



DEVELOPMENT AND MANAGEMENT OF WATER

RESOURCES IN INDIA : 2025

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ABSTRACT:

The water is the important assets of any country because without water the world society does not live. Therefore proper utilization of water can bring prosperity to the living of human beings. Basically resource can be divided into two types i) Natural Resources and ii) Human Resources. The Water is one of part of the Natural Resources. It has included in surface water resources and ground resources. India is one of the wettest country in the world with average annual rainfall of 1100 mm. According to Santosh Sharma ground water has played a prominent role as a primary source of domestic water supplies in the rural and urban areas about 85% of rural 50% of urban population depend on ground water for the day to day domestic needs. According to data published by Census of India, it is worked that during 1981 safe drinking water is made available to 38.2 percent households in the country which increased to 62.3 percent in 1991. Further increased 77.9 percent of house hold in 2001. In spite of those nearly 22.1 percent households of the country is still deprived of safe drinking water and approximately 10 million population is being added every year in this category apart from this in the paper study on Development and Management of Water Resources in India : 2025 and their problems and solutions.

INTRODUCTION:

The classification of resources has been done in various way based on their aim & purpose. Basically “Resource” can be divided into two types 1) Natural Resources and 2) Human Resources. Natural Resources included land, soil, oil, coals iron, animals, marine fish and water etc. The water resources included in surface water resources and ground water resources. They are both part of the earth’s hydrological cycle and derived mainly from precipitation including rain

and show and it is interdependent. Cultural resources are the manmade derivative resources of the natural environment through technology with the aid advice and concept of the culture, such as agriculture, industry, especially manufacturing and infrastructural resources, such as transportation and communication etc. The water resources in the country especially the fresh water resources are facing multitudes of challenges effecting the accessibility, utility and sustainability. The water is the important assets of any country because without water the world society does not live. Therefore proper utilization of water is can bring prosperity to the living of human.

DEVELOPMENT AND POTENTIAL OF WATER RESOURCES IN INDIA:

India's water resources for the National Commission on Agriculture according to them, the annual rainfall over the entire country represent around 400 million hector meters of water in country. Of this about 70 million hector meters of the water are lost immediately due to aspiration and 215 million hectors meters percolate into the soil and 115 million hectors meters is left which flows into the river systems. The entire surface water cannot be utilized. In 1974 the surface water utilization was roofing 25 million hectors meters. It is estimated to increase to 70 million hectors meters in 2025. The ground water of the 215 million hectors meters of water that seeds down annually into the soil, about 55% get absorbed in the top layers. This contribution to soil moisture which is essential for the growth of vegetation. The remaining 45% percolates down into popups strata and represents the annual enrichment of groundwater. The total underground water storage has not been assessed with the adaptation of the new agriculture strategy in 1969 the groundwater utilization has received particular attention. The groundwater irrigation which is the basis of green revaluation India. In 1950-51 tube well and other well provided irrigation in 28.7% of the irrigation. The demand for water has increased in domestic, agriculture and energy. In 2000, International conference on water security of The Hague (Netharlands) It was stress of that access to safe and and sufficient water and sanitation are the basic human needs are essential to health, well beings and empowerment of people. An estimated 1.1 billion people lack to access

to safe drinking and 2.5 billion people has no access to proper sanitation. The water short range and global warming are the two most working problems for the new millennium.

Water resources included surface water resources and ground water resources. They are both part of the earth's hydrological cycle and derived mainly from precipitation including rain and show. They are interdependent, on an average, about 15% of the rain water infiltrates underground. The Anna precipitation of India only about 37% of utilizable for various reason mansoonclimate, topography, geology of the basis. The central ground water Board (CGWB) has estimated the total dynamic groundwater resources of the country about 63% of the resources available for irrigation and 19.61% of the resources is used for the other purpose like drink water supply and industrial use in 2000. India's surface water resources are substantial but comprehensive data regarding various aspects of water resources are lacking in the country.

According to Dr. Bhumbra India's water resources would be about 3,700 million hector meters, or about 10 times the annual precipitation. The annual exploitable potential is put at 45 million hector meters but only around 13 million hector meters are being exploited at present. With the introduction of the new agricultural strategy in the early 1960's there has been increasing use of tube-wells. In 1961, only 1 percent of net irrigated land received tube well irrigation but by 1990-91 about 30 percent of the net. Irrigated land got the benefit of tube well irrigation. Actually it is the ground water irrigation and not large dams and canals which are the basis of India's green revolution.

