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Expanding Reach

KEIP to help revamp urban service delivery in Kolkata

In line with the ongoing policy thrust on the creation of smart, liveable cities, the Asian Development Bank (ADB) is currently assisting a \$400 million project in the city of Kolkata, aimed at improving the quality and efficiency of basic urban services.

"ADB has had a long-term partnership with Kolkata city. We are working to achieve 24-hour continuous water supply and strengthen sewerage and drainage networks. This will provide clean water to the citizens, reduce flood risks, and increase the city's climate resilience. It is our constant endeavour to improve operational efficiencies in delivering a range of municipal services in the city," says Kenichi Yokoyama, ADB Country Director for India.

The Kolkata Environmental Improvement Investment Program (KEIIP) (2014-22) is focused on improving water supply, sewerage and sanitation services and is a logical extension of the original programme, the Kolkata Environmental Improvement Program (KEIP), implemented from 2002 to 2013. KEIP has been successful in improving the coverage of sewerage and drain-

age (S&D) networks in the city as well as bettering water supply and sanitation services.

KEIIP, which is being implemented by the Kolkata Municipal Corporation (KMC), West Bengal, will provide S&D facilities in the balance area (37 square km) that was not covered in the first phase of the programme which covered 50.7 square km. Besides, the project will seek to reduce non-revenue water and enhance KMC's capacity to provide municipal services.

KEIP 2002-13

Of the 200 square km area under KMC, KEIP 2002-13 and KEIIP 2014-22 together cover about 87 square km which includes the peripheral areas that were brought within KMC limits in 1983. These areas lack basic infrastructure and services such as piped water supply and sewage management.

KEIP's objectives included providing affordable access to basic urban services in slums, revamping and upgrading the S&D system, making the solid waste management system efficient, restoring the city's drainage canals,

and enhancing KMC's capacity to raise the standards of municipal services.

The achievements of the project, which concluded in 2013, include the construction of 378 km of S&D network, renovation and desilting of 218 km of sewers and drains, renovation of three sewage treatment plants (STPs), widening of 28 km of drains, desilting of 130.8 km of canals, and lining of 7.6 km of canals. In addition, slum improvement activities including the construction of 565 water standpoints, 700 community latrines and 280 bathing platforms were carried out. Reportedly, the percentage of Kolkata's population with direct sewer connections increased from 31 per cent in 2001 to 43 per cent in 2011.

KEIIP 2014-22

Although 92 per cent of the total population served by KMC has access to piped water, the supply is uneven in terms of duration (hours per day) as well as quantity (litres per capita per day). In addition, unaccounted-for water is estimated at 40 per cent of the city's total water supply. Further, as per the latest available estimates, KMC has an installed capacity to treat less than 30 per cent of the total sewage generated. Also, the peripheral areas of the city, which are particularly underserved in terms of water supply and sewerage, were added to



Key details of KEIIP

Tranche	Scope	Project cost (\$ million)	ADB funding (\$ million)	Closure year	Status/Progress	Expected post-project outcomes
Tranche 1	- Rehabilitation of inefficient water supply assets - Extension of S&D networks to peripheral areas	140	100	2019	4.4 km of water supply pipelines laid; 50 sewerage house connections provided; 13 km of sewer pipes laid; E-platform of project accounting software under upgradation; consultancies fielded	Improved operational efficiency and coverage of water supply, sewerage, drainage services in selected areas of KMC
Tranche 2	- Development of financial and project management capacity	286	200	2022	7 civil works contracts awarded; 4 civil works contracts approved for award; tender ongoing for the other contracts	Improved service quality and operational sustainability of water supply; and providing S&D network in KMC's service area

Source: KEIIP Project Data Sheet, ADB

KMC limits later, and have been given special attention under the programme.

Within its project coverage area, KEIIP 2014-22 aims at providing 100 per cent coverage of 24-hour quality water supply, 100 per cent sewerage coverage, and 100 per cent sewerage treatment. It also aims at capacity building of the implementing authority, KMC, to bring in efficiency in water supply operations, accelerate sewerage asset creation, accumulate surplus for future capital investment and establish a utility finance improvement unit/board to ensure financial sustainability of the urban local body.

The programme is being funded in three tranches – Tranches I, II and III. Tranche I, which is divided into nine packages, aims at funding the extension of S&D networks and improving water supply efficiency, and is expected to be implemented until 2019. Civil works are currently ongoing under this tranche.

KEIIP Tranche 2 which is expected to run until 2022 is at a nascent stage at present. The scope of work involves rehabilitating inefficient water supply assets, extension of S&D networks and institutional capacity building of KMC. The use of technology in the project activities has been widespread. This includes the use of micro-tunnelling for laying S&D networks and geographic information system (GIS) to map water supply and sewerage assets, the installation of water meters for detecting NRW, and deploying IT-enabled systems for urban govern-

ance (tax collection, customer support services, bill payments, etc.)

