Need for Quality in Development of Regional Connectivity

July 8th, 2019
JICA India
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   - Water Sector
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   - Joint projects in the third countries
   - Regional Cooperation
JICA has financed metro projects in 6 major cities in India.

**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

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

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

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

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

<table>
<thead>
<tr>
<th>Phase</th>
<th>Distance</th>
<th>Full operation</th>
<th>Project Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>65km</td>
<td>2006</td>
<td>US$2.3 bil (ODA Loan : US$1.4bil)</td>
</tr>
<tr>
<td>Phase 2</td>
<td>125km</td>
<td>2011</td>
<td>US$3.2 bil (ODA Loan : US$1.8bil)</td>
</tr>
<tr>
<td>Phase 3</td>
<td>106km</td>
<td>Under construction</td>
<td>US$6.0 bil (ODA Loan : US$2.9bil)</td>
</tr>
</tbody>
</table>
1. Delhi Mass Rapid Transport System Project (India)

(1) Inclusiveness

➢ Attention for the disabled, elderly, and women

- Wheelchair users

- Women-only train car
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 CO² reduction (2002 ~ 2032) by regenerative braking system
(3) Safety

Improvement of safety awareness at construction site
➢ Familiarization with helmet and protective shoes usage
➢ Introduction of “On site Visualization” (OSV) system, which shows risk of collapse of ground or structure

Safety Meeting at construction site

Construction site of AIIMS station of Delhi, where OSV was installed.
JICA’s Contribution to Development Agenda of India

Possible Contribution by JICA

Priority Areas and Sectors (Support through ODA Loans)

- Urban Development (Water Supply and Sewage)
- Railway utilizing Japanese Technologies (High Speed Rail, etc.)
- Private Sector Development (Economic Corridor, Skill Development, Infrastructure for Industrial Development, Power and Energy)
- Rural, Environmental Issues (Forestry, Agriculture)
- North East Region, Special Category States, Island Areas

Technical Assistance, etc.

Comprehensive Support for SDGs (Policy Program Loans, etc.)

Development Agenda

- Urbanization
- Industrial Development
- Inclusive Rural Growth
- Other Agenda
- Regional Cooperation (Asia/Africa)

Assistance Policy

- Sustainable and Inclusive Growth
- Strengthening Industrial Competitiveness
- Enhancing Connectivity
- Regional Cooperation

Regional Cooperation

SDGs

Policy Program Loans, etc.

Comprehensive Support for SDGs

JICA Country Analysis Paper (JCAP) FY 2017
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

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)

Citizen Partnership / Public-Private Partnership

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

Accumulated Commitment by FY2017/18:
- JPY 5.3 trillion in total
  (equivalent to over Rs. 3 lakh crore)

Major Sector (FY2008/09-2017/18)

Transport 64%

Water 12%

Energy 9%

Agri & Forest 6%

Others 9%

Others 14%

Metro 33%

DFC 17%

India is JICA’s Largest Development Partner in the World

Soft Loan

Water 12%

Energy 9%

Agri & Forest 6%

Others 9%

Others 14%

Metro 33%

DFC 17%

Transport 64%

Major Sector (FY2008/09-2017/18)
Industrial Corridors under Development (DMIC & CBIC)

DMIC and CBIC are being supported by GoI and GoJ.

- Delhi-Mumbai Industrial Corridor
- Bengaluru-Mumbai Economic Corridor
- Chennai-Bengaluru Industrial Corridor
- Amritsar Kolkata 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)
Energy Sector  Core for Economic Growth & Livelihood

Operation result

- **9.3GW** of generation capacity
  (3% of Indian total Capacity)
- **1.0GW** of Renewable Energy
- **85 Projects**
- **JPY 1.3 Trillion (≒ Rs. 80,000 crore, US$ 1.2 bil.)**
  (roughly 25% of JICA’s total cooperation in India)

- ODA Loan

- Technical Cooperation
  Study for Updating Exhausted Coal Thermal Power Plant

- **Purulia Pumped Storage Project (I), (II), (III)**
  - 1995 – 2008, West Bengal
  - 900MW : 12% of the peak demand of West Bengal

