



# PROJECT SEMINAR

## GICC 2017, Seoul, Korea

# Country Presentation

# BANGLADESH

## Bangladesh Railway

# Outlines of Presentation

- Brief Country Profile
- Bangladesh Railway and Railway Projects
- Outline of Bangabandhu Sheikh Mujib and Karnafuli Railway Bridge Projects

# Bangladesh: Key Facts



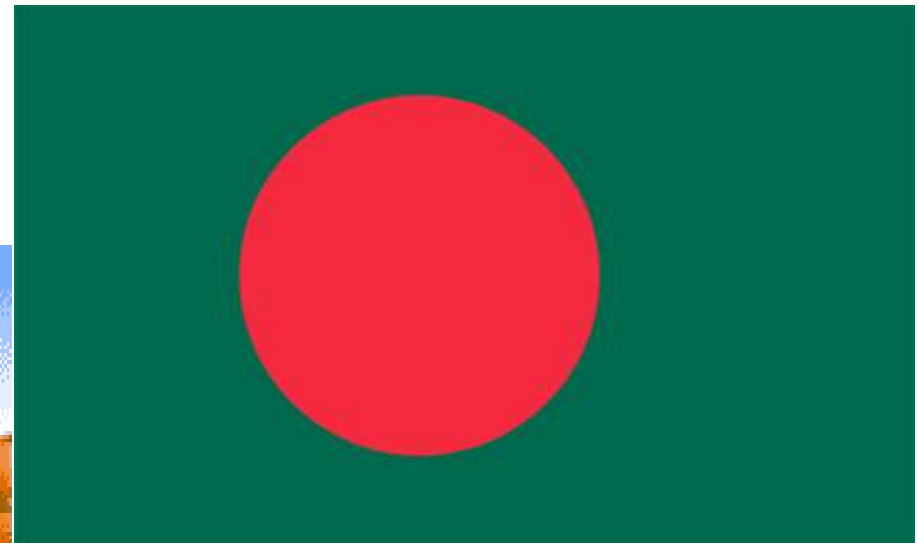
- ❖ **Name:** Government of the People's Republic of Bangladesh
- ❖ **Form of Government:** Parliamentary Democracy
- ❖ **Head of State:** President
- ❖ **Head of Government:** Prime Minister
- ❖ **Parliament System:** Unicameral
- ❖ **State Structure:** Unitary
- ❖ **Capital:** Dhaka



Logo



Emblem



National Flag

# Geography



Bangladesh is in both the eastern and northern hemispheres. It's positioned on the Indian subcontinent in south-central Asia, and is bordered by the Bay of Bengal, and the countries of India and Myanmar.

Lies between 23.34' and 26.38' north latitude and between 88.41' and 92.41' east longitude.

# History

- ❖ **4<sup>th</sup> Century B.C.:** Recorded history traceable with clear evidence of flourishing civilization consisting of cities, palaces, temples, forts, seats of learning and monasteries
  - Stone age tools found in the Greater Bengal region indicate human habitation for over 20,000 years.
- ❖ **12<sup>th</sup> Century A.D.:** advent of the Muslims, enjoying periods of prosperity under Muslim rule
- ❖ **17<sup>th</sup> Century A.D.:** A time of economic well being
- ❖ **1757:** Beginning of British Colonial Rule
- ❖ **1947:** Departure of the British from Indian subcontinent, Bangladesh became part of Pakistan as East Pakistan
- ❖ **1952:** Language Movement (***21 Feb International Mother Language Day***)
- ❖ **16 December 1971:** Emergence of Bangladesh.



Somapura Mahavihara,  
a UNESCO World Heritage Site (Pala Empire)

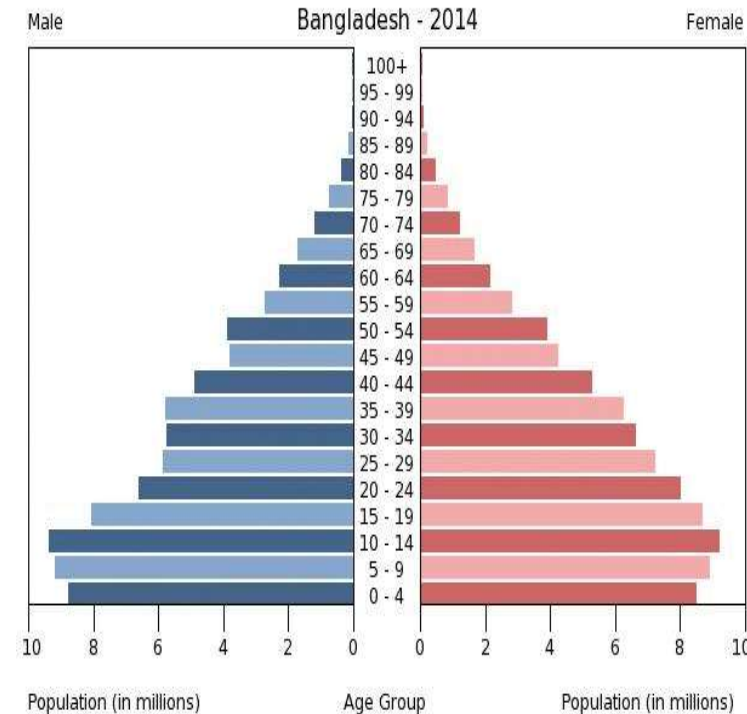


Language Movement in 1952



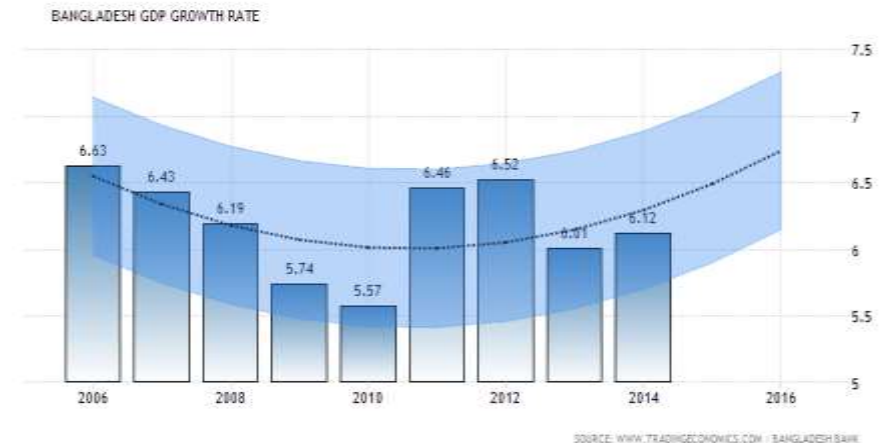
# Bangladesh: Facts & Figures

- **Area:** 147,570 km<sup>2</sup> (92<sup>nd</sup>)
- **Population:** 168.96 (8<sup>th</sup>, 2015)
  - **Density:** 1,033.5/km<sup>2</sup> (12<sup>th</sup>)
  - **Religion:** 86.6% Islam, 12.1% Hinduism, 0.6% Buddhism, 0.4% Christianity, 0.3% Others
  - **Ethnic groups:** 98% Bengali, 2% other (2014)
  - **Growth Rate:** 1.2% (2014)
  - **Urban Population:** 28.4% (2014)
- **Life Expectancy:** 72.63 (2014)
- **Infant Mortality:** 31 per 1,000 live births in 2015 (37 in 2011)
- **Official Language:** Bengali (Bangla)
- **Landscape:** Mostly Flat Alluvial Plain Low Land; Hilly in the Southeast Part



