Sleepy Classes IAS
Awakening Toppers



TWO MINUTE SERIES

JUNE 2025

This Compilation Facilitates Revision of Crucial UPSC Prelims 2025 Topics within Minutes



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Polity & Governance

Ladakh and its New Regulations

Context

- On June 3, President Droupadi Murmu notified four Regulations for the Union Territory (U.T.) of Ladakh, defining new policies on reservation, languages, domiciles, and composition of hill councils for Ladakh
    - Ladakh Official Languages Regulation, 2025
    - Ladakh Civil Services Decentralisation and Recruitment (Amendment) Regulation, 2025
    - Ladakh Autonomous Hill Development Councils (Amendment) Regulation, 2025
    - Union Territory of Ladakh Reservation (Amendment) Regulation, 2025.

Background

- Population – 2.74 lakhs
- 80 percent population is tribal
- Major Religious groups : Muslim (46%), Buddhists (40%), Hindus (12%)
- Seven Districts (Recently 5 new districts carved out)
- Granted Union Territory without legislature Status (UT) in 2019
- After initial euphoria over grant of UT status, civil society groups started demanding protection of land, resources and environment.
- Several leaders started demanding restoration of protection under Article 35A which had been revoked in 2019.
- This article let Jammu and Kashmir Vidhan Sabha Decide "permanent residents" of the state, only these people could purchase properties or be granted reservation in jobs.
- To SUMMARIZE, CSO's from Kargil and Leh put forward four demands in 2022 :
    - inclusion under the Sixth Schedule of the Constitution (giving tribal status and autonomy over land),
    - Statehood,
    - Separate Lok Sabha seats for Leh and Kargil districts,
    - Filling of existing government vacancies with dedicated public service commission for Ladakh
- 2023 – MHA constituted High Powered Committee
- Talks broke down but soon restarted in 2024.

Regulations

Ladakh Civil Services Decentralization and Recruitment (Amendment) Regulation 2025

- Domicile requirement for recruitment in government posts under UT of Ladakh.
- Who will be domicile ?
    - a person who has resided in Ladakh for 15 years
    - a person who has studied for 7 years and appeared in either Class 10 or 12 examination in Ladakh
    - Children of Central Government employees who have served in Ladakh for at least 10 years;
    - Children and spouses of domiciles

Ladakh Civil Services Domicile Certificate Rules, 2025

- These rules lay out the procedure and documentation required to obtain a domicile certificate.
- The tehsildar is designated as the issuing authority, while the Deputy Commissioner is the appellate authority.
- Applications can be submitted both physically and electronically.
- Total Reservation : SC+ST+OBC = 85%
- EWS : 10%
- Reservation also extended to professional institutions such as engineering and medical colleges in Ladakh.

Ladakh Official Languages Regulation 2025

- Recognizes English, Hindi, Urdu, Bhoti, Purgi as official languages

Ladakh Autonomous Hill Development Council (Amendment) Regulation 2025

- One third of seats for women in Ladakh Autonomous Hill Development Councils of Leh and Kargil.

Article 240

(Part VIII.—The Union Territories)

[1][240. **Power of President to make regulations for certain Union territories.**—(1) The President may make regulations for the peace, progress and good government of the Union territory of—

(*a*) the Andaman and Nicobar Islands;

[2][(*b*) Lakshadweep;]

[3][(*c*) Dadra and Nagar Haveli and Daman and Diu;]

[4][(*d*) **** ;]

[5][(*e*) [6][Puducherry];]

[7](f) * * *

[8](g) * * *

[9][Provided that when any body is created under article 239A to function as a Legislature for the Union territory of [6][Puducherry], the President shall not make any regulation for the peace, progress and good government of that Union territory with effect from the date appointed for the first meeting of the Legislature:]

[1][Provided further that whenever the body functioning as a Legislature for the Union territory of [2][Puducherry] is dissolved, or the functioning of that body as such Legislature remains suspended on account of any action taken under any such law as is referred to in clause (1) of article 239A, the President may, during the period of such dissolution or suspension, make regulations for the peace, progress and good government of that Union territory.]

(2) Any regulation so made may repeal or amend any Act made by Parliament or [3][any other law], which is for the time being applicable to the Union territory and, when promulgated by the President, shall have the same force and effect as an Act of Parliament which applies to that territory.]

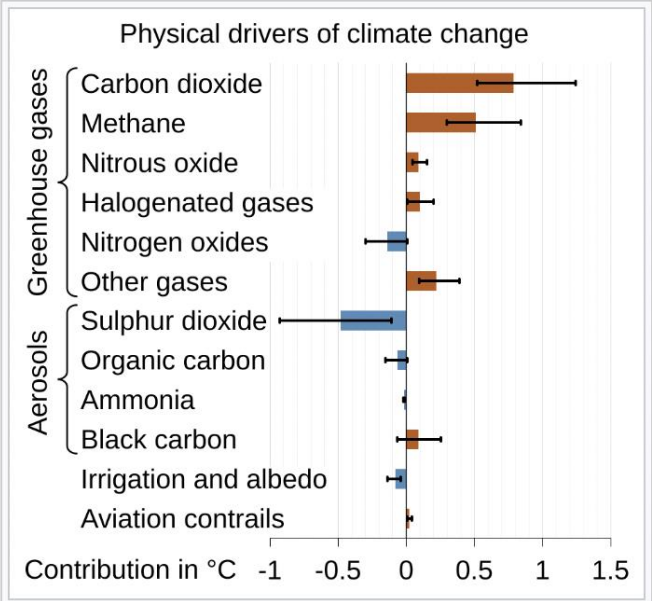
Concerns

- No statutory or constitutional backing
- No 6th schedule status
- No land related safeguards
- No strengthening of autonomous councils or local legislatures.

Environment

Sulphur Dioxide

- It is a toxic gas with a pungent, irritating smell.
- On earth, it exists in very small concentrations in the atmosphere at about 15 ppb.
- It is abundantly available in the atmosphere of Venus – 150 ppm.
- Acidic and reducing gas.
- It is released naturally by volcanic activity.
- Sulphur dioxide is primarily produced for sulfuric acid manufacture.
- It contributes to acid rain.
- Sulfur dioxide inhibits photosynthesis by disrupting the photosynthetic mechanism.
- It is also produced by burning coal in thermal power plants and diesel fuels.
- Some industrial processes, such as the production of paper and smelting of metals also produce it.
- It is estimated that the emission of sulfur dioxide by natural sources is 24 per cent, whereas anthropogenic sources contribute the rest 76 per cent.
- Inhaling sulphur dioxide is associated with increased respiratory symptoms and disease, difficulty in breathing, and premature death.
- It also weakens the functioning of certain nerves.



The extent to which physical factors in the atmosphere or on land affect climate change, including the cooling provided by sulfate aerosols and the dimming they cause. The large error bar shows that there are still substantial unresolved uncertainties.

Sulphate Aerosols

- Clouds formed around sulphate aerosols have more droplets, are brighter and more reflective of sunlight than normal clouds.
- Sulphur dioxide emissions from ships form sulphate aerosols which seed dense clouds that reflect sunlight and reduce planetary heating.

Flu Gas Desulfurization Technology

- Flue gas is emitted as a byproduct of combustion of fossil fuels.
- It mainly contains pollutants such as carbon dioxide (CO2), sulphur dioxide (SO2), nitrogen oxides, particulate matter, etc.
- Flue gas desulfurization (FGD) is a set of technologies used to remove sulfur dioxide (SO2) from exhaust flue gases of fossil fuel power plants, as well as from the emissions of other sulfur oxide emitting processes.
- For a typical coal-fired power station, flue-gas desulfurization (FGD) may remove 90 percent or more of the SO2 in the flue gases.
- Flue gas desulfurization systems have been shown to be effective in lowering emission levels in China, the nation that was responsible for the highest level in 2005.
- If India were to implement these systems, the high levels of damaging SO2 pollution that is currently present in India could be avoided much sooner.

Types

- SO2 is an acidic gas, and is usually treated with a basic compound in the FGD unit to neutralise the pollutant.
- There are three common types of FGD systems around the world –
- Dry sorbent injection
    - The dry sorbent injection method involves adding a powdered sorbent like limestone to the flue gas, where it reacts with SO2.
    - The resultant compound can be removed by using an electrostatic precipitator, or a fabric filter.
- Wet limestone treatment
    - The wet limestone treatment method also uses limestone to remove SO2, but instead of using it in a powdered form, it uses a limestone slurry.
    - Passing SO2 through this slurry results in the formation of gypsum, which is a stable compound and has wide applications in industries like construction.
    - This is the commonly used technology, and has very high efficiency.
- Sea water to remove SO2
    - Sea water treatment is used in plants located near coastal areas.
    - Sea water first absorbs SO2 from flue gas, and then the water is treated to make it suitable to be discharged back into the sea.

Issues

- As of April 2025, compliance had been pushed to 2027, 2028, and 2029, respectively, depending on the category of the thermal power plant.
- It takes around two years to install an FGD unit.
- Installing FGD units is a costly affair.
- According to the Central Electricity Authority, FGD costs approximately ₹1.2 crore per MW to install.
- As of April 2025, India's installed coal capacity stood at 2,19,338 MW, which is more than 46% of the country's total electricity installed capacity.
- FGDs can add up to ₹0.72 per kWh to electricity tariffs — a cost that reflects the price of cleaner air.
- Importantly, over 80% of this increase in tariffs is due to the FGD technology's fixed costs, and variable cost increase is in all cases less than ₹0.1 per kWh.
- Principal Scientific Advisor (PSA) Ajay Sood, has recommended that India do away with a decade-long policy of mandating Flue Gas Desulphurisation (FGD) units in all coal-fired thermal power plants (TPPs).

Nitrogen Fixation

What is Nitrogen Fixation

- Conversion/Reduction of Nitrogen to Ammonia/reactive, biologically available forms of nitrogen.
- Diazotrophy
- There is an inexhaustible supply of nitrogen in the atmosphere but the elemental form cannot be used directly by most of the living organisms.
- Nitrogen needs to be 'fixed', that is, converted to ammonia, nitrites or nitrates, before it can be taken up by plants.
- Nitrogen is an essential part of the biological molecules such as proteins and nucleic acid, which makes nitrogen essential for all living organisms.
- Nitrogen fixation on earth is accomplished in three different ways:
    - By microorganisms (bacteria and blue-green algae),
    - By man using industrial processes (fertilizer factories/Haber-Bosch process) and
    - To a limited extent by atmospheric phenomenon such as thunder and lighting.

Nitrogenase

- Certain microorganisms are capable of fixing atmospheric nitrogen into ammonia (NH3) and ammonium ions (NH4+).
- The enzyme, nitrogenase which is capable of nitrogen reduction is present exclusively in prokaryotes.
- Such microbes are called N2-fixers.
- Nitrogenases are enzymes that are produced by certain bacteria, such as cyanobacteria (Only prokaryotes)

- Also known as diazotrophs.
- These enzymes are responsible for the reduction of nitrogen to ammonia.
- Nitrogenases are the only family of enzymes known to catalyze this reaction, which is a key step in the process of nitrogen fixation.

Nitrogen Fixers

- **Free-living nitrogen fixing bacteria (**non-symbiotic nitrogen-fixing bacteria or nitrogen-fixing soil bacteria) (e.g. aerobic Azotobacter and Beijemickia; anaerobic Clostridium and Rhodospirillum).
- Symbiotic nitrogen-fixing bacteria living in association with leguminous plants (e.g., Rhizobium) and non-leguminous root nodule plants.
- Plants that contribute to nitrogen fixation include the legume family – Fabaceae/ Leguminosae – with taxa such as clover, soybeans, alfalfa, lupins, peanuts, chickpeas, etc.
- Leguminous plants of the pea family typically have seeds in pods, distinctive flowers, and root nodules containing nitrogen-fixing bacteria. (e.g., Rhizobium)



- The ability to fix nitrogen in nodules is present in actinorhizal plants such as alder and bayberry, with the help of Frankia bacteria. (non leguminous plants)
- Species of Azospirillum are able to form close associations with several members of the Poaceae (grasses), including agronomically important cereal crops, such as rice, wheat, corn, oats, and barley.
- Some cyanobacteria/blue-green algae (primary source of nitrogen fixation in oceans E.g., Nostoc, Anabaena, Spirulina etc.).
    - Anabaena is a genus of filamentous cyanobacteria that exist as plankton.
    - They are known for nitrogen-fixing abilities, and they form symbiotic relationships with certain plants, such as the mosquito fern(Azolla).
    - Certain species of Anabaena have been used on rice paddy fields, proving to be an effective natural fertiliser.

Host Plant	N-fixing Symbionts
Leguminous plants (e.g., legumes, *Parasponia*)	*Azorhizobium*, *Bradyrhizobium*, *Mesorhizobium*, *Rhizobium*, *Sinorhizobium*
Actinorhizal plants (e.g., *Alder*, *Ceanothus*, *Casuarina*, *Datisca*)	*Frankia*
Gunnera	*Nostoc*
Azolla (water fern)	*Anabaena*
Sugarcane	*Acetobacter*
Miscanthus	*Azospirillum*

- An international team of scientists describe the first known nitrogen-fixing organelle within a eukaryotic cell.
- The organelle is an example of primary endosymbiosis — the process by which a prokaryotic cell is engulfed by a eukaryotic cell and evolves beyond symbiosis into an organelle.
- The newest discovery is the first example of a nitrogen-fixing organelle, which the researchers are calling a nitroplast.

Misc.

- Biochar has the potential to boost the natural ability of legumes to fix nitrogen to the soil.

UREA

- Urea is a chemical nitrogen fertilizer, white in colour, which artificially provides nitrogen, a major nutrient required by plants.
- Liquid Nano Urea - It is urea in the form of a nanoparticle. It is a nutrient (liquid) to provide nitrogen to plants as an alternative to the conventional urea.
- Neem Coated Urea - Urea that is coated with neem tree seed oil is called neem-coated urea. It reduces the leaching and volatilization losses of nitrogen, has insecticidal and nematicidal properties, and improves the soil texture and water holding capacity.
- Urea Gold – It is created by infusing urea with sulfur, creating a composite fertilizer with 37% nitrogen (N) and 17% sulfur (S).

Geography

Land and Sea Breezes

- The **land and sea absorb and transfer heat differently.**
- **During the day** the **land heats up faster** and becomes **warmer than the sea.** Therefore, over the land the air rises giving rise to a **low-pressure area**, whereas the **sea is relatively cool** and the **pressure over sea is relatively high**.
- Thus, pressure gradient from **sea to land is created** and the wind blows from the sea to the land as the **sea breeze.**
- **In the night** the **reversal of condition takes place.**
- The land loses heat faster and is cooler than the sea. The **pressure gradient is from the land to the sea** and hence **land breeze** .

Mountain and Valley Winds

- In mountainous regions, **during the day the slopes get heated up and air moves upslope** and to fill the resulting gap the air from the valley blows up the valley. This **wind is known as the valley breeze.**
- During the **night the slopes get cooled and the dense air descends into the valley** as the **mountain wind**. **The cool air,** of the high plateaus and ice fields **draining into the valley is called katabatic wind.**

UPSC CDS PYQ

Q. Consider the following statements regarding transportation functions associated with important ports:

1. Singapore functions both as a **port of call and an entrepot**.
2. Karwar in India is an example of a **naval port**.
3. Dover in England is an example of **an outport.**

Which of the statements given above is/are correct?

