



Clean and Green is Our Perfect Dream

MINI ENCYCLOPEDIA

**BASIC TERMS AND NOTIONS ABOUT
SUSTAINABLE DEVELOPMENT:
ENVIRONMENTAL SUSTAINABILITY**



Clean and Green is Our Perfect Dream

MINI ENCYCLOPEDIA

This encyclopedia was prepared by

1- Yenimahalle Bilim ve Sanat Merkezi - Coordinator

2019- 1- TR01-KA229-074488-1

2- Escola Secundária Alves Martins - Partner

2019- 1- TR01-KA229-074488-3



Sustainable development

It is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainability has 3 distinct but linked elements:

Economic sustainability: Ensuring economic prosperity can be maintained over time.

Social sustainability: Ensuring all people, now and in the future, have their basic needs met.

Environmental sustainability: Ensuring non-human elements of nature, like air, water, trees, and wildlife remain healthy over time.



Aerosol pollution



Aerosol pollution refers to particles in the air emitted by vehicles and factories that burn fossil fuels. This pollution contributes to asthma, bronchitis, and long-term irritation of the respiratory tract, which can lead to cancer.

Agriculture



Agriculture is the art and science of cultivating the soil, growing crops and raising livestock.



Air Quality Maintenance

Breathing clean air can lessen the possibility of disease from stroke, heart disease, lung cancer as well as chronic and acute respiratory illnesses such as asthma. Lower levels of air pollution are better for heart and respiratory health both long- and short-term.





Biodiversity loss

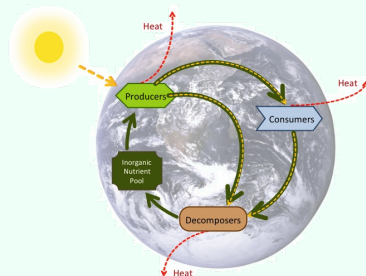


Biodiversity loss refers to the decline or disappearance of biological diversity, understood as the variety of living things that inhabit the planet, its different levels of biological organization and their respective genetic variability, as well as the natural patterns present in ecosystems.



Biogeochemical flows

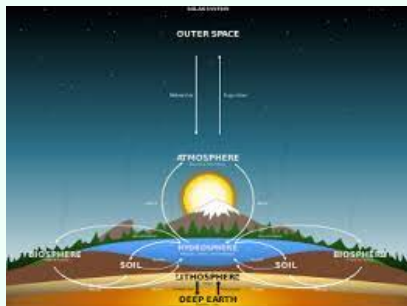
Biogeochemical cycles are the pathways by which elements like carbon, phosphorus, nitrogen, and sulfur, or compounds like water, flow between living organisms and the environment. Human activities can alter these cycles by producing or consuming in different quantities. For example, agricultural fertilizer and soil erosion have substantially increased levels of biologically available nitrogen and phosphorus in natural systems.





Biogeochemical flows

Human production of biologically available nitrogen, primarily driven by the synthetic production of nitrogen fertilizer, is now greater than all forms of natural production combined. The flow of phosphorous into the oceans, primarily driven by the use of fertilizer from mines and livestock manure, is roughly three times the preindustrial level.

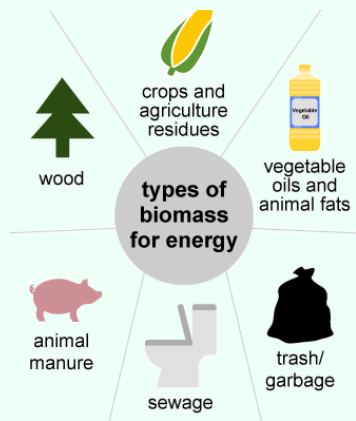


Excess nitrogen decreases plant diversity in terrestrial ecosystems, and the combination of excess nitrogen and phosphorous in water bodies leads to algal blooms and eutrophication.



Biomass energy

Biomass is organic, meaning it is made of material that comes from living organisms, such as plants and animals. The most common biomass materials used for energy are plants, wood, and waste. These are called biomass feedstocks. Biomass energy can also be a non-renewable energy source.





