

# Funding Infrastructure Projects

November 20<sup>th</sup>, 2019  
JICA India

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# India - Japan Relations

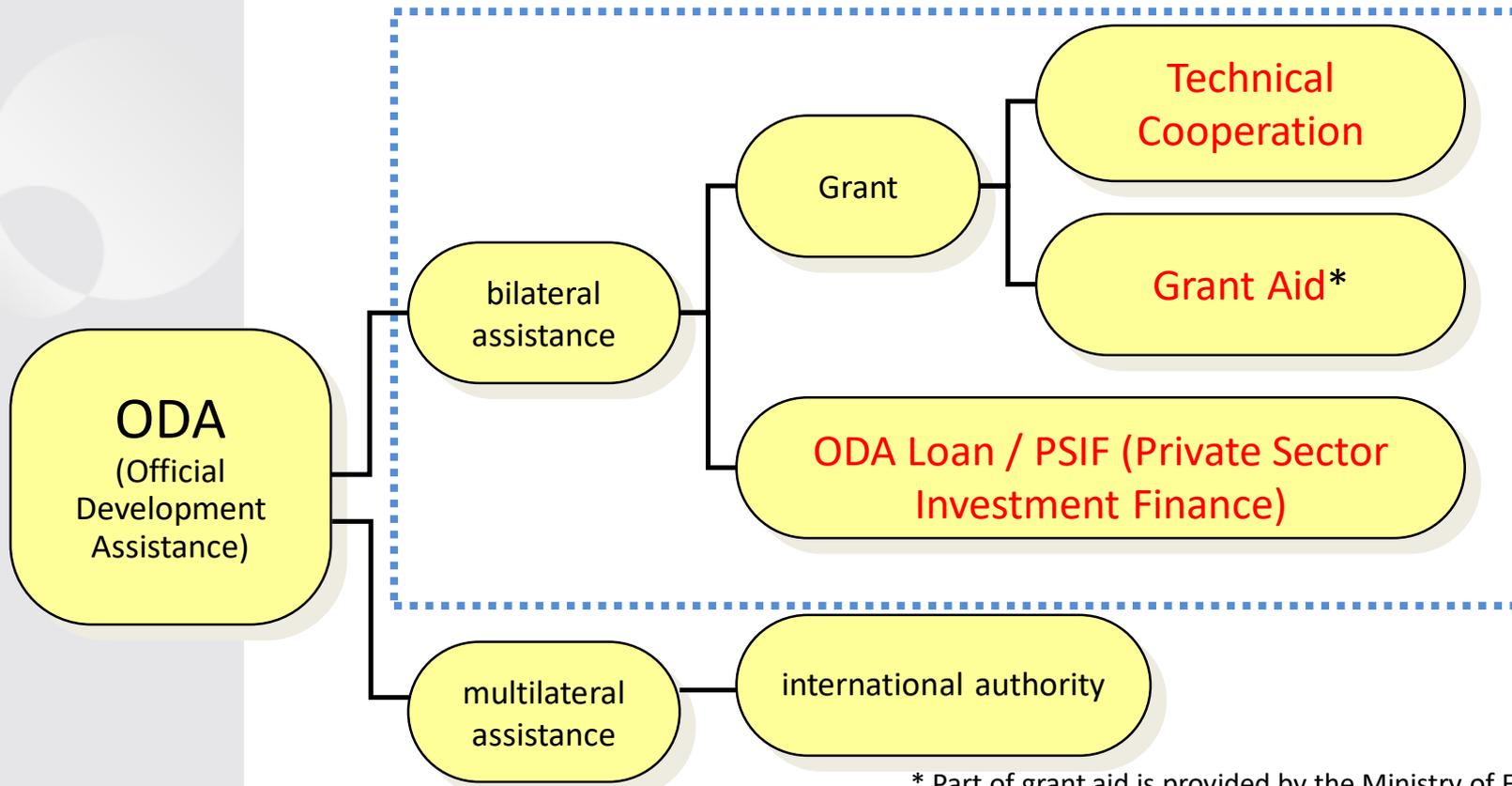
- Both established **Special Strategic and Global Partnership**.
- For India, Japan is the **largest bilateral development partner**.
- For Japan, India is the **oldest** recipient of ODA

- Apr. 1952 Established official diplomatic relations
- 1958 Japan's first ODA Loan in the world extended to India.
- Aug. 2000 "**Japan-India Global Partnership in the 21st Century**"
- Apr. 2005 Japanese PM Koizumi visited India. Annual based PMs mutual visits started.
- Dec. 2006 "**Joint Statement Towards Japan-India Strategic and Global Partnership**"
- Sept. 2014 Indian PM Modi visited Japan. "**Tokyo Declaration for Japan-India Special Strategic and Global Partnership**"
  - a) Doubling Japan's foreign direct investment in India within five years.*
  - b) Doubling the number of Japanese companies in India within five years.*
  - c) JPY 3.5 trillion (Rs. 2 trillion) of public and private investment and financing to India from Japan, including ODA, within five years.*
- Sept. 2017 Japanese PM Abe visited India (Commencement ceremony of HSR in Ahmedabad)
- Oct. 2018 Indian PM Modi visited Japan (Tokyo and Yamanashi).



# What is “JICA”?

- ✓ JICA is a **governmental agency** of Japan that coordinates official development assistance (ODA).
- ✓ JICA, the world’s largest bilateral aid agency, works in over 150 countries and regions and has some 100 overseas offices.



\* Part of grant aid is provided by the Ministry of Foreign Affairs.

## Japan International Cooperation Agency

- **President:** Shinichi Kitaoka
- **Establishment:** August 1974 Reorganized 2008
- **Staff:** 1,827 (Full time)
- **Recipient Countries:** 150
- **Overseas Offices:** 92
- **Offices in Japan:** HQ (Tokyo) and 17 sites

