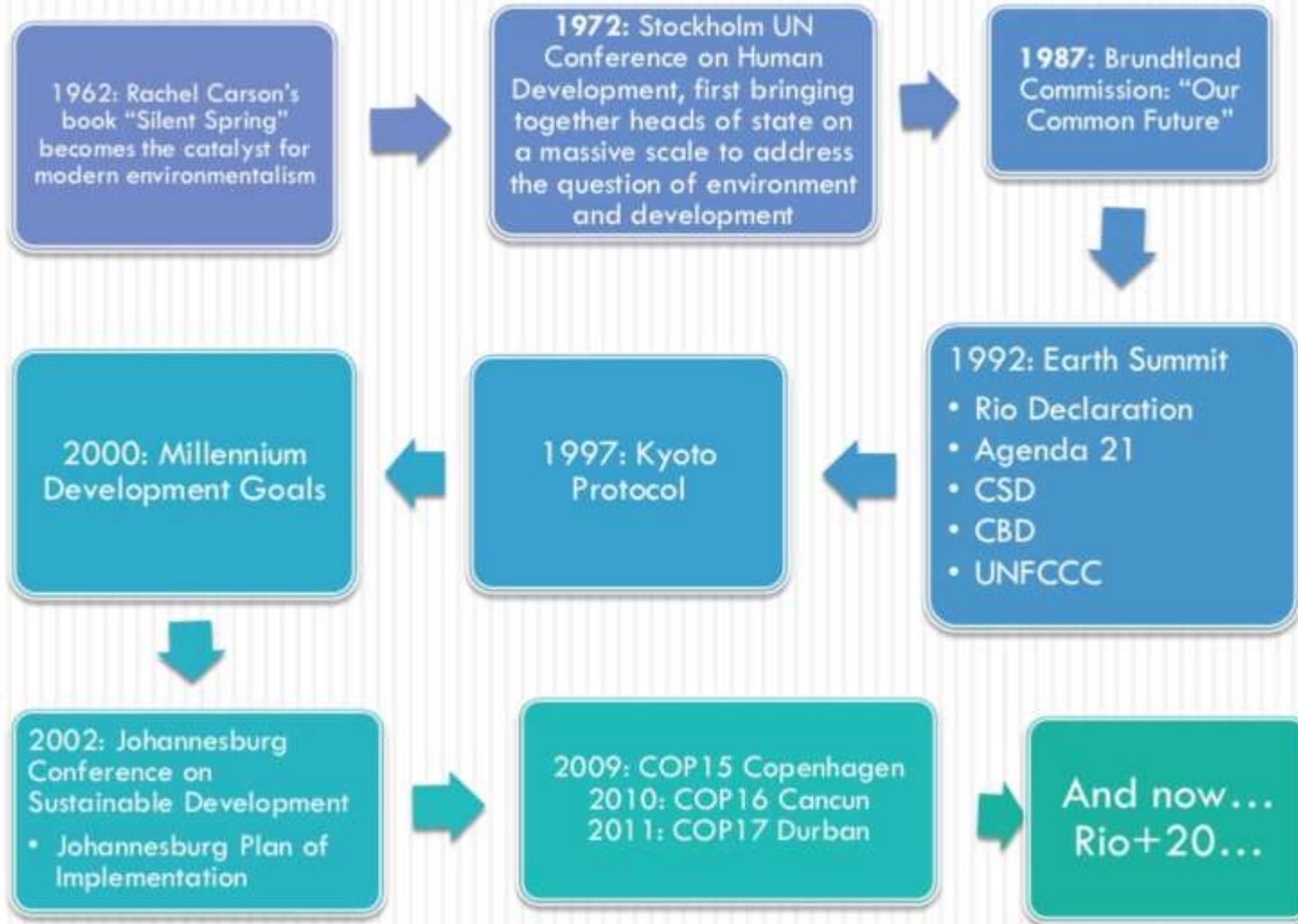
Environmental concerns and sustainable development are not new subjects in international politics.

## **Four periods can be distinguished:**

- (1) the starting up period (until the end of the 1970s),
- (2) the stagnation period (1980–1986),
- (3) a period with major achievements (1987–1995), and
- (4) a period of decline (1996–onwards)

*Reference: (Waas et al., 2011)*

## A brief history of sustainable development



# Sustainable Development Goals 2030

From 2015 onwards...



