



Agriculture in India

The food you eat and many of the clothes you wear, and the items you use every day come from agriculture. The rice and wheat in your meals, your school uniform made of cotton, and the milk you drink from dairy animals all show how agriculture affects our daily lives. The term '[agriculture](#)' refers to the broad activity of growing crops, raising animals and using natural resources like soil and water to produce food, fibre and other useful products for people. The word 'agriculture' comes from the Latin words 'agri', meaning field, and 'cultura', meaning cultivation. [Farming](#) is the practical work of cultivating land and raising crops or animals on a farm, for example, rice farming, dairy farming and poultry farming.

Agriculture is one of the earliest occupations practised by human beings. It has supported human societies for thousands of years and remains one of the most important human activities.

Agriculture in India's economy

Agriculture and allied activities play a major role in India's economy. They contribute about 18 per cent to the country's total income. This total income, called the gross domestic product (GDP), is the value of all final goods and services produced in a year. Nearly 46 per cent of India's working population depends on agriculture and related activities. India has around 140 million hectares of land under cultivation, making it one of the largest agricultural countries in the world. Agriculture is often called the backbone of the economy because it provides employment to millions.

According to the Government of India, apart from the cultivation of crops, the following are grouped under [agriculture and allied activities](#).



Types of soil in India

India has many soil types due to differences in climate, relief and natural vegetation. The ancient Indian text *Amarakosha* described twelve kinds of agricultural land based on soil fertility. Soils in India are commonly grouped into six major types—alluvial, black, red, laterite, desert and mountain soil.

Alluvial soil (northern plains and eastern coastal plains)

- Most widespread soil type
- Made up of silt (mud, sand, fine particles) deposited by rivers
- Rich in nutrients and very fertile
- Suitable for rice, wheat, sugarcane, pulses, fruits and vegetables

Black/cotton/regur soil (Deccan Plateau)

- Formed from weathering of volcanic rocks
- Holds moisture well and is very fertile
- Its moisture-holding capacity supports crops even in semi-arid regions.
- Suitable for cotton, groundnut, millets, soybean

Red soil (southern and eastern India)

- Formed from weathering of old rocks rich in iron
- Red colour comes from iron reacting with air and water
- Usually less fertile, but crops grow with irrigation and fertilisers
- Suitable for millets, groundnut, pulses, cotton, vegetables (with irrigation and inputs)

Laterite soil

- Forms in areas with heavy rainfall and high temperatures
- Generally not very fertile as nutrients get washed away by heavy rain
- Rich in iron and aluminium; becomes hard in hot weather
- Found in parts of the Western Ghats, North-east India, and high rainfall belts
- Suitable for tea, coffee, cashew, rubber, spices