Biomass energy

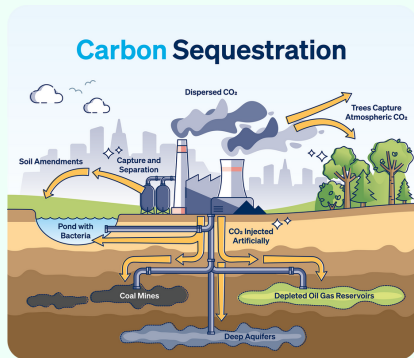
Biomass contains energy first derived from the sun: Plants absorb the sun's energy through photosynthesis, and convert carbon dioxide and water into nutrients (carbohydrates).

The energy from these organisms can be transformed into usable energy through direct and indirect means. Biomass can be burned to create heat (direct), converted into electricity (direct), or processed into biofuel (indirect).





Carbon sequestration



is the process of capturing and storing atmospheric carbon dioxide. It is one method of reducing the amount of carbon dioxide in the atmosphere with the goal of reducing global climate change.





Chemical pollution

Chemical pollution refers to the contamination of our environment with chemicals that are not found there naturally.





Climate change

Climate change refers to long-term shifts in temperatures and weather patterns. These shifts may be natural, such as through variations in the solar cycle. But since the 1800s, human activities have been the main driver of climate change, primarily due to burning fossil fuels like coal, oil and gas.





Climate regulation

It is the ecosystem service that regulates processes related to atmospheric chemical composition, the greenhouse effect, the ozone layer, precipitation, air quality, and moderation of temperature and weather patterns (including cloud formation), at both global and local scales.





Crop fertilizers



Fertilisers are additional substances supplied to the crops to increase their productivity. These are used by the farmers daily to increase the crop yield. These fertilizers contain essential nutrients required by the plants, including nitrogen, potassium, and phosphorus.



Environmental aesthetics

It is a relatively new sub-field of philosophical aesthetics. It arose within analytic aesthetics in the last third of the twentieth century. Prior to its emergence, aesthetics within the analytic tradition was largely concerned with philosophy of art. Environmental aesthetics originated as a reaction to this emphasis, pursuing instead the investigation of the aesthetic appreciation of natural environments.

Since its early stages, the scope of environmental aesthetics has broadened to include not simply natural environments but also human and human-influenced ones.





Drinking Water

Safe and readily available water is important for public health, whether it is used for drinking, domestic use, food production or recreational purposes. Improved water supply and sanitation, and better management of water resources, can boost countries' economic growth and can contribute greatly to poverty reduction.

In 2010, the UN General Assembly explicitly recognized the human right to water and sanitation. Everyone has the right to sufficient, continuous, safe, acceptable, physically accessible and affordable water for personal and domestic use.





Environmental Sustainability

The concept of environmental sustainability emerged in 1987, when the World Commission on Environment and Development created the concept of "sustainable development." That means actions that "meet the needs of present generations without compromising the needs of future generations."

Environmental sustainability: Ensuring non-human elements of nature, like air, water, trees, and wildlife remain healthy over time.





Environmental Sustainability

According to the U.N. Environment Programme, environmental sustainability involves making life choices that ensure an equal, if not better, way of life for future generations.

Environmental sustainability aims to improve the quality of human life without putting unnecessary strain on the earth's supporting ecosystems.

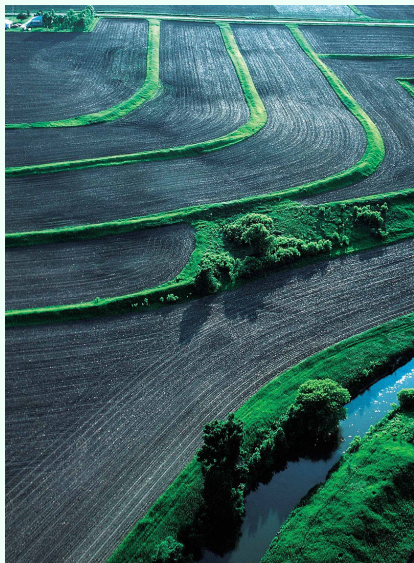


It's about creating an equilibrium between consumerist human culture and the living world. We can do this by living in a way that doesn't waste or unnecessarily deplete natural resources.



