

Domestic and Global Dynamics of the Drinking Water Industry in India: An Evaluation of its Scope, Prospects, and Challenges

Discipline: Commerce

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Abstract

India owns substantial freshwater resources but, at the same time, the country faces the issue of safe and pure drinking water accessibility. This paper evaluates the advent and growth of the drinking water industry in India. It conducts a review of the scope of the bottled water market, the point-of-use (PoU) water purifier sector and emerging community water systems. The study examines the major internal dynamics such as including socio-economic changes and issues of water pollution crucially affecting the industry. The paper throws light into the global dynamics of the industry. The paper also explores the prospects and challenges of the drinking water industry in India.

Keywords: Drinking Water, Bottled Water, Water Purifiers, Public-Private Partnership (PPP)

1. Introduction

Water is the bedrock of life, public health, and economic development. The United Nations' Sustainable Development Goal 6 (SDG 6) clearly calls for ensuring the availability and sustainable management of water and sanitation for all. However, for India, a nation of over 1.4 billion people, achieving this goal remains a monumental task. The country is home to 18% of the world's population but possesses only 4% of its renewable freshwater resources (NITI Aayog, 2019). This inherent scarcity is combined by high rate of pollution, inefficient management, and the impacts of climate change, leading to a situation where a significant portion of the population lacks access to safe drinking water. The Government of India has long acknowledged this crisis, with initiatives like the National Rural Drinking Water Programme and the more recent Jal Jeevan Mission (JJM), which aims to provide functional household tap connections

to all rural households by 2024. The drinking water industry of the nation comprises multinational corporations selling bottled mineral water to local entrepreneurs operating community-based reverse osmosis (RO) plants. This paper seeks to analyse the complex interplay of domestic and global forces shaping this industry. It provides a critical evaluation of the contemporary scope, future prospects for growth and innovation and the major challenges of the drinking water industry of India.

The Evolving Scope of India's Drinking Water Industry

The drinking water industry in India can be deconstructed into four key areas. Understanding their individual characteristics is crucial to grasping the overall complexity of the sector.

- **Public Water Supply Infrastructure** The foundation of water provision in India is the state-run public utility system, managed by municipal corporations in urban areas and public health engineering departments in rural settings. The shortcomings of this system to deliver safe and reliable water to the needy areas is the major reason for the growth of the private market.
- **The Bottled Water Segment:** The most visible face of water commodification is the bottled water market. This segment has witnessed exponential growth, driven by a burgeoning middle class, increased health consciousness, urbanization, and a thriving tourism sector. According to market analysis, the Indian bottled water market is projected to grow at a compound annual growth rate (CAGR) of over 13% between 2022 and 2027 (Mordor Intelligence, 2022). The market is dominated by a few key players, including Bisleri International (a domestic pioneer), Coca-Cola (Kinley), PepsiCo (Aquafina), and Parle Agro (Bailley), alongside a vast, unorganized sector of smaller local brands. This segment ranges from basic packaged drinking water to premium natural mineral water, catering to diverse consumer price points.
- **The Water Purifier (Point-of-Use):** Market for households seeking a long-term, in-home solution, the point-of-use (PoU) water purifier market has become indispensable. This segment is technologically diverse, offering products based on Reverse Osmosis (RO), Ultra-Violet (UV), and Ultra-Filtration (UF) technologies, often in combination. RO purifiers, in particular, have gained immense popularity due to their effectiveness in removing dissolved solids, a common problem in areas with hard water or industrial contamination. Key players like Eureka Forbes, Kent RO Systems, and Hindustan Unilever (Pureit) dominate the organized market.

- **Community Water Systems and Water ATMs:** A hybrid model gaining traction, particularly in underserved communities, involves decentralized community-level water treatment plants. These are often set up as small-scale enterprises or through PPP models, where raw water is treated (typically via RO) and dispensed at a nominal cost through automated vending machines, popularly known as “water ATMs.” These systems provide an affordable alternative to expensive bottled water but still require consumers to pay for a resource that is constitutionally recognized as a fundamental right to life (Article 21 of the Indian Constitution).

