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Session 4: A roadmap for port–railway connectivity, Pakistan

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Outline

- Introduction
- Current issues in Pakistan ports
- Advantages of Rail transport
- Factors for success of Port-Rail connectivity
- Concept and general assumptions for Pakistan
- Recommendation Scenarios for Pakistan
- Next Steps for Pakistan

Introduction

Multiple players required for freight transport from Port to hinterland and back

Shipping lines ↔ Port Terminal operators ↔ Logistics agents ↔ Land transport companies ↔ Inland Terminal operators

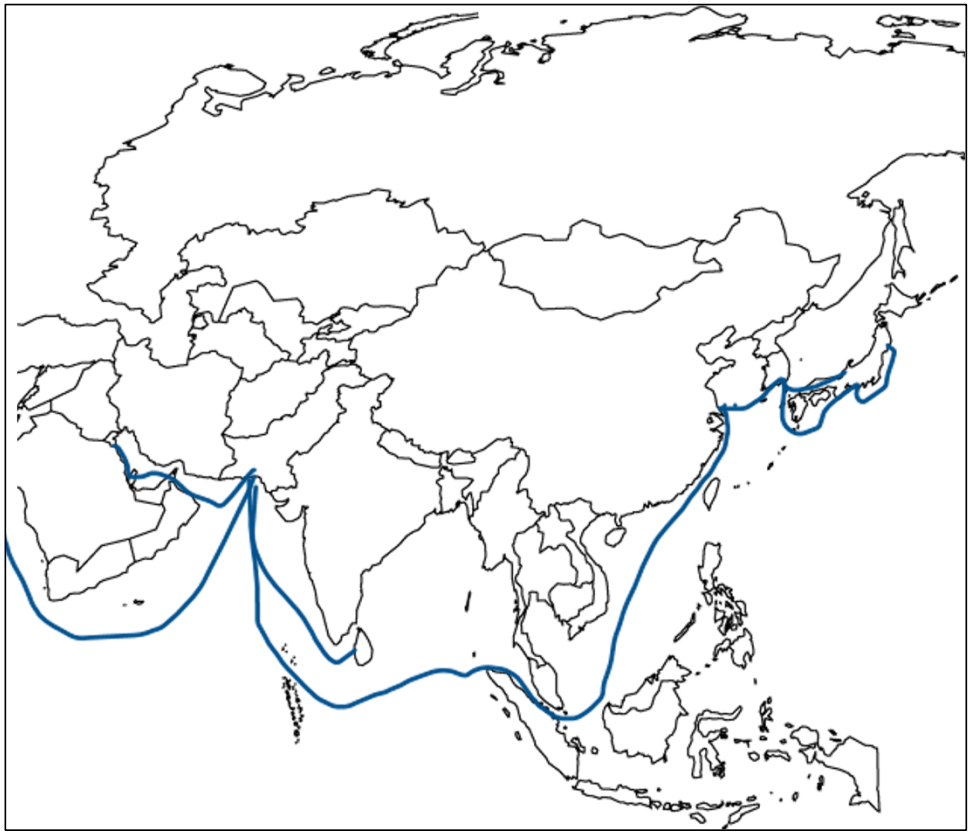
Introduction

Pakistan's seaports are crucial nodes for trade with the Karachi Port and Port Qasim as major hubs in Pakistan's global shipping network, connecting the country to various trade routes and CAREC region

Introduction

Pakistan Geo-Location Advantages

- Access to Arabian Sea (Coastline 990 KM)
- Three Int'l deep-sea ports (Karachi, Qasim, Gwadar)
- Neighbors:
  - Northern: China
  - Western: Landlocked Afghanistan
  - South-West: Iran
  - Eastern: India
  - Secondary Neighbors: Apex south position providing easier access to CAREC countries

