

CHAPTER 2: LMD logistics operations and impacts

UNIT 4: Society Current Demands and Trends

Capsule 2.4.1

Definition of Sustainability and Sustainable Development



To be done prior to this capsule:

No previous additional knowledge is needed

Capsule linked with:

1.3.5, 1.4.6, 2.1.2, 2.1.3, 2.3.2, 2.5.1, 2.5.2,
2.5.4, 3.3.1, 3.3.3, 3.4.5. Special direct link
with capsules from this Unit 2.4.

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Objectives of the Capsule

By the end of this capsule, the learner will understand the concepts of sustainability and sustainable development and why they are important for last mile delivery.

Category	E-learning	EQF		
		4	5	6
		X	X	X

Exercises included	YES
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Effort for the capsule	Content 10 Min.	Exercises 4 Min.	Extra material - Min.
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Contents

1. Definition of sustainability
2. Definition of sustainable development
3. Facts and figures

1. Definition of sustainability

Sustainability is the **balance between the environment, equity and economy**. There are many different definitions, and all of them are rooted on the most often quoted definition, from the UN World Commission on Environment and Development, about **Sustainable Development**. Indeed, sustainability and sustainable development are often used interchangeably.

*“Sustainability is a **broad term** that describes managing resources without depleting them for future generations. This concept goes beyond **environmental sustainability**, which concerns earth’s natural resources, to include **economic** and **social sustainability**” (1).*

Therefore, sustainability can be understood as the **integration** of environmental health, social equity and economic vitality in order to create thriving, healthy, diverse and resilient communities for this generation and generations to come. The practice of sustainability recognizes how these **issues are interconnected** and requires a **systems approach** (2).



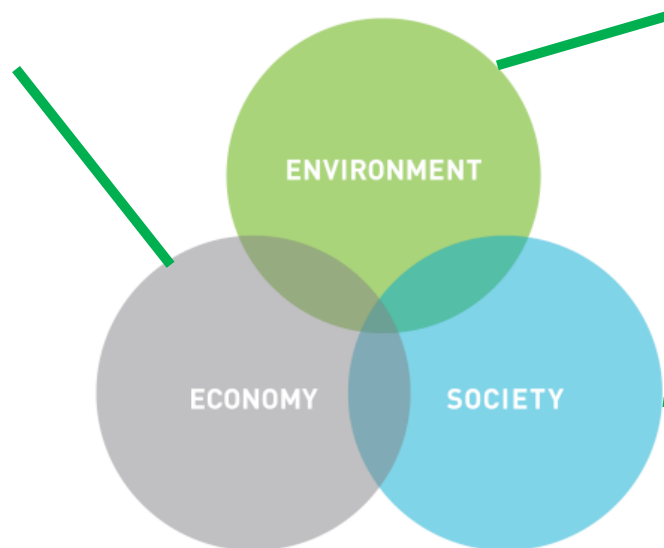
Image: (3)

1. Definition of sustainability

Sustainability is based on **3 fundamental pillars: Environment, Economy and Society.**

What ideas are considered in each pillar?

- Jobs
- Profit and return on investments
- Financial resilience
- Supply and demand
 - Natural resource accounting
- Costs and Prices
- Long term-business viability and stability



