

Research Article

Necessity of Bottled Water Industry in India – Some Facts

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Abstract

The Water shortage around the world and particularly in third world countries has opened new avenues for bottled water Industry. If we compare the growth and status of Indian Bottled Industry with western or Asian market, we are far behind in terms of quantum, infrastructure, professionalism & standards' implementation. Bottled water consumption has been steadily growing in the world for the past 30 years. It is the most dynamic sector of all the food and beverage industry: bottled water consumption in the world increases by an average 7% each year, in spite of its excessively high price compared to tap water and although industrialized countries consumers have, in principle, access to cheap good quality

tap water. In India, the per capita bottled water consumption is still quite low – less than five litres a year as compared to the global average of 29 litres. In the present study, an attempt has been made to give a glimpse of the present day status of bottled water status of the nation.

Keywords: Third world, bottled water, infrastructure, consumption

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Introduction

Water is believed to be elixir of life. Humanity highly depends on water and its proper utilization and management. Although, water has various uses, perhaps its use as thirst-quenching fluid is the most significant one. The life-supporting role of water plays a vital role in assigning water as a material of great importance in ancient and modern texts. Water has crucially shaped the rise and fall of many civilizations in the history of human beings. Many ancient civilizations flourished around river valley signifying the importance of water for human existence. At the same time, humanity has also faced the wrath of water. On several occasions, such events had changed the whole course of human history. Consequently, water has taken prominent status in different civilizations time after time. From time immemorial, human beings are riddled with the question what constitutes water? What are the characteristics that make it different from other fluids? Why does it hold immense importance for life? For a long period, it was like an unsolved puzzle for human being. The physical and chemical properties of water were discovered only in the medieval period.

Leonardo da Vinci was the first who investigated the physical properties of water during the initial period of the scientific revolution in Europe (ibid). With the advancement of science and technology, many of these riddles and puzzles about water quality have been gradually resolved. With the advent of the 19th century, various scientific discoveries had established the physical and chemical characteristics of water. Now, it is a common knowledge that a molecule of water is made up of fusion of two molecules of hydrogen and one molecule of oxygen. The developments in scientific expertise have helped in understanding the various properties of water, including water quality which changes with changing temperature, pressure, and pH.

The notion of water quality has drastically changed from the ancient time to current era. The last three-four decades witnessed the major shift in notion of drinking water quality. The two-third of the earth surface is covered by water. However, 97.5 % is ocean water and is not consumable because of its high saline content. Only 2.5 % of global water resources are fresh water. Although, India accounts for 16.5 % of the share of the world's total population its share of water resources is only around 4%. Moreover, the freshwater resources are unevenly distributed and many times the precipitation determines the annual availability or scarcity of the water in many regions. The increasing

population and population density, multi-source pollution, destruction of catchment areas, huge depletion and exploitation of ground water sources are putting the freshwater water sources under immense pressure. Water is very much critical for sustenance of human life; 70% of human tissue and 50% of blood is made up of water. Thus, water holds great significance for human well-being and health. Moreover, 80 % of the sickness accounted all over the world is water related (WHO 2004). 'Water-borne' diseases are of various kinds, majority of these diseases are due to the drinking of unsafe water. For example, 1.8 million people die every year from diarrheal diseases (including cholera), 133 million people suffers from high intensity Intestinal helminthes infections which causes adverse health effects (ibid). Similarly, millions of people are affected due to consumption of water with excessive amount of certain chemical substances. For example, in Bangladesh, between 28 and 35 million people drink water with high levels of arsenic. Over 26 million people in China suffer from dental fluorosis due to high fluoride in their drinking water [1] & [2].

Overall, water related diseases cost around 2- 5 million people live each year worldwide. Beside this, a huge chunk of population becomes vulnerable due to water related diseases. Around 37.7million Indians are affected by waterborne diseases annually; 1.5 million children are estimated to die of diarrhea alone. Diarrhea continue to effect highest number of people among water borne diseases, at the same time 66 million Indians are at risk due to excess fluoride and 10 million due to excess arsenic in groundwater.