# Bangladesh: Facts & Figures

- **GDP (PPP):** US\$572 billion (33th; 2015)
  - Per capita: \$3,581(144<sup>th</sup>)
  - Agriculture 19%; Industry 30%; Services 51%
- **GDP Growth Rate:** 6.5% (2015)
- **Literacy:** 61.5 % (2014)
  - Enrollment Rate in Primary School: 97.7% against 61% in 1990
- **Access to Electricity:** 74% (2015)
- **Labor force:** 87.9 million (2013)
- **Population below poverty line:** 22% (2015)

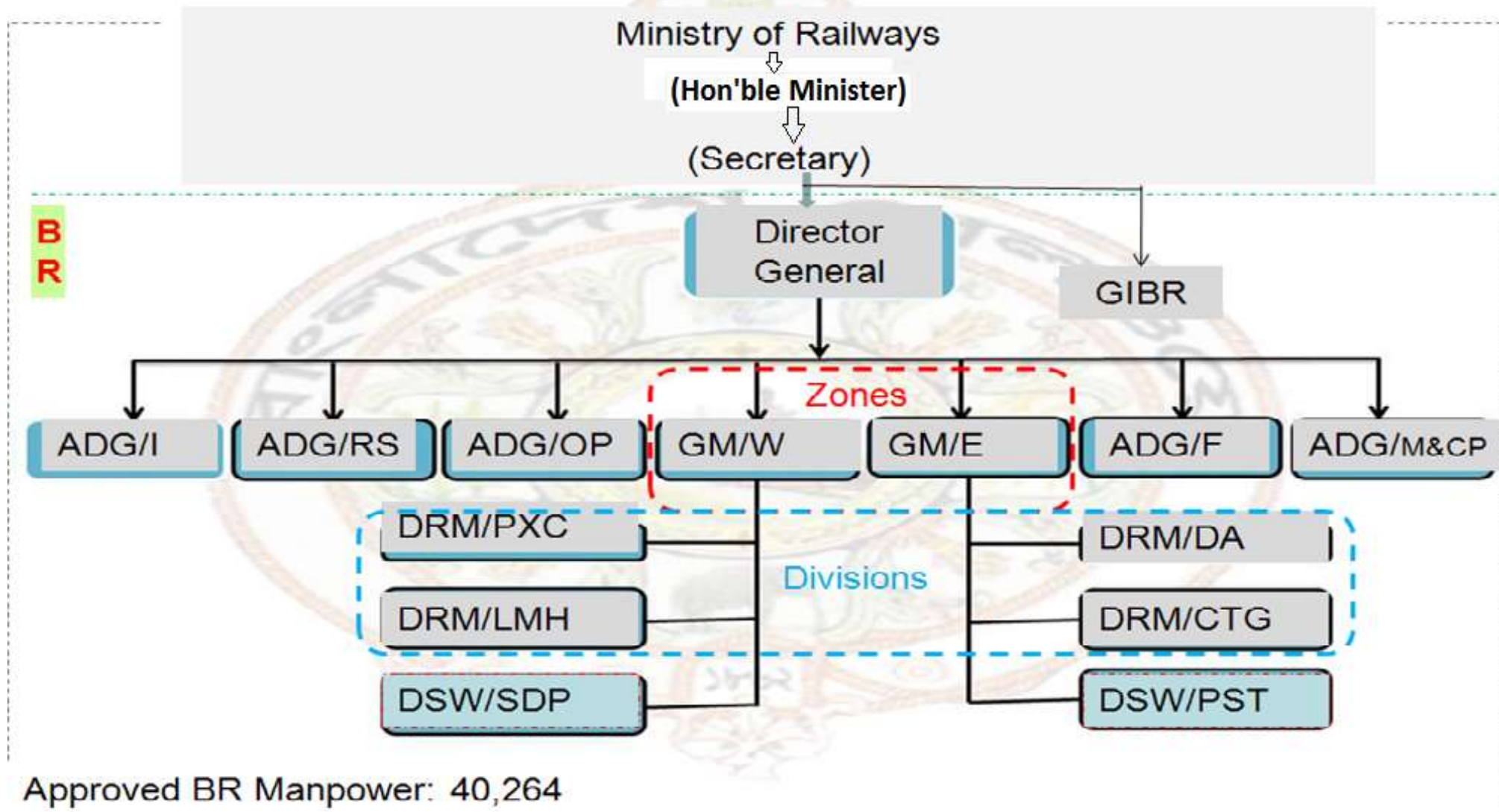




# Bangladesh Railway and Railway Project Financing



# Bangladesh Railway: Organogram



# Bangladesh Railway : Milestone Events

- ❖ **1862:** Started its journey as Eastern Bengal Railway with 53.11 km Jagoti-Darsana BG Rail link
- ❖ **1961:** Renamed as Pakistan Eastern Railway
- ❖ **1972:** Started providing services as Bangladesh Railway
- ❖ **1998:** East-West Railway connectivity over river Jamuna was established from the day of opening Bangabandhu Bridge (Jamuna Multipurpose Bridge)
- ❖ **2003:** Direct BG train communication between East and West zones was established over Bangabandhu Bridge
- ❖ **2007:** Bangladesh signed TAR agreement
- ❖ **2008:** Direct passenger train “Maitree Express” between Dhaka and Kolkata established
- ❖ **2011:** Separate dedicated ministry, Ministry of Railways, was formed



# BR: Facts & Figures

- ❖ Route km: 2,877.10
  - BG: 659.33 km
  - MG: 1,808.05 km
  - DG: 409.72 km
- ❖ No. of stations: 455
- ❖ Passenger carried: 70.83 m.
  - Pass-km: 9,167.18 m.
- ❖ Tonnes carried: 2.48 m.
  - Ton-km: 675.09 m.
- ❖ Daily pass. trains: 340 nos.
- ❖ Daily freight trains: 36 nos.
- ❖ Operating ratio: 217
- ❖ Rev. per pass-km: BDT 0.59
- ❖ Rev. per ton-km: BDT 2.42
- ❖ No. of employees: 25,782





