

INDUSTRIAL WATER: BUSINESS & ECONOMIC GROWTH

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Nothing is more fundamental to life and economic activities than water. It is not only a basic human need, but adequate and safe water supports the nation's health, economy, security, well-being and ecology. The primary challenge in the present time is to ensure adequate quantity and quality of water to meet human, commercial, agriculture and ecological needs amid the growing distress and broadening water scarcity. The situation demands a better understanding of complexity of water resources and urgency of technological intervention and instant public attention to remain sustainable over the long run.

Making sufficient amount of safe water available to municipal and industrial consumers presents a great challenge. Cities and industries have mostly grown without appropriate planning, resulting in higher extraction of ground water, drying up of surface water sources and polluting the remaining water. This has caused hydrological and meteorological alterations, such as increasing air temperature, evapotranspiration, soil salinity and even flood risk. Consequently,

water has become less available, making it scarce and impacting life and economy. The way to address water challenges and resource problems will require that decision makers at all levels of government need to make informed choices with proper investment and accept conflicting and uncertain alternatives with swift and decisive actions.

Worth of Water

What is the worth of water? This is a billion dollar or may be a trillion dollar question as water is impacting lives and businesses globally. There is no easy answer to this simple question. On the one hand, water is infinitely valuable resource needed for life to exist, on the other, water is taken for granted, misused and wasted every day, everywhere.

According to economic theory, the value of a good is determined by scarcity - the gap between limited resources and unlimited needs. We have been using water as if it was limitless, abundantly available and have no value. That traditional thinking and behavior resulted in water getting

scarce faster than any expectations across the globe. If this was not enough, an estimated 80% of all industrial and municipal wastewater is released into the environment without any kind of treatment, making the remaining fresh water polluted and not usable.

Water is indeed both a social and an economic good. Water satisfies basic human needs and services, which are classified as life-support functions. Access to clean water is fundamental to life and ecological and environmental balance and critical for the existence of living systems including humans. After the human and ecological need, water is important to all commercial activities and economic development. It is absolutely a market good of which the efficiency of use and benefits can be maximized through proper allocation and smart demand-supply management. Industrial development happens when water is available in adequate quantity of specified quality at

Water has an established economic value with its various uses and should be recognized as an important factor for economic development.



the disposal of the industries. The worth of water can be understood as it is being traded internationally at commodity stock exchanges along with gold and oil. This is going to be the new oil of future and may become precious than gold in time to come.

How the actual value of water could be determined? The 2021 World Water Development Report focuses on this crucial issue. The assessment suggests several methods to value water across different sectors and identifies how this process can be improved, with a view to better evaluating what water is worth to our societies. It explains various approaches to valuing water for drinking purposes, sanitation and hygiene, environmental considerations, agriculture production, industrial and manufacturing, and water - related infrastructure development. It looks at valuating water on the premises of food and agriculture, business, industry, energy and economy.

Water Challenges

Fresh water is very limited on earth and with unsustainable use; it is becoming scarcer day by day. Over 2.2 billion people already live in areas facing severe water stress as the United Nations reported a while ago. The water assessment predicts that, the world will face a global water deficit of 40% by 2030. This situation may be further worsened by global challenges of climate change and pandemic resurgence.

The surface water reserves and aquifers are being drained rapidly across the globe. In many countries including India, water pollution as a result of agriculture is central to water loss and degradation. Irrigation is the largest user of water in India making up to 80% of fresh water use. The aquifers depleted by intensive groundwater pumping and fertilizer overflow from agriculture including fervent use of pesticides and waste from livestock significantly affect surface and groundwater sources.

Water for Industries

The industries developed in growing economies

The higher costs, lower earnings and substantial financial losses are related to inefficient use of water in industries.



in a much faster rate than other segment. Growing population demands more food and to cater this demand, more industries are established in this segment. The global food and beverage sector is worth an incredible \$6 trillion and lies at the very heart of the water crisis, with companies in the industry reliant on vast amounts of water. As the sector demands more water, they are among the first to feel the impacts of interruptions and unpredictability of water supplies. The industry for years, have been looking for strategies and practices to reduce the impact on the environment and new ways to sustainably manage their water consumptions. With growing water shortage and manufacturing disruptions, in economic terms, water savings have a direct impact on profits, so water-saving strategies are an important pillar in management plans.