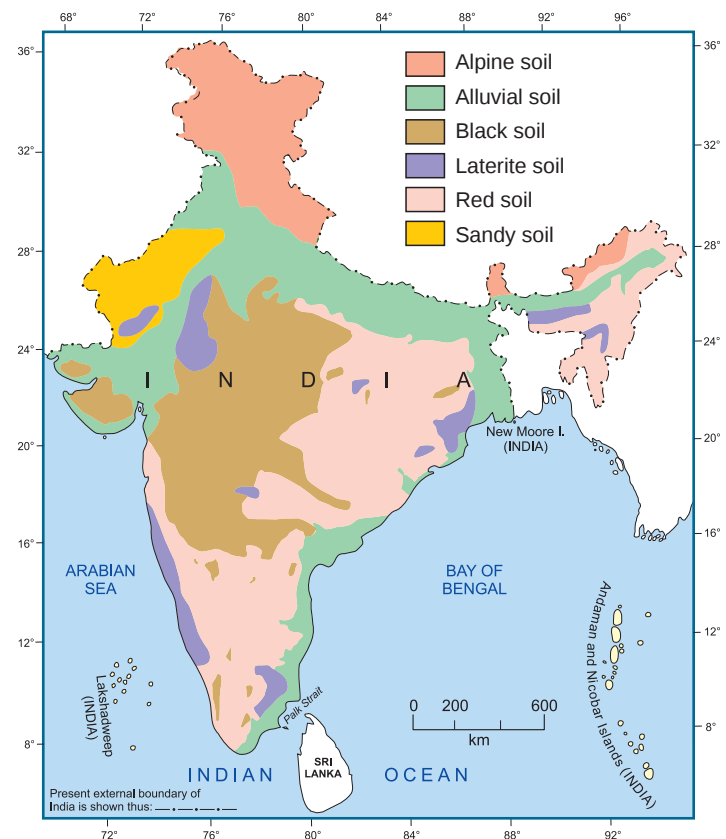


Fig. 1.4 India: Types of soil



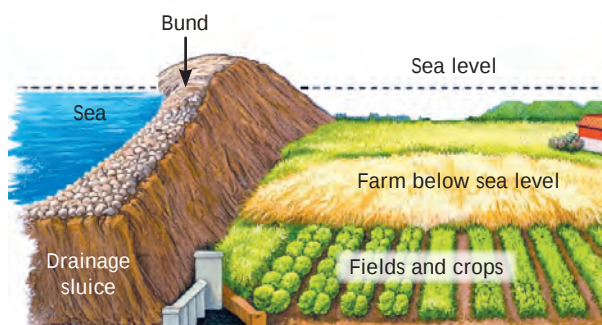
Foreign travellers like Megasthenes, Xuanzang and Al-Biruni, who visited the Indian subcontinent across different centuries, wrote about India's climatic diversity, fertile soil, variety of flowers, plants, fruits and trees, and the dependence of agriculture on the rains.

The way forward

To meet these challenges, farmers need to use water carefully, apply fertilisers wisely, grow a wider variety of crops and adopt farming practices suited to changing climate conditions. Support from institutions and fair markets is also important. Modern farming has greatly increased food production, but it must be managed carefully to protect soil and water. The aim is to increase production while using natural resources responsibly so that farming can continue to support future generations.

KNOW THIS TOO

Below-sea-level farming in Kuttanad, Kerala This is a unique method of growing rice in the Kuttanad region of Kerala, where the fields lie below sea level. Farmers build strong bunds (raised embankments) around the fields to stop seawater from entering. They use gates called sluice gates, and pumps to remove extra water and control the water level. A similar type of farming is practised in the Netherlands, where land below sea level, called **polders**, is protected by strong walls (dikes) and pumps remove extra water.



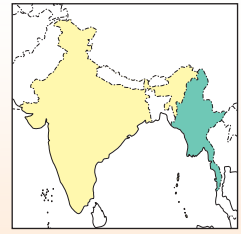
Koraput traditional agriculture, Odisha This is recognised as a Globally Important Agricultural Heritage System (GIAHS) because of its rich crop diversity and indigenous knowledge. The region is considered one of the important centres of rice diversity in the world. However, due to the spread of modern high-yielding varieties and changing agricultural practices, this number has drastically declined but farmers here continue to grow traditional rice varieties, along with millets and pulses. These varieties are naturally adapted to drought, poor soils and local climate conditions. Farmers save and exchange seeds, and grow different crops together avoiding monoculture. Farming is closely linked with forests, sacred groves and tribal cultural practices. In recent years, farmers have also started cultivating crops such as strawberries as a supplementary source of income. The system forms a landscape where agriculture, biodiversity and tradition support each other.

Saffron cultivation, Kashmir This is mainly practised in the Pampore region of Jammu and Kashmir. It is recognised as a GIAHS. Kashmir is one of the few places in the world that produces high-quality saffron. The crop is grown on elevated plateaus called **karewas**, which have well-drained soils suitable for saffron **corms** (swollen underground stem). Saffron grows in relatively dry conditions and needs little irrigation. Farmers plant the corms carefully and harvest the delicate purple flowers by hand. The red stigmas are separated manually. This skill-based system is closely connected to Kashmir's culture, economy and traditional knowledge.



Saffron comes from the dried red stigmas (thin red threads) inside the crocus flower.

India and Myanmar



Myanmar (earlier known as Burma) and India share land and maritime borders. Myanmar serves as India's gateway to South-East Asia, making it important for trade, connectivity and regional cooperation.

Location and physical geography

Myanmar lies to the east of India and shares a long land boundary with Arunachal Pradesh, Nagaland, Manipur and Mizoram. India and Myanmar share a coastline that borders the Bay of Bengal.

Historical links with India

India and Myanmar have been connected since ancient times through trade routes and religious travel. One of the most important routes was the Uttarapatha, which linked the Ganga plains to eastern regions beyond India. Monks, scholars and traders carried Buddhism from India to Myanmar via these routes, influencing Myanmar's religion, art and culture. Today, Theravada Buddhism is practised by most of Myanmar's population. Thousands of Myanmar pilgrims visit Indian Buddhist sites, especially Bodh Gaya, where the Buddha attained enlightenment.