# Bangladesh Railway : Issues & Opportunities

## ❖ Opportunities

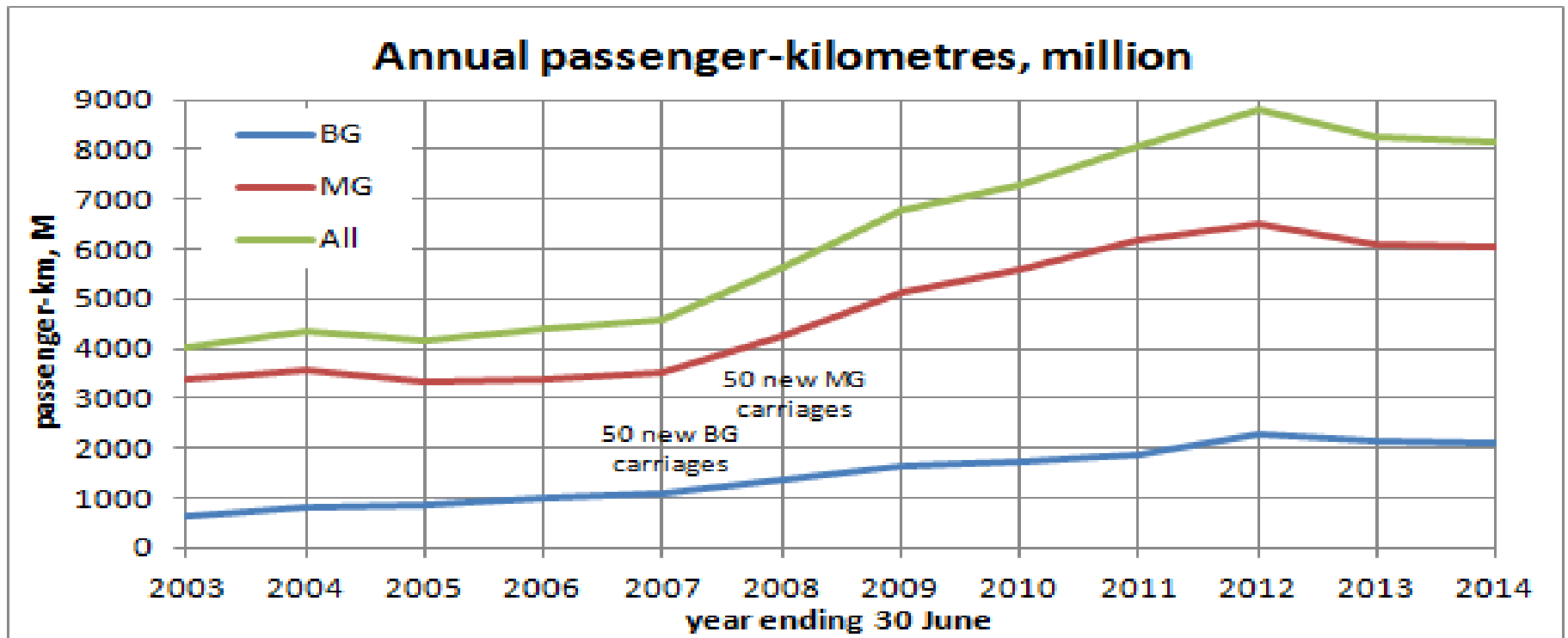
- Geographical location
- Large population
- Huge demand
- Connectivity to TAR network
- Connectivity to Sea Ports



## ❖ Issues

- BR is a truncated portion of the British Indian Railway system
- Less priority and minimal investment over decades
- Gauge differences between East and West
- Missing links and overall deteriorated rail networks
- Poor multi-modal transport and logistics facilities
- Management and reform issues

