



EFFECTS OF CONTAMINATED WATER ON CHILDREN IN RURAL INDIA - ISSUES AND SUGGESTIONS

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ABSTRACT:

It is estimated that more than half of the population residing in the continents like Asia and Africa are not having an access to the clean water to drink. Many diseases are spreading like wildfire due to unhealthy drinking water. The most frequent victims of this unsafe drinking water are the children because they are unaware about the diseases that may spread due to drinking unhealthy water that is easily available. It is the responsibility of the caretakers of the children, the governmental agencies, educated youth, elders and so on to provide the safe drinking water to the children. The main reason of about eighty (80 %) per cent of the health related problems are caused by the water with various contaminants supplied for the drinking purposes to the people. The only solution to this issue is that the governmental agencies, non-governmental organisations, corporate sector and so on should provide the safe and pure drinking water to the population under their respective jurisdiction and should generate awareness about drinking water after heating it well and then cooled for usage.

KEYWORDS : Potable water, Recycling water, Water pollution, Diseases, Global Warming, Water Contamination, United Nations.

INTRODUCTION:

The scarcity of the naturally available fresh water on this planet to meet the increasing demands of the rapidly growing population is considered as a global risk. Many people are quarrelling with each other for the access to the safe drinking water especially in the developing countries. In India the government at the central and the state level has failed to a great extent to tap the river water and rain water every season and leaves the people with false promises of fulfilling the demands of the drinking water if it comes to the power in the next elections with bumper majority. The water available for drinking water purposes is getting contaminated with many chemicals let out by industries and farming activities as they use variety of chemicals, leakages of pipes, drainage water mixing, floods and so on. The water purifying equipments are installed by the governmental agencies for low cost per 20 litres but these units are not adequately cover all the population throughout the nation from capital cities to the grassroot level.

This issue of drinking water has made the people drinking the water supplied by the taps for consumption suffer with many health problems and the children are the major victims. It is the need of the hour to consider this issue seriously and take all the necessary steps to overcome this issue holistically.

OBJECTIVES

The objectives of the study are stated below:

1. To study the scenario of drinking water contamination provided by the government.
2. To focus on the effects of contaminated drinking water in rural India.

3. To identify the issues in supplying safe drinking water to the public.
4. To suggest measures in overcoming this issue of potable drinking water in rural India.

Purified Drinking Water Accessibility in Rural India

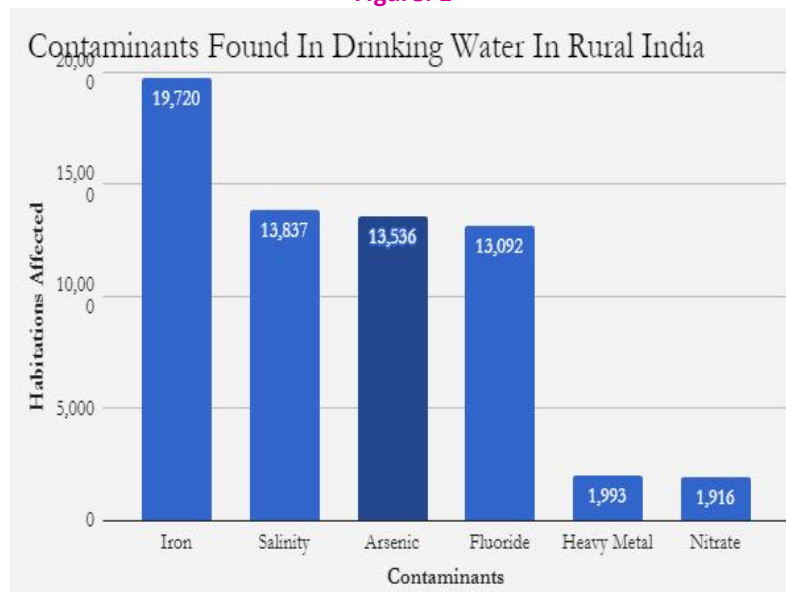
Safe drinking water is essential for a person in their daily lives. The population living in the rural areas usually depend on the tap water, borewell water, well water etc. for their drinking and daily use activities. They are storing the water in the mud pots, plastic drums, steel drums, small tanks and so on. The storing of the water in the mud pots later on get contaminated due to the algal formation on the inner part of the mud pots and gradually the drinking water stored in it gets contaminated mainly due to traditional practices of storing water and lack of appropriate awareness.

