The Japan International Cooperation Agency (JICA) has extended 33,959 million Yen (approx. Rs 1,800 crore) loan assistance for increasing irrigated area under the Rengali Irrigation Project (Phase 2) in Odisha, to facilitate increased agriculture production; and 15,620 million Yen (approx. Rs 830 crore) loan assistance for development of a sewerage system in Guwahati, to mitigate river pollution and enhance living environment in the area.

Rengali Irrigation Project is part of the Rengali dam project with a dam and reservoir built in 1985 in the deltaic region of the Brahmani river in Odisha. Under the Rengali Irrigation Project, a barrage has been built 35 km downstream of the Rengali dam with a canal emanating from it and the canal has been built from 29.177 km to 71.313 km. Under Rengali Irrigation Project (Phase 2) the canal will be extended from the current 71.313 km to 123.500 km on the left bank, and associated distribution system and ancillary canals would be developed.

Cultivation dependent on rains can support only one crop annually, and hence development of an irrigation system is essential for cultivation of more crops annually. The Rengali Irrigation Project has facilitated cultivation during the non-rainy season of paddy, pulses, groundnut and vegetables, thereby increasing their annual production, and in-turn farmer incomes. The current JICA assistance will enable irrigation of 39,416 hectares benefiting over 2,00,000 people in over 42,400 farmer households.

JICA’s assistance for development of sewerage system in Guwahati emanates from increasing urbanization leading to growth of Guwahati city, which in-turn is increasing the requirement for sewerage services. The sewage in Guwahati is generally getting disposed without any treatment into neighbouring drains or low lying areas, subsequently flowing into the Bharalu river passing through the city. This is resulting in unhygienic conditions and risk of pollution of ground and surface water sources.

Through JICA’s assistance a sewer network of over 500 km would be designed and constructed, together with pumping stations and sewage treatment plants with SCADA (Supervisory Control and Data Acquisition) system which enables remote control and monitoring of equipments.

Sinya Ejima, Chief Representative, JICA (right) signed the agreements with Tarun Bajaj, Joint Secretary, Department of Economic Affairs, Ministry of Finance, Govt. of India
JICA’s assistance to the agriculture sector in India: a cross-section of projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Project Components</th>
<th>ODA Loan</th>
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<tr>
<td>Himachal Pradesh Crop Diversification Promotion Project</td>
<td>Development and rehabilitation of minor irrigation facilities and access roads to farms, as well as improvement of extension services including promotion of vegetable cultivation.</td>
<td>JPY 5,001 million (Rs 250 crore)</td>
</tr>
<tr>
<td>Swan River Integrated Watershed Management Project (Himachal Pradesh)</td>
<td>Integrated watershed management activities including afforestation, civil works for soil and water management, soil protection and land reclamation, agricultural development, and livelihood improvement activities.</td>
<td>JPY 3,493 million (Rs 130 crore)</td>
</tr>
<tr>
<td>Andhra Pradesh and Telangana Irrigation and Livelihood Improvement Project</td>
<td>Construction and rehabilitation of irrigation facilities and improvement of water management and agriculture practices.</td>
<td>JPY 23,974 million (Rs 950 crore)</td>
</tr>
<tr>
<td>Rengali Irrigation Project (Odisha)</td>
<td>Construction of irrigation systems, establishment of Water Users Associations, and improvement of agriculture practices.</td>
<td>JPY 51,133 million (Rs 2,450 crore)</td>
</tr>
<tr>
<td>Rajasthan Minor Irrigation Improvement Project</td>
<td>Rehabilitation of existing minor irrigation facilities and improvement of water management and agriculture practices.</td>
<td>JPY 11,555 million (Rs 480 crore)</td>
</tr>
</tbody>
</table>

*Images:
- Wheat cultivation using vermicompost exemplifying crop diversification in Himachal Pradesh
- Swan river watershed management for soil protection for agriculture in Una district, Himachal Pradesh
- Rengali irrigation canal development in Odisha
- Irrigation canal development in Rajasthan*
Hon’ble CM of Kerala inaugurates Kozhikode Water Supply Scheme, developed under JICA assisted Kerala Water Supply Project

The Kozhikode Water Supply Scheme for supplying safe and stable piped water to households, businesses and institutions like hospitals and colleges, was inaugurated by Hon’ble Chief Minister of Kerala Oommen Chandy. The Scheme covers Kozhikode city and 16 adjoining Panchayats.

