

# CSB IAS ACADEMY

THE ROAD MAP TO MUSSORRIE...

MAINS IMPACT– 2025 – 09/11/2024

## DEDICATED FREIGHT CORRIDORS

### SYLLABUS:

GS 3 > Industry and infrastructure > Infrastructure & Investment models > Railways

### REFERENCE NEWS:

- A recent study by the University of New South Wales, published in Elsevier, highlights the substantial economic contributions of India's Dedicated Freight Corridors (DFCs). These corridors are not only enhancing India's GDP but also boosting Indian Railways' revenues through increased efficiency and reduced freight costs.

### MORE ON NEWS:

- The DFCs have been shown to contribute to overall GDP growth by making the transport of goods more efficient.
- According to the study, DFCs contributed to a **2.94% growth in Indian Railways' revenue** from FY 2018–19 to FY 2022–23.
- Faster and more efficient freight transit has reduced the transportation cost and time, leading to a **reduction in commodity prices by up to 0.5%**.
- This price reduction not only benefits consumers but also increases India's global trade competitiveness.
- The findings were derived from an analysis of the **Western Dedicated Freight Corridor (WDFC) data from FY 2019–20**.

### WHAT ARE DEDICATED FREIGHT CORRIDORS?

- DFCs are specific routes optimized for freight transportation, designed to enhance efficiency and capacity by facilitating the faster transit of goods, double-stacked containers, and heavy-haul trains.
- By improving supply chain efficiency, DFCs are strategically positioned along key industrial and economic hubs, boosting export-import traffic.
- **In October 2006**, the **Dedicated Freight Corridor Corporation of India Limited (DFCCIL)**, a Public Sector Undertaking(PSU) corporation run by the Ministry of Railways, was established as a Special Purpose Vehicle for constructing, operating, and maintaining these corridors.

### BACKGROUND AND CURRENT STATUS OF THE DFC PROJECT

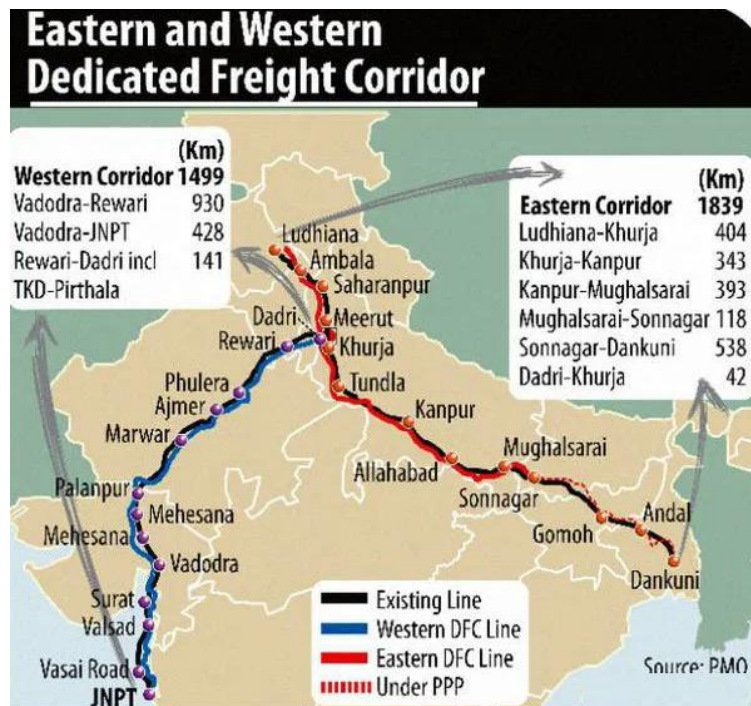
- **Initial Planning and Development:**
  - The Ministry of Railways initiated the construction of two primary corridors:
    - **Eastern Dedicated Freight Corridor (EDFC):** 1,337 km route from Sonnagar in Bihar to Sahnewal in Punjab.
    - **Western Dedicated Freight Corridor (WDFC):** 1,506 km stretch from Jawaharlal Nehru Port Terminal in Mumbai to Dadri in Uttar Pradesh.
  - Foundation laid in 2006 by then Prime Minister Dr. Manmohan Singh.

- **Completion and Progress:**

- **EDFC: Fully operational** with feeder routes connected to various coal mines and thermal power plants.
- **WDFC: 93% completed**, with feeder routes to major ports in Gujarat. Expected to be fully operational by December 2025.