A. 1 only

B. 3 only

C. 1 and 3

D. 1 and 2

Answer: D

Q. Singapore is known as Port of Call because

A. it deals in the processing and shipping of oil

B. it is a deep water port built away from the actual port

C. it is on main sea route where ships use to anchor for refueling, watering and taking food items

D. it serves the parent ports by receiving the ships which are unable to approach due to their large size

Answer: C

Types of Port

- Types of port according to **cargo handled**
- Types of port on the **basis of location**
- Types of port on the **basis of specialized functions**

Types of port on the basis of specialised functions:

Type of Port	Description
Oil Ports	**These ports deal in the processing and shipping of oil**. Some of these are tanker ports and **some are refinery ports**. **Maracaibo in Venezuela**, Esskhira in Tunisia, Tripoli in Lebanon are tanker ports. Abadan on the Gulf of Persia is a refinery port.
Ports of Call	These are the ports which originally developed as calling points on **main sea routes where ships used to anchor for refuelling, watering and taking food items**. Later on, they **developed into commercial ports.** Aden, Honolulu and **Singapore are good examples**.
Packet Station	These are also known as **ferry ports.** These **packet stations are exclusively concerned with the transportation of passengers and mail across water bodies covering short distances**. These stations occur in pairs located in such a way that they face each other across the water body, e.g. **Dover in England** and Calais in France across the English Channel.
Entrepot Ports	These are collection centres where the goods are brought from different countries for export. Singapore is an entrepot for Asia. Rotterdam for Europe, and Copenhagen for the Baltic region.
Naval Ports	These are ports which have only strategic importance. These ports serve warships and have repair workshops for them. Kochi and Karwar are examples of such ports in India.

Types of port according to cargo handled:

Type of Port	Description
Industrial Ports	These ports **specialise in bulk cargo** like grain, sugar, ore, oil, chemicals, and similar materials.
Commercial Ports	These ports **handle general cargo – packaged products and manufactured goods.** These ports also **handle passenger traffic.**
Comprehensive Ports	Such ports handle **both bulk and general cargo in large volumes**. **Most of the world's great ports are classified as comprehensive ports.**

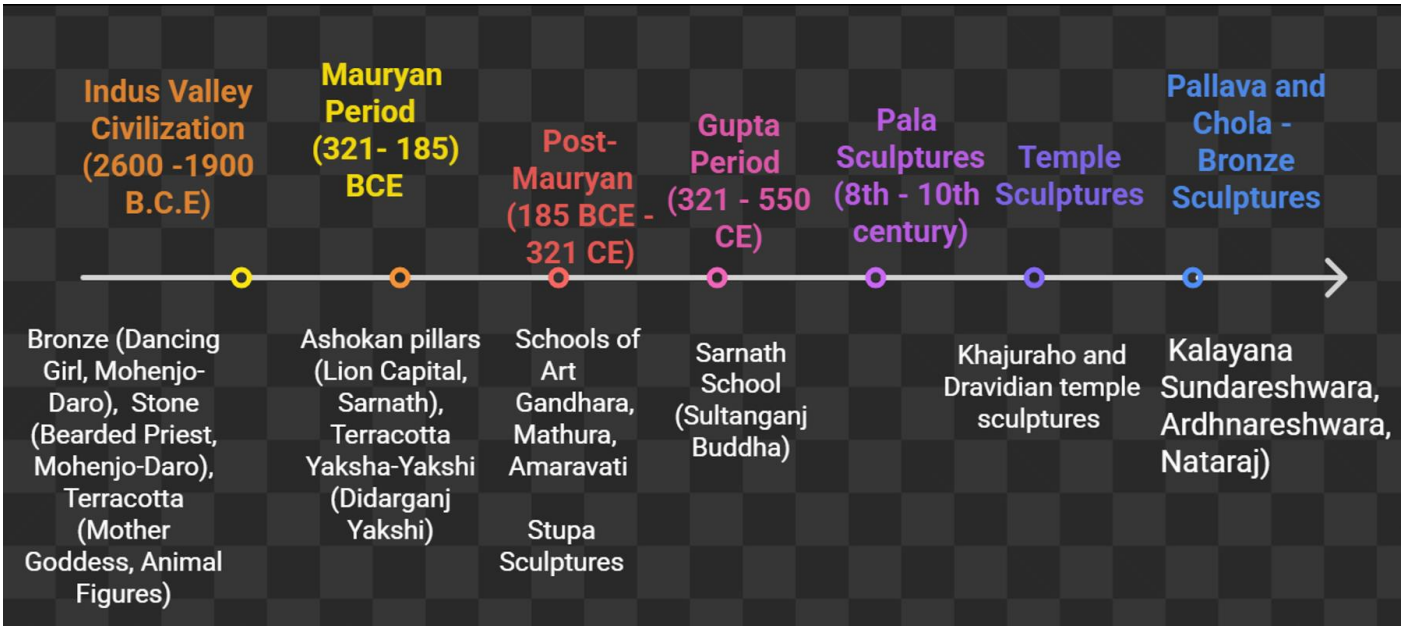
Types of port on the basis of location:

Type of Port	Description
Inland Ports	These ports are **located away from the sea coast**. They **are linked to the sea through a river or a canal.** Such ports are accessible to flat bottom ships or barges. For example, Manchester is linked with a canal; Memphis is located on the river Mississippi; Rhine has several ports like Mannheim and Duisburg; and **Kolkata is located on the river Hoogli, a branch of the river Ganga.**
Out Ports	These are **deep water ports built away from the actual ports**. These serve the **parent ports by receiving those ships which are unable to approach them due to their large size**. Classic combination, for example, is Athens and its out port Piraeus in Greece.

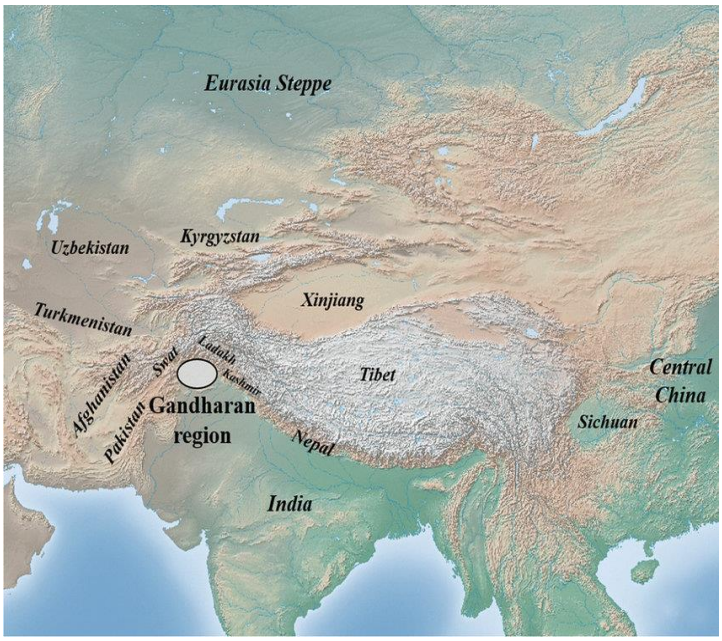
History

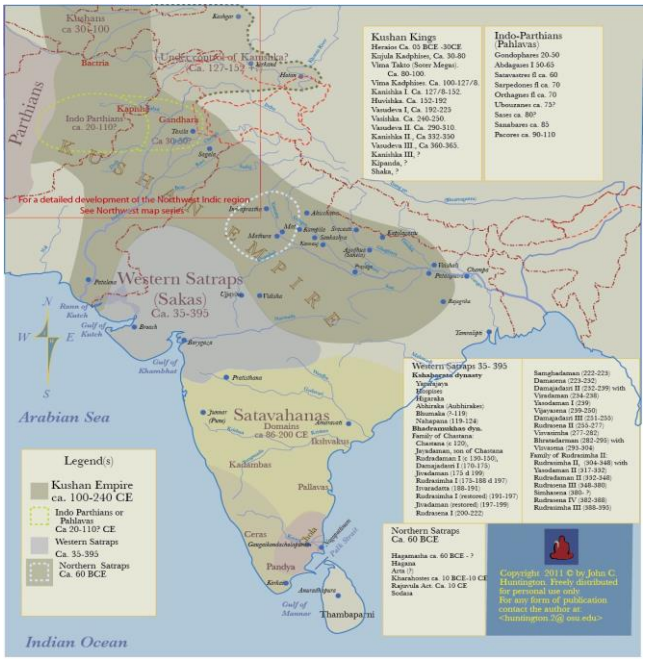
Gandhara School of Sculptural Art

Development Sculpture Art in Ancient and Early Medieval India



Gandhara School of Art





UPSC CSE MAINS PYQs

Q. Highlight the **Central Asian and Greco-Bactrian elements** in **Gandhara art. (UPSC Mains,** 2019)

Q. Gandhara's sculpture owed as much to the **Ro mans as to the Greeks.** Explain. **(UPSC Mains,** 2014)

Gandhara School of Art



- The Gandhara School of Art developed in the **western frontiers of Punjab,** near modern-day Peshawar and Afghanistan, under the **patronage of the Kushanas, particularly Kanishka.**
- A unique synthesis of Indian, Greek, and Roman artistic traditions **– Hellenistic Art (Greek-inspired, but adapted to local cultures).**
- Religious Influence: Mainly *Buddhist imagery*, influenced by the *Greco-Roman pantheon*.
- *Material Used :* Early Gandhara School used ***blue-grey sandstone,*** while the later period saw the use of ***mud and stucco***

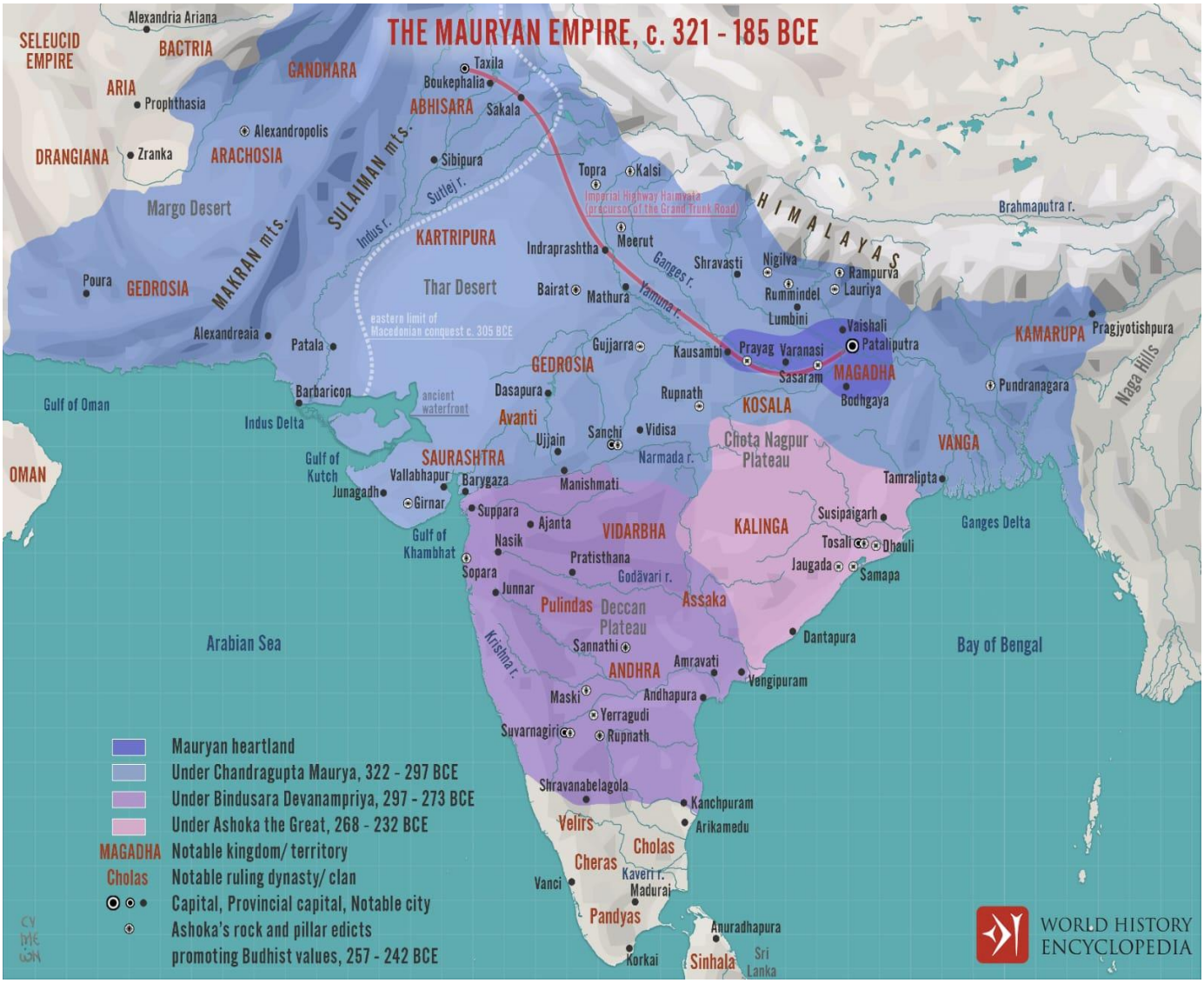
Features of Buddha Sculpture:

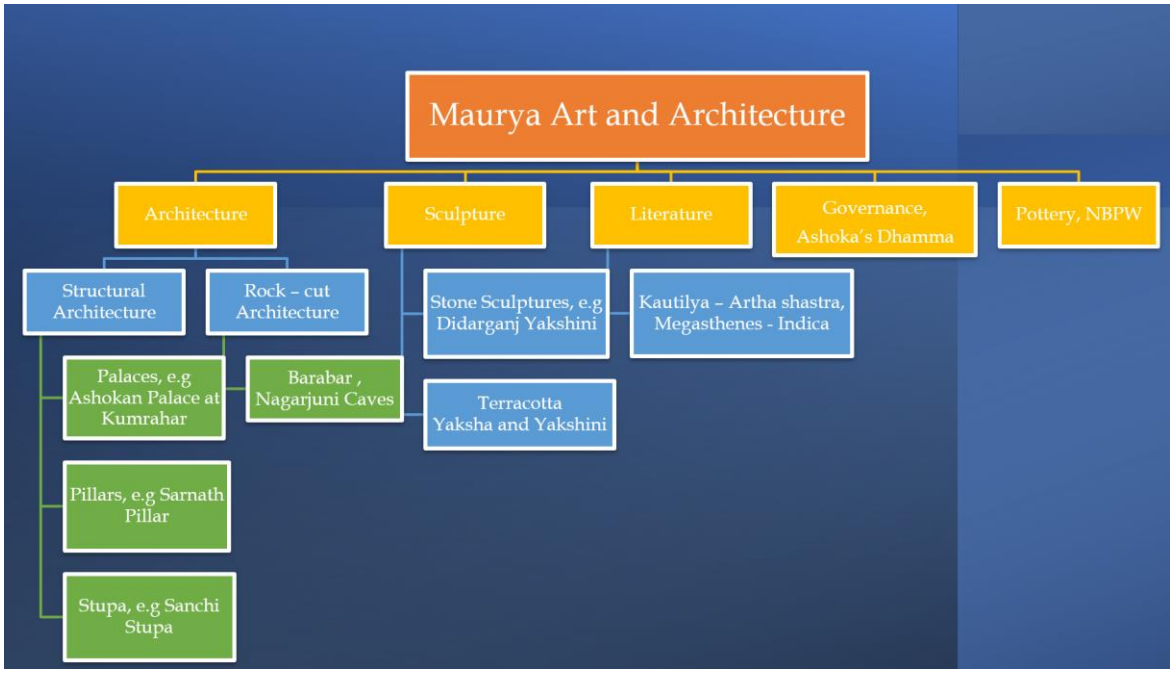
- The Buddha is shown in **a *spiritual state***, the eyes are *half-closed* in meditation.
- **Expression:** Calm, spiritual, and introspective.
- **Facial Features:** Sharp features, **deep-set eyes**, **aquiline nose**, and **prominent moustache** (in Bodhisattvas).
- **Hair Style: Wavy hair** arranged in small curls, often tied in a topknot (*ushnisha*), similar to Apollo.