Table 1: Bottled Water Market Size of Few Nations

Countries (Bottled Water Market Sales Revenue)	2021	2025	Compound Annual Growth Rate (CAGR)
United States	\$ 79.766 Billion	\$ 99.561 Billion	5.621%
Europe	\$ 75.565 Billion	\$ 96.886 Billion	6.352%
United Kingdom	\$ 12.77 Billion	\$ 17.149 Billion	7.647%
Germany	\$ 17.002 Billion	\$ 22.478 Billion	7.134%
Russia	\$ 10.806 Billion	\$ 13.37 Billion	5.253%
Japan	\$ 9.08 Billion	\$ 12.12 Billion	7.466%
China	\$ 22.287 Billion	\$ 31.177 Billion	8.375%
India	\$ 6.769 Billion	\$ 10.138 Billion	10.435%

Source: <https://www.cognitivemarketresearch.com/bottled-water-market-report>

2. Domestic Dynamics Shaping the Industry

The industry’s trajectory is profoundly influenced by a set of interconnected domestic factors.

- **Socio-Economic Drivers:** Rapid urbanization and the rise of a large, aspirational middle class with higher disposable incomes are primary growth engines. This demographic is increasingly aware of waterborne diseases and willing to pay a premium for perceived safety, whether through bottled water or home purifiers. This “push” from failing public services is met by a “pull” from aspirational consumption patterns and health-conscious lifestyles.

- **Water Scarcity and Contamination Crisis:** The deteriorating quality of India's water sources is arguably the most critical driver. The NITI Aayog (2019) report grimly noted that nearly 70% of India's water supply is contaminated. Groundwater, the source for over 80% of drinking water, is severely over-exploited and increasingly tainted with industrial effluents, pesticides, and geogenic contaminants like arsenic and fluoride (Central Ground Water Board, 2021). This pervasive quality crisis makes private purification and packaged water not just a choice but a necessity for many.
- **Policy and Regulatory Landscape:** The regulatory framework governing the private water industry is fragmented and often poorly enforced. While the Bureau of Indian Standards (BIS) has mandatory certification (IS 14543) for packaged drinking water, the unorganized sector frequently flouts these norms. The regulation of groundwater extraction for commercial use remains a contentious issue, governed by disparate state-level policies and often failing to prevent unsustainable water mining. Furthermore, there are no stringent regulations concerning the environmental impact of RO water purifiers, which waste significant amounts of water as brine reject. This regulatory ambiguity creates both opportunities for market players and significant risks for consumers and the environment.

3. Global Dynamics and Influences

The Indian drinking water industry does not operate in a vacuum. It is deeply integrated into global economic, technological, and ideological currents.

- **Foreign Direct Investment (FDI) and Multinational Corporations (MNCs):** The Indian market's vast potential has attracted significant FDI and the entry of global beverage giants like Coca-Cola, PepsiCo, and Danone. These MNCs bring substantial capital, advanced marketing strategies, and extensive distribution networks, which have helped standardize and expand the market. However, their operations have also sparked considerable controversy, particularly regarding their massive groundwater extraction in water-stressed regions, leading to protests and legal battles, such as the Plachimada case in Kerala against Coca-Cola (Shiva, 2016).
- **International Standards and Best Practices:** Global health bodies like the World Health Organization (WHO) set the benchmark for drinking water quality standards, which influence national regulations and consumer expectations. Furthermore, global trends in corporate social responsibility (CSR) and sustainability are compelling companies, especially MNCs, to adopt more

responsible water management practices and invest in community water projects, albeit with varying degrees of success and sincerity.

- **Global Technology Transfer:** The Indian water purifier market is a direct beneficiary of global technology transfer. Key components, such as high-efficiency RO membranes and advanced UV lamps, are often imported from countries like the USA, Japan, and Germany. This influx of technology enables Indian companies to offer state-of-the-art products, but it can also create dependencies on international supply chains.
- **The Global Discourse - Water as a Human Right vs. a Commodity:** The expansion of India's private water market is a local manifestation of a global debate. Proponents of privatization argue that market mechanisms introduce efficiency, investment, and consumer choice where state systems have failed (World Bank, 2004). Conversely, critics argue that commodifying water is ethically untenable, as it systematically excludes the poor and marginalized who cannot afford to pay. This perspective, championed by civil society organizations and UN rapporteurs, posits that access to safe water is an inalienable human right that the state has a non-delegable duty to provide. This ideological tension frames the entire debate around the legitimacy and social impact of the private water industry in India.