# Sustainable Development Goals 2030

- ▶ A set of 17 goals for the world's future, through 2030
- ▶ Backed up by a set of 169 detailed Targets
- ▶ Negotiated over a three-year period at the United Nations
- ▶ Agreed to by nearly all the world's nations, on 25 Sept 2015



# Sustainable Development tend to care:



232 indicators  
vs

# What is new and different about the 17 SDGs?

First, and most important, these Goals apply to **every nation** ... and **every sector**. Cities, businesses, schools, organizations, all are challenged to act. This is called

## Universality

Second, it is recognized that the Goals are all **inter-connected**, in a system. We cannot aim to **achieve just one Goal**. We must achieve them all. This is called

## Integration

And finally, it is widely recognized that achieving these Goals involves making **very big, fundamental changes** in how we live on Earth. This is called

## Transformation

# Sustainable Development Goals 2030

1- End poverty in all its forms everywhere

1 NO POVERTY



2- End hunger, achieve food security and improved nutrition and promote sustainable agriculture

2 ZERO HUNGER



3- Ensure healthy lives and promote well-being for all at all ages

3 GOOD HEALTH AND WELL-BEING



# Sustainable Development Goals 2030

4- Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

4 QUALITY EDUCATION



5 GENDER EQUALITY



5- Achieve gender equality and empower all women and girls

6- Ensure availability and sustainable management of water and sanitation for all

6 CLEAN WATER AND SANITATION



# Sustainable Development Goals 2030

**7** AFFORDABLE AND  
CLEAN ENERGY



7- Ensure access to affordable, reliable, sustainable and modern energy for all

8- Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

**8** DECENT WORK AND  
ECONOMIC GROWTH



**9** INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



9- Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

# Sustainable Development Goals 2030



**10- Reduce inequality within and among countries**

**11- Make cities and human settlements inclusive, safe, resilient and sustainable**

**12 - Ensure sustainable consumption and production patterns**



# Sustainable Development Goals 2030



13- Take urgent action to combat climate change and its impacts



14- Conserve and sustainably use the oceans, seas and marine resources for sustainable development



15- Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss



# Sustainable Development Goals 2030

**16** PEACE, JUSTICE  
AND STRONG  
INSTITUTIONS

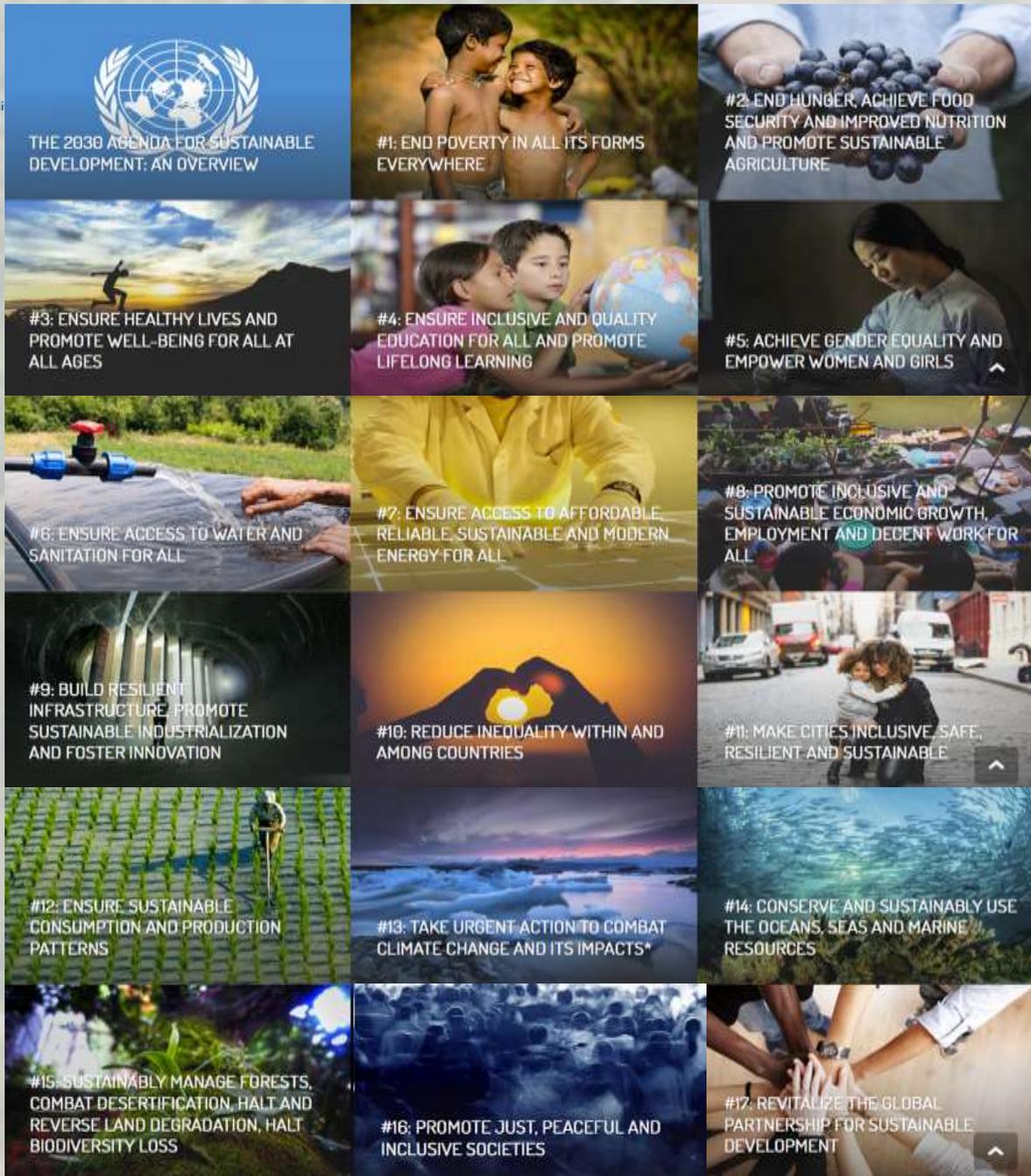


**16- Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels**

**17** PARTNERSHIPS  
FOR THE GOALS

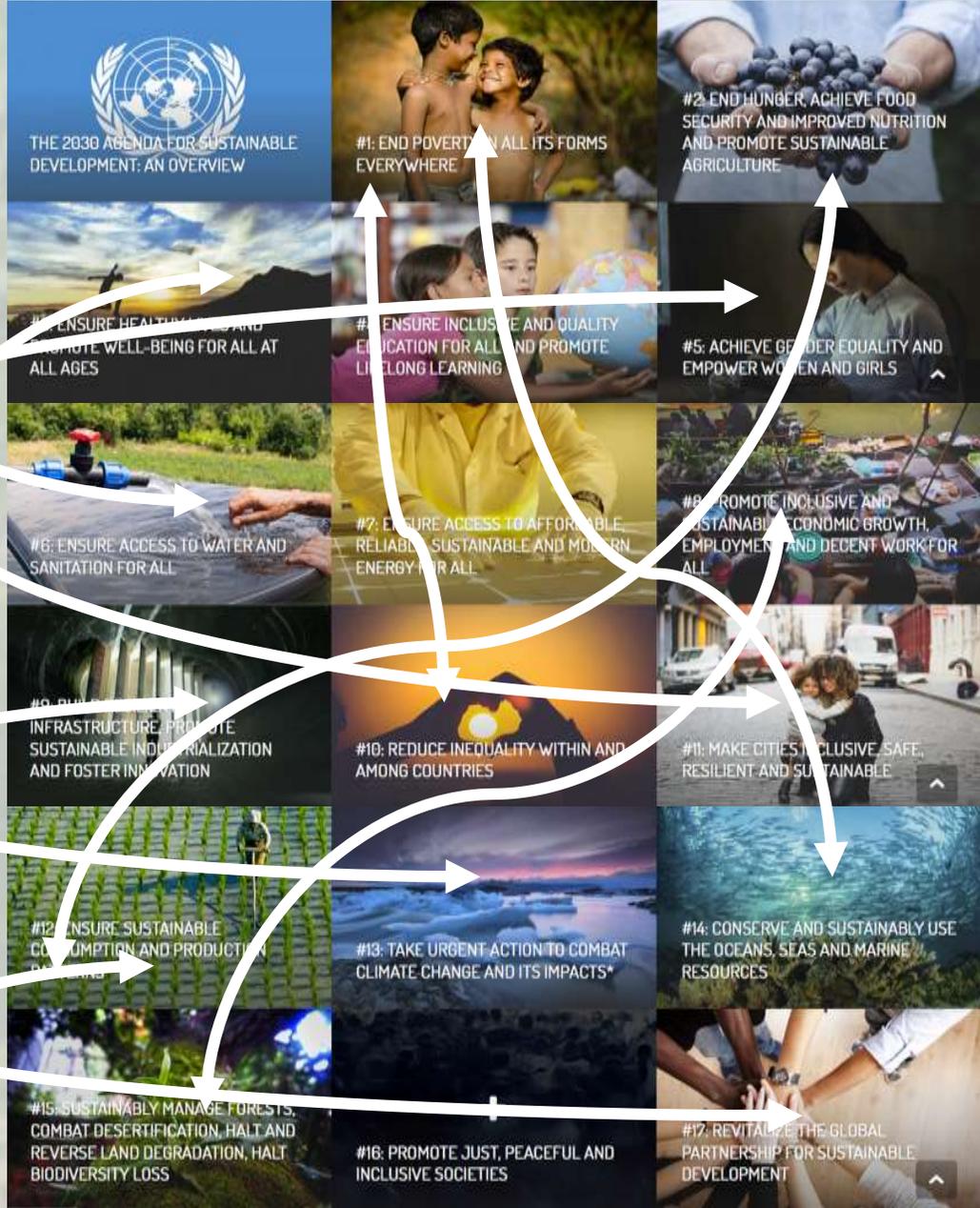


**17- Strengthen the means of implementation and revitalize the global partnership for sustainable development**



Each goal is important by itself ...

Each goal is important by itself ...



And they are all connected

## Sustainable Development Goals (SDGs) | Educational videos

Scope	Topic	Publisher	Link	Time	advantages	disadvantages
Sustainable Development Goals (SDGs)	1- Sustainable Development Goals, from 1338 to 2030	Universita di SIENA	<a href="https://www.youtube.com/watch?v=1peETpy85BI">https://www.youtube.com/watch?v=1peETpy85BI</a>	2 min	<ul style="list-style-type: none"> <li>Short-time video</li> <li>Without talking, just showing the icons and understandable for all students if they can't understand English</li> </ul>	<ul style="list-style-type: none"> <li>All the videos are in the same colors, and it can't make a visual memory for students</li> </ul>
	2-Do you know all 17 SDGs?	UN (Sustainable Development Goals/ Knowledge platform)	<a href="https://www.youtube.com/watch?time_continue=18&amp;v=0XTBYMfZyrM&amp;feature=emb_logo">https://www.youtube.com/watch?time_continue=18&amp;v=0XTBYMfZyrM&amp;feature=emb_logo</a>	1:24 min	<ul style="list-style-type: none"> <li>Shor-time video</li> <li>Without talking, just showing the icons and understandable for all students</li> <li>By UN and authentic</li> </ul>	-