The overall status reveals that civil contracts have either recently been awarded or approved for award. As per the procurement plan document (July 2017), goods and works contracts worth approximately \$184 million have been approved or awarded between September 2016 and March 2017 and about \$72 million worth of contracts are expected to be awarded in the next 18 months.

The third and last tranche of KEIIP, Tranche III is currently in the planning stage with an expected financing of \$100 million.

"Through our project, KMC became the first municipality in the country to have an S&D master plan. All works commissioned and executed under the tranches will be as per this plan. By the time the project is com-

pleted, we will ensure that in the KEIIP project coverage area not a drop of untreated sewage is dumped into the rivers," says Sourav Majumder, project officer, ADB.

The way forward

Kolkata's population density is the thirteenth highest in the world. With this population density, a result of the influx of industrial labour from rural areas as well as immigrants from across the border, the city's existing municipal services often prove to be inadequate. These immigrants mostly inhabit the outer bounds of the city, which does not have organised S&D. Likewise, authorised and unauthorised slums – which make up 31.35 per cent of the city's total population – generally have unsanitary conditions with very poor access to sanitation facilities and safe and affordable water supply.

KEIIP is expected to significantly improve water supply and S&D services in the city. The environmental benefits are expected to be considerable as urban waterbodies will not be saturated with untreated sewage. Also, the control of water leakages will mean lower wastewater generation, which in turn will improve environment quality. Other benefits include reduced waterlogging, which is a recurrent problem in Kolkata. Besides reducing inundation and traffic chaos, these interventions will have a positive impact on public health as waterborne and other hygiene-related diseases will reduce. ▀

Nikita Chhabra and Abhirup Bhunia

Within its project coverage area, KEIIP 2014-22 aims at providing 100 per cent coverage of 24-hour quality water supply, 100 per cent sewerage coverage, and 100 per cent sewerage treatment.

Key Statistics

KEIIP progress report

KEIIP Tranche 1 activities and contractors (as of September 2017)

Ongoing civil works	Physical progress (per cent)	Contractor
Rehabilitation and refurbishment of waterworks at Palta and Garden Reach	55	ITD-ITD Cementation India JV
Water supply: Supply and installation of pumps and motors at Tallah-Palta system and Garden Reach system	96	Kirloskar Brothers Limited
Laying of water trunk main from Garden Reach waterworks to Taratala valve station and laying of sewer line along Diamond Harbour Road by micro-tunnelling method	85	ITD-ITD Cementation India JV
Construction of pumping stations in Begore Khal and in Joka Tram Depot and construction of S&D network within Diamond Harbour Road catchment	60	Tantia Constructions Limited-MPPL (WILO) JV
Micro-tunnelling works on pressure main from Santoshpur pumping station to Garden Reach STP	100	Simplex Infrastructure Limited-Krita JV
Construction of S&D network and pumping station in Borough XIII (Ward No. 122)	30	SNET-SSG JV
Interior renovation of KEIIP office	98	S Mishra Infradev Private Limited
Performance-based water loss management works at Cossipore Service Zone (Ward Nos. 1 to 6)	15	Degremont Private Limited
Supply and installation of geographic information system	50	Cyber Swift Infotech Private Limited
Supply and installation of software and hardware for development of project accounting system	-	Sify Technologies Limited

JV: Joint venture

Source: Asian Development Bank

Key S&D activities under KEIIP Tranche 2

Activity	Estimated expenditure (Rs million)
S&D work and construction of a pumping station in Ward No. 114 (part) in Borough XI	1,034
S&D network in Rania Box catchment (part of Ward Nos. 111, 112 and 113) in Borough XI	878
S&D network in Vivekananda Road Catchment (part of Ward Nos. 113 and 114) and construction of a pumping station in Borough X	1,403
Laying of trunk sewer along James Long Sarani by micro-tunnelling method	937
S&D network within James Long Sarani and Mahatma Gandhi Road catchment in Borough XVI (part of Ward Nos. 123 and 124)	772
S&D mains and pumping station in Churial Extension catchment in Boroughs XIII and XVI (part of Ward Nos. 122, 123 and 124)	1,140
Laying of lateral sewers in Borough XIV (part of Ward Nos. 128-132; laying of lateral sewers in Borough XIV (part of Ward Nos. 128-132)	1,452
S&D mains of two pumping stations (augmentation of Keorapukur pumping station) in Tollys Nullah/Keorapukur sub-basin in Borough XIII (Ward No. 115 and part of Ward No. 122)	910
Construction of new pumping station at Lalababu Nikashi/Bagjola canal	360

Source: Asian Development Bank

