This report is derived from an extensive secondary literature survey of the water and wastewater sectors in India. The primary aim of the report is to set the context for understanding the current state and future evolution of the sector in the country. Briefly, the policy framework and institutional structure as well as the challenges and opportunities within the sectors are delineated.
Water Background

India’s fragile and finite water resources are depleting while the multi-sectoral demands for water from sustained economic growth (over 8%) is driving the increased demand for water through coupled dynamics between increased energy and consumption. Exponentially increasing demand for water due to population growth and agricultural use, coupled with a high degree of variability in the availability of water resources throughout the country, will drive per capita accessibility of water to under 1,000 cubic metres by 2020 if left unchecked.

Climate change and extreme climate variability are further likely to accentuate these numbers. The future evolution of the inter-sector shares is complex and uncertain; however, higher usage in the domestic and industrial domains is likely as the pace of economic development grows.

Market Assessment

The water sector is dominated by the government in areas related to its universal service obligations; India has devoted substantial resources to the water supply and sanitation sector, significantly increasing its commitment since 1980 with the launch of the International Drinking Water Supply and Sanitation Decade. Today, drinking water investments constitute about 3% of the national budget. Due to these steps, today 85% of the urban and 75% of the rural population has access to public water supplies.

Additionally, the public sector continues to drive water consciousness with initiatives such as the National Water Mission, which aims for 20% conservation in water use. Although water deficiency is still prevalent, industry experts are optimistic that this shortfall can be met through the implementation of innovative solutions for more
effective use of water resources. Beyond the government’s push in the betterment of water sanitation and availability, the world’s second most populous country is also attracting supplementary financial and technological contributions from the private sector in the development of sustainable water solutions. The synergy between the private and public sectors will be crucial in solving the imminent water crisis in India.

While no detailed analyses are available for the scale of the water and sanitation market in India, various estimates suggest that there is a ‘billion-dollar market’ (approx €11 billion) waiting to be tapped, and this covers only the construction segment. Additionally, it is estimated that the equipment market is worth approximately €220-367 million, and expected to have double-digit growth rates every year.

**Policy and Regulatory Framework**

As per the Indian Constitution, water is in the domain of the states with the central government only advising the states by issuing a non-binding National Water Policy. Despite this asymmetry, various schemes devised by the central government have had a significant effect on addressing the gaps in the access to freshwater. Lately, the schemes have had a reformist agenda, which has been coupled with direct financial assistance for water sector projects at the state level and as well as channelling multilateral finance into the sector.

The Ministry of Water Resources (MOWR) is the principal agency responsible for water in India and as such, oversees the planning and development of the resource from policy formulation to infrastructure support. Other central departments working in water are:

- The Ministry of Agriculture: Watershed development and irrigation
- The Ministry of Power: Hydropower development
- The Ministry of Environment and Forests: Water quality

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Water companies from all over the world have established a presence in India to pursue an estimated 70 projects, worth several billion euros, in 20 Indian cities across the country.

- **Multilateral and bilateral agencies** provide major funding for infrastructure projects in India. The World Bank currently operates four projects in water supply and two in sanitation and sewage improvement, worth €514M. The World Bank’s total commitment to India’s water sector amounts to more than €0.95B.

- **Rooftop rainwater harvesting systems** are now mandatory for new buildings in 18 of India’s 28 states and 4 of its 7 federally administered union territories. In January 2010, India’s Minister of Rural Development revealed about 50 per cent of the funds for India’s Rural Employment Act are being used for water harvesting systems.
The Ministry of Rural Development: Watershed development and drinking water provision

The Ministry of Industry: Industrial uses of water

The Ministry of Urban Development: Urban drinking water provision and sanitation

The Central Pollution Control Board: Water quality monitoring

The Indian Council of Agricultural Research: Development of water management techniques.

Within each state, the water sector is fragmented, with separate agencies responsible for irrigation, domestic and industrial water supply. Supply to domestic consumers, especially in the urban areas, is further fragmented. Even within a state there can be different service arrangements and service delivery models, such as state-level departmental supply, state-level autonomous boards, city-level utilities and municipal departments. Crucially, in many instances, capital expenditure is the responsibility of a state-level entity, while the actual responsibility of service delivery rests with city municipal bodies, which makes even day-to-day management of the sector unnecessarily complex which makes any reform or improvement difficult as the entire departments/boards/utilities are constantly in fire fighting modes to accomplish day-to-day activities.

