

# **Chapter -2**

## **Review of Literature**

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The most alarming & burning issue of the present & even for the future is water and its scarcity. It's everyday common news everywhere in media news like daily newspaper, magazine, documentary, Television and even common public discussions about the water value and the diminishing level of surface & groundwater. [Annexure -1]

On 29<sup>th</sup> July 2014, while addressing a meeting at the Indian Council of Agricultural Research; New Delhi, our Prime Minister Sri Narendra Modi gave a mantra of “more crop per drop” to create awareness for the conservation of water. As per the recent study in India there will be no water by the year 2040, if the rate of consumption of the water remains continue as it is now [Annexure -2]

According to the case studies of India, China, France and the United States on the consumption of water, the study revealed that in almost all countries, the rapid industrialization & the growth in urban civilization is the major consumer of water and for the day to day function of these sectors, water is required in a very large quantity. And it is very much obvious that by the year 2040, there will be no portable water, even to quench the thirst of all the living things, if still we will not stop the misuse of the available water and unable to make a proper management system to create & conserve the available water to achieve our present & future demands.

Prof. Benjamin Sovacool of ‘Aarhus University’ Denmark; expressed his view that - "It is not an issue of price only, even though the water is available free; we will have to face & even facing an intractable water shortage, if we continue the businesses as usual”.

- **Fresh & potable water percentage in total available water:**

Only 03% (Three) is the available fresh water globally, is in the form of ice & glaciers, ground water & surface water in the rivers & lakes, while more than 70 per cent of Earth's crust is covered with water. Reason behind this is that approx. 97 % (percent) out of this total 70 % (percent) of the available water on the Earth is in the form of sea and oceans.

Many consequences will have to face to India & the Indian Citizen, if we will not start thinking with a serious note and will fails to make a proper plan for the conservation of water, as the report of United Nation (UN) on the conservation of water. In the coming 20-25 years the situation would become dangerous and it is expected that by 2030, nearly 4.3 billion people will have to face a vigorous water scarcity & will have to live in a “water-scarce” country. Because of an unique geographical position in South Asia, India would be a centre of conflict and the subcontinent of India will have to face major impact and crisis of the water.

According to the report of water resource ministry, the populations of Indians are approx 20% of the total population of the world and the availability of total useful water resources is only 5%. During past decade, the accessibility of water per annum capita has been decreased. The upcoming water crisis are supported with some more facts as :-

- The availability of water per capita, in India; is decreased annually from 6375 cubic meters to 1,040 cubic meters during the period 1950 to 2012.
- In India during the year 2001; the per capita annual availability of water, was 1,906 cubic meter.
- In India, the annual per capital availability of water will further reduces to 1250 cubic meters,

to 1,040 cubic meters by the year 2050.

- Approx 85 to 90 % of waste water discharge into the rivers fails to meet the ecological norms.
- The major wastage is that the 65% rainwater runoff goes into the sea.
- The agriculture sector is the biggest user of water in India followed by the domestic and industrial sectors.

For making water conservation as a national interest, the environmentalist & expert are consistently pitching the issues. It is an urgent need to harness the ground water by the rainwater harvesting and by implementing the innovative & best technologies for treating the industrial waste water and again by recycling them.

As many research documents & articles are reported and available on the study of waste water pollution but only few papers are actually present & published on the treatment of steel industry waste treatment. Few researches are available on planning, control & protection from toxic waste to the ecosystem. And very few actual research articles are really available on the recycling and reuse of water waste and sludge. The quantitative analysis for the wastewater treatment is much more effective than the other available methods.