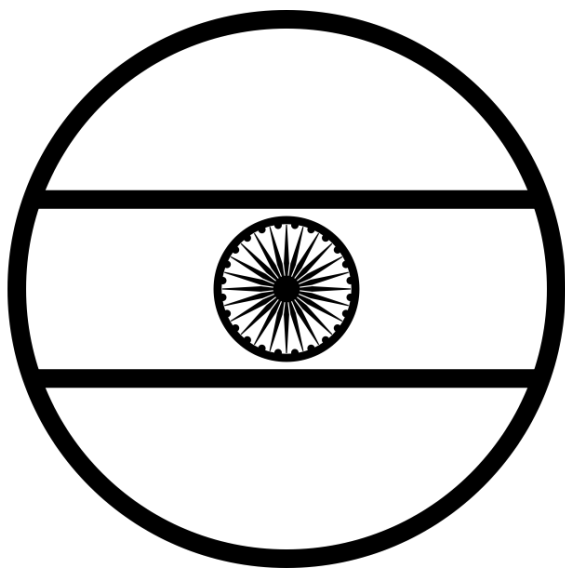


3.3

Year 13
Module 1H

Economic Growth & Challenge in India



Geography Knowledge Organiser

3.3.1 - Physical background

Relief and drainage

The major rivers of India originate in one of three main watersheds:

Himalaya and Karakoram ranges in the north (snow fed, all year);

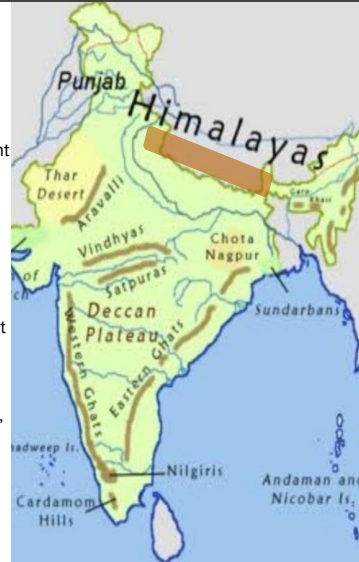
- These drainage basins see water all flowing all year round due to constant supplies from snow melt in the high mountain ranges.

Vindhya and Satpura ranges in the centre (monsoon fed, seasonal);

- These drainage basins see less predictable flows. Monsoon rains bring heavy discharge during the wet season but severely reducing during the dry season

Western Ghats in the west (monsoon fed, seasonal).

- Like the central region, these drainage basins see monsoon rains bringing heavy discharge during the wet season which is severely reduced during the dry season



Climate

India's climate is strongly influenced by both the Himalayas and the Thar Desert. India has several climate subtypes or 'ranges':

Cold - At very high altitudes. *Mainly the Himalayas in the north, however there are a few high peaks in the west.*

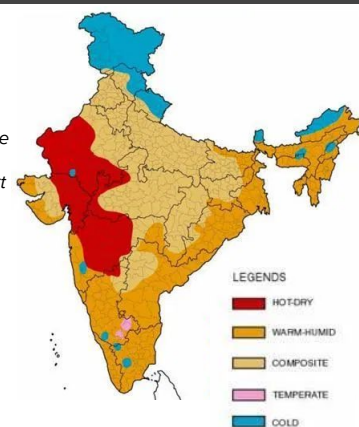
Hot-dry - Centred around the Thar Desert in the west.

Warm-humid - Around the coastlines taking moisture from the sea. Predominantly south and east.

Composite - fluctuate between hot/dry and hot/wet depending on season.

Largely located in the central region, away from the coastline and deserts

Temperate - no weather extremes, often described as 'moderate'. A very small region in the south between the two Ghats mountain ranges.

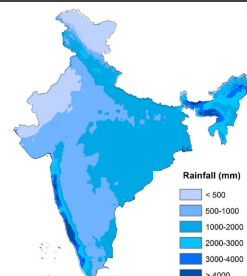


Water availability

Although precipitation is variable, India has a relatively wet climate. India ranks in the world's top ten water-rich countries, with approximately 4% of world's freshwater resources.

Annual precipitation provides over 4000km³ of fresh water to India - half is returned to oceans or evaporated, with only a small percentage stored in inland water bodies and aquifers.

So India has both too much and not enough water, depending on the season and region.



3.3.2 - Characteristics

Population

Population distribution

Total population of 1.38bn (in 2020) and predicted to overtake China as the world's largest population in the next decade.

Population growth rate of 1.1% (in 2017) which is high but a dramatic fall from 10 years ago when it was 1.7%.



Northern states

Moderate fertility rate due to more rural-urban migration of young workers. Total population higher as it is more a cities in the region.

