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SOLUTIONS BOOK

CLASS 8

Social Science · Exploring Society

CHAPTER 1

Natural Resources and Their Use

Complete Questions and Activities Solutions

In-text Questions

Questions and Activities

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Class 8 Social Science · Exploring Society: India and Beyond · Chapter 1 — Natural Resources and Their Use

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Every question is followed by its answer. Question numbers above are clickable and the PDF bookmarks panel lets you jump to any exercise set or question. Figures are reproduced from the NCERT textbook (© NCERT) for educational use.

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1.1

CLASS 8 SOCIAL SCIENCE · CHAPTER 1

In-text Questions

Solutions · 14 questions

Directions (Questions 1–14): These are the questions that appear inside the chapter (The Big Questions, Think About It, Don’t Miss Out and Let’s Explore), numbered in the order in which they appear. Many are open-ended; model answers based on the chapter are given, and you may add examples from your own surroundings.

QUESTION 1 *The Big Questions · p. 1*

How do we categorise natural resources?

ANSWER

Natural resources are categorised by using shared characteristics (criteria). The chapter uses two: (i) the use we put them to, and (ii) whether they are renewable or not.

a Based on use

Category	What it means	Examples
Essential for life	We cannot make them ourselves; life cannot exist without them	Air, water, soil (food)
Materials	Used to make useful or beautiful objects	Wood, marble, coal, gold
Energy	Source of electricity, transport and production	Coal, water, petroleum, natural gas, sunlight, wind

b Based on renewability

Category	What it means	Examples
Renewable	Nature restores and regenerates them, if the natural rhythm is not disturbed	Sunlight, wind, flowing water, timber, soil
Non-renewable	Formed over long periods; cannot be replenished at the rate we use them	Coal, petroleum, iron, copper, gold

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c One resource, more than one category

A resource can fall into more than one category. Coal is a material and a source of energy; water is essential for life and is also a source of energy.

Therefore, natural resources are categorised by use (life, materials, energy) and by renewability (renewable, non-renewable).

QUESTION 2 *The Big Questions · p. 1*

What is the connection between the distribution of natural resources and different aspects of life?

ANSWER

Natural resources are not evenly distributed across the planet or even within countries. This uneven distribution shapes settlements, trade, international relations and conflicts.

a Settlements and livelihoods

- Industries near resources create employment for local people.
- Townships grow around them and open economic opportunities for others.
- More modern facilities that improve quality of life become accessible.

b Costs of resource-rich areas

- Benefits are often accompanied by costs in the short and long term.
- People in resource-rich areas have been displaced from their homes; sacred places can come under threat, leading to conflicts.

c Trade

National and international trade depend on where resources are located. Combined with human knowledge and skills, they create unique products such as Wootz steel, and trade fuelled the growth of large empires in India.

d International relations and conflicts

Many wars have been fought to gain control over resources. Nature ignores political boundaries, so sharing resources across states and countries causes tension, e.g. the Kaveri water shared by Karnataka, Tamil Nadu, Kerala and Puducherry, and the shared waters of the Brahmaputra.

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e Prosperity and fairness

Abundant resources do not guarantee prosperity (the ‘paradox of plenty’). Access to basic resources such as drinking water and clean air is often unfair to some sections of society.

Therefore, where resources are found influences where people live, how they earn, whom they trade with and where conflicts arise.

QUESTION 3 *The Big Questions · p. 1*

What are the implications of unsustainable use / over exploitation of natural resources?

ANSWER

When resources are used faster than Nature can restore them, Nature’s cycle of restoration and regeneration is disturbed, and renewable resources are depleted.

a Implications for renewable resources

- Timber: harvesting faster than a forest grows trees depletes the forest.
- Fish: commercial over-fishing has caused a sharp decline in tuna.
- Water: glaciers in some places in the Himalayas melt faster than precipitation replaces them, threatening water security of the plains. Groundwater is extracted faster than it is replenished (almost 80% of Punjab is ‘over-exploited’).
- Soil: improper use of chemical fertilisers and pesticides causes soil degradation and crop failure.

b Pollution and climate

- Industrial waste that cannot decay can make a river poisonous so that it cannot support life.
- Cement production releases fine dust that harms lungs, plants, soil and water.
- Irresponsible use has led to pollution, biodiversity loss and climate change at an increased pace.

c Non-renewable resources

They cannot be replenished at the rate we use them; India’s coal reserves are estimated to last about another 50 years.

