Class 10 Geography Chapter 1: Resources and Development - Notes, Important Questions and MCQs (2026-27)

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These Resources and Development Class 10 notes cover Class 10 Geography Chapter 1 completely: what a resource is, the classification of resources, development of resources and sustainable development, the Rio Earth Summit and Agenda 21, resource planning in India, conservation of resources, land resources and land use pattern, land degradation and conservation, soil as a resource, the six major soil types, and soil erosion and conservation.

You also get a soil types comparison table, a resource classification table, a land degradation table, map-work points, NCERT-style questions with answers, 10 MCQs and a free PDF with no signup.

Use the table of contents below to jump to the part you need, or read top to bottom for a complete revision of the chapter.

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Chapter Overview

Everything in our environment that can be used to satisfy our needs, provided it is technologically accessible, economically feasible and culturally acceptable, is a resource. Resources are not free gifts of nature; they are a function of human activities, created through an interactive relationship between nature, technology and institutions.

The chapter explains how resources are classified, why indiscriminate use has caused

Important Topics and Concepts

Classification of resources

- On the basis of origin: biotic (from the biosphere and having life, such as human beings, flora, fauna, fisheries, livestock) and abiotic (non-living things, such as rocks and metals).
- On the basis of exhaustibility: renewable (can be renewed or reproduced, such as solar and wind energy, water, forests) and non-renewable (develop over very long periods, such as minerals and fossil fuels).
- On the basis of ownership: individual, community, national and international.
- On the basis of status of development: potential, developed, stock and reserves.

Development of resources

Because resources were believed to be free gifts of nature, human beings used them indiscriminately. This led to three major problems: depletion of resources to satisfy the greed of a few; accumulation of resources in a few hands, dividing society into haves and have-nots; and global ecological crises such as global warming, ozone layer depletion, environmental pollution and land degradation. Equitable distribution and resource planning are therefore essential for a sustained quality of life and global peace.

Sustainable development

Sustainable economic development means that development should take place without damaging the environment, and development in the present should not compromise the needs of future generations.

Rio de Janeiro Earth Summit (1992) and Agenda 21

- In June 1992, more than 100 heads of state met at Rio de Janeiro, Brazil, for the first International Earth Summit to address environmental protection and socio-economic development.
- Leaders signed the Declaration on Global Climatic Change and Biological Diversity; the Rio Convention endorsed the global Forest Principles and adopted Agenda 21.
- Agenda 21 aims at global sustainable development by combating environmental damage, poverty and disease through global cooperation. One major objective is that every local government should draw up its own local Agenda 21.

Resource planning in India

- Resources are unevenly distributed: Jharkhand, Chhattisgarh and Madhya Pradesh are rich in minerals and coal; Arunachal Pradesh has abundant water but poor infrastructure; Rajasthan has solar and wind energy but lacks water; Ladakh has rich cultural heritage but lacks water, infrastructure and some minerals.
- This calls for balanced planning at national, state, regional and local levels.
- Resource planning involves (i) identification and inventory of resources through surveying, mapping and measurement; (ii) a planning structure with appropriate technology, skill and institutions; and (iii) matching resource plans with overall national development plans.

- India has pursued resource planning since the First Five Year Plan.
- Resources contribute to development only with appropriate technology and institutional changes; colonisers used superior technology to exploit the resources of colonies.

Conservation of resources

- Gandhiji said: “There is enough for everybody’s need and not for anybody’s greed.” He blamed greedy individuals and exploitative modern technology and wanted production by the masses, not mass production.
- The Club of Rome advocated resource conservation systematically for the first time in 1968.
- In 1974, Schumacher presented Gandhian philosophy in his book Small is Beautiful.
- The Brundtland Commission Report, 1987, introduced the concept of Sustainable Development, later published as Our Common Future.
- The Earth Summit at Rio de Janeiro in 1992 was another major contribution.

Land resources

- Land supports natural vegetation, wildlife, human life, economic activities and transport, but it is finite.
- About 43 per cent of India’s land is plains (agriculture and industry), 30 per cent mountains (perennial rivers, tourism, ecology) and 27 per cent plateaus (minerals, fossil fuels, forests).

Land utilisation categories

- Forests.
- Land not available for cultivation: barren and waste land; land put to non-agricultural uses such as buildings, roads and factories.
- Other uncultivated land (excluding fallow): permanent pastures and grazing land; land under miscellaneous tree crops and groves; culturable waste land (left uncultivated for more than 5 agricultural years).
- Fallow lands: current fallow (uncultivated for one or less than one agricultural year) and other than current fallow (uncultivated for the past 1 to 5 years).
- Net sown area: the physical extent of land on which crops are sown and harvested. Net sown area plus area sown more than once in a year is the gross cropped area.

