NCERT Archive

SOLUTIONS BOOK

CLASS 9

Social Science · Understanding Society

CHAPTER 2

Life on Earth

Complete Questions and Activities Solutions

In-text Questions

Questions and Activities

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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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2.1

CLASS 9 SOCIAL SCIENCE · CHAPTER 2

In-text Questions

Solutions · 18 questions

Directions (Questions 1–18): These are the questions that appear inside the chapter (The Big Questions, Let's Map, Let's Explore and Think About It), 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. 21*

How do physiography and climate shape life on Earth?

ANSWER

Physiography (the landforms and water bodies of a place) and climate (its temperature and rainfall) decide which plants and animals can survive there. Places with similar conditions form large natural regions called biomes.

a Climate decides the biome

- Hot and wet throughout the year near the Equator (between the Tropic of Cancer and the Tropic of Capricorn): dense tropical rainforests.
- Moderate rainfall, not enough for dense forests: grasslands, with grass and very few trees.
- Very little rainfall: deserts, with sandy soil and sparse vegetation.
- Very cold, with soil frozen almost all year (permafrost): tundra, with mosses, lichens and small shrubs.

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b Biomes and the life they support

Biome	Conditions	Typical life
Tropical rainforest	Hot and wet all year	Dense forest; the richest biodiversity
Grassland	Moderate rainfall	Grasses, grazing animals; lions, elephants and giraffes in savannas
Desert	Driest; very little rainfall	Cacti; camels, lizards and snakes
Tundra	Coldest; permafrost	Mosses, lichens; reindeer, arctic foxes, polar bears
Aquatic	Water-based; about three-fourths of Earth's surface	Fish, frogs, whales, dolphins, plankton

c Landforms and local differences

Landforms and altitude change the climate over short distances. In India, the cold, high Nubra Valley of Ladakh and the hot Thar Desert of Rajasthan both have camels, but the two camels differ in their fur because their climates differ (see Question 7).

Therefore, temperature, rainfall and landforms decide the biome of a place, and the biome decides the life it supports.

QUESTION 2 *The Big Questions · p. 21*

How are humans and other life forms interconnected?

ANSWER

Biomes give plants, animals and humans a natural environment in which to survive and interact. Living beings, in turn, influence biomes, so the two form interconnected systems that depend on each other.

a How living beings influence biomes

- Animals help in pollination and seed dispersal.
- Humans modify landscapes for farming or for cities.
- Microorganisms recycle nutrients.

b How humans depend on forests

- Forests provide food, fuel, fodder, medicine, shelter, timber, bamboo and firewood.

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- Non-timber forest products such as honey, fruits, nuts, resins and medicinal plants meet daily needs and earn income.
- Forests also support livestock grazing, small forest-based industries, ecotourism and employment.
- Communities such as the Gonds and Bhils perform rituals to honour the forest deities before collecting resources, showing respect for nature.

c Pressure on the connection

With a growing population there is increasing pressure on forests, which leads to problems such as human–wildlife conflict and depletion of resources.

Therefore, humans and other life forms depend on one another, so harm to a biome also harms human life.

QUESTION 3 *The Big Questions · p. 21*

What is the importance of preserving various life forms, and how can we contribute to their conservation?

ANSWER

Biodiversity is the variety of life on Earth, including plants, animals, microorganisms and the ecosystems they inhabit. It is essential for healthy ecosystems and for human survival.

a Why preserving life forms is important

- Tropical rainforests preserve unique genetic material and support conservation and scientific research, so they are called a ‘gene bank’.
- Forests maintain oxygen levels and balance the Earth’s climate.
- Biodiversity creates the natural balance needed for healthy ecosystems.
- Hotspots such as the Himalaya, the Western Ghats, North-East India and the Andaman & Nicobar Islands are rich in unique species found nowhere else.
- Forests, rivers, lakes and seas give food, water and livelihoods to millions of people.

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b How we can contribute

Way to help	Example from the chapter
Protect biodiversity hotspots	Himalaya, Western Ghats, North-East India, Andaman & Nicobar Islands
Support protected areas	National parks, wildlife sanctuaries, biosphere reserves, World Heritage Sites; wildlife corridors
Conserve ecosystem by ecosystem	Mangrove protection along coasts; afforestation in mountains
Follow sustainable practices	Terrace farming in the hills; agroforestry in the plains
Join community conservation	Mendha Lekha community forest management; sacred groves
Travel responsibly	Ecotourism, as at Thenmala in Keralam

Therefore, preserving life forms keeps ecosystems and human life secure, and we can help through protection, sustainable use and community action.

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QUESTION 4 *Let's Map · p. 22*

Look at the world map in Fig. 2.2 and answer the following questions.
→ Which type of biome is found in smaller, separate regions, and why?
→ Which continent has the least number of biomes? What could be the reason for this?
→ Why are there areas that do not have any specific biomes?

ANSWER

The answers are read from the colours and the legend of the world map of biomes (Fig. 2.2).

