

International Journal of Management and Development Studies

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Water Pollution – Myths and Realities

C. Parvathi and Kaumudi Misra

Abstract: *The study analysed the real facts underlying the problem of water pollution. Water is one of the most precious gifts of nature without which no life could survive on earth. Fresh water resources all over the world are threatened not only by over exploitation and poor management but also by ecological degradation. The main source of freshwater pollution can be attributed to discharge of untreated waste, dumping of industrial effluents, and run-off from agricultural fields. Industrial growth, urbanisation and the increasing use of synthetic organic substance have serious and adverse impacts on fresh water bodies. A resource is something that is useful and valuable in the condition in which we find it. The scarcity of anything denotes that the amount available is limited relative to the amount demanded. Any resource with a positive price must be scarce. If its availability were unlimited relative to demand, it would be free. The provision of safe drinking water is a basic necessity for the well-being and socio-economic development of the community. Water pollution is a serious threat around the globe. The world has entered the new millennium with an enormous challenge safe drinking water for all. In India, overall water demand will increase from 552 BCM in 1999 to 1050 BCM by 2025, which will require the use of all the available water resources in the country. The study concluded that the most serious problem of water pollution resulted by human activities. Water pollution is not merely a problem of India but is common around the globe.*

Key Words: Exploitation of Water; Water Demand and Water Pollution.

Introduction

Water is one of the most precious gifts of nature without which no life could survive on earth. When our population was limited, its bountiful supply seemed endlessly renewable. Earth is a watery place, unlike most other planets in our solar system. Water covers over 70 percent of the earth's surface. It's everywhere - not only on the surface, but also underground and in the atmosphere. Out of all the water on earth, 97 percent is salt water, like oceans. That means only three percent of all the water on the earth is fresh water. Of the three percent fresh water, two percent is solid frozen in icecaps and glaciers. One of all the water on earth, only one percent is drinkable, and half of this drinkable water is found below the earth's surface.

Fresh water resources all over the world are threatened not only by over exploitation and poor management but also by ecological degradation. The main source of freshwater pollution can be attributed to discharge of untreated waste, dumping of industrial effluents, and run-off from agricultural fields. Industrial growth, urbanisation and the increasing use of synthetic organic substance have serious and adverse impacts on fresh water bodies. Water scenario is now fast changing as a result of increasing population, rising demand for irrigation to raise high yielding varieties of crops, rapid urbanisation and industrialisation, electricity generation, impact of global warming and erratic rainfall (Gopal Kolkoti, 2013).

Water pollution is a serious threat around the globe. Water pollution may be defined as, 'a natural or induced change in the quality of water which renders it unusable or dangerous as regards food, human and animal health, industry, agriculture, fishing or leisure pursuits'.