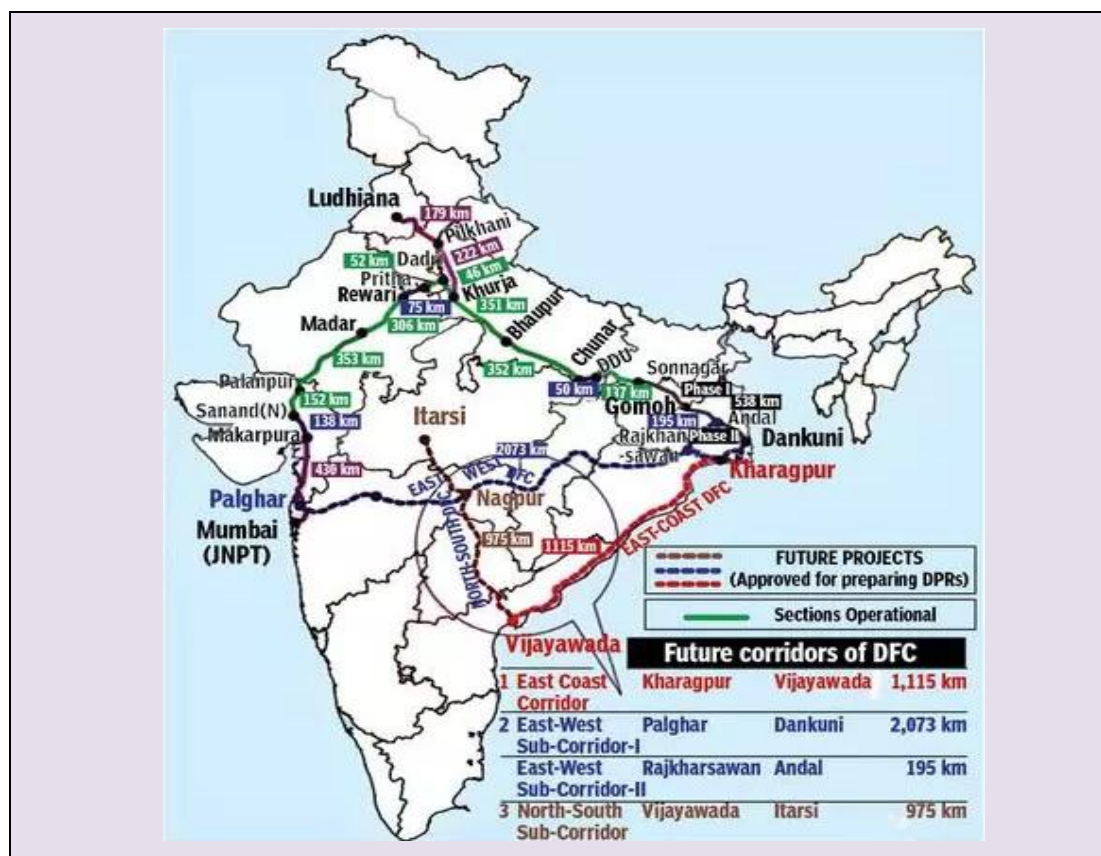
- **Investment:** As of March 2024, ₹94,091 crore has been invested in the project, excluding land acquisition costs.

- **Operational Impact:**
  - Currently, 325 trains run daily, a 60% increase from the previous year.
  - DFC trains are faster, safer, and heavier, having carried over 232 billion Gross Tonne Kilometres (GTKMs) and 122 billion Net Ton Kilometres (NTKMs) since inception.
  - More than **10% of Indian Railways' freight is now transported via DFCs.**



#### Future Prospects: Proposed DFCs

- **Expansion Plans:**
  - **East Coast Corridor:** Kharagpur to Vijayawada (1,115 km).
  - **East-West Sub-corridor I:** Palghar to Dankuni (2,073 km).
  - **East-West Sub-corridor II:** Rajkharsawan to Andal (195 km).
  - **North-South Sub-corridor:** Vijayawada to Itarsi (975 km).