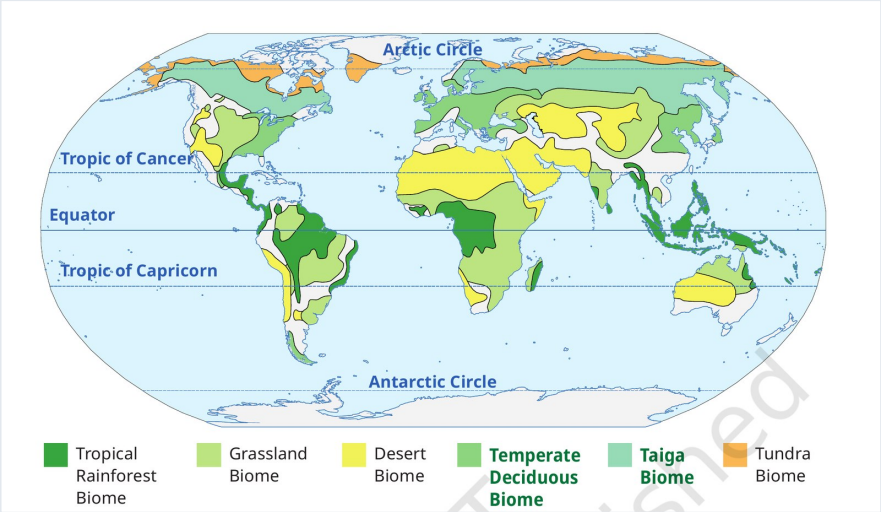


Fig. 2.2. World map showing distribution of biomes (map not to scale)

a Biome found in smaller, separate regions

The **tropical rainforest biome** (darkest green) appears only as small, separate patches: the Amazon Basin, the Congo Basin, Central America and Southeast Asia. It needs a climate that is hot and wet throughout the year, which is found only near the Equator, between the Tropic of Cancer and the Tropic of Capricorn. Where the climate becomes drier or cooler, another biome takes over, so the rainforest is left in separate patches.

b Continent with the fewest biomes

Antarctica. In Fig. 2.2 it is left without any biome colour. It lies in the extremely cold polar region, where conditions are too harsh for the forest, grassland, desert or taiga biomes to develop.

c Areas without any specific biome

- Ice-covered lands such as Antarctica and the interior of Greenland.

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- High mountain regions, where the climate changes quickly with height.
- Transition zones, where one biome gradually merges into another.
- The map shows only broad patterns (map not to scale), so small local differences are not shown.

Therefore, biomes follow climate: rainforests form separate patches near the Equator, and ice-covered Antarctica has none of the biomes shown.

QUESTION 5 *Let's Explore · p. 24*

Look at the layers of vegetation in a rainforest. What do the yellow shapes in the figure indicate?

ANSWER

The yellow shapes show how much sunlight reaches each layer of the rainforest.

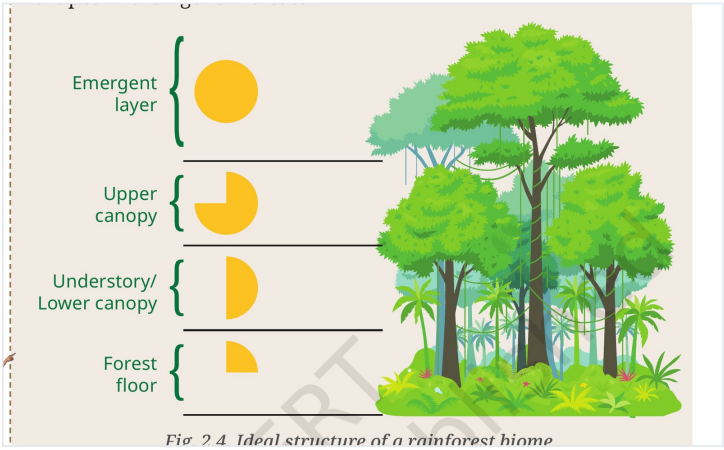


Fig. 2.4. Ideal structure of a rainforest biome

a Reading the shapes

Layer	Yellow shape	Sunlight received
Emergent layer	Full circle	Full sunlight; the tallest trees rise above all the others
Upper canopy	Three-quarter circle	A large part of the sunlight
Understory / lower canopy	Half circle	About half of the sunlight
Forest floor	Small quarter shape	Very little sunlight, so the floor is damp and shaded

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Therefore, the yellow shapes show that sunlight decreases from the emergent layer down to the forest floor.

QUESTION 6 *Let's Explore · p. 25*

Observe Fig. 2.5 and explore which of these animals you will find in the grasslands of India.

ANSWER

Fig. 2.5 shows a savanna, with animals such as an elephant, lions, a giraffe, a zebra and antelopes. Some of these live in India and some do not.



Fig. 2.5. Typical grassland landscape

a Which animals are found in India

Animal	In India?	Note
Elephant	Yes	Asian elephants live in India; they use grassy and forest areas
Lion	Yes	The Asiatic lion lives in Gir, Gujarat
Antelope / deer	Yes	Antelopes and deer such as the blackbuck graze on Indian grasslands
Giraffe	No	Found in African savannas
Zebra	No	Found in African savannas

Therefore, elephants, lions and antelopes or deer can be found in India, but giraffes and zebras belong to African savannas.

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QUESTION 7 *Let's Explore · p. 26*

→ What types of activities do you think people in desert regions generally undertake to sustain their households and livelihood?
→ With the help of your teacher, explore how do people address issues related to the availability of water.
→ Compare the physical features of the Rajasthan camel (Fig. 2.7a) and the Nubra Valley (Ladakh) camel (Fig. 2.7b).
→ Considering the climatic conditions, why do you think the Nubra Valley camel might have a different fur density than the Rajasthan camel?