Land use pattern in India

- Land use depends on physical factors (topography, climate, soil) and human factors (population density, technology, culture and traditions).
- India’s total geographical area is 3.28 million sq km, but land use data is available for only about 93 per cent, because reporting is incomplete in most north-eastern states except Assam and some areas of Jammu and Kashmir occupied by Pakistan and China are unsurveyed.
- In 2019–20, net sown area was about 45.6 per cent and forests about 23.4 per cent of the reporting area. Including fallow lands cultivated once in two or three years, net sown area comes to about 54 per cent.
- Net sown area is over 80 per cent in Punjab and Haryana and less than 10 per cent in Arunachal Pradesh, Mizoram, Manipur and the Andaman and Nicobar Islands.
- Forest area is far below the 33 per cent recommended by the National Forest Policy (1952) for ecological balance.

Land degradation and conservation measures

- About 95 per cent of our basic needs for food, shelter and clothing come from land.
- Human causes include deforestation, overgrazing, mining and quarrying, over-irrigation, mineral processing dust and industrial effluents.
- Mining-led deforestation has degraded land in Jharkhand, Chhattisgarh, Madhya Pradesh and Odisha; overgrazing in Gujarat, Rajasthan, Madhya Pradesh and Maharashtra; over-irrigation causing waterlogging, salinity and alkalinity in Punjab, Haryana and western Uttar Pradesh.
- Grinding limestone for cement and calcite and soapstone for ceramics produces dust that slows water infiltration into the soil.
- Conservation: afforestation, proper grazing management, shelter belts, control of overgrazing, stabilising sand dunes with thorny bushes, managing waste lands, controlling mining and treating industrial effluents before disposal.

Soil as a resource

- Soil is the most important natural resource; it is the medium of plant growth and a living system. It takes millions of years to form soil a few centimetres deep.
- Factors of soil formation: relief, parent rock, climate, vegetation and other life forms, and time. Temperature changes, running water, wind, glaciers and decomposers help, along with chemical and organic changes.
- A soil profile has topsoil, subsoil (weathered rocks, sand, silt, clay), substratum (weathered parent rock) and unweathered parent bedrock.

Alluvial soils

- Most widespread and important soil; the entire northern plains are made of it, deposited by the Indus, Ganga and Brahmaputra systems. Also in Rajasthan and Gujarat through a narrow corridor, and in the deltas of the Mahanadi, Godavari, Krishna and Kaveri.
- Contain sand, silt and clay; coarse near the break of slope in piedmont plains such as Duars, Chos and Terai.
- Old alluvium (bangar) has more kanker nodules; new alluvium (khadar) has finer particles and is more fertile.
- Rich in potash, phosphoric acid and lime; ideal for sugarcane, paddy, wheat, cereals and pulses. Alluvial regions are intensively cultivated and densely populated.

Black soil

- Also called regur or black cotton soil; ideal for cotton.
- Formed from lava flows of the Deccan trap (basalt) region in north-west Deccan; covers plateaus of Maharashtra, Saurashtra, Malwa, Madhya Pradesh and Chhattisgarh, and extends along the Godavari and Krishna valleys.
- Made of very fine clayey material; high moisture-holding capacity; rich in calcium carbonate, magnesium, potash and lime but poor in phosphoric content.
- Develops deep cracks in hot weather that help aeration; sticky when wet, so it must be tilled after the first shower or in the pre-monsoon period.

Red and yellow, laterite, arid and forest soils

- Red and yellow soils: develop on crystalline igneous rocks in low-rainfall areas of the eastern and southern Deccan plateau, and in Odisha, Chhattisgarh, the southern middle Ganga plain and the Western Ghats piedmont. Red colour comes from diffusion of iron; yellow when hydrated.
- Laterite soil: from Latin ‘later’ (brick); forms in tropical and subtropical climates with alternate wet and dry seasons due to intense leaching; deep, acidic (pH below 6.0) and poor in nutrients; found in southern states, the Western Ghats of Maharashtra, Odisha, parts of West Bengal and the North-east. With conservation, it suits tea and coffee in Karnataka, Kerala and Tamil Nadu, and cashew nuts in Tamil Nadu, Andhra Pradesh and Kerala.
- Arid soils: red to brown, sandy and saline; lack humus and moisture; kankar layers in lower horizons restrict water infiltration; become cultivable with irrigation, as in western Rajasthan.
- Forest soils: in hilly and mountainous areas; loamy and silty on valley sides, coarse on upper slopes; acidic with low humus in snowy Himalayan areas; fertile on river terraces and alluvial fans.