### JICA's Vision

## **Inclusive and Dynamic Development**

### Mission 1

Addressing Global Agenda

### Mission 3

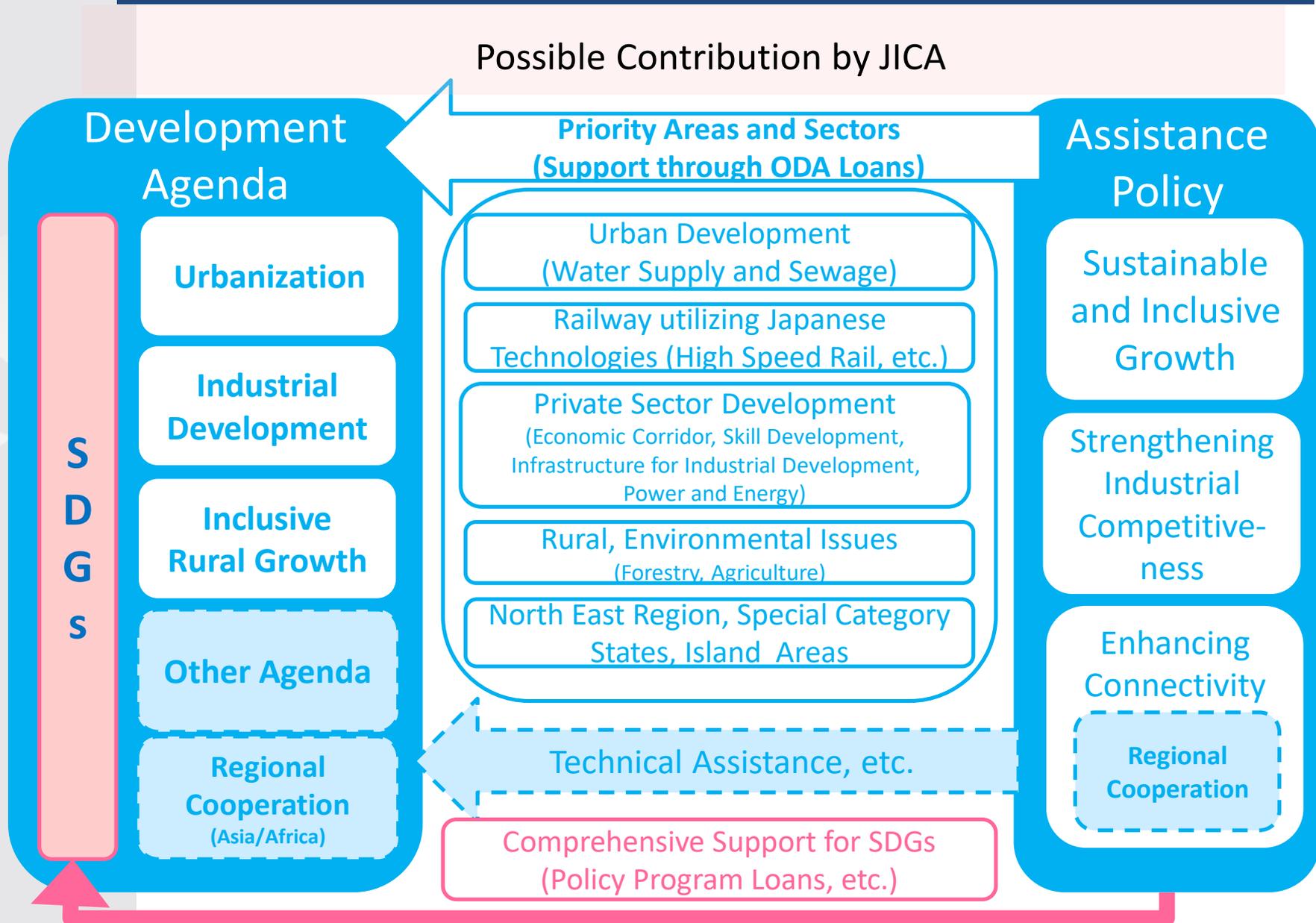
Improving Governance

### Mission 2

Reducing Poverty  
through Equitable Growth

### Mission 4

Achieving Human Security



# India is JICA's Largest Development Partner in the World

## Soft Loan

### Accumulated Commitment by FY2017/18:

- JPY 5.3 trillion in total  
(equivalent to over Rs. 3 lakh crore)

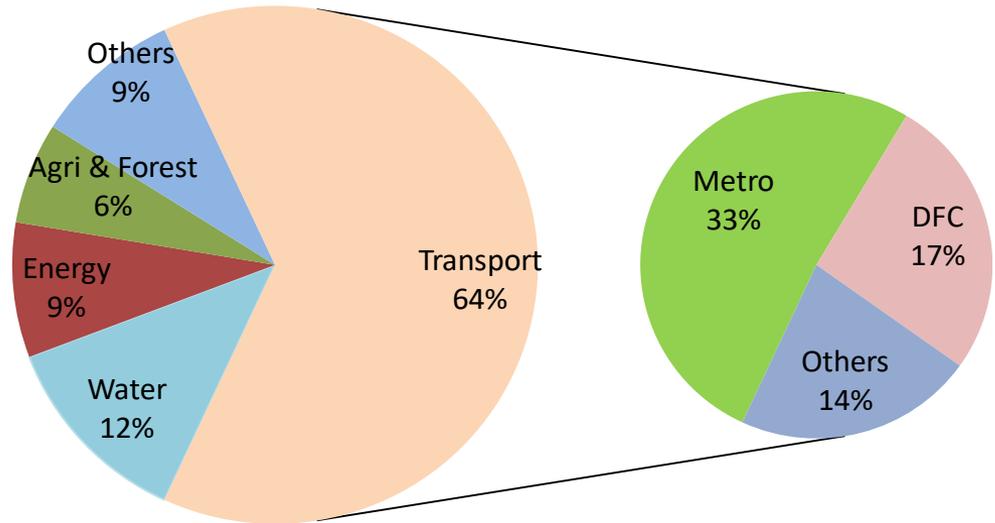
### Operational Results in FY2017/18:

Commitment: JPY 398.4 billion  
(equivalent to about Rs. 25,000 crore)  
Disbursement: JPY 264.3 billion  
(equivalent to over Rs. 16,000 crore)

### Terms and conditions: (as of Jan. 2018)

- General terms: Interest rate 1.5%, repayment period 30 years (including 10 years grace period)  
- STEP: Interest rate 0.1%, repayment period 40 years (including 12 years grace period)

### Major Sector (FY2008/09-2017/18)



### Grant Aid

Two on-going projects  
in  
Varanasi & Bengaluru

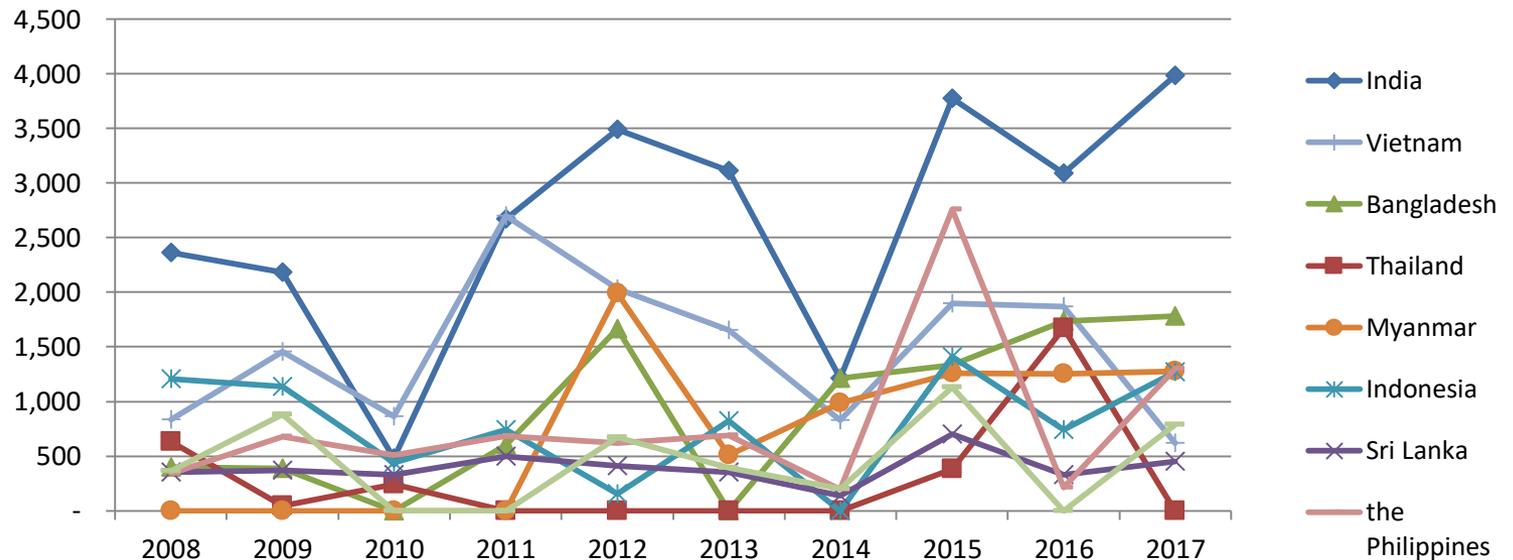
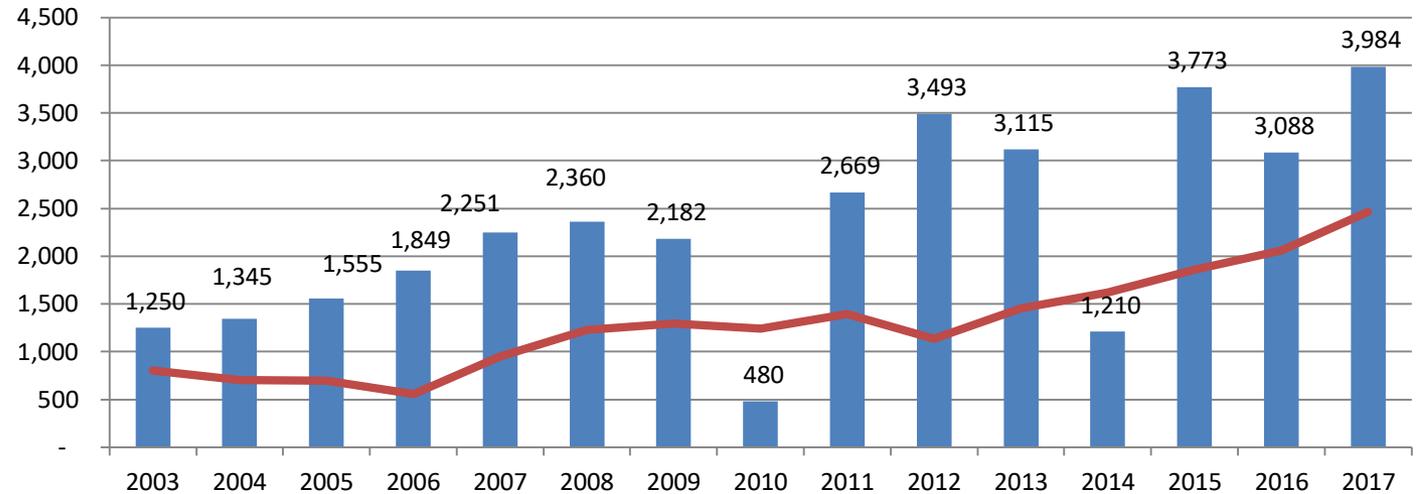
### Technical Cooperation