ANSWER

Life in a desert depends on animals, careful use of water and the few resources the desert offers.

a Activities for livelihood

- Rearing livestock such as camels, sheep and goats.
- Small-scale farming wherever water is available.
- Making handicrafts and serving tourists.
- Mining valuable resources such as minerals and oil, which many deserts provide.
- Collecting salt in salt deserts such as the Rann of Kutch.

b Addressing the shortage of water

- Collecting and storing rainwater in tanks, ponds and other water-harvesting structures.
- Sharing common water sources as a community.
- Carrying water in pots from far away, as seen in Fig. 2.6, and using it carefully.
- Bringing water from distant sources through canals and pipes.

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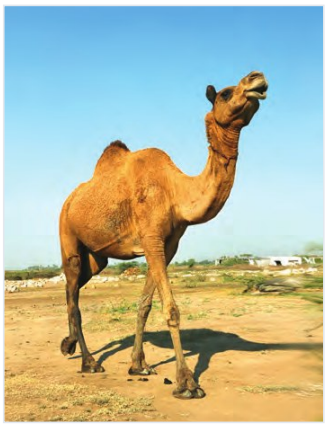


Fig. 2.7a. Rajasthan camel



Fig. 2.7b. Nubra Valley camel

c Comparing the two camels

Feature	Rajasthan camel (a)	Nubra Valley camel (b)
Humps	One hump	Two humps
Fur	Short and thin	Long, thick and dense
Build	Slim and long-legged	Sturdy and heavy
Region	Hot Thar Desert	Cold, high-altitude desert

d Why the fur density differs

The Nubra Valley in Ladakh is cold, so the camel needs thick, dense fur to keep warm. Rajasthan is hot, so a thin coat helps the camel avoid overheating.

Therefore, desert people depend on animals, stored water and local resources, and camels adapt their fur to hot or cold deserts.

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QUESTION 8 *Think About It · p. 27*

Tundra in polar regions has mosses, lichens, shrubs, etc., while the Himalaya, in the subtropics, is dominated by conifers. What could be the reason for this? What difference do you find in the animals found in these two regions? Which species are found only in the Himalaya? Discuss in class.

ANSWER

Tundra and the Himalaya are both cold, but they lie in different latitudes, so their soil, seasons and life differ.



Fig. 2.8. Tundra (left)



Fig. 2.8. Himalaya (right)

a Reason for the different vegetation

- In the polar tundra the winters are very long and harsh and the summers short.
- The soil is frozen almost all year (permafrost), which makes it difficult for trees to grow, so only mosses, lichens and small shrubs survive.
- The Himalaya lie in the subtropics, so conditions are warmer and the soil is not permanently frozen on the forested slopes, which allows conifers to grow.

b Difference in animals

Region	Animals
Tundra	Reindeer, arctic foxes and polar bears, well adapted to freezing temperatures
Himalaya	Animals such as the Big Himalayan Yak and the Himalayan Snowcock bird (Fig. 2.12)

c Species characteristic of the Himalaya

The Himalayan Snowcock and the Big Himalayan Yak shown in Fig. 2.12 are examples of life that belongs to the Himalaya. Polar bears, arctic foxes and reindeer are tundra animals and are not found there.

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Therefore, permafrost and a harsh polar climate keep the tundra treeless, while the subtropical Himalaya support conifers and different animals.

QUESTION 9 *Let's Explore · p. 28*

Explore your local environment. This could be your village, city, town, or residential area. Observe how people, plants, and animals build structures and interact. Complete the table with your findings.

ANSWER

This is an observation activity. A model table is given below; your own findings will differ with your area.

a Model table

Component type	Examples observed	Interaction with humans
Trees / Vegetation / Plants	Neem, peepal, mango, banyan, tulsi, grass	Shade, fruit, timber and fuel; neem and tulsi are used as medicine; peepal and tulsi are worshipped
Insects	Bees, butterflies, ants, mosquitoes	Bees and butterflies pollinate plants and bees give honey; mosquitoes spread diseases
Animals	Cows, buffaloes, dogs, birds, monkeys	Milk and farm work; pets; birds spread seeds; monkeys may damage crops
Non-living things	Water, soil, sunlight, stones, buildings, roads	Water and soil for drinking and farming; sunlight for energy; stones and soil for building

b How to complete your own table

- Walk around your locality with a notebook and record what you see in each row.
- For each example, note how people use it, protect it or are affected by it.

Therefore, people, plants, insects, animals and non-living things in one place depend on and influence one another.

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QUESTION 10 *Let's Map · p. 29*

Mark the following regions at appropriate levels on the Fig. 2.10: Andaman & Nicobar Islands, Keralam, Ladakh, Chhattisgarh, Odisha, Meghalaya, and Lakshadweep. Where will you place your home? There is no arrow on the third side of the triangle. What would happen if we drew an arrow? Would it point upwards or downwards?

ANSWER

On the biome pyramid, the level shows the temperature zone (cold at the top, hot at the base) and the position along the base shows wet to dry. Model placements are given below.