- **Symbolism: Third eye, a *protuberance* is on the head, large ears –** Supernatural traits.
- **Presence of halo** behind the head, signifying **divinity.**
- **Drapery:** Buddha is shown wearing a **Roman-style toga**, with **finely carved folds** of the robe.
- **Posture:** Usually seated in **dhyanasana (meditative pose) or standing upright**; hands in **abhaya** or **dharmachakra mudra**.
- **Ornamentation:** Bodhisattvas are **richly adorned with jewelry, turbans, and earrings.**

Maurya Art & Architecture

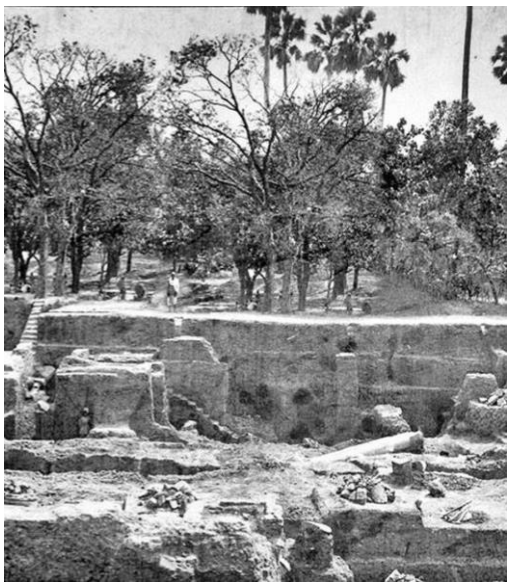




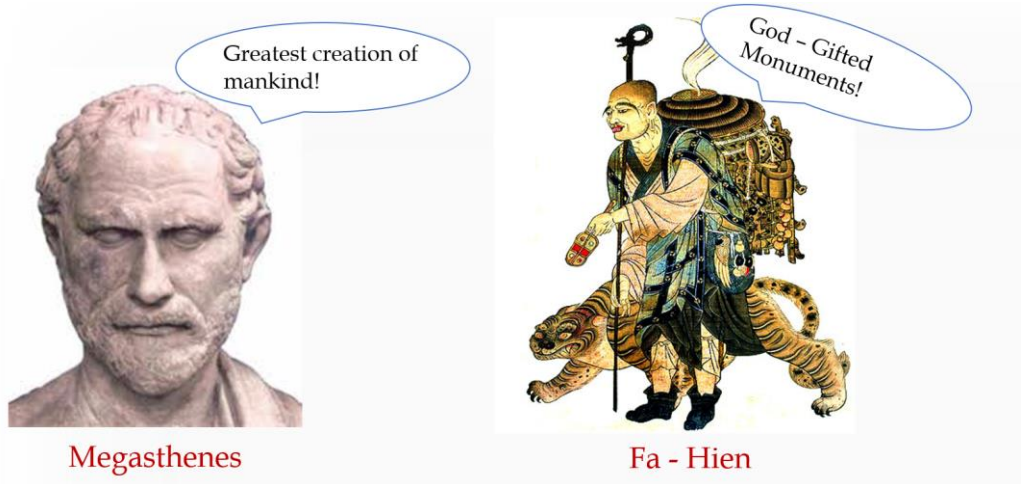
Architecture – Palaces

- The capital at **Pataliputra**, along with the archaeological sites at **Kumrahar** and **Bulandibagh**, was excavated, reflecting the splendour of the Mauryan Empire.
- The excavations at capital **Pataliputra** shows **Greek influence** in Indian art.
- **Chandragupta Maurya's** palace was inspired by **Achaemenid** palaces at Persepolis in Iran.
- **Wood** was the principal building material used in Mauryan architecture.
- **Ashoka's palace at Kumrahar was a massive three-story wooden structure,** with **wooden floors and ceilings** and **pillars made of Chunar sandstone,** decorated with **rich carvings and sculptures.**
- **Ruins of an 80 pillared hall** have been excavated at Kumrahar site of Pataliputra - first excavated by archaeologist D. B. Spooner in 1912–1915.

Remains of Ashokan Palace at Kumrahar, Bihar



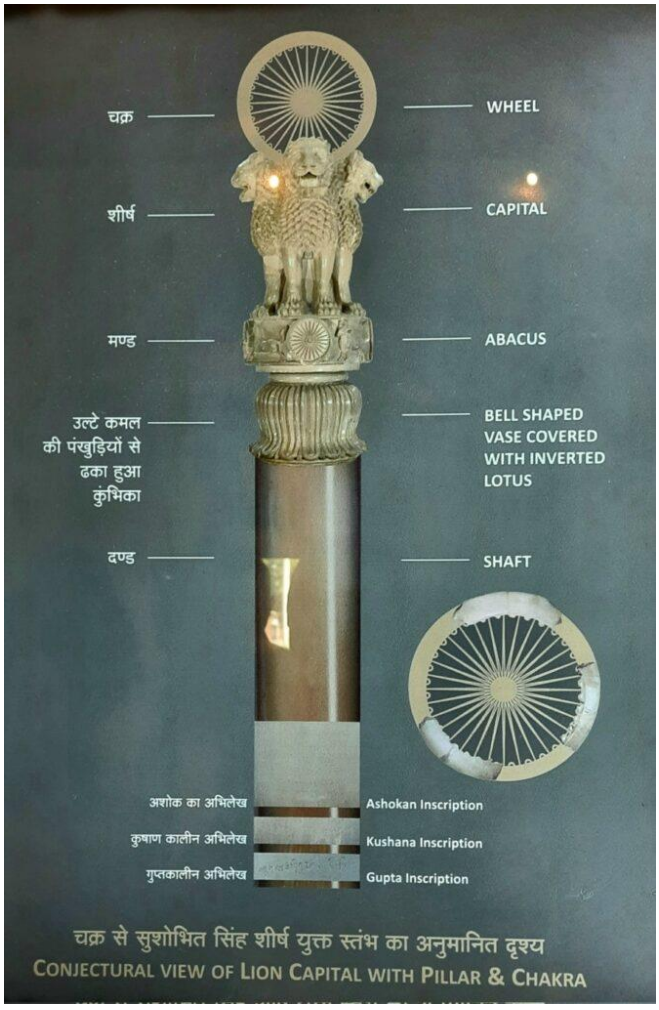
Mauryan Palaces

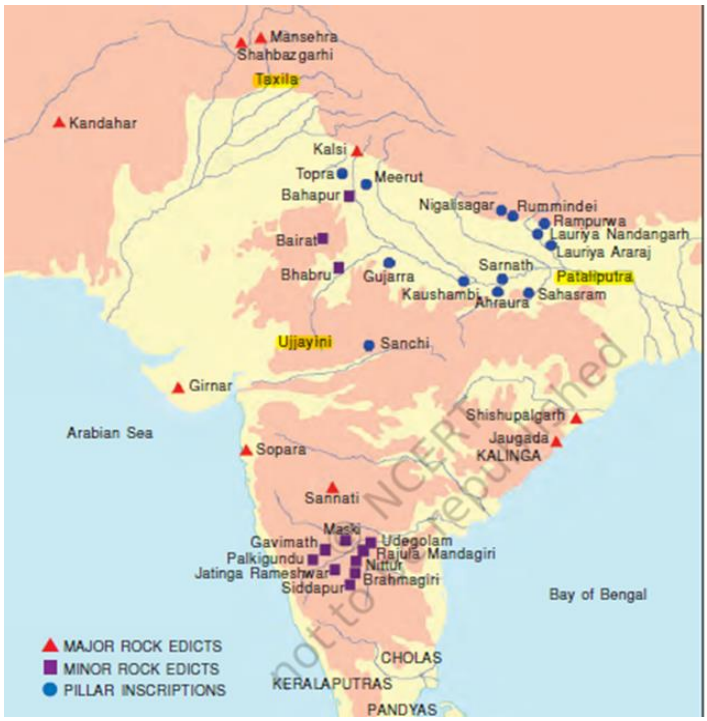


Architecture - Pillars

Pillars –

- **Symbol of state** or
- to **commemorate battle victories** or
- to propagate **imperial sermons.**
- **Material and Construction –** On an average of **40 Ft Height,** made up of polished **Chunar Sandstone**, weighing around **50 tons.**
- Comprises of **Shaft and Capital.**
- A long Shaft formed the base and was monolithic.
- Capital – Persepolitan bell, abacus and capital figure
- **Achaemenid influence – Persepolitan bell, polishing and lustrous finishing.**
- Examples: **Lauriya Nandgarh Pillar**, Bihar, **Sarnath Pillar** near Varanasi, Uttar Pradesh.







Mauryan Pillars vs Achaemenid Pillars

Aspect	Mauryan Pillar	Persian Pillar
Architectural Scheme:	Ashokan pillars were simple **and independent freestanding monuments.**	Achaemenid pillars were **generally part of some larger architectural scheme**, and bit complex and complicated
Shaft	Mauryan shafts are **Monolithic.**	Persian/Achaemenian shafts were **built of separate segments of stones (aggregated one above the other).**
Pillar Surface	Mauryan pillars have a **smooth surface.**	Persian pillars have a **fluted/ ridged surface**

Nigali Sagar Pillar Inscription:

- **Nigali Sagar Pillar Inscription** is an important **Ashokan edict** located near the **Nigali Sagar pond in Kapilvastu district**, Nepal.
- It records that **Ashoka visited the stupa of Kanakamuni Buddha** (a Buddha of the past, according to Buddhist tradition).
- Ashoka **enlarged the stupa** and **erected a stone pillar** to mark the occasion.
- The edict begins with the phrase: "*Devanampiya Piyadasi came here twenty years after his coronation…*

Theme	Significance
Religious	Reflects Ashoka's **devotion to Buddhism** and reverence for earlier Buddhas.
Cultural	Highlights **continuity in Buddhist tradition**, acknowledging pre-Sakyamuni Buddhas like Kanakamuni.
Political	Demonstrates Ashoka's strategy of using religious patronage to **legitimize his rule** across diverse regions.
Geographical	Extends the territorial reach of Ashokan influence into the **Nepalese Tarai**, beyond modern India.

Rummindei (Lumbini) Inscription:

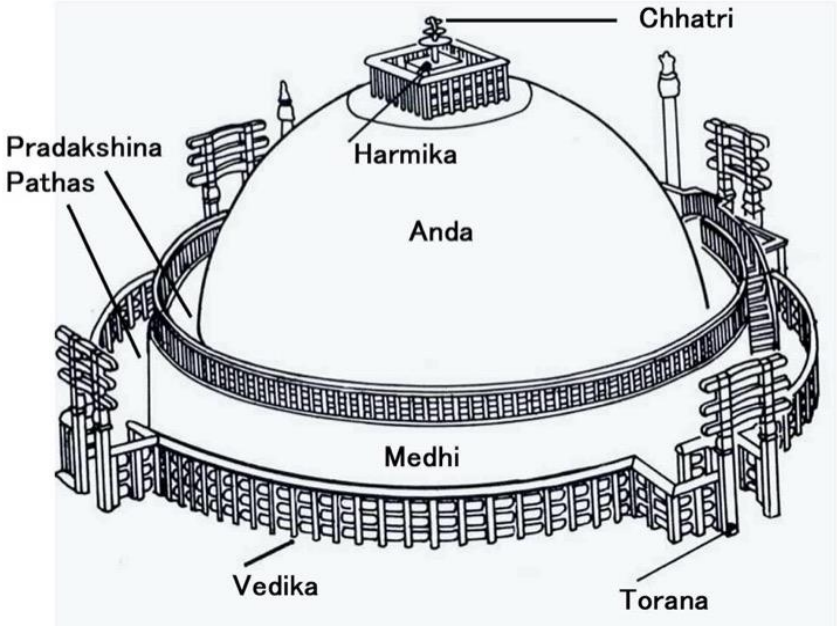
- **Lumbini, Rupandehi District, Nepal**
- The **Rummindei Inscription** (also spelled *Rumeindei*, now widely known as the **Lumbini Pillar Inscription**) is one of the **most historically significant Ashokan edicts**, as it **confirms the birthplace of Gautama Buddha**.
- The inscription states that:
    - "**Devanampiya Piyadasi** (Beloved of the Gods, Ashoka), having been anointed twenty years, came himself and worshipped at this spot because here the **Buddha Sakyamuni was born**. He **caused a stone pillar to be set up** and **reduced the tax of the Lumbini village to one-eighth part (from full)** in honor of the Buddha's birth."

Theme	Significance
Religious	Confirms **Lumbini as the birthplace of Buddha**, central to Buddhist pilgrimage.
Political	Ashoka used such inscriptions to **promote Buddhism and moral governance** across his empire.
Economic	Tax remission shows how rulers linked economic policy with **religious reverence**.
Archaeological	A critical piece of **evidence corroborating Buddhist texts** with historical proof.
Cultural Diplomacy	Enhances the shared Buddhist heritage between **India and Nepal**.

Architecture - Stupas



- *The locations of the 9 stupas built after the death of Buddha are Rajagriha,Vaishali, Kapilavastu, Allakappa, Ramagrama,Vethapida, Pava, Kushinagar and Pippalivana.*



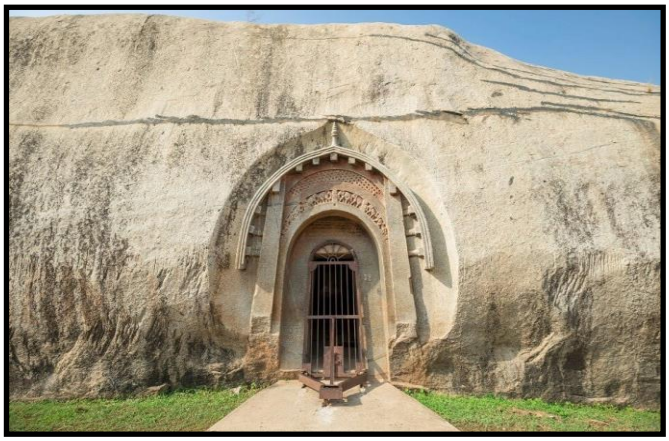
Stupa Architecture

Anda	The **hemispherical mound** is called anda. It symbolises the **mound of sand used to cover Buddha's remains.**
Harmika	It was **a flat structure placed on top of the mound.**
Yashti	Yashti was **a wooden rod fixed to the middle of the harmika.**

Chhatra	On top of the yashti, **three little umbrella-like discs** were set on top of this pole, **symbolising respect, veneration, and magnanimity**.
Torana	These were **entrances of the stupa usually made of stone.**
Vedika	It is **a low wall inside which the entire structure is enclosed.**
Pradakshina Patha	It is **a circumambulatory path surrounding the stupa.**
Medhi	The circular terrace is surrounded by **3 bar railing that supports the anda**

Rock – Cut Architecture

- Emergence of rock – cut architecture.
- Caves were generally used as viharas.
- A **highly polished finish** of the interior walls and **decorative gateways**.
- Examples : **Barabar and Nagarjuni Caves, Bihar**



Mauryan Rock – Cut Architecture

Barabar Caves	Nagarjuni Caves
4 caves	3 caves
Patronized by Ashoka	Dasaratha
Lomas Rishi (elephant figure on doorway and no Ashokan inscriptions) Sudama, Karan Choper, Visvakarma cave.	Gopi ka kubha, Vapya ka kubha/Vahiyaka/Vapuiyaka Kubha Vadathi ka kubha.

Mauryan Sculpture

- Fly Whisk bearing Yakshini, Didarganj
- Polished surface, full round face, well – proportioned body, Physiognomic details.