Cultural and religious ties

Communities living on both sides of the border, especially in Nagaland, Manipur and Mizoram, share languages, dress, festivals, customs, scripts and temple architecture. In many cases, people belong to the same ethnic groups but are divided by modern borders. Border towns act as centres

Fig. 1.11 Tourists float in hot-air balloons over the plains of Bagan, Myanmar. Bagan is dotted with over 2,200 ancient temples and pagodas, the remains of more than 10,000 structures built between the 11th and 13th centuries. India has supported the restoration of Buddhist heritage sites in Bagan, including the Ananda temple, that were damaged by earthquakes.



Harsha also supported [Nalanda](#), a Buddhist monastery and a major centre of learning in Bihar. Nalanda had been founded before Harsha's time, but Harsha's support helped it grow further. It is often described as one of the earliest residential universities, where students and teachers lived and studied together. Nalanda had libraries, hostels and lecture halls. Students could study philosophy, logic, grammar, medicine, astronomy and mathematics. Education was free, and students received food and lodging. To meet these expenses, Harsha granted the revenue of many villages to Nalanda. Students came from places such as China, Tibet, Korea and South-East Asia to study at Nalanda. Nalanda helped spread Buddhist learning, along with Indian knowledge and culture, to other parts of Asia.

Harsha followed a policy of religious tolerance. In his early years, he worshipped Lord Shiva and Lord Surya, and later he was drawn towards Buddhism. However, he respected all religions. He also organised a major Buddhist council at Kannauj. The Chinese monk [Xuanzang](#) (also written as Hiuen Tsang) visited India during Harsha's reign. He travelled widely and studied at Nalanda. His travel account, the [Si-Yu-Ki](#), provides valuable information about Indian society, administration and religion during this period.



Fig. 1.4 Sculpture of a bodhisattva made near Nalanda in the 9th century CE

Fig. 1.5 Illustrations from a palm-leaf manuscript found at Nalanda



The Rashtrakutas played a major role in the tripartite struggle for Kannauj. At different times, they defeated both the Palas and the Pratiharas, but they could not control the north for long.

In the south, the Rashtrakutas fought the Eastern Chalukyas (a branch of the Chalukyas we will learn about later). They also fought the Pallavas of Kanchipuram and the Pandyas of Madurai. At their height, Rashtrakuta influence stretched roughly from the Ganga–Yamuna Doab in the north to Kanyakumari in the south, although their control was stronger in some regions than in others.

The Rashtrakutas supported art and religion. They supported Shaivism, Vaishnavism and Jainism. Their most famous monument is the Kailasa (Kailasanatha) Temple at Ellora, a rock-cut temple dedicated to Shiva, now part of a UNESCO World Heritage Site.

Manyakheta was an important centre of Jainism. Jain monks and scholars produced works in Sanskrit and Kannada, including a text on mathematics. In the late 10th century, the last major Rashtrakuta ruler, Indra IV, is believed to have given up worldly life and performed *sallekhana* (a Jain practice of fasting unto death) at Shravanabelagola.