Majority of the rural population is poor and they are unable to afford the purified drinking water sold by the private businessmen. The state government has started many purified drinking water units but it is charged according to the liters and it is not for free and as most of the rural population is poor they are unable to afford to meet the purified drinking water needs for the entire family for drinking and cooking purposes and are dependent on the tap water or other source to fulfil their family needs. These purified drinking water units started by the state governments are established in most of the urban areas but are not found in various wards of the rural areas and remote areas in rural India.

Harmful Contaminants in Drinking Water

According to a report of the WaterAid [A Global Advocacy Group on Water and Sanitation] has stated that around 63.4 Million rural population do not have an access to the safe and clean drinking water. In the data provided to the Rajya Sabha [Upper House of the Parliament] by the Ministry of Drinking Water and Sanitation on 6th February, 2017 (Published in Hindustan Times e-paper dated: 21st March, 2017)¹. It is estimated that only 26.9 Million rural population have the piped water facility and it is not purified drinking water as done in the water purified equipments(Published in Hindustan Times e-paper dated: 21st March, 2017)².

Figure: 1



Source: Hindustan Times e-paper Dated: 21st March, 2017³.

In figure 1, it is stated that the harmful contaminants that are found in the drinking water available in the rural areas are viz., Iron was found in 19,720 villages, Salinity was found in 13,837 villages, Arsenic was

found in 13,536 villages, Fluoride was found in 13,092 villages, Heavy Metal was found in 1,993 villages and Nitrate was found in 1,916 villages respectively.

The Central Government has proposed a goal to provide ninety (90 %) per cent of the rural households with the piped water and it has also proposed to provide households taps to eighty percent (80 %) of the rural population (Published in Hindustan Times e-paper dated: 21st March, 2017)⁴.

In majority of the rural villages in India the water is supplied through the pipes crosses the pipelines of drainage, sewage, industrial wastes and so on. It is found that at one or the other place these pipelines are cracked either by the labourers who often dig to lay cables or by the people who wish to have illegal water connections to their homes of farms and here the drinking water pipes are contaminated with various harmful minerals, chemicals etc. The storage tanks are not adequately maintained and are often found to be filled with harmful gases, algae, insects, dead birds etc., that pose a serious threat to the consumers without filtering the water and heating it before drinking and cooking purposes.

NATIONAL RURAL DRINKING WATER PROGRAMME

The National Rural Drinking Water Programme is a Central Government sponsored programme with a provision of 50::50 fund sharing between the Centre and the States throughout the country. This programme was started in the year 2009. The main objectives of this programme is to provide the clean, safe drinking water for cooking, drinking and for other domestic needs through pipe system, hand pumps and so on to the households or nearby to the households, it aims at providing the water source within the range of hundred meters within the hilly areas and 1.6 kilometres in the plains, hand pump for every two hundred and fifty persons, thirty litres per capita per day extra in the Desert Development Programme Areas and forty litres per capita per day of drinking water to the rural population. In this system the drinking water will be supplied with minimum quality standard. It's focus is on to provide the piped drinking water to the Border Out Posts, habitations that are affected by low water quality, Integrated Action Plan Districts in India and the Open Defecation Free villages in rural India. In most of the States the rural drinking water supply programme functions under the Panchayat Raj System (Source: Ministry of Drinking Water and Sanitation, Government of India)⁵.