**Legislation**

India’s National Water Policy 2002 prioritises water use in the following order: drinking, irrigation, hydropower, ecology, agricultural and non-agricultural industries, navigation and other uses. The policy also encourages private participation in the planning and operation of water systems. The government is reviewing the policy in consultation with all stakeholders, and is expected to come out with the draft by early 2012. The policy will specifically look into sustainable use of water, effects of climate change and rationalisation of water pricing.

In addition to the National Water Policy 2002, the water sector is governed by the following environmental legislations, pollution control acts, and rules and notifications:


The Key Drivers for Sector Growth
- Increased awareness about drinking water quality and health.
- Decreasing water quality and users having to go for ground water.
- Reducing availability of water forcing users to go for reuse & recycling of water.
- General industrial and economic growth particularly in the chemical, pharmaceutical, power plants, food and textile industry.

Indicative Opportunity Spaces
- Joint ventures with Indian firms to offer integrated solutions in water treatment, including performing feasibility studies, designing, technical consulting and providing operation and online maintenance services.
- Water supply and efficient use and reuse of water particularly in industrial processes for high polluting sectors, such as cement, pulp, paper and equipment for water saving and water recycling.
- Provision of better design, manufacture and installation of various types of rainwater harvesting systems to cater to the inherent and growing needs of the population to conserve and reuse rain water.
- Water use efficiency solutions (including efficient irrigation solutions, such as sprinkler or drip irrigation and low-flow faucets and other water use systems).
- Water governance (including innovative and novel government policy approaches).
- Water analysis and instruments (such as water-saving, household devices and domestic usage monitoring, equipment).
- Municipal and household water purification systems.
- Water consulting (including services to develop water conservation policy plans).

- About 80% of water supplied (especially in urban areas) becomes wastewater.
- It is estimated that 22,900 MLD of domestic wastewater is generated from urban centres while 13,500 MLD of industrial wastewater is generated.
- The treatment capacity available for domestic wastewater is only for 5,900 MLD, against 8,000 MLD of industrial wastewater. Thus, there is a huge gap (and therefore opportunity) in treatment of domestic wastewater.
- Large gap between sewage generated and treatment capacity: Only 30% of Total Sewage Generated by urban India treated.
- Untreated discharge: 26.5 billion litres of untreated wastewater discharged into water bodies every day.
- Poor maintenance: discharge from 39% of STPs do not conform to environment protection standards.
- Massive investments (Rs 106 bn) for waste water with limited focus on O&M.
Wastewater

Wastewater management in India has become an extremely important area of focus due to increasing health awareness and population pressure. Despite the wastewater sector witnessing major growth in the last decade due to increasing government support and private participation, the scale of the problem remains enormous. For instance, it is estimated that less than 20% of domestic and 60% of industrial wastewater is treated. Metros and large cities (more than 100,000 inhabitants) are treating only about 29.2% of their wastewater; smaller cities treat only 3.7% of their wastewater.

Market Assessment

Global water companies have established a presence in India across 20 cities, with some 70 projects initiated or underway, worth several billion Euros. Large global and Indian players have operations in India that include: Veolia Water, Suez de Lyonnaise (Degremont) and VA Tech Wabag, Nalco and GE Betz-Dearborn. Indian water treatment equipment industry is reasonably well established and cost-competitive. Locally fabricated equipment is about 30% cheaper than imported equivalents, but Indian firms have limited capabilities in designing technologies for larger scale water treatment plants. The water treatment market is evolving from chemical treatment and demineralisation technologies to greater use of membrane technology; thereby enhancing the quality of water available for re-use. Industrial effluent represents the first target for market operation and transfer of technology. Industries in India are often located around sector clusters and there are several initiatives to develop infrastructure for treatment of chemicals, dyes for textile industry, leather and tannin.

Decentralized water treatment systems (DEWATS) with aerobic treatment are an example of a European technology that is actively adopted in India and has a potential for a large-scale use. They are also
supported by the CPCB. Due to the small-scale size of their plants, DEWATS can be successfully employed for the villages in rural area and community based projects. It is also a valid alternative at urban level, where only a minimal part of domestic wastewater is treated by central sewerage. Given the governance and financial constraints in infrastructure development it can be a viable alternative at the level of condominium or small residential areas that can be integrated also into the landscaping. At larger scale application there is a wide scope for utilization of Membrane Bioreactors (MBR) and transfer of technology from Europe as research in this segment are not so much developed in India.