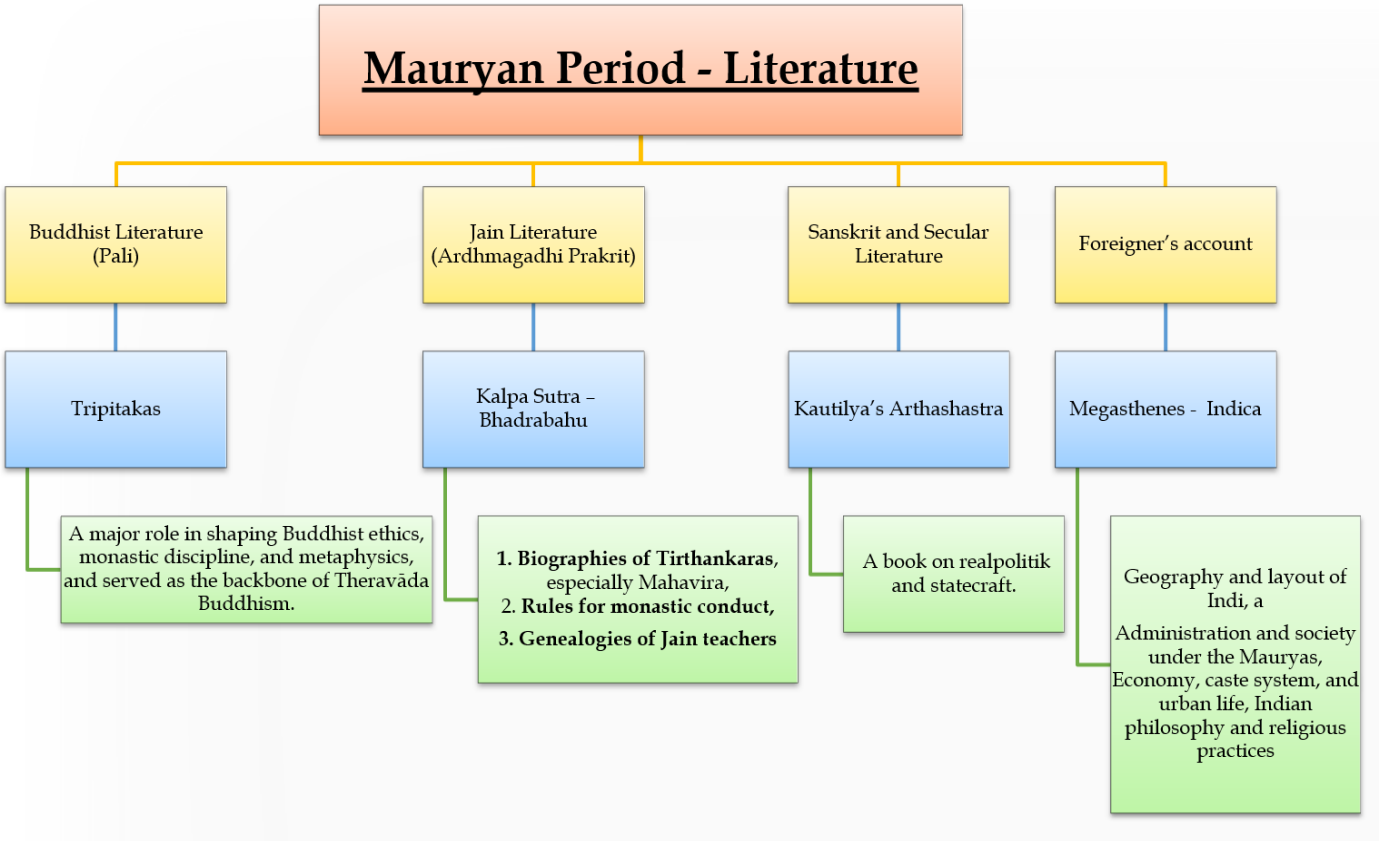
Sarnath Capital
U.P.

Rampurwa Bull
Bihar

Mauryan Pottery

- Pottery of the Mauryan period is generally referred to as **Northern Black Polished Ware** (NBPW).
- Mauryan pottery was characterized by **black paint** and **highly lustrous finish** and was generally used as luxury items.
- Mainly consists of the **standard dining set and tableware** and excludes large or heavy forms.
- **Kosambi and Patliputra** were the centers of NBPW pottery.





Practice Question:

Q. Consider the following pairs : (2022)

Site of Ashoka's major rock edicts	**Location in the state of**
1. Dhauli	Odisha
2. Erragudi	AndhraPradesh
3. Jaugada	MadhyaPradesh
4. Kalsi	Karnataka

How many pairs given above are correctly matched ?

A. Only one pair

B. Only two pairs

C. Only three pairs

D. All four pairs

Q. With reference to ancient India, consider the following statements: (2023)

1. The concept of Stupa is Buddhist in origin.
2. Stupa was generally a repository of relics.
3. Stupa was a votive and commemorative structure in Buddhist tradition.

How many of the statements given above are correct?

A. Only one

B. Only two

C. All three

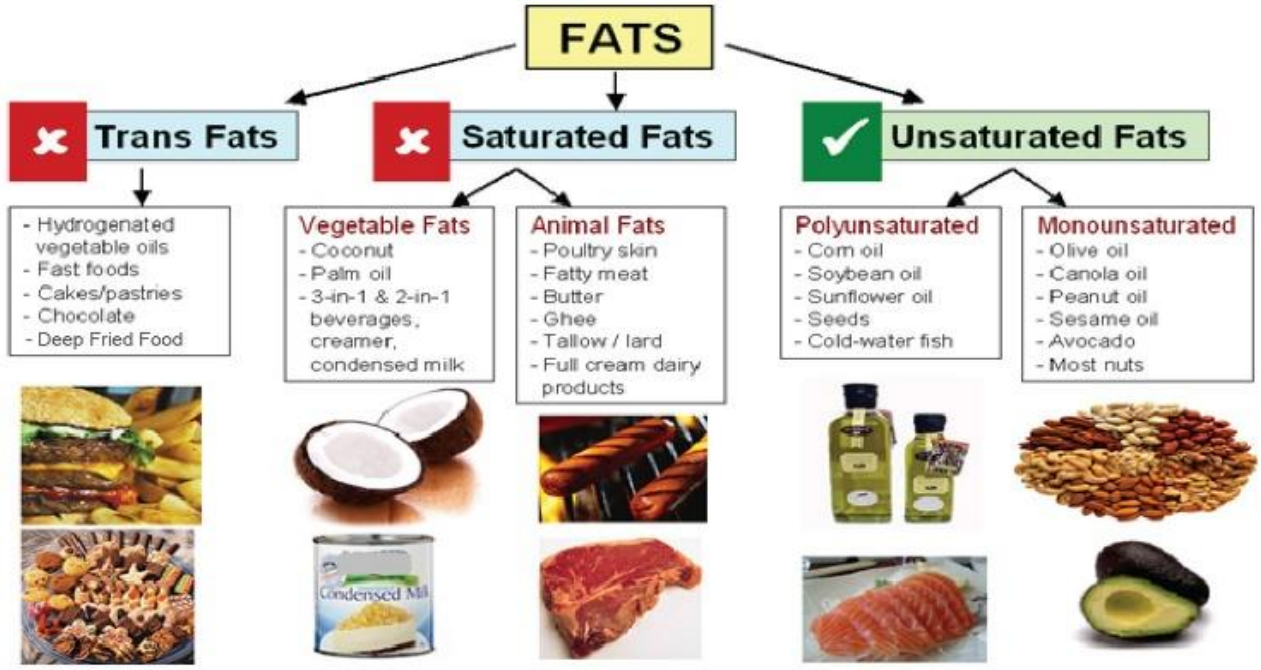
D. None

Science & Technology

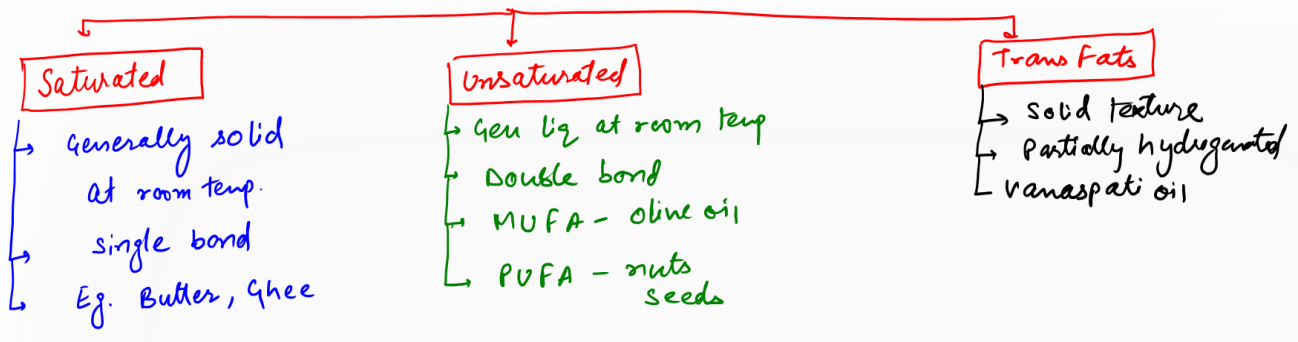
Trans Fats

What are Fats

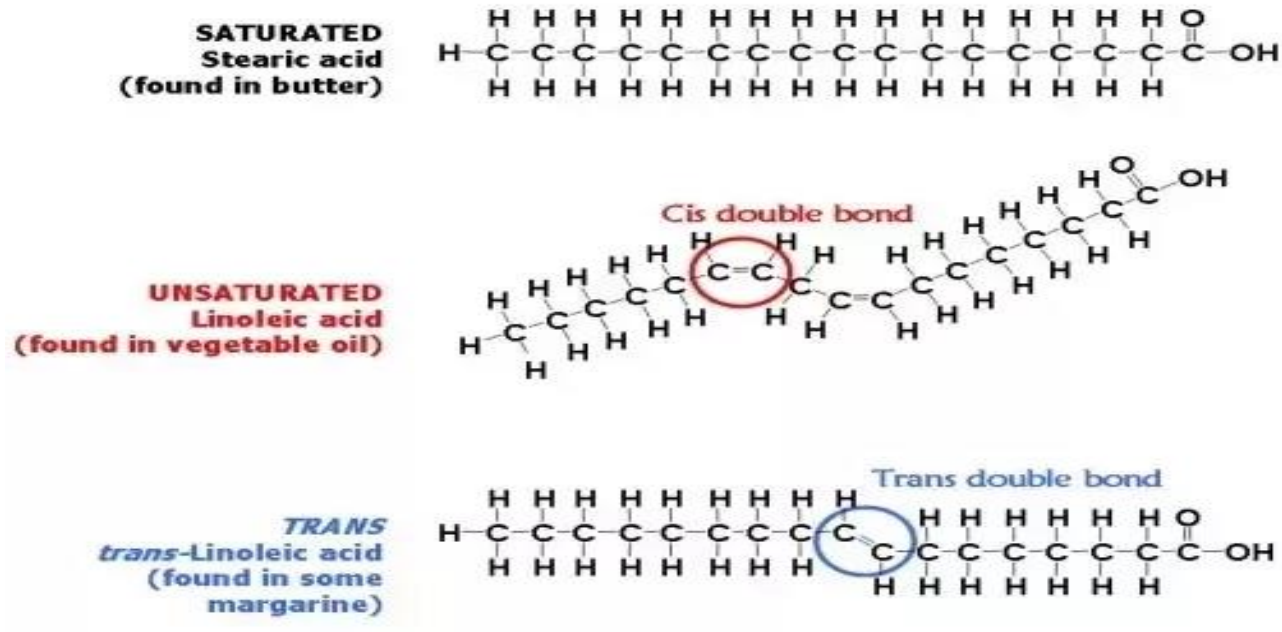
- Fat is also known as fatty acid and it is made up of three important elements : **carbon, hydrogen, oxygen** but the amount of carbon is in maximum quantity.



Types



Why Industries used Trans Fats



Background- Trans Fats

Ancient times → Natural oil for cooking.

19th century → French Chemist discovered fats are made of fatty acid & glycerol

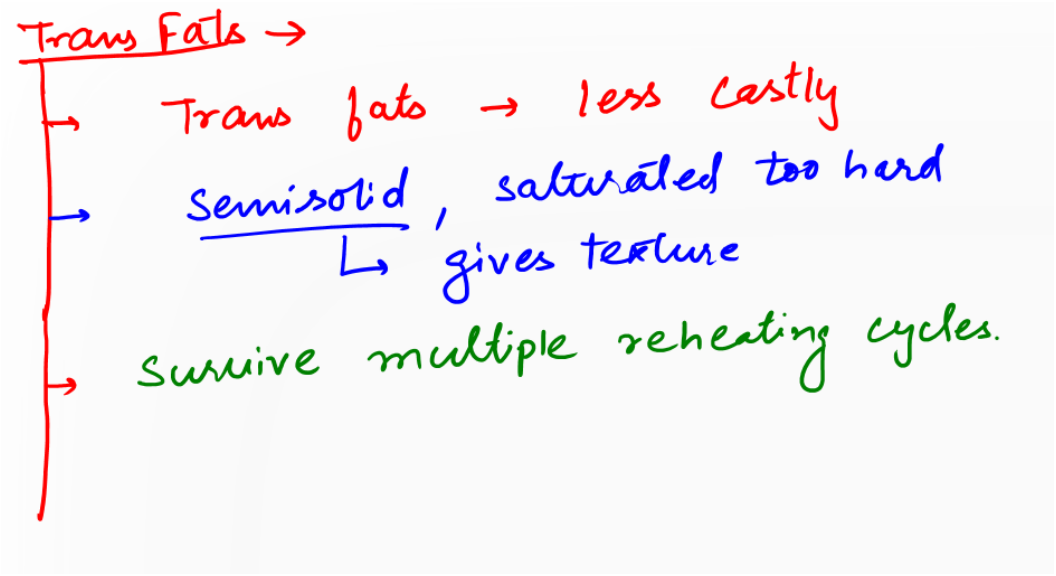
⇓

Birth of organic fat chemistry

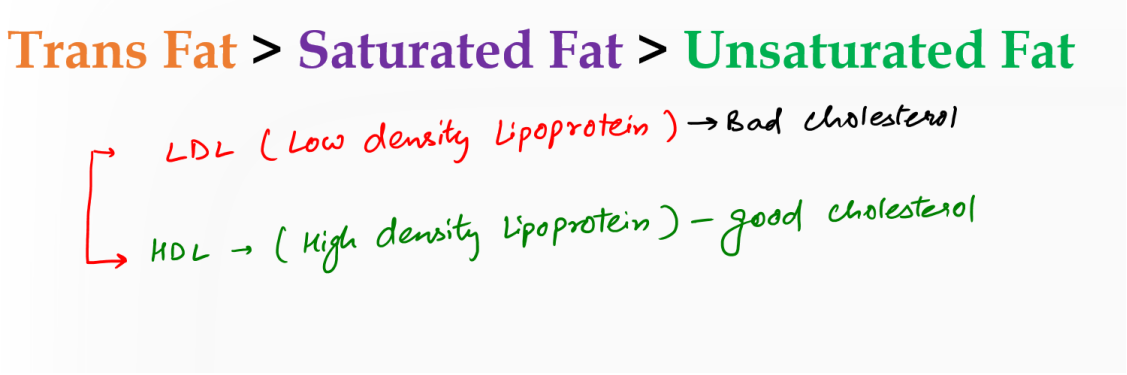
Early 20th century – [Industrial fat Revolution]

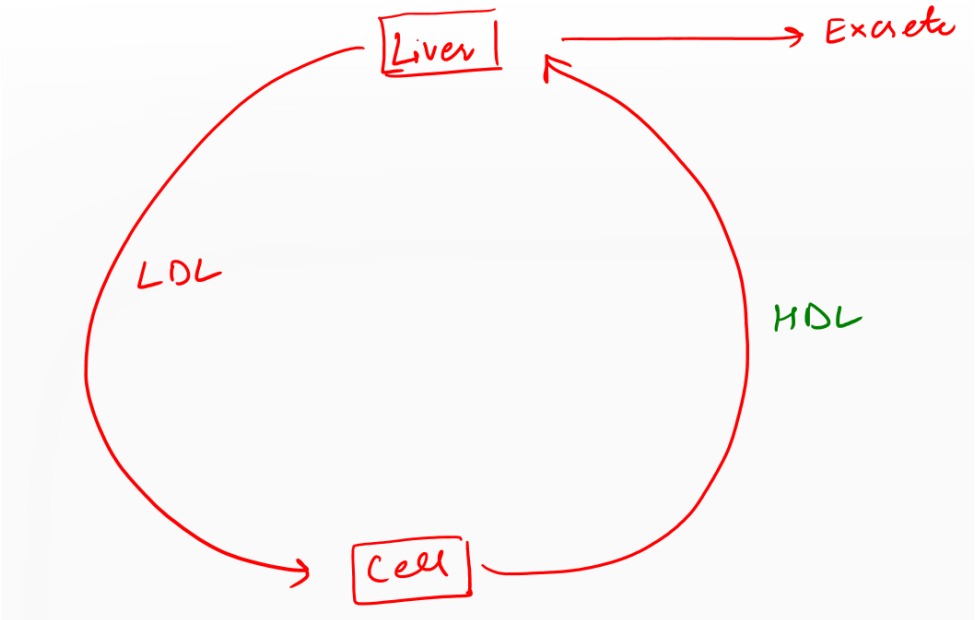
- German chemist developed Hydrogenation process
  - Liq veg oil + H_2 ⟶ Solid / Semisolid fat
- Partially hydrogenated oil formation
  - Marked as cleaner & more modern
  - Cheaper than butter.