GLOBAL WARMING AND SCARCE DRINKING WATER RESOURCES

The raise in the global temperatures has a direct effect on the climate change as the water resources are reduced mainly due to evaporation of the river water and the ground water. It is causing the polar ice to melt and inturn the sea water level is raising and it is gradually increasing its flow into the fresh water resources in the coastal areas. The rising pollution due to global warming is posing a serious threat to the fresh water resources in India as many industries and companies are draining out their waste contaminated used water into the river system of our country like in the Ganga river, Brahmaputra river, Tungabhadra River, Belandur lake and so on.

RECYCLING PROCESS OF WASTE WATER IN INDIA

It is estimated that approximately thirty percent (30 %) of the waste water is being recycled in India. The sewage system that is existing in India is not supportive to the programme of recycling the waste water. The urban sewage system usually lead to the river system or lakes with no treatment units to clean the water and remove the solid particles. There is no compulsion on every industry to recycle the waste water from it and this has provided a provision to the small and medium industries to discharge their waste untreated water to the drains or into the rivers, lakes or ponds.

The Swachh Bharat Abhiyan has played a key role in motivating and encouraging the private corporations in the waste water recycling sector and sanitation as well. This Abhiyan has stressed on the development of the indigenous technology and has been successful in linking the experts from the BARC (

BABA ATOMIC RESEARCH CENTRE) and Gujarat Technological University mainly to develop the low cost technologies to treat the waste water in India.⁶

EFFECTS OF CONTAMINATED DRINKING WATER ON THE CHILDREN IN RURAL INDIA

The major effects of drinking contaminated water by the children in rural India either directly or indirectly are as follows: Dysentery, Skeletal Damage, Taeniasis, Typhoid, Amoebiasis, Salmonella and E.coli Infection, Cholera, Filariasis, Dracunculiasis, Diarrhoea, Giardiasis, Schistosomiasis, Gastroenteritis, Cryptosporidium, Helminthic, Hepatitis, Polyomavirus Infection, Mathemoglobinemia or Blue Baby Syndrome, Nausea, Vomiting, Cramps, Polio, Headaches, lung disease, Vibrio Illness, Convulsions, skin abnormalities such as pigmentation change and Keratosis, Legionellosis, major neurological damage, Botulism, Leptospirosis, coma, organ failure etc.

Issues of Drinking Water Contamination, Scarcity of safe drinking water resources and Access to the Potable Drinking Water

1. The ground water resources are drying out due to global warming.
2. The sewage water is getting blocked frequently due to negligence of the public and the Panchayat employees to clean it regularly.
3. The sewage drains often overflow due to heavy rains during the rainy season leading to drinking water contamination because of several damaged pipes supplying drinking water to the rural people.
4. The rise in the level of sea due to the global warming and melting of ice the salty water of the sea will intrude the ground water resources mainly at the lower areas near coastal region.
5. Flooding in several areas will lead to the contamination of drinking water resources and the ground water.
6. Water theft by the farmers, industries, businessmen etc., also paves the way for the contamination of the drinking water as they do not properly seal the pipes after connecting their pipes to the main pipes supplying drinking water illegally.
7. Increasing pollution cause acid rains thereby contaminating the fresh water resources and drinking water supply system.
8. Industries near rivers often drain their chemical wastes into the river system and causing the drinking water pollution.
9. The drains supplying the human waste often mix with the river water and thereby contaminating the drinking water supply system.
10. Negligence by the government officials to check the damages to the pipes supplying the drinking water often paves for the contamination of the drinking water supply system.
11. Excreta of the human beings, animals etc., is contaminating the ground water resources.
12. Religious beliefs of the people is a major source of polluting the drinking water resources in India.
13. Lack of water saving skills and infrastructure to the population in India is leading to the wastage of the drinking water and its contamination to a great extent.
14. Wastage of the drinking water supplied to the urban users is not limited per household and they spend the water like any other thing in their lives.
15. The infrastructure for recycling waste water not adequate in India.
16. Population Explosion.
17. pH (Measuring the Hydrogen ion concentration in the water) test of the water quality are not examined frequently in rural areas.