- **Umiam Hydro Power Station Renovation Project**
  - 2004 – 2012, Meghalaya
  - Capacity was improved from 18MW to 20MW
  - 530 hours unplanned non-operation time due to malfunction (2002 before the project) → 0 hour for three years after the project completion
- Recent ODA Loan Projects -

- Odisha Transmission System Improvement Project (FY2015)
- Haryana Transmission System Project (FY2007)
- Haryana Distribution Upgradation Project (FY2013)
- Madhya Pradesh Transmission System Modernisation Project (FY2011)
- Madhya Pradesh Transmission System Strengthening Project (FY2015)
- Maharashtra Transmission System Project (FY2007)
- Bangalore Distribution Upgradation Project (FY2006)
- Tamil Nadu Transmission System Improvement Project (FY2012)
- Bakerswar Thermal Power Station Project (FY2002)
- Odisha Transmission System Improvement Project (FY2015)
- Transmission System Modernization Project in Hyderabad (FY2006)
- AP Rural High Voltage Distribution System Project (2010)

(More than two States)
- Rural Electrification Project (FY2005)
- New and Renewable Energy Development Project (FY2011, FY2014)

Legend
- Generation
- Transmission and Distribution
Non-revenue water (NRW) reduction
To reduce non-revenue water, renewal of water pipes and meters and installment of SCADA / GIS system are implemented. Capacity development is also addressed.

Projects throughout the country
In major cites, such as Agra, Varanasi, Bengaluru, Hyderabad, Jaipur and Delhi
Total number of beneficiaries:
  - Water Supply: approx. 30 million people
  - Sanitation: approx. 15 million people

Rejuvenation of rivers
Assistance for rejuvenation of the Ganga River and Yamna river over the last 20 years toward hygienic environment.

Goa’s case of NRW Reduction

<table>
<thead>
<tr>
<th>Location</th>
<th>Before (%)</th>
<th>After (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curtorim</td>
<td>45.1</td>
<td>18.0</td>
</tr>
<tr>
<td>Khadpaband</td>
<td>58.7</td>
<td>34.4</td>
</tr>
<tr>
<td>Moira</td>
<td>53.0</td>
<td>36.1</td>
</tr>
</tbody>
</table>

Our Works

Assistance Policies

① Improving water and sewerage infrastructure in major cities and industrial areas

② Utilizing Japanese knowledge, experience, and advanced technology
  - Introduction of SCADA・GIS system
  - Advanced wastewater treatment
  - Cooperation with municipalities of Japan, with Tokyo City in Delhi and with Yokohama City in Jaipur

③ Enhancing Sustainability
  - Enhancing O/M capacity
  - Securing financial stability by ensuring the collection of water tariff
  - Enhancing of public awareness for safety water and sanitation
Water Sector  Comprehensive assistance in major cities by utilizing Japanese knowledge

Improving water and sewerage infrastructure mainly in metropolitan areas and industrial areas

- Strengthening O&M capacity for Delhi Water Supply Improvement Project (Completed)
- Amritsar Sewerage Project
- Yamuna Action Plan Project
- Agra Water Supply Project
- Non-revenue Water Reduction for Jaipur Water Supply Project (Completed)
- Rajasthan Rural Water Supply and Fluorosis Mitigation Project (Nagaur)
- Goa Water Supply and Sewerage Project
- Capacity Development Project for Non-Revenue water (NRW) Reduction in Goa (Completed)
- Project for Pollution Abatement of River Mula-Mutha in Pune
- Delhi Water Supply Improvement Project
- Ganga Action Plan Project (Varanasi)
- Guwahati Water Supply Project
- Guwahati Sewerage Project
- West Bengal Piped Water Supply Project (Purulia)
- Orissa Integrated Sanitation Improvement Project
- Hussain Sagar Lake and Catchment Area Improvement Project (Completed)
- Hogenakkal Water Supply and Fluorosis Mitigation Project (Completed)
- Kerala Water Supply Project (completed)
- Bangalore Water Supply and Sewerage Project
- Tamil Nadu Urban Infrastructure Project (Completed)
- The Study for Formulation and Revision of Manuals on Sewerage and Sewage Treatment (Completed)
- Double line: Technical Assistance Single line: Yen Loan
MAHSR

