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GREEN SKILLS

Class IX , Ch-5 Green Skills: I (IT #402)

Session 3: Sustainable Development and Green Economy

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Learning outcome of this Session

The students will be able to:

- ❑ Describe the meaning of sustainable development;
- ❑ State the purpose of Sustainable Development Goals;
- ❑ Describe the meaning of green growth and green economy;
- ❑ Identify the green jobs; and
- ❑ Describe the purpose of green projects.

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Introduction

With increasing population and income, the consumption of goods is increasing day by day. This has led to increase in production and utilization of natural resources, which are required for producing goods. Society must thus change its unsustainable development strategy to a new form where development will not destroy the environment. This form of sustainable development can only be brought about if each individual practices a sustainable lifestyle. Since most of the natural resources are scarce, therefore, judicious utilisation of resource is necessary. The concept of green growth aims at achieving economic growth that is socially inclusive and environmentally sustainable.

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Biodiversity

Biological diversity is that part of nature which includes the differences in genes among the individuals of a species, the variety and richness of all the plant and animal species at different scales in space, locally, in a region, in the country and the world, and various types of ecosystems, both terrestrial and aquatic, within a defined area. It is essential for preserving ecological processes.

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Sustainable Development

Sustainable development is defined as ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (World Commission on Environment and Development, 1987).

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Sustainable Development

Sustainable development includes the following:

- Reducing excessive use of resources and enhancing resource conservation.
- Recycling and reuse of waste materials.
- Scientific management of renewable resources, especially bio-resources.
- Using more environment friendly material or biodegradable material.
- Use of technologies, which are environmental friendly and based on efficient use of resources.

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Sustainable Development Goals

The Sustainable Development Goals (SDGs), otherwise known as the Global Goals, are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. The 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) adopted by world leaders in 2015, embody a road map for progress that is sustainable and leaves no one behind.

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Green Growth

The concept of green growth aims at achieving economic growth that is socially inclusive and environmentally sustainable. The Ministry of Environment, Forest, and Climate Change, Government of India recognized green growth in its vision, wherein 'poverty eradication' along with green growth is to be seen as the focal point for green economy.

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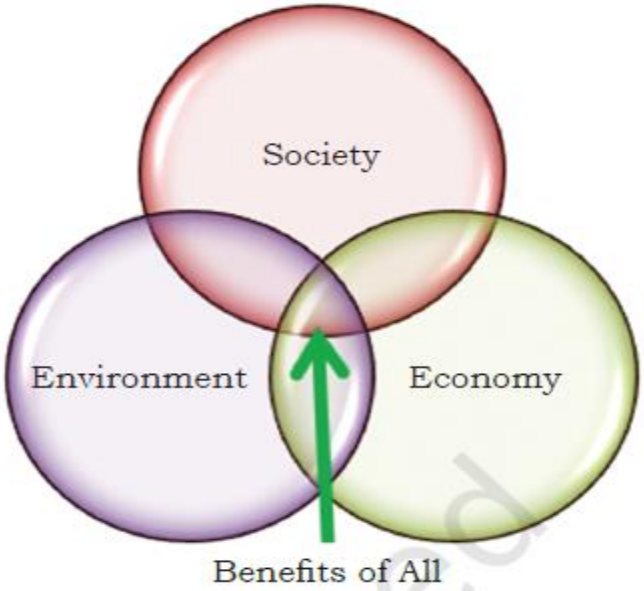
Green Economy

United Nations Environment Programme (UNEP) has defined the “Green Economy” as “one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. A ‘Green Economy’ is a system which helps in economic growth while at the same time, taking care of the environment



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Green Consumer

A **green consumer** is someone who is very concerned about the environment and, therefore, only purchases products that are environment-friendly or eco friendly. Products with little or no packaging, products made from natural ingredients and products that are made without causing pollution are all examples of ecofriendly products.

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Components of a Green Economy

A green economy includes the following components:

Renewable energy 	Renewable energy from renewable resources like wind, water, sun, earth, biomass, etc., are available in large quantities and cause less pollution. India ranks amongst the top 10 countries for production of renewable energy through solar, wind and biomass.
Green building 	Green buildings are buildings that cause minimum damage to the environment during their construction and operation. They use energy, water, and other resources wisely, with minimum waste.
Well-managed (Sustainable) transport 	Sustainable means what is good for the economy as well as the future of the environment. A sustainable transport system will cost less, help more people to move quickly and cause less or no damage to the environment.

Components of a Green Economy

A green economy includes the following components:

Water management

We need to avoid water pollution and not waste water. We should not waste water, rather we should recycle it for various purposes.

Waste management

All wastes result in loss of resources and increases land, water and air pollution. You can prevent this by separating waste before throwing. Using the 3Rs—Reduce, Reuse and Recycle will help in managing waste material.

Land management

Land is used for farming, forests, factories, homes, roads, etc. In a green economy, land is used in a way that it meets the requirement of people without causing damage to the environment.

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Green Skills

Green skills are those skills required to adapt processes, services and products to climate change and the environmental rules and necessities related to it. They embrace the information, abilities, values and attitudes required to live in, develop and support a sustainable and resource efficient society.

Some of the areas in which green skills contribute to the sustainable development are as follows:

- using renewable energy (example, using solar power and wind energy)
- water and waste management
- rain water harvesting
- conserving energy
- reducing pollution

Green skilling is crucial for making a transition from energy and emissions—intensive economy to cleaner and greener production and service. It also prepares people for green jobs that contribute to preserving or restoring the quality of the environment, while improving human well-being and social equity.

