The climate change effects and global warming is altering weather patterns causing shortages and droughts in some areas and floods in others. With current consumption rate, this situation will only get worse and it is estimated that two-thirds of the world's population may face severe water scarcity by 2025, in just two years from now. At the same time, human activity and unsustainable practices are affecting freshwater resources in many ways.

Water Pollution

Water pollution can have several adverse effects on earth's surface and surrounding environment while also negatively impacting human health. According to a report by Lancet, over five lakh deaths occurred across India in 2019 due to water pollution. Globally, water pollution is responsible for 1.4 million premature deaths a year. It is also estimated that around 37.7 million Indians are affected annually by water-borne diseases like cholera, acute diarrheal diseases (ADD), typhoid and viral hepatitis etc. Another consequence of water pollution is the loss of valuable species and biodiversity. Water pollution can also have ecological effects on communities. It can lead to destruction of aquatic ecosystems and disruption of food chains.

Consider the situation in India where an estimated 73,000 million litres of municipal wastewater is generated every day in class I and class II cities only and over 70 per cent of it never receives any kind of treatment before disposal into water bodies. Similar situation is with industrial wastewater as well, although a lesser margin of its direct disposal is estimated. Water Aid, working on water, sanitation and hygiene sectors finds that an alarming 80 per cent of India's surface water is polluted. Central Pollution Control Board estimates that 75-80 per cent of water pollution by volume is from domestic sewage, while untreated sewage flowing into water bodies including rivers have almost doubled in the recent years. Wastewater treatment has become essential to not only address the shortage of fresh water but also saving the surface and ground water sources from further contamination.

Sahara Industry has been promoting the integrated water management and established itself as a leading system provider for water and wastewater treatment with application of technology, exceptional quality, best practices and sustainable long-term solutions. With NSF certified products for water treatment, it has contributed immensely by making water safe for drinking, industrial and institutional purposes.

The ISO 9001:2015 certified company; it has employed technologically advanced machineries and manufacturing solutions combined with professional and well-qualified engineering teams to achieve the feat of being an indigenously creator of advanced water and wastewater treatment solutions matching with world standards.

The Earth Day is a call for action to protect the planet by adopting and implementing solutions that will help it restore its natural resources. Clean water is a precious resource and we must act in harmony to use it wisely and protect it from pollution and contamination. At Sahara Industry, we are committed to follow environment friendly practices and together, we can make a difference to protect the earth and its beauties.

MOHAMMED NASER AZEEZ, MANAGING DIRECTOR, AQUALITY WATER SOLUTIONS PVT. LTD.

Save Earth: Harness the Solar Power

The earth started recuperating itself three years ago when coronavirus pandemic lockdowns across the globe forced to stop all commercial and other activities. The nature's recovering trail did show us that it could repair the damage inflicted due to excessive pollution, unsustainable use of resources, dumping of industrial and domestic solid and liquid waste, irresponsible chopping of trees, and every possible abuse. The lockdown has turned the skyline clearer, lakes and rivers were visibly purer, melting of glaciers stopped and the endangered flora and fauna started coming back to life. It cleared the air pollution to the extent that Himalayan range which is more than 100 miles away from Punjab was clearly visible with the naked eyes. The table has turned again now with earth's natural resources air, water, soil, and plants etc. started facing the assault of our activities.

Water: Vital Resource on Earth

Water is indeed a vital resource for all human activities, from survival to commercial, industrial and financial. It is essential for supporting life on earth and plays a critical role in producing food and products to even generating energy. The taken for granted approach has inflicted perennial damage to this natural resource and now a large population in the world has started facing the impact of water stress. On Earth Day, we are reminded of the current and emerging challenges and the theme of this year, "Invest in our Planet" has been designed to create awareness related to the environmental problems and calling out all governments, businesses, and citizens around the world of the need to invest to improve the liveability on earth and give our descendants a better and safer future.

We know that agricultural and industrial water consumption places heavy pressure on the world's limited water supply. In fact, these two sectors together consume approximately 90% of total water withdrawals. The World Bank has estimated that water demand is expected to exceed current supply by 40% by 2030 – just seven years away! The current water scarcity is mainly caused by unsustainable use and mismanagement of water resources.

