Volume : 4 | Issue : 8 | Aug 2015 • ISSN No 2277 - 8179

Research Paper

Water Pollution in India: Causes and Remedies

Zoology

KEYWORDS : Water, Polution, Causes, environmental, awareness.

MEENAKSHI K. CHANGTE

Asst. Professor, Dept. of Zoology, Government Degree College Sedam Road, Kalaburagi -585105, Karnataka

ABSTRACT

Water pollution is a major environmental issue in India. The largest source of water pollution in India is untreated sewage. Other sources of pollution include agricultural runoff and unregulated small scale industry. Most rivers, lakes and surface water in India are polluted. The pressure of increasing population, growth of industries, urbanization, energy intensive life style, loss of forest cover, lack of environmental awareness, lack of implementation of environmental rules and regulations and environment improvement plans, untreated effluent discharge from industries and municipalities, use of non-biodegradable pesticides/fungicides/ herbicides/insecticides, use of chemical fertilizers instead of organic manures, etc are causing water pollution. The pollutants from industrial discharge and sewage besides finding their way to surface water reservoirs and rivers are also percolating into ground to pollute ground water sources. The polluted water may have undesirable colour, odour, taste, turbidity, organic matter contents, harmful chemical contents, toxic and heavy metals, pesticides, oily matters, industrial waste products, radioactivity, high Total Dissolved Solids (TDS), acids, alkalies, domestic sewage content, virus, bacteria, protozoa, rotifers, worms, etc. The organic content may be biodegradable or non-biodegradable. Pollution of surface waters (rivers, lakes, ponds), ground waters, sea water is all harmful for human and animal health. Pollution of the drinking water and that of food chain is by far the most worry-some aspect. An attempt has been made in this paper what are main causes of the water prolusion and how to salve those problems.

Introduction:

Polluted water is the main cause of a number of diseases. Polluted water not only affects the life of present generation but it also affects the life of upcoming generations because its effect remains for long. Bhopal gas tragedy case can be named as an example. Bhopal Gas tragedy is the world's worst industrial disaster. Study by official scientific agencies shows that ground water contamination has spread 40 meters deep and up to 3.5 km from the abandoned factory. Nearly 40000 persons have consumed this contaminated water over the past 14 to 20 years and cancers, birth defects and diseases related to skin, lungs, brain, kidneys and liver are several times more prevalent in that community than anywhere else in the country. The use of water is multifold. The survival of human being is not possible without the water. Human being cannot live without the water. For a healthy life pure and pollution free water is indispensable. If in any area the water is polluted then people or the other living creatures are forced to drink that polluted water because they have no other option nor can they live without it.

In recent years, water pollution has become a serious problem across the country, mostly due to the presence of untreated effluents, chemicals and pesticides in it. There are many causes of water pollution. These causes can be removed or at least controlled with the awareness amongst the people and by the strong implementation of the legislative measures. It is the right of a person to get pollution free water. It is also the duty of the state to provide clean water to its people. Right to clean water is not explicitly mentioned in the Chapter- III of Fundament Rights in the constitution of India. But because of the activism of judiciary in India this right to clean and sufficient water is embodied in Article 21 of the Constitution of India. If the water is not clean or is polluted then Constitution of India also provides remedy which can be claimed under the law of torts and under Article 226of the Constitution in the form of filing writ in the High Court of the respective State and under Article 32 writ can be filed in the Supreme Court for preventing the causes of water pollution and providing compensation to the victims. Shortage of clean water in the country, the uncontrollable causes of water pollution, lack of awareness about the right to clean water and lack of strict implementation of the preventive measures are the main reasons for choosing this topic for research purpose

Cusses for water pollution

Urbanization:

Rapid urbanization in India during the recent decades has given rise to a number of environmental problems such as water supply, wastewater generation and its collection, treatment and disposal Municipal water treatment facilities in India, at present, do not remove traces of heavy metals. Given the fact that heavily polluted rivers are the major sources of municipal water for most towns and cities along their courses it is believed that every consumer has been, over the years, exposed to unknown quantities of pollutants in water they have consumed. To add to this, Indian towns and cities have grown in an unplanned manner due to rapid population growth. Facilities for running water have been provided in many towns and even in some villages during the last couples of decades. This has resulted in the use of flush-latrines and much larger use of water in home for bathing, washing of clothes, utensils etc., generating large quantities of wastewater.

Industries:

Most Indian rivers and other sources of fresh water are polluted by industrial wastes or effluents. All these industrial wastes are toxic to life forms that consume this water. The total wastewater generated from all major industrial sources is 83,048 MId which includes 66,700 Mid of cooling water generated from thermal power plants. Out of remaining 16,348 mid of wastewater, thermal power plants generate another 7,275 Mid as boiler blow down water and overflow from ash ponds. Engineering industries comprise the second largest generator of wastewater in terms of volume. Under this category the major polluting industries are electroplating units. The other significant contributors of wastewater are paper mills, steel plants, textile and sugar industries. The major contributors of pollution in terms of organic load are distilleries followed by paper mills. Small scale and cottage industries cause no less water pollution than the large scale industries. There are about 3 million small scale and cottage industrial units in India. These units neither have, nor can they afford appropriate sanitation and/or pollutant disposal systems, and yet have not hasistated in adopting highly polluting production technologies such as chrome, tanning of leather, use of azo-dyes in fabrics, use of cadmium in ornaments and silver-ware, electroplating with cyanide baths, production of dye-intermediates and other refractory and toxic chemicals, etc.

