



Problems of Water pollution and its measures and controls in India

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Abstract:

Available water resources include 97 percent in oceans and 2 percent in polar ice caps while fresh water lakes constitute only 1 percent of the total water resources. India is likely to be water scarce in future. It is therefore important to increase the efficiency of water use and ensure more effective management of water resources. The environment refers to natural things around us which sustain human life, such as the earth's atmosphere or healthy air or drinkable water. Pollution of water can be caused by point sources or non-point sources. Point sources are specific sites near water which directly discharge effluents into them. Major point sources of water pollution are industries, power plants, underground coal mines, offshore oil wells etc. the discharge from non-point sources is not at any particular site, rather these sources are scattered, which individually or collectively pollute water.

Introduction:

Human beings live in both natural and social world. Our technological development has strong impacts on the natural as well as the social components. When we talk of development it cannot be perceived as development only for a privileged few who would have a high standard of living and would derive all the benefits. Development also does not mean an increase in the GNP of a few affluent nations. Development has to be visualized in a holistic manner, where it brings benefits to all, not only for the present generation but also for the future generations. There is an urgent need to inter-link the social aspects with development and environment.

Water is an essential resource for all life on the planet of the water resources on earth only three percent of it is fresh and two thirds of the freshwater is locked up in ice caps and glaciers. Of the remaining one percent, a fifth is in remote inaccessible areas and much seasonal rainfall in monsoonal deluges and floods cannot easily be used. At present only about 0.08 percent of all the worlds fresh water is exploited by mankind in ever increasing demand for sanitation, drinking, manufacturing and agriculture. One of the biggest concerns for our water based resources in the future is the sustainability of the current and even future water resource allocation. As water becomes more scarce the importance of how it is managed grows vastly. Finding a balance between what is needed by human and what is needed in the environment is an important step in the sustainability of water resources. Attempts to create sustainable freshwater

systems have been seen on a national level in countries such as Australia and such commitment to the environment could set a model for the rest of the world.

Water Pollution:-

The control of water pollution is a worldwide movement. Water is called 'Jiwan' in Sanskrit. It is life itself. One cannot use stronger words to indicate the importance of pollution free water. Environment pollution problem has become pressing both in developed and developing countries. It is posing a challenge to scientists, engineers, technologists, economists, ecologists, planners and academicians. Industry, transport and domestic sectors are the major contributors to pollution. Although pollution of various kinds eg. water, land, noise, air etc.

Water is polluted if it is not of sufficiently high quality to be suitable for the highest uses and for human consumption. Pollution is the introduction into the water of substances of such character and quantity that its natural quality is so altered as to impair its usefulness or render it offensive to the senses of sight, taste and smell. Water pollution is caused by nature as well as living bodies. The most serious destruction of water quality comes from dredging spoils, municipal wastes and industrial wastes. In India the major source of pollution of water is the discharge of community wastes. We are draining much more organic effluents to the water bodies than their assimilative capacity. Industry is another major offender for creating water pollution. Untreated sewage and industrial effluents with toxic elements

are polluting the water resources in our country. Thus most of the community and industrial waste water finds its way into water courses without treatment rendering the water downstream unfit for use. Many diseases, some of them on epidemic scale are directly and indirectly caused by the polluted water. Water pollution can be defined as alteration in physical, chemical or biological characteristics of water making it unsuitable for designated use in its natural state.

Sources of water pollution:

Water is an essential commodity for survival. We need water for drinking, cooking, bathing, washing, irrigation and for industrial operations. Most of water for such uses comes from rivers, lakes or groundwater sources. Water has the property to dissolve many substances in it, therefore, it can easily get polluted. Pollution of water can be caused by point sources or non-point sources. Point sources are specific sites near water which directly discharge effluents into them. Major point sources of water pollution are industries, power plants, underground coal mines, offshore oil wells etc. the discharge from non-point sources is not at any particular site, rather these sources are scattered, which individually or collectively pollute water.