Why should we care?

India, which has recently become the world's most populated country outpacing China, which has been the most populous country since at least 1950 as reported by the Wall Street Journal citing UN's world population projections. With the current population of 1425.77 million, it is an uphill task to provide essential resources including water to all the people when almost 80% of the surface water is polluted and we still dispose almost 70% of wastewater untreated into our water bodies. If we continue with the current practices of treating water ruthlessly, the predictions of the Water Ministry that per capita water availability will reduce by 36% in 2025 and 60% by the year 2050 from the level of 2001, may become a reality much earlier than predicted.

The total water demand in India is expected to rise by over 70% by 2025; a huge demand-supply gap is expected in the coming years. Rapid urbanization, steady commercial and economic growth, changing life style has intensified the demand of clean water, while also increasing the load of generated sewage. The demand for water in Class I and Class II cities is expected to increase to 110,000-120,000 MLD by 2025 and sewage generation is expected to increase to over 87,000-97,000

MLD by the same year. On the other hand, the industrial demand for water is expected to increase multifold, with a larger share coming from water-intensive sectors such as power, steel, paper and pulp, textile and oil refineries. It is estimated that almost 640 million people in three-quarters of Indian districts are facing severe water-related stress, and the number is increasing.

Water is integral to our survival and livelihood but the last few decades witnessed the unprecedented use that saw surface and ground water quality deteriorating due to human-related activities such as mining, livestock farming, industrial, municipal and agricultural waste disposal, soil erosion and chemical and heavy metal pollution. India, one of the 17 countries facing the highest levels of water stress in the world, has seen extraordinary pressure on water resources in recent years.

To address the emerging challenges, it will be necessary to make significant investments in sustainable water and wastewater infrastructure and adopting innovative technologies to avoid economic losses. If action is not taken now, the situation is likely to deteriorate further by 2050 with demand exceeding supply leading to a likely 6% loss in India's GDP.

Renewable and Sustainable Action

An important aspect that can help India manage its water resources is the use of sustainable technologies such as renewable energy for water treatment. Energy is one of the basic needs of water treatment and supply infrastructure. The consumption of fossil fuels to generate energy has resulted in serious ecological problems with climate change becoming a threat to not just natural habitats but the health of all living creatures. Tackling this challenge with the energy from renewable sources like solar, has led to a focus on renewable energy use for sustainable growth. In addition to being clean energy, solar powered water treatment system require zero conventional energy enabling India to meet its power needs for other sectors without carbon emissions or consuming water to generate more thermal energy.

Aquality Water Solutions Pvt. Ltd. has been leading the initiative to make clean drinking water available to people, security forces and other establishments globally including human habitats in African and Middle Eastern Countries by using the pioneering solution of Solar Powered Water Filtration System. The solar powered system has high speed water filtration unit that can purify water from practically any source, such as hand pumps, swamps, wells, floods, rivers, and even wastewater making it an ideal source of clean water without much investment. The embedded innovative technology utilizes high purification techniques to make water absolutely clean leaving containments behind, resulting in producing high grade water suitable for drinking at any place without the requirements of conventional electricity.

The purification device is compact, around the size of a big box, has low power requirements and no removable parts that need to be maintained or replaced. The best part of the system is, it can even reclaim the wastewater to be used in toilet flush in all Swacch Bharat Mission toilets that has been constructed but not being used properly due to lack of water.

The technology advanced treatment system will not only reduce the logistical challenges of transporting bottled water, but it will also reduce the risk of waterborne diseases affecting millions of people while ensuring constant clean water supply to all far-flung places wherever our security forces are deployed or even at villages where availability of clean water is a challenge due to electricity. Adopting water purification systems at a large scale can help us use fewer resources from the earth depository and reduce the amount of waste generated. It can also help reduce the amount of water that is wasted and reduce the amount of energy required to treat and transport water. In this way, using solar powered water purification systems can be a true tribute to the earth.