	3-The world we want: Sustainable Development Goals	UN (Office of Secretary-general's Envoy on Youth)	<a href="https://www.un.org/youthenvoy/video/sustainable-development-goals-explained/">https://www.un.org/youthenvoy/video/sustainable-development-goals-explained/</a>	5:30 (applicable part)	<ul style="list-style-type: none"> <li>Asking the students about their knowledge regarding SDGs (inspiring video)</li> <li>A brief definition of Sustainability at first</li> <li>By UN and authentic</li> </ul>	<ul style="list-style-type: none"> <li>Long-time video (we can choose some parts/ or as a suggestion for home)</li> <li>Too formal in my mind</li> </ul>
	4-Transitions from the MDGs to the SDGs	UNDP	<a href="https://www.undp.org/content/undp/en/home/presscenter/pressreleases/2015/09/24/undp-welcomes-adoption-of-sustainable-development-goals-by-world-leaders.html">https://www.undp.org/content/undp/en/home/presscenter/pressreleases/2015/09/24/undp-welcomes-adoption-of-sustainable-development-goals-by-world-leaders.html</a>	2:30 min	<ul style="list-style-type: none"> <li>Shor-time video</li> <li>By UN and authentic</li> </ul>	<ul style="list-style-type: none"> <li>Speak English a bit fast</li> <li>It is included a brief explanation about MDGs that might not relevant to the Module</li> <li>Just talking without subtitle (less user-friendly for our target group in my mind)</li> </ul>