▪ Results in FY 2016/17  
JPY 16.0 billion (about Rs. 850 crore)  
  
About 1100 Japanese experts to India  
About 250 Trainee from India to Japan

### Citizen Partnership / Public-Private Partnership

- Japanese Volunteers
- Japanese NGO activities
- Partnerships with Private-Sector Activities

# Increasing trend of ODA loan to India



# Cooperation on Metro Projects

**JICA is supporting metro projects in 6 major cities in India**

## Ahmedabad Metro

- Total Length: 38 km
- Project Cost: JPY 246 Billion (about Rs. 15,000 crore)
- Completion Year: 2020
- Under Construction

## Delhi Metro

- Total Length: 351km
- Project Cost: JPY 1,274 Billion (about Rs. 80,000 crore: Phase 1-3)
- Completion Year: 2020 (Phase-3)
- Phase 4 plan is coming up



## Mumbai Metro

- Total Length: 34 km
- Project Cost: JPY 621 Billion (about Rs. 39,000 crore)
- Completion Year: 2021
- Under Construction. New plan for Line 2 and 4 is coming up.

## Kolkata Metro

- Total Length: 16 km
- Project Cost: JPY 140 Billion (about Rs. 9,000 crore)
- Completion Year: 2021
- Under construction

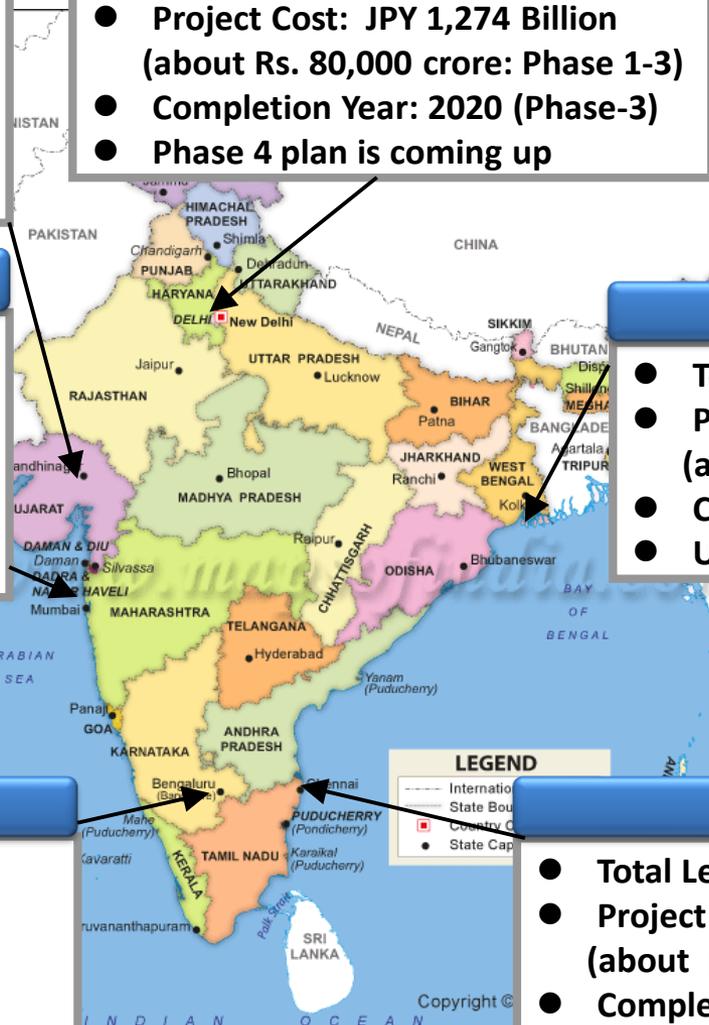


## Bangalore Metro

- Total Length: 42 km
- Project Cost: JPY 307 Billion (about Rs. 19,000 crore)
- Completion Year: 2017
- Phase-2 is under construction

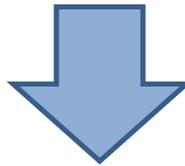
## Chennai Metro

- Total Length: 53 km
- Project Cost: JPY 386 Billion (about Rs. 24,000 crore)
- Completion Year: 2020 (Phase-1)
- Phase-1 under construction



# Safe, Timely, Comfortable Move for Better Life

- **Safe** operation
- **Timely & Stable** (with reliability, efficiency and comfort)
- Considerations for **environmental harmonization, operation and maintenance**, managerial/financial **sustainability**
- Coordination with various stakeholders for better operation /service



***“Quality Infrastructure”***

# Sustainable Development Goals (SDGs) (draft)

## Goal 9

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

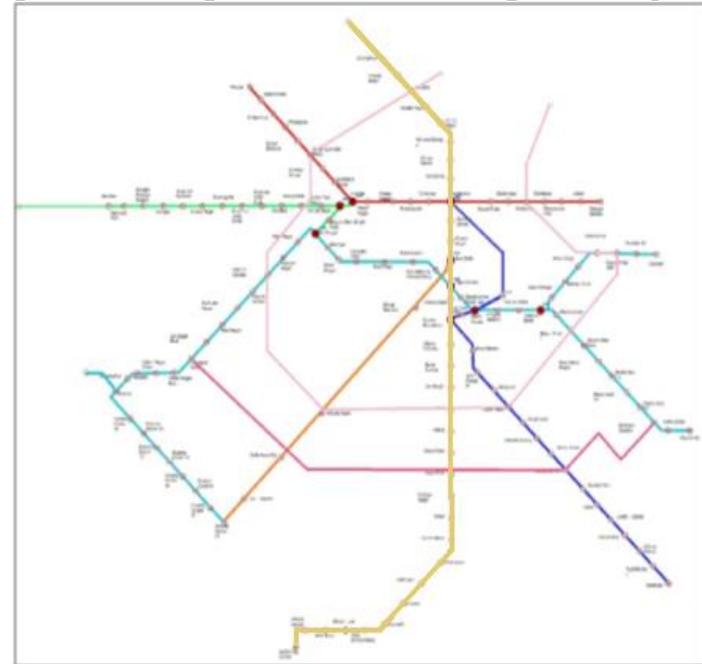
### Target 9.1

Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

# Key Elements of Quality Infrastructure Investment

1. Aligning to country/regional development strategy
2. Attach importance to Life-Cycle cost rather than adopting lower initial cost
3. Duly addressing potential social and environmental impacts in accordance with relevant international practices and standards
4. Safety and resilience
5. Benefits to society and people: Job creation and human resource development