# Bangladesh Railway : Annual passenger-kilometres, 2014

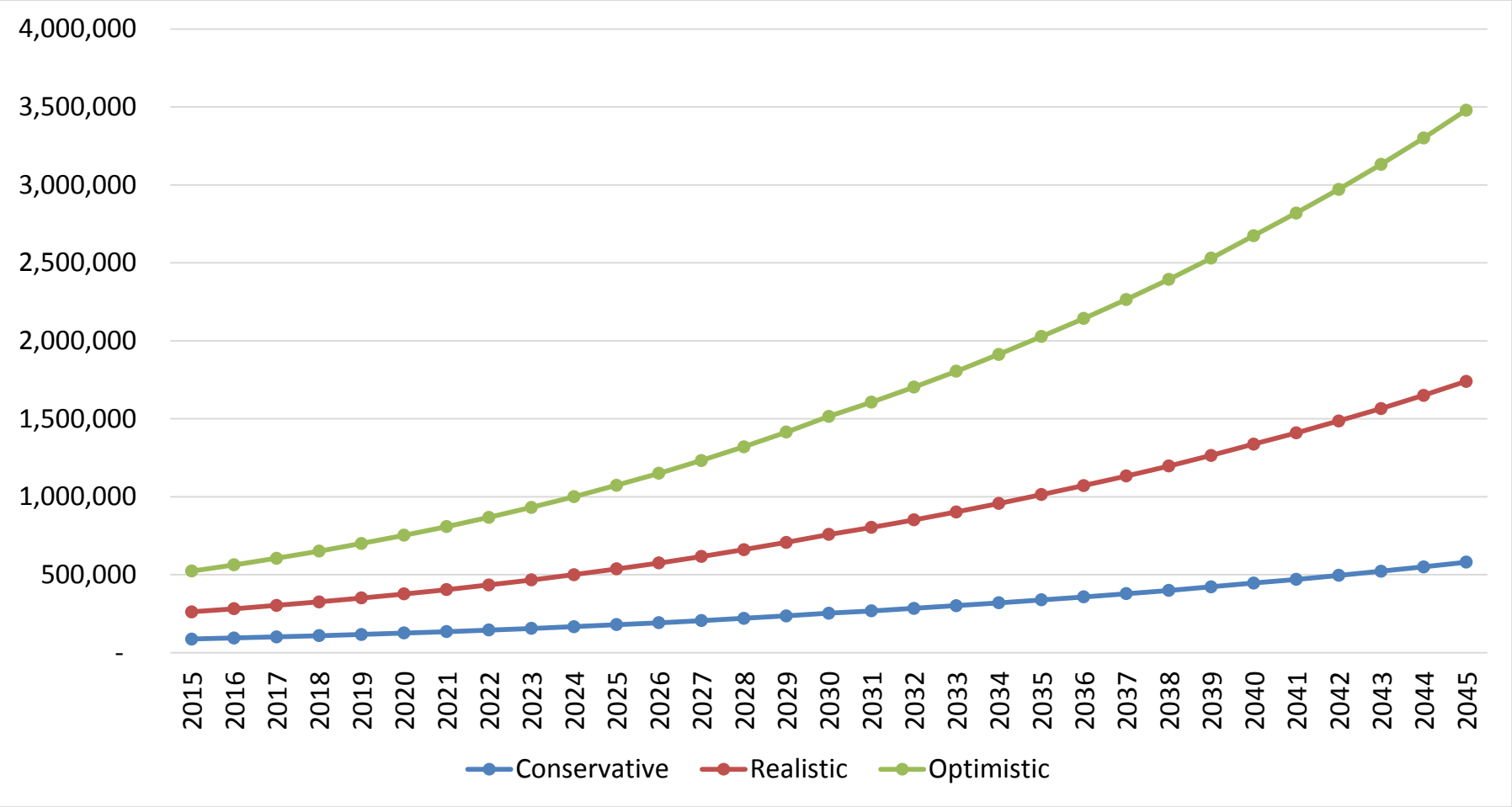


Market share of BR in terms of passenger-km is only 3.0%. With the consistent GDP growth of more than 6% over the last decade, passenger-kilometres of BR are currently increasing at 9%pa.

The freight-kilometres are also increasing at 7.6% pa.



# Bangladesh Railway : Container Traffic Forecasts (TEU)



# Bangladesh Transport Policy

Bangladesh Railway is in harmony with the institutional mandate for transport policy, planning and development priorities of the government and providing a realistic roadmap for implementing the prevalent policies.

- **National Land Transport Policy (2004):** Emphasizes on: rail network development; infrastructure enhancement; railway operations improvement; increased market share for freight traffic especially containers, passenger services, promoting modal shift, rural connectivity and inter-regional rail links, etc.
- **National Perspective Plan 2010-2021, Vision 2021:** The vision of the Perspective Plan, in context of railways, is “to expand and improve the railway system to provide safer, better, a more environmentally friendly and cost effective transport facility to national and international traffic. Bangladesh Railway will also foster international rail links to serve regional/sub-regional connectivity and Trans Asian Railway (TAR).” Port.”

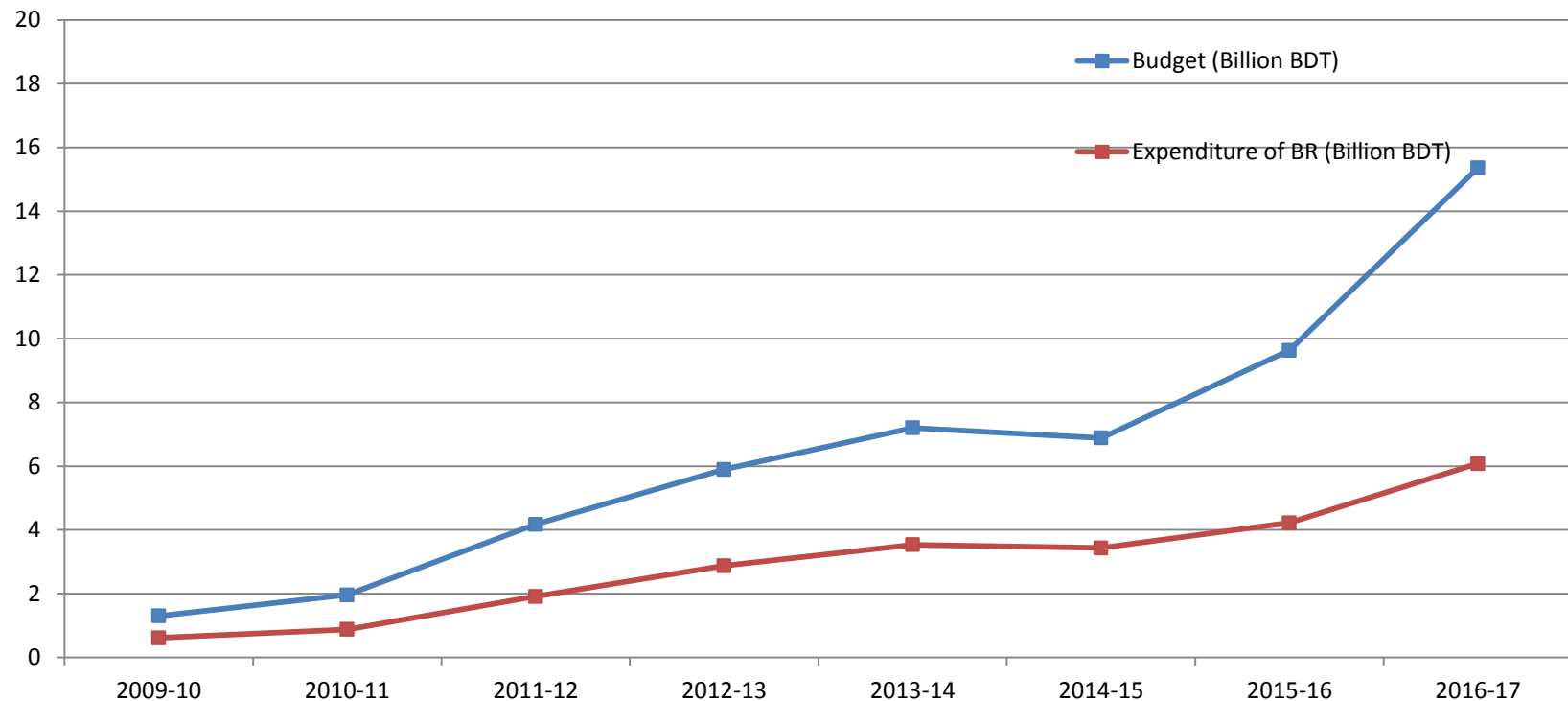
# Bangladesh Transport Policy : A Paradigm Shift Towards Railway Transportation

- **Seventh Five Year Plan (2015-16 to 2019-20):** The Seventh Five Year Plan (2015) also focuses on modernizing railways and “to strengthen the use of river and rail transport to provide a low cost and more environment-friendly alternative to road transport; coordinate the roads, railway and inland water cargo linkages to strengthen the performance of Chittagong Port.”
- **National Integrated Multi-modal Transport Policy:** The National Integrated Multi-modal Transport Policy (NIMTP, 2013) lays primary focus on the roles that rail and inland water transport must play in the development of the overall transport network. One of the imperative measure recommended in NIMTP for Bangladesh Railway is developing multimodal corridors between major economic centers which give priority to freight and a high-speed network for passengers. The immediate priority will be the Dhaka Chittagong Economic Corridor.

Implementation of these Transport Policy of Government would result in a paradigm shift towards Railway Transportation.