- **Joint Feasibility Study (F/S)** conducted by JICA and Ministry of Railway from Dec. 2013 to July. 2015.
- Both sides confirmed the use of **Japanese high speed rail technologies (i.e. the SHINKANSEN system)** and experiences, in line with the result of the joint F/S at the Japan-India Summit Meeting (December 2015).
- **Follow-Up Study** conducted by JICA from Mar. 2016 to Feb.2018
- In the latest Japan-India Summit Meeting (September 2017), the two Prime Minister welcomed:
  1. Steady progress, including the **project commencement at the Sabarmati Station**, witnessing the **construction commencement** of training institute in Vadodara
  2. Provision for a soft **ODA loan amounting to JPY 100 billion**
  3. Business matching efforts to establish Japan-India cooperation for advancing “**Make in India**” and **technology transfer** HSR projects
- JICA has been providing with utmost **technical support** (for CD);
  ✓ Formulation of **technical standards**,
  ✓ **Safety certification** measures,
  ✓ Strengthening the **institutional capacity of NHSRCL**
  ✓ Urban development planning of stations and surrounding areas for **enhancement of the connectivity** and **non-fare revenue**, etc.
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
## Mumbai – Ahmedabad High Speed Railway Project (MAHSP)

<table>
<thead>
<tr>
<th>Package</th>
<th>Location</th>
<th>FIDIC Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-1</td>
<td>Mumbai St.</td>
<td>Design-Build</td>
</tr>
<tr>
<td>C-2</td>
<td>Undersea Tunnel</td>
<td></td>
</tr>
<tr>
<td>C-3</td>
<td>Mid Section 1</td>
<td>Design-Build</td>
</tr>
<tr>
<td>C-4</td>
<td>Mid Section 2</td>
<td>Design-Build</td>
</tr>
<tr>
<td>C-5</td>
<td>Vadodara St.</td>
<td>Works</td>
</tr>
<tr>
<td>C-6</td>
<td>Mid Section 3</td>
<td>Design-Build</td>
</tr>
<tr>
<td>C-7</td>
<td>Ahmedabad St.</td>
<td>Works</td>
</tr>
<tr>
<td>C-8</td>
<td>Sabarmati Depot (Civil)</td>
<td>Design-Build</td>
</tr>
<tr>
<td>P-1</td>
<td>Paticular Bridges (A)</td>
<td>Works</td>
</tr>
<tr>
<td></td>
<td>Paticular Bridges (B)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Paticular Bridges (C)</td>
<td></td>
</tr>
<tr>
<td>P-2</td>
<td>Paticular Bridges (No.10)</td>
<td>Works</td>
</tr>
<tr>
<td>P-3</td>
<td>Paticular Bridges (No.11)</td>
<td>Works</td>
</tr>
<tr>
<td>P-4</td>
<td>Paticular Bridges (fabrication)</td>
<td>Works</td>
</tr>
<tr>
<td>T-1</td>
<td>Track Works</td>
<td>Design-Build</td>
</tr>
<tr>
<td>T-2</td>
<td>Track Works</td>
<td>Design-Build</td>
</tr>
<tr>
<td>T-3</td>
<td>Track Works</td>
<td>Design-Build</td>
</tr>
<tr>
<td>E-1</td>
<td>Electrical Works</td>
<td>Design-Build</td>
</tr>
<tr>
<td>D-1</td>
<td>Thane Depot</td>
<td>Design-Build</td>
</tr>
<tr>
<td>D-2</td>
<td>Sabarmati Depot</td>
<td>Design-Build</td>
</tr>
<tr>
<td>R-1</td>
<td>Rolling Stock</td>
<td>Design-Build</td>
</tr>
<tr>
<td>IM-1</td>
<td>Inspection/Maintenance Car</td>
<td>Design-Build</td>
</tr>
<tr>
<td>TI-1</td>
<td>Training Institute</td>
<td>Design-Build</td>
</tr>
<tr>
<td>TI-2</td>
<td>Training Institute</td>
<td>Design-Build</td>
</tr>
<tr>
<td>TI-3</td>
<td>Training Institute</td>
<td>Local Competitive Bidding</td>
</tr>
</tbody>
</table>
JICA’s guidelines share the same basic principles as FIDIC, and procurement for MAHSR is in line with JICA’s guidelines and project specific requirements.