Moreover, around 1.1 billion people lacked access to improved water sources, which represented 17% of global population. Quality of water, therefore, holds great significance from health perspective. Today safe drinking water is one serious challenge in front of national governments in all countries. Kofi Annan, former Secretary General of the United Nations mentioned that, "we shall not finally defeat AIDS, tuberculosis, malaria, or any of the other infectious diseases that plague the developing world until we have also won the battle for safe drinking water, sanitation, and basic health care".

Perhaps, as a response to this challenge of providing safe drinking water, recent years have witnessed emergence and tremendous growth of bottled water industry. The North American and the west European countries are the dominant consumers of bottled water. However, last few years have also seen high growth of this industry in many developing countries of Asia and South America. Countries like, China, Indonesia, Thailand, India, United Arab Emirates, and Brazil are the new entrants showing tremendous potential for bottled water market. There are many kinds of bottled water available, while the most dominant ones are natural mineral water and packaged drinking water. With the growth of bottled water consumption, various regulations have also sprung up to regulate the quality of bottles water. Standards were formulated to ensure suitable quality of bottled water. Codex Alimentarius Commission (CAC) is one such regulatory body which formulates standards; its standards are taken as reference point in many developing countries which are not capable of developing their own standards. Similarly, United States Food and Drug Administration (US FDA) formulates standards for bottled water in the United States(US). In India, Bureau of Indian Standard (BIS) is entitled to establish quality standards for bottled water. The BIS comes with quality standards for natural mineral water and simple packaged water in 1992 and 1998 respectively. However, up to 2001, these standards were voluntary in nature. From 2001 onwards, bottled water has been notified as a food item and has been brought under the Prevention of Food Adulteration Act 1954. As a result, the government notified and made the bottled water standards mandatory in nature. Here it would be important to note that standards establish quantitative limits for drinking water contaminations. These values represent concentration of contaminant that would not have any adverse health effect if consumed for lifetime (Productivity Commission 2007).The quality standards of bottled water are posited as important factor to depict the superior quality of bottled water by bottled water industry. What are these quality standards of bottled water and how they are being shaped are thus critically important to examine. Scholars in the field of social sciences have argued that quality standards are shaped by various, scientific, technical, social, economic, institutional, and cultural factors. It has also been pointed out here that public controversies and debates also shape the process of standardization in a major way. In this context, it would be crucial to study how the quality standards of bottled water were socially constructed and what are the reasons for growth of bottled water consumption in India [3]; [4] & [5].

Chemical Contamination of Water

Among 1.42 million villages in India, 1,96,813 are affected by chemical contamination of water.

A recent United Nations report says that more than three million people in the world die of water-related diseases due to contaminated water, which includes 1.2 million children. In India, over one lakh people die of water-borne diseases annually. It is reported that groundwater in one-third of India's 600 districts is not fit for drinking as the concentration of fluoride, iron, salinity and arsenic exceeds the tolerance levels.

Rajasthan, Gujarat and Karnataka are the worst affected. About 65 million people have been suffering from fluorosis, a crippling disease due to high amount of fluoride and five million are suffering from arsenicosis in West Bengal due to high amount of arsenic [6].

According to an earlier UN agency report, since the world's population has grown to over six billion, many countries have been facing water crisis. A majority of the poor in these countries do not have access to safe drinking water. Around 80 per cent of diseases in the developing countries are attributed to poor quality of water supply.

The World Health Organisation reported that of the 10 million annual deaths in India, 7.8 lakh are due to lack of basic health care amenities like effective sewage system, safe drinking water supply, elementary sanitary facilities and hygienic conditions. Almost 90 per cent of diarrhoea cases are due to contaminated water.