According to data published by census of India, it is worked that during 1981 safe drinking water is made available to 38.2 percent households in the country which increased to 62.3 percent in 1991. Further increased 77.9 percent of house hold in 2001. In spite of this nearly 22.1 percent households of the country is still deprived of safe drinking water and approximately 10 million population is being added every year in this category. Thus there is an urgent need to address thus problems a priority basis.

Table No. 1: Projected utilization of water demand in India (2025)

Sr. No.	MOWR		NCIWRD		
	2010	2025	2010	2025	
	Low	High	Low	High	
1. Irrigation	688 (84.6)	910 (83.5)	543 (69.26)	611 (72.47)	BCM.
2. Drinking water	56 (6.9)	73 (6.7)	42 (5.3)	62 (7.3)	BCM.
3. Industry	12 (1.5)	23 (2.1)	37 (4.71)	67 (7.09)	BCM.
4. Energy	65 (0.66)	15 (1.4)	18 (2.29)	33 (3.9)	BCM.
5. Other	52 (6.4)	72 (6.6)	54 (6.88)	70 (8.3)	BCM.
Total	813 (100.00)	1093 (100.00)	784 (100.00)	843 (100.00)	BCM.
6. Surface Water	540 (64.42)	729 (71.96)	497 (63.39)	545 (64.65)	BCM.
7. Ground Water	273 (33.57)	364 (33.30)	287 (36.60)	298 (35.34)	BCM.

Source: Central Water Commission Water Resources Information System Directorate, December 2010. (BCM-Billion cubic meter)

Table No. 1 indicated that The total utilizable water resources in the country are estimated at 1,122 bcm including 540bcm (64.42%) of the surface flows and 273 bcm (33.57%) of groundwater. The total consumption of water at present (2010 AD) is about 813 bcm (72% of the total utilizable resources) including 540 bcm (64.42%) of surface water and 273 bcm (33.57) of groundwater. It may go up to 1,093 bcm by 2025 including 729 bcm of surface water and 364 bcm of groundwater. The most of water as present in (2010 AD) is 85% for farm irrigation. Domestic supply, industrial uses, hydel power generation etc. use together about 15%.

The total water requirement of the country as assessed by NCIWRDP would be 694 to 710, 784 to 843 Km. by years 2010, 2025 respectively depending on the low demand and high demand scenario, irrigation would continue to have the highest water requirement 68% of total water requirement. Followed by domestic water use 10% of total water requirements, Industries would require about 7% of total water requirement evaporation would 7% of total water requirement power generation would need about 6% of total water requirement

and environment and mitigation needs, 3% of total water requirement in 2025. The commission has estimated utilizable return flow which vary from 213 Km. to 259 Km. for low and high demand respectively. The additional return flow for low and high demand has estimated as 123 Km. and 169 Km. respectively. It has been indicated that country's rural water requirement barely matches the estimated utilizable water resources. Globally this may be true but there exist movable anomalies in different basis and locality. There is substantial quantity goes utilized.

Central water commission in water resource information system directorate provides estimate about water resources and utilization as given that total estimated annual rainfall was 3136 billion cubic meters (BCM.) An average annual potential in reverse is 1869 BCM. In 2010 per capita water availability was 1588 cubic meters which was 1816 cubic meter in 2001. This indicate that declining per capita availability of water in the country. The India has been water shortage problem are being experienced year after year. The most part of the state as Tamilnadu, Rajasthan, Gujarat, Orissa etc. The problem of water shortage reason is increasing size of urban population and size of growth citizes.

GOVERNMENTS POLICY ON WATER RESOURCES:

India's water policy since Independence or more specifically, since 1950-51 consisted of the construction, of huge dams and reservoirs, distribution canals etc. all of which were designated as major and median irrigation works. Some were also known as multipurpose projects. Since they were designed to generate electric power, provide irrigation water to agriculture and drinking water to cities and control floods.

The 11th five year plan (2007-2012) has focused attention on the dangerously low ground water in 60% of irrigated and rain fed land. The UPA government at the centre started in 2005 a pilot project for repair, reformation and restoration of water bodies directly linked to agriculture. The central water board has identified 1065 blocks in the country as "over-exploited" or "critical." Over 80% of their blocks are in 100 districts in seven states. The strategy for groundwater recharge is to direct rain water to "dug wells." Each structure is

expected to cost R 4000 crores. 2007-08 in the budget, the government proposed a grand of 100% subsidy to small and marginal farmers and 50% subsidy to other farmers.

CONCLUSION:

The United Nations general assembly has proclaimed 2003 as International year of fresh water. According to U.N., the water resources have to be managed and quality to different use sectors. The future challenges in water management include development of new technical solutions and elimination of present pollution sources. There are some ways to tackle the problem the water demands have to be managed.

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