

## CHALLENGES RELATING TO WATER RESOURCE MANAGEMENT IN URBAN INDIA

**AUTHOR :- SIMRAN SALUJA**

**CO-AUTHOR:- SUBHASHMITA PATRA**

### ABSTRACT

This study gives an out sketch of the challenges relating to the water resource management in Urban India. Water is the most important natural resource, but it has been scarcely available in India i.e., the 2<sup>nd</sup> largest populated country of the world and home for 1.3 billion people. This has also become the talk of the hour and has become a most important topic of discussion at national and international levels. The earth is covered with 71% of water out of which only 3.5% water is considered as fresh water which can be used, out of which only mere 4% is used by such a highly populated country like India. With the growing population there is an increase in demand and use of water. The methods of use of water has changed ominously. The development of modern technologies has led to more and more consumption of water, whereas escalation in industrial sector, agricultural sector and other sectors have contaminated the fresh water along with the ground water. Though India has laws and governing bodies like pollution control board still such issues are persistent. Thus the main objective of this study is to analyse the challenges relating to water resources specifically in urban areas and recommend rational solutions for the same which can be further implemented. Thus this will be achieved by doctrinal analytical method of research with the help of primary sources like books and encyclopaedias.

**KEYWORDS** – rational solution, urban drainage, urban sanitation, water allocation, water resource management,

### INTRODUCTION

Water is the basic source of a living being. A person can survive without food for three weeks but can survive only up to three days without water<sup>1</sup>. History has been evident that people

---

<sup>1</sup>How long a person can survive without water' a study done by Corey Binns, published in Live Science on 30<sup>th</sup> November 2012.

have always settled in the area where there is proper availability of water and this is how the civilizations have expanded. In the ancient times, the important source was surface water, conversely the situation is different now. At the present day the important source of fresh water is ground water. Ground water meets more than 80% of the needs of the rural area and more than 50% of the needs of the urban area. Basically ground water is a hidden natural resource and India is the major consumer of groundwater in the world. It uses 230 cubic kilometres of ground water per year<sup>2</sup>. More than 60% is used in the fields of irrigation and approximately 85% of the drinking supplies are dependent on ground water<sup>3</sup>. The urban residents decidedly rely on the ground water due to insufficient municipal water supply. Global changes like population growth, climate variability, expansion in industrialization and urbanization with increase in pollution growth has severely affected the water availability and has also lead to prolonged water shortage in a growing number of regions. Preserving the quality and availability of fresh water resources has now become a persistent environment challenge.

Water is an essential precondition for life and it is a human right to have access to clean water. In the case of *Meneka Gandhi v. Union of India*<sup>4</sup>, the Hon'ble Supreme Court held that under Article 21<sup>5</sup> of the Constitution of India, people have the right to life in a healthy and pollution free environment. This also indicate that a person has a fundamental right to avail pollution free drinking water. However millions of people in India are living without access to safe and fresh water and further in the years to come it will be highly difficult to cope up with this kind of a situation. One has to be prepared already for the worst to come. So the major call of the hour is to protect water resources and the important development to this area will be the sustainable use of water resources following the concept of water management. Some of the goals of sustainable development in India<sup>6</sup> are:

1. To eradicate poverty of all kinds.
2. To encourage sustainable agriculture and ultimately achieve food security.
3. Ensure availability and sustainable management of water and sanitation for all.

---

<sup>2</sup> India Groundwater: a Valuable but Diminishing Resource, published in The World Bank IBRD.IDA published on 6<sup>th</sup> March 2012.

<sup>3</sup>*Ib.* 2.

<sup>4</sup> AIR 1978 SC597.

<sup>5</sup> *INDIA.CONST.* Article 21- Protection of life and personal liberty No person shall be deprived of his life or personal liberty except according to procedure established by law.

<sup>6</sup> An overview of the sustainable development goals in India, published on NITI (National Institution for transforming India) Aayog, Government of India page.( <http://niti.gov.in/content/overview-sustainable-development-goals>)

4. Ensure healthy lives of all age groups.
5. Ensure impartial quality education and promote learning opportunities for all.
6. Ensure sustainable consumption production patterns.
7. To take effective actions to combat climate change and its impacts.
8. Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
9. Promote sustainable use of ecosystems, protect the forest and control land degradation and loss of biodiversity.

Water resource management is the activity of planning, developing, distributing and managing the optimum use of water resources. Basically the planning for water resource management is to meet the demands of water and seek to allocate water on an equitable basis to satisfy all uses and demands. The rapid growth of urbanization is the result of technological advancement and economic opportunity. Urbanization is the ultimate reason for over exploitation of the ground water resources, polluting fresh water resources, poor construction of water supply system.