Getting worse

The UN reported that some 2.6 billion people in the world, mostly in Africa and Asia, do not have access to basic sanitation, which increases the risk of diarrhoeal and other diseases fatal to children. Also, rapid urbanisation, growth of unauthorised colonies, lack of amenities and medical facilities and disposal of garbage have worsened the situation.

Water-borne diseases like cholera, gastroenteritis, diarrhoea have been erupting every year during summer and rainy seasons in India due to poor quality of drinking water supply and sanitation. A California think tank reported that as many as 76 million children could die worldwide from water-borne diseases by 2020 if adequate safeguards are not taken.

Children among the poor are most vulnerable to water-borne infections as they are largely undernourished and their immune systems are underdeveloped. Trans-Yamuna and resettlement colonies of Delhi are largely afflicted every year from these diseases due to shortage of safe drinking water. A World Resources Report says: about 70 per cent of India's water supply is seriously polluted with sewage effluents. The UN reported that India's water quality is poor. It ranks 120th among the 122 nations in terms of quality of water available to its citizens.

The World Development Report says: Delhi's water supply is among the worst in many big cities of the developing world. The Central Pollution Control Board has found that the tap water in Delhi contains carcinogenic substances and the toxic quotient is five times higher than the WHO standards. It is reported that of the 1.42 million villages in India, 1,96,813 villages are affected by chemical contamination of water [7] & [8].

Water-Borne Diseases in India

Travelling from north to south in India, you can easily experience the huge contrast in water availability and scarcity. There are places in India which have an abundance of water and also places like Rajasthan where water is the main concerning issue - the daily job for women consists of sourcing water for their household. Places with adequate water supply struggle to sustainably manage the use of it while others struggle with the reality of scarce clean drinking water. Underlying this imbalance in water availability is the issue of water-borne diseases.

Towns and cities with an abundance of water, struggle to manage the water efficiently, often leading to water collecting in potholes and or in the surrounding areas and going un-used. This can have severe consequences as water-borne diseases, such as cholera, malaria and diarrhoea can spread as a result of improper management of the water supply as well as discharge - these diseases are a common cause of death. Looking at the figures, the Ganges provide water to over 500 million Indians - contamination of just one source of water could affect millions of lives in one go. Water contamination often occurs due to inadequate and incompetent management of resources as well as inflow of sewage into the source.

A recent report by the United Nations says that more than three million people in the world die of water-related diseases due to contaminated water each year, including 1.2 million children. In India, over one lakh people die of water-borne diseases annually. It is reported that groundwater in one-third of India's 600 districts is not fit for drinking as the concentration of fluoride, iron, salinity and arsenic exceeds the tolerance levels. About 65 million people have been suffering from fluorosis, a crippling disease due to high amount of fluoride and five million are suffering from arsenicosis in West Bengal due to high amount of arsenic. A World Resources Report says: about 70 per cent of India's water supply is seriously polluted with sewage effluents. The UN reported that India's water quality is poor - it ranks 120th among the 122 nations in terms of quality of water available to its citizens.

Water-borne diseases like cholera, gastroenteritis, diarrhoea erupt every year during summer and rainy seasons in India due to poor quality drinking water supply and sanitation. Here is a list of the 5 most dangerous water related diseases that occur in India, which are described as follows:

1) Cholera

- Cholera is a water related disease, and is diarrhoeal in nature.
- It can kill in hours if left unattended.
- Cholera strikes when one ingests water that is infested with the *Vibrio Cholerae* bacterium.

2) Diarrhoea

- Diarrhoeal infection is spread through food and drinking water that has been contaminated.
- A diarrhoeal attack can last up to 2 weeks and leave the person completely dehydrated.

3) Malaria

- Malarial fever is spread by the *Plasmodium* parasite mosquito that breeds in water bodies like lakes, paddy fields and stagnant water.
- Malaria can kill a child who does not have the immunity against malaria

4) Typhoid

- Fluctuating high fever, exhaustion, sleepiness, diarrhoea etc are the signs of typhoid.
- The infection spreads through contaminated food and water or through close contact with an infected person.

