Background

The project originated from the final Indo - German Sustainability Conference in New Delhi in 2010 during which 8 general research fields with priority for the water sector were defined. In dialogue with key staff from academia, industry and development cooperation a list of 21 research topics for Indo-German water research (“Long list”) was created based on these research fields. The 21 research ideas were assessed for their compatibility with the ongoing activities of KfW Bank in India. As a result, 3 topics were found to be particularly relevant and promising for both the development cooperation as well as for research & development (“Shortlist”). Subsequently a “fact-finding mission” took place with the involvement of KfW, the IB of the BMBF and IEEM. During that mission various cities in India were visited to assess the local working conditions and the interest of the end-users (municipal water and wastewater plants) for the three preselected individual topics. As a result of the fact finding mission the research topic “WaLUE” was found to be best suited to meet all required criteria. The project aims to reduce the water losses in urban supply networks through innovations in technology and management and thus to improve economic and environmental sustainability of water supply.

The municipality in Tiruvannamalai, which was selected as the local partner, already extended their water supply systems with financing of TNUDF (Tamil Nadu Urban Development Fund [www.tnudf.com]).

The natural, social and technical conditions in Tiruvannamalai are suitable to execute the project successfully for the local partners as well as research partners as policy makers and employees of the water works on site showed a strong interest (“ownership”) to engage in such a project.

WaLUE’s Objective

WaLUE’s main objective is to deliver an overall solution concept for water loss reduction, adapted to the situation of the Indian water supply sector and exemplarily executed for the municipality of Tiruvannamalai (a medium sized town in the Federal State of Tamil Nadu) within three years. For such a solution, the best available and suitable technologies shall be adapted and improved for durable functioning under the physical and socio-economic working conditions in the project area. A viable water utility business concept, equipped with a novel financing model for long-term value investment programmes shall be developed, verified and demonstrated. Know-how transfer to local operators and decision-makers is included as an important project activity in order to ensure the sustainable implementation of WALUE, especially against the background that sustainable operation and maintenance is one of the major bottlenecks in Indian water supply sector.

Current Situation

In many Indian cities the public water supply only works a few hours a day and the proportion of non-revenue water (water leaks, water theft and other losses) is often higher than 50 %. Urbanization, population growth, the fast economic development and the thereby caused contamination of regional water resources have led to a rapid increase in the supply gap and to serious problems for the national health and welfare. Consequently, India and its local urban committees are determined to create a sustainable water sector infrastructure that is designed for a growing demand. The aim is to improve water quality, reduce water losses (i.e. less NRW), to improve service quality, to reduce the maintenance effort and costs and thus to create an economically sustainable water supply. In Tiruvannamalai the development is very similar to the general development in India: the population and the demand for drinking water rises steadily and demand is higher than supply. As of now water is supplied for 2-3 hours a day. The network is not maintained well and there is no leak detection. The current business model of the water provider generates revenues which generally do not even cover operation and maintenance costs - this is also due to the very low payment discipline of the population. The current situation emphasizes the need for a fundamental change, which can secure a sustainable water supply as will be developed by WaLUE.
Outlook
After a successful test of the WaLUE concept in a pilot area in Tiruvannamalai, the concept shall be applied to the whole city. The selected pilot areas in the city have already been equipped with water meters and pressure sensors as part of the WaLUE project. Due to the high water losses, not only in Tiruvannamalai but in most Indian cities, water loss reduction programs in India are often likely to be many times more profitable than individual measures to increase water production such as dams or desalination plants. As the implementation of WaLUE will increase the cash flow and improve the efficiency of water utilities within a relatively short time, it is expected that funding models with a "bankable ROI" (Return of Investment) can be realized. Considering the growing demand for water and the resulting supply gap, the need for programs to reduce water losses will grow steadily and the planned option to replicate WaLUE in other Indian cities and emerging markets looks promising.

Research Partners:

Industrial Partners:

Associated Partners:

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