Fig. 1.11 The Kailasa Temple in the Ellora Caves, Maharashtra



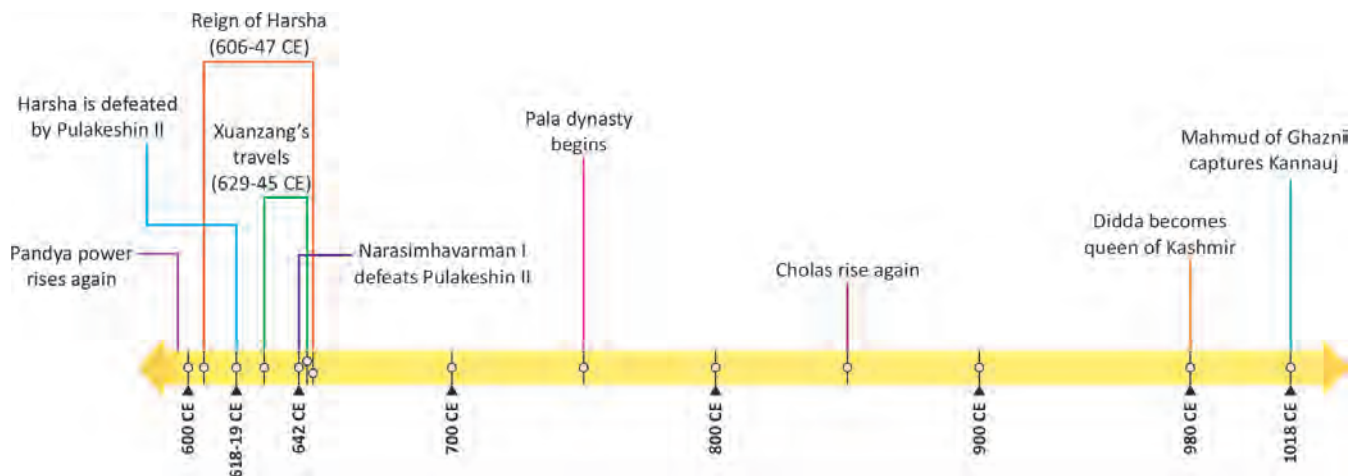
KNOW THIS TOO

Xuanzang was a Chinese Buddhist monk who travelled to India in the 7th century CE to study Buddhist teachings and collect sacred texts. He spent many years travelling across the Indian subcontinent and visited major cities and sacred places, including Bodh Gaya, Sarnath, Varanasi, Vaishali and Kanchipuram. He also studied at Nalanda.

Xuanzang's travel account is known as *Si-Yu-Ki*. In this work, he described what he saw in different kingdoms. He praised Indian learning and public debates. But he also noted social problems, including the practice of untouchability. His careful notes on routes and distances later helped scholars identify and locate ancient sites. Historians also value Xuanzang's account because it helps us understand links between religion, education and politics.



Route of Xuanzang's travels



SAY IT RIGHT

Word	Say	Word	Say
Harshavardhana	Hur-shuh-vur-dhuh-nuh	Gurjara-Pratihara	Goor-juh-ruh Pruh-ti-haa-ruh
Harshacharita	Hur-shuh-chuh-ri-tuh	Mihira Bhoja	Mi-hi-ruh Bho-juh
Chalukya	Chaa-look-yuh	Mahendrapala	Muh-hen-druh-paa-luh
Pala	Paa-luh	Rashtrakuta	Raash-truh-koo-tuh

Remember, the 'uh' is soft, and sounds like 'a' in the word 'about'.

Regional Powers

While the north-west frontier faced many attacks, much of India was ruled by strong regional kingdoms in the 11th and 12th centuries.

Chandelas

The Chandela kingdom, based in Bundelkhand in central India, emerged in the early 9th century CE. The Chandelas were originally subordinates of the Gurjara-Pratiharas, but they later established an independent kingdom. Under Vidyadhara, they put up strong resistance against Mahmud of Ghazni.

The Chandelas are best remembered for their temple architecture, seen in the world-renowned temple complex at Khajuraho in modern-day Madhya Pradesh. The finest example is the Kandariya Mahadeva Temple, built in the early 11th century. Khajuraho also has other temples dedicated to Lord Vishnu as well as to Jain tirthankaras. The Khajuraho temple complex is now a UNESCO World Heritage Site.

Cholas

In the previous chapter, you learnt about the revival of Chola power in the mid-9th century CE. By the 11th century, the Cholas had become one of the strongest powers in South India. Their power grew rapidly in the late 10th century under [Rajaraja I](#), and reached a high point under his son [Rajendra Chola I](#). After them, Chola rule continued, but strong rivals emerged and the empire slowly weakened.



Fig. 2.7 Kandariya Mahadeva Temple, Khajuraho, Madhya Pradesh

The Dalai Lama is known for his Four Principal Commitments. He promotes human values such as compassion, kindness and forgiveness. He encourages harmony among religions. He supports the preservation of Tibetan culture and speaks about protecting the environment. He is also concerned with reviving ancient Indian wisdom.

In the 1950s, the People's Republic of China established control over Tibet. In 1959, after an uprising in Lhasa, the 14th Dalai Lama fled across the mountains and entered India on March 31, 1959. India gave him refuge. Soon, many Tibetans also came into exile. India helped them rebuild their lives by supporting schools and setting up settlements in different states, including the Himalayan regions and parts of Karnataka.

Tibetan refugees worked hard to protect their culture. (A refugee is a person who is forced to leave their home country because it is unsafe there, often due to war, violence or persecution, and who seeks safety in another country.) Many monasteries were rebuilt or strengthened in India. One well-known example is Namdroling Monastery at Bylakuppe in Karnataka, founded in 1963.

Another famous monastery in India linked with Tibetan Buddhist tradition is Tawang



Fig. 3.12 Interior of the Namdroling Monastery, Bylakuppe, Karnataka



Fig. 3.13 Losar (Tibetan New Year) celebrations in Ladakh, India

Executive: Implementing Laws

The **executive** implements the laws and policies made by the legislature. It also carries out the programmes and schemes of the government. The executive branch of government consists of the political executive and the permanent executive. Though the Constitution does not define them separately, both groups work together following established rules and long-standing traditions to make sure the country is governed well.