Key Basic Principles for Procurement similar to FIDIC such as the following:

➢ Fair risk allocation between contractor and employer
➢ Clear understanding of Employer’s obligation and contractor’s responsibility
➢ No unilateral or one-sided contract conditions
JICA’s Standard Bidding Documents (SBDs) on Design Build and Works contracts are by and large in line with FIDIC Yellow and Pink Book - FIDIC conditions have been incorporated in JICA’s SBDs wherever considered appropriate

Bidding Documents for MAHSR are based on JICA’s SBDs. Key conditions in line with FIDIC:

➢ Employers’ liability vis-à-vis contractors’ liability
➢ Neutrality of Dispute Adjudication Board (DAB) and Arbitration process
➢ Appropriateness of milestone conditions
➢ Payment terms and conditions (Mobilisation advance, retention money, recovery of mobilisation advance etc)
➢ Documentation requirements (JV agreements, financial eligibility determination etc)
### Location of HSR stations

<table>
<thead>
<tr>
<th>No.</th>
<th>Station Name</th>
<th>Population (million)</th>
<th>Location of Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Sabarmati</td>
<td>6.30</td>
<td>Brown field, Adjacent</td>
</tr>
<tr>
<td>11</td>
<td>Ahmedabad</td>
<td></td>
<td>Brown field, Adjacent</td>
</tr>
<tr>
<td>10</td>
<td>Anand/Nadiad</td>
<td>0.85</td>
<td>Green field, New</td>
</tr>
<tr>
<td>9</td>
<td>Vadodara</td>
<td>2.00</td>
<td>Brown field, Adjacent</td>
</tr>
<tr>
<td>8</td>
<td>Bharuch</td>
<td>0.22</td>
<td>Green field, New</td>
</tr>
<tr>
<td>7</td>
<td>Surat</td>
<td>4.50</td>
<td>Green field, New</td>
</tr>
<tr>
<td>6</td>
<td>Bilimora</td>
<td>0.05</td>
<td>Green field, New</td>
</tr>
<tr>
<td>5</td>
<td>Vapi</td>
<td>0.10</td>
<td>Green field, New</td>
</tr>
<tr>
<td>4</td>
<td>Boisar</td>
<td>0.15</td>
<td>Green field, New</td>
</tr>
<tr>
<td>3</td>
<td>Virar</td>
<td>1.20</td>
<td>Green field, New</td>
</tr>
<tr>
<td>2</td>
<td>Thane</td>
<td>1.20</td>
<td>Green field, New</td>
</tr>
<tr>
<td>1</td>
<td>Mumbai</td>
<td>12.00</td>
<td>Semi-brown field, New</td>
</tr>
</tbody>
</table>
Station Area Development for HSR Project

Phased development is considered for station area of HSR

【Image of Area Classification】

Area 1
The area to be secured before opening of HSR

Area 2
The area to be developed approximately within 10 years after HSR opening

Area 3
The area surrounding the station to be developed / re-developed the mid/long term

【Sequence】

[Area 1] Areas to be developed before opening of MAHSR
✓ Develop access road, pedestrian walkway and station plaza necessary for station operation

[Area 2] To be developed within 10 years after HSR opening
✓ Expansion of station plaza, and development of bus terminal and streets
✓ Commercial and/or housing development by private sector

[Area 3] To be developed in the mid-term
✓ Infrastructure development and private sectors’ property development
JICA invited Indian officials, MOR, MOHUA, NHSRCL, Gujarat and Maharashtra state governments to Japan from Jan 27 to Feb 5, 2019.
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**
- **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)
Free and Open Indo-Pacific

• The Free and Open Indo-Pacific (FOIP) concept, originally advocated by the Japanese government, is based on the recognition that a maritime order that is free and open under the rule of law represents a foundation for the stability and prosperity of the international community. To ensure the stability and prosperity of the Indo-Pacific region, it is vital to maintain or bolster its free and open maritime order by eliminating various kinds of threats such as those from piracy, natural disasters, terrorism, the proliferation of weapons of mass destruction and illegal operations.

