### Country News

- JICA Extends Financial Assistance to Enhance Key Projects across India

### Events and Workshops

- JICA Shares Key Insights on Industrial Corridors and Societal Manufacturing during ‘Make in India’ Week
- JICA Re-Emphasizes Focus on Sustainable Forest Management and Community Development Activities on Occasion of 8th Annual Workshop.

### Features

- JICA Transforms Ahmedabad’s Public Transit System by Assisting its First Ever Metro Train
- JICA’s Assistance to Mitigate Pollution of Mula, Mutha and Mula-Mutha Rivers and Improve the Living Environment in Pune

### Project Update

- JICA Assisted Feasibility Survey for Pre-Cast Concrete Products to Accelerate Social Infrastructure Development in India

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During FY2015-16, JICA extended a total of 377.259 billion Japanese yen for loan assistance to numerous projects in various sectors, including transport, health, water and sanitation, energy, and agriculture by signing respective Official Development Assistance (ODA) loan agreements with the Government of India. These ODA loans supporting various key projects will play a vital role in the development of Indian infrastructure, quality living and protection of the environment and water resources. In conjunction with the commitment of Government of India to promote sustainable economic growth of India, JICA India supported several key projects across the country since the inception of 2016.

Various JICA signed ODA loan agreements for FY2015-16 in India are as follows:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Project Name</th>
<th>Date of LA Signing</th>
<th>ODA Loan Amount (JPY Million)</th>
<th>ODA Loan Amount (approx. Rs. Core)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Odisha Transmission System Improvement Project</td>
<td>May 15, 2015</td>
<td>21,787</td>
<td>1,150</td>
</tr>
<tr>
<td>2</td>
<td>Project for Pollution Abatement of River Mula-Mutha in Pune</td>
<td>January 13, 2016</td>
<td>19,064</td>
<td>1,000</td>
</tr>
<tr>
<td>3</td>
<td>Chennai Metro Project (IV)</td>
<td>March 4, 2016</td>
<td>19,981</td>
<td>1,180</td>
</tr>
<tr>
<td>4</td>
<td>Ahmedabad Metro Project (I)</td>
<td>March 4, 2016</td>
<td>82,434</td>
<td>4,870</td>
</tr>
<tr>
<td>5</td>
<td>PPP Infrastructure Financing Project</td>
<td>March 11, 2016</td>
<td>50,000</td>
<td>2,866</td>
</tr>
<tr>
<td>6</td>
<td>Madhya Pradesh Transmission System Modernization Project</td>
<td>March 31, 2016</td>
<td>15,457</td>
<td>920</td>
</tr>
<tr>
<td>7</td>
<td>Dedicated Freight Corridor Project (Phase 1) (III)</td>
<td>March 31, 2016</td>
<td>103,664</td>
<td>6,170</td>
</tr>
<tr>
<td>8</td>
<td>Odisha Integrated Sanitation Improvement Project (II)</td>
<td>March 31, 2016</td>
<td>25,796</td>
<td>1,535</td>
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<tr>
<td>9</td>
<td>Jharkhand Horticulture Intensification by Micro Drip Irrigation Project</td>
<td>March 31, 2016</td>
<td>4,652</td>
<td>277</td>
</tr>
<tr>
<td>10</td>
<td>Tamil Nadu Urban Health Care Project</td>
<td>March 31, 2016</td>
<td>25,537</td>
<td>1,373</td>
</tr>
<tr>
<td>*<em>TOTAL</em></td>
<td></td>
<td></td>
<td><strong>377,259</strong></td>
<td><strong>22,456</strong></td>
</tr>
</tbody>
</table>

*The total amount includes amendment of existing loan agreements.

**The exchange rate of JPY 1 = INR 1.68 is used to calculate.
JICA Shares Key Insights on Industrial Corridors and Societal Manufacturing during ‘Make in India’ Week

Takema Sakamoto, Chief Representative of JICA India participated in the “Make in India” week, which took place in Mumbai from February 13 to 18, 2016. He was a distinguished guest and speaker at two of the most important discussion panels at the event.