Scope	Topic	Publisher	Link	Time	advantages	disadvantages
Sustainable Development Goals (SDGs)	5- The Sustainable Development Goals – Action Towards 2030	CAFOD (Catholic Agency for Overseas Development)	<a href="https://www.youtube.com/watch?v=9-xdy1Jr2eg">https://www.youtube.com/watch?v=9-xdy1Jr2eg</a>	5:52 min	<ul style="list-style-type: none"> <li>Combination of SDGs, the key principles and Sustainability concept</li> <li>Attractive (colorful) and understandable</li> </ul>	<ul style="list-style-type: none"> <li>Long-time video (but useful for the students if they wish to watch later at home)</li> </ul>
	6- UN Sustainable Development Goals - Overview	UNICEF Georgia	<a href="https://www.youtube.com/watch?v=M-iJM02m_Hg">https://www.youtube.com/watch?v=M-iJM02m_Hg</a>	2:12 min	<ul style="list-style-type: none"> <li>Short-time video</li> <li>Including the concept of 5P (Planet, People, peace, etc.)</li> <li>Attractive (colorful) and understandable</li> </ul>	-
	7-Sustainable Development Goals	17 Sustainable Development Goals		<a href="https://www.eda.admin.ch/agenda2030/en/home/agenda-2030/die-17-ziele-fuer-eine-nachhaltige-entwicklung.html">https://www.eda.admin.ch/agenda2030/en/home/agenda-2030/die-17-ziele-fuer-eine-nachhaltige-entwicklung.html</a>	4 min	<ul style="list-style-type: none"> <li>Super interesting and clear (it includes an explanation about the universality of goals)</li> <li>Definition of sustainability in the beginning and last of video)</li> <li>Speak slowly and fluently</li> <li>With some useful notes if students can't follow English</li> <li>Including the role of other actors for implementing SD</li> </ul>

Scope	Topic	Publisher	Link	Time	advantages	disadvantages
Sustainable Development Goals (SDGs)						
Sustainable development definition/ concept	8- What is sustainability	ACCIONA/ Sustainability for all	<a href="https://www.youtube.com/watch?time_continue=1&amp;v=FbAjxkGvDNs&amp;feature=emb_logo">https://www.youtube.com/watch?time_continue=1&amp;v=FbAjxkGvDNs&amp;feature=emb_logo</a>	1:43 min	<ul style="list-style-type: none"> <li>Short-time video</li> <li>Simple</li> <li>Focus on all 3 dimensions</li> <li>University of Maine/ Office of sustainability also shared it in its website</li> </ul>	-
	9- Sustainability	explainity®	<a href="https://www.youtube.com/watch?v=_5r4loXPyx8">https://www.youtube.com/watch?v=_5r4loXPyx8</a>	3:40 min	<ul style="list-style-type: none"> <li>Explaining a story (about Piter who is a teacher)</li> <li>Very Simple with focusing on each pillar separately</li> <li>Also, it includes sustainability in everyday life</li> </ul>	-
Sustainability in Daily life	10- Sustainability in everyday life	ACCIONA/ Sustainability for all	<a href="https://www.youtube.com/watch?time_continue=1&amp;v=kZlrIQDf1nQ&amp;feature=emb_logo">https://www.youtube.com/watch?time_continue=1&amp;v=kZlrIQDf1nQ&amp;feature=emb_logo</a>	1:34 min	<ul style="list-style-type: none"> <li>Short video</li> <li>Very simple</li> <li>Relevant the main topic of our module (daily life)</li> </ul>	-

A close-up, high-angle photograph of a diverse group of children. In the foreground, a young boy with light skin and blonde hair is laughing with his mouth wide open, wearing a yellow shirt. Next to him, a young girl with dark skin and curly hair is also laughing, wearing a red shirt. Behind them, other children of various ethnicities are visible, some smiling and some laughing. The background is slightly blurred, showing more children and a blue patterned fabric. The overall mood is one of pure joy and happiness.