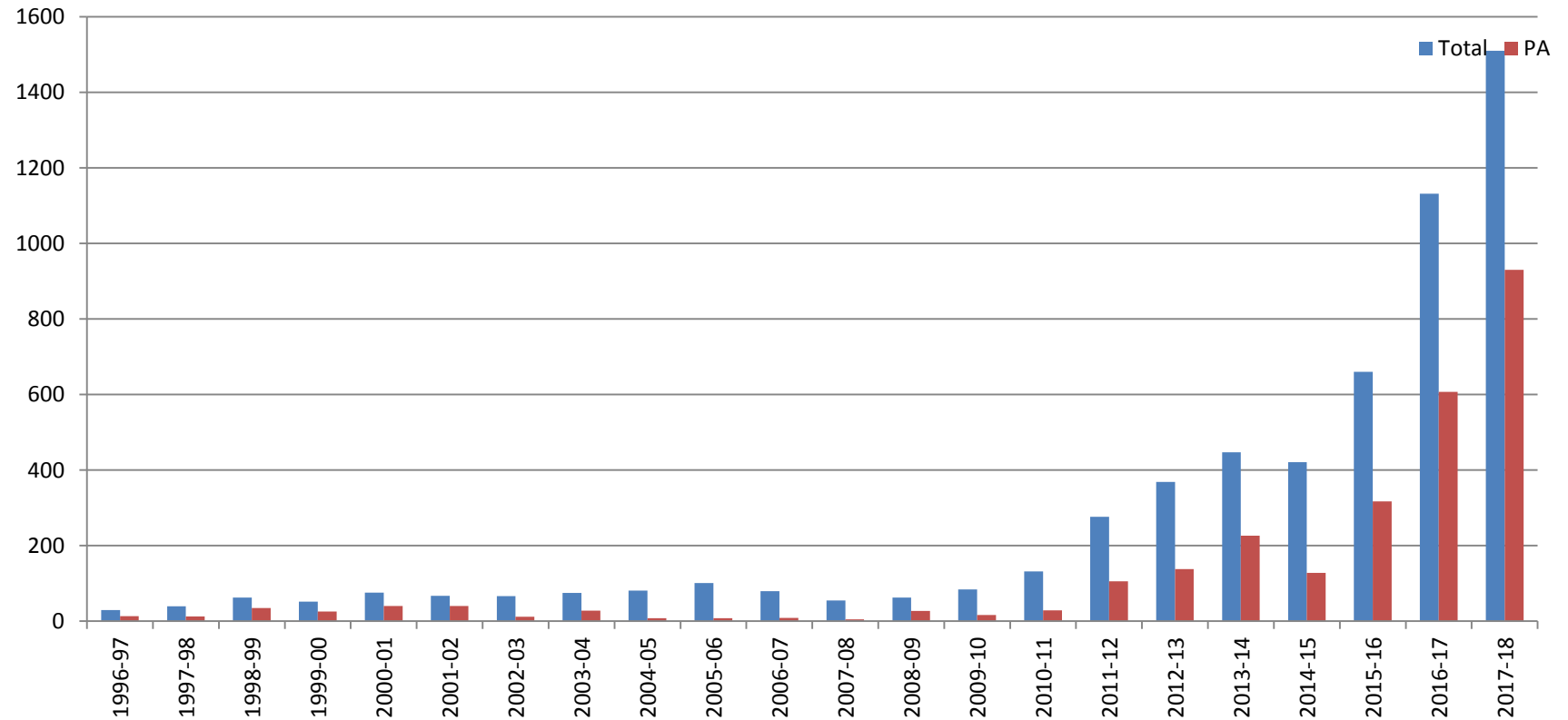
# Recent Developments of Bangladesh Railway

- GoB has put utmost priority to improve railway infrastructure.
- Allocation in Annual Development Program is increasing progressively.
- Since 2009, 63 projects have been approved at a total cost of US\$9.30 b.



# Financing in BR Infrastructure Development

Financial Trends in BR Development Projects (In million USD)





## Bangladesh Railway Projects : FY 2017-18

**40 Investment Projects and 3 TA Projects of BR are included in Annual Development Plan (2017-18)**

❖ GOB funded 18 nos. – Project Cost	:USD 872 million
❖ EDCF funded 01 no. – Project Cost	:USD 28 million
❖ ADB funded 08 nos. – Project Cost	:USD 3673 million
❖ JICA funded 02 nos. – Project Cost	:USD 1433 million
❖ DRGA funded 02 nos. – Project Cost	:USD 75 million
❖ LOC/India funded 7 nos. – Project Cost	:USD 1006 million
❖ China funded 01 no. – Project Cost	:USD 4374 million
❖ Tenderer's Financing 01no. – Project Cost	:USD 116 million
❖ TA projects (ADB) 03 no. – Project Cost	:USD 30 million

## Railway Master Plan (2016-2045)

- ❖ Development of a Railway Master Plan was initiated in 2007 to guide the overall development of Bangladesh Railway in the foreseeable future.
- ❖ The Master Plan is now being updated.
- ❖ The implementation programme has been divided into six phases of 5 years each beginning in 2016-17 and ending in 2044-45.
- ❖ A total of 219 number projects costing US\$ 65.60 billion have been proposed in the Master Plan to be implemented in six phases.
- ❖ The implementation of the plan, along with modern management and operating practices will allow railway to play its full role, not just in the transport system, but in fostering the economic and social development of Bangladesh.

## Railway Master Plan: Program Costs and Phasing

Phases	Phase Period	No of Projects	Cost (in billion USD)
Phase I	2016 - 2020	78	17.58
Phase II	2021 - 2025	65	14,15
Phase III	2026 - 2030	33	11.25
Phase IV	2031 - 2035	23	11.02
Phase V	2036 - 2040	14	10.08
Phase VI	2041 - 2045	06	1.52
Total Investment Cost	2016 - 2045	219	65.60

## Railway Master Plan: Category of Projects

Category of Projects	No of Projects
Rolling Stock Projects	34
Signal and Telecom Projects	23
Works Projects	38
Permanent Way Projects	73
Gauge Conversion Projects	18
Train Operations Support Projects	09
Other Projects	24