The **political executive** represents the people and is chosen by them through elections. It includes the president, the prime minister and the council of ministers at the centre, and the governor, chief ministers and ministers at the state level. The president and governors mainly perform formal or ceremonial functions. The political executive is responsible to the legislature, which is accountable to the people.

These elected leaders are responsible for taking important decisions, introducing new laws, setting goals for the nation and representing India in other countries. They are chosen through elections, and they hold office for a fixed term, usually five years, unless they lose the confidence of the legislature or are re-elected. (We will learn about this in class 8). Their power depends on the trust and support of the people.

The **permanent executive** includes government officers who are not elected by the people but are appointed through competitive examinations such as those conducted by the Union Public Service Commission (UPSC). These officers are known as **bureaucrats** or **civil servants**. In a parliamentary democracy like India, the permanent executive works under the political executive.

Unlike members of the political executive, those in the permanent executive are not removed after elections. They are responsible for performing the day-to-day administrative tasks in government departments other than the armed forces. They work in the background to ensure that the government runs smoothly, regardless of which political party is in power.

Structure

The bureaucracy in India is organised in a hierarchical structure (arranged in successive ranks). Within a ministry or department, work is organised into wings, which are further divided

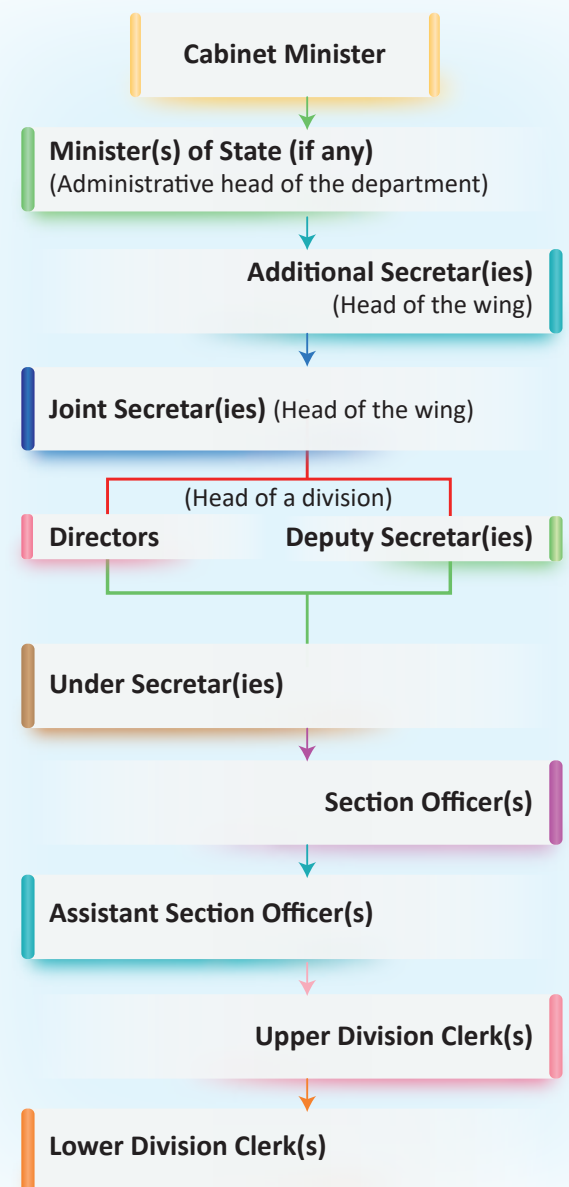


Fig. 1.2 Organisational structure of a government department

🌀🌀🌀 The Government and People 🌀🌀🌀

The Government of India performs three important roles in the lives of its people.

- It acts as a **protector** by maintaining law and order and ensuring national defence through agencies such as the police and armed forces.
- It also serves as a **provider** by promoting public welfare through measures like providing free education for children, building schools, appointing teachers and developing infrastructure such as roads, bridges, railways and airports.
- In addition, the government functions as a **regulator** by overseeing economic activities and promoting social justice, including taking steps to ensure food safety.

The government carries out these roles through the following.

- Laws and the Constitution, which define rights, duties and rules
- Institutions such as the legislature, executive and judiciary
- Administrative machinery like the bureaucracy, police and armed forces
- Public policies and programmes implemented at different levels of government

However, despite this well-defined system, we face several challenges that affect how our government performs its roles. Because of these, people need to raise their concerns and hold the government accountable. Here are some key challenges.

Corruption and misuse of

power Corruption in administration and politics can lead to poor delivery of services, favouritism and loss of public trust.