Policy and Regulatory Framework for Wastewater

Wastewater shares the policy and regulatory framework with water; however with some differences such as the role of bodies such as the Central Pollution Control Board (CPCB) becomes more critical. The CPCB, under the MoEF, is an advisory body to the government for prevention and control of water and air pollution and for improvement in air quality. At the state level, the state departments of environment and forests with the advice and assistance of the state pollution control boards (SPCBs) are responsible for enforcing the environmental acts and rules, and monitoring them. Meanwhile, many ad hoc expert appraisal committees (at the centre and state level) play a significant role in the grant of environmental clearances. Research is being conducted on applications of bio-technology on the treatment of industrial effluents – especially for paper and pulp industry, electroplating, distillery, tannery, dye and refineries – and bio-sensors for detection of pollutants, especially residues of pesticides and bio-diversity. Regulatory frameworks for on-site systems are virtually non-existent in India.
The Key Drivers for Sector Growth

- Reducing availability of water forcing users to go for reuse & recycling of wastewater.
- Decreasing water quality in water bodies and rivers and environmental pressures on wastewater discharge from government pollution control boards.
- General industrial and economic growth, particularly in chemical, pharmaceutical, power plants, food and textile industries.

Indicative Opportunity Spaces

- Joint ventures with Indian firms to offer integrated solutions in wastewater treatment, including performing feasibility studies, designing, technical consulting and providing operation and online maintenance services.
- Sewerage treatment, and efficient use and reuse of water particularly in industrial processes for high polluting sectors, such as cement, pulp, paper and equipment for wastewater treatment (including treatment technologies, biogas regeneration through anaerobic treatment of municipal and industrial wastewater, and water saving equipment and water recycling).
- Design, manufacture and installation of various types of wastewater systems, sewage system rehabilitation and septic system rehabilitation and alternatives, packaged and transportable sewerage and wastewater treatments, waterless composting toilets, water treatment controllers, design, manufacture and/or maintain equipment for disinfecting water by electrolysis.
- Wastewater consulting (including services to develop water conservation policy plans).

Fiscal Incentives: Water and Wastewater Sectors

1. Tax Holiday: A 10 year, 100% deduction of profits and gains is available for companies operating in water supply projects, water treatment systems, and sanitation and sewage projects.


3. Loan availability. Soft loans are provided through:
   - IREDA, a public sector company of the Ministry.
Nationalised banks and other financial institutions for identified technologies / systems.

4. Tax / Duties Relief:
   - Direct taxes: 100% depreciation within 1st year of project installation.
   - Exemption / reduction in excise duty.
   - Exemption from Central Sales Tax, and customs duty concessions on the import of material, components and equipment used in “Renewable Energy” RE projects.
   - Duty-free import of renewable energy equipment.
   - Exemptions from electricity taxes.

5. Subsidies:
   - CETPs, TSDF, and conveyance pipelines for treated wastewater disposal into deep sea are eligible for a 25% state subsidy.
   - Capital subsidies and concessionary financing from the Indian Renewable Energy Development Agency are available.

Government Initiatives:

1. Setting-up an Energy Fund: In the Union Budget 2010-11, the government announced the setting up of the NCEF for all funding research and innovative projects within clean technologies.

2. Initiating Waste Management Programs: Government has set up JNNURM program to fund cities for developing urban infrastructure and services.

3. Budget Expansion: Plan outlay for the Ministry of New and Renewable Energy has increased by 61%, from €99M in 2009-10 to €160M in 2010-11

4. Encouraging Public-Private Partnerships: Through economic incentives, both the central and state governments are promoting PPPs for the development of infrastructure for environmental services

Sources:


2. Market opportunities in environmental goods and services, renewable energy, carbon finance and CATs Country report India, UK Trade & Investment, October 2008


7. Infrastructure to 2030: VOLUME 2, MAPPING POLICY FOR ELECTRICITY, WATER AND TRANSPORT

8. Indian Water Market, Presentation by IL&FS, Global Water Intelligence, 2007, Barcelona


10. Indian Water and Wastewater Treatment Market: Opportunities for US Companies, IMaCS-Virtus Global Partners, 2010

11. Sewage wastewater recycling for industrial use, IDFC Research Note, IDFC Policy Group, Quarterly no 12, June 2011

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