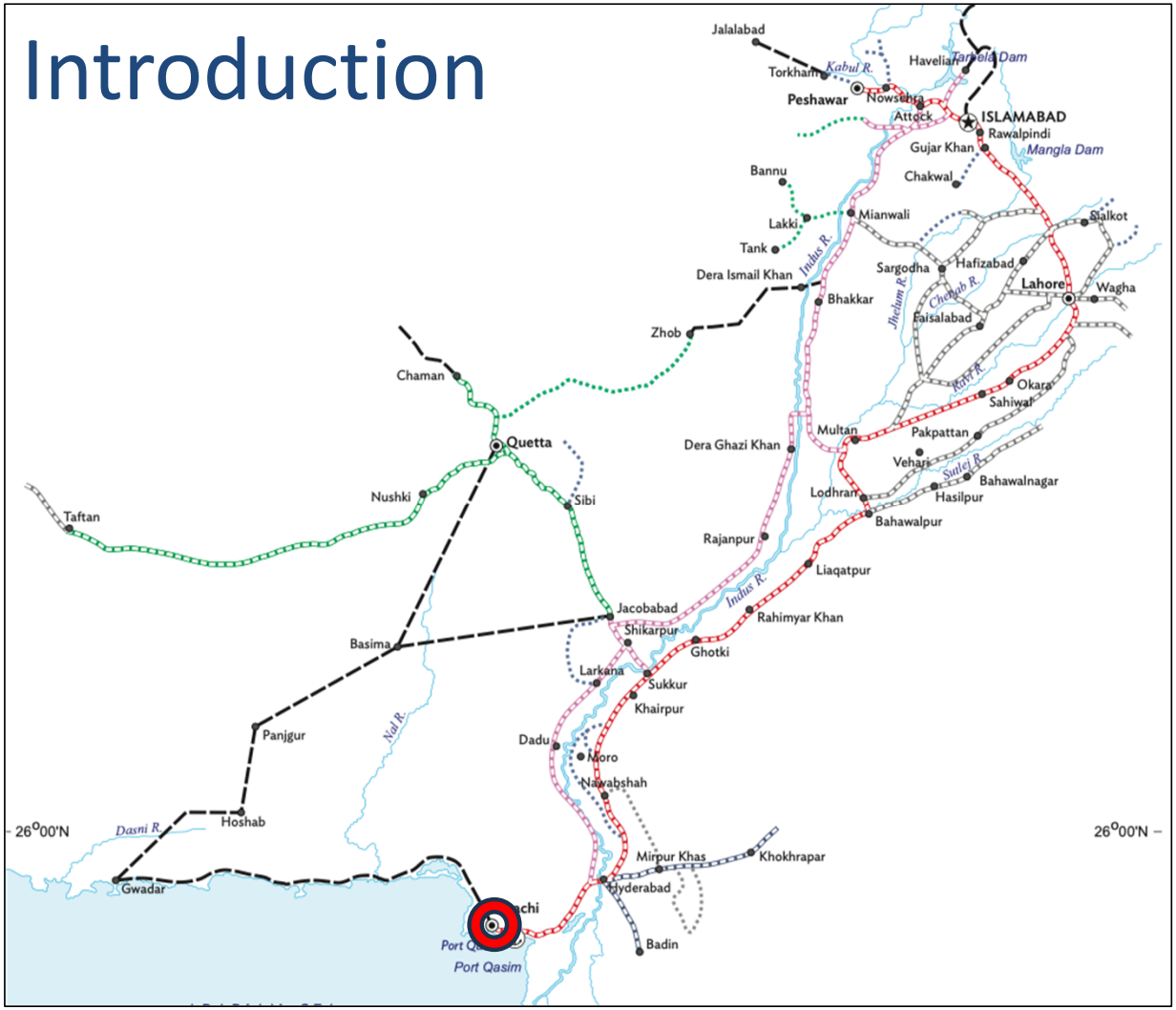


Introduction

Pakistan's geography and strategic location

The railway network should give Pakistan Railways (PR) a competitive alternative over road transport for much of the traffic between the ports and central and northern parts of the country.

