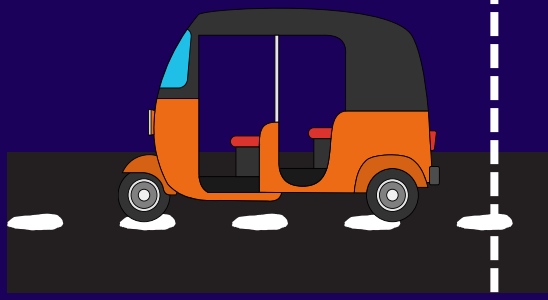
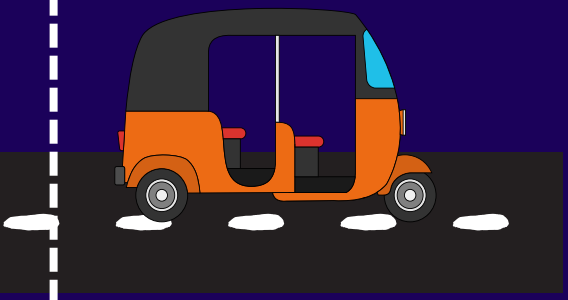
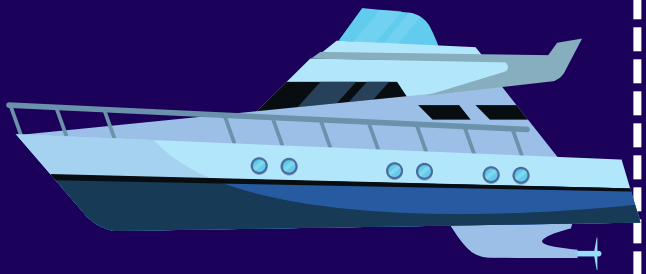
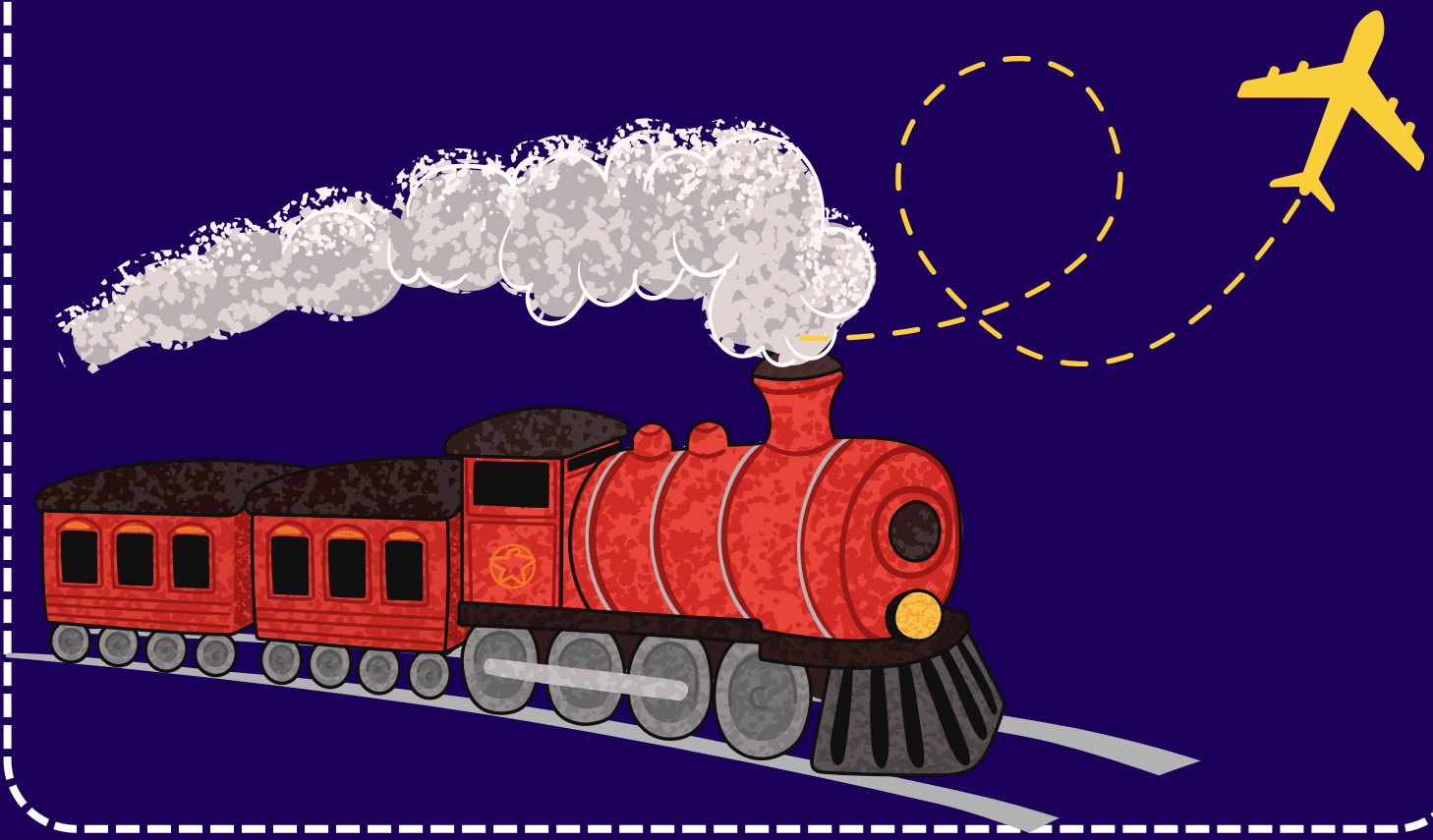
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Topic : Transport







