



Water Use in Indian Industry Survey

FICCI Water Mission

New Delhi

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Water use across various sectors in India is on the rise. Various estimates and projections indicate an increasing trend in water demand for agriculture, industrial and domestic uses in the coming decades. India is also projected to move into the category of water stressed nation by 2020.

The water demand for the industrial sector is on a rise and will account for 8.5 and 10.1 per cent of the total freshwater abstraction in 2025 and 2050 respectively. This is a 4 per cent rise from the current level of 6 per cent of the total freshwater abstraction by the industries in 2010.

FICCI Water Mission undertook a survey with its member companies to gauge the importance Indian companies attach to water, its conservation and management. The survey was also an attempt to understand the water use patterns in industries, risks associated with water, its availability, quality and the subsequent impact on the businesses. It is a prelude to a detailed study on water risks in Indian Industry with Columbia Water Centre, Earth Institute.

Responses were obtained from companies belonging to the sectors - Agriculture, Automobile, Cements, Chemicals, Engineering and Construction, Food Processing, FMCG, Health Care, Hospitality, Infrastructure, IT Services, Manufacturing, Mining, Power, Pharmaceuticals, Real Estate, Petroleum and Natural Gas, Steel and Textiles.

The findings of the survey are enumerated below-

Water availability and use

Surface water is the major source of water for the industries (41%) followed by groundwater (35%) and municipal water (24%). The use of municipal water is limited to industries located in urban/ peri-urban areas (See Figure 1). A vast majority of industries use surface and groundwater in conjunction with groundwater being relied as a source when surface water availability is on a decline or is impacted by water pollution bound to have an impact on the industrial process.

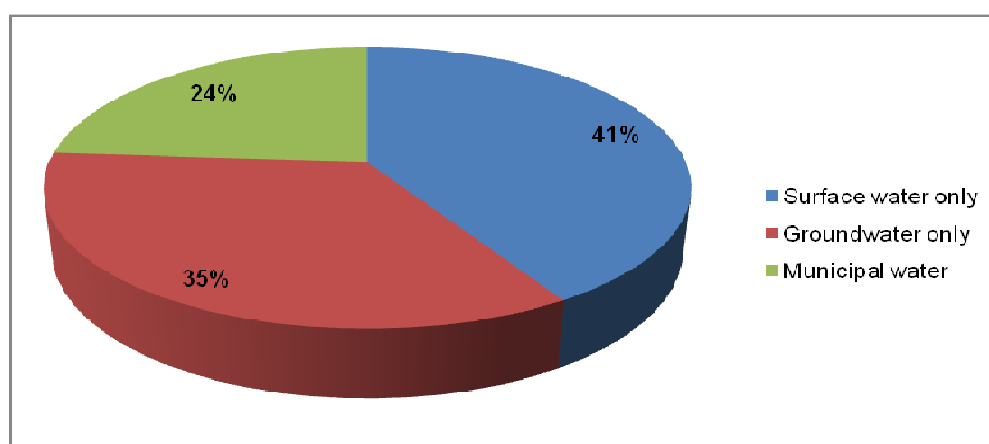


Figure 1: Source of water

Close to 77% of the industries mention of the easy availability of water for running their operations. Out of this 17% of the respondents have to pay a high price for getting water. In case of the remaining 23% industries who state that water is not easily available, 64% have to pay a high price for getting water (See Figure 2).

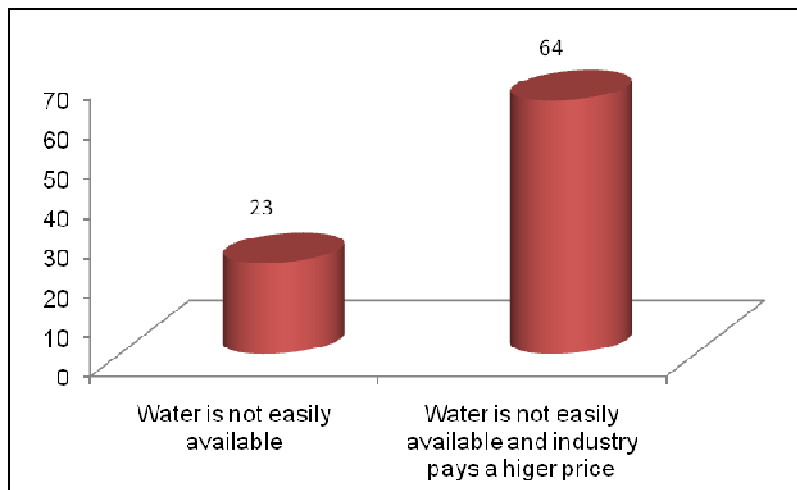
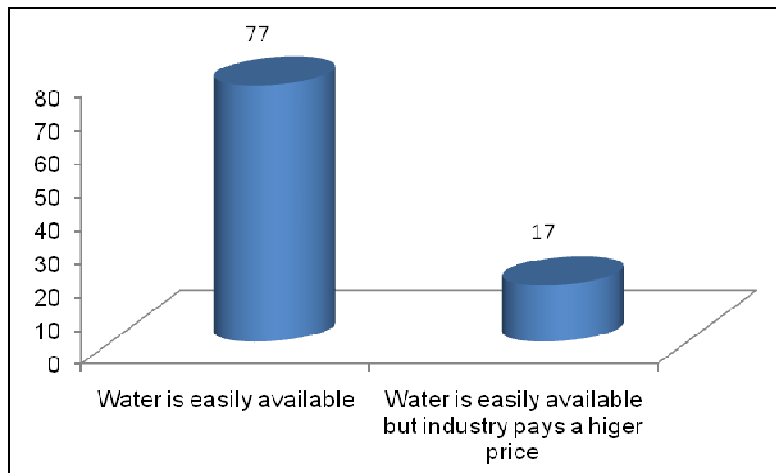


