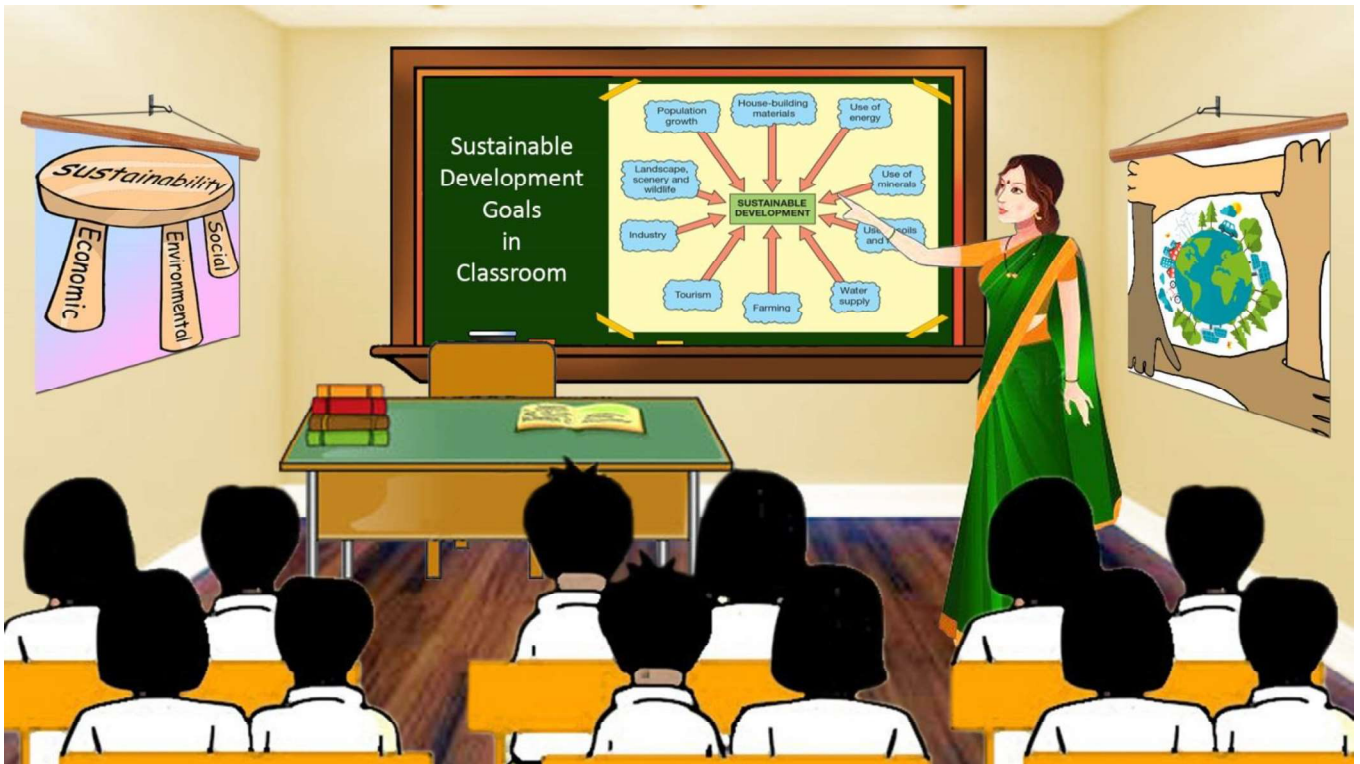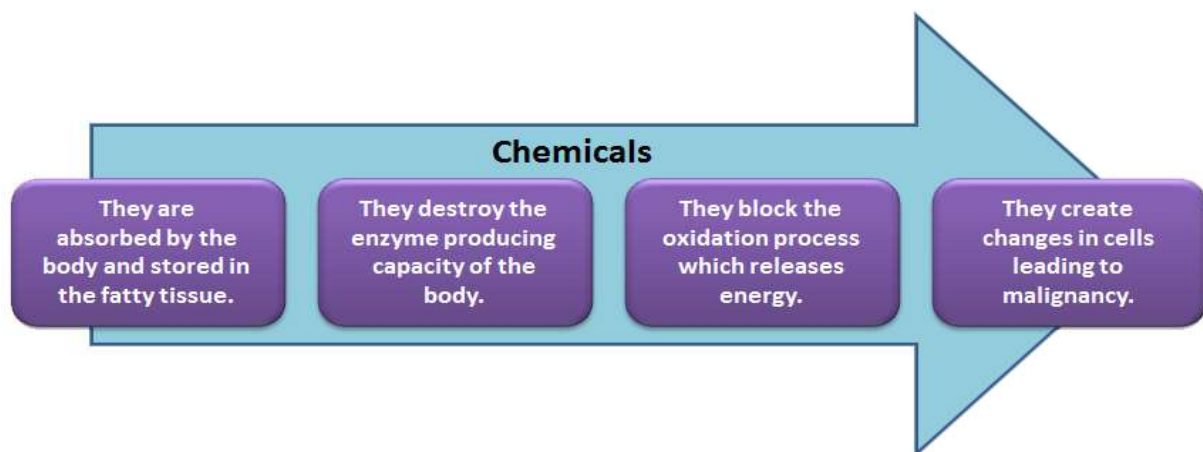# Understanding Sustainable Development