Saturated Vs Trans Fats

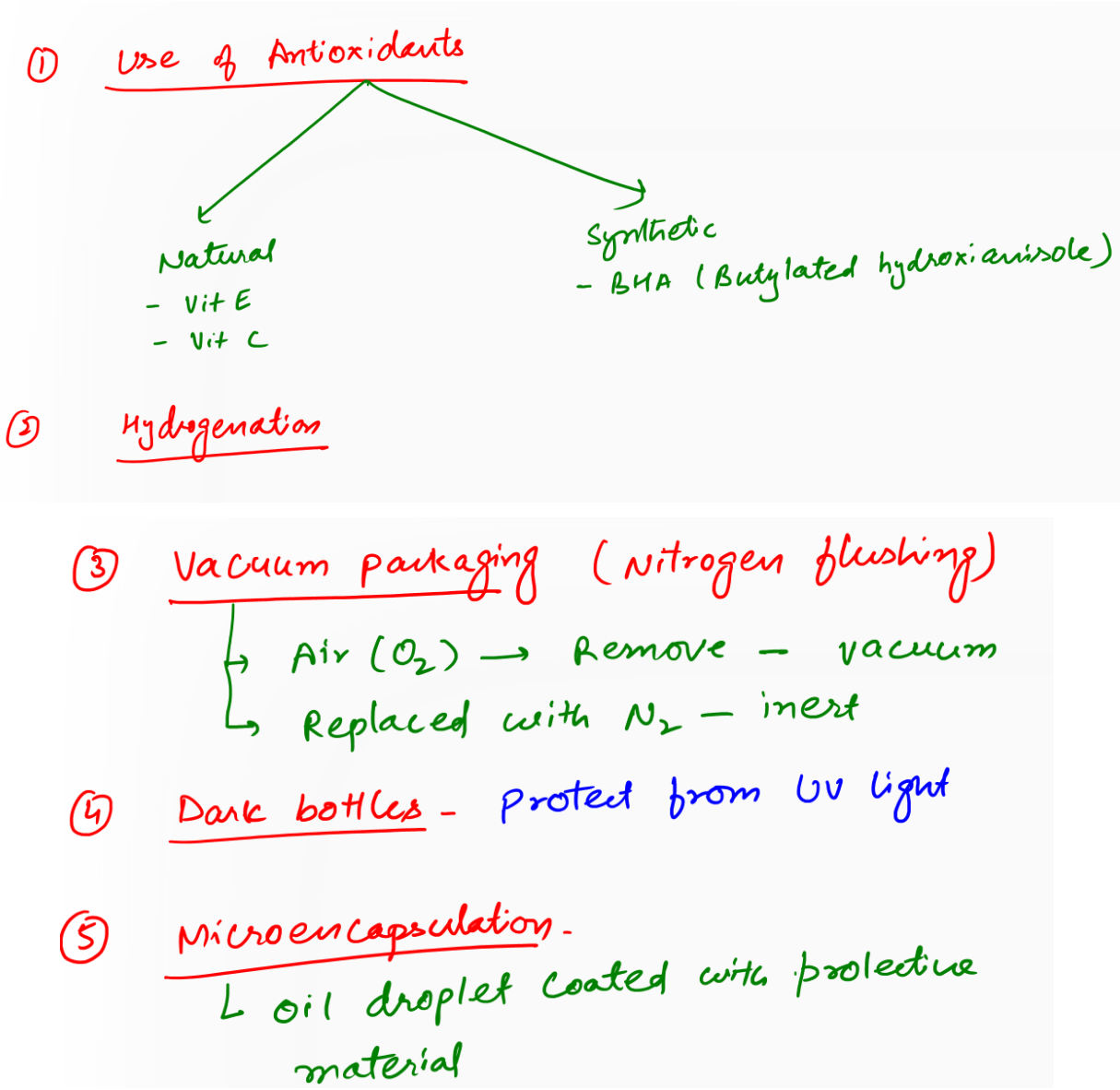


Why Trans Fat is more dangerous





What industries do to prevent Rancidity



Efforts

WHO criteria

- Best-practices in trans fat elimination policies **follow specific criteria established by WHO** and limit industrially produced trans fat in all settings. There are two best-practice policy alternatives:
    - Mandatory **national limit of 2 grams of industrially produced trans fat per 100 grams of total fat** in all foods; and
    - Mandatory national **ban on the production or use of partially hydrogenated oils** (a major source of trans fat) as an ingredient in all foods.
- **Target**
    - WHO target to fully eliminate iTFA by 2023 not met, now set target to eliminate by 2025

Replace Initiative- WHO

- **RE**view dietary sources of industrially-produced trans fat and the landscape for required policy change.
- **P**romote the replacement of industrially-produced trans fat with healthier fats and oils.
- **L**egislate or enact regulatory actions to eliminate industrially-produced trans fat.
- **A**ssess and monitor trans fat content in the food supply and changes in trans fat consumption in the population.
- **C**reate awareness of the negative health impact of trans fat among policy-makers, producers, suppliers, and the public.
- **E**nforce compliance with policies and regulations.

Efforts-India

India

Trans fatty acids (TFA) limits

- The Food Safety and Standards Authority of India (FSSAI) has capped the amount of trans fatty acids (TFA) in oils and fats to **3% for 2021 and 2% by 2022 and later aligned with WHO target to end iTFAby 2023**

The Eat Right Movement

- **Food Safety and Standards Authority of India (*FSSAI)*** has unveiled 'The Eat Right Movement', built on two broad pillars of '**Eat Healthy' and 'Eat Safe**'.
- The programme aims to engage and enable citizens to improve their health and well-being by making the right food choices.

FoSTaC (Food Safety Training and Certification)

- FSSAI recommends that all licensed food businesses must have at least one trained and certified Food Safety Supervisor under FoSTaC for **every 25 food handlers in each premise.**

'Heart Attack Rewind' Campaign-FSSAI

- Create awareness about the harmful effects of trans fats.

Mandatory Labelling

- FSSAI mandates food labels to:
    - Declare **trans fat content**
    - Mark **"Trans Fat-Free"** if ≤0.2g per 100g

Q. A company marketing food products advertises that its items do not contain trans-fats. What does this campaign signify to the customers? (UPSC 2011)

1. The food products are not made out of hydrogenated oils.
2. The food products are not made out of animal fats/ oils.
3. The oils used are not likely to damage the cardiovascular health of the consumers.

Which of the statements given above is/are correct?

A. 1 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

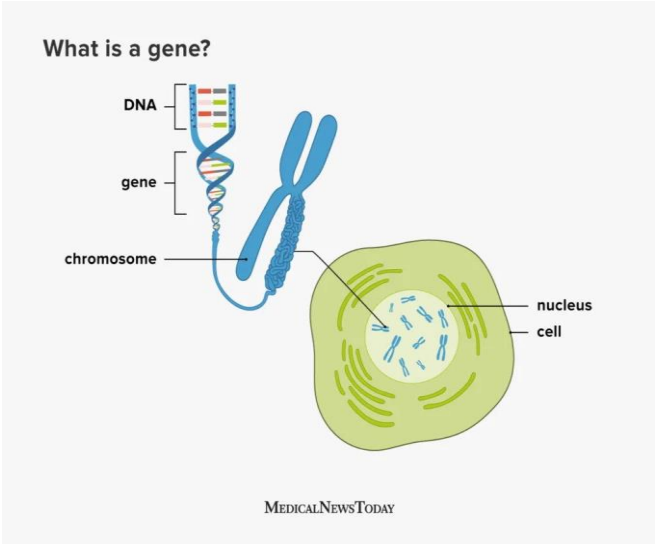
Ahmedabad Air India plane crash

How to identify Victims?

DNA identification

Methods of analysis

- Short tandem repeat (STR) analysis
- Mitochondrial DNA (mtDNA)
- Y chromosome analysis
- Single nucleotide polymorphisms (SNPs)



Application of DNA Fingerprinting

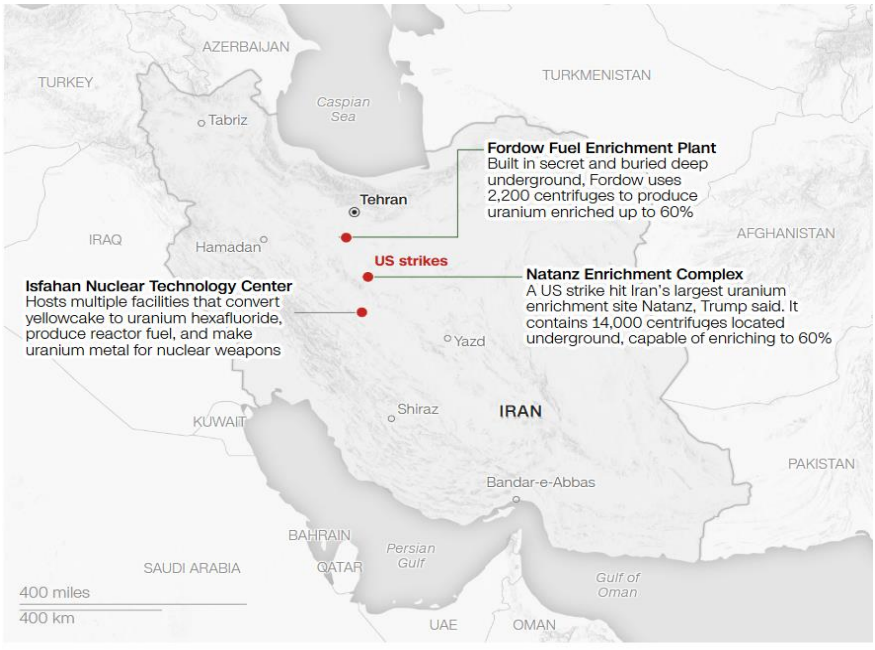
- **Criminal Identification (Forensics)**
  - Matching DNA found at a crime scene (blood, hair, skin cells) to a suspect.
- **Paternity and Maternity Testing**
  - Determines **biological relationships**.
- **Disaster Victim Identification**
  - Used in mass disasters (e.g., earthquakes, plane crashes, 9/11) to **identify remains** by matching DNA with family members
- **Medical Diagnosis and Genetic Disorders**
  - Identifies **mutations** associated with inherited genetic conditions.
  - Helps in **carrier detection**, **prenatal diagnosis**, and **gene therapy** planning.
- **Anthropological and Evolutionary Studies**

- Traces **human migration patterns**, **evolution**, and **common ancestry**.
- Used in studying relationships among different populations or species.

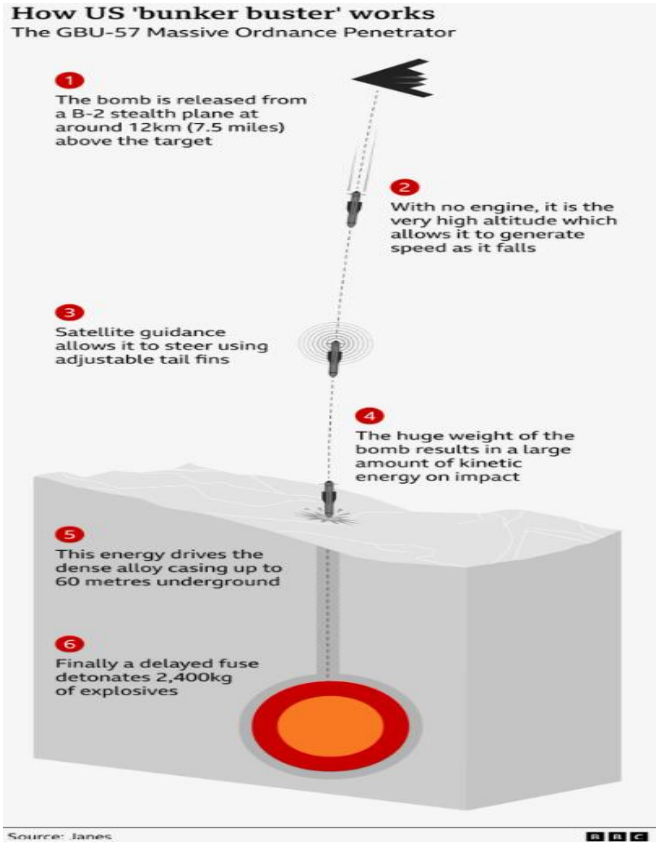
- **Personalized Medicine**
  - By analyzing DNA (SNPs), treatments can be **customized** to suit an individual's genetic makeup — especially in cancer and pharmacogenomics.
- **Organ Transplant Compatibility**
  - Ensures **donor and recipient compatibility** by matching DNA markers.
  - Reduces risk of **organ rejection**.
- **Animal and Plant Breeding**
  - Confirms **pedigree** and **genetic purity** in livestock and crops.
  - Helps in selecting desirable traits in **agriculture and animal husbandry**.
- **Identification of Missing Persons**
  - Compares DNA from unidentified bodies with family members of missing persons.
  - Useful in cases of **abduction, trafficking, or unidentified deaths**.