• The entire Indo-Pacific region’s economic activities will be stimulated by connecting Asian economies that have grown significantly through attaining a certain degree of political stability, with Middle Eastern and African countries that are expected to grow in the coming years and by boosting the regional connectivity.

• Promotion and establishment of fundamental values (rule of law, freedom of navigation, etc.);
  -Pursuit of economic prosperity (improvement of connectivity, etc.); and
  -Commitment for peace and stability (capacity building on maritime law enforcement, etc.)
Cooperation in the third countries

India and Japan agreed to implement joint projects as

- Cooperation in Sri Lanka, such as the development of LNG-related infrastructure;
- Cooperation in Myanmar, synergizing development efforts in the Rakhine State by collaborating in housing, education and electrification projects;
- Cooperation in Bangladesh, for enhancing connectivity by way of four-laning of road and reconstruction of bridges on the Ramgarh to Baraiyarhat stretch, and providing rolling stock and constructing the Jamuna Railway Bridge over the Januma River; and
- Cooperation in Africa, such as organising an SME development seminar in Kenya and seeking a possibility of a collaborative project in the area of health service such as developing a cancer hospital in Kenya.
Act East Forum

The Forum aims to further expand the cooperation between Japan and India in North East and to strengthen the relationship between Japan and North East, as well as that between Japan and India. In this regard, the Forum discusses cooperation in various fields and promotes Japan’s cooperation in the region.

1. Enhancing Connectivity
2. Forest Management
3. Bamboo
4. Disaster management
5. People-to-people exchanges
Shortlist – 11 Regional Road Corridors

Regional Road Corridors

- RO1
- RO2
- RO3
- RO5
- RO7
- RO9
- RO14
- RO15
- RO16
- RO17

Base map data: Google

Alignments are indicative only

Port
Potential Port
Major Border Crossing Point
JICA’s Cooperation for NER
Continuous Cooperation for Sustainable Development including Connectivity Enhancement

- Assam Guwahati Water Supply (2008-)
- Assam Guwahati Sewerage (2014-)
- Sikkim Biodiversity Conservation & Forest Management (2010-)
- Meghalaya Umiam Hydro Power (2018-)
- Nagaland Forest Management (2016-)
- Assam North East Connectivity Phase 3
  Dhubri/Phulbari (New Bridge) (2018-)
- Meghalaya North East Connectivity Phase 1
  Tura-Dalu (NH-51) (2016-)
- Meghalaya North East Connectivity Phase 2
  Shillong – Dawki (NH-40) (2017-)
- Tripura Forest Phase 2 (2018-)
- Mizoram TCP for Sustainable Agri & Irrigation Dev. (2017-)
- Mizoram North East Connectivity Phase 2
  Aizawl–Tuipang (NH-54) (2017-)
- Mizoram North East Connectivity Phase 1
  Aizawl–Tuipang 350.7km (NH-54) (2016-)

JICA’s Cooperation for NER in the North East Region (NER) includes a range of projects focused on sustainable development and connectivity enhancement. Projects in Assam include the Guwahati Water Supply and Sewerage, in Meghalaya there are projects like Umiam Hydro Power and Forest Management, and in Nagaland, the focus is on Forest Management. In Mizoram, projects include the Transformation of Community and Public (TCP) for Sustainable Agriculture and Irrigation Development. The diagram illustrates the geographical spread of these projects across the region.
JICA’s contribution to Economic Corridors and Mekong Area

Projects related to Southern Economic Corridor
- Cambodia National Rd No.5 (F/S)
- Cambodia National Rd No.6 & 7 (Grant)
- Cambodia National Road No.1 (Grant)
- Neak Loeung Bridge (Grant)
- Saigon East-West Highway (Loan)
- North-South Expressway (Loan)
- Cai Mep-Thi Vai Port (Loan)

Projects related to East-West Economic Corridor
- Nam Leuk Hydroelectric Power Plant (Loan)
- Nam Ngum Hydroelectric Power (Loan/Grant)
- Wattay Vientiane International Airport (Grant)
- Suvarnabhumi Airport (Loan)
- Lam Ta Khong Pumped Storage (Loan)
- Sihanoukville Port (Loan)
- Cai Mep-Thi Vai Port (Loan)
- Laem Chabang Port (Loan)
- Tansonnhat International Airport (Loan)
- Phu My Thermal Power Plant (Loan)