Southern states

Lower fertility rate due to more urban and better education, health family planning programmes in the cities. Total population lower as it is more of a rural region.

Eastern states

Higher fertility rate due to more settled agriculture and mining. Total population lower as it is more a rural region. Northeastern states see large population increases due to refugees from Burma

Western states

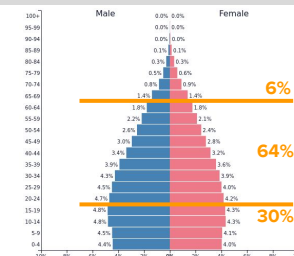
Higher fertility rate due to harsh environment (Thar desert) and farming. Total population lower as it is more a rural region. However there are some major cities (Mumbai) that see high population density due to rural-urban migration.

Population structure

India has a **youthful population**. Around 30% of the total population is under 15 years old.

Dependency ratio 56% - this means around 56% of the population is not of working age, however this is overstated as many children in India start working very young in the informal sector (child labour).

Sex ratio 107:100 (Male:Female) India has more males than females.



Political system

Governance

India has a constitutional democracy with a central government which decided laws, provides funding and some infrastructure. However, India is also split into states which govern themselves and follow their own priorities.

Healthcare

Public healthcare is free but very basic. The system is struggling to cope with such a large population. Very little available in rural areas. Urban areas are more serviced and people have a choice of private healthcare too.

Education

Compulsory education starts at age 4 and ends at age 14 in India. However attendance is not enforced. Rural education is challenging, particularly for girls where they are often removed to perform household duties.

Cultural influences

Gender issues

Gender inequality is a significant issue for India. It is rated 130 out of 189 countries on the Gender Inequality Index (GII).

Issues include:

- Violence against women
- Modern slavery
- Limited employment opportunities
- Unequal access to healthcare or education



Caste system

This is a system which divides Hindus into rigid hierarchical groups based on their karma (work) and dharma (duty).

For centuries, caste has dictated almost every aspect of Hindu religious and social life. The system bestowed many privileges on the upper castes while sanctioning and repressing of the lower castes by privileged groups

3.3.3 - Physical environment

Natural resources

India is a mineral rich landmass, which included:

- Coal
- Iron ore
- Manganese
- Mica
- Bauxite
- Titanium ore
- Natural gas
- Petroleum
- diamonds
- Thorium
- Oil



Physical features

Himalayan region (NORTHERN EXTREMITIES)



- + Strategic position with borders to 7 other countries (including China)
- + Scenic mountainous region attracts a lot of tourism
- + Relief of the mountains prevents most of the arctic winds from reaching the plateau
- Prone to natural hazards (earthquakes & flooding)
- Poor infrastructure due to steep relief

Indo-Gangetic plains (NORTH)



- + Major river activity has deposited alluvium (silt) making soils very fertile
- + Thar desert provides significant opportunities for solar power
- Prone to flooding
- At risk from climate change increasing snow melt and increasing flooding

Peninsular plateau (CENTRAL-SOUTH)



- + Multiple converging rivers and seasonal rains provide abundant water supplies
- Drier than areas further north, particularly during dry season

Coastal plains (EAST-WEST)



- + Access to the sea has encouraged international trade
- + Access to additional food sources from the sea
- Prone to natural hazards (typhoons/tropical storms)

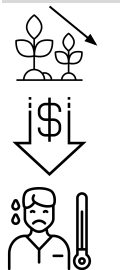
Climate challenges

Anthropogenic (human induced) climate change is leading to more climate variability within India, such as declining monsoon rainfall, more frequent rainfall at other times in the year and more droughts in water stressed regions. The headline predictions for India include:



- 2°C increase in temperatures** leads to unpredictable monsoons
- Changes in monsoon seasons** leads to more flooding and droughts
- Dry years** become even drier
- Wet years** become even wetter

Impacts of climate variability



- Decline in crop yields** by 2040 because of extreme heat (although developing drought resistant crops could reduce some of these impacts)
- Falling agricultural income** as crops fail and sales decline, particularly in regions without irrigation to supply additional water to the soil due to rising temperatures and reduced rainfall
- Health impacts** such as malnutrition, child growth stunting (children not getting enough nutrients to grow), malaria (tropical disease spread by mosquitoes which spawn in water) and increased deaths from heat related illness in heatwaves

3.3.4 - Economic background

Economic distribution

A. Andhra Pradesh

Growing agriculture sector - inc. dairy and aquaculture (fish farms)

B. Madhya Pradesh

Highest of India's agriculture output - wheat, pulses and dairy

C. Maharashtra

Coastal economic zone - food and processing hub

D. Punjab

Important region for grain production (80%) at national level.