Sujata C

Sustainable development can be defined as growth and advancement that takes place in all fields of life, in a manner and at a pace that can be carried on over very long periods of time. The term was coined at a United Nations Conference on Environment and Development at Rio de Janeiro in 1992 following which a UN commission for Sustainable Development was set up in the same year.

The earth has two types of resources – renewable and non renewable. Scientists have estimated that there are 8.7 million types of life forms on Earth, all are dependent on the resources that the single planet provides for sustaining life. As the most evolved life form, human beings are at the top of the food chain. They have great capacity to not just advance their own life and its associated comforts, but also misuse and exploit the existing resources so much that the future generations and other life forms remain deprived.

Manmade Crisis: Human needs are growing due to population explosion. Currently the rate of population growth is 1.11%. In the 1960s the rate of growth of

human population was above 2%. This was an all-time high figure that precipitated many crises – the first one being food shortage. The pressure to grow more food made man turn to use chemical fertilisers and toxic pesticides like DDT which in the long run did more harm to the soil and water resources than was ever imagined. Man was quick to calculate the immense profits that could be had by using chemicals. Without a thought for the consequences and driven purely by greed, man contaminated the biosphere with abandon. Excessive use of chemicals and over exploitation of resources pushed the planet to the precipice, setting off a deterioration, hard to control. The overuse of chemicals has brought in diseases and death at a faster rate. This means the productivity of man is hit and resources are diverted for healthcare.

Why is the use of chemicals so dangerous? How do they become harbingers of death?

Chemicals

| They are absorbed by the body and stored in the fatty tissue. | They destroy the enzyme producing capacity of the body. | They block the oxidation process which releases energy. | They create changes in cells leading to malignancy. |

DDT is one such chemical identified by the US Environmental Protection Agency as a deadly toxin and banned from use since 1972. Its use in India for agriculture was banned in 1989 but use in other areas continues. The overuse of chemicals during the Green Revolution in India in the 70s is showing its impact forty-fifty years later in the form of rising number of cancer cases, kidney failures and other life threatening conditions. This means how we treat the Earth and its resources today is going to impact coming generations. Does that not make us responsible for our actions? Should we not be sensitive to the needs of the future generations?

Honeybee crisis: Honeybees have been in a sharp decline since the last ten years due to excessive use of the pesticide, neonicotinoid. This global crisis has been

called the *Honeybee Colony Collapse Disorder*. This has not just affected the production of honey but overall food manufacture has fallen as bees are major pollinators. Even though the honeybee comes way down in the food chain, its loss have had a cascading impact on all living beings, and has resulted in major upsets in the balance of nature.

Interdependence of living beings:
To appreciate sustainable development it is important to understand the concept of interdependence of living beings as its core. Our ecosysem contains creatures of all sizes and forms. The smaller ones depend on the larger ones. Carnivorous animals prevent the proliferation of herbivores. Elephants help smaller herbivores like deer and rabbit by breaking down branches of trees or even uprooting them. When they walk the soil is dug up. This brings up fresh food for frogs, snails, crabs, turtles, etc. So when elephants are killed for their ivory tusks, the entire range of animals that were dependent on the elephants get affected. Similarly when the tigers disappear there is a proliferation of *nilgai* and deer that were the main food of the tiger.