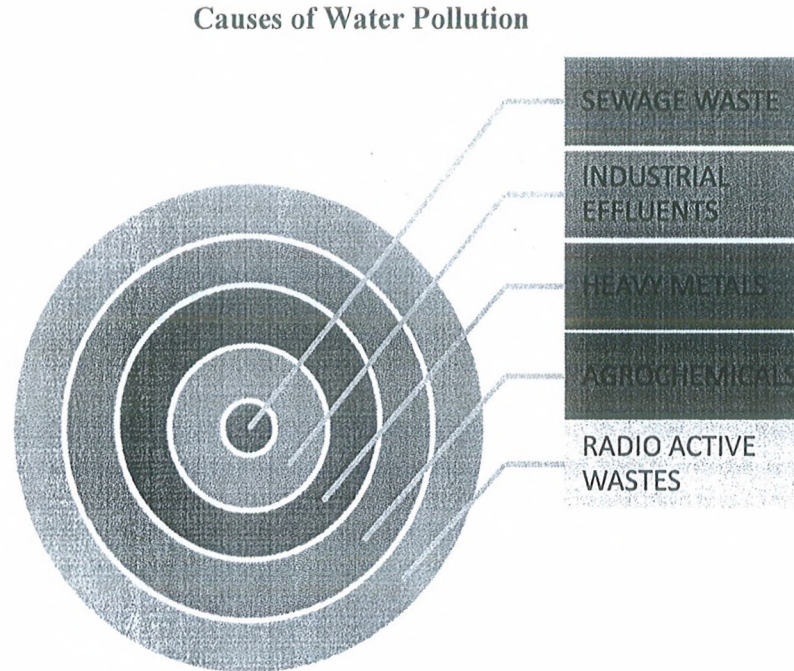


FIGURE: 1

Availability of Water in the World

The world has entered the new millennium with an enormous challenge safe drinking water for all. In many parts of the world, drinking water has been acknowledged as a fundamental right. However, the poor continue to be most vulnerable to changes in water resource availability. The United Nations has proclaimed the year 2003 as the International Year of Freshwater with the slogan "Water-Two billion people are dying for it".

Almost 85 percent of drinking water needs are met from groundwater. Only 5 percent of total groundwater extraction is needed for domestic water supply while irrigation accounts for 90 percent and the industry takes the remaining 5 percent. The rapid exploitation of groundwater has caused depletion resulting in shortage of water supply and damage to its quality. (Chandrakuma,G. and Mukundan,N. 2006). Globally, all future population growth will take place in cities, especially in Asia, Africa, and Latin America. In Asia and Africa, this growth will signal a shift from rural to urban growth, changing a millennia-long trend. Between 2000 and 2030, the urban population in Africa and Asia is set to double. Asia's urban population will grow from 1.4 billion to 2.6 billion. Africa's will surge to more than twice its size, from 294 million to 742 million. Latin America and the Caribbean will see its urban population rise from 394 million to 609 million. By 2030, 79 percent of the world's urban dwellers will live in the developing

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world's towns and cities. And Africa and Asia will account for almost seven in every 10 urban inhabitants globally.

Global Water Shortage

The amount of water in the world is finite. A third of the world's population lives in water-stressed countries. Table 1 explains the domestic water demand in Asian countries.

Table 1: Details of Domestic Water Demand In Asian Countries, 1995 And 2025

Country	Domestic Water Demand(Km ³)			
	1995 Baseline Estimates	2025 Projections		
		BAU	CRI	SUS
Asia	79.1	156.7	113.0	143.9
China	30.00	59.4	42.3	54.3
India	21.0	40.9	27.7	42.0
Southeast Asia	13.9	30.4	23.6	23.8
South Asia excluding India	7.0	16.2	11.1	15.3
Latin America (LA)	18.2	30.7	24.7	22.8
Sub-Saharan Africa (SSA)	9.5	23.9	15.2	23.8
West Asia/North Africa (WANA)	7.1	13.1	9.9	11.2
Developed Countries	58.7	68.6	62.8	65.8
Developing Countries	110.6	221.0	159.7	198.7
World	169.3	289.6	222.5	264.5

Source: (Bancil.P.C, 2004), BAU: business-as-usual scenario, CRI: Water crisis scenario and SUS: Sustainable water use scenario.

By 2025, this is expected to rise to two-thirds. There is more than enough water available, in total, for everyone's basic needs. The UN recommends that people need a minimum of 50 liters of water a day for drinking, washing, cooking and sanitation.

Demand of Water

In India, overall water demand will increase from 552 BCM in 1999 to 1050 BCM by 2025, which will require the use of all the available water resources in the country. Of the present water usage, 92 percent is devoted to agriculture, with roughly 3 percent used in industry and only 5 percent for domestic purposes like drinking water and sanitation. Demand from the industrial and domestic sectors is expected to increase with the growing population, urbanization and industrialization.

Asian Development Bank in its report on "Water Operational Framework 2011-2020" explicitly cautioned that by 2030 water shortages are likely to aggregate 40 percent in developing Asia and in India demand will exceed supply by 50 percent. In 2005, a World Bank document recommended that 'if India is to have sustainable economic growth, the role of the Indian water

state must change from that of a builder and controller to creator to an enabling environment and facilitator of the actions of water users large and small’.