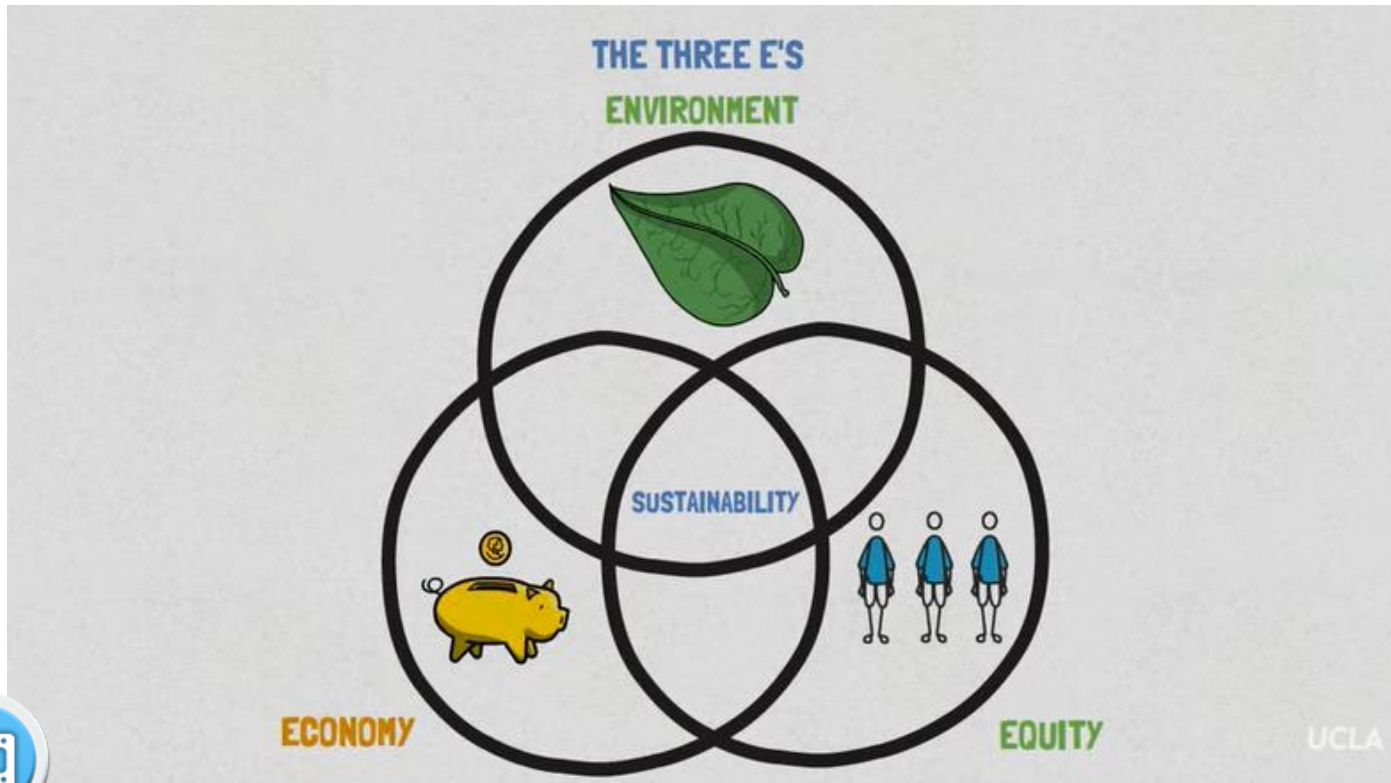
- Ecosystem services
- Air and water quality
- Renewable resources
- Resource efficiency
- Low and zero waste
- Pollution and emissions prevention

- Equity and diversity
- Human Health
- Participation
- Labour standards
- Education
- Sustainable Communities
- Environmental Justice

(4)

1. Definition of sustainability

Watch this short video that will help you to better understand what sustainability is, and why it is important!



(5) <https://www.youtube.com/watch?v=zx04KI8y4dE> (duration: 3.06).

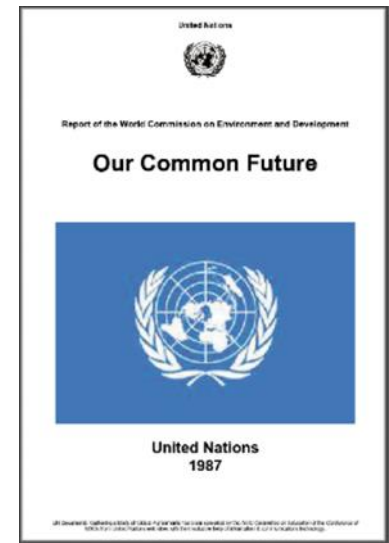
2. Definition of sustainable development

As already mentioned in previous slides, sustainability and sustainable development are **very closely related concepts**; both speak to the **danger of consuming resources faster than they can be replenished** (1).

Sustainability is often thought of as a long-term goal (i.e. a more sustainable world), while **sustainable development** refers to the **many processes and pathways to achieve it** (e.g. sustainable agriculture and forestry, sustainable production and consumption, research and technology transfer, education and training, etc.) (6).