Green factory sustainable development/Shutterstock/OUP DAM

Nature maintains a very delicate balance to support all forms of life. When man thoughtlessly makes himself the centre of the universe, this balance is upset, causing irreversible damage. The world is headed towards a mass extinction due to the excesses of mankind, according to nature experts.

Origin of Sustainable Development: The idea of sustainable development is more than fifty years old. In the early 1960s the overuse of chemicals in agriculture had environmental fallout that in turn gave birth to a massive movement against the chemical industry in America.

Significant events, well known groups, conferences and movements related to Sustainable Development include:

1962 – Rachel Carson, a marine biologist, who single-handedly took on the chemical industry for environmental devastation with her book, *Silent Spring.*

1969 – Friends of the Earth International was formed.

1970 – Environmental Protection Agency was set up in the United States.

1971 – Greenpeace was started.

1973 – Chipko Movement was initiated in India.

1975 – CITES (Convention on International Trade in Endangered Species) was formed .

1982 – World Resources Institute was set up.

1985 – Antarctic Ozone hole was discovered for the first time.

1985 – World Meteorology Society warned about global warming for the first time.

1992 – UN Conference on Environment and Development at Rio de Janeiro coined the term *Sustainable Development.*

1992 – UN Commission on Sustainable Development was set up.

2005 – 2014 was declared by the United Nations as the *Decade for Education for Sustainable Development.*

 2014 – UNESCO Conference on Education for Sustainable Development was held.

Challenges in Sustainable Development:

- War and conflict: Peace is a prerequisite to sustainable development, which is unthinkable in war conditions. This is because war leaves a trail of death and destruction, and demands huge investments of resources and time to rehabilitate and restore normalcy.

- Terrorism: Acts of terror are destructive and are similar to disasters that set back governments.
- Poverty: The world is full of inequalities. The divide between the poor and rich is wide, and the onus is on governments to take care of the welfare of the poor.
- Population control: Uncontrolled growth of human population puts excessive pressure on natural resources.
- Climate change: It triggers events like droughts, floods and extreme weather conditions.

Sustainable Development Goals: Member countries of the United Nations adopted a set of goals on September 25, 2015 as part of the new sustainable development agenda in a bid to protect the planet, end poverty and ensure prosperity for all. Specific targets have been given for each goal and they are to be achieved over a period of 15 years. These goals are also known as the ***Global Goals***.

There are 17 goals in all to transform the world, prominent among which include:

To end poverty and hunger

To achieve better standards of education

To improve healthcare

To remove inequalities

To ensure sustainable economic growth while promoting jobs and stronger economies

To combat adverse effects of climate change and pollution

Principles of Sustainable Development: Sustainable development will be possible when certain parameters are adhered to. For starters, the following can be taken as the core principles for sustainable development. When each of these is further broken down, a clear roadmap indicating the way to achieve sustainable development emerges.

Sujata C is a writer and editor with a portfolio of diversified writing categories like web content, articles, short stories for children, technical editing, etc. She has been a brand consultant and advisor for several companies and has worked with concerns like McCann Erickson, New Delhi; Foundations Advertising Services, New Delhi; Saatchi and Saatchi, Hyderabad; etc.