## Twenty (20) Present and Future Priority Project

Project No.	Project Name	Master Plan Phase	Project Cost (BDT crore)	Phase Period
1	Bangabandhu Railway Bridge Construction	1	9,740	2016-2020
2	Construction of Rail line from Bhanga Junction (Faridpur) to Payra Port via Barisal	1	28,335	2016-2020
3	Construction of Akhaura-Agartala dual gauge railway link (Bangladesh portion)	1	478	2016-2020
4	Conversion of existing MG track to DG track between Akhaura- Sylhet.	1	8,619	2016-2020
5	Construction of DG Rail Link from Bogra to proposed Railway Bridge parallel to existing Bangabandhu Bridge.	1	6,607	2016-2020
6	Construction of double line between Joydebpur and Ishurdi section of BR	1	7,698	2016-2020
7	Construction of a Dual Gauge Rai Line Parralel to the Existing Meter Gauge Rail Line in Joydebpur- Mymensingh -Jamalpur Section.	1	7,255	2016-2020
8	Modernization of Parbatipur Central Locomotive Workshop	1	770	2016-2020
9	Construction of new locomotive workshop at Narayanganj	1	1,155	2016-2020
10	Construction of Repair & Maintenance Workshop for DEMU	1	963	2016-2020
11	Reconstruction of Diesel Loco sheds (09 total) including Equipment upgrade and DG Conversion	1	3,500	2016-2020
12	Establish railway inland container terminal with customs facilities at Dhirasram	1	1,640	2016-2020



## Twenty (20) Present and Future Priority Project

Project No.	Project Name	Master Plan Phase	Project Cost (BDT crore)	Phase Period
13	Rehabilitation of Jessore-Benapole rail line	1	1,502	2016-2020
14	Procurement of 30 BG Locomotives	1	1,078	2016-2020
15	Procurement of 390 Nos. MG and 300 Nos. BG Bogie Covered Vans (BC) and 180 MG and 120 BG Bogie Open Wagons (BKC) for Bangladesh Railway	1	1,165	2016-2020
16	Construction of overpass/flyover in Narayanganj-Joydebpur section of Bangladesh Railway	2	591	2021-2025
17	Construction of Dhaka-Chittagong via Comilla/ Laksam High Speed Railway	2	30,995	2021-2025
18	Conversion of existing MG double track to DG track between Tongi- Bhairab.	2	6,233	2021-2025
19	Construction of Chittagong CGPY Inter-Modal Terminal	2	TBD	2021-2025
20	Conversion of MG double track in to DG track between Bhairabbazar Akhaura including rebuilding of existing Bhairab and Titas bridge.	2	3,214	2021-2025

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# Response from Development Partner

## **Asian Development Bank:**

- 200.00 million USD for procurement of 264 Passenger Coach (214 MG & 50 BG) & procurement of 10 Locomotives.
- 68.57 million USD for procurement of 4 relief cranes.
- 1.00 billion USD for Construction of single line dual gauge railway track from Dohazari to Cox's Bazar railway via Ramu and Ramu to Gundum near Myanmar border.

## **China G2G:**

- 2667.94 million USD for Construction of Padma Bridge Rail Link Project.

## **JICA:**

- Around 1.2 billion USD for Bangabandhu Sheikh Mujib Railway Bridge Construction Project.

## **Indian LOC: Under 2nd LOC-**

- 530.00 million USD for construction of Khulna-Darsana double line railway track and conversion of MG track in Parbatipur-Kaunia section.
- 78.90 million USD for construction of new carriage workshop at Saidpur.

# Response from Development Partner

## **EDCF:**

- 99.00 million USD for construction of Karnaphuly rail cum road bridge.
- 192.00 million USD for procurement of 150 MG carriage & 20 MG locomotives.
- 28.00 million USD for modernization of 20 station's signaling system in Ishurdi-Parbatipur section.

## **Umbrella Project of ADB for Bangladesh Railway:**

- An Aide Memoire has been done for total estimated cost of 453.42 million USD and ADB fund for 360.00 million USD. Under the umbrella project the followings are included:
- Procurement of 40 nos BG Locomotives (Diesel Electric)
- Procurement of 75 nos MG & 50 BG Luggage Van.
- Procurement of 400 MG & 300 BG Bogie Covered Wagon and 180 MG & 120 BG Bogies Open Wagon.
- Technical Assistance for Diesel Electric Workshop, DEMU Workshop and Loco shed at Dhaka & Modernization of Caloca Locomotive Workshop.
- Technical Assistance for Enterprise Resource Planning system.

# **Outline of** **Bangabandhu Sheikh Mujib Railway Bridge Project**



## Project Details

- Railway bridge (L≐4.8 km) equipped with dual gauge double track
- Railway viaducts (L≐0.3 km)
- Railway approach (L≐6.2 km) including minor bridges, culvert, etc.
- Renovation remodeling of Bangabandhu Setu East (BBE) Station and Bangabandhu Setu West (BBW) Station with Computer Based Interlocking (CBI) Signaling System.

