Water scarcity and right to water in India: an overview

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According to the author K.R.Gupta, "water, water everywhere but not a drop to drink".[1]
Water is a unique resourace. It is a renewable resource, but supplies are finite.[2]

I. Introduction

Defining Water Scarcity:
Water is very indispensable for human life. we all know that 30% of world's land and 70% of the water . But still there is a crisis for water. Water scarcity means water problem and water crisis. It may be happen due to naturally or by human beings. According to hydro geologists the water is soon going to become a rare commodity. The UNDP's Human development report 2006 also mention that the most important problem of the current civilization is the water problem. The concept water scarcity also involves water stress and water crisis. Water crisis means lack of adequate clean water and water problem created when there is insufficient fresh water in a region as compared to the population. So we can say water scarcity means the presence of adequate fresh water in a region.

According to K.R. Gupta, " the world bank's report on India say's that India has no proper water management system in place, its ground water is disappearing and river bodies are turning into makeshift sewers-estimates reveal that by 2020, India' demand for water will exceed all sources of supply .even today in metro cities such as Chennai and Delhi, some localities rely on private water tankers for their daily water needs."[3]

II. UN Report on Water

A report published by UN on 22th march 2006 has prepared on global fresh water resources on the basis of 17th case studies from 41 countries. According to the report in Maxico, at present 1. billion people are suffering from adequate fresh water problems and nearby 2.6 billion people could not get the basic sanitation facilities. The slum people get only 510 liter

The report also reveals the fact that world's food requirement will rise by about 55% as a result of a strong pressure on the world's irrigation system.

The report emphasis on the matter that "Governance systems will determine who gets what water, when and how, and decide who has the right to water and related services." The report also says that "our ability to meet this demand hinges on good governance"[4]

Although safe and sustainable drinking water scarcity is a global problem but with population growth in India, the problem continues to grow.

Chinese project the Greater Western Water Diversion Project one of the biggest worry of India. Because if the project has implemented it effected not only India but also Bangladesh's water resources. The project which has already started in 2006 involves damming the Brahmaputra river and diverting 200 billion cubic meters of water annually to feed the yellow river.[5]

III. Global water situation :

The 70% of the world's water is basically equal to 1400 million cubic. In the meantime the sea water is 97.5% which is basically saline water. Fresh water is just 35 K.M. Out of this 0.7% of the total fresh water is frozen. Meanwhile 30% water is underground and only 0.3% of water is found at the surface of the earth. 87% of water is deposited in the lakes, 11% in swamps and 2% in the rivers. Only 1% of water is used for human beings.

Water is a natural resource that continues to flow in a long unplanned manner. And fresh water demand continues to grow with the population growth. As water is a natural resource, some parts of the world there is a scarcity and some parts of the world have water abundance. As a result with the growth of population in different countries, the distribution of adequate water can be noticed of imbalance.

Asia is a country with about 60% of the population of the world, but there are only 36% water reserves. Africa is in good condition compared to Asia. In Africa the proportion of the population and water is 10:11. There is 1% population in Australia where water is stored in 5% North and South America have 8% population and 15% water, other side the South America have 6% world population with 26% 0f water. Water use depends upon on the agriculture, industrial development, or domestic use in different countries.

Water crisis in India : water scarcity in India is not a new concept. Although today India did not face too much water scarcity all over the country. But according to the various report in the near future India will face a serious water problem. Even in 2050 India became a water scarce country. In fact it is being projected that water demand in India is going to be as high as 24% by 2025 and 74% by 2050.[6]According to the report of Indian Institute of Technology, the most scarcity areas are the state of Punjab, Hariyana, Rajasthan, Gujrat, Delhi, North Eastern States, Jammu and Kashmir, Himachar Pradesh, Uttarakhand,

Chhattisgarh, odisha, Jharkhand, Kerala, Madhya Pradesh, Maharastra, Tamil Naru, Karnataka and Andra Predesh. Water crisis is two types – one is when there is a scarcity for water but physical water is occurred when water is available but we can not use it. In Rajasthan, Gujrat, Uttar Pradesh, Punjab, Hariyana, Madhya Pradesh, Maharastra, Karnataka and Tamil Nadu, the people are face the physical water scarcity.