# 1. Delhi Mass Rapid Transport System Project (India)



	Distance	Full operation	Project Cost
Phase 1	65km	2006	US\$2.3 bil (ODA Loan : US\$1.4bil)
Phase 2	125km	2011	US\$3.2 bil (ODA Loan : US\$1.8bil)
Phase 3	106km	Under construction	US\$6.0 bil (ODA Loan : US\$2.9bil)

# 1. Delhi Mass Rapid Transport System Project (India)

## (1) Inclusiveness

- Attention for the disabled, elderly, and women



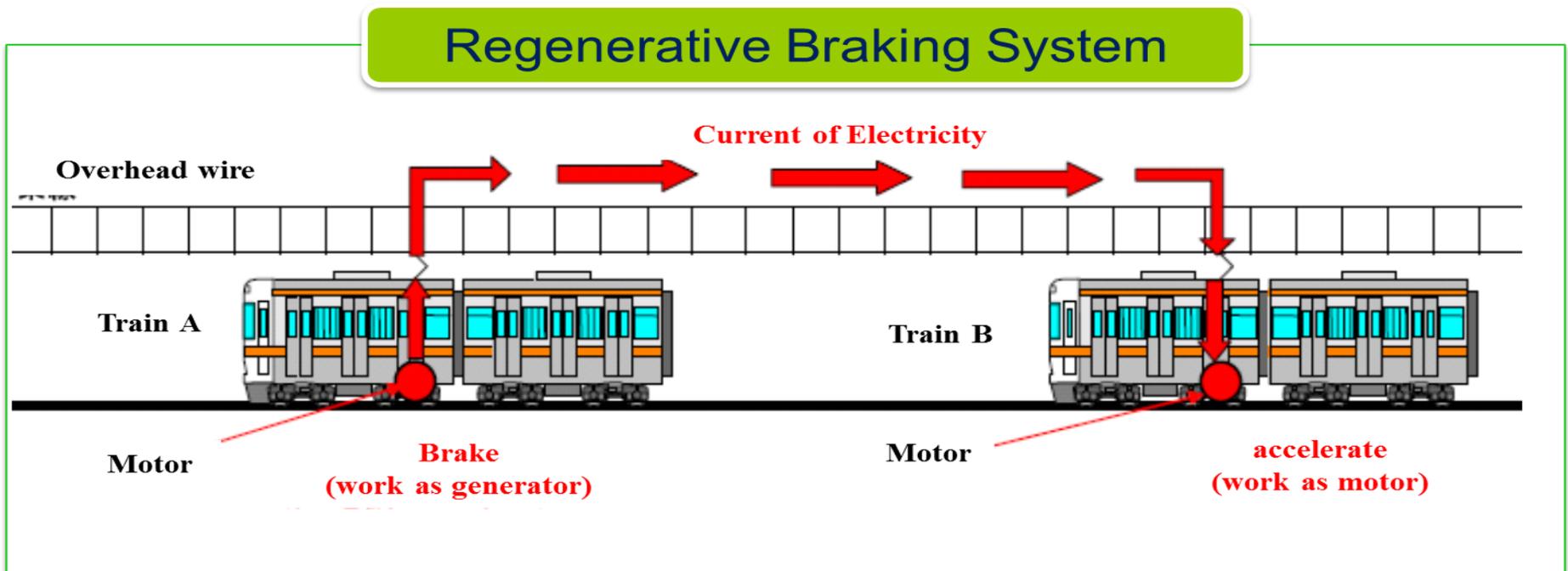
Wheelchair users



# 1. Delhi Mass Rapid Transport System Project (India)

## (2) Environmental Sustainability

- First railway project registered with the UN under the Clean Development Mechanism (CDM)
- **22 mil ton CO<sup>2</sup>** reduction (2002 ~ 2032) by regenerative braking system

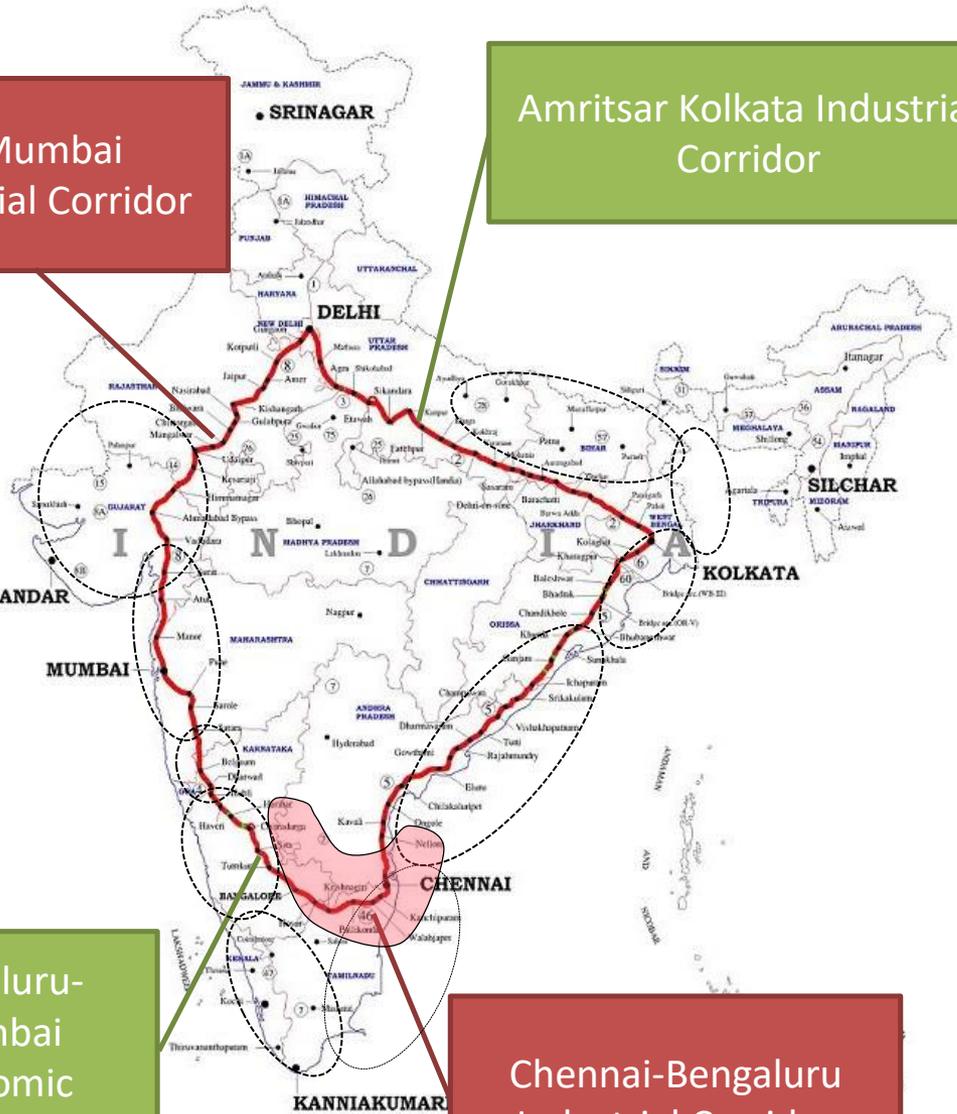


# Industrial Corridors under Development (DMIC & CBIC)

Delhi-Mumbai Industrial Corridor

Amritsar Kolkata Industrial Corridor

DMIC and CBIC are being supported by GoI and GoJ.