Inequality and social exclusion Certain groups such as the poor, women, minorities and marginalised communities may not get equal access to rights, resources or opportunities.

Gaps in delivery of public

services Problems like inadequate schools, poor healthcare facilities, unsafe drinking water and unreliable public transport affect everyday life.

Weak implementation of laws and

policies Even well-made laws and schemes may not reach people properly because of delays, lack of coordination or inefficiency.

Corruption and misuse of power



Bribery, favouritism,
abuse of authority

Inequality and social exclusion



Discrimination,
unequal access

Gaps in public services



Lack of quality facilities

Weak implementation



Poor execution of
laws and policies

Lack of transparency



Opaque decisions,
no accountability

Law and order issues



Crime, delayed justice

Environmental degradation



Pollution, resource loss

Limited public participation



No voice in decisions

Tunnels allow roads to pass through hills and mountains, making travel shorter, safer and possible even in difficult weather.

- The Atal Setu (Mumbai Trans Harbour Link), Maharashtra (21.8 km), is India's longest sea bridge (connecting Mumbai–Navi Mumbai across the Thane Creek).
- The Bhupen Hazarika Setu (or Dhola–Sadiya Bridge) in Assam (9.15 km) is one of India's longest bridges over water and a major link in the North East.
- The Bogibeel Bridge in Assam (4.94 km) over the Brahmaputra is India's longest rail-cum-road bridge.
- The Chenab Rail Bridge, Jammu and Kashmir, is the world's highest railway arch bridge and a major engineering landmark.

There are several tunnels in the mountainous areas of northern India. Dr Syama Prasad Mookerjee Tunnel, Jammu and Kashmir, and the Atal Tunnel in Himachal Pradesh are among the longest.



While there are many engineering marvels in the form of highways, bridges and tunnels, Meghalaya's living root bridges, called *jingkieng jri* in Khasi, are a brilliant example of indigenous, eco-friendly engineering. This unique kind of bridge is not built, but grown. Khasi communities carefully train, or guide, the living aerial roots of the rubber fig tree (*Ficus elastica*) across streams with the help of bamboo scaffolding. Over the years, the roots weave into a strong, natural walkway that becomes stronger with time, perfectly suited to the region's heavy rains and dense forests.