IV. Water resources in India:

The rivers, lakes, and ground water is the major water sources in India. In maximum states the people of the cities are permanently dependent on the municipal corporation for water supply. The municipal corporation supply water from the various rivers, lakes, and ground water. Some time they supply water from interbasin transfer. But it is unfortunate that all the people of the cities count not get adequate amount of water. Specially in the slum areas the people did not get water. Although in the cities the municipal corporation supply the water but in the rural area the people access the water from the ground water. In some areas the women is travelling to get water from a long distance.

According to the National Water Policy of India 2002, "water is a prime natural resources, a basic human need and a precious national asset." We can categorized the Indian Water resources into two. One is surface water through streams and rivers and second is the ground water.

The surface water consists of twenty-two major river basins and among the twenty-two river basins there are thirteen major river basins.

V. The Indian rivers :

India have 14 major, 44 medium, and 55 minor river basin. The major rivers basins cover 83% of the total dranage basin and contribute to 85% of the total surface flow whereas medium and minor river basins flow. The average annual basin wise availability of water from Indian rivers is 1869k.m., out of which the availability from Ganga and Brahmaputra basins alone is 1110k.m. (58.7)[7]

The following data shows us the unequal water distribution in India. The utilizable surface and ground water resources are estimated at 690 k.m. and 432 k.m. respectively. India depends heavily on agriculture and is utilizing 84% of the 750 k.m. of water available in the year 2000 for irrigation purposes. This consumption is expected to decrease to 73.33% by 2025.[8]

We can categorized the rivers of India into two groups : (1) the perennial rivers of the Himalayan region. The main source of water in this rivers are the snow and the glaciers which are melt from the Himaliyan . The second group of rivers is - the seasonal rivers.

The first group of rivers means the Himaliyan rivers are very uncertain in nature. Their flow is very uncertain and drastic changeable. The main reason for the changeable nature is the landslides and seismic activity in the region. On the other hand the second types of rivers are more systematic and predictable in nature because they are flow through more geographical areas. During the monsoon season the seasonal rivers flow very high but in the dry months the water flow became very poor. Although the Himaliyan rivers water flow is very uncertain in nature but they did not so much poor water flow as compare to seasonal rivers.

We can categorized the Himalayan rivers into three parts- the Indus system, the Ganga system, the Bramhaputra-Barak system. The Indus river consists of six major rivers, which originated from the north of Mansaovar in Tibet. The Ganga river arises from Devprayag and the Bramhaputa- Barak system originated from Tibet. The seasonal rivers are two types- the coastal river and the inland river.

VI. Ground water resources

ground water is an another important water resources. The first systematic assessment of groundwater resources was started in 1954. In that year the Ministry of food and Agriculture of Central government had set up the Exploratory Tube Wells Organization which aim was to asses the amount of ground water.[9]

Basically the ground water resources has two components (a) static reserver which could not be exploited and it is nonreplenisihable. (b) dynamic reserver which useable and replenished seasonally. 67% of groundwater is recharged by the rain water. Although in Andra Pradesh, Punjab, Hariyana, and Jammu Kashmir, the rain water is not only the resource of ground water recharge, the canal seepage and return flow of irrigation also make significant contribution in rechearging the ground water.

According to the data of CGWB 2006, 93% of ground water is used for irrigation, 7% is used in domestic purpose and Industrial requirement. But it is very unfortunate that the ground water also became polluted which create a dangerous water scarcity in India. According to the report of World Bank 2010 " the groundwater demand in India has been increasing as secondary source of drinking water, as well as irrigation. Currently more than 50 percent of urban water requirements are met by ground water, and more than 80% of all rural water comes from groundwater source, as does 65% of water used for irrigation." [10]

Basically the ground water is a non polluted resource of water. But it is very unfortunate that today not only the surface water became polluted, the ground water also became polluted due to the overexploitation of the ground water. The people of the rural are totally dependent on water for drinking and irrigation. Although the iron is an important component in the water but the amount is very vital. The large amount of iron consisting in water is very harmful for the human beings as well as for the animals. According to a report of World Bank in 2011, in West Bengal, Rajasthan, Orissa, Goa, Haryana, Jammu and Kashmir , Andra Pradesh, Karnataka and Kerala- the amount of iron in the ground water is very high.