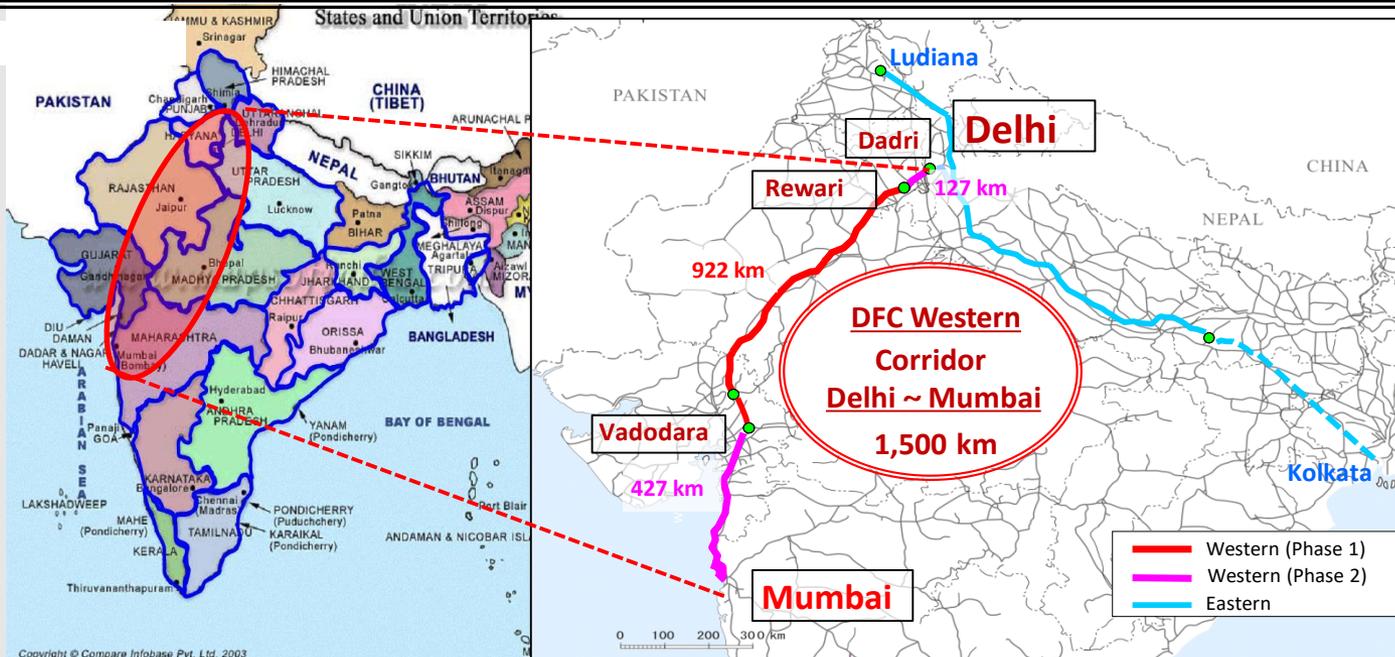
Bengaluru-Mumbai Economic Corridor

Chennai-Bengaluru Industrial Corridor

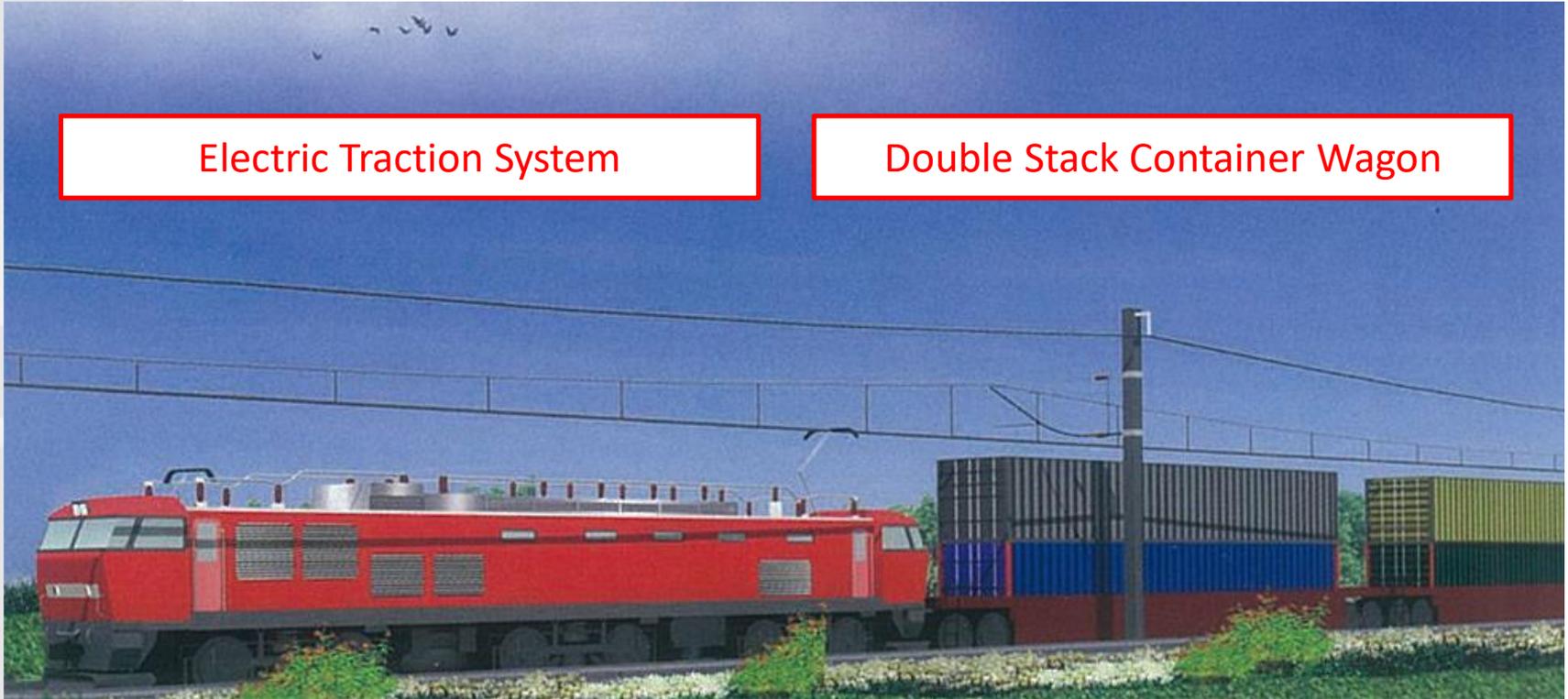
## National Manufacturing Plan Targets

- ~15% y-o-y growth in manufacturing sector to achieve 25% contribution to GDP by 2022
- 100 million jobs by 2022
- Skill development for inclusive growth
- Improved *technology* orientation & *value addition*
- Global Competitiveness
- Environmental sustainability

- The **backbone of DMIC** (Delhi-Mumbai Industrial Corridor)
- WDFC (**Delhi-Mumbai: 1,500 km**) will focus on:
  - (1) construction of **new dedicated freight lines**
  - (2) installation of **automated signal & telecommunication**
  - (3) introduction of **electric locomotives** with high-speed & high-capacity transportation
- Construction is underway (Almost all tendering are completed)



## <Completion image>



	DFC		NOW
Maximum speed	100 km / h	←	30 - 40 km / h (approximately)
Transport time (Delhi – Mumbai)	20 hours (approximately)	←	48 - 72 hours