Shri Atal Bihari Vajpayee former Prime Minister of India, remarked at the 11th meeting of the National River Conservation Authority in New Delhi on 16th June 2003 thus: “With the phenomenal increase in population and the dramatic rise in living standards of people in many parts of the world, there has been a sharp increase in the demand for fresh water. The total availability of freshwater on the other and has not increased. To make the matter worse, the availability has actually dipped on account of manmade pollution. Water sustains life. Now the time has come for us to sustain the availability of clean water”.

Indian Facts

When humans use more water than we used to, it can cause problems. Below are the facts projected by the National Training Project and Administration Institute.

- In India about 303.6 million cubic of water is received by the Asian rivers from Himalayan glaciers
- By the end of the year 2100 glaciers of Himalaya will dry up
- About 4.4 million of Indian population is drinking polluted water
- About 70 percent of water is obtained from groundwater resources
- About 80 percent of water supply is done from groundwater resources
- In India, there are about 190 million of tube wells
- About 39 percent of families of India have developed their own drinking water resources in their house premises; and

Table 2 states that the population of India is witnessing a continuous increase. As per the census of India, the total population was 439.23 million in 1961 which increased to 844.32 million in 1991 and further to 1210.19 million in 2011. The rate of growth of urban population was much higher because of the migration of the people from rural to urban areas.

Table 2 represents the percentage of population covered with water supply in India. In 1961, the proportion of urban population in the total population was 17.97 percent and it went up to 25.72 percent in 1991 and 31.16 percent in 2011.

Table 2: Details on Percentage of Population Covered With Water Supply in India

Year	Total population (million)	Urban population (million)	% of urban to total population	%of population covered with water supply
1961	439.23	78.94	17.97	NA
1971	598.15	109.11	19.91	82
1981	683.32	159.00	23.34	78
1991	844.32	217.11	25.72	84
2001	1027.01	285.35	27.78	89
2011	1210.19	377.10	31.16	NA

Source: 2011 Census, NA: Not Available

Water Pollution in India

Table 3: Water Supply in Metropolitan Cities in India

City	Water supply (in 10 lakh litre)	Per capita water supply (Litre per day)
Mumbai	2143.0	207.8
Delhi	1848.0	258.0
Calcutta	976.0	226.7
Hyderabad	652.5	241.6
Ahmedabad	477.0	113.9
Bangalore	435.0	200.1
Kanpur	407.0	307.0
Lucknow	277.0	262.3
Madras	250.0	75.8
Nagpur	240.0	206.5
Pune	202.3	169.8
Jaipur	168.0	155.5
Total	8075.9	Average 189.4

Source: S.Shankaran, (1998)

According to the above table the maximum amount of water is been supplied to Mumbai and the least to Jaipur.

CONTROL OF WATER POLLUTION

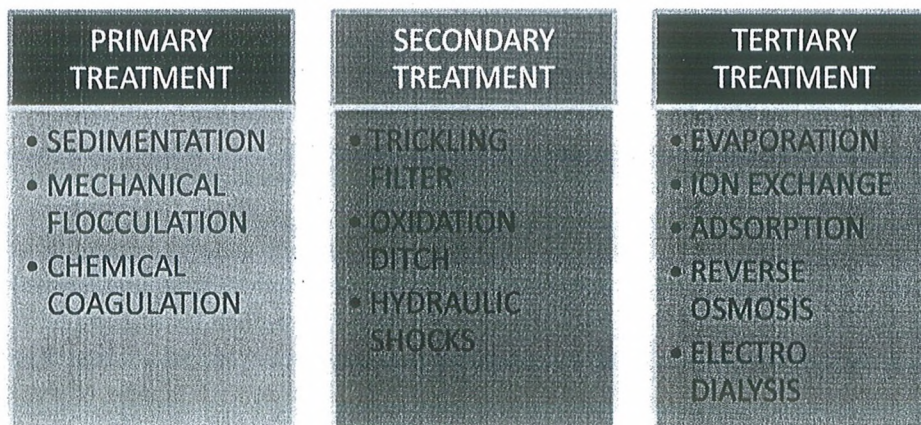


FIGURE: 2

Background of the Study

The history of water pollution goes with the history of man itself when he first arrived at this planet. All the activities of early man like clearing of trees, burning, cultivation and pilling of