As the traditional water resources are being depleted and polluted at increasingly alarming rates, it has now become absolutely vital for food industry to review their water consumption and make necessary changes with treatment and reuse facilities effectively. Aquality Water Solutions have been advocating the efficient use of water for industries across the spectrum and have installed technologically advanced best quality water treatment plants in several

industrial units across India. These fully automated plants not only reduce wastage of water optimally, but also produce ultra-pure water for better production facilities.

Case Study: Industrial Water Treatment Solutions

Client: CPA India Pvt. Ltd.
Industry: Food Industry

Background: C P Aquaculture (India) Private Limited is a subsidiary of Charoen Pokphand Foods (CPF) Public Limited Company, a Thailand based multi-national conglomerate with \$35 billion businesses in Agro-Industry & Food, Retail and Telecommunications. Charoen Pokphand Group (C P Group) is one of the largest group companies of Thailand. The enterprise in its legacy of 70 years has developed and spread technology in Agro-Industrial business to provide the highest level of produce to both farmers and consumers.

In the year 1992, honoring the invitation by the then Prime Minister of India, (Late) P V Narasimha Rao; the CP Group started investing

The significant value of water for business is well established.

in India. CPA (C P Aquaculture) started its first feed mill in Chennai as C P Aquaculture (India) Private Limited with its first commercial production in 1996. With a clear vision and dedication over the years, they have expanded the business in major places in North & South India. CPF is the world's largest Shrimp Feed Producer and ranks among the Top five of the world's largest Animal Feed Producers as well. One of the largest manufacturers of poultry and fish feed globally, it operates in 17 countries and exports to over 30 countries in five continents, covering more than 3 billion people.

The Project: CPF operates integrated agro-industrial and food business, including livestock and aquaculture such as broiler, layer, duck, shrimp and fish. The businesses are categorized into 3 categories, namely Feed, Farm and Food. The Company also operates retail and foods outlets as well. In order to produce cooked and ready meal products with the aim to deliver great taste, convenience and variety of healthy foods in line with changing trends and consumer liking, they wanted to install best quality water treatment plant at their industrial unit situated at Rajahmundry, Andhra Pradesh. This plant is established with a capex of Rs.700 Crore having a monthly water consumption of 16 million litres.

Water Infrastructure: Aquality Water Solutions Pvt. Ltd. was engaged by the plant to install high capacity RO water treatment plant in line of their requirement and specification. The engineers visited the facility and studied their production units and live stock farms, analysed their capacity expansion plans of future and worked out the best possible solutions that can



be enhanced for all future requirements. The company has supplied, installed, tested and commissioned the following water treatment infrastructure at the facility.

- Twin Commercial RO Plants with combined capacity of 576KLD installed. The produced water is being used for broiler feed.
- 144KLD RO Plant was installed for Super PS Plant within the facility
- 12 Softeners of 6 M³/Hr installed at multiple locations within the facility
- A centralized drinking water plant is installed for providing safe drinking water for hundreds of employees
- 8 Point of use purification, cooling and dispensing systems are installed.

Aquality Water Solutions Pvt. Ltd. is also providing operation & maintenance of the water

treatment infrastructure and all related systems and equipment since its commissioning in 2015.

Way Forward

Water is at the heart of all production and management strategies that could maximize the multiple values of water for food production that could be beneficial in terms of productivity, resource optimization, better employment facilities and good return of revenue. It also helps in improving water use efficiency, reducing demand for more water and improving knowledge and understanding of ideal water use for production. Businesses tend to focus on operational savings and short-term revenue impacts and usually pay less attention to water value in administrative costs. An understanding of better water efficiency will support the industries to lower costs, higher earnings and better financial returns while supporting future



About the Author

A first generation entrepreneur, he is an avid innovator and risk taker. He established the acclaimed Aquality Water Solutions Pvt. Ltd. with the idea to provide technologically advance water treatment solutions for industries and institutional clients. With an ardent interest in clean drinking water facilities, he contributed immensely in improving the life of people with commitment, technological innovations and quality excellence.

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