Modes of Transport



1. By Land : Road and Railways
2. By Water : Inland and Seaways
3. By Air : Domestic and International flights.





Land Transport

Roadways

- India's road network is the second largest in the world.
- Total road network length: 66.71 lakh kilometres



Detailed Breakdown:

- Total National Highway Length: 1,46,145 km.
- State Highways: 1,79,535 km.
- Expressways: 5,579 km (as of July 2023).
- Highest road density: Kerala
- Lowest road density: Arunachal Pradesh
- State with maximum road length: Maharashtra
- State with least road length: Sikkim

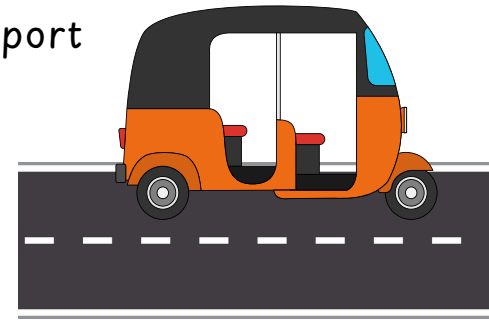
National Highway Authority of India

- National Highway Authority of India is the designated authority for construction of Roads in Plane areas.
- It was established in 1995 and has its headquarters in New Delhi.
- Public Works Department(PWD) established in 1854 works for the maintenance of roads at the district and village level.

- Motor Vehical Act : 1988
- National Highway Authority Act : 1988

National Highways

- The National Highways in India are a network of trunk roads owned by the Ministry of Road Transport and Highways (MoRTH).



Longest National Highway: NH 44

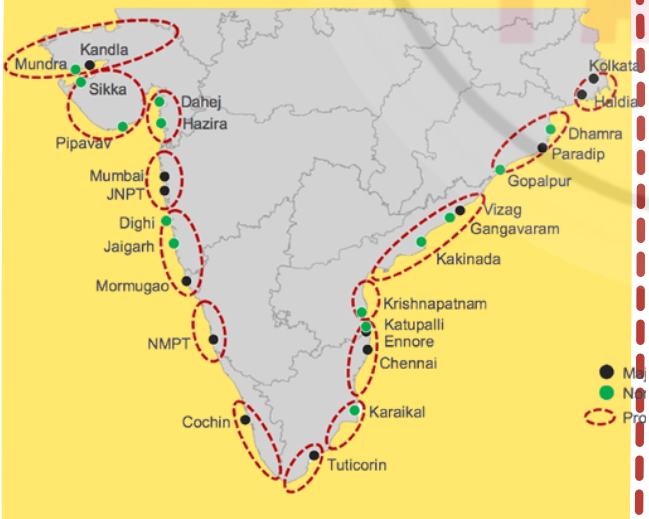
- It is 4112 Km long.
- It connects Srinagar to Kanyakumari and was earlier known as NH 7.