Due to capacity limitations, PR only transports about 5% of this traffic and 95% is carried by road



Introduction

Key Ports

Port Muhammad Bin Qasim

- Qasim International Container Terminals (QICT) operated by DP World for containerized traffic
- Pakistan International Bulk Terminal (PIBT) for dry bulk including Coal, Clinker and Cement.

Karachi Port

- South Asia Ports Terminals (SAPT) operated by CK Hutchinson for containerized traffic and Karachi International Container Terminal (KICT) operated by CK Hutchinson for containerized traffic,
- Karachi Gateway Terminal Limited (KGTL) operated under a Joint Venture between Abu Dhabi Ports Group and Kaheel Terminals for dry bulk (excluding coal) and expanded containerized traffic in future

Current Issues

1. **Railway plays a minor role**
   - Scarce capacity
   - Rolling stock shortage
2. **Slow operations due to inefficient shunting operations (~32km/h average)**
3. **Due to lack of service, market depends on road**
   - Trucks available and competitive in price with good service quality
4. **Unsuccessful PPP establishment attempts in the past**
5. **The most successful rail connection operates between Port Qasim QICT terminal operated by DP World and the Prem Naghar terminal south of Lahore also operated by DP World**
6. **Maximum 10 freight train pairs per day**

Advantages of Rail transport

Adds value

- Rail connections add value to port users through lower overall transport costs and have a huge potential to increase trade activity due to the extension with the hinterland and to increase the share of sustainable transport, resulting in smaller carbon foot-print.

Sustainable

- Shifting traffic to rail is recognized as a sustainable mode of transport, contributing to reducing emissions and costs and facilitating energy efficient transport.

Factors for success of Port-Rail connectivity

1. Availability of rolling stock (wagons and locomotives)
2. Introduction of scheduled freight trains with fast turnaround also in other terminals (such as at DP World)
3. Allowing PPP arrangements for providing intermodal rail services
4. Enhancing the reliability and safety of the rail infrastructure

Concept and general assumptions

1 Growth potential for rail freight services

- There is enormous suppressed demand for railway freight at the gateway ports of Karachi and Qasim
- Many shippers and freight forwarders prefer to use railway for port – hinterland connectivity if it works properly
- For dry bulk and container traffic rail can offer cost and service quality advantages over road particularly for longer distances
- It is expected that if railway capacity is improved and bottlenecks reduced, the rail share of port traffic could rise from 3-5% today to 25% and above

Concept and general assumptions

2 **Need to address transport-related air pollution and congestion in Karachi**

- Approach should contribute substantially to reducing/minimizing air pollution and road congestion in Karachi
- Pakistani authorities should invest in improved infrastructure and facilities to bypass the congested part of the city
    - Establish stricter policies on citywide curfews for heavy road traffic
    - Heavy vehicle road worthiness/emissions
    - Improve axle-loading enforcement
    - Develop other possible solutions

Concept and general assumptions

3 Block trains

- Railway services to/from Lahore and other northern cities to be operated as full-train load block trains
- In 2022 PR adopted a “policy” of running all freight as full-train loads so if that policy continues to hold this idea should be acceptable to PR
- Adopt best practice approaches to the operation of such block trains with a view simplifying/streamlining services
    - Making them more attractive to customers
    - Less costly to operate
    - Improving schedule reliability
    - Improving asset utilization
- Operate block trains as Shuttles that retain their locomotives and wagons and reduce the need for shunting

Concept and general assumptions

4 **Need for reforms to enable private sector participation**

- There is a longstanding weaknesses in PR's business management, customer orientation and level of service provided, together with PR's inability to generate profits to finance investment
- it is therefore essential for the government to allow the private sector to operate trains and terminals, and compete for traffic, based on granting of track access rights and introduction of an independent regulation (economic and safety regulation)
- If the private sector is allowed to participate in this way, it will be willing to invest in rolling stock and in providing efficient, modern terminals
- Reforms of this kind are already envisaged in the new SOE Act and the ongoing IMF structural adjustment programme