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d Short term versus long term

Punjab's Green Revolution ensured food security in the short term, but the long-term consequences will take time and effort to heal.

Therefore, unsustainable use harms resources, health and ecosystems, and the damage is hard to reverse.

QUESTION 4 *Don't Miss Out · p. 3*

In many indigenous traditions of the world, Nature is considered sacred. You have read about this. In such traditions, Nature is a nurturer and nourisher.
Do you know of practices that reflect this?

ANSWER

Yes. Many everyday practices show respect for Nature as a nurturer. Examples are given below; you may add others from your own family or region.



Fig. 1.6. Tulasī puja for wellbeing



Fig. 1.9. Offering arghyam to Sūrya, the sun-god, in gratitude

a Examples

- Tulasī puja for wellbeing (Fig. 1.6 of the chapter).
- Offering arghyam (water) to Sūrya, the sun-god, in gratitude (Fig. 1.9).
- Protecting sacred groves; cutting trees there is culturally unacceptable.
- Treating soil as part of Mother Earth, and using cow dung and other natural fertilisers, mulching and multi-cropping.
- Worshipping rivers, trees and the Sun, and thanking Nature during harvest festivals.

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Therefore, such practices express gratitude to Nature and encourage us to use resources with care.

QUESTION 5 *Think About It · p. 3*

Take a pause. Look at yourself and the things around you. What is the origin of each of them? At some point they all lead to Nature; even the plastic button on your shirt.

ANSWER

Everything around us can be traced back to a natural resource, even if it passes through many stages of making.

a Tracing some common things to their origin

Thing around me	Natural origin
Cotton shirt	Cotton plant grown in soil with water and sunlight
Plastic button	Petroleum (a fossil fuel formed over millions of years)
Wooden desk, paper, pencil	Trees (timber / wood)
Glass window or bottle	Sand
Steel pencil box or utensils	Iron ore (a metal ore)
Electric wire	Copper ore
Rice, vegetables, roti	Soil, water and sunlight
Electricity at home	Coal, flowing water, sunlight, wind

Therefore, even the plastic button on a shirt leads back to Nature (petroleum). Your own list may differ.

QUESTION 6 *Think About It · p. 4*

What might be the different criteria we can use to categorise natural resources?

ANSWER

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A criterion is a shared characteristic used to group things. Natural resources can be grouped using several criteria.

a Criteria used in the chapter

- **Use:** essential for life, source of materials, source of energy.
- **Renewability:** renewable and non-renewable resources.

b Other possible criteria

- **Origin:** living (forests, fish, crops) and non-living (minerals, water, air).
- **Spread:** available almost everywhere (air, sunlight) or only in some places (coal, iron ore, oil).

Therefore, the criterion we choose decides the categories we get; use and renewability are the two in this chapter.

QUESTION 7 *Don't Miss Out · p. 6*

Do you know of other traditional practices that help the ecosystem to stay in balance?

ANSWER

Traditional communities developed practices that let Nature restore itself, such as not fishing during the spawning season. Other such practices are listed below.

a From the chapter

- Water harvesting and rejuvenation of ponds and tanks.
- Cow dung and other natural fertilisers, mulching, multi-cropping and crop rotation for soil health.
- Vṛikṣhāyurveda: growing plants together, natural pest repellents and ploughing that retains soil moisture.
- Protecting sacred groves.

b Other examples

- The Bishnoi community of Rajasthan protects trees and wildlife.
- Johads (small earthen check dams) in Rajasthan collect rainwater.

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Therefore, traditional practices take only what Nature can restore and help keep ecosystems in balance.

QUESTION 8 *Let's Explore · p. 7*

Identify human actions in your surroundings that result in Nature losing her ability to restore and regenerate. What types of interventions can be undertaken to restore Nature's cycle?

ANSWER

Nature loses her ability to restore and regenerate when we use or damage resources faster than she can renew them.