### SIGNIFICANCE OF DEDICATED FREIGHT CORRIDORS (DFCS)

- **Over-utilization of Existing Network:**
  - The **Golden Quadrilateral**, connecting Delhi, Mumbai, Chennai, and Howrah, handles **52% of passenger traffic and 58% of revenue-generating freight**, despite comprising **only 16% of the rail route**.
- **Decongestion:**
  - With approximately **70% of freight trains** expected to shift to DFCs, the existing rail network will have more capacity to accommodate passenger trains, improving punctuality and service efficiency.
- **Increasing Rail Freight Share:**
  - In line with the **National Rail Plan**, which aims to **boost rail freight share to 45% by 2030**, DFCs will enhance rail capacity, providing a competitive alternative to road transport.
- **Reduction in Greenhouse Gas Emissions:**
  - DFCs offer an environmentally friendly option by alleviating road congestion, thus reducing greenhouse gas emissions associated with road transport.
- **Economic and Social Impact of DFCs**
  - **Study Findings by University of New South Wales:**
    - **GDP Contribution:** DFCs contributed to a 2.94% revenue growth for the Railways from FY 2018–19 to FY 2022–23.

- **Commodity Prices:** Reduction in freight costs and travel time through DFCs has led to a decrease in commodity prices by up to 0.5%.
- **Social Equalising Effect:** Significant economic benefits were observed in states with lower per-capita GDP, indicating a positive redistribution impact.
- **Improved Connectivity:**
  - By connecting key economic centers, DFCs support logistics players and industries along their routes, boosting import-export activity and supply chain efficiency.
- **Faster Transit Times:**
  - Transit times are reduced by up to **50%** in some cases, allowing goods to reach destinations quicker and minimizing delays.
- **New Investment Avenues:**
  - The establishment of **industrial corridors and logistics parks** along the DFCs promotes investment, stimulating economic activity in regions around these routes.
- **Track Access Charges and Custom Logistic Services:**
  - DFCs will earn track access charges from Indian Railways and expand rail freight share by offering tailored logistic services, further boosting revenue.
- **Increased Load Capacity:**
  - DFC tracks are built to **carry heavier loads**, accommodating high levels of transport demand.
- **High-end Technology Integration:**
  - The corridors incorporate advanced IT systems for managing freight operations, improving productivity and reducing unit transport costs.

### CHALLENGES

- **Slow progress in land acquisition by states:** For instance, the Gujarat government has cited **slow acquisition of land** for approach roads as a major hurdle. Rehabilitation of affected communities is also a persistent issue, delaying project progress.
- **Time taken in obtaining statutory clearances:** Securing approvals for the procurement of construction materials has disrupted the project schedule, impacting the timeline for implementing agencies.
- **Sluggish work by contractors:** Major contractors, including Alstom, Hitachi, GMR Infra, TPL-Aldesa (a joint venture of TATA Projects India and ALDESA of Spain), and Texmaco Rail and Engineering, have faced difficulties such as **labor shortages, cash flow problems, and general delays in mobilizing resources**.
- **Law and order situation:** In the Eastern Dedicated Freight Corridor (EDFC), **law and order issues** have arisen in areas like Meerut, Muzaffarnagar, and Saharanpur in Uttar Pradesh. These regions have faced **protests that disrupted construction**, especially

affecting the completion of 46 planned road-over-bridges (RoBs), of which only three have been completed while work is yet to commence on 13 others.

- **Delay in construction of approach roads by state governments:** Slow progress in building essential approach roads has created logistical challenges, while long-pending arbitration cases have further delayed development.
- **Delay in cost-sharing agreements for Road Over Bridges (RoBs):** Prolonged delays in obtaining consent and subsequent sanctioning of cost-sharing arrangements for RoBs by state governments along the DFC alignment pose a significant risk to the project's timely execution.
- **Impact of COVID-19 pandemic:** Initially scheduled for completion by December 2021, the DFC project was delayed due to the pandemic, pushing the completion deadline to June 2022. The pandemic resulted in labor shortages, disrupted supply chains, and restricted access to work sites.
- **Lease rent demands by state departments:** The Uttar Pradesh Forest Department's high lease rent demands have further impeded the project's progress.
- **Challenges in coordination with industrial corridors:** Ensuring seamless integration between DFCs and industrial corridors has been challenging, affecting the connectivity between these projects and overall operational efficiency.
- **Public-Private Partnership (PPP) project complications:** PPP projects often experience time and cost overruns, with private entities pushing for higher revenues, complicating project management and increasing budget pressures.
- **Stringent environmental regulations:** Environmental laws have become more rigorous, and securing necessary clearances, particularly from the National Green Tribunal (NGT), has led to project delays.
- **Limited capacity for efficient coordination among states:** Coordination between central and state governments, especially for RoB and land acquisition matters, remains a challenge, slowing down approval processes and decision-making.