### **Objectives**

1. Are the laws sufficient enough to deal with the challenges of water resource management?
2. What is the position of the same scheme in all over the world?
3. What strategies should be followed to improve the system of water management?
4. What extra policies should be adopted by government to face the upcoming challenge of scarcity of water?

### **Laws and policies relating to Water Management**

Every man is entitled to some basic human rights in every civilized society, which includes right to decent environment, right to food and water, right to education, right to medical care and right to shelter. All rights, be it civil political or cultural rights augmented in the Universal Declaration of Human Rights and Conventions or under Constitution of India cannot be implemented without these basic human rights. Nature has given us various treasurable gifts, but air and water are the most precious ones. They are not only valuable for

the mankind but also to the flora and fauna. The Environment protection Act,1986 defines the term 'Environment' under section 2(a), and states "environment" includes water, air and land and the inter- relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property. Man has always been dependent on the environment for every basic amenity since the existence of mankind is traceable. There is a distinctive relationship between the environment and the mankind. Thus this unique relationship bounds the mankind to protect the environment along with the flora and fauna as well. Therefore to protect them special strategies have been adapted since the Stockholm Conference on Human Environment, 1972.

The United Nation Conference on Human Environment discussed on how the humans should take initiatives to safeguard the nature. The conference also laid down certain principles as well as suggests strategies and policies for the government to adapt. Some of the principles of this conference were :-

#### Principle 1

Man has a fundamental right to live with dignity under a quality environment. It is the complete responsibility of the man to protect and improve the environment for present as well as future generations.

#### Principle 2

Appropriate planning and management should be ensured to safeguard the natural ecosystem along with the other natural resources.

#### Principle 4

Man has inherited the nature from its forefathers and now the responsibilities lies on their shoulder to safely pass it on to their coming generation.

#### Principle 7

The state should ensure the protection of marine life and prevent pollution of the sea which may ultimately cause health hazards to humans.

#### Principle 15

Planning must be done keeping in view avoiding adverse effects on the environment and obtaining maximum environmental benefits.

Following the Stockholm Conference, the Rio Conference on Sustainable Developments also talks about the similar agendas and after rigorous debates and discussions by the experts from all over the world, we find a scenario to be improving but at a decreasing rate. In this modern era of developed technologies we are still stuck with debates and discussions and at the same time the environment is degrading.

After this conference the Indian government took several legislative and executive measures by amending the Constitution to protect and preserve the environment. Even the judiciary gave dynamic interpretations to Article 21<sup>7</sup>, Article 48(A)<sup>8</sup> and Article 51(g)<sup>9</sup> of the Indian Constitution. The Honorable Supreme Court observed that Article 21 not only provides for right to life but it also provides right to life with dignity, whereas Andhra Pradesh High Court also observed that Article 21 of the Constitution embraces the protection and reservation of the nature's gift without which a man may not enjoy his life.

### **Indian Perspective**

Sustainable development goals which are focused to be achieved by all the developing countries are still a dream because of the lacunas in the management of natural resources. Natural Resources are being vastly and most injudiciously used by the trends of urbanization. Urbanization is inversely proportional to shortage of natural resources. Due to the increase in the displacement of large number of people towards urban areas and because of the developed facilities, technologies and industries, there is an imprudent use of natural resources particularly water. As a result of excessive usage there is not only scarcity of the same but also has affected the people living in rural areas. Though they are in minority yet they are the ones majorly affected. As a consequence of which there is change in climatic phenomenon resulting to drought in some areas where as flood in some other regions.

Not only Large Scale Industries and MNCs<sup>10</sup> are responsible for the excessive water but also small industries and other commercial activities have played a major role not only in the shortage of water but also contamination of water. For example, River Ganga which was once considered as a holy and sacred river is now one of the most polluted rivers of the world.

---

<sup>7</sup>INDIA.CONST. Article 21 - Protection of life and personal liberty No person shall be deprived of his life or personal liberty except according to procedure established by law.

<sup>8</sup>INDIA.CONST. Article 48(A) - Protection and improvement of environment and safeguarding of forests and wild life The State shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country.

<sup>9</sup>INDIA.CONST. Article 51(g) - to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures.

<sup>10</sup>Multinational Companies.