E. Rajasthan

Extensive desert - but still major dairy, oilseed & cereals producer

F. Uttar Pradesh

Important in milk production

G. West Bengal

Coal mining, steel mills and power stations



Special Economic Zones (SEZ)

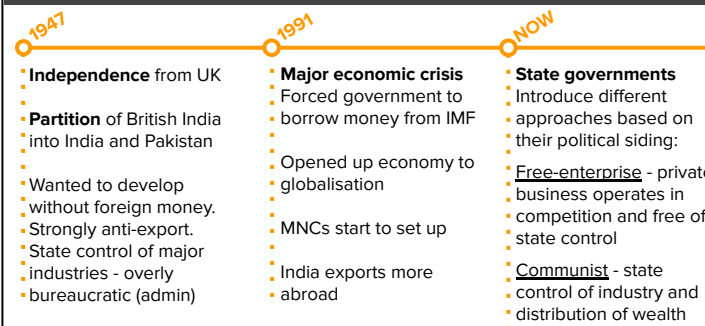
An area in which the business and trade laws are different from the rest of the country. SEZs aim to increase trade, employment, increased investment and job creation by offering companies favourable tax rates, access to markets and streamlined admin.

India has 4 significant SEZs based on different industries:

1. Petrochemical
2. Pharma and biotech
3. Manufacturing and engineering
4. Information technology



Influence of politics on economy change



Role of government in economic change



Agriculture - central government sets prices of crops and the tax level. State government is responsible for ensuring laws are upheld and investing in the sector.

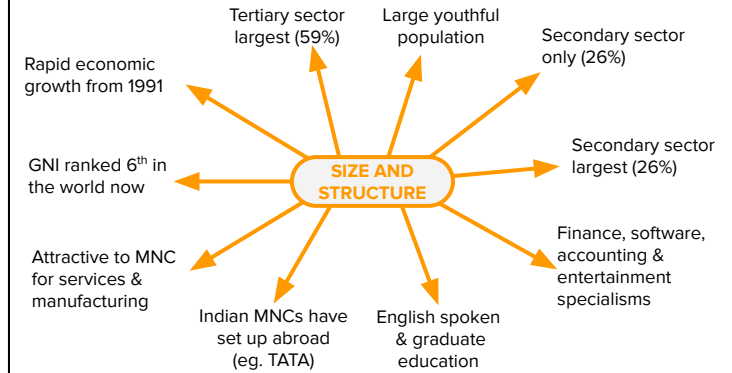


Political tensions - Due to tensions with China and Pakistan the central government has been motivated to develop its own space programme, satellites and nuclear weapons. Many defence industries are under central government control



Transport - Serious issues with congestion and bottlenecks on road and rail networks. Central government has made this a priority for investment and giving out loans with favourable conditions. Effective transport is vital for smooth trade and a health economy.

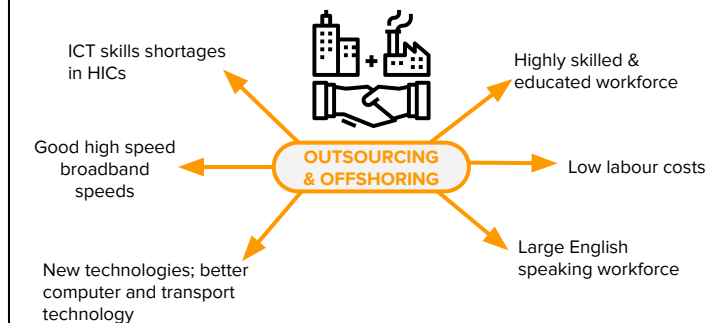
3.3.5 - Global importance



Outsourcing and offshoring

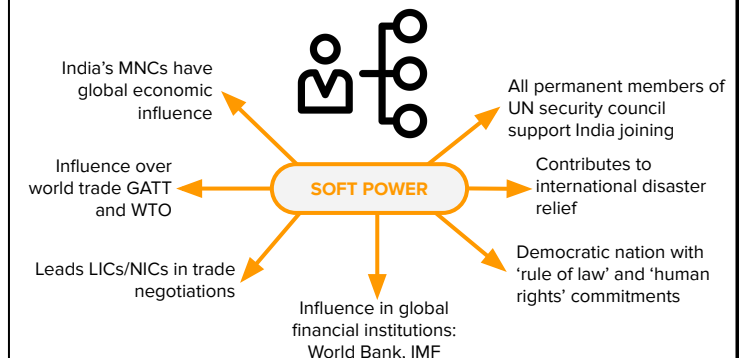
Outsourcing: To obtain (goods or a service) by contract from an outside supplier

Offshoring: To move (some of a company's processes or services) overseas



Political power

Soft power: A persuasive approach to international relations, typically involving the use of economic or cultural influence



3.3.6 - Environmental threats

Environmental pressures



Economic growth often goes hand-in-hand with **industrial pollution**.