Concept and general assumptions

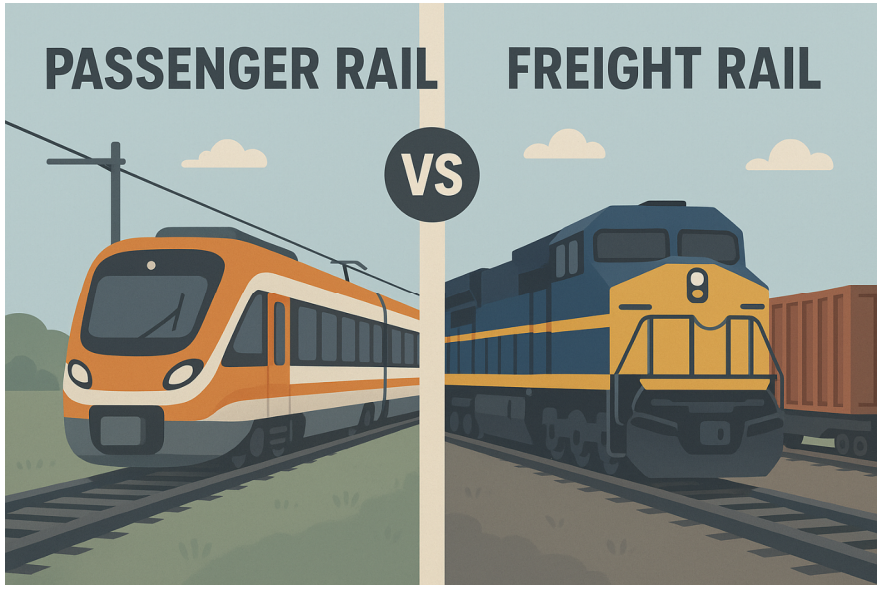
5 **Change in PR core business and investments over the medium term**

- Necessary infrastructure improvements for modern rail transport
  - Removal of speed restrictions
  - 23 t axle load on ML2
- Identifying „quick wins“ for improving capacity and operationa
- Cutting transport times for freight
  - Faster delivery and return
  - Increased competitiveness with trucks
  - Reduced staff deployment
  - Increase rolling stock efficiency
  - Low costs and increased profits
  - Increased demand
  - Increased number of trains operated