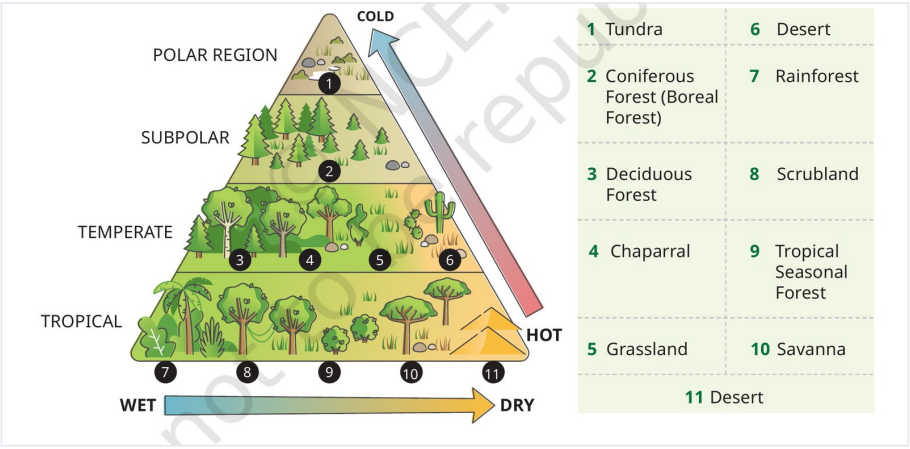


Fig. 2.10. Biome pyramid

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a Placing the regions

Region	Place on the pyramid	Reason
Andaman & Nicobar Islands	Tropical level, wet end: rainforest (7)	Hot and wet; the chapter names these islands among rainforest regions
Keralam	Tropical level, wet side: rainforest (7) towards tropical seasonal forest (9)	Hot and rainy Western Ghats region
Meghalaya	Tropical level, wet end: rainforest (7)	North-eastern states have smaller rainforest regions
Chhattisgarh	Tropical seasonal forest (9)	Forests with sal and tendu trees (Fig. 2.16)
Odisha	Tropical seasonal forest (9)	Forest produce such as wild fruits and honey (Fig. 2.16)
Lakshadweep	Tropical level, wet side (between 7 and 9)	Hot island region surrounded by sea
Ladakh	Cold desert (6)	Very dry, cold and high; a cold desert (see Nubra Valley)
Your home	Decide from your local climate	Choose the level from temperature and the position from rainfall

b The third side of the triangle

A third arrow could show the amount of life (biodiversity and number of organisms). It would point **downwards**: life is least in the cold tundra at the top and increases towards the hot, wet tropical base, where rainforests are found. (An arrow for increasing latitude would point upwards.) This is a reasoned model answer; discuss it in class.

Therefore, regions are placed by temperature and rainfall, and an arrow for the richness of life would point downwards, towards the hot and wet tropics.

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QUESTION 11 *Let's Map · p. 31*

Mark and name the following regions on the map in Fig. 2.13. Also gather more information about these biodiversity regions from your teacher or other sources and discuss their features with your peers. 1. Namdapha National Park 2. Rann of Kutch 3. Gahirmatha beach 4. Gulf of Mannar 5. Pachmarhi 6. Achanakmar–Amarkantak

ANSWER

The six regions are marked with numbers on the political map of India. Positions are approximate.