Soil erosion and soil conservation

- Soil erosion is the denudation of the soil cover and its washing down. Human causes: deforestation, overgrazing, construction, mining; natural agents: wind, glaciers and water.
- Gully erosion: running water cuts deep channels in clayey soils, making land unfit for cultivation (bad land); in the Chambal basin these are called ravines.
- Sheet erosion: water flows as a sheet over large areas and washes away topsoil. Wind erosion: wind blows loose soil away.
- Defective farming such as ploughing up and down slopes also causes erosion.
- Conservation methods: contour ploughing, terrace cultivation (well developed in the western and central Himalayas), strip cropping with grass strips, and shelter belts of trees, which have helped stabilise sand dunes in western India.

Resource Classification at a Glance

Learn one example for each type.

Basis	Types	Examples
Origin	Biotic, abiotic	Flora, fauna, livestock; rocks, metals
Exhaustibility	Renewable, non-renewable	Solar, wind, water, forests; minerals, fossil fuels
Ownership	Individual, community, national, international	Private land; village grazing land; roads, minerals; oceanic resources beyond 200 nautical miles
Status of development	Potential, developed, stock, reserves	Solar and wind energy in Rajasthan; resources in use; hydrogen as fuel (stock); water in dams (reserves)

Land Degradation: States and Causes

A common 3-mark question.

Cause	States affected
Deforestation due to mining	Jharkhand, Chhattisgarh, Madhya Pradesh, Odisha
Overgrazing	Gujarat, Rajasthan, Madhya Pradesh, Maharashtra
Over-irrigation (waterlogging, salinity, alkalinity)	Punjab, Haryana, western Uttar Pradesh
Mineral processing dust	Areas with cement, ceramic industries
Industrial effluents	Industrial and suburban areas

Map Work: Soil Types

Practise marking these on an outline map of India.

- Alluvial soil: northern plains, Gujarat and Rajasthan corridor, eastern coastal deltas
- Black soil: Maharashtra, Saurashtra, Malwa, Madhya Pradesh, Chhattisgarh, Godavari and Krishna valleys
- Red and yellow soil: eastern and southern Deccan plateau, Odisha, Chhattisgarh
- Laterite soil: Western Ghats, Karnataka, Kerala, Tamil Nadu, Odisha, North-east
- Arid soil: western Rajasthan
- Forest soil: Himalayan and other hilly regions

Major Soil Types of India: Comparison Table

Soil	Regions	Key features	Crops
Alluvial	Northern plains, Gujarat, Rajasthan, eastern coast deltas	Most widespread; bangar and khadar; rich in potash, phosphoric acid, lime	Sugarcane, paddy, wheat, cereals, pulses
Black (regur)	Deccan trap: Maharashtra, Saurashtra, Malwa, MP, Chhattisgarh	Clayey, holds moisture, rich in calcium carbonate, magnesium, potash, lime; poor in phosphorus; cracks in summer	Cotton
Red and yellow	Eastern and southern Deccan, Odisha, Chhattisgarh, Western Ghats piedmont	Formed on crystalline igneous rocks; red from iron, yellow when hydrated	Varies with fertilisers and irrigation
Laterite	Southern states, Western Ghats, Odisha, West Bengal, North-east	Intense leaching, acidic (pH below 6), poor in nutrients	Tea, coffee, cashew nuts
Arid	Western Rajasthan	Sandy, saline, lacks humus and moisture, kankar layer	Cultivable with irrigation
Forest	Hilly and mountainous areas	Loamy-silty in valleys, coarse on slopes, acidic in snowy areas	Fertile on terraces and alluvial fans

Important Definitions and Terms

Term	Meaning
Resource	Anything in the environment that satisfies needs and is technologically accessible, economically feasible and culturally acceptable
Biotic resources	Resources from the biosphere that have life
Abiotic resources	Resources made of non-living things

Term	Meaning
Potential resources	Resources found in a region but not yet utilised
Stock	Resources that can satisfy needs but humans lack the technology to use them
Reserves	Subset of stock that can be used with existing technology but whose use has not started
Sustainable development	Development without damaging the environment or compromising the needs of future generations
Agenda 21	1992 Rio declaration to achieve global sustainable development
Net sown area	Physical extent of land on which crops are sown and harvested
Gross cropped area	Net sown area plus area sown more than once in a year
Culturable waste land	Land left uncultivated for more than 5 agricultural years
Bangar	Old alluvial soil with more kanker nodules
Khadar	New alluvial soil, finer and more fertile
Regur	Another name for black soil
Leaching	Washing away of nutrients from soil due to heavy rain
Gully erosion	Deep channels cut by running water in clayey soils
Contour ploughing	Ploughing along contour lines to slow water flow down slopes
Strip cropping	Dividing fields into strips with grass between crops to check wind
Shelter belts	Rows of trees planted to break the force of wind

Short Answer Questions

Q1. What is a resource? How are resources created?