Concept and general assumptions

6 **Allocation of railway capacity between passenger and freight services**

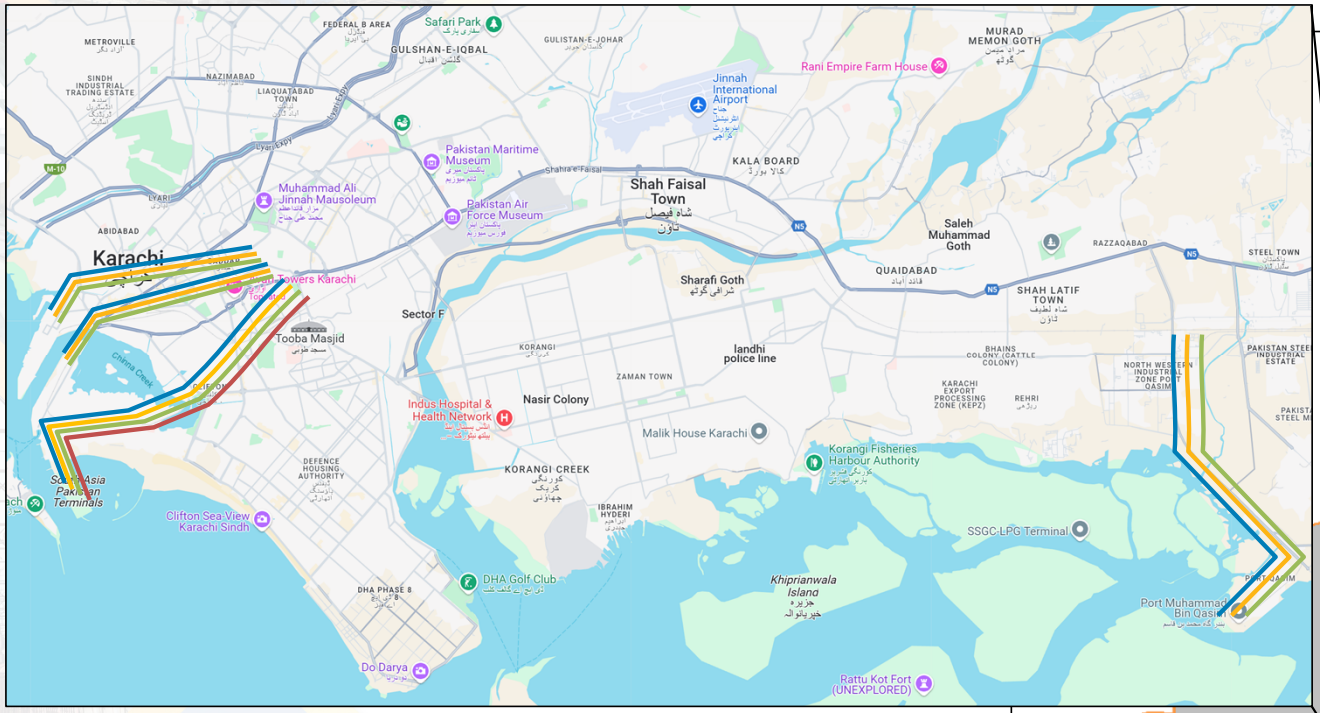
- Risk that, due to political priorities, the additional capacity may be allocated to passenger services not freight
- These priorities lead to losses as most passenger services are loss making
- Without enough earnings, PR's assets were depleted and traffic carrying capacity, and service quality, reliability and safety steadily declined
- It is essential to discontinue such priorities and ensure that most additional capacity is allocated to freight services
- Such a change seems to be required by the SOE Act, which reportedly directs PR to operate strictly along commercial lines in future