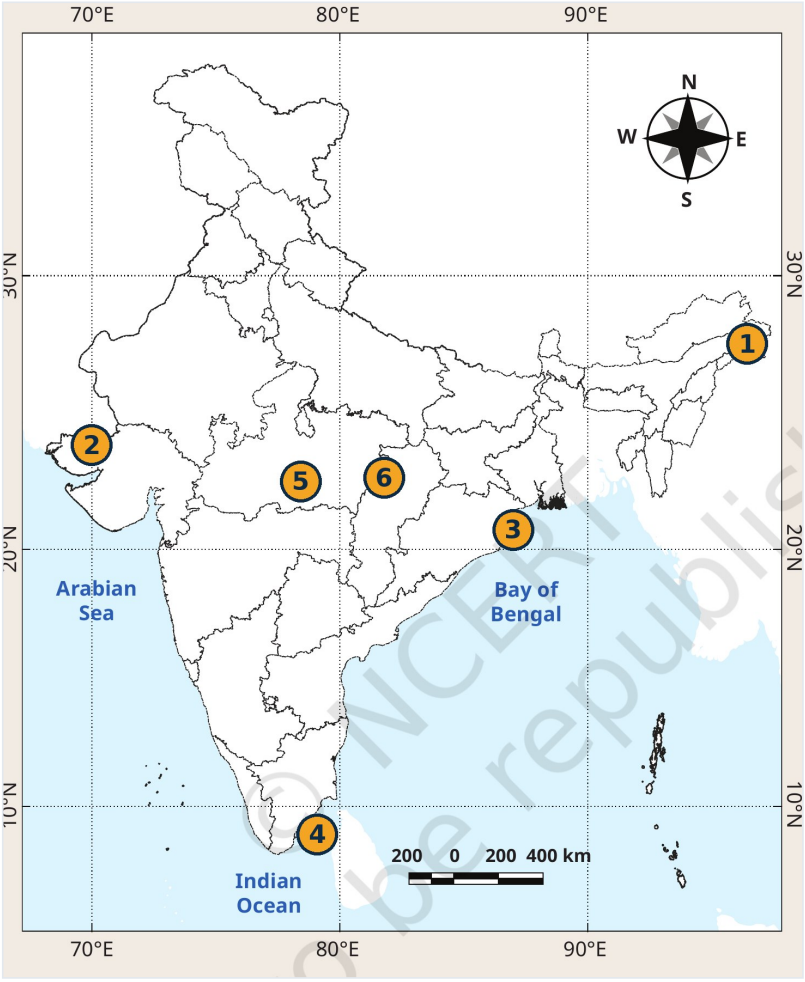


Fig. 2.13. Political Map of India with the six regions marked

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a Features of the regions

No.	Region	Where it is	Features
1	Namdapha National Park	Arunachal Pradesh, far north-east	Forest-rich area of North-East India, a biodiversity hotspot
2	Rann of Kutch	Gujarat, west	One of the world's largest salt deserts: a marshy wetland in the monsoon and a white salt desert in the dry season
3	Gahirmatha beach	Odisha coast	Beach on the Bay of Bengal known for nesting sea turtles
4	Gulf of Mannar	Tamil Nadu coast, towards Sri Lanka	Marine region with coral reefs
5	Pachmarhi	Madhya Pradesh	Forested hill region protected as a biosphere reserve
6	Achanakmar–Amarkantak	Chhattisgarh–Madhya Pradesh border	Forested biosphere reserve; Amarkantak is the source of the Narmada

Therefore, India's biodiversity regions lie in forests, deserts, coasts and seas across the country, and each has its own features.

QUESTION 12 *Let's Explore · p. 32–33*

→ Is there any such ecotourism site in your State/UT? Collect some information and discuss with your friends.
→ What should be a tourist's behaviour while visiting any tourist site? What should one be mindful of?

ANSWER

Ecotourism means travelling to nature-friendly places without harming the environment and supporting local people. Thenmala in Keralam is the model site in the chapter.



Fig. 2.14. Exploring forest canopy in Thenmala

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a Finding an ecotourism site in your State/UT

- Ask your teacher or look at the forest or tourism department of your State/UT for national parks, wildlife sanctuaries and forest treks that welcome visitors.
- Note its name, the forests or wildlife it protects, and how local people take part (for example as guides or eco-guards, as at Thenmala).
- The chapter shows ecotourism in Uttarakhand, Assam and Keralam (Fig. 2.16).

b A tourist's behaviour

- Do not litter; carry back plastic and other waste.
- Stay on marked paths and follow the rules of the forest staff.
- Do not disturb, feed or chase animals, and do not pluck plants.
- Avoid loud noise and never light fires.
- Respect local people and their culture, and support them by using local guides and products.
- Save water and energy, and leave the place as clean as you found it.

Therefore, responsible tourists keep their impact minimal, respect local communities and help conserve the places they visit.

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QUESTION 13 *Think About It · p. 33*

Sacred groves are small forest patches protected by local communities for religious and cultural purposes. Why are these groves so special?

ANSWER

Sacred groves are special because, although small, they protect rich life and water that may not survive elsewhere.



Fig. 2.15. Rituals to honour the forest deities

a Why they are special

- They are rich biodiversity hotspots despite their small size.
- They often preserve rare plants, medicinal species and wildlife that may not survive elsewhere.
- Some groves are linked to water sources and help to maintain streams and groundwater.
- They are protected by local communities for religious and cultural reasons, so people care for them.
- There are over 1,00,000 sacred groves across India, known by names such as Devrai, Devarakadu, Kavu and Sarna.

Therefore, sacred groves are special because belief and tradition protect rare life and water sources in small forest patches.

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QUESTION 14 *Let's Explore · p. 36*

Try to identify and classify the items for sale in the images given in Fig. 2.18.
Also, make a list of the food and medicinal varieties available in your local market.

ANSWER

The photographs show forest produce and traditional tribal livelihoods. The items can be sorted by their use.



Fig. 2.18 (top left)



Fig. 2.18 (top right)



Fig. 2.18 (bottom left)



Fig. 2.18 (bottom right)

a Classifying the items

Image	Items for sale	Class
Top left	Large bamboo baskets	Handicraft made from a forest produce (bamboo)
Top right	Baskets of small yellow-orange fruits	Food: wild or forest fruits
Bottom left	Roots and tubers laid out for sale	Food and medicinal forest produce
Bottom right	Tubers and small dried fish	Food

b Model list for a local market

Type	Examples
Food	Fruits, vegetables, pulses, cereals, honey, nuts, dried fish
Medicinal	Neem, tulsi, ashwagandha, turmeric, ginger, aloe vera

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Your own list will depend on what is sold in your local market.

Therefore, forest produce such as bamboo, fruits, roots and tubers supports food, medicine and handicrafts, and a local market shows the same variety.

QUESTION 15 *Let's Explore · p. 38*

→ Can you explain how GI tagging of the forest products mentioned above connects geography, cultural traditions, local governance, and rural economy?
→ Can you name some GI-tagged forest products from your state or union territory?

ANSWER

A Geographical Indication (GI) tag identifies a product as coming from a specific place, whose qualities are essentially linked to that place.