Shortest National Highway:

- NH 548 Connets Kalamboli to NH 348 near Palaspe in Maharastra.
- NH 118 connects Asanboni and Jamshedpur in Jharkhand.
- Both are about only 5 Km Long.

Bharatmala Pariyojana:

- The Bharatmala Pariyojana was launched with the primary focus on optimizing the efficiency of the movement of goods and people across the country.
- **Phase I-** approved in October 2017, focuses on development of 34,800 km of National Highways.



Note: The Sagarmala Project, launched in 2015, is related to the development of ports.



Bhupen Hazarika Bridge:



- Bhupen Hazarika was posthumously awarded both the Padma Vibhushan, India's second-highest civilian award, in 2012, and the Bharat Ratna, India's highest civilian award, in 2019
- Bhupen Hazarika Bridge is the longest bridge constructed over Lohit river and connects Assam to Arunachal Pradesh.

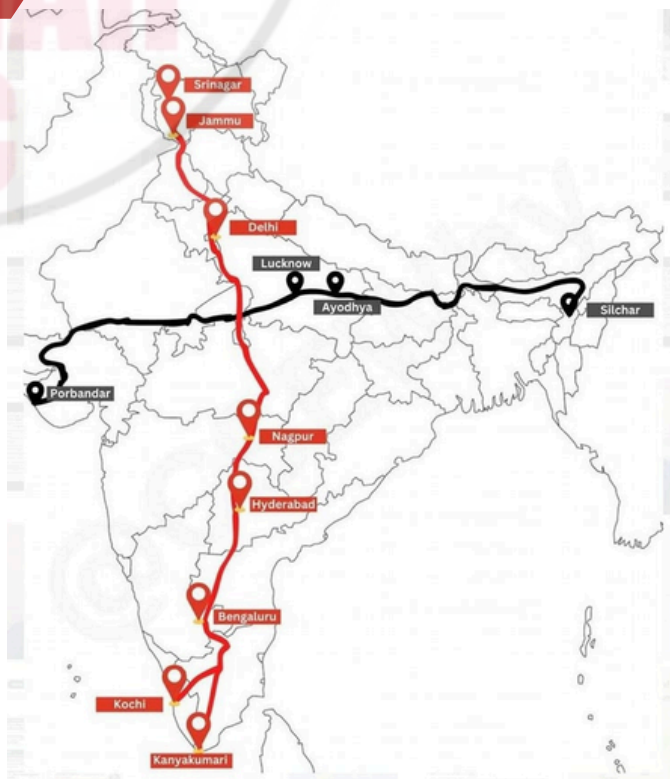
The Golden Quadrilateral (GQ)



- The Golden Quadrilateral(GQ) project initiated in 1999, is a national highway network connecting most of the major industrial, agricultural and cultural centres of India.
- It forms a quadrilateral connecting the four major metro cities of India, viz., Delhi (north), Kolkata (east), Mumbai (west) and Chennai (south).
- It is a system of highways that spans a total length of 5846 Km (3,633 miles)

North-South-East-West Corridor

- The North-South and East-West Corridor is a network of national highways connecting major cities of India. It consists of two highway systems - the North-South highway extending 4,000 km (2,500 mi) from Srinagar in the north to Kanyakumari in the south with a spur to Kochi and the East-West highway extending 3,300 km (2,100 mi) from Silchar in the east to Porbandar in the west.
- Jhansi is the junction of North-South and East-West Corridors.