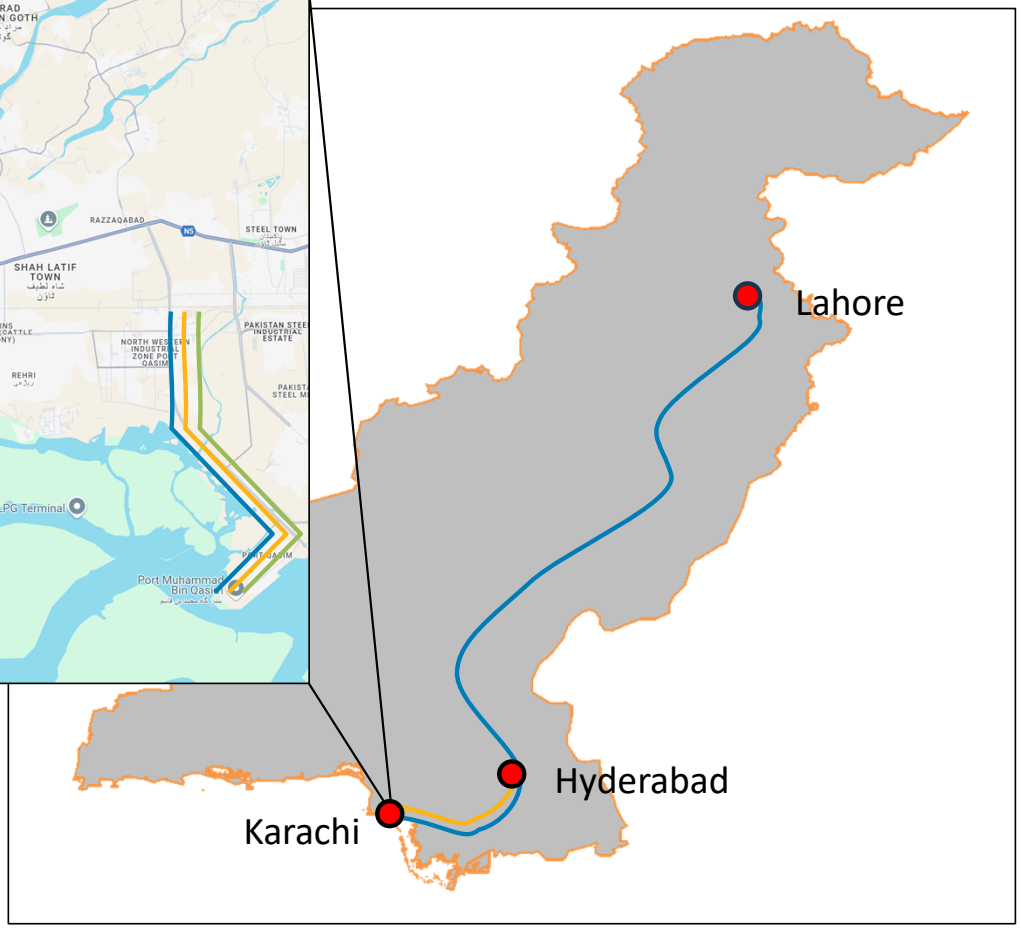


Recommendation Scenarios

Scenario 1	Scenario 2a	Scenario 2b	Scenario 3
Small, quick interventions to realize potential traffic capacity of existing infrastructure	Development/upgrading of priority port-rail connections	Development/upgrading of priority port-rail connections and alleviating the most critical ML1 capacity bottlenecks with better rolling stock efficiency	Development/upgrading of priority port-rail connections and alleviating all ML1 capacity bottlenecks with better rolling stock efficiency
CAPEX Rolling stock: ~€135 million	**CAPEX** Rolling stock: ~€590 million	**CAPEX** Rolling stock: ~€765 million	**CAPEX** Rolling stock: ~€3 billion
KPI Increase in Train-km p.a.: ~1.7 million Increase in Ton-km p.a.: - Increase in TEU p.a.: ~84,000	**KPI** Increase in Train-km p.a.: ~7.5 million Increase in Ton-km p.a.: ~1.4 billion Increase in TEU p.a.: ~294,000	**KPI** Increase in Train-km p.a.: ~15.6 million Increase in Ton-km p.a.: ~5.2 billion Increase in TEU p.a.: ~504,000	**KPI** Increase in Train-km p.a.: ~79.3 million Increase in Ton-km p.a.: ~18.5 billion Increase in TEU p.a.: ~2.73 million