middens influenced the bodies of water. The cutting of forests resulted in an increased run off altering the river biology. Agriculture caused an increased erosion of soil causing greater silting and increase of salt in streams. Natural sources of pollution like leaf fall in forested areas increased the organic matter in water bodies to affect fish. Such conditions might be prevailing, beyond doubt, throughout the history since invasion of plants on the earth, even much before the arrival of man. However the most serious problem of water pollution resulted by human activities.

With the civilization, large settlements and towns began to appear that gave rise to the problem of waste disposal. References in history indicate that the use of earth – pits was a common practice for waste disposal, while several ancient cities even developed elaborate sewer systems. Evidences show that the civilisation like Mohan-Jo-Daro and Harappa had drains for collection of waste water. The reference of white colour (sewage fungus) and small red colour threads (sludge worms) in the foul mud in the writings of Aristotle indicate that the effects of sewage were known to the ancient people. As there was no treatment facility for these wastes at that time, it is quite certain that these wastes might have brought quite severe problems of river and ground water pollution. (Goel.P.K, 2009)

Impact of Water Pollution

Water pollution has its impacts on many areas. It not only harms one's health but also decreases the availability of freshwater in the world. Due to excess of water pollution a major section of the society now depend on the private sector for their water supply. Usage of aqua guards have now become common and moreover a necessity.

It is due to scarcity of rain water, acute drought and improper price brought by the agriculture produce farmers that they are compelled to move towards town or cities to survive. Another reason for deterioration of water resources is the mixing of effluent water with that of rivers, ponds and lakes. (Lakshminarayanan. M.R 2013). Hence this water cannot be used for agricultural purposes. The study concluded by focusing on more of awareness programmes regarding the various problems given birth due to poor water management. The quantum of water utilised for agriculture i.e. irrigation is expected to increase by 68.5 trillion litres between 2000 and 2025. The study also stated that the industry and domestic sector consume approximately 11 percent of available water in India (Dandapani.C, 2013). The study concluded by urging the water policies to be reviewed and modified. Suggestions were made towards usage of surplus flood water. Watershed is water management through natural system, human activity and water resources management programme as soil conservation, land improvement, pasture development and forestry development. The study indicated the need for watershed management arises due to climate change, growing demand for water due to population explosion and urbanisation, increased supply of waste water and due to overuse and misuse of available water (Ranjan Babu.A 2013). The study concluded by highlighting climatic change as the major cause for all the various problems of water and water management.

The provision of safe drinking water is a adequate basic necessity for the well-being and socio-economic development of the community. The study emphasized on the fact that both nationally and internationally a reliable and safe water supply is an essential basic requirement for development and stability. The study area comprised of four sampling sites surrounding the Sagar city. The study concluded by stating that the physio-chemical properties of water changed due to the addition of organic and inorganic compounds as well as by the presence of microorganisms in water (Agnihotri and Singh, 2010)

Water Pollution – Myths and Realities

A huge population size, a rapidly growing economy and increasing levels of urbanization, coupled with the dwindling sources of freshwater, have made management of urban water supply one of the most important priorities in the development agenda of India. The study also revealed that water supply in India is mainly a responsibility of the individual state governments which in turn delegate powers to the urban local bodies for provision of water and sanitation services to people at the city level (Hoque, 2012). Water utilities in India are grappling with the problem of poor and ageing infrastructure, high levels of unaccounted-for water, intermittent supplies, poor water quality and low tariff rates. The paper aimed to discuss the gradual reforms that have been taking place in the Indian urban water supply sector since the 1990s, with specific reference to changes in legal and institutional frameworks and how these have been incorporated practically in the various forms of water supply projects conducted in the past decade. Using cities from the South Indian States of Tamil Nadu and Karnataka as examples, the paper highlights the various approaches undertaken by the state governments and other agencies to augment water supply in their areas. Two main aspects of project financing – the market-based financing mechanism and the development of private – public partnerships – have been explored in detail through the above mentioned case studies.