He spoke at the “Sectorial Seminar on Opportunity in Industrial Corridors” which emphasized the prosperity of integrated and enhanced approach of the Industrial Corridors. In the seminar, Mr. Sakamoto touched upon issues, such as (i) importance of fostering economic growth engine areas for boosting whole country’s prosperity by quoting past cases of Japan’s Pacific Coastal Belt and Thailand’s Eastern Seaboard, (ii) importance of selectivity and concentration policy in order to avoid broad but shallow scattering inputs/investment, (iii) importance of creation/appeal of comparative advantages for corridors/industrial zones for attracting FDIs competing with neighboring countries and other Indian areas/zones, (iv) necessity of advance appropriate consideration on possible negative impacts to environment and social matters including regional disparity, and (v) effectiveness of learning past experiences/lessons of JICA/Japan.

Mr. Sakamoto also spoke at the “Seminar of Champions for Societal Manufacturing (CSM)” which explained the futuristic initiatives of the CSM towards accelerating the competitiveness of Indian manufacturing towards “Make in India”.

During this seminar Mr. Sakamoto touched upon issues, such as (i) importance of mindset change in management levels, (ii) recognition of companies participated in VLFM/CSM Project as reliable partners of foreign investors, (iii) importance of wide replication/dissemination of knowledges by participants/attendees, and (iv) decision to extend another 2.5 years for CSM Project.

JICA Re-Emphasizes Focus on Sustainable Forest Management and Community Development Activities on Occasion of 8th Annual Workshop

The 8th Annual Workshop on Forestry and Natural Resource Management Projects was organized in Gangtok from February 29 to March 1, 2016, under the JICA assisted Sikkim Biodiversity Conservation and Forest Management Project (SBFMP) being implemented by the Sikkim Forest Department.

Esteemed Chief Guests and attendees at the workshop included Mr. T.W. Lepcha, Hon’ble Minister of Forest, Environment & Wildlife Management, Government of Sikkim; Mr. C. Zangpo, Secretary, Tourism & Civil Aviation, Government of Sikkim and Dr. Thomas Chandy, Principal Secretary cum PCCF & Chief Project Director, SBF MP.

Other participants at the workshop included State Forest Departments from Tamil Nadu, Gujarat, Tripura, Odisha, Uttar Pradesh, Karnataka, West Bengal, Haryana, Rajasthan and Uttarakhand, which are also the executing agencies of JICA assisted forestry projects. Officials from Nagaland, Meghalaya and other states were also present.

Lead presentation was made by the JICA at the workshop. The workshop was divided into four technical sessions based on the themes such as Sustainable Forest Management & Biodiversity Conservation, Livelihood Security, Institutional Strengthening & Capacity Building and Technology based Monitoring & Carbon Financing. The technical sessions were followed by group discussions, and recommendations were made on each theme by the four groups, were shared with Ministry of Environment, Forest and Climate Change (MOEF & CC), Government of India and all participants for necessary action.
JICA Transforms Ahmedabad’s Public Transit System by Assisting its First Ever Metro Train

On March 4, 2016, JICA signed a loan agreement with the Government of India to provide 82.434 billion Japanese yen (approximately INR 4,870 crore) ODA loan for the development of the metro rail system in Ahmedabad, Gujarat. The assistance from JICA will facilitate construction of underground and elevated rail-tracks, electrical, telecommunication and signaling systems and procurement of the rolling stocks.

The project will provide the first metro rail system of approximately 38 km in Ahmedabad from Motera Stadium to APMC (North-South Corridor) and Thaltej to Vastral Gaam (East-West Corridor). It will cover the central business district, academic, residential and institutional complex area of Ahmedabad Metropolitan Area.

Development of metro in Ahmedabad will provide safe, timely and comfortable travel with high reliability of services to the citizens as a typical example of high quality infrastructure. The metro will also provide safe and reliable service for female and vulnerable passengers such as the seniors and persons with disability, by installing CCTV, intercoms for emergency communication, courtesy seats, women-only passenger car, space for wheelchairs in cars, textured paving blocks and lifts at platforms.

The Executing Agency for the project is Metro Link Express for Gandhinagar and Ahmedabad Company Ltd. (MEGA). The complete commercial operations are expected to start from 2020.

JICA’s Assistance to Mitigate Pollution of Mula, Mutha and Mula-Mutha Rivers and Improve the Living Environment in Pune

JICA is facilitating the construction of sewer lines, pumping stations and treatment plants for treatment of the sewage before its discharge into Mula, Mutha and Mula-Mutha Rivers in Pune, which will lead to control of river pollution and will enhance the living environment in Pune and adjoining areas.

