

WASTEWATER IN COASTAL CITIES - AN ASSET NOT A LIABILITY

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Calcutta, the second largest city in India with more than 10 million inhabitants is a port city along the Bay of Bengal. The sewage generated in Calcutta is led into a series of small water bodies called "bheries" where detoxification and biodegradation takes place. The algae in these lakes forms a source of food for fish. More than 80% of the pathogenic bacteria are destroyed. The fish are harvested by local fishermen who are organised in cooperative societies. The societies sell the fish to private traders who are responsible for marketing. The final effluents from the lakes are let out and reach the sea largely free of contaminants. However, the legal rights of the cooperatives over the water bodies remain uncertain and the marketing system does not ensure fair returns to the cooperatives.

Chennai, the fourth largest city of more than 4 million, is also located on the eastern seaboard of India along the Bay of Bengal. Domestic wastewater of around 250 million litres per day flows down the waterways into the sea damaging the quality of the waterways and the coastal ecosystem. The pollution of the waterways also contributes to water borne diseases like cholera, hepatitis and filariasis. Unlike Calcutta, Chennai is a water scarce city, and cannot afford to discharge all the wastewater into the sea. If the wastewater could be cleaned and reused, it could save the pumping out of ground water and also prevent the ingress of seawater which is occurring at some locations. Two major industries are purchasing domestic sewage, treating and upgrading it to industrial standards. Thus, pollution of the waterways and coastal waters has been reduced, and fresh ground water has been saved. The water agency has priced water for industrial use at more than ten times the price for domestic consumers to encourage conservation and recycling. The success of the reuse experiment has led the water agency to consider a centralised treatment facility which will supply treated sewage to other industries in the area which cannot afford expensive treatment facilities.

These two case studies show that a "closed loop" approach to land and water management can convert wastewater from being a liability to an asset, ensuring the sustainable development of coastal cities in the developing world.