Agricultural runoff and improper agricultural practices:

Traces of fertilizers and pesticides are wasted into the nearest water-bodies at the onset of the monsoons or whenever there are heavy showers. As the point of entry of such agricultural inputs is diffused throughout the river basin, they are termed

Volume : 4 | Issue : 8 | Aug 2015 • ISSN No 2277 - 8179

as non-point sources of pollution. Although irrigation has increased considerably in the country, little precious has been done to tackle the problem of the high salinity return water.According to A.K. Dikshit, senior scientist with the Indian Agricultural Research Institute (IARI), New Delhi, farmers often indulge in excess usage of fertilizers and pesticides. When these are used more than the recommended doses, they pollute water, land and air. Flood-plain cultivation is another significant contributor to water pollution. Fertilizers and pesticides used in these tracts of land are bound to be washed into rivers during the monsoons.

Withdrawal of Water:

Indian rivers, particularly the Himalayan Rivers, have plenty of water in their upper course. They are, however, starved of water when they enter the plain area. Irrigation canals whisk away clean water soon after the rivers reach the plains, denying water to flow in the river downstream. What flows into the river is water trickling in from small insignificant streams and drains carrying untreated sewage and effluents. The river-turned drain flow downstream with little or no fresh water unless a large river augments the depleted flows. As the quantity of fresh water in the river is negligibly small, pollution—either from urban and rural areas, industries or even natural forms of pollution—cannot get diluted and its ill effects are not reduced. The Yamuna has almost no water at Tajewala in Haryana where the Eastern Yamuna Canal and the Western Yamuna Canal abstract all the water for irrigation.

Religious and Social Practices:

Religious faith and social practices also add to pollution of our river waters. Carcasses of cattle and other animals are disposed in the rivers. Dead bodies are cremated on the river banks. Partially burnt bodies are also flung into the river. All this is done as a matter of religious faith and in keeping with ancient rituals. These practices pollute the river water and adversely affect the water quality.

Suggestions to avid water pollution

The best solution for water pollution is prevention. While pollution that has already occurred is a current threat to all life on Earth, attempts to clean it up may cause even more harm. Chemicals used to treat or clean up oil spills may further contaminate water supplies. Adjustments in temperature to counteract heat or cooling pollution may not achieve proper balance, leading to more loss of aquatic life. Preventing water pollution does more for the environment by halting the level of pollutants where they are. This gives the environment needed time to begin to correct itself, and time for scientists to determine the best way to combat existing problems.

Water Pollution Preventions

There are several steps that can be taken to help prevent water pollution from getting worse.

Conserve Soil

Erosion is one of the biggest causes of water pollution today. When you take steps to conserve soil, you are also conserving water and water life. Planting vegetative covers, strict erosion management and implementing beneficial farming methods are just a few of the many possible approaches to soil conservation.

Dispose of Toxic Chemicals Properly

It's always a good idea to use lower VOC (Volatile Organic Compounds) products in your home whenever possible. If you do use toxic chemicals, such as paints, stains or cleaning supplies, dispose of them properly. Paints can be recycled and oils can be reused after treatment. Proper disposal keeps these substances out of storm drains, water ways and septic tanks.

Keep Machinery in Good Working Order

Oil is one of the largest polluters of water in the world. It's estimated that just the transportation of oil is responsible for .0001 percent of oil contamination in water. Take steps to ensure you aren't adding to this problem by repairing oil leaks in cars and machinery as soon as they are spotted. Clean up the residue and dispose of the used oils properly.

Clean Up Beaches and Waterways

Just picking up waste and litter wherever it is spotted can go a long way to keeping debris and pollutants out of the water. Do your part by taking your own trash, other wastes and any you see to a nearby disposal facility.

Avoid Plastics When Possible

Plastic bags in the ocean is a well documented water pollutant. Keep this problem from getting worse by changing to reusable grocery bags whenever possible.

Get Active and Get Involved

Spreading an awareness of problems is a big first step toward combating them.

While water pollution solutions may seem like too little, too late when viewed in the light of major oil spills and floating plastic bag islands they are necessary to prevent these problems from growing worse. Simply slowing down the rate of pollution can give the environment and scientists time to find long-term solutions to the very real problems of water pollution.

Conclusion:

To avoid ill effects of water pollution on the human and animal health and agriculture, standards/rules/guidelines have been devised for discharge of effluents from industries and municipalities, quality of drinking water, irrigation water, criteria for aquatic life in fresh water by various authorities including central pollution control board (India), World Health Organization (WHO), World Bank, Indian Standard Institution, Indian Council of Medical Research, etc. The implementation of these rules, standards and guidelines, etc is however, wanting. Improperly treated or even untreated industrial and municipal effluents have been continuing to pollute not only surface water sources but also the ground waters.

REFERENCE

1. Trivedi, R.C. (CPCB), "Key Note Address—Water Quality Standards", Int. Conf. on Water Quality Management, Feb. 2003, New Delhi. | 2. Kant, R., "Remedial Strategy—Drinking Water Pollution", Chemical Engg. World January 2005. | 3. "Enviro News", International Society of Env. Botanists (ISEB) NBRI, 3/1998, 1/2000, 4/2001, 7/1998, Lucknow. | 4. Lucky, T.D. and Venugopal, B ., "Metal Toxicity in Mammals" , Plenum Press, New York | 5. Kudesia, V.P., "Water Pollution—Toxicity of Metals" Pragati Prakashan, Meerut | (India). | 6. Dutta, Venkatesh (TERI), "Bioremedy for Oil Pollution", Science Reporter, April | 2002. | 7. Trivedi, R.C., "Water Quality Management in India" , Int. Conf. on Water Quality Management, Feb. 2008, Nagpur |