**“Never doubt that a small  
group of thoughtful,  
committed individuals can  
change the world; indeed, its  
the only thing that ever has”**

**Margaret Mead**



**EUSTEPs**

Enhancing Universities' Sustainability Teaching  
and Practices through Ecological Footprint

# Homework 1

Sustainability features at your university

# For further reading...

- Waas, T., Hugé, J., Verbruggen, A., & Wright, T. (2011). Sustainable Development: A Bird's Eye View. *Sustainability*, 3(10), 1637–1661. <https://doi.org/10.3390/su3101637>.
- Pulselli, F. M., Coscieme, L., Neri, L., Regoli, A., Sutton, P. C., Lemmi, A., & Bastianoni, S. (2015). The world economy in a cube: A more rational structural representation of sustainability. *Global Environmental Change*, 35, 41–51. <https://doi.org/10.1016/j.gloenvcha.2015.08.002>.
- Kuhlman, T., & Farrington, J. (2010). What is Sustainability? *Sustainability*, 2(11), 3436–3448. <https://doi.org/10.3390/su2113436>.
- UNDP SDGs booklet  
(<https://www.undp.org/content/undp/en/home/librarypage/corporate/sustainable-development-goals-booklet.html>)

# References

- Spangenberg, J. H. (2002). Institutional sustainability indicators: An analysis of the institutions in Agenda 21 and a draft set of indicators for monitoring their effectivity. *Sustainable Development*, 10(2), 103–115.  
<https://doi.org/10.1002/sd.184>
- Waas, T., Hugé, J., Verbruggen, A., & Wright, T. (2011). Sustainable Development: A Bird's Eye View. *Sustainability*, 3(10), 1637–1661. <https://doi.org/10.3390/su3101637>
- United Nations (n.d.). Sustainable Development Goals. Available at <https://unric.org/en/sdgs-in-your-language/>  
SDGs Booklet web- UNDP. Available at  
<https://www.undp.org/content/undp/en/home/librarypage/corporate/sustainable-development-goals-booklet.html> **(Strongly suggested)**  
<https://sustainabledevelopment.un.org/sdgs> **(website for further reading)**
- Leal Filho, W., Shiel, C., Paço, A., Mifsud, M., Ávila, L.V., Brandli, L.L., Molthan-Hill, P., Pace, P., Azeiteiro, U.M., Vargas, V.R., Caeiro, S., 2019. Sustainable Development Goals and sustainability teaching at universities: Falling behind or getting ahead of the pack? *J. Clean. Prod.* 232, 285–294. <https://doi.org/10.1016/j.jclepro.2019.05.309>
- Pulselli, F. M., Coscieme, L., Neri, L., Regoli, A., Sutton, P. C., Lemmi, A., & Bastianoni, S. (2015). The world economy in a cube: A more rational structural representation of sustainability. *Global Environmental Change*, 35, 41–51.  
<https://doi.org/10.1016/j.gloenvcha.2015.08.002>

# About the authors of the EUSTEPs module



**BACELAR-NICOLAU, Paula.** Assistant Professor in the Department of Sciences and Technology, Unibersidade Aberta, PORTUGAL, [pnicolau@uab.pt](mailto:pnicolau@uab.pt)  
<https://www2.uab.pt/departamentos/DCT/detaildocente.php?doc=59>.