1. **Ground Water Pollution:** Ground water forms about 6.2 percent of the total water available on planet earth and is about 30 times more than surface water. Ground water seems to be less prone to pollution as the soil mantle through which water passes helps to retain various contaminants due to its action exchange capacity. However, there are a number of potential sources of ground water pollution. Septic tanks, industry, deep well, injection, mining etc. are mainly responsible for ground water pollution, which is irreversible. Ground water pollution with arsenic, fluoride and nitrate are passing serious health hazards.

2. **Surface Water Pollution:** The major sources of surface water pollution are:

- i. **Sewage:** Pouring the drains and sewers in fresh water bodies causes water pollution. The problem is severe in cities.
- ii. **Industrial Effluents:** Industrial wastes containing toxic chemicals, acids, alkalis, metallic salts, phenols, cyanides, ammonia, radioactive substances etc. are sources of water pollution.
- iii. **Synthetic Detergents:** Synthetic detergents used in washing and cleaning produce foam and pollute water.
- iv. **Agro chemicals:** Agro chemicals like fertilizers and pesticides washed by rain water and surface run-off pollute water.
- v. **Oil:** Oil spillage into sea water during drilling and shipment pollute it.
- vi. **Waste Heat:** Waste heat from industrial discharge increases the temperature of water

bodies and affects distribution and survival of sensitive species.

Water (Prevention and Control of Pollution) Act, 1974 :-

The United Nations has repeatedly expressed deep anxiety over the ceaseless pollution all over the world and the innumerable problems it creates. Under the auspices of the United Nations, a conference on the Human Environment was held at Stockholm in June 1972 which laid down the principles and action plan for controlling and regulating human environment and institutional and financial arrangements for that purpose. It provides for maintaining and restoring the wholesomeness of water by preventing and controlling its pollution. Pollution is defined as such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge as is likely to cause a nuisance or render the water harmful or injurious to public health and safety or harmful for any other use or to aquatic plants and other organisms or animal life. The act aims to prevent and control water pollution and to maintain wholesomeness of water by establishing central and state pollution control board to monitor and enforce the regulations.

Water constitutes an important and integral part of our environment. Water is a colourless, odourless and transparent liquid substance. These are the qualities of water but are lost when water becomes polluted and contaminated. As a result, it becomes unfit for use. In other words, although water is an important and essential element of human life, it is useful only when not contaminated and injurious to public and animal health and aquatic life. The Central Pollution Control Board and State Pollution Control Boards composition, terms and conditions of service of members are defined in Sections 3-12 of water (prevention and control of pollution) act, 1974. The Boards advise the government on any matter concerning the prevention and control of water pollution. It coordinates the activities and provides technical assistance and guidance. This policy sets the standards and penalties for non-compliance for polluting bodies. The Government has power to restrict any unit, and to take samples of effluents and get them analysed in Central or State laboratories. Whoever fails to comply with any provision of this Act is punishable with imprisonment fine or with both.

Legal Regulation of Water Pollution:

1. Water (Prevention and control of Pollution) Act 1974 is an appropriate step for the management of water pollution; the maintenance or restoration of wholesomeness of water; the establishment with a view to carrying out the purposes aforementioned of Boards for the prevention and control of water pollution

conferring on and assigning to such Boards powers and functions relating thereto and for matters connected therewith.

2. The Act deals with a particular type of pollution and presents an integrated approach to tackle the problem. It is an important legislative measure which has been enacted to implement the decision taken in the United Nation's Conference on Human Environment held in June 1972 at Stockholm.
3. Water (Prevention and control of Pollution) Act 1974 has 64 Sections and has been divided into eight chapters relating to i) Preliminary ii) Central and State Boards for the Prevention and Control of Water Pollution, iii) Joint Boards, iv) Powers and Functions of Boards, V) Prevention and Control of Water Pollution, vi) Funds, Accounts and Audit, vii) Penalties and Procedures and viii) Miscellaneous.
4. The Act provides for the creation of the Central Pollution Control Board and State Pollution Control Boards. It authorises the establishment of the Joint Boards. The main function of the Central Board under Section 16 (1) of the Act, is to promote cleanliness of streams and wells in the States. Section 16 (2) provides certain functions in the nature of advice, planning, co-ordination, publications, education and programmes for preventing, controlling and abating water pollution.
5. The State Boards (under Section 17) of the Act are expected not only to plan comprehensive programmes for the prevention and control of water pollution in the State but also to inspect sewage or trade effluents, works and plants for their treatment, to lay down standards for such effluents, their treatment and for the quality of receiving waters and to make orders for waste disposal and the like.
6. Under the Water (Prevention and control of Pollution) Act 1974, power to give 'directions' is conferred on:-
The Central Government (which can give direction to the Central Boards)
The Central Boards (which can give direction to State Boards).
The State Government (which can give direction of State Boards).
In case of conflict between directions given by the Central Government, that matter shall be referred to the Central Government for decision. If the Central Boards directions are not complied with by the State Board, the Central Board can order the former to perform the functions of the latter for a specified period.
7. The Act provides that the State Government in consultation with the State Board is empowered to declare any area or areas within the