Figure 2: Water availability scenario

Risks associated with water

Availability of water is becoming an area of concern for the industries. This is true for industries across the sectors surveyed. With regard to the current availability of water, while 60% of the respondents agree that availability of water is impacting their business today, the figure rises to 87% after 10 years.

Member industries have acknowledged the fact that over the past few years, access to water has become difficult and the problem is likely to increase in the coming years. This is a major worry for industries belonging to the sectors like thermal power plants, chemicals, textiles, cement and manufacturing.

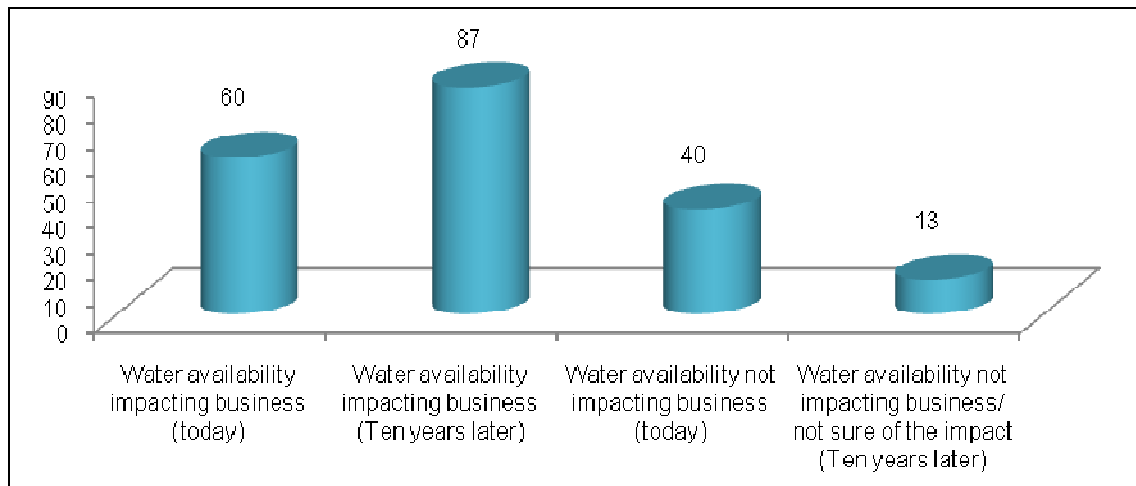


Figure 3 Availability of water impacting business

When asked about the nature of risks associated with water there are a variety of responses that emerge from the survey (See Figure 4). While inadequate availability is the major risk facing the industries (37%), others agree that poor water quality is another major risk in the running of business (14%). Sectors like pharmaceuticals, power, food processing and agriculture feel the brunt of poor water quality. High costs for obtaining water are hindering the business interest of smaller industries and the ones which are located in the drier regions of the country.