Pune has been growing as a centre of education, engineering industry and IT services sector. The population of Pune has been proportionately increasing, from 2.6 million in 2001 to 3.2 million in 2011 as per the Census, and is estimated to reach 5.7 million by 2027 and 8.4 million by 2047. The requirement for sewerage services has also increased proportionately. The sewage volume being treated currently is about 476 million liters per day (MLD), while the sewage volume generated is about 728 MLD.

JICA’s assistance will entail construction of a sewer network of over 113 km, 4 sewage pumping stations and 11 sewage treatment plants of 396 MLD combined capacity, to cater to population increase over the ensuing 30 years. The sewerage system is designed to benefit over 8 million inhabitants in Pune and adjoining areas. There will also be 24 community toilet facilities constructed under the assistance. JICA will also assist in designing of the sewerage network, management of its construction and application of Geographic Information System (GIS) and Management Information System (MIS) for capacity building of the Pune Municipal Corporation for subsequent operation and maintenance.
JICA Assisted Feasibility Survey for Pre-Cast Concrete Products to Accelerate Social Infrastructure Development in India

Starting June 2015, JICA has been assisting a survey to examine the potential use of Precast Concrete (PC) Products to accelerate social infrastructure development in India. The proposed PC products are intended to contribute to disaster prevention and countermeasures such as flooding of rivers due to torrential rain during the rainy season, and traffic congestion caused by flooding of the road and flooding of housing.

The purpose of the survey is:
• To Identify the need and requirement of precast concrete products for infrastructure development projects to be implemented by Mumbai Metropolitan Region Development Authority (MMRDA) in Maharashtra
• To examine various ODA projects utilizing PC products and technologies related to disaster prevention
• To conduct a market survey of PC products in Maharashtra, Gujarat, and Delhi and prepare a business plan to participate in both ODA projects and private projects
• To demonstrate and verify the applicability of PC products and technologies by carrying out demonstrations in Gujarat

The survey was conducted in three major cities of India - Mumbai, Ahmedabad, and Delhi. In these cities, while the number of automobiles and motorcycles is increasing due to rapid urbanization, the traffic congestion has become a serious problem due to the fact that infrastructure development has not progressed as fast as urbanization. During the monsoon season from May to October, torrential rain and flash floods disrupt the function of the cities. These problems have become a bottleneck for further development of economic and social activities, and modern infrastructure development including disaster prevention measures. There is an urgent need to make these cities internationally competitive. Concrete products are widely used not only for construction purposes, but also for infrastructure development, such as roads, rivers, railways, and ports. In Japan, a "cast-in-place" method, manufacturing and constructing concrete by stirring gravel, sand and water to make cement at construction sites, has been adopted for infrastructure development in the past. This method has been adopted from the fact that the cement can solidify rapidly and manufactured close to the construction sites. However, concrete products are composite, material products mainly of cement, gravel, sand and water, and careful control of the production process is essential.

In particular, various technologies are required in product molding and management system to adapt changes in the weather and season is important. India has also adopted a "cast-in-place" method, and concrete products have been often manufactured by construction companies as part of their construction work. Insufficient management in the manufacturing process has shortened product lifetime and caused quality deterioration of public infrastructure.

To solve the complexity of the techniques required in "cast-in-place" method a "Precast Concrete (PC)" scheme has been established as a way of distinguishing products and technologies of Japan. PC products are manufactured by using moulds in factories and placed in the construction fields. The strong points of precast concrete are as follows:
• Shortening of construction period
• Requiring only 1/3 the quantity of concrete to ensure the same strength
• Environmentally friendly

In India, utilizing PC products is expected to accelerate infrastructure development by cutting down the life-cycle-cost in the areas of disaster prevention and environmental measures.

Japanese companies have also proposed various environmentally friendly PC products like Hydrophilic River Revetment Box with habitat function of fish and benthic organisms, Road Retaining Wall applicable for greening and Roadside Drainage enabling dropped amphibian to climb out.

Under the framework of the program, the study has made a good progress. Two Japanese companies, Toyota Kohki Co., Ltd., a manufacturer of mould and Fuji Concrete Industry Co., Ltd., a manufacturer of precast concrete, have already set up Indian subsidiaries and factories in the suburbs of Ahmedabad. The complete survey is set to be completed by June 2016; however, they will keep on providing technical guidance to Indian concrete manufacturers as strong local partners.

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