A resource is anything in our environment that satisfies our needs and is technologically accessible, economically feasible and culturally acceptable. Resources are created through an interactive relationship between nature, technology and institutions; human beings transform materials in the environment into resources.

Q2. What problems have arisen from the indiscriminate use of resources?

Depletion of resources to satisfy the greed of a few, accumulation of resources in a few hands dividing society into rich and poor, and global ecological crises such as global warming, ozone layer depletion, pollution and land degradation.

Q3. What is Agenda 21?

Agenda 21 is the declaration signed by world leaders at the 1992 UN Conference on Environment and Development at Rio de Janeiro. It aims at global sustainable development by fighting environmental damage, poverty and disease through cooperation. Every local government is expected to draw up its own local Agenda 21.

Q4. Name three states having black soil and the crop mainly grown in it.

Maharashtra, Madhya Pradesh and Chhattisgarh (also Saurashtra in Gujarat) have black soil. Cotton is the main crop grown in it, which is why it is called black cotton soil.

Alluvial soil is found in the deltas of the Mahanadi, Godavari, Krishna and Kaveri. It is very fertile, contains adequate potash, phosphoric acid and lime, and is suitable for sugarcane, paddy and wheat.

Q6. What steps can be taken to control soil erosion in hilly areas?

Contour ploughing along contour lines, terrace cultivation by cutting steps on slopes, strip cropping, and planting trees and shelter belts to reduce the force of water and wind.

Q7. What is the main cause of land degradation in Punjab, and how does it harm land?

Over-irrigation is the main cause in Punjab, Haryana and western Uttar Pradesh. It causes waterlogging, which increases salinity and alkalinity in the soil and reduces fertility.

Q8. Distinguish between bangar and khadar.

Bangar is old alluvial soil with a higher concentration of kanker nodules and is less fertile. Khadar is new alluvial soil with finer particles and is more fertile.

Long Answer Questions

Q1. Explain the land use pattern in India. Why has the land under forest not increased much since 1960-61?

Land use depends on physical factors such as relief, climate and soil and human factors such as population, technology and culture.

India’s area is 3.28 million sq km, but land use data is available for only about 93 per cent.

In 2019–20, net sown area was about 45.6 per cent and forests about 23.4 per cent of the reporting area; the rest includes barren land, non-agricultural uses, pastures, groves, culturable waste and fallows.

Net sown area is over 80 per cent in Punjab and Haryana but under 10 per cent in Arunachal Pradesh, Mizoram, Manipur and Andaman and Nicobar.

Forest area has not increased much because of growing population, demand for agricultural land, expansion of settlements, roads and industries, mining and overgrazing, so it remains far below the 33 per cent target of the National Forest Policy (1952).

Q2. How have technical and economic development led to more consumption of resources?

Technological development made it possible to extract and use more resources, such as minerals, fossil fuels and water, more quickly.

Industrialisation increased demand for raw materials and energy.

Economic growth raised incomes and consumption, increasing demand for goods and services.

Colonisers used superior technology to exploit the resources of colonies.

Urbanisation and mass production led to over-utilisation, causing depletion, inequality and ecological problems, which is why resource planning and conservation are needed.

Q3. Describe the different methods of soil conservation.

Contour ploughing along contour lines slows the flow of water down slopes.

Terrace cultivation on hill slopes restricts erosion; it is well developed in the western and

Strip cropping divides large fields into strips with grass in between to break the force of wind.

Shelter belts of trees reduce wind erosion and have stabilised sand dunes in western India.

Afforestation, controlled grazing, stabilising sand dunes with thorny bushes, proper management of waste lands and control of mining also help conserve soil.

