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Water: The country's inconvenient truth

India's march towards high growth has to be matched with water conservation, which can come only with every individual's help



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We need to leverage technology, innovation, investments, collaboration and new learnings. We need to build capability on a massive scale. To solve the country's looming water crisis, we need an unlimited supply of what I call 'freshwater thinking'

IN RECENT years, India has emerged as one of the fastest-growing economies of the world. Most projections suggest that India is racing towards becoming the world's third-largest economy by 2050. Water is one variable that could halt the country's march to economic greatness. India's inconvenient truth is that our country's per-capita water availability has declined from 2,309 cu m in 1991 to below 1,700 cu m — the official water-stressed mark today. And if we do not change our ways dramatically, we are in real danger of becoming water-scarce, with per-capita availability nearing the 1,000 cu m by 2050, and our economic aspirations but a rude mirage.

Most early civilisations developed around fresh water, which was essential for consumption, agriculture, commerce, transport, defence and other uses. Indeed, there are historical records to show that some civilisations and settlements perished or migrated, only because of sustained drop in water availability. Somewhere along the line, back then, we wrongly assumed, and were treating water as an infinite resource. We risk making the same mistake today.

Rainfall is the main source of water in India, and we receive a substantial 4,000 billion cubic metres (BCM) annually. However, about 85% of this rainfall is confined to 4-5 months of the year, and varies widely from just 310 mm in the western belt, to a massive 11,400 mm in Meghalaya. This concentrated, yet uneven, rainfall leads to two major challenges: it causes floods as well as droughts at the same time. Rainwater needs to be captured and stored for future use, but we sorely lack storage capacity.

Compared to developed countries that capture and store over 900 days of rainfall in major river basins, India captures just 30 days. Consequently, of the total precipitation, a mere 1,123 BCM in the shape of surface water, and 433 BCM as groundwater resource.

While the supply of water has remained finite, the demand on water by all the consuming sectors has been increasing with our growing economy and population. As is the case in most emerging economies, agriculture uses about 80% of our water supplies, industry uses 8% and domestic consumption is 6%.

There is excessive unregulated drawing of groundwater, leading to continuous depletion, as there is little effort to recharge it.

Each water-consuming sector poses specific challenges. In agriculture, which is by far the biggest user, crop selection is perverse, with water-stressed areas growing water-intensive crops such as rice, wheat and sugarcane. Take rice, for instance. Can you guess how much water it takes to produce 1 kg of rice? 3,000 litres. Yes, 3,000 litres of water for each kilogram of rice. And India happens to be the largest producer of rice in the world. What's more, the country ends up exporting up to 9.6 trillion litres of 'virtual water', in years of surplus rice production!

Water-saving agricultural technologies are available, but are not reaching our large and

fragmented farmer population due to a lack of institutional mechanisms, among other reasons. Unfortunately, we lose a very high percentage of our agricultural produce before it reaches the market, owing to poor supply chain. When these food grains rot in our warehouses, what is lost is not only the opportunity of feeding so many more people — we also lose the water used in the cultivation of those food grains.

While industry in India is still a modest consumer at 8%, it is growing at the fastest rate, thanks to our economic growth. One of the barriers to our economic growth, as we all know, is infrastructure and, specifically, power. What you may not know is that thermal power consumes as much as 88% of water used by industry. The engineering sector has the next highest consumption, with a 5% share.

Even today, only 60% of the waste water generated by industry is treated. Credit where it is due: large industries today are becoming increasingly responsible. However, huge potential

political and economic affairs of the country, the continent and the world."

Water sits at the nexus of food security, education, gender empowerment and global disease. How can we protect this valuable resource?

The good news is that it definitely can be done — and indeed, has been done in several countries. The US was faced with a similar situation back in 1960s. Their efforts to improve water use efficiency resulted in per-capita water consumption dropping 20% between 1980 and 2000. On my recent visit to the Singapore International Water Week, I was amazed to see that they have been able to reuse 100% of their wastewater. What's more, they are able to recycle 10% of the entire wastewater and convert it into fresh, potable water that they call NEWater.

Here in India too, there are several outstanding examples of path-breaking work across the country on new initiatives and practices, driven by committed and passionate individuals and organisations, which are helping conserve, reuse



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exists amongst all industry, especially small and medium enterprises, to adopt water conserving and water treatment technologies.

The domestic sector has its own share of problems. The efficiency of water supply by municipalities in urban areas is less than 50%. Water supply lines not only leak due to poor infrastructure, they are also tapped illegally, and not all consumption points are metered. The per-capita consumption of water is growing rapidly in urban centres. The story in rural areas is quite the opposite: people don't even have easy access to clean drinking water.

Women walk miles in search of water, and children don't go to school as they are forced to help their mothers in collecting water. The problem of water scarcity gets compounded as whatever water is available for potable use is infected, thus leading to waterborne diseases. It is estimated that 50% of our population doesn't have access to sanitation and 37.7 million Indians are affected by waterborne diseases annually.

I am reminded of a famous speech given by Nelson Mandela in 2002 at the world summit on Sustainable Development in Johannesburg. He said, "One of the many things I learned as president was the centrality of water in the social, po-

and replenish water. And the solutions are simple. What we need to turn the tide and secure our country's future is to convert these islands of excellence into oceans of change.

The country's inconvenient truth must be placed on the table and addressed as a burning platform, with a sense of urgency, and a whole new mindset in water management. We need to leverage technology, innovation, investments, collaboration and new learnings. We need to build capability on a massive scale. Most importantly, we need to set new rules and demonstrate a passion for breaking down the barriers to success, that have existed for decades. To solve the country's looming water crisis, we need an unlimited supply of what I call 'freshwater thinking'.

The unique thing about water is that every citizen — every citizen — including you and me, is a consumer of water. The need of the hour is for every Indian and every organisation to play their part in conserving, reusing and replenishing water. We owe it to our country. We owe it to our children.

(The author is chairman of CII's National Committee on Water, and chairman and CEO of PepsiCo India)