Estimated Cost of the Project : 1200 Million USD

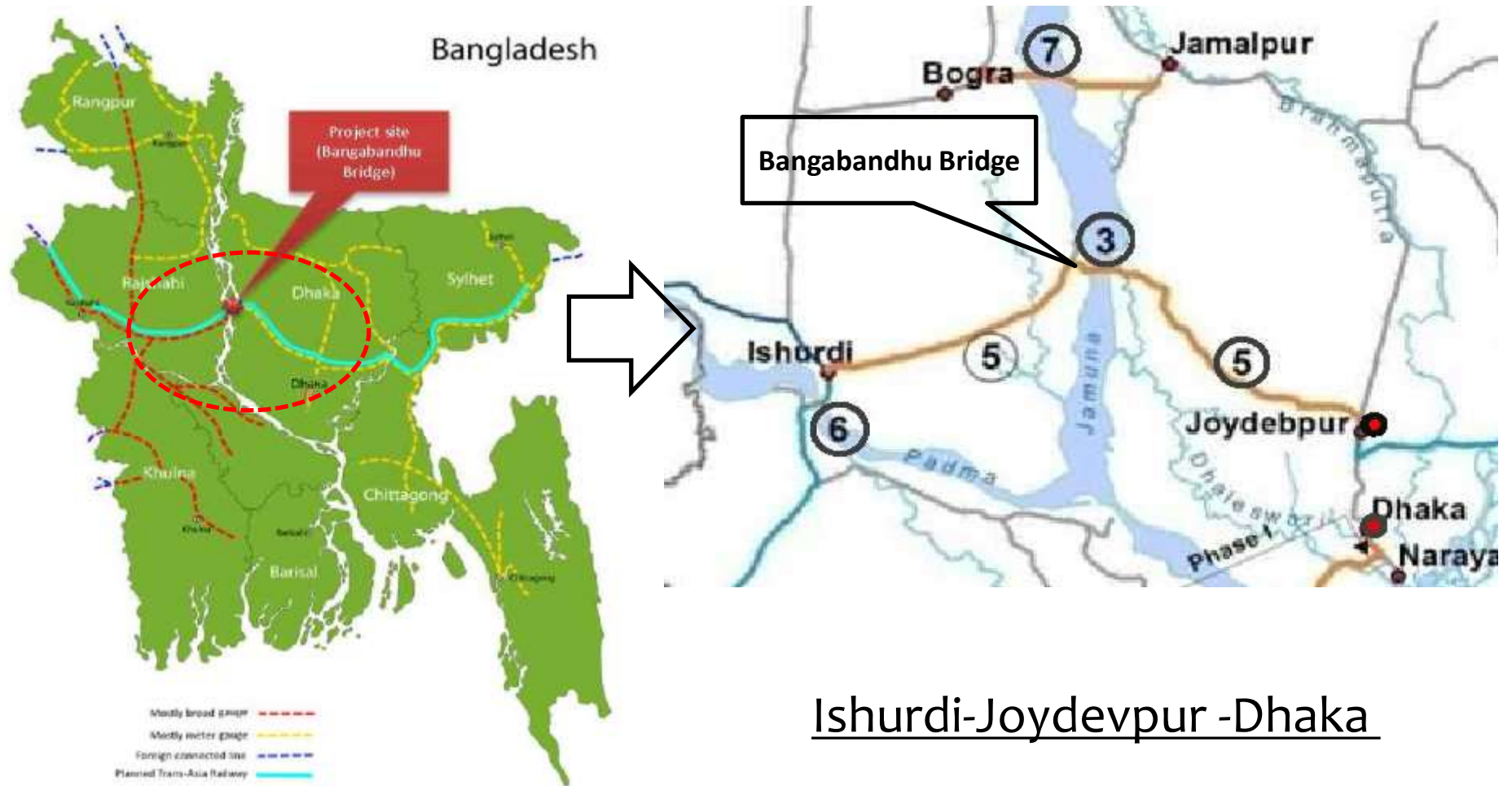
PA : 1200 Million USD

GOB : 1200 Million USD

Development Partner: Japan International Cooperation Agency (JICA)

Implementation Period : 2016-17 to 2023-24

# Project Site



Ishurdi-Joydevpur -Dhaka

## Project Location Map



Bangabandhu Bridge



Existing Railway on Bangabandhu Bridge



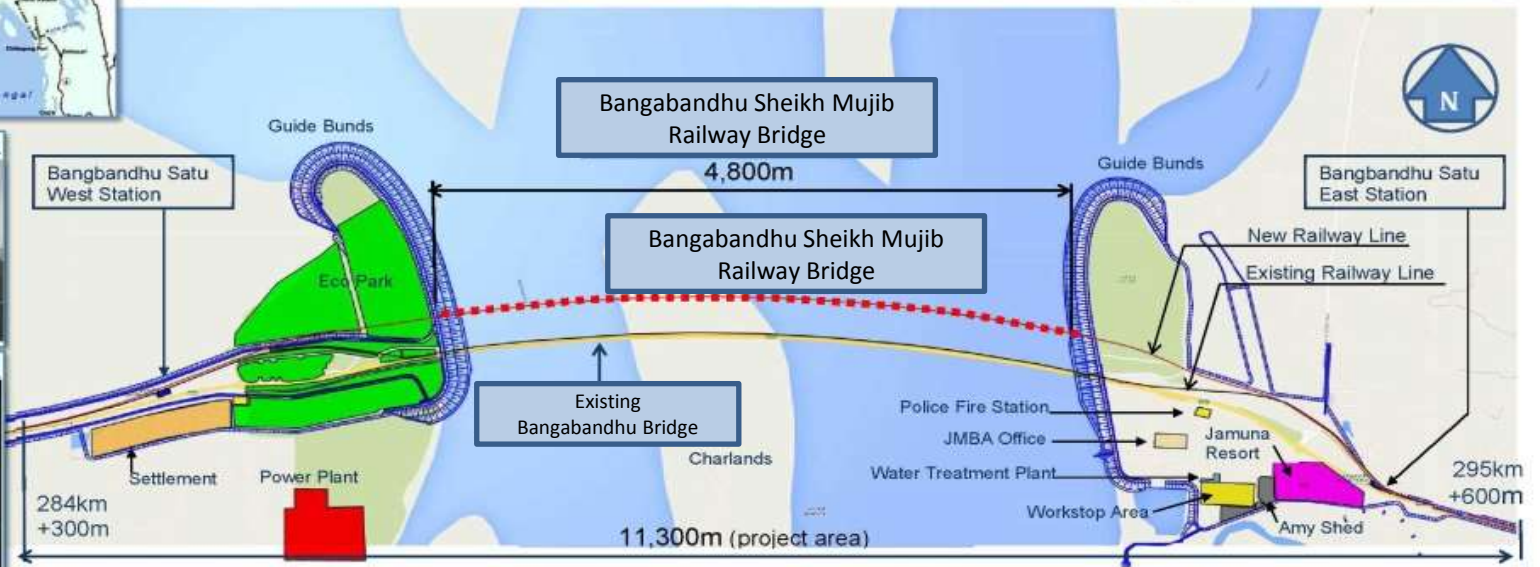
Charlands



Guide Bunds (West Side)



Guide Bunds (East Side)



Existing Railway



Bangabandhu Satu West Station

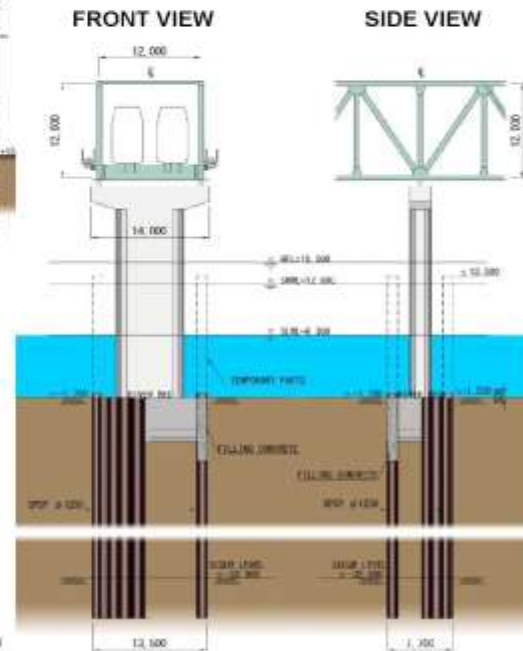
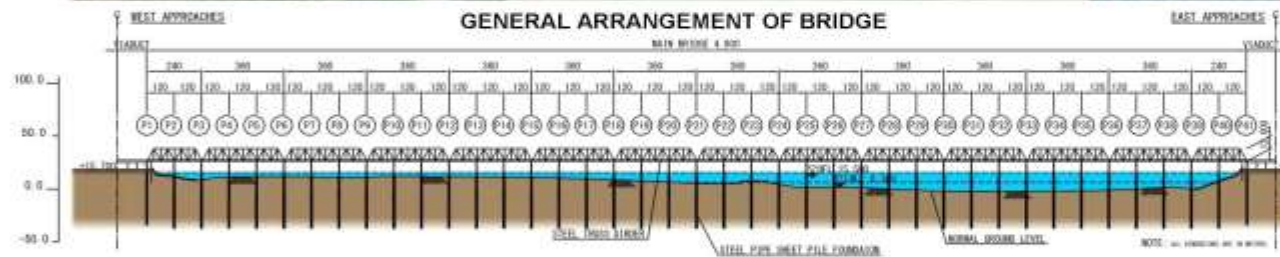