MCQs with Answers

1. Which one of the following is the main cause of land degradation in Punjab?(a) Intensive cultivation (b) Deforestation (c) Over irrigation (d) OvergrazingAnswer: (c) Over irrigation

2. In which one of the following states is terrace cultivation practised?(a) Punjab (b) Plains of Uttar Pradesh (c) Haryana (d) UttarakhandAnswer: (d) Uttarakhand

3. In which state is black soil predominantly found?(a) Uttar Pradesh (b) Maharashtra (c) Rajasthan (d) JharkhandAnswer: (b) Maharashtra

4. Resources classified as biotic and abiotic are based on their(a) Ownership (b) Origin (c) Exhaustibility (d) Status of developmentAnswer: (b) Origin

5. The Brundtland Commission Report was published in(a) 1968 (b) 1974 (c) 1987 (d) 1992Answer: (c) 1987

6. Which soil is the most widespread in India?(a) Black (b) Red (c) Alluvial (d) LateriteAnswer: (c) Alluvial

7. Laterite soil is formed mainly due to(a) Lava flows (b) Intense leaching (c) Wind deposition (d) Glacial actionAnswer: (b) Intense leaching

8. The National Forest Policy (1952) recommended forest cover of(a) 23 per cent (b) 33 per cent (c) 43 per cent (d) 54 per centAnswer: (b) 33 per cent

9. Ravines in the Chambal basin are a result of(a) Sheet erosion (b) Wind erosion (c) Gully erosion (d) Glacial erosionAnswer: (c) Gully erosion

10. Land left uncultivated for more than five agricultural years is called(a) Current fallow (b) Culturable waste land (c) Barren land (d) Net sown areaAnswer: (b) Culturable waste land

Quick Revision Points

- Resource = technologically accessible, economically feasible, culturally acceptable.
- Classification: origin, exhaustibility, ownership, status of development.
- Problems: depletion, inequality, ecological crises.
- Rio Earth Summit 1992: Agenda 21, Forest Principles.
- Resource planning: inventory, planning structure, matching with national plans.
- Conservation: Gandhiji, Club of Rome (1968), Small is Beautiful (1974), Brundtland (1987).
- Relief: plains 43%, mountains 30%, plateaus 27%.
- Area 3.28 million sq km; data for 93%.
- NSA about 45.6%; forests about 23.4%; target 33% forest.
- Degradation: mining (Jharkhand, Odisha), overgrazing (Gujarat, Rajasthan), over-irrigation (Punjab, Haryana).

- Soil profile: topsoil, subsoil, substratum, bedrock.
- Alluvial: bangar and khadar; most widespread.
- Black (regur): cotton, Deccan trap, moisture retentive.
- Red-yellow: iron; laterite: leaching, tea, coffee, cashew; arid: sandy, saline; forest: hilly areas.
- Erosion: gully, sheet, wind; ravines in Chambal.
- Conservation: contour ploughing, terraces, strip cropping, shelter belts.

Chapter Summary

Resources are created by the interaction of nature, technology and institutions and can be classified by origin, exhaustibility, ownership and status of development. Their indiscriminate use has caused depletion, inequality and ecological crises, so sustainable development, resource planning and conservation are essential, as stressed by Gandhiji, the Brundtland Report and the Rio Earth Summit.

Land is a finite resource. India’s land is used for forests, cultivation, pastures and non-agricultural purposes, but forest cover remains below the 33 per cent target, and mining, overgrazing and over-irrigation have degraded land. Soil, formed over millions of years, includes alluvial, black, red and yellow, laterite, arid and forest soils. Soil erosion through gullies, sheets and wind can be controlled through contour ploughing, terracing, strip cropping and shelter belts.

Exam Tips and PYQ Pattern

- The soil types table is the most important part of this chapter for 3- and 5-mark questions and map work.
- Remember the three NCERT MCQs: over-irrigation in Punjab, terrace farming in Uttarakhand, black soil in Maharashtra.
- Learn the four bases of resource classification with one example each.
- For land use questions, quote the 33% forest target and the 80% vs 10% net sown area contrast.
- In map questions, practise marking major soil types on an outline map of India.

Frequently Asked Questions

What are the main types of soil in India?

Alluvial, black, red and yellow, laterite, arid and forest soils.

What is sustainable development?

Development that does not damage the environment and does not compromise the needs of future generations.

Which soil is best for cotton?

Black soil, also called regur or black cotton soil.

Is Resources and Development in the 2026-27 syllabus?

Yes. It is Chapter 1 of the Class 10 Geography book for 2026-27. Map work on soil types is also asked.

Yes. Use the free PDF link at the top of this page. No signup is required.

Conclusion

Resources and Development teaches that resources depend on human effort and must be planned and conserved for a sustainable future. Revise the resource classification, land use facts, the soil types table and the soil conservation methods, and practise the map work to score full marks in this chapter.

More Notes: Class 10 Geography Chapter 2: Forest and Wildlife Resources notes | Class 10 Geography Chapter 2: Forest and Wildlife Resources notes | Class 10 Economics Chapter 1: Development notes | All Class 10 Social Science notes

Author Bio: Written and reviewed by the Nextoper Editorial Team, a group of CBSE social science educators who build chapter notes directly from the NCERT textbook and past board paper patterns.

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