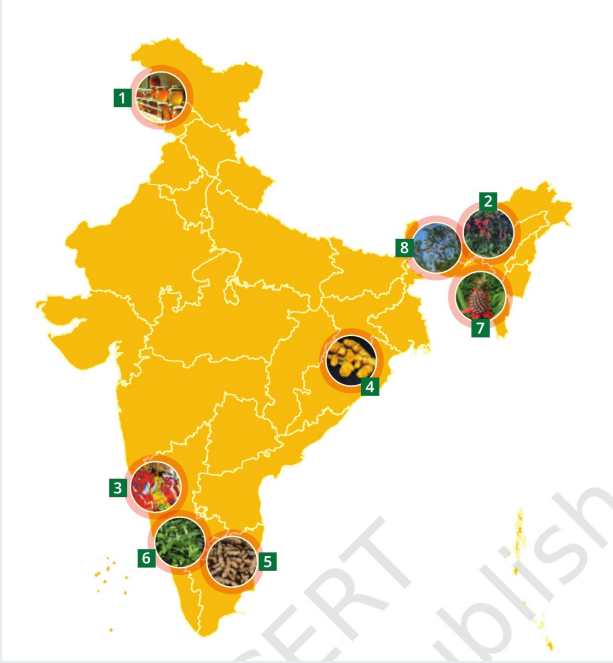


Fig. 2.19. Some GI-tagged forest products of India (map not to scale)

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a How GI tagging connects four aspects

Aspect	Connection through GI tagging
Geography	The quality depends on the place: Tezpur litchi on Tezpur's forest-influenced soil and climate, Nilgiri tea on the forest conditions of the Western Ghats, Khasi mandarin on the forest-rich hills of Meghalaya
Cultural traditions	Products are linked to traditional knowledge: Channapatna toys are made from 'Aale mara' wood, and Kandhamal haldi is grown by tribal communities
Local governance	A GI tag is an intellectual property right, so the product name is registered and protected, and only products of that place can use it
Rural economy	GI tagging protects region-specific products, promotes cultural heritage and brings economic benefits to local communities through exclusive market recognition

b GI-tagged forest products in the chapter

Product	State
Ramban Sulai Honey	Jammu and Kashmir
Tezpur Litchi	Assam
Channapatna Toys	Karnataka
Kandhamal Haldi	Odisha
Erode Manjal (Erode Turmeric)	Tamil Nadu
Nilgiri Tea	Tamil Nadu, Keralam, Karnataka
Tripura Queen Pineapple	Tripura
Khasi Mandarin	Meghalaya

To name GI-tagged forest products of your own State/UT, explore the School Bhuvan–NCERT Geoportal or ask your teacher.

Therefore, GI tagging links a product's place, tradition, protection and income, helping local communities.

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QUESTION 16 *Let's Explore · p. 39*

You may have heard about the Pradhan Mantri Ujjwala Yojana (PMUY). How are the benefits of this scheme impacting the health of women?

ANSWER

PMUY provides cooking-gas (LPG) connections to poor households. The chapter notes that women who cook on fuelwood are exposed to fumes and face many health issues.

a Effect on women's health

- Cooking on gas produces far less smoke than fuelwood, so women breathe fewer harmful fumes and have fewer breathing and eye problems.
- Women spend less time and effort collecting firewood from forests, which reduces tiredness and the risks of the journey.
- The saved time can be used for rest, education, earning or caring for the family.
- Less cutting of firewood also reduces the pressure on forests.

Therefore, PMUY improves the health of women by reducing their exposure to fuelwood fumes and their burden of collecting firewood.

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QUESTION 17 *Think About It · p. 39*

→ Which wild animals (like monkeys or deer) have you seen in your residential area?
→ Identify the causes behind these animals' presence in human settlements.

ANSWER

Wild animals enter human settlements mainly because their natural habitat is shrinking or no longer meets their needs.



Fig. 2.21. Forest bridge to avoid roadkill

a Animals commonly seen (examples)

Monkeys, deer, wild boars and birds are commonly seen near human settlements, and elephants in some areas near forests. Your list will depend on where you live.

b Causes of their presence

- Forests are cleared for farms, roads and buildings, so animals lose their habitat.
- Settlements and roads expand into forests and cut across the routes animals use.
- Food and water in forests may be short, so animals move to farms and towns.
- Crops, fruit trees and open garbage give them easy food.
- Forest fires and climate change can drive animals out of forests.

c What can be done

- Protect forests and wildlife corridors; build forest bridges, as in Fig. 2.21, to avoid roadkill.
- Do not feed wild animals, and manage garbage properly.

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Therefore, wild animals come into settlements when their habitat shrinks, and protecting forests and corridors reduces human–wildlife conflict.

QUESTION 18 *Let's Explore · p. 42*

Below is Fig. 2.24 from the School Bhuvan–NCERT Geoportal. Observe the image carefully and see if you can identify some of the tanks and mark the agricultural fields irrigated by them.

ANSWER

Water tanks are shared water-storage structures. In a satellite image they can be found by looking for a round or curved bed with an embankment, with farmland around it.