Erosion control

Erosion control is the practice of preventing or controlling wind or water erosion in agriculture, land development, coastal areas, river banks and construction. Effective erosion controls handle surface runoff and are important techniques in preventing water pollution, soil loss, wildlife habitat loss and human property loss.





Erosion control

Erosion controls are used in natural areas, agricultural settings or urban environments. In urban areas erosion controls are often part of stormwater runoff management programs required by local governments. The controls often involve the creation of a physical barrier, such as vegetation or rock, to absorb some of the energy of the wind or water that is causing the erosion. They also involve building and maintaining storm drains. On construction sites they are often implemented in conjunction with sediment controls such as sediment basins and silt fences





Fossil Fuels

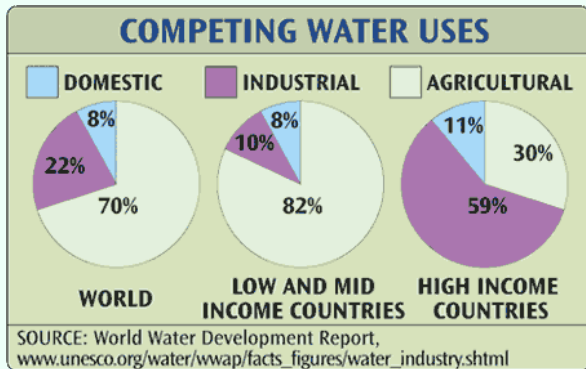
Fossil fuels are made from decomposing plants and animals. These fuels are found in the Earth's crust and contain carbon and hydrogen, which can be burned for energy. Coal, oil, and natural gas are examples of fossil fuels.





Freshwater use

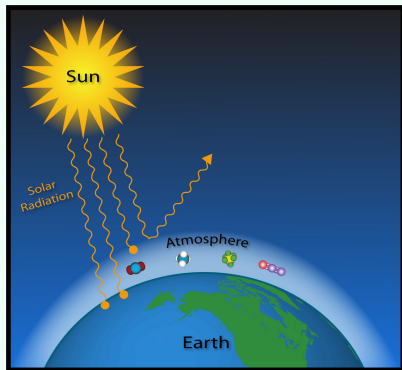
Freshwater is vital for life, supporting ecosystems and human civilizations. We use freshwater in many aspects of daily life including food production, power generation, manufacturing, and sanitation. However, it is becoming increasingly threatened. Although the Earth's surface is two-thirds water, less than three percent is fresh.





Greenhouse Gases

Technically speaking any gas that absorbs and emits radiation is a "greenhouse gas." Water vapor, methane, ozone, nitrous oxide, and carbon dioxide are all classified as greenhouse gases. However, carbon dioxide is the most prevalent of all greenhouse gases, which is one of the reasons it comes up so frequently when discussing climate change issues. According to a study conducted by the EPA in 2019, carbon dioxide made up 81% of all greenhouse gases.





Natural hazard mitigation

It is any sustained action taken to reduce or remove the long-term risk to life, property, and the environment from natural hazards. Mitigation is the responsibility of individuals, businesses, industries, non-profits, and all levels of government. It is most effective when implemented under a comprehensive, long-term natural hazards mitigation plan, and integrated into other plans.

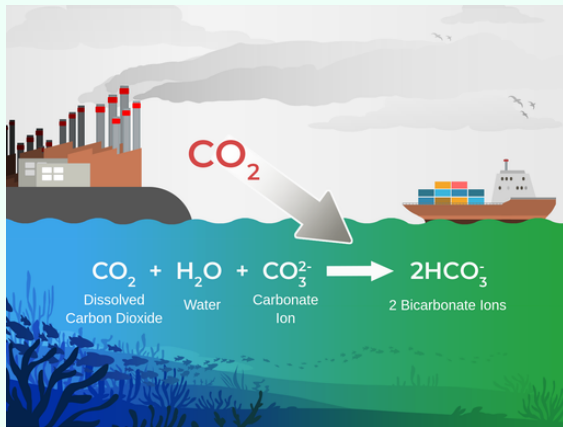


State, tribal, and local governments engage in hazard mitigation planning to identify risks and vulnerabilities associated with natural disasters, and develop long-term strategies for protecting people, property, and the environment from future hazard events.