A standard indicator of inefficiency is the percentage of water produced that does not reach water board customers. There are unaccounted water results both from leakages and illegal connections. In addition to the financial costs to the water utility, high levels of unaccounted for water are also a major reason for intermittency in the supply of water, since leaks and illegal connections lower water pressure in the distribution system (Parekh Jigar and Lalani.A.I, 2011). The study concluded by stating that the current structure of water tariffs do not provide any economic incentives in terms of recovering costs - both operation and maintenance and depreciation of capital - in the urban areas; rather, they provide incentives for over consumption and inefficient use while not reflecting the scarce conditions of water availability.

Methods and Materials

Water is the essence of life, there is no life without water. Water was once upon a time a free a commodity. Slowly it became an economic resource, and now it is on the path of scarcity. All this is due to human activities. Urbanisation, industrialisation and population explosion are the main causes of water pollution. Water pollution is not merely a problem of India but is common around the globe. The city of Coimbatore was selected for the study. Coimbatore is a city in the city of Tamil Nadu. The geographical area of the city is between: North Latitude between 11°00'58" and 11°01'61" East Longitude between 76°58'16" and 76°09'71". The city has experienced population explosion in the past two decades which has given rise to a lot of pollution. The city is facing a lot of pollution from various sectors such as industries, agriculture, hospital wastes and domestic discharge. The Coimbatore Corporation has taken lot initiatives in providing its people with safe drinking water. Yet some of the places suffer due to poor supply of water.

In general the water scarcity is one of the most severe problems in Tamil Nadu. Water scarcity leads many adversities such as health problems, agriculture and so on. Water is the life line for any living being. The water that is collected in the ground water is not sufficient for the usage of the people. The reason for water scarcity in Tamil Nadu is because of the development taking place in the state.

Table 4: Details of Water Demand of India in the Next Fifty Years

Sector	Year		
	2000	2025	2050
Domestic	42 (6.6%)	73 (6.7%)	102 (7%)
Irrigation	54 (85.3%)	910 (83.3%)	1072 (74.4%)
Industry	8 (1.3%)	22 (2%)	63 (4.4%)
Energy	2 (.3%)	15 (1.4%)	130 (9%)
Others	41 (6.5%)	72 (6.6%)	80 (5.5%)
Total	634 (100%)	1092 (100%)	1447 (100%)

Source: Chandrakumar.G and Mukundan.N , (2006).

Table above table predicts the increasing water demand from 2000 to 2050. In 2000 the total water demand was 634, which is likely to increase to 1092 in 2025. In the year 2050 this demand increases to 1447 which is more than the double of the demand in 2000. Due to over population and exploitation of natural resources the world is facing such a problem. One must realise that no matter how much the demand increases with time, the supply of water will always be fixed or in the worst cases it would decrease. The only result of this is that sectors will have to be prioritised in order to manage the shortage of water.

Coimbatore district was selected for the current study. In Coimbatore four areas were selected namely, Tudiyalur, Podanur, Karumbukadai and Ukkadam. The selected areas badly affected due to the problem of water scarcity. In Tudiyalur there was poor and irregular water supply. A total of 31 samples were selected from Tudiyalur. In the remaining three areas there was poor quality of water supply due to which consumers were forced to depend on private water supply for drinking purpose. From Podanur 56 households were selected whereas 7 households were selected from Karumbukadai and 6 from Ukkadam. Thus the total sample units selected were 100. In the current study both primary and secondary data was collected. Multi-stage sampling technique was used to select the samples for the current study. A pilot study was conducted to understand the major problems of water pollution, to filter the most affected areas and to identify the gaps in the interview schedule.