The development of Kozhikode Scheme includes Kozhikode Water Treatment Plant of 174 million liters per day (MLD) capacity, construction of new and refurbishment of old water transmission system, building of intake well and reservoirs of 85 million liters capacity and reduction of water-leaks. The Scheme enables increase in the water supply volume to 246 MLD from 72 MLD in 2006, serving 12,08,000 people.

The Kozhikode Water Supply Scheme is part of JICA assisted Kerala Water Supply Project which comprises Water Supply Schemes to construct, augment and rehabilitate water supply systems in Thiruvananthapuram, Kozhikode and adjoining villages, Meenad and adjoining villages (Kollam district), Cherthala and adjoining villages (Alappuzha district), and Pattuvam and adjoining villages (Kollam district). Each of the five schemes covers population spread across 200 to 400 sq km.

The Kerala Water Supply Project entails construction of over 4,500 km of distribution lines, over mostly hilly and undulating terrain, to bring piped water supply to over 41 lakh people. JICA has extended 57,501 million Yen (approx. Rs 3,000 crore) in loan assistance since 1997 for the Kerala Water Supply Project.

IITH co-organizes an international symposium on Digital Fabrication

A two-day international symposium on Digital Fabrication was organized jointly by Indian Institute of Technology (IIT) Hyderabad, Keio University Japan and Deakin University Australia to deepen inter-disciplinary collaboration to further Digital Fabrication technology and broaden this technology’s reach among entrepreneurs. Digital Fabrication entails digitization of the design as well as of the process of fabrication. Together with Computer-Aided Design (CAD) tools, Digital Fabrication facilitates creation of new types of objects with unique geometrical and material properties which cannot be created using conventional methods.

The Digital Fabrication or 3D Printing technology is changing the way designing and fabrication is done, from that of machine parts, concrete structures, prosthetics, electronic components to almost anything. Dr V K Saraswat, formerly Director General, Defence Research & Development Organization and Chief Scientific Advisor, Minister of Defence, Government of India and currently member, NITI Ayog was the Chief Guest at the symposium.

Other speakers and attendees at the symposium included research driven government organizations from India like Department of Science & Technology, Department of Biotechnology, Defence Metallurgical Research Laboratory and Defence Research & Development Laboratory among others; 3D Printing user organizations like Cyient, Roland DG and LV Prasad Eye Institute among others; academic institutions like IIT Delhi, IIT Bombay, IIT Kanpur, Deakin University, University of Tsukuba and Keio University among others.

JICA is extending integrated assistance for development of IITH, which includes loan assistance of 23,035 million Yen (approx. Rs 1,336 crore) and technical cooperation to augment research at IITH through network between it and institutions of higher learning and industrial clusters in Japan.
Technology driven strawberry cultivation to raise rural incomes

JICA is facilitating expansion of IT controlled strawberry cultivation in Pune district which is empowering rural women through income generation opportunities. The cultivation is controlled using IT based sensors for monitoring pH, temperature and moisture during cultivation, cloud-based storage of data tracking cultivation progress and computer with internet connectivity for communication with cultivation experts in Japan when required.

The strawberries are grown in a greenhouse on coco peat, on a raised platform instead of on soil. Coco peat is coir fiber by-product abundantly available in India, and it minimizes use of pesticides and risk of disease or pests. The greenhouse has customized air-coolers to maintain temperature, a retractable curtain with mosquito net for use at night and in winters to maintain temperature without air-coolers and an RO system to maintain pH in irrigation water.

The strawberry cultivation method is being provided by General Reconstruction Association, GRA, which came into being to redevelop strawberry cultivation in Japan using IT, following the damage caused by the 2011 Tsunami. The first strawberry baby saplings from Japan were introduced in India by GRA, with support from NEC corporation and an NGO, the Institute of Cultural Affairs, with the objective of providing livelihood enhancement opportunities for rural women. The strawberries were test grown at the College of Agriculture, Pune in 2012. Following successful harvesting of the test crop and pollination for local generation of such plants, 1,000-square-meter greenhouse was set-up in Pune district.

The first crop from the greenhouse has generated repeat orders from hotels and local markets for such strawberries. JICA has provided a grant of 50 million Yen (approx. Rs 2.63 crore) to scale-up the project over two years and propagate the cultivation practice among local farmers for the cultivation to be carried-out into the future without Japanese assistance. The grant has been provided under the JICA program of utilizing know-how available with the Japanese private sector to aid new technology introduction, human resource development and generation of employment opportunities in rural areas.

Indo-Japan team at the strawberry cultivation

Expert from GRA examining the strawberry crop