jurisdiction of the concerned State as "Water Pollution Prevention and Control Area".

8. Apart from the General powers of the State Boards (Section 17) a State Board has statutory powers to obtain information (section 20) to take samples of effluents and have them analysed (section 21-22) and enter and inspect premises and vessels (section 23) Violation is punishable under Section 40.
9. The Act lays down the circumstances in which such consent may be granted. Orders refusing consent are under section 28, appealable to the prescribed appellate authority. They can also be revised by the State Government under Section 29 of the Act.
10. The Act provides for the appeal by any person aggrieved by an order made by the State Board under Section 25 (Restriction of new outlet and new discharges) Section 26 (Provision regarding existing discharge of sewage or trade effluent) Section 27 (Refusal or withdrawal of consent by the State Board) may within thirty days from the date on which the order is communicated to him, refer an appeal to such an authority or appellate authority as the State Government may think fit to constitute.
11. The Act provides that the State Government may at any time either of its own motion or on an application made to it in this behalf, call for the records of any case where an order has been made by the State Board under Section 25 (Restriction on new outlet and new discharges) Section 26 (Provision regarding sizing discharge of sewage of trade effluent) or Section 27 (Refusal or withdrawal of consent by the State Board) for the purpose of satisfying itself as to the legality or propriety of any such order and may pass such order in relation thereto as it may think fit after giving reasonable opportunity of being heard in the matter to the appealing person.
12. The Act imposes on the person concerned, an obligation to inform the State Board where owing to any accident etc, there is any discharge of person poisonous, noxious or polluting matter. Failure to do so is punishable under Section 45a, which is the residuary penal provision.
13. Under the Water (Prevention and control of Pollution) Act 1974 (Subject to direction of the Central Government) a Board can in the exercise of its powers and performance of its function under the Act, issue directions. Breach of such directions is punishable under Section 41.
14. The Act provides for enhanced penalty if any person who has been convicted of any offence under section 24 (Prohibition on use of stream or well for disposal of pollution matter etc) or

Section 25 (Restrictions on new outlets and new discharges) or Section 26 (Provision regarding existing discharge of sewage or trade effluent) is again found guilty of an offence involving a contravention of the same provision he shall on the second and on every subsequent conviction be punishable with imprisonment for a term which shall not be less than one half years but which may extend to six year and with fine. No cognizance shall be taken of any conviction made more than two years before the commission of the offence which is being punished.

15. Under the Act members, officers and servants of Board shall be deemed to be public servants within the meaning of Section 21 of the Indian Penal Code while acting or purporting to act in pursuance of any of the provisions of this Act (45 of 1860) and the rules made there under.

Conclusion:

The act has made detailed provisions regarding the power of the boards to obtain information, take trade samples, restrict new outlets, restrict expansion, enter and inspect the units and sanction or refuse consent to the industry after effluent analysis. While development is necessary, it is all the more important to prevent pollution, which can jeopardize the lines of the people. Installation and proper functioning of effluent treatment plants in all polluting industries is a must for checking pollution of water and land. Despite certain weaknesses in the act, the water act has ample provisions for preventing and controlling water pollution through legal measures. Therefore, the act became necessary and expedient to ensure that the domestic and industrial effluents are not allowed to be discharged into the water courses without adequate treatment. As such untreated water not only renders water unfit for human consumption, fish life and for irrigation purposes, but also threatens the economy of the country. Thus, this act concentrates on effective control and prevention water pollution in the country.

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