#### WAY FORWARD

- **Streamlining Land Acquisition:** To expedite land acquisition, state governments could adopt single-window clearance mechanisms, ensuring swift and transparent processing of required approvals and prioritizing rehabilitation programs for affected communities.
- **Improving Coordination Among Agencies:** Enhancing coordination between the Dedicated Freight Corridor Corporation of India Limited (DFCCIL), state governments, and industrial corridors can help avoid delays. Setting up joint committees with representatives from key stakeholders could facilitate smoother decision-making.
- **Ensuring Contractor Accountability:** Strengthening contracts with enforceable clauses for accountability and timely completion would help mitigate delays from contractors. The government could also consider incentives for early completion and penalties for sluggish work.

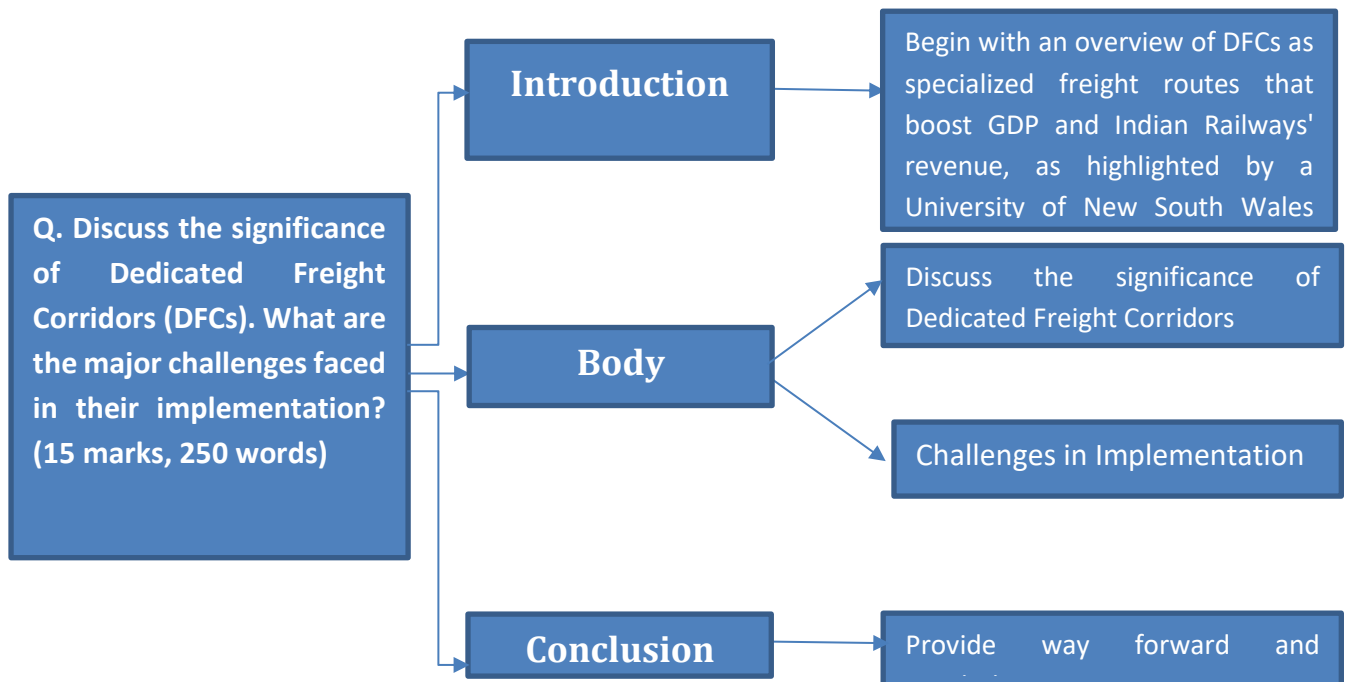
- **Strengthening Law and Order:** Improved collaboration with local authorities to maintain law and order in sensitive areas along the DFC routes is essential. Engaging with local communities to address grievances and ensure security for construction workers can help mitigate disruptions.
- **Addressing Environmental Concerns:** Establishing a framework for faster environmental clearances while adhering to sustainability standards will help meet both regulatory and operational needs. Engaging with the National Green Tribunal (NGT) early in the planning process can help minimize delays due to environmental laws.
- **Expanding Public-Private Partnerships (PPP):** The government can encourage more effective PPP models by defining clear terms and setting realistic profit-sharing goals, while monitoring progress closely. A supportive regulatory environment that ensures fair returns for private players while aligning with project goals is essential.
- **Deploying Advanced Technology:** Utilizing high-end technology and advanced IT systems for project monitoring, data management, and supply chain optimization will increase efficiency, reduce delays, and enhance freight productivity on the DFCs.
- **Developing Skilled Workforce:** Investing in training programs for construction workers, engineers, and operators associated with the DFCs will ensure that skilled labor is available to meet future demands.