Fig. 1.2 Atal Setu, Mumbai



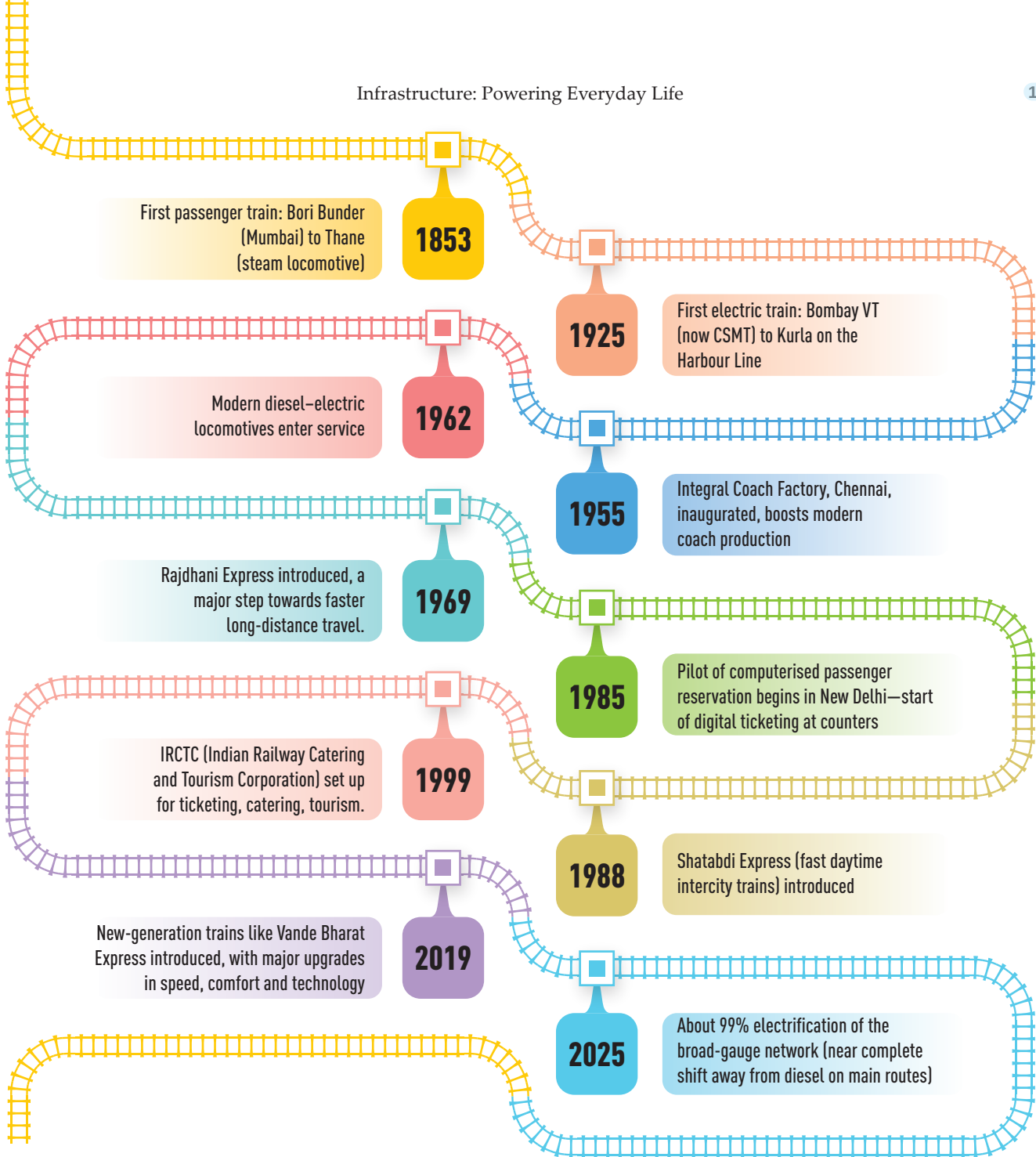


Fig. 1.3 a. An early steam engine (1947) and **b.** Vande Bharat Express



Inland water transport is cost-effective, fuel-efficient and environment-friendly, especially for carrying bulky goods like coal, cement, food grains and fertilisers. With projects such as the Jal Marg Vikas Project, India is working to improve river navigation, build terminals and integrate waterways with road and rail networks. Though its share is still small compared to road and rail transport, inland waterways have a strong potential to reduce congestion, lower transport costs and support sustainable development.

Communications

Communication today happens through devices like mobile phones, computers and tablets. We can send messages, share photos and make video calls. But these devices work only because there is a strong **communication infrastructure** behind them.

This infrastructure includes underground and undersea cables (optical fibre), wireless equipment, mobile towers, satellites and data centres (large buildings with powerful computers that store and manage data). Together, they carry digital signals from one place to another and help transmit text, voice, images and videos across cities, countries and even oceans.

New communication technology has many benefits. It enables online classes, digital libraries and educational videos for learning anytime and anywhere. It has made e-commerce (online shopping) easy and has enabled quick online payments for bills, tickets and purchases. It also helps **e-governance**, where people can use online services for tasks like applying for documents, accessing government schemes and getting information without long travel or waiting in lines.

When you send a message from your mobile, it does not go directly to the other person's phone. It travels through a network.

Phone to mobile tower

Your phone changes the message into a radio signal and sends it to the nearest mobile tower (also called a cell tower).

Tower to network cables

From the tower, the signal goes into the telecom company's network through high-speed fibre-optic cables (underground or under the sea). These cables carry huge amounts of data very fast.

Through the telecom network and data centres

Inside the network, computers and servers (often in data centres) find where the receiver's phone is and choose the best route to deliver the message.

Tower to receiver's phone

That tower sends a radio signal to the receiver's phone, and the message appears on the screen.

Back to a tower near the receiver

The message is sent through cables to a mobile tower close to the receiver.



Most messages travel mainly through towers and fibre cables. Satellites are used in special cases, like very remote areas, ships and aircraft or when other connections are difficult, so they can act as an extra link in the communication chain.