Fig. 1.10. Waste from industries is often disposed without proper treatment



Fig. 1.14. Crop failure on account of injudicious use of chemical fertilisers

a Actions and possible interventions

Human action	Effect	Intervention
Clearing forests for housing, agriculture	Loss of trees and habitat	Plant the native trees that grew there; harvest timber in limited quantities
Untreated industrial waste into rivers	River becomes poisonous	Treat waste before disposal
Over-pumping groundwater	Water table falls, extraction cost rises	Water harvesting, rejuvenating ponds and tanks, less wastage, reuse of water
Excess chemical fertilisers and pesticides	Soil degradation, crop failure	Compost, natural fertilisers, mulching, multi-cropping
Over-fishing	Fish populations decline	Regulate fishing, especially in spawning season
Burning fossil fuels, cutting forests	Rising temperatures, melting glaciers	Shift to solar and wind energy; protect forests

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b **Your surroundings**

Look around your locality (for example, dumping of waste, wasteful use of water, felling of trees) and match each action with an intervention as above.

Therefore, restoring Nature's cycle needs us to reduce harmful actions and actively replenish what we have depleted.

QUESTION 9 *Let's Explore · p. 8*

Take up a small research study to assess the types of renewable resources in your region; you may discuss with your teacher the geographical area of your study and sources to access information that you may need. What has been the change in their status over time? Make a small report that identifies the reasons for the change and what may be done.

ANSWER

This is a project. The steps and a model report format are given; fill in your own region's findings.

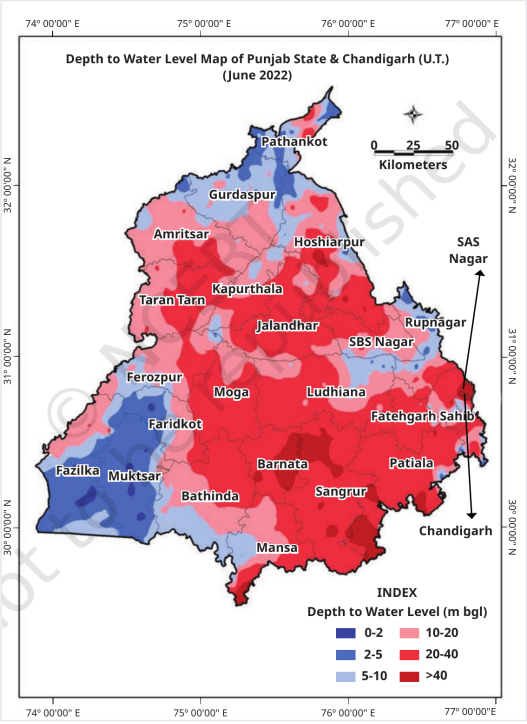

Fig. 1.17. Depth to water level map of Punjab and Chandigarh, June 2022 (m bgl = metres below ground level)

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a Steps

- **Choose the area** (village, town or district) with your teacher.
- **List the renewable resources** there: sunlight, wind, rivers and ponds, groundwater, forests, soil.
- **Collect information** from the library, local offices, newspapers, and elders of the community.
- **Compare the status** now with the past for each resource.
- **Find the reasons** for the change and **suggest what may be done**.

b Model report format

Resource	Status over time	Reasons	What may be done
Example: groundwater			

c Illustration (from the Punjab caselet in the chapter)

Resource: groundwater. Status: almost 80% of Punjab is ‘over-exploited’; water is inaccessible to about 30 m depth in a large part.
Reasons: high-yielding wheat and paddy needing more water; free power leading to over-pumping.
What may be done: water harvesting, rejuvenating ponds and tanks, cutting wasteful use, reusing water.

Therefore, a good report states the resource, its change over time, the reasons and the actions needed.

QUESTION 10 *Let’s Explore · p. 8*

What are the non-renewable resources that you use daily, directly or indirectly? What are the possible renewable substitutes? What are some of the steps we can take to transition to renewables?

ANSWER

We use non-renewable resources all day: fuels for energy, metals in objects, and materials such as plastic and cement.

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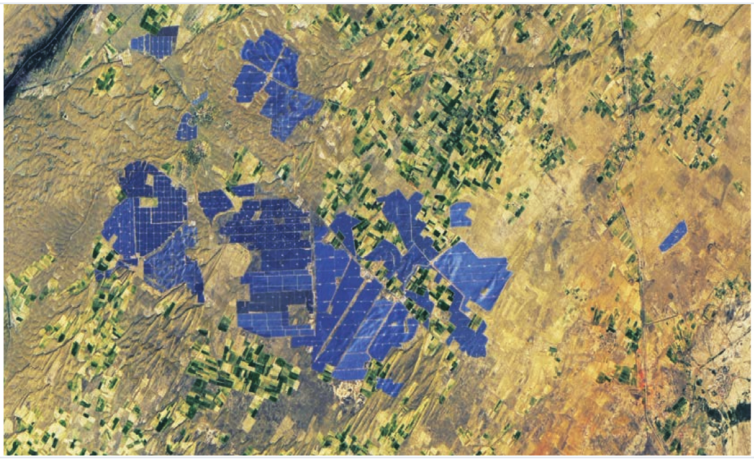