## ■ The impact of HSR on development of India

### *Safe, comfortable and punctual HSR*

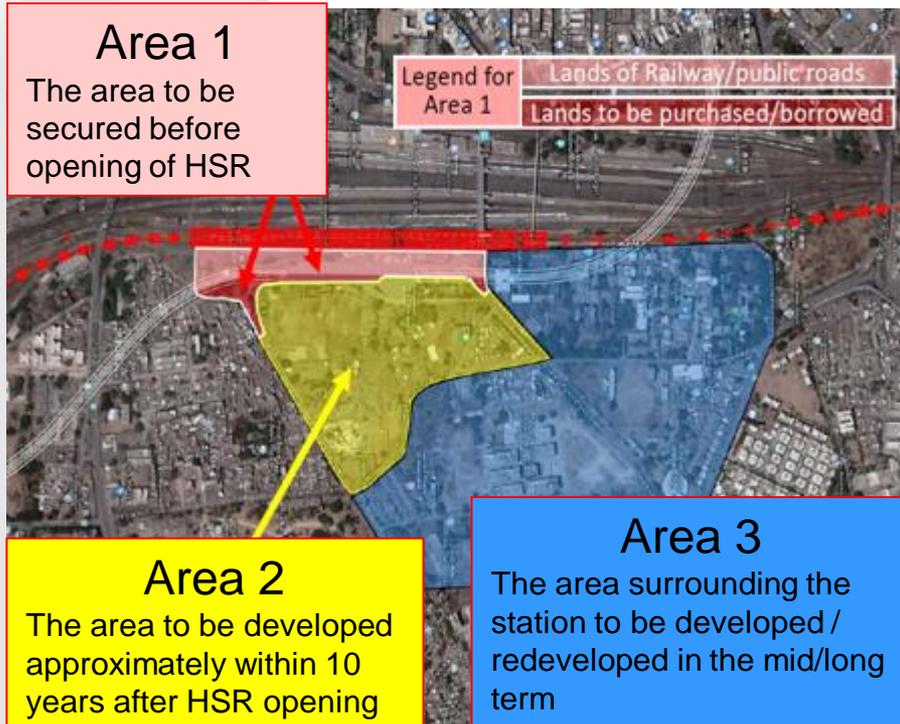


- Boost economic development
- Stimulate regional development
  - ✓ mitigate excessive concentration on large cities
  - ✓ lead to balanced economy
- Promote “social innovation” by introducing Japan’s;
  - ✓ Technology
  - ✓ Discipline
  - ✓ Perfection
  - ✓ Teamwork Concept

# Station Area Development (SAD) for MAHSR Project

- The Experts Committee for SAD was formed between India and Japan and have been discussing on SAD issues.
- Phased development based on Area Classification is considered for station area of HSR
- JICA invited Indian officials, MOR, MOHUA, NHSRCL, Gujarat and Maharashtra state governments to Japan from Jan 27 to Feb 5, 2019.

## 【Image of Area Classification】



## 【JICA Invitation Program in Japan】

**Tokyo Station**



**Osaka Station**



# Training in Japan for Officials of MOR and NHSRCL

- At Prime Ministers' Summit Meeting held in December 2015, it was agreed that Japan would cooperate with India for MOR's Human Resource Development.
- Based on this, JICA has been providing MOR and NHSRCL with comprehensive training program in Japan for Railway system and technology.
- JICA have conducted 19 times of training in Japan since February 2017.
- In total, 683 officials of MOR/NHSRCL have participated as of August 2019.
- In this FY 2019, 8 times for this training program in Japan are scheduled.

Comprehensive Training Program in Japan



Tohoku SHINKANSEN (E5/H5)



# Capacity Development on Railway Safety in India

- JICA's Technical Cooperation on Improvement of Existing Railway Safety.
- Project period : November 2018 to October 2020
- Technical knowledge and experience are shared by Japanese experts to Indian experts through site survey in India and training in Japan to improve technical capacity in the fields of (1) Rail welding, (2) Track maintenance, (3) Rolling stock maintenance, (4) Accident investigation and (5) Safety management.

Discussion for accident Investigation in February 2019



Training in Japan for accident Investigation in July 2019



Site Survey for Rolling Stock Maintenance in July 2019



# Japanese ODA for Road Sector (on-going)

## Delhi Eastern Peripheral Express Intelligent Transport System Installation Project

-L/A amount : INR 457 crore  
-L/A signing : March 2017

## Capacity Development Project Highways Mountainous Regions (Technical Cooperation)

Period: April 2016- March 2021

## North East Connectivity Improvement Project (Phase 1)

-L/A amount : INR 4,470 crore  
-L/A signing : March 2017

## Project for Upgradation of Environmental Management for Ship Recycling in Alang and Sosiya in Gujarat

-L/A amount : INR 567 crore  
-L/A signing : September 2017

## North East Connectivity Improvement Project (Phase 2)

-L/A amount: INR 2,573 crore  
-L/A signing : March 2018

## Mumbai Trans-Harbour Link Project (I)

-L/A amount : INR 9,636 crore  
-L/A signing : March 2017

## North East Connectivity Improvement Project (Phase 3)

-L/A amount: INR 1,696 crore  
-L/A signing: January 2018

## The Project for Smart Cities for emerging countries based on Sensing Network and Big Data analysis of Multimodal Regional Transport System (SATREPS) Period: June 2017- June 2022

## Bihar National Highway Improvement Project (Phase 1 and Phase 2)

L/A amount (Phase 1) : INR 1,524 crore  
L/A Signing(Phase 1) : February 2013  
L/A amount (Phase 2) : INR 1,426 crore  
L/A Signing(Phase 2) : January 2014

## Hyderabad Outer Ring Road Project (Phase 1,2)

-L/A amount (Phase 1) : INR 2,785 crore  
-L/A signing (Phase 1) : March 2008  
-L/A amount (Phase 2) : INR 2,797 crore  
-L/A signing (Phase 2) : November 2008

## Project for Advanced Traffic Information and Management System in parts of Core Bengaluru (Grant)

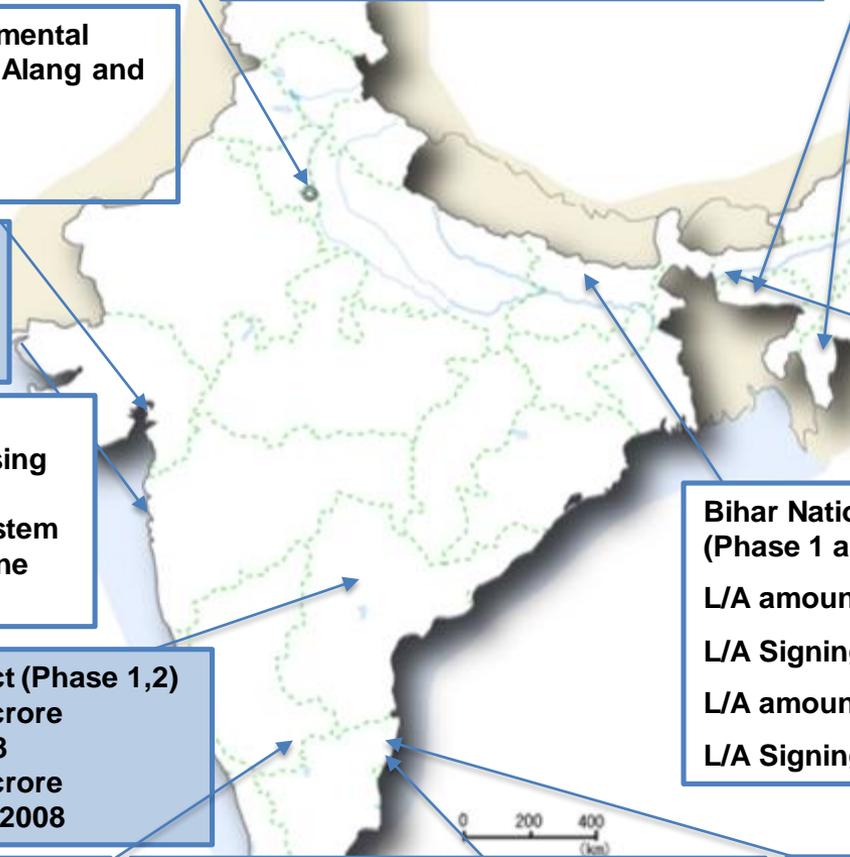
-G/A amount : INR 84 crore  
-G/A signing : January 2018