Table 2: Market Size and Share for Major Multinational Bottled Water Brands in India for 2025

Brand	Market Share (%)	Estimated Market Size (USD Billion)	Parent Company
Bisleri	36	2.98	Bisleri International
Kinley	28.3	2.34	Coca-Cola
Aquafina	19.1	~1.58	PepsiCo

Source: <https://www.maximizemarketresearch.com/market-report/india-bottled-water-market/20197/>

Tabl 3: The Value of Bottled Water Exports from India from 2020 to 2025

Year	Country	Approximate Export Value (USD Million)
2020	United States (Largest importer from India, about 24% export share)	5.0
2020	Bhutan (Second largest importer, about 18% export share)	3.7
2020	United Arab Emirates (Third largest importer, about 14% export share)	2.9
2021-2024	United States	5.5 - 7.0
2021-2024	Bhutan	4.0 - 5.1
2021-2024	UAE	3.2 - 4.4

Source: <https://www.volza.com/p/water-bottle/export/export-from-india/>

4. Prospects and Opportunities

In spite of the major challenges, the industry is exhibiting substantial growth, as a result of numerous opportunities.

- **Market Growth and Expansion:** The market remains far from saturated, especially in rural and semi-urban areas. As disposable incomes rise in these regions, the demand for packaged water and affordable purifiers is expected to surge. Furthermore, there is a growing trend of “premiumization,” with companies introducing value-added products like alkaline water, vitamin-fortified water, and flavoured water to cater to niche urban segments.
- **Technological Advancements:** Innovation is a key prospect. The development of “smart” IoT-enabled water purifiers that monitor water quality and filter life in real-time, more water-efficient RO technologies, and low-cost, electricity-free purification methods for rural markets represent significant growth areas. Advances in nanotechnology and materials science could lead to next-generation filters that are more effective and sustainable.
- **Public-Private Partnerships (PPPs):** PPPs hold the potential to bridge the gap between public service obligations and private sector efficiency. Well-structured partnerships could leverage private capital and operational expertise to upgrade public water treatment plants, manage distribution networks, or scale up community-level water enterprises. However, the success of PPPs hinges on

robust regulatory oversight, transparent contracts, and mechanisms to ensure affordability and accountability to the public.

5. Challenges and Critiques

The rapid growth of the private water industry is fraught with severe and systemic challenges.

- **Equity and Accessibility:** The most damning critique is that the industry creates a two-tiered system of water access: one for those who can pay for safe, private solutions, and another for those who cannot and are left to rely on contaminated or unreliable public sources. This commodification effectively disenfranchises the poor, turning a basic human right into a privilege. The proliferation of water ATMs, while seemingly affordable, still imposes a cost that can be prohibitive for the most impoverished households.
- **Environmental Sustainability:** The environmental footprint of the industry is alarming. First, the bottled water segment is a major contributor to plastic pollution. A lack of effective waste management infrastructure means that billions of PET bottles end up in landfills, rivers, and oceans. Second, both bottling plants and RO purifiers rely heavily on groundwater extraction, contributing to the depletion of aquifers in already water-stressed regions (Shashi, 2019). Third, domestic RO purifiers are notoriously inefficient, rejecting as much as 3-4 liters of water for every litre they purify. This brine reject, with its high concentration of total dissolved solids (TDS), is typically discharged into drains, adding to surface water pollution.
- **Regulatory Deficits and Enforcement Issues:** As a result of the certain gaps in regulations, the bottled water poses significant public health risks from impure or substandard products. There is a lack of clear policy on the sustainable management of RO brine discharge and a failure to enforce groundwater extraction norms on commercial bottlers rigorously. This regulatory vacuum allows for practices that are both environmentally and socially detrimental.
- **Public Health Implications:** While purifiers and bottled water can protect against microbial contamination, the widespread use of RO technology has raised concerns about the demineralization of water. Consuming water stripped of essential minerals like calcium and magnesium over the long term may have adverse health effects. This highlights a paradox where a solution to one health problem may inadvertently contribute to another.

Conclusion

The drinking water industry in India is a dynamic and complex ecosystem. The analysis reveals that the scope of this industry is multidimensional, its growth is driven by powerful domestic and global forces, and its prospects are substantial. However, these prospects are overshadowed by formidable challenges that strike at the heart of sustainable and equitable development. The industry imposes severe environmental costs through groundwater depletion, plastic pollution, and water wastage. The path forward requires a paradigm shift. There must be a solid mechanism to modernize public water infrastructure to deliver safe, reliable, and affordable water to all citizens. Concurrently, the government must implement a strong regulatory framework for the private water industry. This framework must address the entire lifecycle of the product starting from sustainable sourcing of water and responsible manufacturing to waste management and consumer protection.

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