Recommendation Scenarios

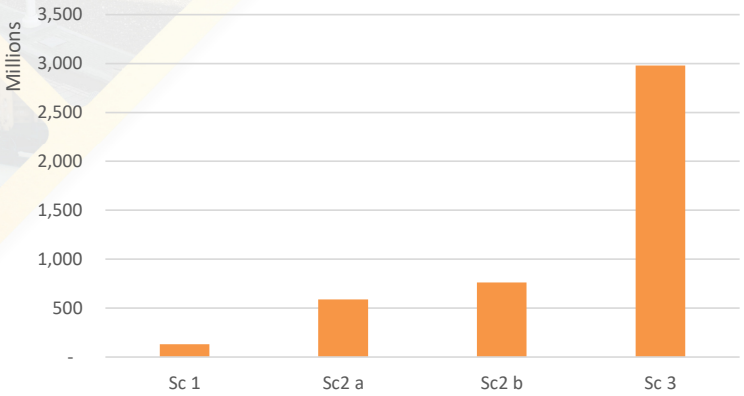




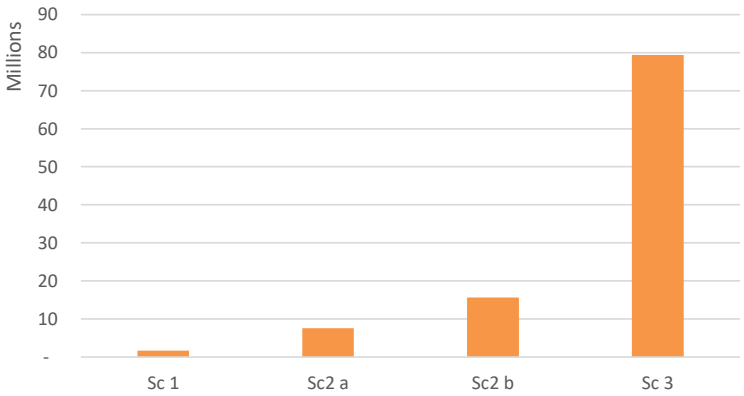
Scenario 1
Scenario 2a
Scenario 2b
Scenario 3

Recommendation Scenarios

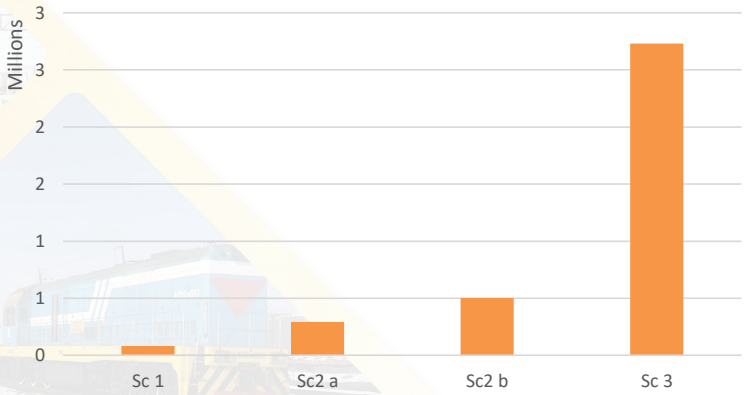
Rolling stock investments (€)



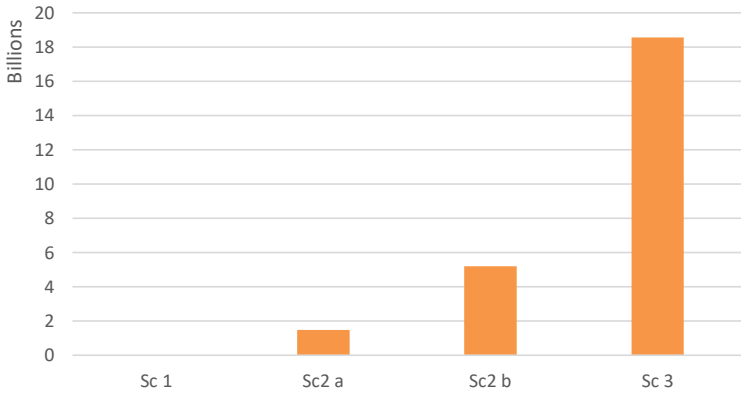
Potential increase in Train-km p.a.



Potential increase in TEUs p.a.



Potential increase in ton-km (Bulk) p.a.



Next steps

1

Technical assistance for the implementation of:

- Timetable planning software
- Traffic management systems
- Process management and quality management methods

2

Technical assistance for improving safety standards

- Minimize incidents of derailing
- Introducing train protection systems
- Improve safety culture within staff and officials

3

Assessment of branch lines including infrastructure conditions, transport demand, investment need, and traffic virtue strengthen secondary rail network

4

Optimization of rolling stock usage and asset management

5

Operational and cost analysis to improve the utilization of rolling stock (locomotives and wagons) with circulation planning, procurement strategy based on LCC, maintenance routine, etc.

Thank you