## Project for Installation of Chennai Metropolitan Area Intelligent Transport System

-L/A amount : INR 537 crore  
-L/A signing : March 2018

## Project for the Construction of Chennai Peripheral Ring Road (Phase 1)

-L/A amount : INR 2,667 crore  
-L/A signing : January 2019



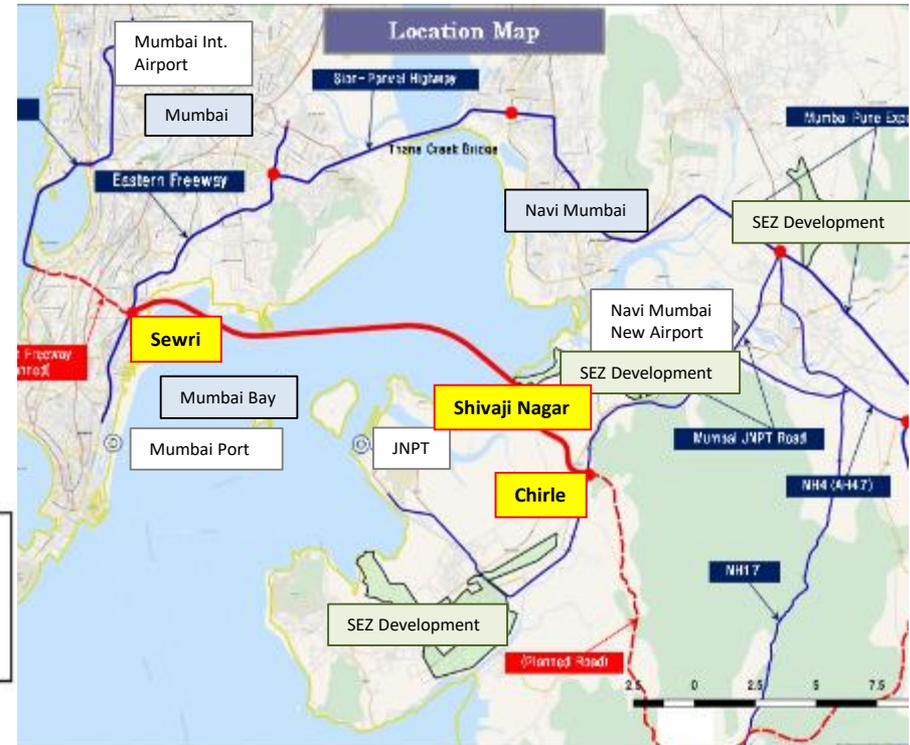
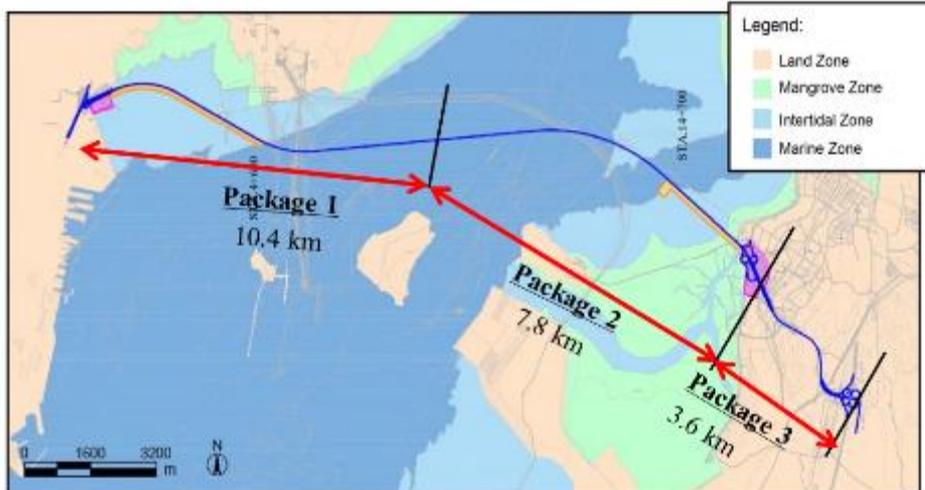
The project is to increase connectivity by constructing an ocean road connecting the Mumbai city center to Navi Mumbai, thereby contributing to further economic growth in Mumbai metropolitan region.

## Mumbai Trans Harbour Link Project (I)

Total Project cost: JPY 326,531 million /  
Loan amount: JPY 144,795 million

Project period: 2016-2023

Project: 22 km road construction (3 lanes on each side) including (i) 18km on the sea (Sewri to Shivaji Nagar), (ii) 4 km on land (Shivaji Nagar to Chirle) and (iii) Intelligent Transport Systems (ITS)



The project is to improve accessibility in the state of Bihar , thereby contributing to mitigation of traffic jam and promoting economic development including tourist traffic

## Bihar National Highway Improvement Project (Phase I)

Total Project cost: JPY 41,760 million /  
Loan amount: JPY 22,903 million

Project period: 2013-2020

Project : Involving 4 laning of NH83  
(Patna-Dobhi)

Road construction 127 m (Including  
bypass 56km, service road and bridge)

## Bihar National Highway Improvement Project (Phase II)

Total Project cost: JPY 29,363 million /  
Loan amount: JPY 21,426 million

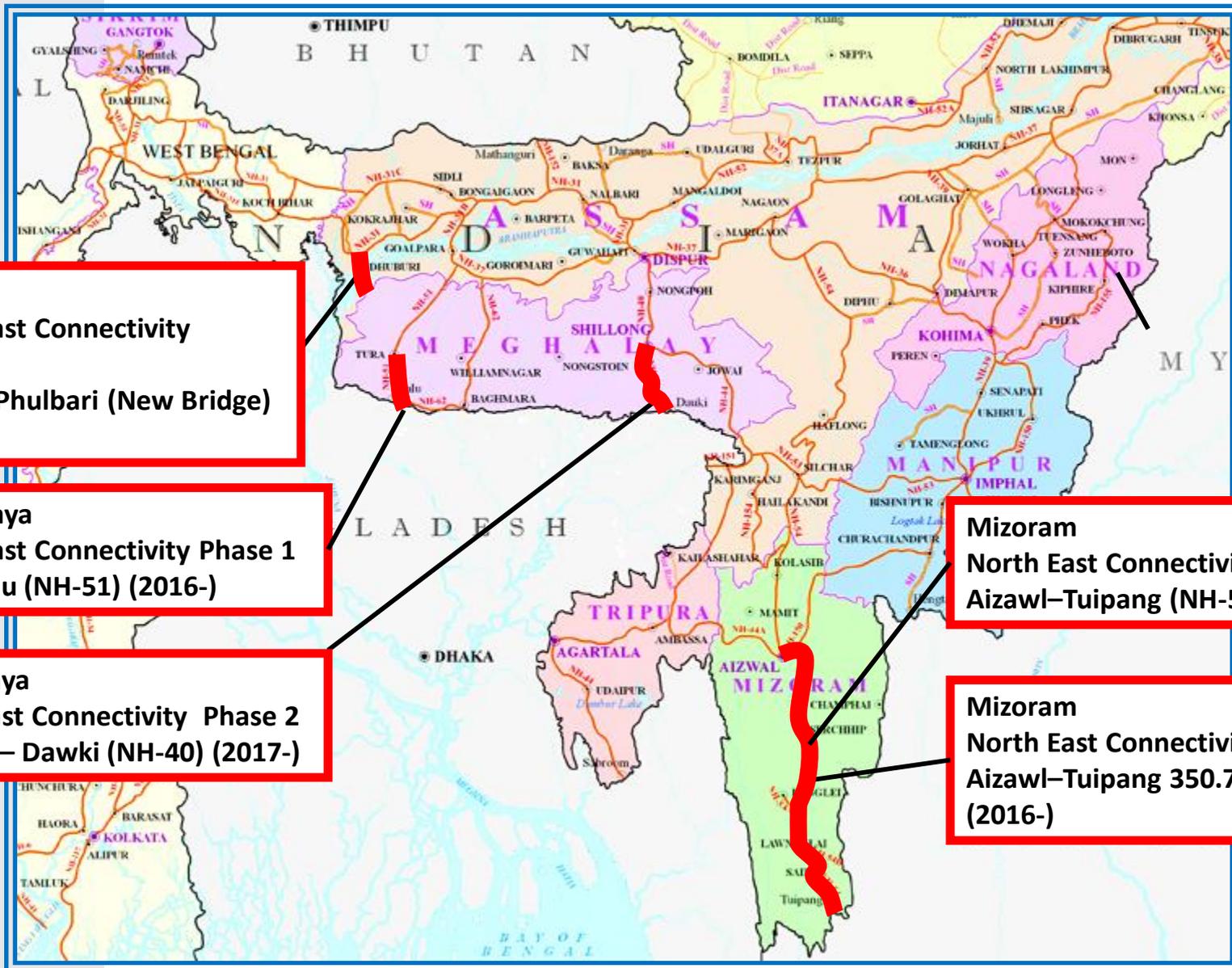
Project period: 2014-2022

Project : Involving 4 laning of NH82  
(Gaya- Biharsharif)