Suggestions to overcome the contaminated water supplied for the drinking and cooking purposes in Rural India

- Policies to overcome the issue of global warming should be strictly implemented by the concerned officials and awareness should be spread to contain it by all means.
- The solids in the sewage water should be separated by new technology throughout the country.
- Extensive drive to lay the pipelines with filters to trap the excess rain water should be built to overcome the flooding of the drains, canals and rivers.
- Purified drinking water units should be established in the rural areas covering all the wards and in the clusters of the Scheduled Caste and Scheduled Tribes population and it should be provided free of cost to the people living below poverty line.
- Water theft should be checked and to overcome it drones and sensors should be used.
- Desalination of the sea water.
- Water saving during the rainy season.
- Recycling the used water.
- To encourage for the skills and technology for resolving the issue of fresh water scarcity in the rural India.
- Information about the water scarcity based on the reports of the Early warning satellite system should be spread throughout the country like a wildfire so as to limit the usage of the drinking water supplied through the pipes.
- Drastic drinking water conservation schemes should be introduced with huge grants from grassroots to the metro level.
- Every industry should be should be strictly monitored through adequate technology for spilling the sewage from the industries into the rivers.
- Wastage of the drinking water supplied to the urban users should be reduced through metering for the usage of the drinking water.
- State Governments should take stringent measures to overcome the water scarcity and waste water recycling from the grassroot level and provide the technology to each and every village a recycling unit of drinking water from the waste water, rain water etc.
- The ground water resources should be inspected frequently and all measures should be taken in order to protect its contamination by natural and human made disasters.
- Awareness about the water saving skills and adequate infrastructure should be provided to them to have the access for a safe drinking water in their households.
- Awareness about over population and its effects should be provided by the rural and urban masses.
- Drinking water contamination can be reduced through adopting scientific sanitation techniques, disposal of sewage in a proper way,
- Appropriate distance should be maintained between the drinking water supplying pipes and the drainage disposal pipes.
- pH (Measuring the Hydrogen ion concentration in the water) test of the water quality should be examined frequently in rural areas.
- Usage of ceramic filters should be encouraged.
- Open defecation should be strictly monitored and mobile lavatories should be increased in urban and rural areas by the government.
- The government officials should be suspended if they are unable to implement the rules framed by the legislators to check the damage of the pipes supplying drinking water.
- Religious beliefs of the people should not pollute the drinking water resources in our country.
- Drainages in the rural and urban areas should be should be disposed through pipes to the treatment yards of the government.

- Government should make a scheme to provide a water purifier filter to every BPL (Below Poverty Line) household throughout the country.
- Non-governmental organisations should take a lead in providing clean and safe water in the rural areas along with the government and all other stakeholders.

CONCLUSION

Water is one of the basic right of the people and the government should provide clean and safe drinking water to the rural population through water purifier units throughout the country. The human body contains about sixty percent water and everyday the water we consume is crucial in the functioning of the entire body and the water should be replaced continuously because we lose water due to body functioning. But, the water we use to drink should be clean, safe and so on because if we consume the contaminated water we gradually face several health issues from minor to major ones and it may also lead to the death especially the children are more vulnerable because they don't distinguish between the safe and unsafe water for drinking. The tap water provided by the government has numerous contaminants and it is quite often advised to clean the water and heat it before consumption. The adults or care takers should be very careful in providing the clean and safe water to drink for the children. The government should take this issue seriously and provide the water purifying units in each and every wards of the rural and remote areas free of cost to safeguard their health. Every individual should take this issue seriously and should force the political leaders and the government in power to take adequate and immediate steps to resolve the issue of safe and clean drinking water supply through water purifier units all over the country free of cost.

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