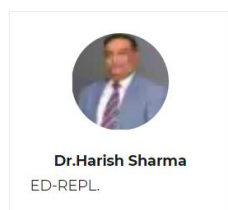


LIFESTYLE

Climate change and water: Moving from risk to resilience for a water-secure future

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Climate change is no more a debatable topic. It is a universally observed and accepted fact. Various studies have indicated that India will be one of the worst affected countries by climate change. Government of India and private sector have been doing their bit to arrest and reverse environmental degradation and climate change. However, rapid urbanization and industrialization are somehow neutralizing the effects of the efforts. Climate change has been taking a toll on the country's weather patterns, which in turn is impacting agriculture, human life, industries, and bio-diversity.

One of the most severe and immediate effects of climate change can be seen on the availability of water in India. Every year the water supply infrastructure in the country is expanding under Jal Jeevan Mission, however, the water sources are shrinking. This situation is leading India towards a catastrophe that will have serious implications for the nation both on economic and social levels.

Understanding the ground reality

In India, 80 percent of the rainfall happens due to the southwest monsoon within a period of 2 to 3 months. The June, July, and August period see heavy to very heavy rainfall across most parts of the nation. Heavy downpour causes flooding of rivers and cities causing enormous loss of life and property. On the other hand, during the other months, most of the places in the countries are suffering from a shortage of water supply. According to the data from the Indian government, 22 out of 32 major cities in India continuously suffer from the water crisis. The situation is no better in most of the smaller towns and rural areas. A few years ago, in places like Shimla, the locals were urging the tourists not to come to their city due to the water crisis. This is a serious matter for a place that is heavily dependent on tourism for its economic sustenance.

Climate change has made the matters worse for the country. Various trends suggest that the amount of rainfall in the country is rather constant, however, the number of rainy days has decreased. This means a heavier downpour on rainy days. More water in less time causes floods, water-run off, soil erosion, and various other problems.

In India, traditional water conservation techniques have largely been ignored. The increasing urban population and the demand for household water, drinking and sanitation services have been exerting tremendous pressure on India's water infrastructure.

Moving towards a water-secure future

As the urban population in the country is rapidly growing and according to the UN, 41% of India's population will be living in the cities by 2030; it is most logical to focus on urban planning and infrastructure to counter the impact of climate change and address the issues of the water crisis. India is in the process of developing 100 smart cities. Resource conservation is one of the most important features of a smart city. Proper urban planning can play a significant role in water conservation and enhance water security in the cities.

Blue and Green infrastructure

The inclusion of blue and green infrastructure in urban planning can do wonders for water security. Green infrastructure not only helps in countering pollution but also provides permeable surfaces for the rainwater to seep into the ground. It also helps in reducing the flow of the stormwater. Similarly, the blue infrastructure helps in storing the stormwater for periods of scarcity. It also helps in the replenishment of the groundwater and prevents floods downstream.

Focus of rainwater harvesting

Storing and conserving rainwater is one of the most effective means of solving the water crisis. Rainwater harvesting is not a new concept. Indian cities like Delhi and Chennai have government policies for rainwater conservation. However, the adoption and implementation of these policies are very low. Urban planners need to focus on provisions of roof-top water collection systems and infrastructure to carry this water to recharge groundwater and replenish water bodies.

Rehabilitation of water bodies

In urban India, thousands of water bodies have either perish or are severely endangered. Many water bodies have gradually been converted into garbage dumping sites. Rehabilitation of such water bodies can be a gamechanger for water security in Indian cities. Such water bodies will not only store the stormwater and help in uplifting the water table but will also support local flora and fauna. More greenery, means lesser pollution, reduced environmental degradation, and improved climatic conditions.

Recycling of water

Recycling water is no rocket science. Not only it will help solve the water problem, but also will help in reducing the pollution in the water bodies and underground water. The Government of India has policies and provisions for effluent treatment and water recycling. However, due to the sheer volume of wastewater coming from the Indian cities and the huge amount of electricity required for effluent treatment, water recycling in the country has not been met with great success. Urban planners need to devise ways of reducing the load on the water recycling facilities and create infrastructure for recycling the wastewater at the source.

Awareness

Government and industry can make the best policies and invest millions in creating blue & green infrastructure, water harvesting, replenishment, and recycling; however real success cannot be achieved without the participation of the general public. Spreading awareness regarding water conservation, water harvesting, and the role of the general public in solving the water crisis should be an important aspect of urban administration.