Fig. 1.21. Satellite image of one of the largest solar parks in the world located in Rajasthan

a Non-renewables used and possible substitutes

Non-renewable use	Possible renewable substitute
Electricity made from coal	Solar, wind and hydel power
Petrol and diesel for transport	Electric vehicles charged with renewable power; cycling and walking
LPG or coal for cooking	Solar cookers, biogas
Plastic (from petroleum)	Cloth or jute bags, paper, plant-based materials
Cement for buildings	Stone, mud, plant-based materials, recycled materials
Metals (iron, copper)	Reuse, repair and recycle; buy only what is needed

b Steps to transition to renewables

- Switch to renewable energy for as many purposes as we can.
- Save electricity and fuel; use resources judiciously.
- Reuse, repair and recycle.
- Support the development of technology and skills for renewables.

Therefore, using non-renewables judiciously while shifting to renewables makes them last longer.

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QUESTION 11 *Let's Explore · p. 9*

Observe the map in Fig.1.11. Notice the uneven distribution of important minerals. What types of resources are available in your region? How are they distributed?

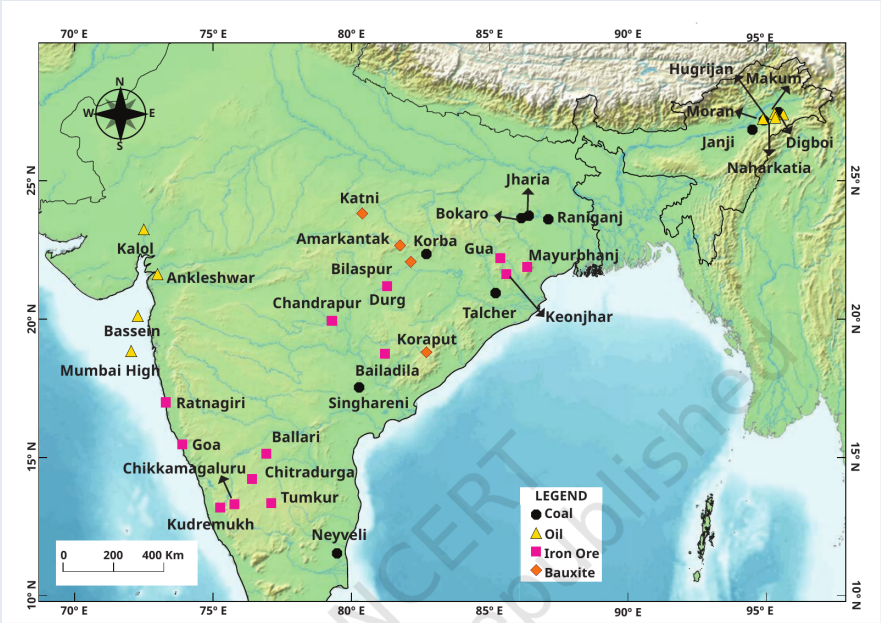

Fig. 1.11. Distribution of important minerals

ANSWER

Fig. 1.11 uses black dots for coal, yellow triangles for oil, pink squares for iron ore and orange diamonds for bauxite.

a What the map shows

Resource	Places marked on the map
Coal	Jharia, Bokaro, Raniganj, Korba, Talcher, Singareni, Neyveli
Oil	Digboi, Naharkatia, Moran and nearby fields in the north-east; Kalol and Ankleshwar in Gujarat; Mumbai High and Bassein off the western coast
Iron ore	Mayurbhanj, Keonjhar, Gua, Durg, Bailadila; Ballari, Chitradurga, Tumkur, Kudremukh, Chikkamagaluru; Goa, Ratnagiri
Bauxite	Katni, Amarkantak, Koraput

b Observation

The minerals are unevenly distributed. Coal, iron ore and bauxite are mostly marked in the eastern and central parts and in the south, oil in the north-east and the west, while large areas (for example, the northern plains) have no mineral marked.