VII. India and rainfall:

The average annual rainfall of India is 1170k.m. out of which the Cherapunji receives the highest rainfall(1000 k.m.) total fresh water volume in India is 4000 k.m, out of which around 1047 million water fillies on steam. very unfortunately that only 18% rain water is used for human consumption and 48% water fall into river and sea. According to the data of government of India, the annual rainfall in India in 2006,around 829 billion which will

increase in 2025, around 1093 billion. Unfortunately according to the data in the future in India the useable water will increase only 5% to 10%. As a result in the future the water scarcity in India became increased.

The growing population in India will create extra burden on the per capita water availability. The following table shows us the scarcity,

Table:1:1

Year	population	Per capita water availability
1951	361	5177
1955	395	4732
1991	846	2209
2001	1027	1820
2025	1394	1341
2050	1640	1140

Source : govt. of India

VIII. The crisis of drinking water in India in various States:

the problem of drinking water has spread to the whole of India. Problem of drinking water in Karnataka state has affected the school students . around 65% school has affected by the problem. Although the government has been taken various steps towards removing the water crisis such as – government has been arrange tube-wells for the students but there are problem with the quality of the water. Water quality is not accurate in the wells and rivers also these causes various diseases that are borne by water, such as Hepatitis B, A, C. the poor water quality problem also found in Tamil Nadu. In Tamil Nadu Nellikuppum , a area where many people were suffered due to impure water. The people of the area told that the municipal authorities have failed to clear the garbage, human and animal wastes in the area.

Delhi:

According to the report of the Central pollution Control Board and Delhi pollution control Committee, the surface water and ground water of Delhi both are polluted. Like the other state the water of Delhi also polluted by the city waste, Industrial effluentsand agrochemicals.

As per the latest report available, everyday around 1,393 million liters per day of treated and untreated sewage and about 2200 mld of waste water find their way into river Yamuna through 18 major dams. Of the total waste water, about 1900 mld comes from the municipal sector while 320 mld from the industrial sector. The biochemical oxygen demand (BOD) of this water is 587 mld in all the five sewage zones of Delhi. Sixty four per cent of total BOD is from domestic sources. [11]

Uttarakand:

Almora in Uttarakand has caused a massive water problem due to rapid and unplanned urban growth of vital natural resources. The amount of rain water has been reduced by cut of the trees. The impact has been fall on the various mountain water sources. The maximum amount of ground water depends on the rain water . so the scarcity of rain water also effects the ground water level. The amount of water in Almora district is gradually dropping. 50 years ago the annual rain water in the Almora district was 1,059mm, where in the year of 2004 it was nearly 745.2mm. The koshi river which flows over Uttarakand suffers from lack of rain water. In summer the river provides only 4% water. Due to lack of the water the river is about 7.2 km dry in the summer. According to data, 12 years ago nearly 790 liter water were flow over the river but in monsoon season in the year of 2003 it flows only 85 liters. The scientists became very scared about the situation and according to them if the situation continues the river became dry in the next 12 years. The situation also became very worst when the springs were became dry and due to lack of water the rivers also became dry. The district was totally depend upon the 'dharas' and 'nalas'. Where 150 years ago the total no of dharas was 360 but now it is only 60.

To tackle the situation the Uttarakand government has take an initiative in 2005. Government arrange hand pump to extract the ground water. At present the government arrange pipe water for the whole town.

Although according to the government the water problem will be removed very soon by the pinder Glaciar project. Government hoped that when the project is successfully done it not only removed the water problem of Koshi river, but also the other rivers such as Gangas, Ramganga, Kausani. But to complete the project it near about 15 to 20 years time will be taken. So now the whole town is suffering from huge water problem, specially in summer time when water is supping only for 2 hours in a day even in some places water is supping within 2 days.