Lesson plan on Sustainable Development

Sujata C
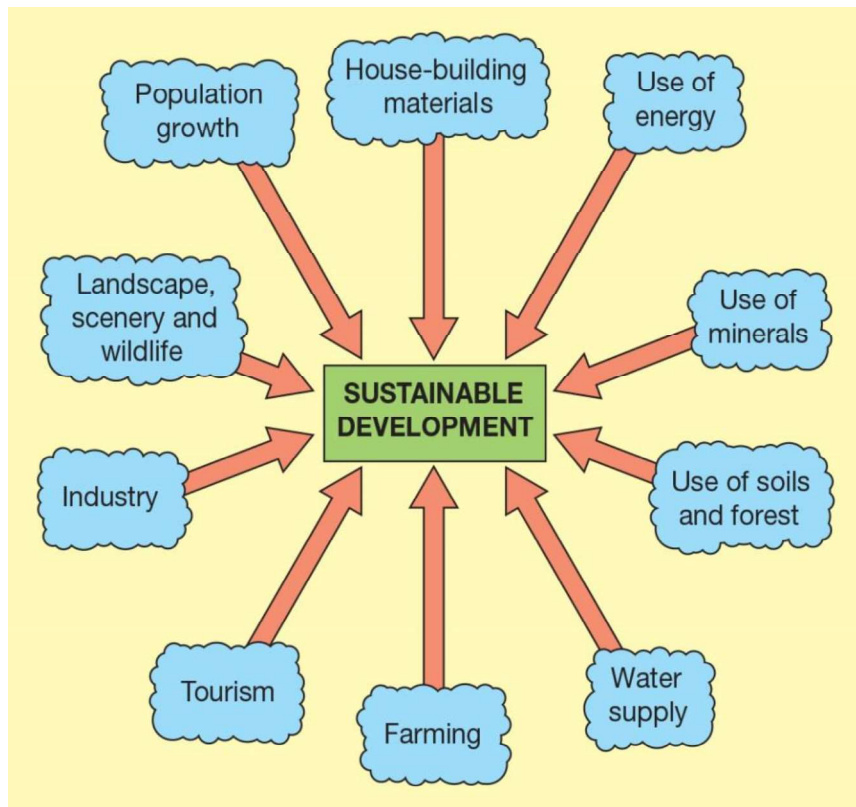
Picture courtesy: Nelson Thornes/New Wider World 2/OUP DAM

School is the best place to sensitise a child towards sustainable development and mould them into agents of change. Today's children will be tomorrow's citizens and they will have to deal with and manage their lives in a challenging world. From a young age they have to be made aware of a certain way of life that will be necessary for the future. Each child can impart the message of sustainable development goals to their family and community. This way the scope of reaching the message on sustainable development to at least half the population in the country would be maximised. You can involve students in various activities that aid sustainable development:

1. **Join as volunteers:** There are several NGOs that work for the environment like Greenpeace and Friends of the Earth. The latter is an international network with 75 member countries and two million supporters. They work on urgent environmental and social issues providing disaster relief during

calamities, and working for the release of imprisoned environmental activists. They also put pressure on businesses to follow ethical environmental strategies and expose corporations that cause grievous damage to environment.

2. **Prepare a project report on Chipko Movement:** Who started it, where was it located, what was the outcome of the movement, etc.

3. Older students can **prepare a case study on the Honey Bee collapse** that the world is still grappling with.

4. **Essay writing:** Ask students to write an essay on the topic, *Waste not, want not*.
Describe a scenario when an environmental disaster struck and the damage it had on life and livelihood.

5. **Prepare a chart** on the important Sustainable Development Goals.

6. **Study newspaper reports on the war in Syria:** Find out how it has impacted ordinary life of school children, small businesses, etc., and write a small report.

7. **Arrange a visit to a weekly bazaar** where organically grown fruits and vegetables are sold. Explain to the children what organic food is and why it is necessary.

8. **Arrange a visit to an organic farm**.

Picture courtesy: Oz Box 4/Shutterstock/OUP DAM

9. **Take a refresher course in chemical free gardening:** Traditional farm practices included the use of natural home-based ingredients for killing pests and increasing output. Find out what natural substances in our kitchen or the farm can be used in our garden.