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Knowledge and Skills Needed for Green Economy

S.No.	Purpose	Knowledge and skills needed for green economy
	Manage natural resources	• To assess environmental impact • To design and adopt technologies that help in reducing the consumption of natural resources • To understand legislation and guidelines for sustainable utilisation of natural resources
	Support climate resilience	• To develop models for interpreting climate change projections • To develop risk management strategies for future resource availability • To adopt technologies that improve resilience
	Support resource efficiency	• To develop resource efficient business models • To develop and adopt technologies that maximises resource utilisation and reduces waste
	Support low carbon industry	• To develop technologies that promote renewable energy sources (wind, solar, water) • To design and adopt technologies and products that minimises carbon emissions

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Green Jobs

S.No.	Sector	Areas/Field	Green Jobs
	Agriculture	• Organic farming • Watershed management • Rain water harvesting	• Water quality technician • Rain water harvesting professionals and technician • Solar pump technician • Greenhouse or polyhouse professionals and technicians
	Construction	• Planning, design and manufacturing of energy efficient lighting appliances and equipment • Increasing efficiency of existing buildings through energy audits • Planning, design, and construction of green buildings • Green plumbing, using sensor based equipment	• Green builders • Green design professionals • Green workers

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Green Jobs

	Energy	• Research, construction, and monitoring of power plant, including plant efficiency and carbon sequestration • Increased power plant efficiency	• Solar Cell Technicians and Engineers • Wind energy professionals • Wind energy workers • Biofuel professionals • Wave energy producers
	Forestry	• Reforestation and afforestation projects • Agroforestry and vertical farming for better utilisation of natural resources.	• Natural scientists
	Manufacturing	• Pollution control • Energy efficiency • Recycling waste materials	• Recyclers
	Retail	• Greener products and specifically targeted green stores	• Green salesperson • Accountants • Cashiers • Sales associates
	Automotive and Transport	• Research and design on more fuel efficient vehicles and on public transport systems • Manufacture of alternatively fuelled vehicles	• Clean car engineers

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Green Jobs

	Tourism and Hospitality	• Eco-friendly practices, such as centralized lighting and air conditioning systems for saving electricity • Eco-tour guides	• Eco-tour guides • Green tour guides
	Education	• Research and development activities for promoting green growth and economy • Teaching environmental education • Research and development in conservation of natural resources	• Teachers teaching environmental education • Green scientist • Conservation biologists

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Green Projects

Many people and organisation are concerned and motivated about doing something to save the environment. They are implementing green projects in areas like waste management, energy conservation, green sanitation, biofuel use, green buildings, etc.

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Examples of Green Projects in India:

Solid Waste Management by 'Swachh Cooperative'

Swachh Cooperative' is wholly owned by waste pickers. The Cooperative has members who are engaged in door step ollection of waste in Pune. This integrates informal waste ickers into Pune city's olid Waste Management ystem. This project has ecome a success with the upport of government nd the waste-pickers. Vaste pickers now work vith dignity and provide a ecentralised waste anagement system. They nsure efficient disposal of vet waste through biogas egeneration, along with recycling of solid waste. Biogas is roduced from plant material and animal waste, garbage, aste from households and some types of industrial wastes, uch as fish processing, dairies, and sewage treatment plants. is a mixture of gases which includes methane, carbon ioxide, hydrogen sulphide and water vapour. In this mixture, ethane burns easily.

Modern *Chulha* of 'Society of Development and Environment Protection'

Energy efficient cooking stoves or 'chulas' help the movement f air through it so that the wood is burnt more efficiently. The Society of Development and Environment Protection eveloped the 'Modern DEEP (Development and Environment rotection) Chulha' that uses biomass to reduce consumption f wood by 50%. This chulha reduces smoke by 80%, reducing nvironmental and health problems. The project trains asons and welders, to produce the chulhas, thus increasing mployment and entrepreneurship opportunities. The initiative as started in 35,000 households of Solan district in Himachal radesh in 1995.

Biotoilet by 'Green Solution Foundation'

GSF (Green Solution Foundation) has created a bio-toilet solution for hygienic sanitation in villages and slums in cities that lacked sewage systems. Users or donors fund these bio-toilets while GSF provides training on toilet use and servicing involving the local population, thus creating employment and entrepreneurship opportunities.

The Bio-digester tank forms the basis for this eco-friendly toilet. Using aerobic bacteria, this tank converts human waste into environment standard compatible water, which is used for flushing, or even for irrigation.

Green benefits

- Water conservation due to less flushing
- Efficient sewage system
- Decrease in soil and water contamination
- Decrease in diseases due to hygienic sanitation.

A Quick Recap Of This Session

In this session, you have learnt about sustainable development, sustainable development goals, green growth, green economy, green consumer, green skills and green jobs.

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Home Assignment

A. Multiple choice questions

Read the questions carefully and circle the letter (a), (b), (c) or (d) that best answers the question.

1. What does conservation of energy mean? (Choose all options that apply)
   a) Saving energy
   b) Producing energy
   c) Using energy efficiently
   d) Creating energy sources
2. Which of the following are non-renewable resources?(Choose all options that apply)
   a) Coal
   b) Diesel
   c) Sun
   d) Water
3. Which of the following is an example of renewableresources?
   a) Coal
   b) Solar Energy
   c) CNG
   d) Petroleum

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Home Assignment

B. Subjective questions

1. Write any three actions which you can take to conserve energy.
2. Describe any three methods of water conservation.
3. What is the purpose of soil conservation?
4. State any three ways by which we can save energy.

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