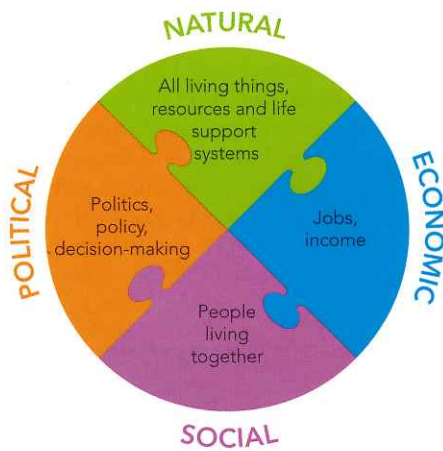


Sustainability

Sustainability is the capacity of the Earth to support all forms of life, both now and into the future. It refers to the ability of economic development to take place without damage to the environment or depletion of resources. To live more sustainably, we need to address the consequences of our human footprint on Earth and create a more balanced approach to the way humans interact with the environment and with each other.

Using human–environment systems thinking we can view all aspects of life and the capacity of the Earth to maintain those aspects. For example, the uncontrolled collection of firewood in developing countries can lead to deforestation and erosion. An understanding of the importance of wood collection for income and families is important when formulating policies to make timber usage more sustainable.



▲ Human–environment systems thinking requires us to think how the different systems that operate on Earth can best work together to provide more sustainable ways of living.



◀ These Ethiopian girls complete an eight-hour journey in search of wood. They make this trip two or three times a week. More than 95 per cent of Ethiopia is now deforested, yet most of its population requires wood for light, heating and cooking. Aid organisations are working with local communities to experiment with inexpensive, clean-burning stoves that use alcohol fuels and help reduce reliance on timber.



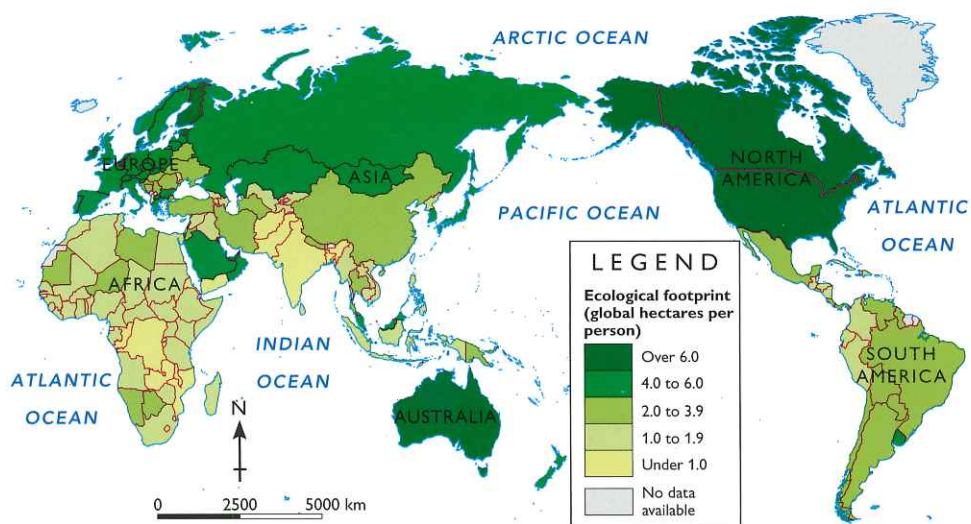
Wind power

The wind turns large windmill-like blades. As the blades turn they cause a turbine to spin and produce electricity. The turbines are fixed onto tall poles in areas where there is reliable wind. Collections of wind-powered turbines are called wind farms.

Solar power

Solar panels turn the sunlight to electricity. The panels contain silicon cells that become energised when they receive an electrical current.

WORLD: ECOLOGICAL FOOTPRINT



Renewable energy

Renewable energy is energy that is generated from resources that are continually replaced. Approximately seven per cent of the world's energy comes from renewable resources such as the Sun, the wind, the ocean's tides, running water and heat stored beneath the Earth's surface. Non-renewable energy is energy that is generated from resources that cannot be replaced or can only be replaced at a very slow rate. Uranium and fossil fuels, such as coal, oil and natural gas, have taken millions of years to form. Most of the world's non-renewable energy resources are expected to run out within the next 50 to 200 years.

AUSTRALIA

biogas/b
solar
wind 8%
hydro 19%

Solar power

Solar panels turn the Sun's light into electricity. The panels contain special chemicals that allow the sunlight to charge electrons. The electrons become energised and flow into wires to form an electrical current.

solar panels

geothermal power station

Geothermal power

Heat stored below the Earth's surface can be used to generate power. Large wells, some as deep as five kilometres, are drilled into the Earth's surface. Water is pumped underground and heated. It is then piped to the surface as steam. The steam is then used to drive large turbines and generate electricity.

Hydroelectric power

Water flows from a dam over turbines. This causes the turbines to spin and generate electricity. The faster the water flows, the greater the amount of electricity that can be created.

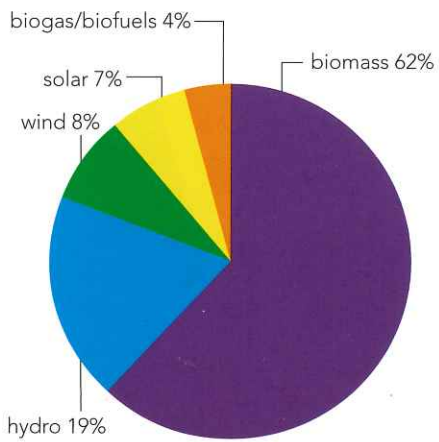
power station

barrage

Tidal power

A barrage or dam is built across a river mouth. Water is then pushed through tunnels as the tide comes in and out, driving turbines that produce power.

AUSTRALIA: RENEWABLE ENERGY



WORLD: SOLAR ENERGY POTENTIAL