10. **Familiarize students with rainwater harvesting:** Have them examine the rainwater harvesting pit in the school and explain how it works.
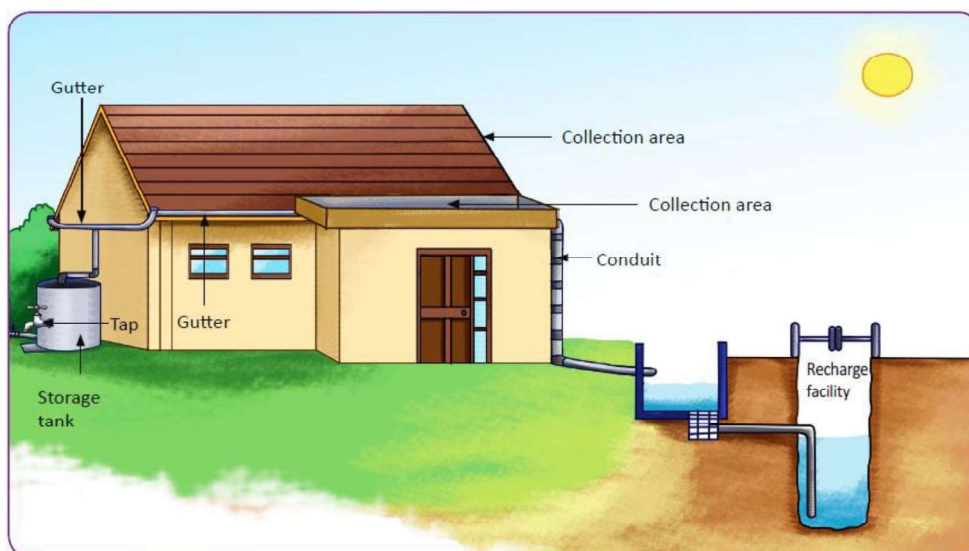
*Diagrammatic representation of a typical water harvesting system*

11. **Have children do a survey** in the school or apartment complex to see that all vehicles are checked for pollution control.

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12. **Arrange a visit** to an establishment, farm or office that uses **renewable energy source** like solar or wind energy.
13. Involve the class in **recycling some old newspapers**.
14. Ask children to prepare a water filter using everyday material available.
15. **Keep a sustainable development calendar** to record activities done by students in a month. Reward the person with the highest score and give them the title, *Sustainable Development Hero*. Encourage everyone to be a SD Hero. Some activities that support sustainable development include:

  I.   Recycling paper, plastic, glass and aluminium.
  II. Keeping wet and dry waste separate.
  III. Donating old clothes and books.
  IV. Carrying a cloth bag while shopping to avoid using plastic bags.
  V.   Doing something productive in the spare time like learning a skill or making something.
  VI. Switching on light and fan only in the room where we are. The whole house need not be lit up.
  VII. Handwashing our clothes and air drying them. Use a washing machine only if the load is full. Hang clothes to dry instead of spin drying them.
  VIII. Maintaining body hygiene and health. Wash hands with soap after using the toilet. Keeping good health is also a part of sustainable development.
  IX. Avoiding junk food and eating nutritious home cooked food.
  X.   Giving leftover food to the poor and hungry, and thereby avoiding food waste.
  XI. Plugging off all computers and television at night.
  XII. Buying locally grown fruits and vegetable, and avoiding the imported ones.
  XIII. Planting a tree and water it well till it grows up.
  XIV. Cycling or walking instead of using transport. Use public transport for long distances.
  XV. Using less paper tissue.
  XVI. Eating more vegetarian food and less of non-vegetarian. Including more vegetables in our diet.
  XVII. Having compost pit in the school to recycle garden waste.
  XVIII. Switching to LED bulbs in our homes.
  XIX. Finding out what is clean energy and what are its sources.