Road construction 92 m (Including  
bypass 11km, 27 crossroads)



# North East Road Network Connectivity Project Map



# Intelligent Transport System (ITS)

- **Intelligent Transport System (ITS)** is integrated system consisted of efficient toll collection system, real-time traffic information system, traffic signal control system, etc. ITS is aiming to optimize the traffic and minimize risks of congestion and accident by IT technology.
- ITS is awaited technology for Metropolitan city to mitigate issues along with urbanization such as heavy traffic.
- JICA is supporting GoI with a) Development of ITS Masterplan, b) Finance to establish facilities, and c) Technical Cooperation for capacity development of Operation and Maintenance.

## Hyderabad Outer Ring Road Project (Phase 1, 2)

- Loan Amount: JPY 83,706 million
- Construct an expressway and install ITS.
- Technical Assistance to enhance O&M Capacity



## Delhi Eastern Peripheral Expressway ITS Installation Project

- Loan Amount: JPY 6,870 million
- Introducing ITS on Delhi Eastern Peripheral Expressway (EPE)

## Project for Installation of Chennai Metropolitan Area Intelligent Transport Systems

- Loan Amount: JPY 8,082 million
- Chennai Smart City Limited is introducing ITS

## (GRANT) The Project for Implementation of Advanced Traffic Information and Management System in Core Bengaluru

- Grant Amount: JPY 1,276 million
- Signal control systems at 29 intersections and a traffic control centre.

Mitigating traffic congestion and promoting regional economic development by constructing Chennai Peripheral Ring Road

## Chennai Peripheral Ring Road Project (Phase I)

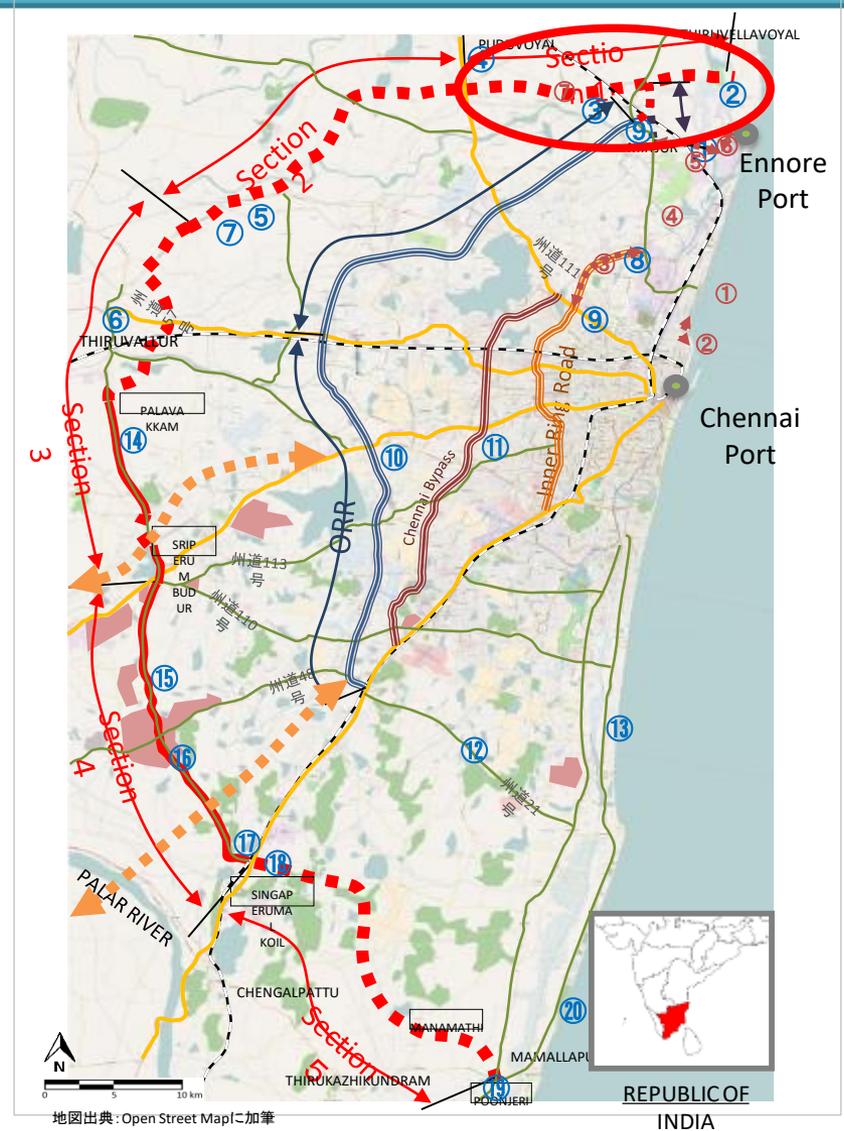
Total Project Cost : JPY 74,497 million

Loan amount: JPY 40,074 million

Project period: 2019-2024

Project scope:

- (i) 24.52km road construction (Section 1 of Chennai Peripheral Ring Road consists of the Northern Port Access Road (Ennore Port to Thatchur), which is the northern part of the planned Chennai Peripheral Ring Road)
- (ii) Installation of Toll Management System and Highway Traffic Management System



India- Japan Joint Research Program to create innovative solution for severe traffic congestion and to realize a modal shift of urban transportation towards a low carbon society through scientific traffic analysis

- This India- Japan joint research project has been designed collaboratively as a scheme of “Science Technology Partnership for Sustainable Development (SATREPS)”.
- It has been jointly undertaken by Indian Institute of Technology, Hyderabad (IIT-H), Nagoya Electric works Co. Ltd., Nihon University and Tokyo Institute of Technology.
- The aim of this joint research project is to establish a reliable and common approach for grasping the traffic situation in cities by building a system that effectively utilizes mobile devices, traffic sensing, big-data analysis and network technology.
- The team has launched the field test bed system in IIT-H campus, Hyderabad and also Ahmedabad city. This field test bed system comprises of several key components of traffic management system such as real time traffic flow monitoring cameras, speed detection safety system, traffic signal lights and remote environment gas sensing.



The technical cooperation project is to strengthen institutional capacity of organization concerned for development of sustainable mountainous highways

- Project Outline : To develop technical guidelines for highways in mountainous regions, and to provide technical training programs in order to enhance capacity of the planning, the construction and management of mountainous highways consisting of tunnels, bridges and earthworks etc.
- Project Period: April 2016- March 2021
- Project Cost : JPY 491million
- Project Site: Whole India
- Implementing Agencies: MORTH, NHAI, NHIDCL
- Beneficiaries (Direct): Technical Officials in MoRTH, NHAI, NHIDCL and PWD.
- (Indirect): Road Users



# Thank you!

# धन्यवाद



c.f. <http://www.jica.go.jp/india/english/office/about/message.html>  
<http://www.jica.go.jp/india/english/office/others/brochures.html>  
<http://www.jica.go.jp/india/english/office/others/presentations.html>

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