5) Filariasis

- Filariasis is a parasitic disease and affects people who live near unsanitary water bodies or sewages.
- Filariasis is spread by mosquitoes that breeds in fresh and stagnant water bodies and is the host of the filarial nematode worm. This worm affects humans and leads to elephantitis.

Global Scenario

It is estimated that more than one billion people – about one in eight –do not have access to improved water supply whereas 2.6 billion people lack access to adequate sanitation globally. Nearly half the people in the developing world do not have proper toilet facilities. India is one of the developing countries facing serious drinking water problems and lack of toilet facilities. Diarrhoea claims the lives of 2 million children around the world every year as a result of drinking unsafe water and living in unhygienic conditions. Unsafe drinking water, along with poor sanitation and hygiene are the main contributors to an estimated total 4 billion cases of diarrhoea each year in the world [9].

Regional Scenario (South Asia)

Open defecation and non-sanitary latrines together account for a high toll taken by water-borne diseases in South Asia. It is estimated that between 2008 and 2011, the interval between SACOSAN-III held in New Delhi and SACOSAN-IV that recently conducted in Colombo, 750,000 children under five succumbed to diarrhea, dysentery and jaundice in the region.

National Scenario (India)

According to a recent World Bank report, the sanitation coverage in India is only 68 per cent for its people. India as an emerging economic superpower in the world, open defecation still remains a major public health concern with 6 per cent of its GDP,(US \$ 53.4 billion), wasted annually due to lost productivity, healthcare provision, and other consequences of poor sanitation.

Concept of Bottled Water

High awareness for safety and hygiene and increases in disposable income are driving sales of bottled water in India. With an increase in the number of waterborne diseases, consumers are concerned about safety and do not mind spending on bottled water. In fact bottled water has become a necessity when travelling. There is increasing awareness, even in rural areas and small towns, of the need for safe drinking water, which coupled with the acute water shortage in many areas in the country, is also supporting bottled water sales. With strong distribution in place by manufacturers, such as Parle Bislery, PepsiCo and Coca-Cola, bottled water is available in every nook and corner of the country, even in tier two and tier three cities. Safety factors coupled with rising per capita income are also contributing to category growth. The situation is so amazing that people are prepared to pay Rs. 15-20 for a litre of water-in India especially when the cost of material input (0.25 paisa per litre excluding labors cost) is insignificant before the price of the product. Up to 40% of bottled water comes from the same source as tap water, but is sold back to consumers at hundreds of times the cost.

About Bottled Water

Increasing scarcity of portable drinking water coupled with changing lifestyles and aggressive expansion by category players will lead to an increase in bottled water sales over the forecast period. Although the growth will be in strong double digits, per capita consumption will nevertheless be lower than in other Asian countries. This shows that there is a room for growth considering the water shortage and lack of portable water facilities India faces.

Bottled water is sold in a variety of packages:

- pouches and glasses,
- 330 ml bottles,
- 500 ml bottles,
- one- litre bottles and
- 20- to 50-litre bulk water packs.

The formal bottled water business in India can be divided broadly into three segments in terms of cost and type:

1. **Premium natural mineral water** includes brands such as Evian, San Pelligrino and Perrier, which are imported and priced between Rs.80 and Rs.110 a litre.
2. **Natural mineral water**, also known as mountain water, with brands such as Himalayan and Catch, is priced around Rs.20 a litre.
3. **Packaged drinking water**, which is nothing but treated water, is the biggest segment and includes brands such as Parle, Bisleri, Coca-Cola's Kinley and PepsiCo's Aquafina. They are priced in the range of Rs.10-15 a litre.

Bottled water has been treated by distillation, reverse osmosis, or other suitable process and that meets the definition of "purified water" [10]. The bottled water treatments include:

Distillation: In this process, water is turned into a vapor. Since minerals are too heavy to vaporize, they are left behind, and the vapors are condensed into water again.