Iran Vs US Battle over Nuclear enrichment

USA attack on Iran



Sources: Explore Nuclear, Wisconsin Project on Nuclear Arms Control's Iran Watch, The Institute for the Study of War with AEI's Critical Threats Project, International Atomic Energy Agency
Graphic: Lou Robinson and Annette Choi, CNN



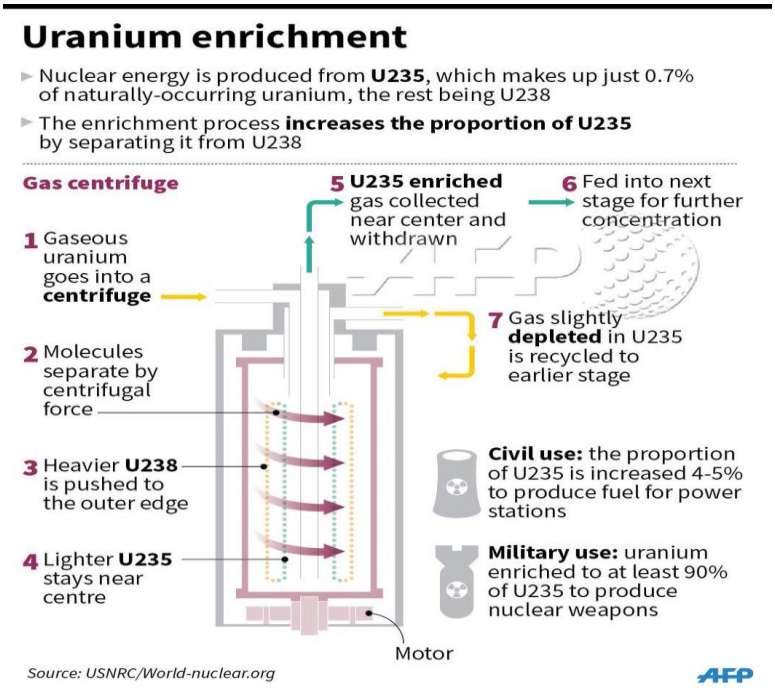
Fissile Vs Fertile material

- Fissile Material –

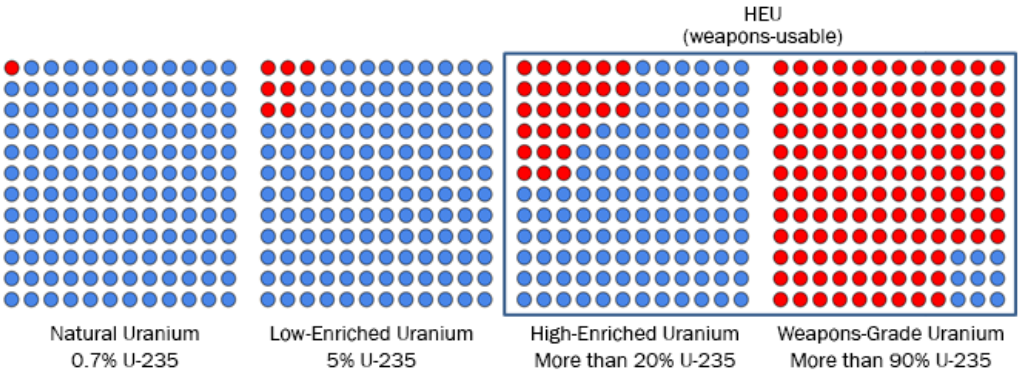
  1.1. Uranium-233, Uranium-235, Plutonium-239, Plutonium-241, etc.

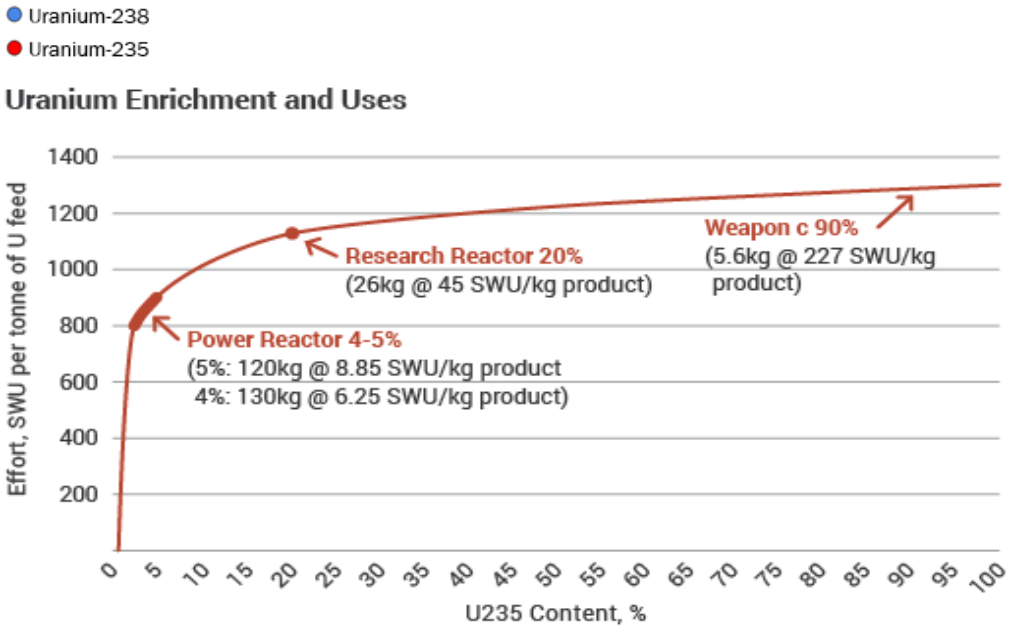
- **Fertile Material-**

  1.2. Thorium 232, Uranium 238

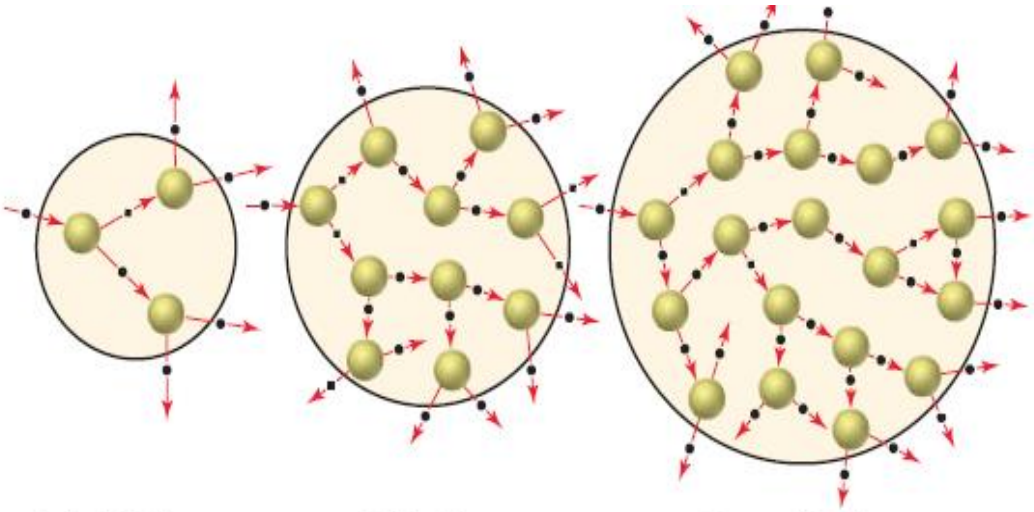


Uranium enrichment





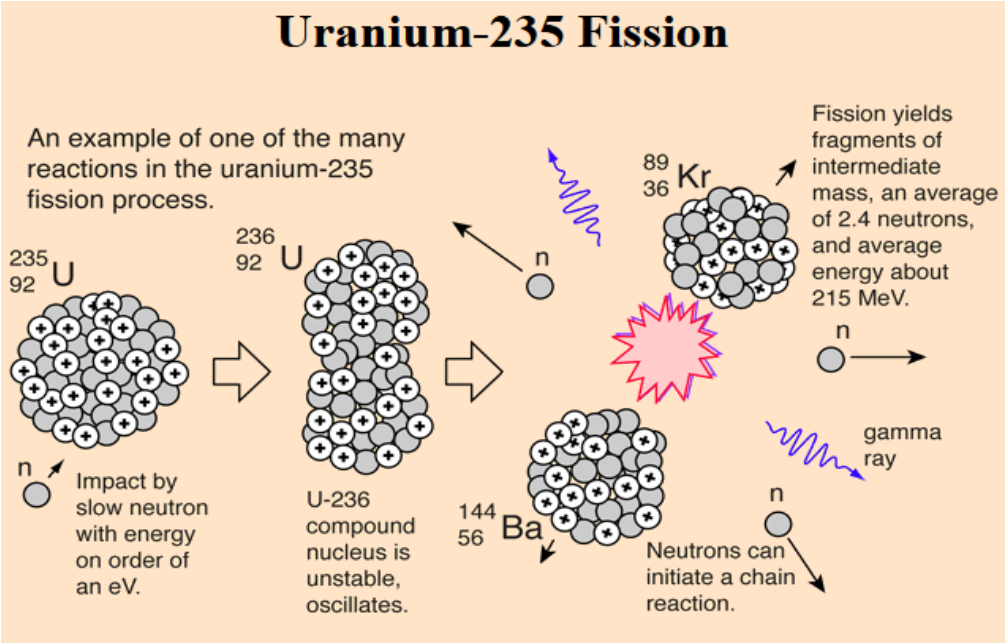
Critical Mass



Subcritical mass
Rate of neutron loss > rate of neutron creation by fission

Critical mass
Rate of neutron loss = rate of neutron creation by fission

Supercritical mass
Rate of neutron loss < rate of neutron creation by fission



Weather Balloon

- Context-In the wake of budget cuts by the Trump administration will soon start to replace the weather balloons with AI-powered alternatives, which are supposed to be much cheaper.



Historical background of upper air observations

- **Use of kites-**The tradition of making upper air observations goes back to the 18th Century. It all began in 1749 when two students in Glasgow, Scotland, used kites to measure the temperature at high altitudes. Subsequently, meteorologists started to send kites in the upper atmosphere carrying aloft instruments — called meteorographs — that measured pressure, temperature, and relative humidity data.
- **Hot balloons-** invented in France in the 1780s. Scientists would travel to high altitudes in these balloons, taking with them barometers, thermometers, and other instrumentation for measurements and experiments.The **weather balloon carrying the meteorograph would burst upon reaching a certain altitude**, and the instrument would return gently to Earth,

preserving the data until it was recovered.

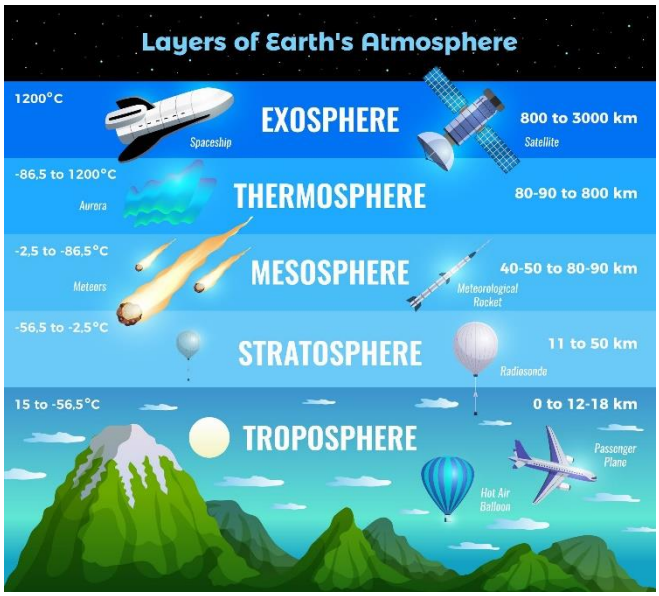
Invention of radiosondes

- **Issues with meteorographs** -the data recorded by meteorographs would not be readily available for weather forecasting. There was also a chance of **losing the data if the meteorograph could not be recovered.**
- **Radiosondes** -These issues were tackled with the invention of radiosondes, **or radio-meteorographs**, in the early 1930s. The instrument, smaller than the size of a coffee cup, was not only able to measure meteorological variables in the atmosphere but also transmitted the data back to the ground station. They are now much lighter, have a longer battery life, and even employ techniques such as global positioning system (GPS) for more accurate position tracking and wind measurements.

Weather Balloon

- Typically, today's weather balloons, made of **latex and filled with helium**, can reach an altitude of 1,15,000 feet (35 km) in a journey lasting up to two hours. The radiosonde is suspended 66 feet below the balloon.
- Weather agencies across the world use weather balloons to make upper air observations that are crucial for forecasts. Upper air refers to the Earth's atmosphere above about 5,000 feet, and it is from here that the planet gets its rain and drought, wind and calm, and heat and cold at the surface.
- Notably, weather balloons continue to hold importance in an era of satellites for several reasons. For instance, while **satellites are good at giving a big picture and ground measurements, weather balloons help provide information about the key middle part of the forecasting puzzle** — the atmosphere, where most of the weather phenomena take place.

Q. Satellites are good at giving a big picture and ground measurements, weather balloons help provide information about the key middle part of the forecasting puzzle.Discuss.



International Relations

Operation Rising Lion

Backdrop of Operation Rising Lion

IAEA Findings

- On June 12, 2025, the International Atomic Energy Agency (IAEA) declared Iran in breach of non-proliferation obligations for the first time in 20 years, citing a stockpile of enriched uranium sufficient for nuclear weapons.
- Iran was enriching uranium to 60% purity, close to weapons-grade, and had begun weaponization steps, potentially enabling a nuclear bomb within months

Iranian Nuclear Advances

- Israeli intelligence assessed Iran could produce up to 15 nuclear weapons rapidly, with advanced centrifuges at facilities like Natanz and Fordow accelerating enrichment. Iran's announcement of a new enrichment facility and upgraded centrifuges heightened fears.

Failure of Diplomacy

- U.S. President Donald Trump warned of a "massive conflict" if Iran did not curb its nuclear program, but talks collapsed.
- Israel acted unilaterally, though Trump was informed in advance, signaling tacit U.S. approval despite public distancing.

Can Khamenei survive Operation Rising Lion?

Israeli Penetration and Attacks

- Israel's repeated strikes have exposed significant weaknesses in Iran's establishment, targeting leaders and nuclear scientists, and even operating within Iranian territory. This highlights the regime's vulnerabilities under Khamenei, who has been in power since 1989.

Iran's Regional Isolation

- Despite Iran's support for Arab and Islamic causes, it faced political isolation at the International Atomic Energy Agency's meeting, indicating a lack of regional support during critical moments.

Netanyahu-Trump Strategy

- Israeli Prime Minister Benjamin Netanyahu and U.S. President Donald Trump are described as employing a "bad cop-good cop" tactic.
- Trump has praised Israeli attacks while urging Iran to abandon its nuclear ambitions for peace, aiming to exploit internal divisions within Iran's regime.

Iran's Dilemma

- Iran faces a tough choice: escalating conflict by attacking the U.S. or its Arab neighbors, risking a regional war that could end the Islamic Republic, or pursuing a restrained mix of force and diplomacy.
- Israel's aggressive moves aim to neutralize Iran's nuclear program and challenge Khamenei's leadership.

Regime's Resilience and Fragility

- Despite Iran's economic and military resilience over decades, the article questions whether the 85-year-old Khamenei can navigate internal elite tensions and external pressures, especially given his inability to effectively counter Israel's actions against Iran's allies like Hamas and Hezbollah.

Israel Lacks Strategic Depth?

Context

- **Geographic Constraint**: Israel is roughly 470 km long and, at its narrowest, only 15-20 km wide. This small area means enemy forces could potentially traverse the country quickly, leaving little room for defensive retreat or maneuvering.
- **Vulnerability to Attack**: The lack of depth makes key population centers, like Tel Aviv and Jerusalem, close to borders with potentially hostile neighbors (e.g., West Bank, Gaza, Lebanon). A sudden attack could reach critical infrastructure or cities within minutes.
- **Limited Buffer Zones**: Unlike larger nations with vast territories to absorb invasions, Israel cannot trade space for time to regroup or counterattack effectively.
- **Strategic Implications**: This necessitates a proactive defense strategy, including preemptive strikes, strong intelligence, and rapid-response capabilities. It also drives Israel's reliance on advanced technology, air superiority, and deterrence (e.g., Iron Dome, nuclear ambiguity).