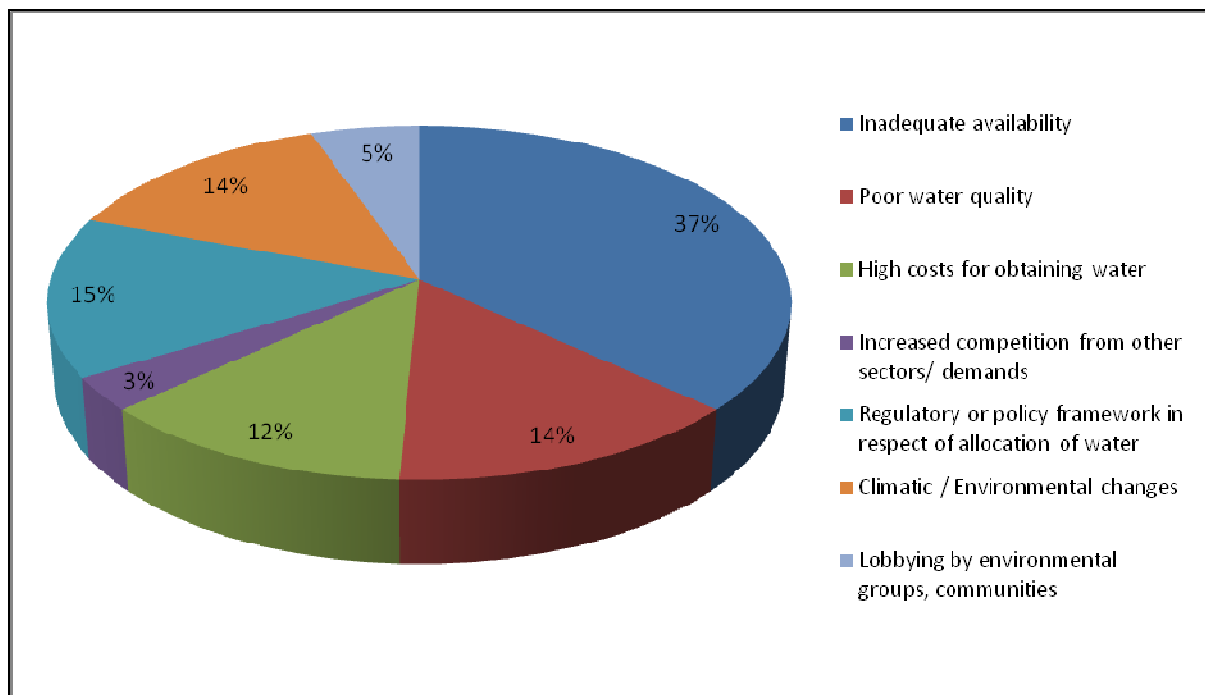


Figure 4: Risks associated with water

Regulatory policies in respect of allocation of water (mainly in the state water policy) is also an important risk that industries see will have a bearing on their functioning in the coming years with 15% of the industries mentioning it as a major risk. Some industries have

suggested a dual allocation system for companies that have undertaken water conservation measures and have shown prudence in the water use.

Around 14 per cent of the respondents also feel that environmental changes over the past few decades have had an impact on freshwater availability. A realisation is gradually emerging that rectifying measures needs to be taken by industries to augment freshwater through rainwater harvesting and wastewater treatment and reuse.

A small fraction also sees increased competition from other sectors primarily agriculture and lobbying by environmental groups and communities as a risk to water availability.

When asked to categorise the various risks and identify the ones which have maximum potential to impact the business, the responses were on similar lines as above. Almost all the industries surveyed indicate inadequate availability of water having the maximum potential to impact business. This is partly due to the policy framework which favours other uses when it comes to allocation of water and climatic changes which have an overall bearing on the total water resources of the country.

Water treatment and reuse

Indian industry is becoming responsive to the fact that it should be the role of every user to undertake measures for water conservation. The respondents see it as the shared responsibility of companies across sectors to join hands with communities and governments to work on programmes for water conservation, recharge and wastewater treatment.

Nearly 80% of the industries surveyed have reported to have undertaken wastewater treatment and reuse in their companies (See Figure 5).

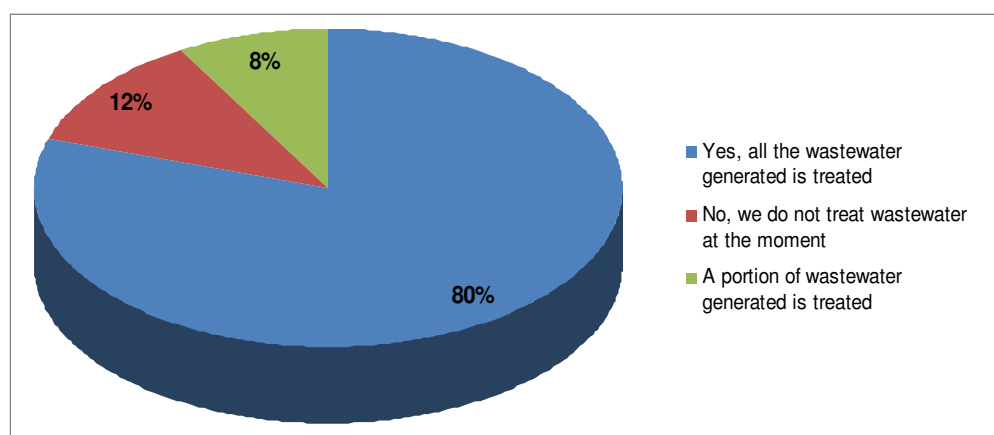


Figure 6: Wastewater treatment

One of the main reasons for companies to undertake wastewater treatment is the declining availability of freshwater. The industries see a merit and an economically value in reusing wastewater for purposes where water quality is not an important criterion.