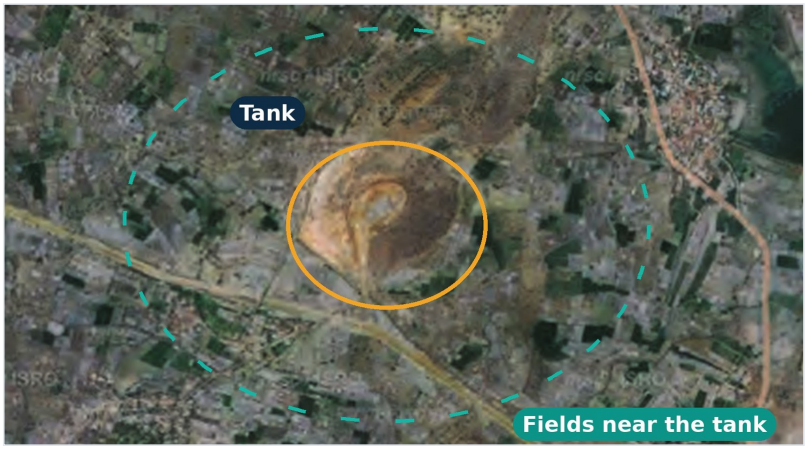


Fig. 2.24. Water tanks in Bhandara district, Maharashtra (tank and nearby fields marked)

a What the marking shows

- **Tank:** the round, light-brown bed near the centre, ringed in orange, is a tank with its embankment.
- **Fields:** the dark-green and dark patches of farmland around and below it, inside the dashed ring, are the fields that such a tank can irrigate.
- Roads and the village on the right show how close people live to the tank and its fields. The marking is a model; you may mark more tanks you can see.

Therefore, tanks store rainwater for the fields around them, and they are a long-standing common resource of seasonal-rainfall regions.

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2.2

CLASS 9 SOCIAL SCIENCE · CHAPTER 2

Questions and Activities

Solutions · 9 questions

Directions (Questions 1–9): These are the Questions and activities at the end of the chapter (page 43). Answer each in your own words using the points given.

QUESTION 1

Why does India have diverse biomes? How does the local geography connect to the diversity?

ANSWER

India has diverse biomes because its landforms and climate vary widely, and each combination of physiography and climate supports its own plants and animals.

a Local geography and the biome it supports

Region	Local geography and climate	Biome and life
Himalaya	High, cold mountains	Conifers; animals such as the yak and the snowcock
Ladakh (Nubra Valley)	Cold, dry and high	Cold desert; thick-furred camels
Thar Desert and Rann of Kutch	Very little rainfall; sandy and salty land	Desert; cacti, camels, lizards and snakes
Western Ghats and North-East India	Hot, rainy hills	Rainforests and rich forest produce
Andaman & Nicobar Islands	Hot, wet islands and coasts	Tropical rainforests and mangroves
Coasts, rivers and lakes	Water bodies	Freshwater and marine (aquatic) biomes
Regions of moderate rainfall	Rainfall too low for dense forest	Grasslands used for grazing and farming

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b The connection

Landforms, altitude, nearness to the sea and rainfall change the temperature and water available. Because these differ from place to place in India, many biomes exist side by side, and hotspots such as the Himalaya, the Western Ghats, North-East India and the Andaman & Nicobar Islands hold species found nowhere else.

Therefore, India has diverse biomes because its physiography and climate vary so much from region to region.

QUESTION 2

Make a list of economically valuable native plants in your region and comment on their abundance.

ANSWER

This is a local activity. A model table is given; replace it with the plants of your own region and your own observations.

a Model table

Plant	Economic value	Comment on abundance
Neem	Medicine, timber, shade	Widely found around villages and towns
Bamboo	Building material, baskets, handicrafts	Abundant where rainfall is high, such as North-East India
Sal and teak	Timber	Found in forest areas; need careful harvesting
Mango	Fruit	Widely grown in orchards and homes
Tendu and mahua	Leaves and flowers sold for income	Found in the forests of central India
Tulsi and ashwagandha	Medicinal herbs	Common in homes and forests; need protection

b How to comment on abundance

- Say whether each plant is plentiful, common, scarce or rare in your area.
- Give a reason, such as clearing of land, over-collection or good rainfall, and what can be done to protect it.

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Therefore, a good list names each native plant, its economic value and how plentiful it is in your region.

QUESTION 3

Prepare a map of your state or Union Territory showing national parks and sanctuaries.

ANSWER

This is a map activity. The steps and a model key are given; use the names from your own State/UT.

a Steps

- Take an outline map of your State/UT and mark its boundary and main rivers or hills.
- Collect the names and locations of its national parks and wildlife sanctuaries from the forest department, an atlas or the School Bhuvan–NCERT Geoportal.
- Locate each one by district and mark it at the right place on the map.
- Give the title, a north arrow, a scale and a key, and write the names neatly.

b Model key and table

Symbol	Meaning	Name and district (fill in)
Green triangle	National park	e.g. Kaziranga National Park (Assam)
Blue circle	Wildlife sanctuary	Fill in from your State/UT
Brown line	State/UT boundary	–

Therefore, a good map shows each park and sanctuary at its correct place with a clear key.

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QUESTION 4

Study the impact of forest fires on people dependent on forests. Try to include the causes, losses, and preventive measures.