Trump's gamble in Iran

Context of Trump's Intervention

- Trump's move was unexpected, as he had initially urged Israeli Prime Minister Benjamin Netanyahu to avoid attacking Iran and focus on ending the Gaza conflict.
- The intervention came after the International Atomic Energy Agency (IAEA) censured Iran for non-compliance with non-proliferation obligations, providing a pretext for military action.
- Military Action: On June 22, 2025, U.S. forces, using B-2 stealth bombers and Tomahawk missiles, struck three key Iranian nuclear sites—Fordow, Natanz, and Isfahan)—in what Trump called a "spectacular success" aimed at neutralizing Iran's nuclear capabilities.

Domestic Political Challenges

Internal Challenges

- Internal Opposition: Trump faces significant pushback from within his "Make America Great Again (MAGA) coalition, which has been vocal against U.S. involvement in "endless wars" in the Middle East.
- This populist right-wing base, a key driver of his re-election, may view the intervention as a betrayal of his campaign promises to avoid foreign conflicts.
- The Democratic Party has labeled Trump's actions as illegal, arguing that he acted without Congressional approval, reviving debates over presidential war powers to declare war.
- Senator Mark Warner, a senior Democrat, criticized the lack of consultation with Congress.

Risk to Legacy

- Trump's gamble risks drawing the U.S. into a prolonged conflict, contradicting his pledges to keep America out of "stupid wars."
- This could undermine his political legacy as a peacemaker, especially if the strikes fail to achieve their objectives or provoke significant Iranian retaliation.

Iran's Weakened Regional Position

Loss of Proxies

- Iran's regional influence has been severely diminished over the past 18 months. Israel's military campaigns have weakened Iran's proxies, including Hamas in Gaza, Hezbollah in Lebanon (with the assassination of leader Hassan Nasrallah in September 2024), Hamas, and the Houthis in Yemen.
- The fall of Syrian President Bashar al-Assad in December 2024 further eroded Iran's "Axis of Resistance," disrupting its strategic corridor to Lebanon.

Nuclear Setback

- While Trump claimed the U.S. strikes "obliterated" Iran's nuclear facilities, Iran insists the damage, particularly at the fortified Fordow site, was minimal.
- Uncertainty over whether Iran's enriched uranium stockpiles were destroyed or secured beforehand, raising doubts about the strikes' long-term effectiveness.

Retaliatory Options

- Despite its weakened state, Iran retains the capacity to escalate. Potential responses include targeting U.S. forces in the region, attacking American allies, launching cyberattacks, or disrupting oil shipping through the Strait of Hormuz, a critical global oil transit route.
- Such actions could provoke massive U.S. retaliation, particularly against Iran's oil sector.

Implications for US Allies



Israel's Strategic Victory

- For Israel, U.S. military involvement is a major win. Beyond halting Iran's nuclear program, Israel seeks regime change in Tehran, though the article questions whether this goal is achievable.
- Israel's air superiority and ongoing strikes have exposed Iran's military vulnerabilities, but the elusive goal of regime collapse remains uncertain.

Gulf States' Ambivalence

- Iran's Arab neighbors, including Saudi Arabia and the UAE, have provided passive support to Israel's offensive, quietly welcoming the dismantling of Iran's nuclear capabilities.
- However, they fear a prolonged war that could destabilize the region and threaten their own security, especially if Iran disrupts the Strait of Hormuz.



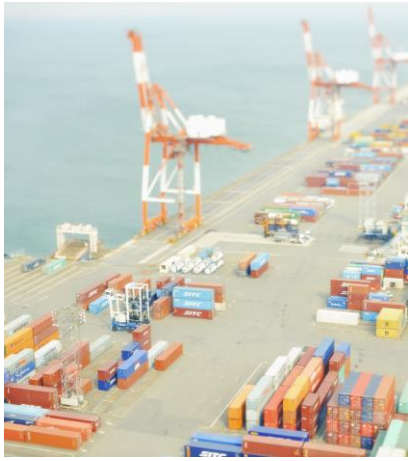
Global Concerns

- UN Secretary-General António Guterres warned of a "spiral of chaos" due to the U.S. escalation, reflecting international fears of a broader conflict.
- European allies, who supported the 2015 Iran nuclear deal (JCPOA), may view Trump's actions as undermining diplomatic efforts

Global Economic Risks

Oil Market Volatility

- The threat of Iran blocking the Strait of Hormuz, through which 25% of global seaborne oil trade passes, has spiked oil prices.
- 84% of crude oil and 83% of liquefied natural gas through the Strait goes to Asian markets, including India, China, Japan, and South Korea, making a blockade a significant threat to global energy security.



Regional Stability

- A prolonged conflict could disrupt global trade, increase shipping costs due to heightened insurance and security measures, and trigger cyberattacks or proxy warfare, further destabilizing the Middle East.

Strategic Calculations & Risk

Trump's Gamble

- Trump's intervention as a high-stakes bet that the U.S. can deter Iran's retaliation and permanently halt its nuclear ambitions.
- Unlike his predecessors, who avoided direct strikes due to fears of escalation, Trump acted on the belief that Iran's current weakness—due to proxy losses and economic strain—presented an opportunity.
- The strikes' success is unclear, with conflicting claims about the extent of damage to Iran's nuclear infrastructure.
- If Iran reconstitutes its program or escalates through asymmetric warfare, the U.S. could be drawn into a protracted conflict, reminiscent of the "forever wars" Trump criticized.

India's Perspective

Diplomatic Stance

- According to the MEA's estimated data of Indian students studying abroad, in 2022, about 2,050 students were enrolled in Iran, mostly for medical studies.
- India has urged both Israel and Iran to avoid escalation, with Prime Minister Narendra Modi emphasizing peace and stability in calls with Netanyahu and Iranian officials.

Economic Impact

- As a major oil importer, India would be significantly affected by disruptions in the Strait of Hormuz.
- India accounted for a portion of the 69% of Hormuz crude oil flows to Asia in 2024, underscoring its vulnerability to an energy crisis.

Israel Versus Iran: Friends turned Foes





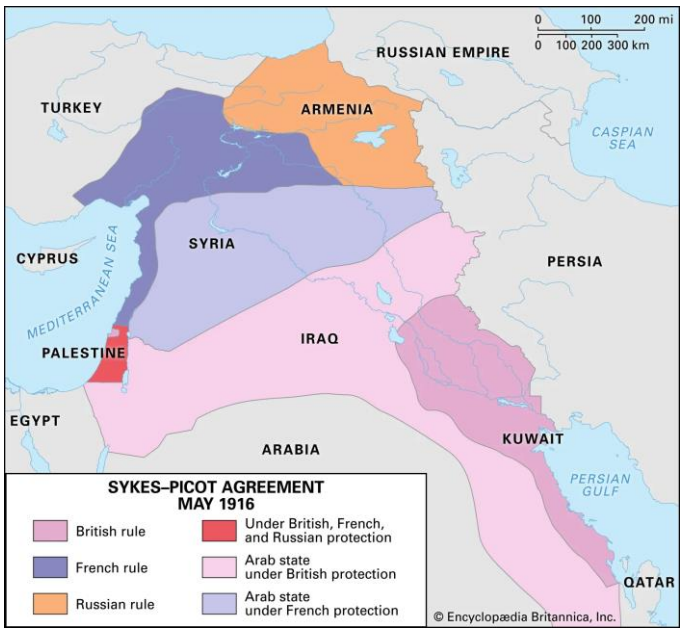


Context

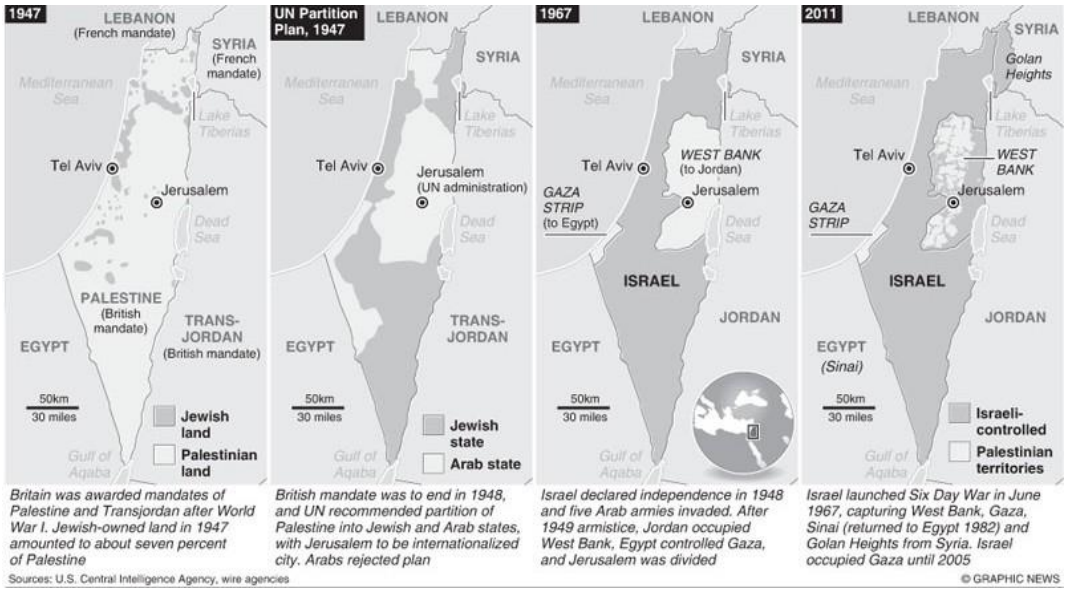
- 13th June 2025 – Operation Rising Lion – Israel Launches dozens of attacks with the stated aim of stopping the expansion of Iran's nuclear Program.
- 13th June 2025 – Operation True Promise III launched by Iran retaliating ballistic missiles and drones

Lets Trace the history of this rivalry

- Zionism – Theodor Herzl – 1896
- Sykes Picot Agreement – 1916
- Balfour Declaration – 1917
- Mandatory Palestine – 1920-1948





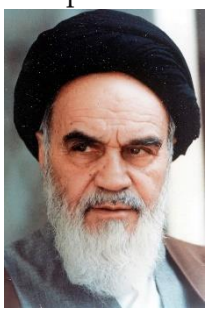


Lets Trace the history of this rivalry

- 1947 – Iran one of the 11 members of Special Committee on Palestine (UNSCOP)
- Committee proposed partition plan
- But Iran, India and Yugoslavia opposed partition plan of Palestine.
- Iran also initially opposed the admission of Israel into UN.
- 1953 – Coup Detat in Iran – PM Mohammad Mosaddegh overthrown by Iranian army and supported by US/UK .
- Strengthened autocratic rule of Shah Mohammed Reza Pahlavi.
- 1953- 1979
    - Period of good relations between Israel and Iran
    - Iran became second Muslim majority country to recognize Israel state after Turkey.
    - Became part of Alliance of the Periphery along with Turkey and Ethiopia

Let's Trace the history of this rivalry

- Cooperation in multiple domains – Oil Purchases by Israel from Iran, Agriculture modernization cooperation by Israel.
- Post 1979 – Overthrow of Pro Western Pahlavi dynasty and Establishment of Islamic Republic under Ayatollah Khomeini.



- 1979 – Students Seize US Embassy in Tehran – 444 day hostage
- Iran adopted Sharp Anti Israel Stance
- Cut off all official relations with Israel
- Declared Israel as enemy of Islam and Little Satan.
- 1980- Even then, Israel sold millions worth of arms to Iran during Iran-Iraq conflict.(1980-88)
- 1980 onwards:
- Era of Proxy Warfare begins
    - 1987 – Establishment of Hamas – First Intifada
    - 1989 – Hamas carries out first attack on Israeli soldiers
    - 1992- Formation of Hezbollah in Lebanon, which was an offshoot of Shia militia Islamic Resistance – with the support of Iran Revolutionary Guard Forces.
    - Followed by Multiple targeted killings from both sides

Israeli Embassy bombing in Argentina, 1992



Jewish Centre AMIA bombing , 1994

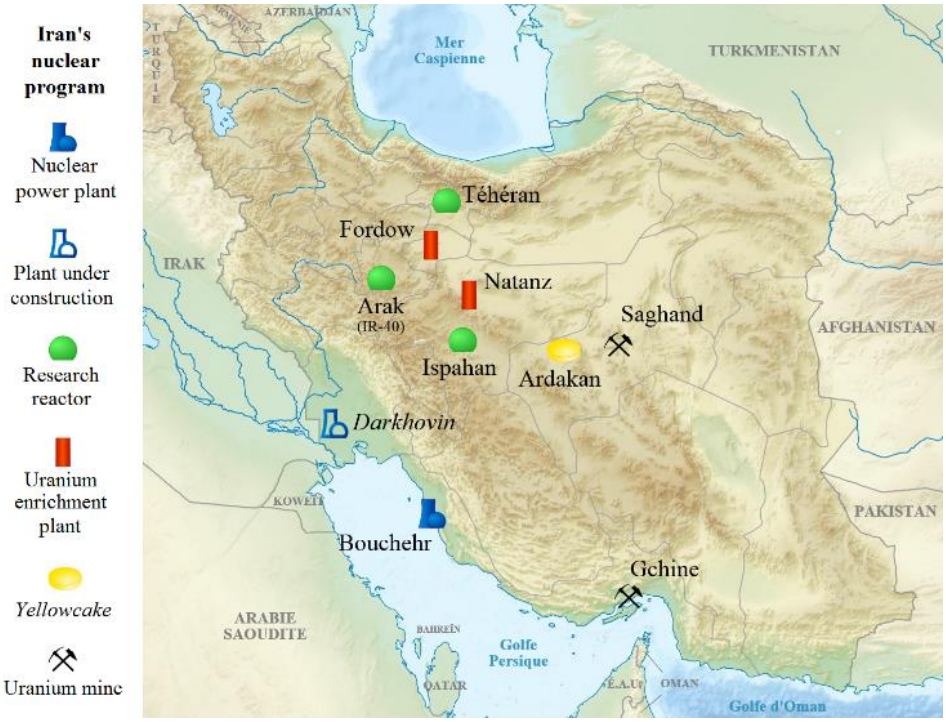


The Nuclear Conundrum

- 1957 – Iran US signed civil nuclear cooperation agreement under Eisenhowers' "Atoms for Peace" program
- 1967 – US provides Iran with nuclear reactor and enriched uranium
- 1967 – Tehran Research Reactor gained criticality
- 1970 – Iran ratified Nuclear Non Proliferation Treaty- This meant that they had committed not to pursue nuclear arms as they were "non nuclear weapon state"
- 1975 – Bushehr Nuclear Power Plant with West Germany's assistance
- New Nuclear Technology Centre established at Isfahan
- 1979 – Islamic Revolution – Nuclear programs shelved/delayed
- 1995- Russia agrees to finish construction of Iran's planned nuclear power plant at Bushehr.
- 2002 – Western Intelligence groups and opposition groups in Iran disclose secret Natanz Enrichment Facility
- Iran had benefitted from Chinese, Pakistan and Russian expertise, equipments , designs.
- 2003 – Tehran Agreement – Iran and Britain, France and Germany (EU-3) – Iran agreed to suspend uranium enrichment
- 2006 – Iran announces it will restart Uranium enrichment
- Sanctions Regime began
- 2009 –Secret backchannel messaging between US and Iran via Oman
- 2010 – Stuxnet virus – jointly developed by US-Israel – disrupts Iran's centrifuges
- 2012- Targeted killing of Iran nuclear scientist Mostafa Ahmadi Roshan – allegedly by Israel
- 2015 – JCPOA – P5+1 and Iran – capping of enrichment and limiting nuclear energy to civilian purposes only
- 2017-18 – Israel claimed, via clandestine documents – Iran was still carrying out nuclear weapons program in secret.
- 2018 – US under Trump withdraws from JCPOA
- 2020 – NATANZ centrifuge attacked
- 2020 – Top Iranian military scientist , Mohsen Fakhrizadeh – assassinated



- 2021 – Another attack on Natanz, cyberattack this time
- 2021 – Iran begins enriching Uranium to 60 percent , just a short distance below 90 percent weapons grade Uranium



- Oct 2023 – Israel Hamas hostilities begin – Iran offers support to Hamas
- Feb 2024 – Israel sabotage attack – multiple explosions in gas pipeline – Chaharmahal to Bakhtiari in Caspian Sea
- April 2024 – Alleged Israel attack on Iranian embassy in Damascus, Syria and Iranian missils/drone response
- July 2024 – Hamas leader Isamil Haniyeh assassinated during visit to Tehran
- Sept 2024 – Israeli airstrikes kill Hezbollah leader Hassan Nezrallah

Lessons to be learnt

- No permanent friends and foes
- Regime changes can be highly instrumental in changing course of relations (Bangladesh case in point).