Ocean Acidification

ocean acidification, the worldwide reduction in the pH of seawater as a consequence of the absorption of large amounts of carbon dioxide (CO₂) by the oceans. Ocean acidification is largely the result of loading Earth's atmosphere with large quantities of CO₂, produced by vehicles and industrial and agricultural processes.





Ocean Acidification

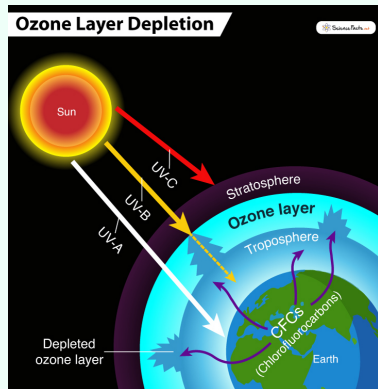
Since the beginning of the Industrial Revolution about 1750, roughly one-third to one-half of the CO₂ released into Earth's atmosphere by human activities has been absorbed by the oceans. During that time period, scientists have estimated, the average pH of seawater declined from 8.19 to 8.05, which corresponds to a 30 percent increase in acidity.





Ozone layer depletion

Ozone depletion, gradual thinning of Earth's ozone layer in the upper atmosphere caused by the release of chemical compounds containing gaseous chlorine or bromine from industry and other human activities. The thinning is most pronounced in the polar regions, especially over Antarctica. Ozone depletion is a major environmental problem because it increases the amount of ultraviolet (UV) radiation that reaches Earth's surface, which increases the rate of skin cancer, eye cataracts, and genetic and immune system damage.





Pest control

It is an extremely important measure owing to the fact that a number of pests are carriers of harmful disease-causing microorganisms. Some critters spread these noxious microbes by contaminating food and water. Some bugs also cause structural damage, such as wood boring insects like termites, carpenter ants and powder post beetles.

Unwanted rodents like rats and mice can destroy electrical wirings, cardboard and wood by chewing through them for gaining entry. Therefore, it is imperative that suitable measures be adopted for keeping these creatures at bay.





Pollination

It is the act of transferring pollen grains from the male anther of a flower to the female stigma. The goal of every living organism, including plants, is to create offspring for the next generation. One of the ways that plants can produce offspring is by making seeds.





Pollutants

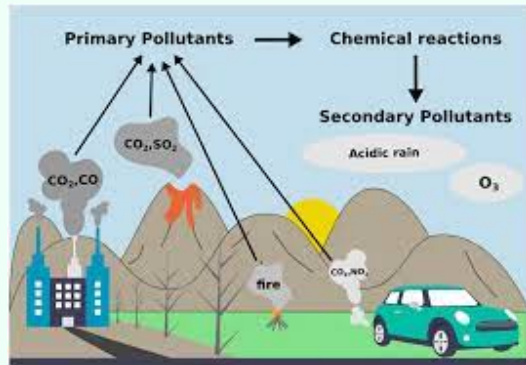
Pollutants are the elements, molecules and particles involved in pollution - life can be harmed when exposed to these materials, and the effects of them on humans and plants are well known. Pollutants can be introduced into the environment in many ways, both naturally and by humans. What pollutants do once they are emitted into the atmosphere, soil or water supply is dependent on the type of pollutant





Pollutants

however it is useful to characterize them in the following way: Primary pollutants are emitted directly into the environment, while secondary pollutants are formed from primary pollutants and external factors. Many pollutants are introduced into the environment in different ways, they have different and sometimes unique health effects and are found in different amounts.





Natural resource

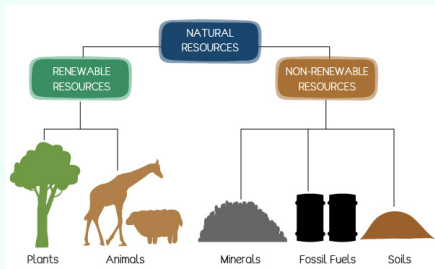


Natural resource, any biological, mineral, or aesthetic asset afforded by nature without human intervention that can be used for some form of benefit, whether material (economic) or immaterial. What is considered a "resource" (or, for that matter, "natural") has varied over time and from one society to another.