Border Roads Organisation

- The Border Roads Organisation (BRO), established in 1960, aims to boost economic development and defense preparedness by improving road infrastructure in northern and northeastern border areas.
- BRO has built and black-topped the world's highest motorable road at Umlingla Pass in Eastern Ladakh, located at an altitude of 19,300 feet.
- **Motto of BRO is : Shramena Sarvam Sadhyam**



Railways



Significant facts about Indian railway network:

- Indian Railways is the 4th largest railway network in the world.
- Dibrugarh(Assam) to Kanyakumari(Tamil Nadu) is the longest train route in India & Vivek Express runs on this route.
- Uttar Pradesh has the longest route of Railway Lines in India while Rajasthan is at 2nd Place.
- Longest Rail Bridge: Bogibeel Bridge (4.94Km); constructed on the Brahmaputra river - connects Dhemaji & Dibrugarh
- Highest Rail Bridge: Chenab Bridge (359m)
- Longest Railway Station: Hubali (Karnataka) (1.5 Km)
- 2nd Longest: Gorakhpur



In India, Railway Coaches are Manufactured in following places:

- Chittaranjan Locomotive Works: West Bengal
- Integral Coach Factory: Perambur (Chennai)
- Rail Spring Karkhana: Gwalior
- Rail Coach Factory: Kapurthala (Punjab)
- Diesel locomotive Works: Varanasi
- Wheel and Axle Plant: Bengaluru

1st train in India:

- Introduced by Dalhousie.
- Ran from Mumbai to Thane on 16 April 1853.



The Trans-Siberian Railway line is the longest Railway line in the world (9332 Km). It connects Moscow with the Russia far east.



DHR (Darjeeling Himalayan Railways)

- The Darjeeling Himalayan Railway (DHR), also known as the Toy Train, is a 610 mm narrow-gauge railway in West Bengal, India, that connects New Jalpaiguri and Darjeeling.
- The DHR is a UNESCO World Heritage site known for its ingenious engineering solutions for navigating mountainous



"Pamban Bridge"

- The Pamban Bridge is an engineering marvel in India that connects the town of Rameswaram on Pamban Island to mainland India



S.No	Name	Abbr.	Headquarters
1	Northern Railway	NR	Delhi
2.	North Eastern Railway	NER	Gorakhpur
3.	Northeast Frontier Railway	NFR	Maligaon (Guwahati)
4.	Eastern Railway	ER	Kolkata
5.	South Eastern Railway	SER	Kolkata
6.	South Central Railway	SCR	Secunderabad
7.	Southern Railway	SR	Chennai
8.	Central Railway	CR	Mumbai
9.	Western Railway	WR	Mumbai
10.	South Western Railway	SWR	Hubli
11.	North Western Railway	NWR	Jaipur
12.	West Central Railway	WCR	Jabalpur
13.	North Central Railway	NCR	Allahabad
14.	South East Central Railway	SECR	Bilaspur, CG
15.	East Coast Railway	ECoR	Bhubaneswar
16.	East Central Railway	ECR	Hajipur
17.	Konken Railway	KR	Navi Mumbai

Water Transports

- Nearly 90% of India's trade Volume (77% in terms of value), is moved by sea making shipping, the backbone of trade and economic growth.

