

Sustainability

by Sophia



WHAT'S COVERED

In this lesson, we will cover the topic of sustainability. We will discuss an overview of sustainability, including key concepts and a historical timeline, as well as explore challenges to sustainability and international involvement in sustainability. Specifically, this lesson will cover the following:

1. Sustainability: Key Concepts

Sustainability, our key term for today, is a movement with the goal of establishing interactions with the environment that can continue indefinitely.

The following are key concepts to remember about sustainability in relation to environmental science.

- Harvesting natural resources at a rate that allows regeneration and recovery so that they can be harvested indefinitely into the future
- Protecting the environment in such a way that major ecosystem services are retained over time
- Managing human population growth so that a reasonable standard of living for everyone can be maintained within the infrastructure capacity over time



TERM TO KNOW

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2. History of Global Sustainability

The table below outlines some notable historical points in sustainability history.

Year	Event	Historical Relevance
1972	Stockholm Conference	World leaders gathered to discuss the environment and humans' impact on it. They created the first structure of guidance to address human impacts on the environment on the global stage.
		Published by the United Nations World Commission on Environment and

1987	Brundtland Report	<p>Development, the report began to popularize the concept of sustainability. It examined global environmental issues and proposed ways to address them. It was eventually published in a book called <i>Our Common Future</i>, and identified the following six major global environmental issues:</p> <ul style="list-style-type: none"> • Overpopulation • Food security • Loss of species and genetic diversity • Energy supply and demand along with pollution and resource depletion • Industrial pollution and resource use • The impacts of human settlements in terms of land development and resource use
1992	Agenda 21, Rio Summit	<p>Called all countries to begin sustainable development in earnest by implementing actions by 2005, with a goal of reversing negative environmental trends by 2015. However, by 2002 at the Johannesburg summit, only a handful of nations had developed any strategies.</p>
2002	Johannesburg Summit	<p>A handful of nations developed strategies to reverse negative environmental trends, though fewer countries than expected participated.</p>
2012	Rio+20 Summit	<p>Many nations reaffirmed their commitment to the 1992 Agenda 21. However, it is unclear if any strategies have been implemented since.</p>

3. Challenges to Global Sustainability

An important challenge to global sustainability is cost. The cost of implementing some sustainable strategies can be huge.

➞ **EXAMPLE** Completely transitioning a nation's electricity production from fossil fuels to renewable sources would be a costly sustainable initiative depending on the strategy because it will most likely require installation of renewable energy infrastructure, new transmission infrastructure, and significant investments of labor and time at various political levels.

Sustainability is a global issue, but this fact does not guarantee that every nation is interested in engaging in sustainable development at the same scale or is even interested at all. Each nation develops and evolves differently, which means that the way the nation practices resource harvesting and manages growth will vary.

➞ **EXAMPLE** Australia and China might emphasize different policy strategies in relation to agriculture. Australia might enforce different policies on sustainable agriculture than China because its economy is less focused on agriculture. Currently, the biggest economic driver for Australia is the service industry, while China is the world's largest agricultural producer.

Industries may resist sustainable development in a country because it might not be an economic benefit to that particular sector or company.

➞ **EXAMPLE** The coal industry would not be interested in sustainable development because it would largely mean an end to their industry.

4. Climate Change

A complex environmental issue that involves every nation on the planet is climate change. It is and will continue to impact every corner of the planet, which means it is an environmental issue that every nation will have to deal with.

Not only is it an international issue but a highly interdisciplinary one as well. It involves climate scientists and meteorologists to understand the effects it could potentially have, such as weather events like the hurricane shown in the image below.



It involves sociologists and psychologists to understand the cultural impacts and strategies needed to shift behaviors contributing to climate change. It involves chemists to understand the chemical processes creating the intensified greenhouse effect. In order to address this issue, it will take policymakers, private industries, economists, nonprofit organizations, and general public pressure and action.



SUMMARY

In this lesson, we learned about **sustainability and its key concepts**. We also covered a timeline of key events in the **history of global sustainability** and outlined **challenges** to, and international involvement in, sustainability. Lastly, we discussed an environmental issue that impacts sustainability on a global platform: **climate change**. Don't forget, sustainability is our key term for today, and it refers to a movement with the goal of establishing interactions with the environment that can continue indefinitely.

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