Natural resource

Examples of assets that can be considered natural resources include forests, surface water and groundwater, and the fertile lands or the soil and minerals within them (rather than the crops that grow on them), as well as energy resources (such as petroleum, natural gas, and heated water [that is, geothermal energy]) contained within layers of rock.





Waste (or wastes)

are unwanted or unusable materials. Waste is any substance discarded after primary use, or is worthless, defective and of no use. A by-product, by contrast is a joint product of relatively minor economic value. A waste product may become a by-product, joint product or resource through an invention that raises a waste product's value above zero.





Water purification

is the process of removing undesirable chemicals, biological contaminants, suspended solids, and gases from water. The goal is to produce water that is fit for specific purposes. Most water is purified and disinfected for human consumption (drinking water), but water purification may also be carried out for a variety of other purposes, including medical, pharmacological, chemical, and industrial applications. The history of water purification includes a wide variety of methods. The methods used include physical processes such as filtration, sedimentation, and distillation; biological processes such as slow sand filters or biologically active carbon; chemical processes such as flocculation and chlorination; and the use of electromagnetic radiation such as ultraviolet light.



Water purification

Water purification can reduce the concentration of particulate matter including suspended particles, parasites, bacteria, algae, viruses, and fungi as well as reduce the concentration of a range of dissolved and particulate matter.

The standards for drinking water quality are typically set by governments or by international standards. These standards usually include minimum and maximum concentrations of contaminants, depending on the intended use of the water.





Atmosphere

Is a layer of gases that surrounds the earth.



Clean energies

Renewable energies that do not cause pollution by the emission of substances are also called alternative energies, including: solar, wind, geothermal, tidal and hydraulics.





Ecology

Study of the relationships of living beings with the organic or inorganic environment (in which they live).





Environment



Refers to the nature thought or represented by the human mind, that is, to the reality seized, to what we are aware of through perception. It can be understood as what nature is known to by the social system, what is on the human perceptible horizon. A historically constructed human construction.

It alludes to the set of environments known man and is constituted of phenomena that we can represent and that are able to get in reaction with an organism, but that have not yet been called to do. It includes those phenomena that are not immediately used, but which are in a condition of being employed operationally by the body.



Nature

Actual doable entity to be perceived. It is a reality offered to knowledge and thoughtable, but independent of it. Consisting of elements that may not be directly and immediately in reaction with an organism.





Nature

Actual doable entity to be perceived. It is a reality offered to knowledge and thoughtable, but independent of it. Consisting of elements that may not be directly and immediately in reaction with an organism.





Soil Pollution

Is the occurrence of pollution of this above certain level, causing the deterioration or loss of one or more of the functions of the soil? It consists of the undue presence in the soil of foreign chemical elements, such as solid waste or liquid tributaries produced by man, which harm life forms and their regular development.





Solar Energy

Solar energy corresponds to the energy from the light and heat emitted by the Sun. This energy source can be used in a photovoltaic or thermal form, generating electrical and thermal energy, respectively.

See more about "Solar Energy" at:
<https://brasilecola.uol.com.br/geografia/energia-solar.htm>





Sustainable development

It is one that meets the present needs, without compromising the ability of future generations to meet their own needs.

Principles of sustainable development

- Economic sustainability;
- Environmental sustainability;
- Social sustainability





Waste

Is all material, substance, object or well discarded resulting from human activities in society. These can be found in solid or solid states, as well as gases contained in containers and liquids whose particularities make their release into the public sewer system or water unfeasible.





Water Pollution

Is characterized by the introduction of any matter or energy responsible for altering the physical-chemical properties of a body of water. The main responsible for this type of pollution are the releases of industrial, agricultural, commercial and domestic sewage effluents, as well as various solid waste. This compromises the quality of surface and groundwater, affecting the health of animal and plant species in various parts of the planet





Wind Power

Production of electricity using wind.