- **1st Under Water Metro** : Kolkata
- Metro Man of India : **Sreedharan**

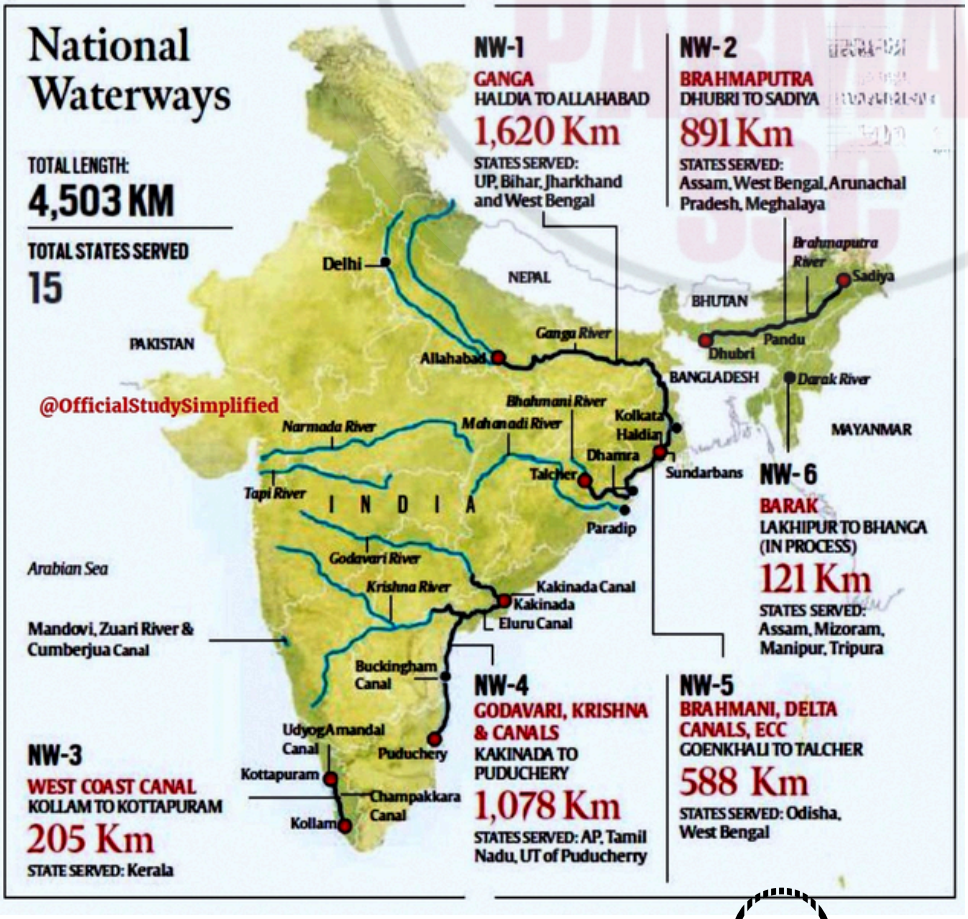
Inland Waterways Authority of India (IWAI)

- IWAI, established in 1986 under the Ministry of Ports, Shipping and Waterways, is responsible for the development, maintenance, and regulation of inland waterways for shipping and navigation in India. It has its headquarters in Noida, Uttar Pradesh.

National Waterways

Series Number	Name and Stretch	Geographic Extent
*National Waterway No.1(NWI)	Ganga between Allahabad-Haldia (1620 km)	UP,Bihar, Jharkhand and West Bengal
National Waterway No.2 (NWII)	Sadiya-Dhubri stretch of river Brahmaputra (891 km)	Assam
National Waterway No.3(NW: III)	Kollam-Kottapuram stretch of West Coast Canal along with Champakara and Udyogmandal Canals (205 km)	Kerala.
Two proposed Waterways (recently declared)		
National Waterway No.4(NWIV)	Kakinada-Puducherry stretch of Canals and the Kaluvelly Tank, Bhadrachalam - Rajahmundry stretch of River Godavari and Wazirabad - Vijayawada stretch of River Krishna (1095 km)	Andhra Pradesh
National Waterway No. 5(NWV)	The Talcher-Dhamra stretch of river Brahmani, Geonkhali-Charbatia stretch of East Coast Canal, Charbatia-Dhamra stretch of Matai river and Mangalgadi-Paradip stretch of Mahanadi delta rivers (623 km).	Dhamra, Orrissa

