



# IN ACTION

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## Meeting development challenges in coastal Karnataka

The migration of vast numbers of people from the countryside to the city is putting massive pressure on the urban infrastructures.

This is particularly the case in the subregion of Bangalore, in India, where improvement of the water and sanitation network is vital for the health and welfare of the local population and balanced development of the region.

Serpentine streets and monsoon climatic conditions were tough local challenges that required specific solutions for the pipe network. The answer was to install PE100 pipe systems to provide inhabitants of Mangalore and Puttur with access to fresh water and improved sanitation.



*For the first time in human history, more people are living in cities than in the rural areas. This rural-to-urban migration is putting major pressures on the buried infrastructure; nowhere more so than India where 20 million people live today in cities with no access to fresh water and sanitation. The improvement and extension of water and sanitation networks within the cities are therefore crucial for the health and welfare of these growing communities.*

The Indian State of Karnataka, and its capital city, Bangalore, are facing strong rural to urban migration pressures, and there is an urgent need to improve water infrastructure and services. Set up in 1993, the Karnataka Urban Infrastructure Development and Finance Corporation (KUIDFC) is the State agency dedicated to planning, financing and developing urban infrastructure. The Karnataka Urban Infrastructure Development Project (KUIDP) is one of its integrated projects designed to provide and upgrade essential urban infrastructure and services.

Aimed at reducing the rural-to-urban migration pressure on Bangalore, the project encompasses a full range of welfare and development activities, from environmental sanitation to institutional strengthening.

## Creating a reliable water network

One of the main concerns in the subregion of Bangalore is that water supply to the area is often intermittent, and the water quality is poor. Sewerage and drainage systems in the region are also inadequate.

The KUIDP chose to address this issue by building a reliable water distribution network in the coastal cities of Mangalore and Puttur in Karnataka. In the first phase, 540 km of water pipelines will be installed in South Mangalore and 109 km in Puttur.

In order to build a durable water distribution network requiring little or no maintenance, KUIDFC needed to select a high quality pipe material. Pipeline flexibility was also important to accommodate the installation of long pipe lengths in narrow serpentine roads. Also, due to the presence of old pipes in the trenches at various depths, the new pipes often need to be laid deeper below the ground. To meet the projected growth of the region, the pipes should also accommodate greater water demand and increased surge pressures.

The natural solution was polyethylene, and to meet the quality requirements, KUIDFC selected BorSafe™ PE100 from Borouge, which is specially suited for pressure pipe system applications such as drinking water supply and pressure sewerage.

Despite the monsoon season and the challenging road conditions, the project proceeded smoothly with an average of 1 km of pipes installed per day. The locals living near the site have been very cooperative as they know that these high quality, durable pipes will provide them with fresh, reliable water supply.

## Supporting future growth

To meet increased demand, the PE pipe solution provided a 20% increase in hydraulic capacity. The material's flexibility and corrosion resistant properties also facilitated easy installation in the wet, narrow and winding terrain. The PE100 pipes are also able to withstand the cuts and gouges that commonly occur during handling and installation.

With a longer lifespan, the new network will bring Karnataka State inhabitants a reliable water supply and an improved quality of life well into the future.

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