Reverse osmosis: Water is forced through membranes to remove minerals in the water.

Absolute 1 micron filtration: Water flows through filters that remove particles larger than one micron in size, such as "Cryptosporidium", a parasitic protozoan.

Ozonation: Bottlers of all types of waters typically use ozone gas, an antimicrobial agent, to disinfect the water instead of chlorine, since chlorine can leave residual taste and odor to the water.

Why is there a growing need for bottled water?

- Lack of role of government in providing good quality drinking water.
- Scarcity of pure and safe water
- Urbanization
- Increasing water pollution
- Growing number of cases of water borne diseases
- Scarcity of potable and wholesome water at railway stations, tourists spots, etc.

In India, the per capita bottled water consumption is still quite low - less than five litres a year as compared to the global average of 24 litres. However, this does not reflect the huge market for bottled water in India, this number is low because of the large population of our country.

The Current Market Trends in India

Presently, this market is estimated at Rs 8,000 crore. The overall packaged bottled water industry in India is estimated to touch the Rs 10,000 crore mark in the 2012-13 fiscal. This could touch Rs15,000 crore by 2015.

The current domestic market is split between three sets of players –

1. national brands with a pan India presence worth around Rs 4,000 crore,
2. local brands manufactured by registered plants but restricted to regions estimated to have a combined turnover of Rs 2,400 crore and
3. Unorganized local brands estimated at Rs 1,600 crore.

Market Leaders

The market leader is Bisleri International, which boasts a 60% share. It is followed by Coca-Cola's Kinley (around 25%) and PepsiCo's Aquafina (around 10%).

Conclusion

Drinking bottled water has become a trivial habit in many people's everyday lives. Bad tap water taste or quality, fitness objectives or safety purposes, numerous reasons lead consumers to buy bottled water. Bottled water may even be necessary, for instance in case of temporary tap water contamination. The trend toward consuming more and more bottled water will keep increasing in the coming years. This flourishing market is profitable for a high number of companies, and employs thousands of people world-wide. Bottled water quality is generally good, although it can suffer from the same contamination hazards as tap water. In Europe, natural mineral waters quality is frequently tested, both by independent labs and by companies' internal services [11]. These latter controls may not be fully reliable. Yet, it is not in the interest of the companies, who base their marketing strategies on the purity of their products, to hide away occasional and traceable contamination. To make sure bottled water quality is as good as it is claimed to be, companies should release their quality tests on a day-to-day basis and make them available to a wide number of people, for instance through the internet. It is essential that consumers have access to major information, directly on the bottles' labels, i.e., the "type" of water (natural mineral water, purified water, etc.), its mineral composition, and the location of the spring or the treatments this water may have undergone. International companies locally investing in bottled water businesses should make sure that the products are of good quality and packed in hygienic conditions, particularly in emerging and developing countries. They should also be careful to the additional pressure they put on local water resources.

Consumption of bottled water in India is linked to the level of prosperity in the different regions. The western region accounts for 40 per cent of the market and the eastern region just 10. However, the bottling plants are concentrated in the southern region – of the 3400 + bottling water plants in India, more than 55 % are in 4 southern states. This is a major problem because southern India, especially Tamil Nadu, is water starved

As multinationals have entered Indian Shores, making rapid strides in Indian Market and have eroded market share, image and infrastructure of leaders and small players alike. My belief is that through methodical approach, Indian companies CAN withstand this onslaught, which is threatening to gobble up the competition & eventually, the Market. Though in a way, this entry has provided a semblance of professionalism to the market and Indian firms HAVE noted the same. Unless a matching product, not necessarily coming from huge infrastructure matching them, is brought in the market, it would be reduced to no competition. If one has general perception that bottled water in India is a saturated Market now, this is completely baseless and the final remark is that it is just the beginning and thirsting for more, day by day...

DEMAND OF WATER WOULD NEVER GO DOWN & WATER WOULD NEVER BE OUT OF BUSINESS

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