**CAEIRO, Sandra.** Associate Professor with habilitation I Environmental Sciences, Department of Science and Technology, UAb, Portuguese Distance learning University, PORTUGAL, [scaeiro@uab.pt](mailto:scaeiro@uab.pt)  
<https://www2.uab.pt/departamentos/DCT/detaildocente.php?doc=64>

**GALLI, Alessandro.** Global Footprint Network, Director, Mediterranean-MENA Program, SWITZERLAND, [alessandro.galli@footprintnetwork.org](mailto:alessandro.galli@footprintnetwork.org)  
<https://www.footprintnetwork.org/about-us/people>

**MALANDRAKIS, George.** Assistant Professor in Environmental Education, School of Primary Education, Aristotle University of Thessaloniki, GREECE, [gmalandrakis@eled.auth.gr](mailto:gmalandrakis@eled.auth.gr)  
<https://qa.auth.gr/en/cv/gmalandrakis>.

**MAPAR, Mahsa.** Postdoctoral researcher. Department of Science and Technology and Distance Education and Elearning Laboratory (LE@D), PORTUGAL, [m.mapar@fct.unl.pt](mailto:m.mapar@fct.unl.pt)

**MORENO PIRES, Sara.** Researcher in Sustainable Cities and Regions, Research Unit on Governance, Competitiveness and Public Policies (GOVCOPP), Department of Social, Political and Territorial Sciences, University of Aveiro, PORTUGAL, [sarapires@ua.pt](mailto:sarapires@ua.pt)  
[https://www.ua.pt/govcopp/profile\\_160](https://www.ua.pt/govcopp/profile_160)

**NICCOLUCCI, Valentina,** PhD in Environmental and Cultural Heritage, Sustainability and Indicators. Department of Physical Sciences, Earth and Environment, University of Siena, ITALY. [valentina.niccolucci@unisi.it](mailto:valentina.niccolucci@unisi.it).

**NICOLAU, Mariana.** MSc in Political Science, Department of Social, Political and Territorial Sciences, University of Aveiro, PORTUGAL, [mariananicolau@ua.pt](mailto:mariananicolau@ua.pt)  
**PAPADOPOULOU, Athanasia.** Agriculturalist, Primary School Teacher, Ph.D. Candidate, School of Primary Education, Aristotle University of Thessaloniki, GREECE, [papath55@yahoo.gr](mailto:papath55@yahoo.gr).

**PATRIZI, Nicoletta.** Post-doc fellow in Environmental and Cultural Heritage Chemistry, Sustainability, Indicators, Environmental assessment, Department of Physical Sciences, Earth and Environment, University of Siena, ITALY, [patrizi2@unisi.it](mailto:patrizi2@unisi.it) [http://www.ecodynamics.unisi.it/?page\\_id=123&lang=it](http://www.ecodynamics.unisi.it/?page_id=123&lang=it)

**PULSELLI, Federico Maria.** Associate Professor in Environmental and Cultural Heritage Chemistry, Sustainability, Indicators, Environmental assessment, Department of Physical Sciences, Earth and Environment, University of Siena, ITALY, [federico.pulselli@unisi.it](mailto:federico.pulselli@unisi.it)  
[http://www.ecodynamics.unisi.it/?page\\_id=107&lang=en](http://www.ecodynamics.unisi.it/?page_id=107&lang=en)

**THEODOSIOU, Nikolaos.** Professor Division of Hydraulics and Environmental Engineering, Department of Civil Engineering, Aristotle University of Thessaloniki, GREECE, [niktheod@civil.auth.gr](mailto:niktheod@civil.auth.gr)  
<https://qa.auth.gr/en/cv/niktheod> .

**ZACHOS, Dimitrios.** Assistant Professor of Pedagogy – Intercultural Education, School of Primary Education, Aristotle University of Thessaloniki, GREECE, [dimzachos@eled.auth.gr](mailto:dimzachos@eled.auth.gr) <https://qa.auth.gr/en/cv/dimzachos>.





# EUSTEPs

Enhancing Universities' Sustainability TEaching  
and Practices through Ecological Footprint

## Thank You!

Name, affiliation

Email address, telephone

"The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflect the views of the authors only. The Commission, along with the National Authority (IKY), cannot be held responsible for any use which may be made of the information contained therein."

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



ARISTOTLE  
UNIVERSITY OF  
THESSALONIKI



Global Footprint Network®  
Advancing the Science of Sustainability



UNIVERSITÀ  
DI SIENA  
1240



universidade  
de aveiro

UNIVERSIDADE  
AbERTA  
www.uab.pt