Rajasthan :

The worst water crisis faced by Rajasthan in the summer season. Almost 13,500 villages do not have access to safe drinking water. They are totally depend upon water tankers send by the government. According to the report of NDTV " Rajasthan has the countries 10 % mass but only 1.1% surface water making it almost completely depend on ground water which is fast depleting. Only 10% of wells have water that is safe for drinking. 88% of Rajasthan's water is saline.

Chennai**:**

water crisis is the one of the leading crisis in chennain. In 2019 the water situation in chennain became very worst. There seen an extreme water crisis. The officials of the city declared "Day Zero" on 19th June 2019, when almost every water supplying reservoirs became totally dry. These dry situation has created for the two year deficient monsoons rainfall particularly in late 2017 and throughout much of 2018 had led to this crisis.

West Bengal:

In west Bengal there is very critical water situation. Purulia and Bankura two most drought prone district of west Bengal. A study published in 2017, the Union Ministry revealed the worst water situation of West Bengal. According to the report around one out of every five persons in rural India does not get enough clean drinking water in west Bengal. The report also revealed that around 411 lakh villagers in India, which is around 4.5 percent of the country's rural population, do not have access to clean drinking water. According to the report out of the 411 lakh population around 19 percent villages are from the West Bengal.[12] West Bengal is the second number of State where the maximum rural population do not access clean and safe drinking water. The report also says that the urban people also does not access the adequate amount of clean drinking water.

A village, Onda from the Bankura district, where the women collect water and store it in pichers and buckets for two days. The situation became very worst in the summer when the temperatures range from 42 to 47 degrees Celsius. A person from the Onda village said that "the shortage of drinking water cause several diseases. We suffer bouts of dehydration, constipation, diarrhea and urinary tract infections."[13]

IX. Right to water and Indian Constitution:

Today right to water considered as a most important fundamental right. The United Nations also agree with that. In 1977 at United Nations Water Conference passed a resolution which stated that "All people, whatever their stage of development and their social and economic conditions, have the right to have access to drinking water in quantum and of a quality equal to their basic need."

In India the right to water considered as right to food, right to clean environment and right to health, in short all those right which have been protected under the broad category of Article 21, Right to life. The article 39(b) of the Indian Constitution which is non justiciable, recognizes the principle of equal access to the material resources of the community, it also declared that 'the state shall in particular, direct its policy towards securing that the ownership and the control of the material resources of the community are so distributed as best to subserve the common good.'[14]

In the form of various court proceedings the Supreme Court of India protects the right to water of Indian Citizen. Article 21 enhanced the right to healthy environment. Right to healthy environment means protections the fundamental right in a clean and healthy environment. Today the right to healthy environment has been developed as a part of the right to life under article 21 of our Indian Constitution. In 1984 the Supreme Court in the Bandha Mukti Morcha v/s Union of India case, declare that the right to healthy environment is a part of the right to life under Article 21. In 1st December 2000, the Supreme Court of India also declare that in today's emerging jurisprudence, environmental rights which encompasss a group of collective rights are described as 'third generation' rights.[15]

A most important verdict of Indian Supreme Court was in 1990, the case of A.P. Pollution Control Board ll v/s Prof. M.V.Nayudu. In 1986 the Andra Pradesh government was violating the Environment Protection Act and had allowed to set up a industry (which spread pollution) near the two main reservoirs of Andhra Pradesh,- the Himayat Sgar lake and the Osman Sagar lake. The Supreme Court declared that "Environment Protection Act and The Water (Prevention and Control of Pollution) act 1974 did not enable to the State to grant exemption to a particular Industry within the area prohibited for location of polluting industries. Exercise of such a power in favour of a particular industry must be treated as arbitrary and contrary to public interest and in violation of the right to clean water under article 21 of the constitution of India……..the government could not pass such an order of exemption carelessly passed, ignoring the 'precautionary principle' could be catastrophic."[16] The court stated that right to clean and safe drinking water is fundamental to life and it is the fundamental duty of government under article 21, to provide clean and safe drinking water to all citizens.

