

Health Related Problems of Water Pollution in Jaffna

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The Jaffna District depends to a great extent on underground water resources for domestic and agricultural purposes.

This underground water is being continuously polluted as a result of human activities. The pollution is in the form of bacterial and chemical pollution.

Bacterial pollution is mainly caused by defecation on land, and indiscriminate disposal of garbage and infective hospital waste, which percolates to the underground water resources. Even the latrines, which are in existence in Jaffna, are a major source of pollution of the underground water because of the type of pit constructed locally and the nature of the soil. But the more serious pollution comes from the hospitals in Jaffna. Patients with severe gastrointestinal infections (mostly with the resistant organisms) are admitted to hospitals for treatment. Their faeces are dumped into the environment without adequate treatment. None of the hospitals in Jaffna (except the Teaching hospital Jaffna) have proper sewage treatment facilities. Even at the sewage plant dealing with the sewage from the Jaffna Hospital, there is lack of proper monitoring of the effluent, which is led into the Jaffna lagoon. Fishing takes place in the lagoon where effluent is supposed to be discharged.

In most hospitals, Infective waste is transported with garbage and indiscriminately dumped, resulting in environmental pollution.

Water samples from the wells in Jaffna have shown faecal pollution (40 – 1800 B coli Type 1). One of the wells which supplies water to the Jaffna hospital is about 30 feet from the sewage sump built several decades ago. Several epidemics of typhoid have occurred in Jaffna among the hospital staff and medical students.

Unrestricted use of insecticides, pesticides and chemical fertilizers has led to pollution of the underground water. Studies (1) have shown that the nitrate content of water as far back as the early 1980s has been three times the

maximum permissible limit of 50 mg/litre. According to the recent study by GTZ (2), the nitrate content has come down but still remains above the maximum permissible limit.

The indiscriminate dumping of “waste oil” from vehicles is also known to pollute the water.

High nitrate content of the water is related to occurrence of cancer. According to a study (3) carried out in 1973 – 1977, the Northern Province had the highest incidence of cancer in Sri Lanka.

The incidence of oesophageal cancer in Northern Province was double that of the National figure. This could be partly attributed to the high nitrate content of the water and consumption of vegetables with insecticides on it

The possible control measures in the environmental management in Northeast are

1. Establishment of suitable sewage disposal system in all hospitals
2. Development of sewage disposal schemes for the Jaffna Municipality and all urban areas to be implemented in stages.
3. Regular monitoring of water supplies to hospitals and other public water supply schemes should be carried out by the Ministry of Health
4. Restricting transport of excess fertilizers into the peninsula
5. Establishing de-nitrification plant for the water supply to the Jaffna town
6. Rainwater harvesting should be introduced.
7. Establishment of a Public Health laboratory in Jaffna to carry out regular water analysis
8. Establishment of a solid waste disposal system such as compost making and incinerator facilities at the Kakkaitivu dumping grounds
9. Repair, de-silting and reconstruction of the storm water drains and other drains in the District

References

1. Gunasekaram T. Ground water contamination and case studies in limestone aquifer of Jaffna, Sri Lanka. Mimeograph document
2. Harald Kraft(2002), Jaffna Rehabilitation Project((JRP), Sri Lanka, October 2002)
3. Panabokke R G (1984). The Geographical Pathology of Malignant Tumours in Sri Lanka. Ceylon Medical Journal. 29:4; 211-15.)