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c Your region

Find your state or district on the map and note which symbols fall there, and whether they are clustered or scattered. If none fall in your region, state that your region has none of these four minerals marked, and name the resources it does have (for example soil, water, sunlight).

Therefore, minerals are concentrated in a few places, so distribution is uneven.

QUESTION 12 *Let's Explore · p. 10*

(i) Select any two natural resources. Gather information about their availability across different parts of India. Mark them on a map. What do you observe about their distribution? What are the types of economic activities connected with them?
(ii) Discuss the implications of extracting the natural resources in those parts for current and future generations. Suggest ways in which we can use Nature's gifts in responsible ways.

ANSWER

Model answer using coal and iron ore (both are shown in Fig. 1.11). You may choose any two resources.

i Availability, distribution and economic activities

Point	Coal	Iron ore
Where found	Jharia, Bokaro, Raniganj, Korba, Talcher, Singareni, Neyveli	Odisha, Jharkhand and Chhattisgarh area (Keonjhar, Mayurbhanj, Gua, Durg, Bailadila); Karnataka and Goa
Marking on map	Mark each place with a black dot	Mark each place with a pink square
Observation	Concentrated in a few areas; none in the northern plains	Found in two main areas; unevenly spread
Economic activities	Mining, transport, power generation	Mining, transport, industry using metals

ii Implications and responsible use

- **Current generation:** employment, townships, energy and development, but also displacement and pollution.
- **Future generations:** these are non-renewable; coal reserves may last about 50 years.
- **Responsible ways:** use judiciously, shift to renewables, reuse and recycle, and treat waste.

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Therefore, resources are unevenly spread and linked to mining and industry; we must extract them responsibly for future generations.

QUESTION 13 *Let's Explore · p. 10*

Find out about such a conflict in the international context. Discuss your findings in the class.

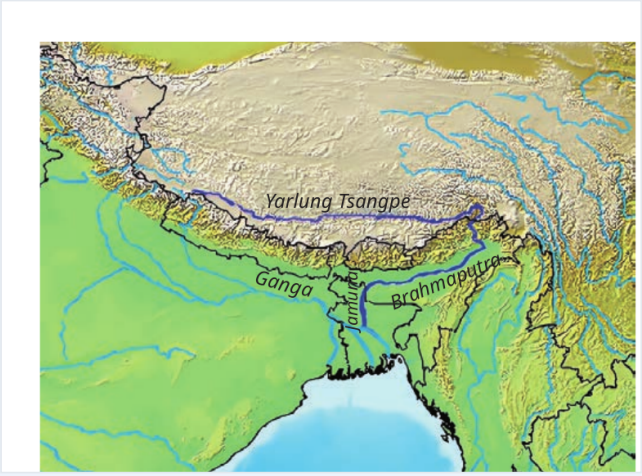

Fig. 1.12. Shared waters of the Brahmaputra river

ANSWER

The question refers to the sharing of natural resources across countries. Two examples are given.

a The Brahmaputra

Fig. 1.12 shows the river as the Yarlung Tsangpo in Tibet, the Brahmaputra in India and the Jamuna in Bangladesh. Countries upstream can affect the flow reaching countries downstream, so agreements and information sharing matter.

b The Nile

Egypt, Sudan and Ethiopia have disagreed over the Grand Ethiopian Renaissance Dam on the Blue Nile, including how fast its reservoir is filled and how water is released.

c Points for class discussion

- Why do such conflicts arise (uneven distribution, Nature ignores boundaries)?
- How can they be resolved (negotiation, fair sharing, as with the Kaveri)?

Therefore, shared resources can cause conflict, and reaching agreements between neighbouring countries is not easy.

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QUESTION 14 *Let's Explore · p. 11*

What do you think are the different inputs required to enable the use of the natural resources available in different geographical areas?

ANSWER

To be a resource, something must be technologically accessible, economically feasible and culturally acceptable. This tells us what inputs are needed.



Fig. 1.3. An offshore oil rig extracts petroleum from below the seabed

a Inputs required

Input	Why it is needed
Technology	To reach and extract resources, e.g. oil from under the seabed
Money (investment)	Extraction must be economically feasible
Knowledge and skills	To convert resources into products of higher value
Industries and infrastructure	To process, transport and use the resources
Good governance and planning	To turn resources into lasting benefits, not temporary windfalls
Cultural acceptance	Using a resource must not violate beliefs, such as cutting trees in sacred groves

Therefore, technology, investment, skills, planning and cultural acceptance are needed to use natural resources.