ANSWER

A forest fire spreads quickly through dense vegetation and destroys homes and resources. According to the Forest Survey of India (FSI), about 36 per cent of India's forest cover is prone to forest fires, of which nearly 4 per cent is extremely prone.

a Causes

- Climate change, such as higher temperatures and dry spells.
- Human-induced factors, such as carelessly left campfires or cigarettes and fires lit to clear land.

b Losses for forest-dependent people

- Loss of homes and resources, and of forest produce such as honey, fruits, bamboo and medicinal plants that give food and income.
- Loss of fuelwood and fodder, and damage to livestock grazing areas.
- Smoke that harms health, and loss of wildlife and biodiversity.
- Bare, burnt slopes that can later lead to floods and landslides, causing more insecurity.

c Preventive measures

- Raise awareness and avoid open fires in forests, especially in dry seasons.
- Clear dry leaves and undergrowth near villages and create fire lines.
- Watch for fires early, using fire-location data from the School Bhuvan–NCERT Geoportal.
- Involve local communities, as the people of Mendha Lekha do by preventing forest fires.

Therefore, forest fires cost forest dwellers their homes and income, and care, early detection and community action can prevent many of them.

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QUESTION 5

Why are forests often called the ‘lungs of the Earth’?

ANSWER

Forests are called the ‘lungs of the Earth’ because they help keep the air fit for life, in much the same way that lungs do for our bodies.

a Reasons

- Plants capture solar energy through photosynthesis, and in the process forests help in maintaining oxygen levels.
- Forests take in carbon dioxide, which helps in balancing the Earth’s climate.
- The largest tropical rainforests, such as those of the Amazon and Congo basins, act as the planet’s great breathing areas.
- Forests also give habitat to a huge variety of life and help keep the balance of nature.

Therefore, forests are the ‘lungs of the Earth’ because they maintain oxygen levels and balance the climate.

QUESTION 6

If large forest areas continue to be destroyed, what do you think would be its long-term effect on the global climate?

ANSWER

Forests balance the Earth’s climate, so destroying large forest areas would disturb that balance over the long term.

a Likely long-term effects

- Fewer trees would take in carbon dioxide, so more of it would remain in the air and temperatures would rise.
- Burning or clearing forests releases the carbon stored in trees, adding to warming.
- Rainfall patterns could change, leading to droughts in some places and floods in others.
- Loss of forests would reduce oxygen production and destroy habitats and biodiversity.

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- Fragile biomes such as tundra could be harmed, since even small temperature changes affect them.

Therefore, continued destruction of forests would speed up global warming and upset climate and ecological balance.

QUESTION 7

Discuss some traditional forest conservation methods with your grandparents or an elderly person.

ANSWER

This is a discussion activity. Note down what your elders tell you; some traditional methods mentioned in the chapter are given below.

a Traditional methods from the chapter

Method	How it conserves forests
Sacred groves	Small forest patches are protected for religious and cultural reasons and stay rich in rare plants and wildlife
Rituals before collecting resources	Gonds and Bhils honour the forest deities first, which encourages taking only what is needed
Bishnoi Movement	Led by Amrita Devi, people protected trees in Rajasthan
Chipko Movement	Village women hugged trees in Uttarakhand to prevent deforestation
Community forest management	In Mendha Lekha the Gram Sabha regulates tree cutting, prevents fires and harvests bamboo as a renewable resource
Traditional knowledge	Forest dwellers pass down knowledge of herbs and plants, which helps biodiversity conservation

b For your discussion

Ask your elders which trees or places were protected in your area, which festivals or customs honour nature, and how forest produce was collected, and record their answers.

Therefore, traditional methods protect forests through belief, community rules and respect for nature.

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QUESTION 8

How do forest dwellers contribute to the protection and conservation of forests?

ANSWER

Forest dwellers have a deep connection with forests and are often deeply involved in caring for and using forest resources.

a Their contributions

Role	Contribution
Knowledge holders	They have rich traditional knowledge of herbs, plants and forest resources, passed down through generations, which helps biodiversity conservation
Forest protection	They have been at the forefront of forest protection movements such as the Bishnoi and Chipko movements
Community management	They play a key role in community forest management and eco-restoration, as the people of Mendha Lekha do
Cultural and social role	Forests are linked to rituals, festivals and beliefs, making forest dwellers guardians of ecological and cultural traditions
Careful use	They collect firewood, fodder and non-timber forest products for their needs and livelihood while respecting the forest
Role of women	Women play a vital role in collecting and managing forest resources and in sustaining traditional knowledge

Therefore, forest dwellers protect forests through knowledge, movements, community management and cultural traditions.

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QUESTION 9

What is a forest fire? Prepare a plan for prevention and mitigation of forest fires.

ANSWER

A forest fire is an uncontrolled fire that spreads quickly through the dense vegetation of a forest, destroying trees, wildlife, homes and resources.

a Plan for prevention and mitigation

Stage	Actions
Prevention (before the dry season)	Raise awareness and avoid open fires; clear dry leaves and undergrowth; make fire lines; train local volunteers and forest committees
Detection (early warning)	Keep watch from high points; use fire-location data on the School Bhuvan–NCERT Geoportal; report any fire at once to the forest department
Control (during a fire)	Local teams and forest staff work together to stop the spread; people move to safe places; do not enter the burning area
Mitigation (after a fire)	Plant native trees to restore the forest; support affected families; study the cause and plan better

- Involve the community through Joint Forest Management and the Gram Sabha, as in Mendha Lekha.
- Remember that human care and preventive measures can help prevent many forest fires.

Therefore, a forest fire plan combines prevention, early detection, quick control and restoration, with local communities taking part.

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