Major Findings of the Study

A resource is something that is useful and valuable in the condition in which we find it. The term resource is a dynamic concept. There are possibilities of a non-resource having no value becoming a resource and that to very valuable resource due to changes in information and technology. Any human activity that impairs the use of water as resource may be called water pollution. Water is a universal solvent, and as such it gets readily contaminated by the materials with which it comes into physical contact. The scarcity of anything denotes that the amount available is limited relative to the amount demanded. Any resource with a positive price must be scarce. If its availability were unlimited relative to demand, it would be free.

Natural Resource Scarcity Historical Approach

'Scarcity of resources' is the major theme of economics since it emerged as a recognised discipline more than two centuries ago. Many classical economists have dealt with problem of scarcity of resources in the context of prosperity of mankind. We should come to the conclusion that scarcity of resources and multiplicity of wants, as the realm of economics is of recent origin.

Water Pollution – Myths and Realities

The problem is as old as Adam Smith and other classical economists, though their method of approach and treatment were different from modern economists.

Socio-Economic Characteristics

The socio-economic characteristics are an important aspect in any study. It not only gives the basic details regarding the concerned but also gives us a glimpse of the living conditions of the selected areas. Socio-economic characteristics such as gender, religion, occupation and income determine an individual's behaviour and influences his/her decision making perception. The socio-economic characteristics of the current studies are given in Table 4.

The socio-economic characteristics of the selected samples are discussed in table 10. Gender is a vital factor that has been dominating the Indian society from generation. It is only now that the trends have started to revolutionalise. Tudiyalur 29 percent of the samples were males and a majority of 71 percent were females. In the city of Podanur 26.79 percent are males and 73.21 percent of the samples are females. In Karumbakadai the males 71.43 percent and females are only 28.57 percent. Males in Ukkadam constitute 33.33 percent of the sample size. India is a multi-religious nation, one often says that India is a country where there is “unity in diversity”, and religion plays an important role in the current study also. In Tudiyalur has 83.9 percent of Hindus and only 16.1 percent of Christians. The city of Podanur consists only of Muslims. Muslims in Karumbakadai constitute for 85.7 percent, while the Hindus are merely 14.3 percent.

In Ukkadam the entire samples are Muslims. Occupation determines the sector in which one is employed. It plays a significant role in analysing the changing the consumption pattern of the individuals. In Tudiyalur the 61.29 percent of the samples are employed in the private sector and only 38.71 percent are employed in the government sector. The private sector dominates even in Podanur constituting to 87.5 percent. There are 10.71 percent working in the government sector and a bare minimum of 1.79 percent works in MNCs. The entire samples of Karumbakadai work in the private sector. The private sector dominates in Ukkadam also with a majority of 83.33 percent and 16.67 percent of the samples are government employees. Income of an individual is a very important factor that determines the consumption pattern of the individual and family. In the city of Tudiyalur 6.45 percent of the samples earn an annual income 60 thousand and 2.5lakhs respectively. A minimal of 1.94 percent receives an annual income of 1.5lakhs. A majority 23.33 percent obtains an annual income of 2lakhs and above 3lakhs respectively. Education is base of any individual's basic growth and development of knowledge.

Education plays a crucial role in determining one's consumption behaviour as it enhances the decision making power of an individual. In the area of Tudiyalur 3.23 percent of the selected samples were educated till the primary level, 35.48 percent till the secondary level, 32.26 percent of them are graduates and the remaining 29.03 of the selected samples have done other studies. In Podanur, 3.57 percent of the samples are educated till the primary level, 46.43 are educated till secondary level, 35.71 are graduates and the remaining are educated in other areas such as diplomas. In Karumbakadai 14.29 percent of the selected samples are educated till the primary level, 57.14 of them are educated till the secondary level and the remaining are graduates. In Ukkadam the majority of the population, 66.67 percent are educated till the secondary level whereas 33.33 percent of them are graduates.