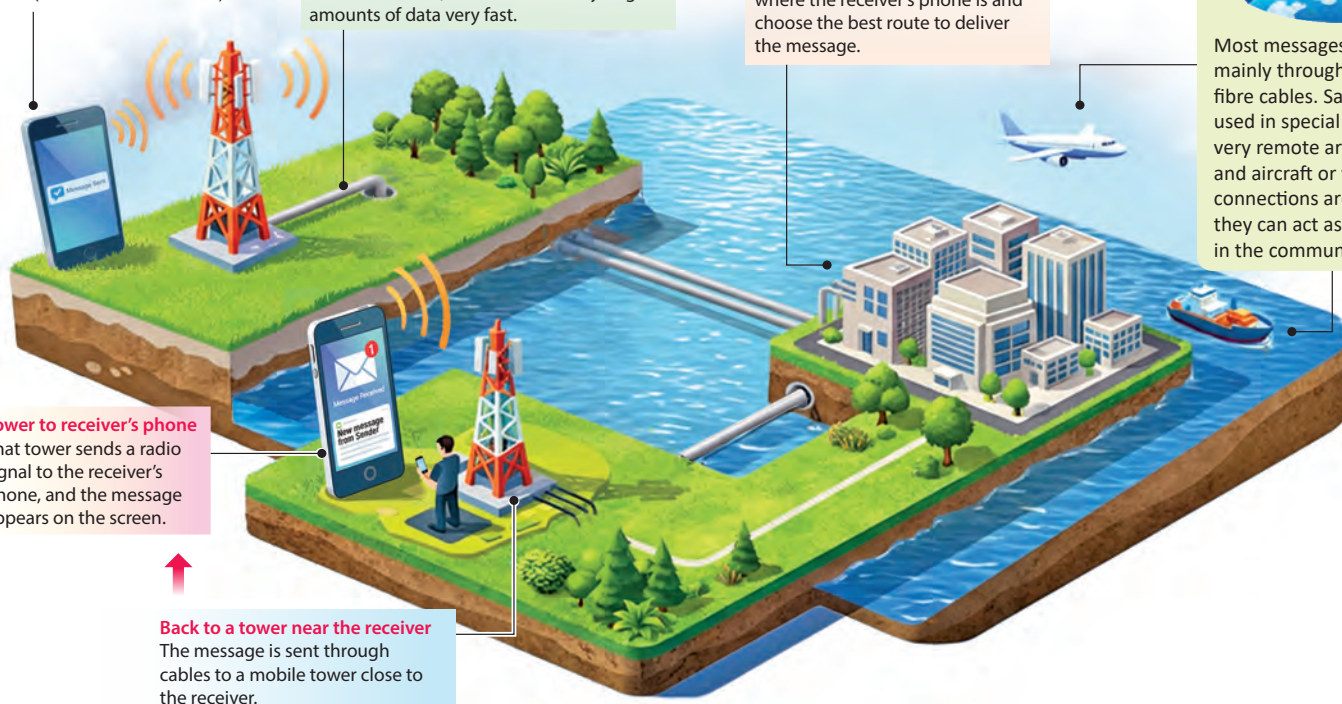
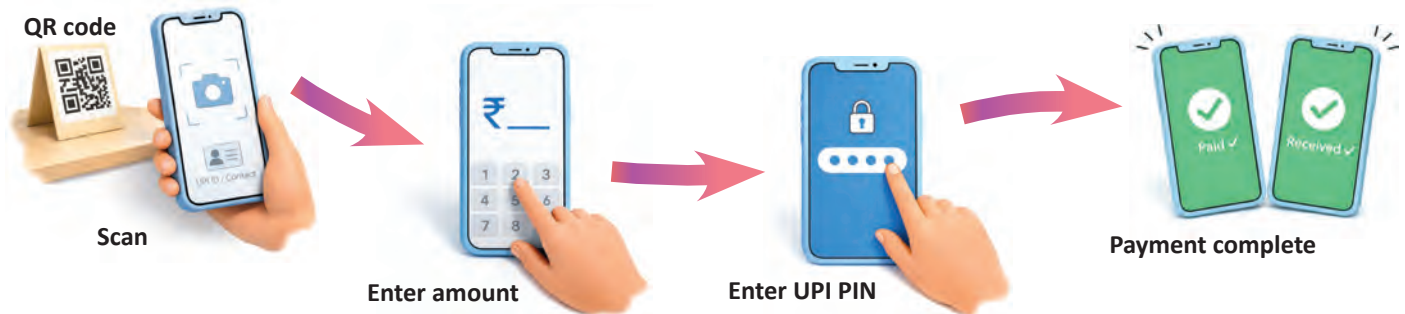




Fig. 2.3 a. Netbanking on computer b. Debit/credit card c. POS machine

Financial frauds and how to prevent them

Digital payments have made life easier, but we need to stay alert about fraud and scams. We may get calls or messages that appear to be from a bank or a payment app, asking us to click unknown links or download harmful apps. They may also mislead people into sharing bank details or a **one-time password (OTP)**, a unique, temporary code made up of letters or numbers that is used to verify identity or authorise a transaction. Once they get such details, they can access the person's phone or account and withdraw money.



To stay safe while making digital payments, remember these safety rules.

- Never share personal or banking information like your phone number, account number, passwords, card PINs or OTPs with strangers.
- Do not click unknown links or open files/videos received through messages.