Bangabandhu Satu East Station

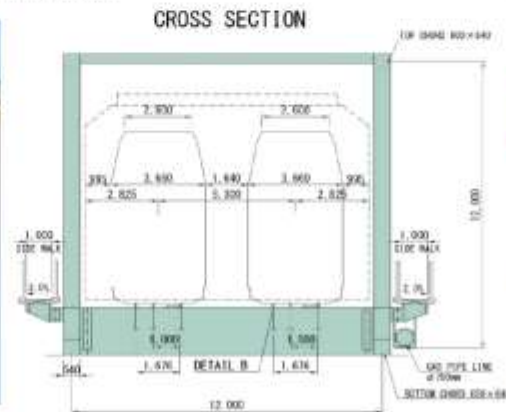




### Bangabandhu Sheikh Mujib Railway Bridge



### Bangabandhu Sheikh Mujib Railway Bridge



**Outline of**  
**Construction of Railway cum Road Bridge Across River**  
**Karnafuli at Kalurghat Point in the Vicinity of Existing**  
**Railway Bridge in Chittagong District Project**

## Project Details

- Road cum Railway bridge (L  $\doteq$  720 meters) equipped with single dual gauge railway track and two road lanes
- Viaducts and approach link (L  $\doteq$  3.78 km)
- Width 18.7 meters and Girder depth of 2.0 meters
- Nine continuous span (2X50+2X60+5X100=720m) and Six Pylon each side.

Estimated Cost of the Project : 144 Million USD

PA : 104 Million USD

GOB : 40 Million USD

Development Partner: Economic Development Cooperation Fund, Korea

Implementation Period : 2017-18 to 2021-22



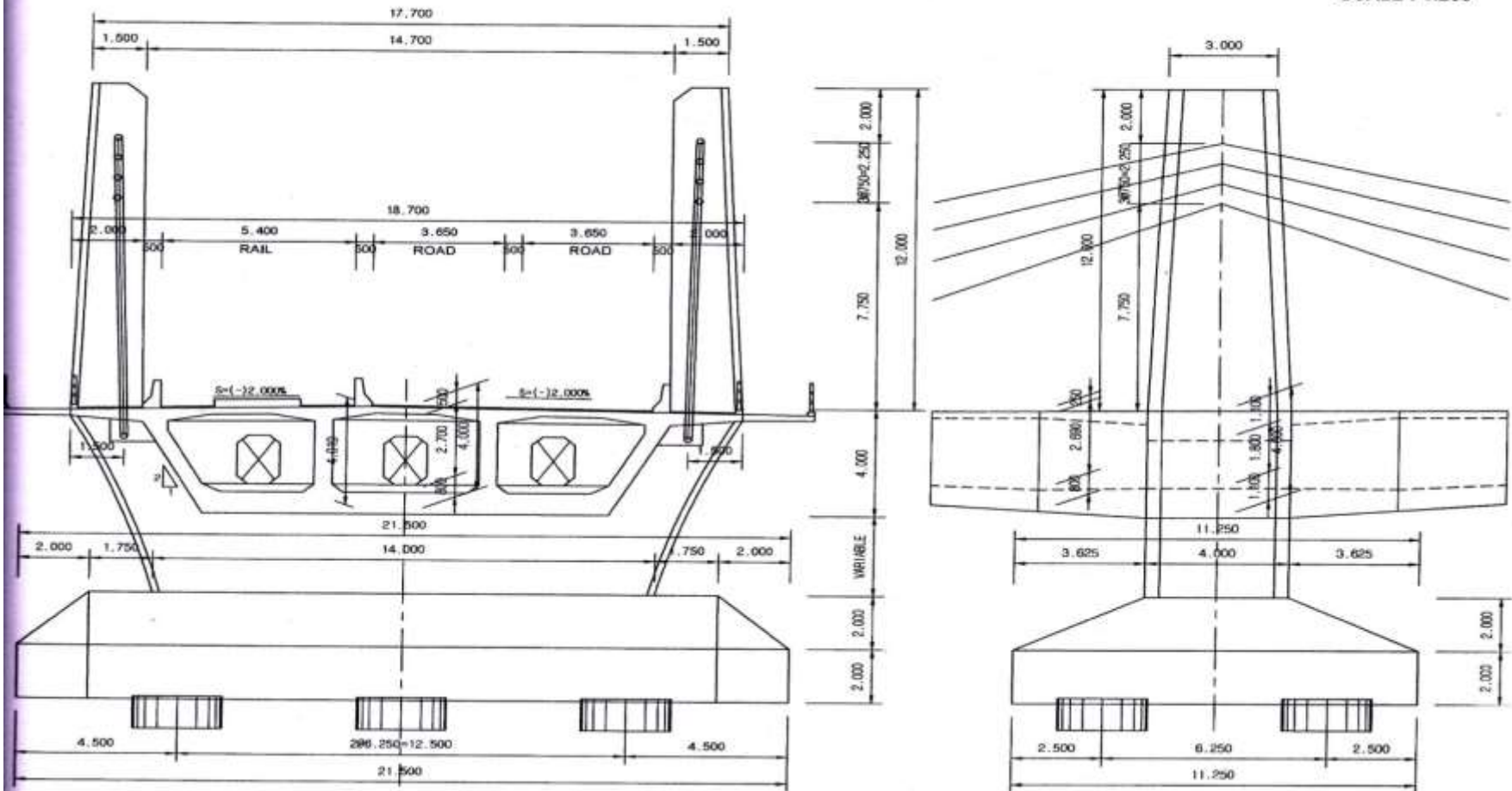
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## PIER & FOUNDATION

SCALE : 1:200





## The Way Forward

- ❖ Bangladesh Railway is going through a reform process to restructure it into more commercially-oriented organization in combination with substantial investment in infrastructure, rolling stocks, signaling systems, maintenance and technical modernization.
- ❖ Some progress has been made in recent years, more will be achieved with your active support.
- ❖ We welcome YOU ALL to engage with the ongoing opportunity and support [Bangladesh Railway](#) to achieve its goal towards sustainable development.

**For More Information**



## **Contact**

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**Thank you**