Table 4: Socio-Economic Characteristics of the Selected Household Consumers

Particulars	Tudiyalur	Podanur	Karumbakadai	Ukkadam	All
Religion					
Hindu	26 (83.9%)	0 (0.00%)	1 (14.3%)	0 (0.00%)	27 (27.00%)
Muslim	0 (0.00%)	56 (100%)	6 (85.7%)	6 (100%)	68 (68.00%)
Christian	5 (16.1%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	5 (5.00%)
All	31 (31.00%)	56 (56.00%)	7 (7.00%)	6 (6.00%)	100 (100.00%)
Gender					
Male	9 (29%)	15 (26.79%)	5 (71.43%)	2 (33.33%)	31 (31.00%)
Female	22 (71%)	41 (73.21%)	2 (28.57%)	4 (66.67%)	69 (69.00%)
All	31 (31.00%)	56 (56.00%)	7 (7.00%)	6 (6.00%)	100 (100.00%)
Age					
20-30	4 (12.90%)	15 (26.79%)	2 (28.56%)	2 (33.33%)	23 (23.00%)
30-40	5 (16.13%)	10 (17.86%)	3 (42.86%)	2 (33.33%)	20 (20.00%)
40-50	6 (19.35%)	13 (23.21%)	0 (0.00%)	0 (0.00%)	19 (19.00%)
50-60	7 (22.32%)	10 (17.86%)	1 (14.29%)	2 (33.34%)	20 (20.00%)
Above 60	9 (29.03%)	8 (14.28%)	1 (14.28%)	0 (0.00%)	18 (18.00%)
All	31 (31.00%)	56 (56.00%)	7 (7.00%)	6 (6.00%)	100 (100.00%)
Occupation					
Government	12 (38.71%)	6 (10.71%)	0 (0.00%)	1 (16.67%)	19 (19.00%)
Private	19 (61.29%)	49 (87.5%)	7 (100.00%)	5 (83.33%)	80 (80.00%)
Joint	0 (0.00%)	0(0.00%)	0(0.00%)	0(0.00%)	0(0.00%)
MNCs	0 (0.00%)	1(1.79%)	0(0.00%)	0(0.00%)	1(1.00%)
All	31(31.00%)	56(56.00%)	7(7.00%)	6(6.00%)	100(100.00%)
Income (in Rupees)					
Up to 60000	2(6.45%)	1(1.79%)	0(0.00%)	0(0.00%)	3(3.00%)
60000-100000	723.33%)	0(0.00%)	1(14.29%)	0(0.00%)	8(8.00%)
100000-150000	6(1.94%)	4(7.14%)	1(14.28%)	1(16.67%)	12(12.00%)
150000-200000	7(23.33%)	13(23.21%)	2(28.57%)	3(50%)	25(25.00%)
200000-250000	2(6.45%)	21(37.5%)	3(42.86%)	2(33.33%)	28(28.00%)
Above 300000	7(23.33%)	17(30.36%)	0(0.00%)	0(0.00%)	24(24.00%)
All	31(31.00%)	56(56.00%)	7(7.00%)	6(6.00%)	100(100.00%)
Education					
Illiterate	0(0.00%)	0(0.00%)	0(0.00%)	0(0.00%)	0(0.00%)
Primary	1(3.23%)	2(3.57%)	1(14.29%)	0(0.00%)	4(4.00%)
Secondary	11(35.48%)	26(46.43%)	4(57.14%)	4(66.67%)	45(45.00%)
Graduate	10(32.26%)	20(35.71%)	2(28.57%)	2(33.33%)	34(34.00%)
Others	9(29.03%)	8(14.29%)	0(0.00%)	0(0.00%)	17(17.00%)
All	31(100.00%)	56(100%)	7(100.00%)	6(100.00%)	100(100.00%)

Source: Field Survey, (2013). MNCs: Multi National Corporations.