[*Information*

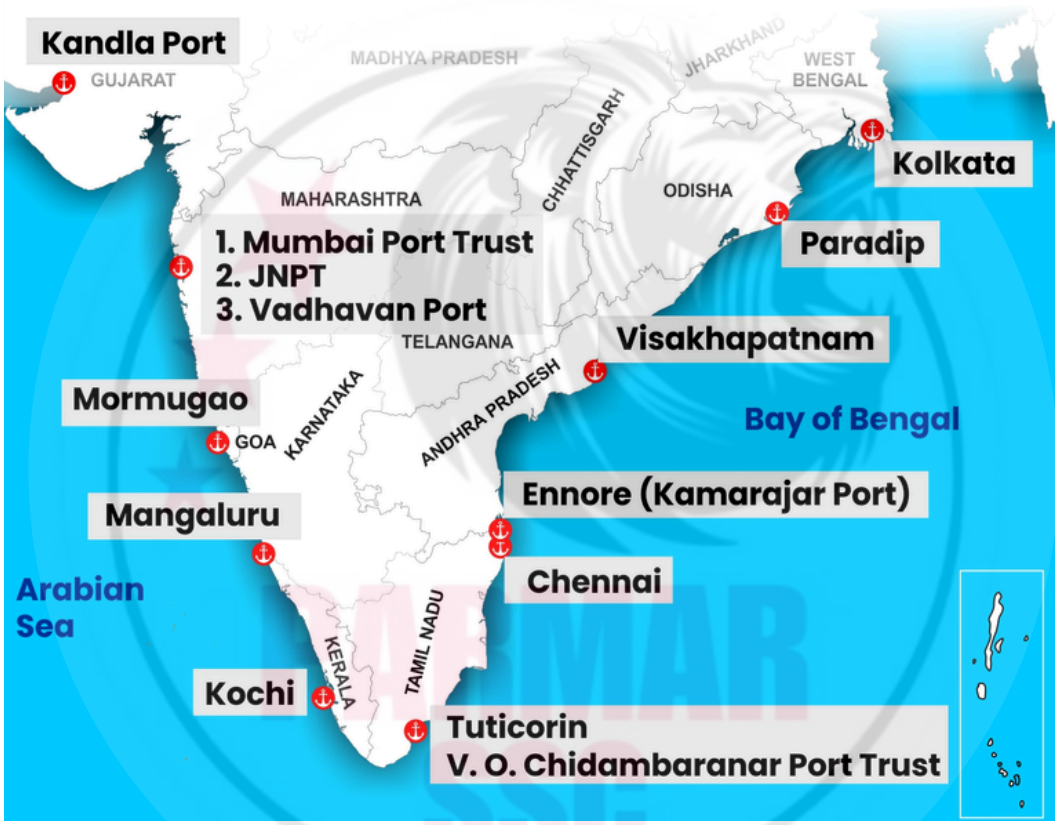




Ports

Classification of Indian Ports

- **Public Ports (12)**: Ownership and managed by Central Government
- **Privately Managed Ports (01)** : Kamarajar port ; located in Ennore in Tamil Nadu is the only corporatized port owned by the Government of India.



- Kandla Port is a Tidal port and is also known as Deendayal Upadhyay port.
- Nhava Sheva Port is largest Ship Container port,
- Kochi Port is known as Queen of Arabian Sea.
- Ennore is Corporatised Port.
- Paradip Port handles largest volume of Cargo.
- Haldia port is a Riverine Port.
- Kolkata Port is known as Diamond Harbour.
- Vizhinjam International Seaport (in Kerala) is the first transhipment Port in India.

Types of Port:

- **Satellite Port :** Secondary Port that supplements a Major Port
- **Port of Call :** Used for Ship Refulling (Intermediate Port). Eg: JNPT port
- **Entreport:** Trading hub where good are imported, stored and re-exported.
- **Outport:** Subsidiary port to Main Port ; haldia Port

Air Transport

- Air services in India started in: 1911
- State with Most no. of International Airports: Uttar Pradesh (Kerala stands at 2nd Place)
- Largest Airport: Indira Gandhi International Airport, IGIA (New Delhi)
- Smallest Airport: Baljek AirPort (Meghalaya)
- Oldest AirPort: Juhu Aerodrome in Bombay (established in 1928)



Recently in February 2025, IGAI became the first Indian airport to run entirely on solar and hydro power.

Airports Authority of India (AAI)

- AAI is a statutory body under the ownership of the Ministry of Civil Aviation, Government of India.
- AAI currently manages a total of 137 airports, including 34 international airports, 10 Customs Airports, 81 domestic airports, and 23 Civil enclaves at Defense airfields.
- It was established in 1995 and has its Headquarters in New Delhi.



Greenfield Airport

- A greenfield airport is a completely new airport built from the ground up on undeveloped land



Brownfield Airport

- A "brownfield" airport, which is an upgraded or expanded existing facility.



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