Using the treated wastewater for horticulture and gardening is the most preferred choice for the industries. A large percentage of industries (24%) use treated wastewater for industrial process like ash handling (in case of thermal power plants); washing of ore. Treated

wastewater is also used for flushing toilets, cleaning, fire-fighting and dust suppression activities (See Figure 7).

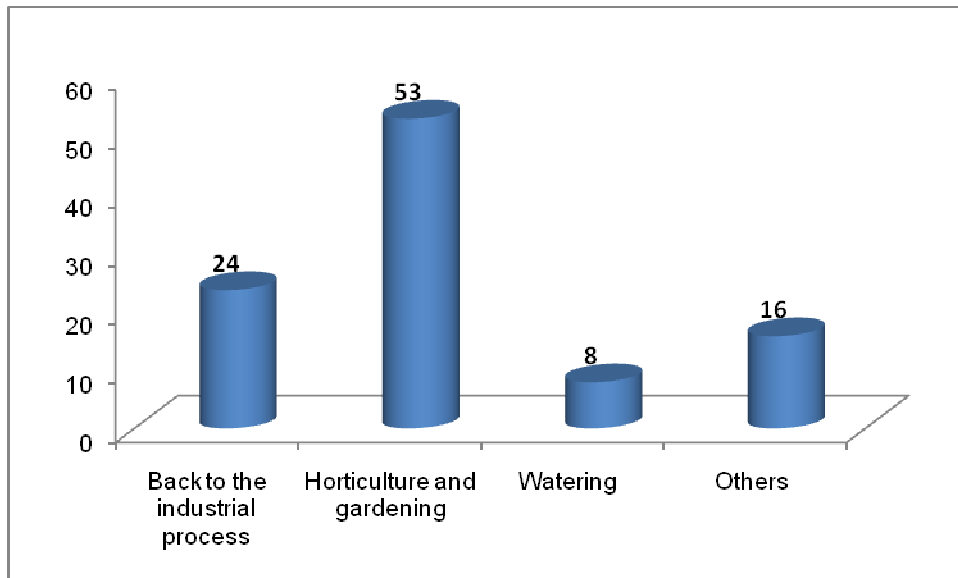


Figure 7: Use of treated wastewater

The growing need to manage water judiciously has resulted in industries taking up water audits regularly. 62% of the industries surveyed had undertaken water audits to understand the complete water use pattern in their operations and look for water saving measures. In majority of the cases water conservation measures have been implemented by the companies and the results are being monitored.

Many companies feel that the realisation to work on water conservation, which was earlier limited to senior management, has now gone down to plant managers and employees. Efforts are being made at the plant level to implement water saving measures. Member companies are eager to inculcate water saving practices in their workforce through trainings and awareness programmes.

Indian industry is beginning to explore sustainable models of water conservation from the point of view environmental management and ethical practices in business. A need is felt to undertake large scale and well monitored interventions to better understand and document industries efforts for water harvesting, recharge, and treatment.

FICCI Water Mission

Access to safe water is one of the essential elements for sustainable development and poverty reduction. However, the past few decades has seen an increase in demand amongst various water using sectors putting enormous stress on the natural resource.

FICCI has constituted a 'Water Mission' to promote and provide thought leadership in the area of water efficiency. It aims to facilitate the sharing and dissemination of best practices across industry sectors in order to encourage corporate and industry players to imbibe a culture of water and energy conservation within their organizations.

The Mission aims to create awareness on the existing situation pertaining to water scarcity, quality and generate a discourse on sustainable use of water amongst various users. With growing and extensive depletion and pollution of our water resources, our current work is being restructured to bring this issue back in focus to provide a sense of urgency to the debate of water management.

The objectives of the divisions work are:

- To formulate suggestions for changes in policy framework in India for better water resource allocation, conservation and management;
- To promote fresh water conservation strategies across the irrigation, industry and domestic sectors;
- To document and disseminate best practices across various sectors and create a forum to facilitate exchange of information and experiences in the country;
- To promote new innovative technologies of water saving and management like rainwater harvesting, watershed management, desalination, water auditing and accounting across water intensive sectors through projects, workshops, conferences and training programmes.