Source of Water

The major source of water in India is the rainfall. In the earlier days there were natural sources of water such as lakes and rivers. It was available in abundance, but now due to over population, urbanisation, and migration and most importantly due to pollution of water; water has become scarce and economic good. It has now become the responsibility of the government to provide its

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people with water for daily activities and for survival. It is the government's responsibility to provide its people with proper water facilities for all purposes. The corporation provides water at a regular basis yet the consumers prefer to opt for aqua guard water systems and packaged water systems in order to maximise their satisfaction.

Table 5: Details of Source of Water for Selected Household Areas

Particulars	Tudiyalur	Podanur	Karumbukadai	Ukkadam	All
Government	31 (100%)	36 (64.29%)	0 (0.00%)	0 (0.00%)	67 (67.00%)
Private	0 (0.00%)	5 (8.93%)	3 (42.86%)	0 (0.00%)	8 (8.00%)
Own	0 (0.00%)	15 (26.78%)	4 (57.14%)	6 (100%)	25 (25.00%)
All	31 (31.00%)	56 (56.00%)	7 (7.00%)	6 (6.00%)	100 (100.00%)

Source: Field Survey, (2013)

The table 5 portrays the source of water for the selected household consumers. The study revealed that the residents of Tudiyalur depend completely on the corporation supply for water. In Podanur 64.29 percent of the samples depend on corporation water supply. A smaller amount of 8.93 percent of the samples prefer private water supply. An average of 26.78 percent of the samples has their own supplies in form of tube wells and bore wells. The majority of 57.14 percent have their own supplies while 42.86 percent of the samples depend on private water supply. In Ukkadam all the samples have access to water in form of their own bore wells and tube wells.

Use of Water

Water is used for various purposes throughout the day; water is used for cooking, drinking, washing, agriculture and other activities. Water is not only used by humans but the animals and plants also depend on water for their survival. Nowadays the water supplied by the corporation is not of good quality and is irregular in supply resulting in water scarcity. As a result of water pollution the quality of water has dropped so much that consumers are more comfortable using the corporation water for domestic and other uses and depend on the private sector for drinking purpose.

Due to water pollution now the trends are so that now the people prefer use the corporation water for domestic purpose or other uses. The quality of water has deteriorated significantly and the trend would continue if necessary steps are not taken. The table 6 explains the usage of water by the selected household consumers. In Tudiyalur 51.61 percent of the samples use corporation water for drinking purpose whereas 48.39 percent uses the corporation water for domestic purpose. In Podanur the 71.43 percent uses corporation water for domestic use and 28.57 percent of the selected household consumers use the corporation water for drinking purpose after boiling it. In Karumbakadai the majority use the corporation water for drinking purpose after boiling it and only 14.29 percent use it for domestic purpose. In Ukkadam all the selected samples use the corporation water for domestic usage.

Table 6: Details about the Usage of Water by the Selected Household Areas

Particulars	Tudiyalur	Podanur	Karumbakadai	Ukkadam	All
Drinking	16 (51.61%)	16 (28.57%)	6 (85.71%)	0 (0.00%)	38 (38.00%)
Domestic use	15 (48.39%)	40 (71.43%)	1 (14.29%)	6 (100%)	62 (62.00%)
Non domestic	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
Other	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
All	31 (31.00%)	56 (56.00%)	7 (7.00%)	6 (6.00%)	100 (100.00%)

Source: Field Survey, (2013)

Conclusion

Water is one of the most precious gifts of nature without which no life could survive on earth. Fresh water resources all over the world are threatened not only by over exploitation and poor management but also by ecological degradation. The scarcity of anything denotes that the amount available is limited relative to the amount demanded. Any resource with a positive price must be scarce. If its availability were unlimited relative to demand, it would be free. The amount of water in the world is finite. The study highlighted on more of awareness programmes regarding the various problems given birth due to poor water management. The study concluded that the most serious problem of water pollution resulted by human activities. Water pollution is not merely a problem of India but is common around the globe.

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