The another most important verdict of Supreme Court is the judgment of Narmada Bachao judgment. In the Narmada Bachao Andolon v/s Union of India, case the chief Judge Kripal, J said that "water is the basic need for the survival of human beings and is part of the right to lofe and human rights as enshrined in article 21of the Constitution of India……..and the right to healthy environment and to sustainable development are fundamental human rights implicit in the right to life."[17]
In the Vellore Citizens Welfare Forum v/s Union of India, case the Supreme Court also protects right to water of the people. In that case, the allegation raised against the tanneries and other industries of the Tamil Naru State. In this regard a petition was filled . According to the petition untreated effluent was being discharged into agriculture fields, waterways and open land which reached the Palar river. The Palar river is the main source of fresh water to the residents of the area. The to the residents the effluents had spoiled the physic-chemical properties of the soil and had contaminated the groundwater by percolation. [18]

In that case the Supreme Court of India recognized the right to clean and healthy environment. The Court also compensate the victims according to the precautionary principal and polluter pays principle. The precautionary principle means **firstly** the state law of environment have to be anticipated and preventive in nature to check environmental degradation. The environmental degradation means the disintegration of the earth or deterioration of the environment through consumption of assets, for example air, water and soil, the destruction of environments and the eradication of wildlife. It is characterized as any change or aggravation to nature's turf seen to be pernicious or undesirable. Ecological effect or degradation is created by the consolidation of an effectively substantial and expanding human populace, constantly expanding monetary development or per capita fortune and the application of asset exhausting and polluting technology. It occurs when earth's natural resources are depleted and environment is compromised in the form of extinction of species, pollution in air, water and soil and rapid growth of population.[19] secondly , that where there are threats of serious and irreversible damage, lack of scientific certainty should not be used as a reason for posting measures to prevent environmental degradation and thirdly that the onus of proof is on the actor or the developer/industrialist to show that his action is environmentally benign.[20]

The Supreme Court also said that "The constitution and statutory provisions protect a person's right to fresh air, clean water and pollution free-environment but the source of the right is the inalienable common law right to clean environment".[21]

The Supreme Court look up on the matter of cleaning up various water resources like rivers, tanks wells etc. The Supreme Court also very much concerned about ground water pollution, it's cleaning up and also the pollution of the drinking water sources.

According to the Supreme Court the water is a community sources which is to be held by the state in public trust in recognition of its duty to respect the principle of inter-generational equity.[22].

An another most important verdict of Supreme Court is the M.C.Meheta v/s Kamal Nath case. In that case court declared that

"our legal system- based on English common law- includes the public trust doctrine as part of its jurisprudence. The state is the trustee of all natural resources which are by natural meant for public use and enjoyment. Public at large is the beneficiary of the seashore, running waters, air, forests and ecological frangile lands. The state as a trustee is under a legal duty to protect the natural resources. These resources meant for public use cannot be converted into private ownership."[23]

So after the above discussion we can say that right to water is not considered as a separate fundamental right in India. It came under the broad category of right to life under article 21. The Supreme court protects people right to water through protecting the right to life in a clean and safe environment. The court protecting it as a negative right to do not water sources polluted.
According to South African Constitution " (1) Everyone has the right to have access to

a…….
b. sufficient food and water; and

(2) the state must take reasonable legislative and other measures, within its available resources to achieve the progressive realization of each of these rights."[24]

In South Africa it is the duty of the state to 1. ensure physical accessibility of water to all citizens.2. ensure that all citizens can access water in a very low cost and 3. Protect the water right against undue infringement.
So both the India and South Africa consider the right to water as an important right and protects them but in a different manner and different perspective.

X. Conclusion

After the end of cold war and disintegration of soviet Union today the world thinkers began to shift their focus from military security to human security. Human security means the human well-beings, human development. The human development means to secure food, water, employment and environment. Water security not only secure the individuals right to dinking water, it also protects the right to food, right to employment of the human beings. Because water is not usable in drinking purpose only, agriculture production, industrialization depend on water. So it is the duty of the state to safeguard the right to water of the people.

In India, our constitution protects the right to water through the article 21 but if we really want to fully enjoys the right to water, it is our duty to crate consciousness among the people about the misuse of water and also government have to take positive action through various plans, projects, and policies towards safeguard the water. Government have to take initiative towards rainwater harvesting, protects the surface and ground water from the pollution.

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