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1.2

CLASS 8 SOCIAL SCIENCE · CHAPTER 1

Questions and Activities

Solutions · 5 questions

Directions (Questions 1–5): These are the Questions and activities at the end of the chapter (page 19). Answer each in your own words using the points given.

QUESTION 1

What can make what is today a renewable resource non-renewable tomorrow? Describe some actions that can prevent this from happening.

ANSWER

A resource stays renewable only if we use it more slowly than Nature restores it. If we use it faster, it becomes depleted.

a **Causes and preventive actions**

What can make it non-renewable	Action to prevent it
Harvesting timber faster than forests grow	Take timber in limited quantities; plant trees
Extracting groundwater faster than it is replenished	Water harvesting; rejuvenate ponds and tanks; cut wasteful use; reuse water
Over-fishing	Regulate fishing, especially in the spawning season
Chemical fertilisers and pesticides degrading soil	Compost, natural fertilisers, mulching and multi-cropping
Untreated waste poisoning rivers	Treat waste before disposal
Warming that melts glaciers faster than they are replaced	Reduce fossil fuels; protect forests

Therefore, a resource remains renewable only if its natural rhythm of restoration and regeneration is not disturbed.

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QUESTION 2

Name five ecosystem functions that serve humans.

ANSWER

Ecosystem functions are Nature’s inherent ways of working. When they benefit humans, they are called ecosystem services.

a Five ecosystem functions

Function	How it serves humans
1. Trees produce oxygen	Air to breathe
2. A forest filters water	Clean water
3. A forest prevents soil erosion	Protected farmland
4. A forest provides habitat for animals	Keeps the variety of life
5. Pollination by insects and birds	Pollinated crops

Therefore, oxygen production, water filtering, soil protection, habitat and pollination are ecosystem functions that serve us.

QUESTION 3

What are renewable resources? How are they different from non-renewable ones? What can people do to ensure that renewable resources continue to be available for our use and that of future generations? Give two examples.

ANSWER

Renewable resources are those that Nature restores and regenerates over time, so they can be used again.

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Fig. 1.8. We can take timber from the forest, in limited quantities, for a long time if we allow it to regenerate.

a Renewable resources

Examples: solar energy, wind energy, energy from flowing water, timber from forests, rivers and soil. They remain renewable only if managed in a sustainable manner.

b Difference from non-renewable resources

Point	Renewable	Non-renewable
Replenishment	Restored by natural processes	Cannot be replenished at the rate we use them
Formation	Regenerate over time	Created over long periods
Examples	Sunlight, wind, flowing water, timber	Coal, petroleum, iron, copper, gold

c What people can do (two examples)

- **Forests and timber:** take timber in limited quantities, allow forests to regenerate and plant native trees.
- **Water:** harvest water, rejuvenate ponds and tanks, cut wasteful use, and reuse water.

Therefore, renewable resources last only if we use them within the rate at which Nature restores them.

QUESTION 4

Identify cultural practices in your home and neighbourhood that point to mindfulness in the use of natural resources.

ANSWER

This is an activity. Observe your home and neighbourhood and list practices; some examples are given.

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a Examples

- Tulasī puja and offering water (arghyam) to the Sun in gratitude.
- Protecting sacred groves and old trees in the neighbourhood.
- Using cow dung and kitchen waste as compost instead of chemical fertilisers.
- Storing and reusing water, and rejuvenating village ponds and tanks.
- Reusing and passing on clothes, containers and bags, and avoiding wastage of food.

b How to present

Write each practice, who follows it, and which resource it helps to conserve.

Therefore, such cultural practices show respect for Nature and mindful use of resources.

QUESTION 5

What are some considerations to keep in mind in the production of goods for our current use?

ANSWER

Industries are needed to produce goods, but production must not disturb Nature's cycle of restoration and regeneration.

a Considerations

- **Raw materials:** use renewable resources within their rate of regeneration and non-renewable ones judiciously.
- **Pollution:** keep the process less polluting and follow pollution-control guidelines.
- **Waste:** treat waste before it reaches rivers; reuse and recycle materials, and minimise waste.
- **Energy:** use renewable sources of energy wherever possible.
- **Local needs:** provide local employment and design for the climate of the place.
- **Future generations:** do not leave resources depleted.

Therefore, production should minimise waste and pollution and replenish what is used.

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