Approximately 1 billion liters of raw, untreated sewage are dumped in the river on daily basis which has doubled in last 20 years and 100% increase is predicted in the coming 20 years.<sup>11</sup> The amount of toxins and chemicals with other dangerous substances found in the river are almost 3000 times<sup>12</sup> over the suggested limit by WHO<sup>13</sup> as safe. Even after in the 21<sup>st</sup> Century, people still believe River Ganga as a Route To Heaven and A Highway of Flesh. When we have such a large population of people with this mentality then it is not possible even in the part of the government to control pollution of River Ganga. This alarming situation led the government to introduce a society known as National Mission for Clean Ganga.<sup>14</sup> The main objective of this scheme was to ensure effective abatement of pollution and transformation of River Ganga by adopting proper approach regarding inclusive planning and management.<sup>15</sup> And the other goal to achieve was to maintain ecological flows in the River Ganga with the aim of ensuring water quality and environmentally sustainable development.<sup>16</sup>

### **Constitutional Provisions and Government Strategies**

The Constitution of India also provides for certain provisions for solving disputes related to Water Resource Management. Article- 262 of the Constitution of India, 1950 states that<sup>17</sup>:

262. Adjudication of disputes relating to waters of inter State rivers or river valleys

(1) Parliament may by law provide for the adjudication of any dispute or complaint with respect to the use, distribution or control of the waters of, or in, any inter State River or river valley

(2) Notwithstanding anything in this Constitution, Parliament may by law provide that neither the Supreme Court nor any other court shall exercise jurisdiction in respect of any such dispute or complaint as is referred to in clause ( 1 ) Coordination between States.

This article empowers Parliament to enact such laws for solving the issues relating to use, distribution and control of waters of States or river valleys. And no higher authority and Supreme Court can exercise jurisdiction in respect to the same.

---

<sup>11</sup> [www.all-about-india.com/Ganges-River-Pollution.html](http://www.all-about-india.com/Ganges-River-Pollution.html).

<sup>12</sup> *ibid*.

<sup>13</sup> World Health Organisation.

<sup>14</sup> [nmcg.nic.in](http://nmcg.nic.in)

<sup>15</sup> [www.nmcg.nic.in/aims\\_obj.aspx](http://www.nmcg.nic.in/aims_obj.aspx).

<sup>16</sup> *ibid*.

<sup>17</sup> <https://indiankanoon.org/doc/1558821/>

There was a dispute between States of Chhattisgarh and Orissa relating to water dispute over Mahanadi River. So in relation to the constitutional provisions and Water Disputes Act 1956, it was decided to set a tribunal and resolve the issue.

The decade long water dispute between the states of Punjab and Haryana was decided by the Honourable Supreme Court with the Termination of Agreement Act, 2004 and mentioned in its verdict that Punjab must share its water with its neighbour Haryana and stated that it is illegal to bypass the law which has been enacted in the interest of the state.

According to the Ministry of Urban Development, 182 cities require immediate attention in regards to water and waste water management. Because in a city there is demand of 210 litres/day whereas because of leakages and slippages of around 35% it decreases down to 125 litres/day per capita.<sup>18</sup> This shows that infrastructure and regulations have not kept proper pace with population growth and wastewater management. Government has tried to make significant efforts to reduce surface water pollution but they remain jeopardised due to the lack of waste water treatment and also because of recklessness and casual approach of the people. Therefore, reform is needed which reduces non-revenue water, groundwater exploitation, considers water as a source and looks for the recycling of water in a proper manner.<sup>19</sup>

The major step taken by the government was IUWM, i.e., Integrated Urban Water Management which invites existing cities and emerging ones to adjust their current planning and management practices, given their own priorities, in a hydrological, environmental and socio-economic context. The main objectives of this management system are:-

- Participation of key stakeholders having socio economic interest over the water in urban areas.
- Aims for water security through multiplicity and best possible use of all potential sources of water and matching water quality with purpose of use. directing for a better utilisation of natural systems for water and wastewater treatment and allowing for storm water/rainwater catchment systems as a potential source; and lastly managing the water effluents in a hygienic manner.

---

<sup>18</sup><http://www.waterworld.com/articles/wwi/print/volume-30/issue-2/technology-case-studies/urban-water-management-in-india.html>

<sup>19</sup>ib 18

- To strengthen leakage management and maintenance and to firm resilience of urban water systems that are facing drought or floods.
- Productive use of wastewater. For example: using of grey water for irrigation and industrial processes
- Optimum infrastructure design to access advanced technology and skilled manpower.

Policies which are laid down by the government are :--

1. Restoration, repair and renovations of water bodies.

It deals with the three R's namely Restoration, Repair and Renovation of water bodies. It in general provides guidelines on the steps that needs to be undertaken for planning and implementation of the Projects.