XX. Not littering the public spaces in our area – parks, roads, ponds, shopping areas, etc.

XXI. Writing some original slogans to promote sustainable development and displaying them on posters.

XXII. Recycling old clothes – making a bag out of old jeans or skirt.

XXIII. Making patch work blanket out of old shirts, skirts and other cloth scraps.

XXIV. *Panchagavya* – finding out what it is and how it is made.

XXV. Finding out names of plants that can be used to generate fuel for transport.

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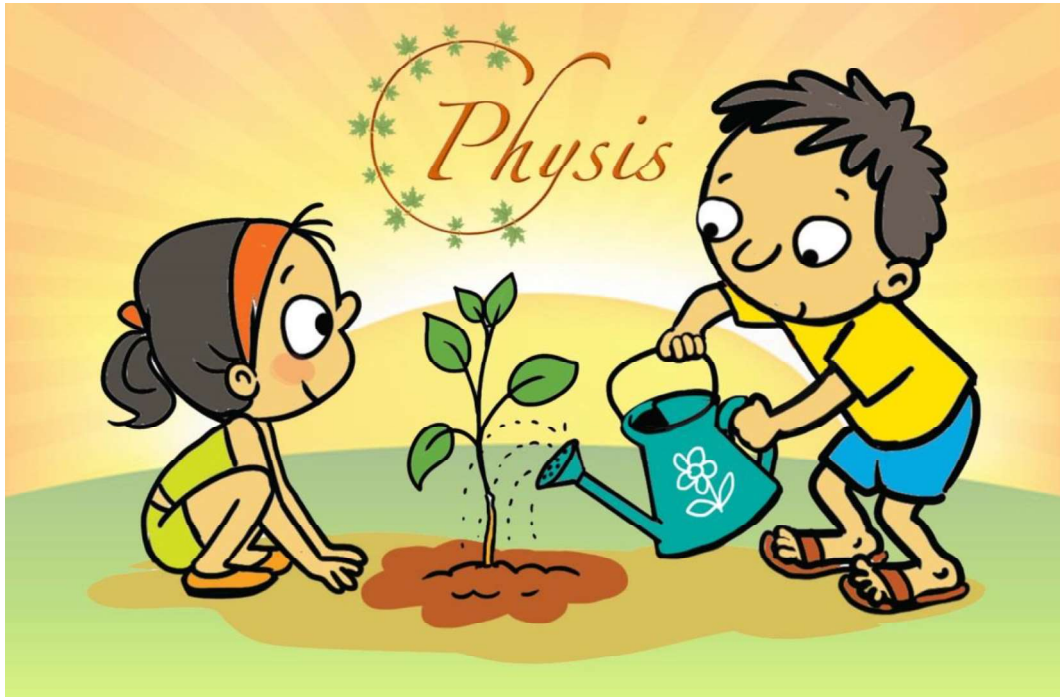
Physis (noun)

Meaning: The principle of growth or change in nature. / Something that grows, becomes or develops.

Plural: physes

Origin and additional information:

In early use: †Nature personified (obsolete).

Later: Nature in various philosophical contexts, especially the inherent quality of a being or object.

Philosophical use begins in pre-Socratic times, but the earliest known appearance of the word in literature is in Homer's *Odyssey*, referring to the intrinsic way of growth. The Oxford Dictionary traces the word to the early seventeenth century. One of the earliest use was found in the works of Nathaniel Baxter (1569–1611), poet and clergyman under the Church of England.

Modern: It is commonly used to refer to nature.

Words Section: It is most likely that the word is drawn from classical Latin *physis*, meaning nature used in Greek φύσις. In Hellenistic Greek it is also personified from φύειν to produce + -σις. People in ancient Greece often thought that the world was a fight between law (rationalism / *nomos*) and nature

(chaos / *physis*). Chaos was the state of nature in which the world existed before the advent of the gods who brought order in the world. Mathematics, music, architecture, etc., which follow strict sets of rules and tries to bring order in nature are good examples of *nomos*.

Today's classical biological debate of *Nature vs Nurture* is based on the Sophist tradition where physis stood for nature and nomos meant nurture. The Greeks also believed that the physis-nomos conflict correlated to various aspects of science and philosophy, which would include the gender debate. Aristotle is said to have derived the term *physics* from physis in Sophist times.

Physis is a great example of a keyword that was very important in classical rhetoric that also helped define Greek language, and over time was modified through various cultural changes into a related, but new word.

Pronunciation

Physis /ˈf(j)uːsɪs//ˈfʌɪsɪs/

Usage:

i.   Greatest is the *physis*, and Hippocrates is its prophet.

On the Natural Faculties by Galen

ii.   Another: It is all physiological units; but his reason asks: What is the "*physis*," the nature and "innate tendency" of the units?

Scientific Essays and Lectures by Charles Kingsley

iii.   Because those who use the term mean to say that nature is the first creative power; but if the soul turns out to be the primeval element, and not fire or air, then in the truest sense and beyond other things the soul may be said to exist *by* nature; and this would be true if you proved that the soul is older than the body, but not otherwise.

Plato's Laws, *Book 10* (892c) - translation by Benjamin Jowett