Flagship Project
- Saigon East-West Highway (Loan)

Projects related to Southern Economic Corridor

Projects related to East-West Economic Corridor

Flagship Project

JICA’s contribution to Maritime ASEAN Economic Corridor

**East-West Economic Corridor**
- (Y) Cai Mep Thi Vai Port
- (Y) Hai Phong Port
- (Y) Dieu Phong Port
- (Y) Da Nang Port
- (Y) Cai Mep Thi Vai Port

**Southern Economic Corridor**
- (Y) Sihanouk Ville Port
- (Y) Map Ta Phut Port
- (Y) Laem Chabang Port
- (Y, TA) Sihanouk Ville Port
- (TA) Yangon Port

**ASEAN RoRo Shipping Network**
- (Y) Bintulu Port
- (Y) Port Klang
- (Y) Johor Port
- (Y) Dumai Port
- (Y) Palembang Port
- (Y) Tanjung Priok Port
- (Y) Semarang Port

**Flagship Project**
- (G) Oecusse Port
- (G, TA) Dili Port

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(G) Grant, (TA) Technical Assistance, (Y) Yen Loan

ASEAN 47 Network Ports

33 Flagship Project
JICA’s activities for prosperity of the Indo-Pacific

- Chennai-Bengaluru Industrial Corridor
- Nacala Corridor
- North-South Corridor
- Northern Corridor
- Central Corridor
- Nacala Corridor
- West Africa Growth Ring
- Nile Corridor
- Djibouti-Addis Ababa Corridor
- Cross Boarder Project in North East India and Bangladesh
- Delhi-Mumbai Industrial Corridor (DMIC)
- Bay of Bengal Industrial Growth Belt (Big-B)
- The Fourth Trans-African Highway
- Maritime ASEAN Economic Corridor
- East-West Economic Corridor
- Southern Economic Corridor
- Trans-Maghrebin Corridor
- Maritime ASEAN Economic Corridor
1. Southeast Asia
   (1) East-West Economic Corridor
       ➢ 2nd Mekong International Bridge (Loan)
       ➢ Hai Van Tunnel (Loan)
       ➢ Da Nang Port (Loan)
   (2) Southern Economic Corridor
       ➢ Cambodia National Road No. 5 (Loan)
       ➢ Neak Loeung Bridge (Grant)
       ➢ Cai Mep-Thi Vai Port (Loan)
   (3) Maritime ASEAN Economic Corridor
       ➢ ASEAN RoRo Shipping Network
       ➢ Maritime Safety (Loan, Grant, Technical Cooperation)
   (4) Institutional connectivity for Economic Corridors
       ➢ Projects for E-Customs and National Single Window for Customs Modernization in Vietnam and Myanmar (Grant)

2. South Asia
   (1) Bay of Bengal Industrial Growth Belt (Big-B)
       ➢ Dhaka-Chittagong Railway Development (Loan)
       ➢ Matarbari Ultra Super Critical Coal-Fired Power (Loan)
   (2) Cross Boarder Projects in North East India and Bangladesh
       ➢ North East Connectivity Improvement (F/S)
   (3) Delhi-Mumbai Industrial Corridor
       ➢ Dedicated Freight Corridor (Loan)
   (4) Chennai-Bengaluru Industrial Corridor
       ➢ Chennai Metro (Loan)
       ➢ Bangalore Metro Rail (Loan)
       ➢ Tamil Nadu Investment Promotion Program (Loan)

3. Africa
   (1) Northern Corridor
       ➢ Mombasa Port Development in Kenya (Loan)
       ➢ Master Plan on Logistics in Northern Economic Corridor (Technical Cooperation)
   (2) Nacala Corridor
       ➢ Nacala Port Development (Loan and Grant)
   (3) Central Corridor
       ➢ Comprehensive Transport and Trade System Development Master Plan in the Tanzania (Technical Cooperation)
   (4) West Africa Growth Ring
       ➢ The Corridor Development for West Africa Growth Ring Master Plan (Technical Cooperation)
Thank you!

धन्यवाद

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