The concept of sustainable development was described originally in **1987** by the **United Nations Brundtland Commission Report** as:

*“Development that **meets the needs** of the **present** **without compromising** the ability of **future generations** to meet their own needs” (7).*



(7)

2. Definition of sustainable development

Sustainable development describes the **processes for improving long-term economic well-being and quality of life** without compromising future generations' ability to meet their needs (1).

3 key ideas to be highlighted regarding Sustainable Development:

- It calls for a development that respect the **Earth's ecological limits** (natural resources, pollution, biodiversity). The development of today should not compromise the future
- It is not only about the environment. It is also about meeting the **fundamental needs** of everyone in the **present** (intra-generational equity) and in the **future** (inter-generational equity)
- The objective is **human development**, not necessarily growth – promoting a good quality of life for all.



(3)

3. Facts and figures

Did you know that..... ? (8)

Energy is the dominant contributor to climate change, accounting for around 60% of total global greenhouse gas emissions.

36 million people live in modern **slavery** today, many of whom are working in the supply chains of Western brands such as that of the fast fashion industry.

China is the world's **top polluter** emitting 10,357 metric tons of carbon dioxide, followed by the United States, India, Russia and Japan.

70% of the world is covered by **water**, yet only 2.5% of it is fresh and only 1% of it is easily accessible for human use. Water use has grown at more than twice the rate of population increase in the last century.



3. Facts and figures

Did you know that..... ? (8)

Human-caused **emissions of carbon dioxide** need to fall 45% from 2010 levels by 2030 and reach net-zero around 2050 to limit climate change catastrophe.

Agricultural emissions could be reduced by as much as 70% by adopting a vegan diet and 63% by adopting a vegetarian diet.



Lighting accounts for 15% of global electricity use. Switching to LEDs will use 90% less energy and last far longer than with the use of incandescent lights.

The world's **indigenous population** makes up just 5% of the global population yet protects 80% of global biodiversity-

3. Facts and figures

And what about the transport sector?

Transport accounts for about **64% of global oil consumption**, **27% of all energy use**, and **23% of the world's energy-related carbon dioxide emissions**. It is the fastest growing source of energy-related greenhouse gas (GHG) emissions in the world. (9)

As populations, economies, and the need for mobility grow, GHG emissions from transport could **increase by as much as 60% by 2050** if left unchecked. (10)

Over **90% of the fuel used** for transportation is petroleum based, primarily gasoline and diesel. (9)

72% of the CO2 emissions produced by the transport sector, come from **cars and other road vehicles**. From 1970 to 2010, such vehicles were responsible for 80% of the increase in emissions. (9)



3. Facts and figures

And what about the transport sector?

The **aviation sector** currently accounts for about 2% of global emissions, and is one of the fastest-growing polluters. A round-trip **flight from London to Rome** generating 234 kg CO₂ is as much as an average citizen in Madagascar emits in one year!
(11)