### **CONCLUSION**

- The Dedicated Freight Corridors represent a transformative shift in India's rail and logistics infrastructure, offering solutions to longstanding issues of congestion, environmental impact, and economic inefficiencies. By addressing current challenges and implementing strategic improvements, India can realize the full potential of DFCs, which promise to enhance GDP growth, reduce logistics costs, and foster regional development. The DFCs, once fully operational, will be instrumental in elevating India's competitiveness in global trade and advancing its economic ambitions.

### **PRACTICE QUESTION:**

**Q. Discuss the significance of Dedicated Freight Corridors (DFCs). What are the major challenges faced in their implementation? (10 marks, 150 words)**

APPROACH:MODEL ANSWER:

The University of New South Wales, in a study published by *Elsevier*, highlighted the significant economic contributions of India's Dedicated Freight Corridors (DFCs). These specialized freight routes, designed for efficient goods transit, **have enhanced GDP and increased Indian Railways' revenue** by reducing freight costs and improving transport times. Initiated in 2006 by the Dedicated Freight Corridor Corporation of India Limited (DFCCIL), DFCs connect major industrial hubs, streamlining India's supply chain.

**Significance of Dedicated Freight Corridors:**

1. **Economic Growth:** DFCs contributed to a 2.94% revenue increase for Indian Railways between FY 2018–19 and FY 2022–23.
2. **Reduced Commodity Prices:** Faster transit reduces transportation costs, decreasing commodity prices by up to 0.5%.
3. **Higher Rail Freight Share:** DFCs support the National Rail Plan's target of a 45% rail freight share by 2030, reducing road traffic.
4. **Decongestion of Rail Network:** Shifting 70% of freight trains to DFCs allows greater capacity for passenger trains, enhancing punctuality.
5. **Environmental Benefits:** DFCs reduce greenhouse gas emissions by lessening road transport dependency.

6. **Regional Development:** States with lower per capita GDP benefit significantly, promoting balanced economic growth.
7. **Improved Investment Opportunities:** DFCs foster the development of industrial corridors and logistics parks, stimulating regional investments.

#### Challenges in Implementation:

1. **Land Acquisition Delays:** Slow land acquisition and rehabilitation processes, especially in Gujarat, impact project timelines.
2. **Delays in Statutory Clearances:** Obtaining construction material and environmental clearances disrupts schedules.
3. **Underperforming Contractors:** Labor shortages and cash flow issues among contractors lead to project delays.
4. **Law and Order Issues:** Protests in areas like Meerut disrupt construction, particularly for Road Over Bridges (RoBs).
5. **Coordination with Industrial Corridors:** Integrating DFCs with industrial corridors poses connectivity and efficiency challenges.
6. **Impact of COVID-19:** The pandemic caused delays due to labor shortages and supply chain disruptions.
7. **Environmental and Regulatory Challenges:** Strict environmental laws and National Green Tribunal (NGT) clearances slow progress.

#### Way Forward

- **Expedite Land Acquisition** through single-window clearance systems and prioritize rehabilitation.
- **Enhance Coordination** between DFCCIL, state agencies, and industrial corridors for smoother integration.
- **Strengthen Contracts** with enforceable timelines and penalties to ensure contractor accountability.
- **Address Environmental Concerns** by establishing streamlined clearance processes aligned with sustainability standards.
- **Promote Public-Private Partnerships (PPPs)** with realistic terms to attract private investment and reduce project risks.

The Dedicated Freight Corridors promise a transformative impact on India's logistics infrastructure by reducing congestion, improving efficiency, and fostering sustainable growth. Addressing existing challenges will allow DFCs to play a pivotal role in India's economic ambitions and global trade competitiveness.