The Ganges River holds religious and emotional significance to many Indians.

It is polluted with over 500 million litres of toxic waste everyday by the factors next to the river



India relies on **agriculture** to feed the massive population and for trade.

However, over-exploiting the soil planting crops has led to soil degradation - where soil lacks essential nutrients and minerals to be fertile



Deforestation is occurring due to the demand for paper and wood products. This is also leading to a loss of biodiversity.

With the loss of trees to anchor soil and the soil degradation from agriculture over 30% of India is at risk of desertification

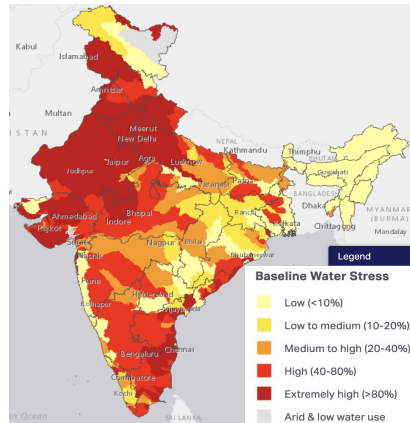
Water security

India has both too much and not enough water, depending on the season and region.

Water demand is high due to rapid urbanisation, agriculture irrigation, industrialisation & increasing living standards

The unpredictability of the rains means semi-arid regions (like the west) are at risk.

India is under **water stress** when demand for water exceeds the available amount. This is due to physical issues (eg. desert), infrastructure (no piping in rural areas) and poor management



Rapid urbanisation

In 20 years, India's cities will have to accommodate 250-300 million more people than they do today. That's the equivalent of 11 New Delis.



Water pollution Massive expansion of cities and slums means sewage spills overland into rivers. Growing urban areas attract more industry which dumps waste (often toxic) into local water courses. Monsoon rains overwhelm the drainage/sewage systems and it backs up onto the surface and then into the rivers



Air pollution As more people move into cities the demand for transport increases, including cars putting exhaust fumes into the air. Congestion compounds this issue as traffic is left standing for long periods. Industry expands and just like with water pollution they also vent smoke and fumes into the atmosphere



Waste As the population of a city increases the more waste is produced. The waste that is formally collected will most likely end up in landfill. This creates ground pollution and can take thousands of years to decompose. More and more landfill space is needed at urbanisation occurs.

3.3.7 - Sustainable development

Environmental management

EFT

Ecological Fiscal Transfer - The central government distributes tax revenue (state funding) factors such as population size, poverty level etc. In 2014 India decided to include ecological factors such as % of forest.

This encouraged states to stop deforestation for profit and instead start afforestation to increase their % forest cover for more central government funding.



PES

Payments for Ecosystem Services - An arrangement where the states protect their environmental services, such as watershed protection, forest conservation, carbon sequestration and landscape beauty.

It reward those states whose lands provide these services with subsidies or market payments.



Water management



Domestic rainwater harvesting



Artificially recharging groundwater aquifers



Cleaning sewage and recycling the 'saved' water



Building desalination plants (convert seawater into freshwater)



Maximise storage of monsoon rainfall
Afforestation of river catchments to improve groundwater supplies



Treat polluted/contaminated water using reverse osmosis

Coverservation management solutions - fixing leaks, using water meters, using water conserving appliances

Urban management



Banning diesel cars and vans and encouraging more people to use mass transit. Some cities like Imphal are investing in public transport and electric cars/rickshaws



Transport demand management is a strategy used by some private companies. This involves mapping out commuter routes for employees which are the most efficient and so least polluting. Some companies also stagger start times so workers commute outside of the rush hour



Banning single use plastics is a growing policy in some states. This includes plastic bags, disposable cups and some packaging



Switching energy sources for cooking stoves, public transport and industry. India is currently investing heavily in green energy production from solar and wind power



Rural investment involves improving the quality of life in rural areas to reduce the rapid rural-urban migration and take the strain of major population centres in urban areas.

Home study questions



DEVELOPING

Outline the global significance of India today **[4 marks]**

Explain how politics can influence social and economic development **[4 marks]**

SECURING

Analyse the pattern of water stress in India (3.3.7) **[6 marks]**

Explain how the economic challenges in India have changed over time **[6 marks]**

MASTERING

'Urbanisation is the most significant environmental threat to India' **To what extent** do you agree with this statement? **[15 marks]**

Evaluate how multiple physical factors have influenced the regional development within India **[15 marks]**

CHALLENGE

Create a flow diagram to show how relief, climate and water are related (3.3.1)

Summarise the sustainable development strategies and evaluate the effectiveness of each one