2. National lake conservation plan.

It aims at restoring the water quality and ecology of the lakes in different parts of the country. It includes information on the scheme and highlights the points that need to be considered to prevent and protect the lakes from getting disposed with toxins and other hazardous chemicals.

3. Regulation and control of the groundwater.

4. National Action Plan on Climate Change.

The main objective of the scheme is to conserve water through reducing wastage and wastewater management ensuring equitable distribution of water across and within states through integrated water resources development and management and it also looks forward for recycling and secondary usage of the same matter. It also enhances the judicious use of water so that water could be available for the future generations also.

5. National Water Policy,2002

It highlights the importance of water for human existence as well as for all economic and development related activities. It addresses the problem of scarcity of water and the need to conserve this resource through optimal, economical, sustainable and equitable means

6. Policy on Rainwater Harvesting.

7. The Water Act,1974

It provides for the prevention and control of water pollution and the maintenance/refurbishment of the purity of water; and aids in the establishment of a board, which possesses the powers and functions of conducting activities and

involvements in the context of prevention and control of water pollution. Along with this, the government also established Central Board of Pollution Control and State Board of Pollution Control to supervise and implement the act above mentioned.

In the case **Subhash Kumar v. State of Bihar**<sup>20</sup>, the Court observed that right to life guaranteed by Article-21 includes the right of enjoyment of pollution free water and air for full enjoyment of life. The court recognised the right to a wholesome environment as a part of the fundamental right to life and observed that an affected person or a person genuinely interested in the protection of the society would have recourse to Article-32.

In the case **M.C. Mehta v. Kamal Nath**<sup>21</sup>, PIL<sup>22</sup> was filed against the hotel company. The hotel company tried to change the course of river by constructing bandhs over it to build hotel for a new hospitality project which severely affected the people living in that area. In this case the Court applied the Polluter's Pay Principle<sup>23</sup> and said the one who pollutes the environment must pay to reverse the damage caused by his act.

In the case of **Himachal Pradesh v. Umed Ram Sharai**, the Supreme Court held that every person is entitled to life as enjoyed in Article-21 of the Constitution alongwith not with physical existence but also quality of life.

In the cases **P. R. SubhashChandran v. State of Andhra Pradesh and SardarSarovar Case** it could be well seen that the Honourable High court of Andhra Pradesh and Honourable Supreme Court of India have established that a man has a right to access clean drinking water and it's the fundamental duty of a person under Article-51(g)<sup>24</sup> and directive principles of state policy to protect the water from being polluted.

### Recommendations

Undoubtedly water legislation at national level is meant to prevent pollution of water and its various sources. But current legislations don't cover the area of conservation of water as a resource and its usage in an efficient sustainable manner. The short term goals require:-

---

<sup>20</sup>AIR 1991 SC 420

<sup>21</sup> 1997 1 SCC 388

<sup>22</sup>Public Interest Litigation

<sup>23</sup>Polluters Pay Principle states that one who causes damages or one who pollutes the environment shall be liable to pay damages as well.

<sup>24</sup>INDIA.CONST. Article 51 - to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures.

- (i) To increase the efficiency of irrigation with the use of better technology.
- (ii) To focus on the complexities of the water sector and accordingly improve the policies.
- (iii) To create awareness particularly to the people of urban areas about the alarming situation of water scarcity and disastrous impacts.
- (iv) To teach the advance methods of irrigation and agriculture practices to the farmers.
- (v) To stop polluting water because of religious beliefs.

Long term goals which are highly required to be achieved for the survival of the upcoming generations to come includes:-

- (i) To discuss the water relating disputes with neighbouring countries and to come up with efficient solutions.
- (ii) To efficiently and judiciously use water resources.
- (iii) To have proper ideas of waste water management and reuse and recycle of the water resources.
- (iv) To improve strategies and come up with alternative ideas.
- (v) Saving water and using metered connections will help us consume less water.
- (vi) Adapt more schemes like Rally For Rivers.
- (vii) To use less vehicles, air conditioners which further leads to melting of glaciers leading to lack of fresh water.

### Conclusion

We have inherited this nature from our forefathers as a blessing or as a gift but if we do not protect the environment then it will become a curse for the future peers to come. It is our responsibility to safeguard the natural resources for it to be utilised for the upcoming generations. Even if we have to make maximum investments to save our nature then we should do it because unbalancing of the nature will lead to harsh consequences. Because **“We don’t inherit the earth from our ancestors; we borrow it from our children.”**