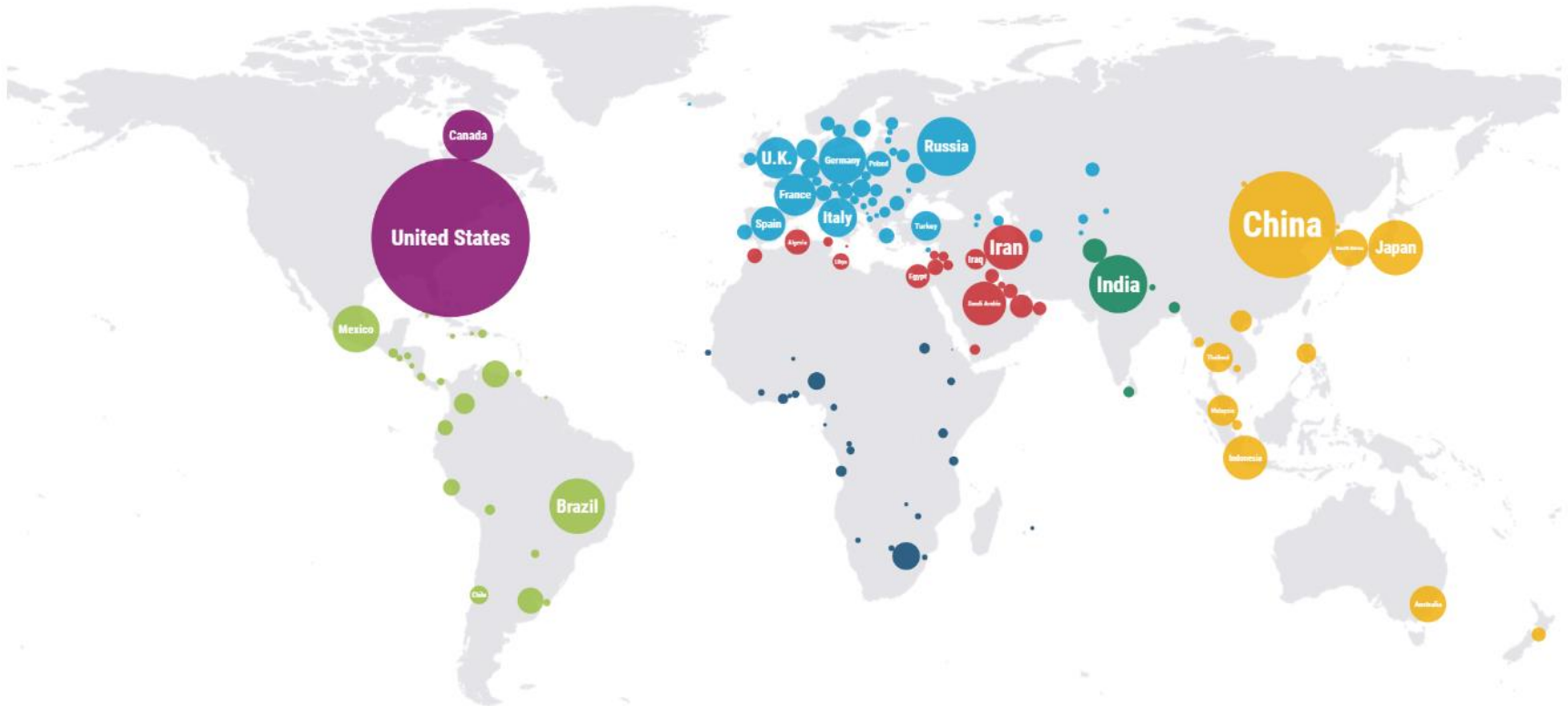


Each year, almost **185,000 deaths** can be directly attributed to **vehicular pollution**. More than 1.25 million people are killed and up to 50 million are injured on the world's roads every year (World Bank, 2019). (10)

3. Facts and figures

Transport Emissions Around the World (12)

This map presents the **emissions generated** by transport, per country. The USA is the most pollutant country, followed by China.



Capsule's validation quiz

The following quiz represents 5 questions you will have to answer to confirm your understanding of the present capsule.

Each correct answer is worth 1 point. No point for errors.



Self-evaluation quiz

Question n°1:

Which of the following concepts is a broad term that describes managing resources without depleting them for future generations?

Sustainable Development

Environment

Sustainability

Social inclusion

Self-evaluation quiz

Question n°2:

Which are the three fundamental pillars of sustainability?

Employment, Environment and Society

Environment, Society and Justice

Environment, Economy and Society

Environment, Economy and Education

Self-evaluation quiz

Question n°3:

What is not true about sustainable development?

It is based on respecting Earth's ecological limits

It is not only about the environment

Its objective is human development

Its objective is growth

Self-evaluation quiz

Question n°4 :

Which of the following options is the dominant contributor to climate change in terms of produced greenhouse gas emissions?

Agricultural sector

Transport and logistics

Energy

Lighting

Self-evaluation quiz

Question n°5 :

Over 90% of the fuel used from transportation is....

Bio based

Petroleum based

Renewable energy based

Hydrogen based

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- (12) World Resources Institute. (2019, October 16). *Everything You Need to Know About the Fastest-Growing Source of Global Emissions: Transport*. <https://www.wri.org/insights/everything-you-need-know-about-fastest-growing-source-global-emissions-transport>