Winning Heart & Minds of People

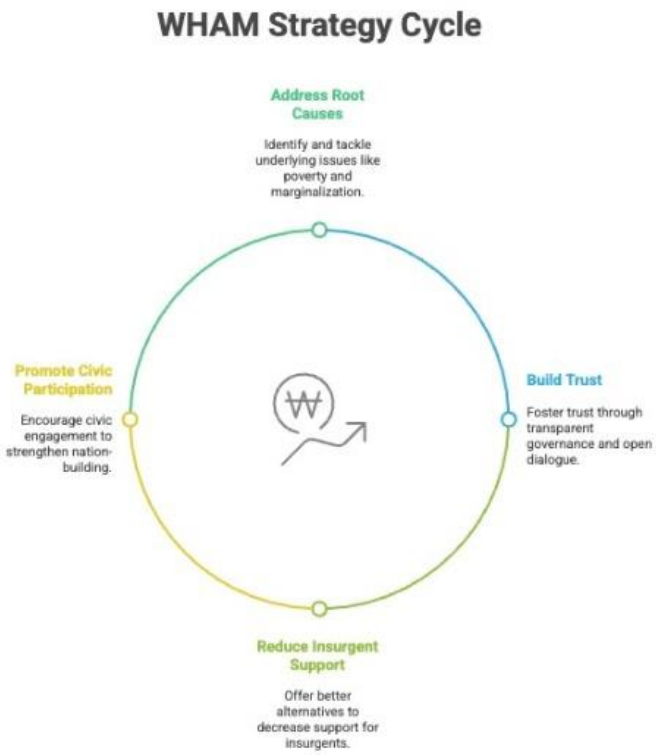
PYQ- 2023

Q. Winning of 'Hearts and Minds' in terrorism-affected areas is an essential step in restoring the trust of the population. Discuss the measures adopted by the Government in this respect as part of the conflict resolution in Jammu and Kashmir. (150 words, 10 Marks)

What is WHAM?



WHAM Strategy Cycle



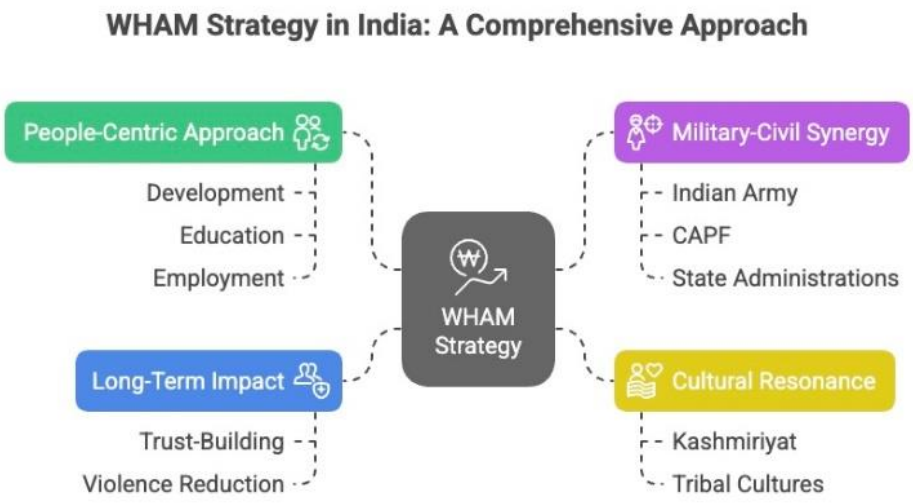
WHAM – Origin

- The use of the term "hearts and minds" to reference a method of bringing a subjugated population on side, was first used by French general and colonial administrator Hubert Lyautey as part of his strategy to counter the Black Flags rebellion during the Tonkin campaign in 1895.
- **Vietnam War (1960s–1970s):** The U.S. adopted WHAM during the Vietnam War, focusing on civic action programs like building schools and hospitals.
- However, its effectiveness was limited due to inconsistent implementation and heavy reliance on military force.

Indian Context

- In India, WHAM was formalized in the Indian Army's counter-insurgency doctrine, particularly after the 1990s, when insurgencies in J&K and the Northeast highlighted the need for non-military approaches.
- The Army's 2007 Doctrine for Sub-Conventional Operations explicitly prioritized WHAM as a prerequisite for successful counter-insurgency.

Effectiveness of WHAM in India



Challenges

- Effectiveness varies by region due to differences in terrain, demography, and insurgent tactics.
- External support (e.g., Pakistan in J&K) and local corruption can undermine WHAM efforts.

Results of WHAM in Naxal-Affected Areas

- Naxalism, rooted in the 1967 Naxalbari uprising in West Bengal, is a left-wing extremist movement driven by socio-economic inequalities, particularly in the tribal-dominated "Red Corridor" (Chhattisgarh, Jharkhand, Odisha, Maharashtra, etc.).

- WHAM has been a cornerstone of India's counter-Naxal strategy, with mixed but notable results.

Developmental Schemes

- Programs like the *Pradhan Mantri Gram Sadak Yojana* (PMGSY) and *Integrated Tribal Development Programmes* have improved connectivity, healthcare, and education in remote areas.
- For example, road construction in Chhattisgarh's Bastar region has enhanced access to markets and schools, reducing isolation.
- Outcome: Reduced local support for Naxalites, as communities gain access to government services. By 2025, Naxal influence has declined to 38 districts from a peak of 180 in the late 2010s.

Employment & Skill Development

- Initiatives like *Pradhan Mantri Kaushal Vikas Yojana* (PMKVY) and *Aspirational Districts Programme* provide vocational training and jobs to tribal youth, countering Naxal recruitment.
- Outcome: Youth engagement has increased, with fewer joining the People's Liberation Guerrilla Army (PLGA).
- For instance, in Gadchiroli (Maharashtra), skill centers have empowered tribal youth to join mainstream employment.

Civic Action By Security Forces

- The Central Reserve Police Force (CRPF) and state police conduct medical camps, sports events, and community outreach under initiatives like *Civic Action Programmes*.
- The *Bastariya Battalion* in Chhattisgarh, comprising local tribal recruits, fosters trust. Outcome:
- Improved community-security force relations. In Sukma (Chhattisgarh), locals have provided intelligence, leading to successful operations against Naxal leaders.

Rehabilitation of Surrendered Naxalites

- Policies offering amnesty, vocational training, and financial aid have encouraged surrenders.
- For example, Jharkhand's *Nayi Disha* scheme has reintegrated over 500 former Naxalites since 2020.
- Outcome: Weakened Naxal cadres, with over 1,000 surrenders reported in Chhattisgarh and Jharkhand between 2022 and 2025.

Results of WHAM in Jammu & Kashmir

Operation Sadbhavna

- The Indian Army's flagship WHAM program involves building schools, hospitals, and infrastructure, organizing medical camps, and conducting cultural events. In Ladakh, 13 Army Goodwill Schools and 11 women's empowerment centers have been established.
- Outcome: Improved civil-military relations. In Turtuk (formerly PoK), locals now view the Army as "apni fauj" (our army), with 80 men joining the Army and 32 joining the police since Sadbhavana's inception.

Developmental Projects

- The *Prime Minister's Development Package* (₹80,000 crore) has funded infrastructure like the Chenab Bridge, Udhampur-Srinagar-Baramulla Rail Link, and AIIMS in J&K. Tourism promotion (e.g., new wool and handicraft policies) has boosted local economies.
- Outcome: Enhanced connectivity and livelihoods. Tourism in Kashmir has surged, with 2.7 crore visitors in 2024, signaling normalcy and economic revival.

Youth Engagement

- Programs like *Himayat* (skill training), *Umeed* (women's empowerment), and *Udaan* (employment) target youth to prevent radicalization. National integration tours expose Kashmiri youth to India's diversity.
- Outcome: Reduced youth recruitment by militant groups. For example, footballer Majid Khan left Lashkar-e-Taiba (LeT) after his mother's plea, supported by the Army's leniency.

Political Abrogration

- The abrogation of Article 370 (2019) aimed to align J&K with India's constitutional framework, extending schemes like *One Nation One Ration Card* and *PM Kisan Yojana*.
- Panchayat reforms and delimitation (2022) have strengthened local governance.
- Outcome: Increased civic participation, with higher voter turnout in recent elections (e.g., 58% in 2024 J&K Assembly elections).

Quantitative Impact

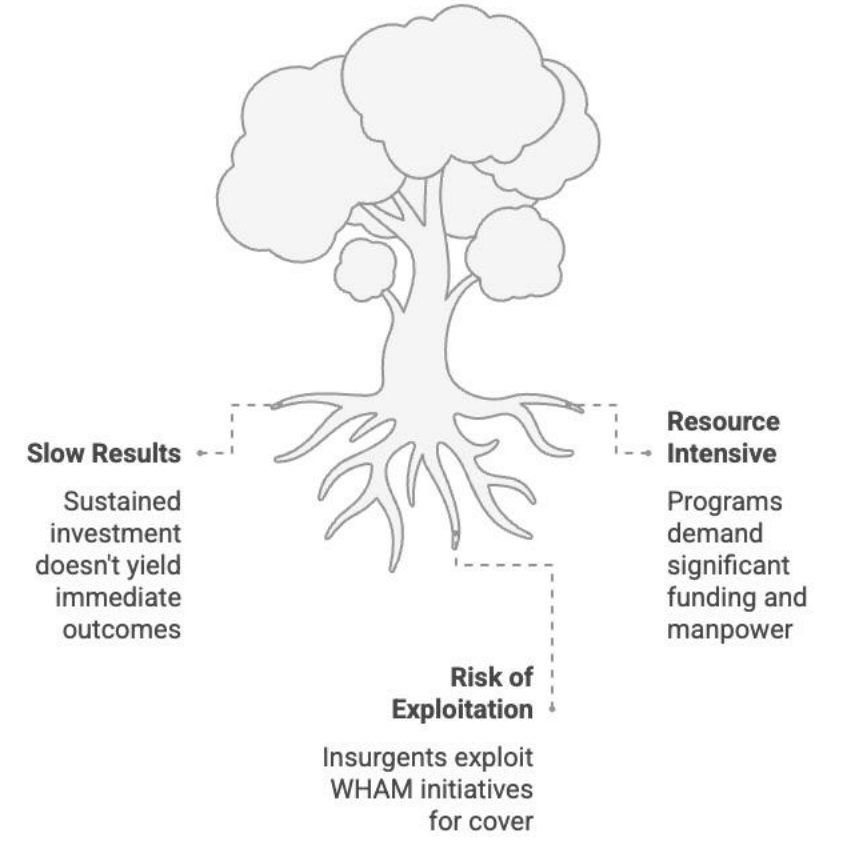
- Terrorist incidents in J&K dropped from 417 in 2018 to 125 in 2024, per Ministry of Home Affairs data.
- Surrendered militants increased, with over 200 reintegrated since 2019, reflecting WHAM's role in reducing militancy.
- By 2025, only six districts (e.g., Bijapur, Sukma) remain "most affected" by Naxalism, with six others as "districts of concern," indicating a significant reduction in Naxal influence.
- Over 4,000 civilians and 2,500 security personnel have been killed since the 2000s, but violence has declined due to WHAM and security operations.

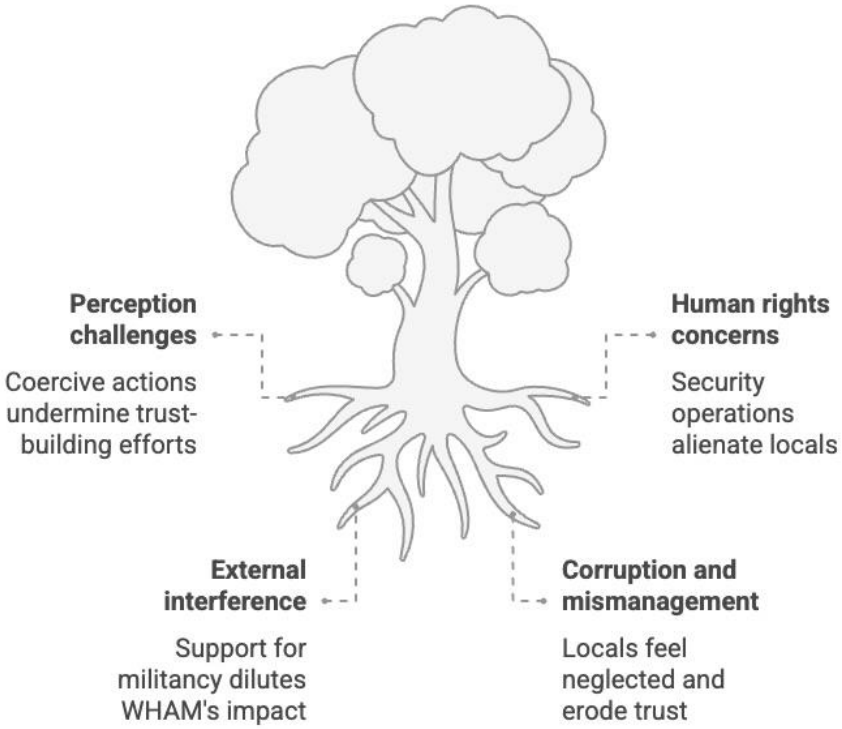
Government Policies in Alignment with WHAM

Developmental Schemes

- *Prime Minister's Development Package (J&K)*: Funds infrastructure, healthcare (e.g., AIIMS), and education, addressing socio-economic grievances.
- *Pradhan Mantri Gram Sadak Yojana (PMGSY)*: Enhances connectivity in Naxal and J&K areas, improving access to services.
- *Aspirational Districts Programme*: Targets underdeveloped districts (e.g., Sukma, Baramulla) for holistic development.
- ***Himayat, Udaan, Umeed***: Provide vocational training and employment in J&K, reducing youth radicalization.
- ***Pradhan Mantri Kaushal Vikas Yojana (PMKVY)*:** Offers skill training in Naxal areas, empowering tribal youth.
- *Abrogation of Article 370 (2019)*: Aims to integrate J&K constitutionally, extending central schemes and rights.
- ***Panchayat Reforms***: Strengthens local governance in J&K through delimitation and elections.
- ***Security Related Expenditure (SRE) Scheme***: Funds capacity-building in Naxal-affected states for policing and development.
- ***Nayi Disha (Jharkhand)*:** Reintegrates surrendered Naxalites through training and financial aid.
- ***Surrender Policies in J&K***: Offer amnesty and vocational support to former militants, as seen in cases like Majid Khan.

Challenges


Slow Results
Sustained investment doesn't yield immediate outcomes
Resource Intensive
Programs demand significant funding and manpower
Risk of Exploitation
Insurgents exploit WHAM initiatives for cover


Perception challenges
Coercive actions undermine trust-building efforts
Human rights concerns
Security operations alienate locals
External interference
Support for militancy dilutes WHAM's impact
Corruption and mismanagement
Locals feel neglected and erode trust