

## **Environmentalism and Dal Lake**

**Firdous A. Wani**

*National Institute of Technology, Srinagar, J&K, India, 190006.*

### **ABSTRACT**

Dal lake is not only the source of drinking water for Srinagar, but also a major tourist attraction. But due to wasteful use of this world famous water body, Dal has lost its glory, resulting in social, economic and recreational loss. In order to save Dal from environmental degradation, we have to change our environmental ethics and attitude.

**Keywords:** Water pollution, environmental attitude, biological sink, environmental ethics, deforestation, population explosion.

### **INTRODUCTION**

The contemporary development is based upon the wasteful use of precious and vital biological components, which form our environment and man's quest for rapid material development, even at the cost of destruction of the fragile, but very vital ecosystem is the cause of our present day ecological crisis. This "Ecological Misbehaviour" of man, no doubt has led to some progress in the living standard of modern man, but most of the development, today, is not sustainable over the long term. The culture of modern technology has no self limiting principle in terms of size, speed and violence, and is immediate in scale, discordant to nature as well as discriminatory to sectoral development. Environment is a dynamic system consisting of components (Land, Air and Water), sectors (Forests, Wild Life and Man) and sub-sectors (Industry and Society), the natural change in each component, sector or sub-sectors, being slow and non-violent, the intra-compartmental stresses produced therein are automatically balanced. Water being an important component of environment, any undesirable change, in its physical, chemical and / or biological properties, affects not only living but also non-living things. This is water pollution.

The Dal is the DELIGHT OF THE WORLD and deserves to be preserved for generations to come. But due to human interference it has become a biological sink, where every kind of human waste ultimately finds its way, resulting in the enhancement of mineral concentration which in turn has accelerated the growth of weeds (hydrophytes etc.).

## MEANING, CAUSES AND EFFECTS

### MEANING

Natural Waters, such as ponds, lakes, rivers and oceans form balanced ecosystems. They constitute an environment with set physical and chemical characteristics that sustain the aquatic community and fluctuate in tune with the metabolic rhythm of the organisms.

The word 'pollution' is derived from a Latin word 'pollutus' which means defiled. The term 'pollution of water' has been used differently in different Acts and different persons have different perceptions about it. Some describe it as a nuisance and others maintain that it is negligence in carrying rubbish. Yet another way of describing water pollution is as fouling of water. In some statutes water pollution has been described as poisoning of water, while other enactments explain it as rendering water less fit for consumption by persons and animals. The interference with or alteration of inflow of water in any river or stream, so as to endanger, damage or render these water ways less useful is another form of describing water pollution (Wani, 1998). By all these diverse descriptions of water pollution, one thing is mainly emphasized upon i.e. mode of causing pollution rather than explaining pollution itself.

"Water pollution" enumerated in Gordin Academic Encyclopaedia, "is the introduction into land and ocean waters of chemical, physical or biological materials that degrade the quality of water. This process ranges from simple addition of dissolved or suspended solids to discharge of most insidious toxic pollution. In the Helsinki Rules on the use of water of International rivers, 'water pollution' is defined as something referring to any detrimental change resulting from human conduct in the natural composition, content, or quality of water of any International drainage basin. Changes in the physical, chemical, biological or bacteriological characteristics can be the test for determining the pollution. Water resources are said to be polluted when, because of man's action in adding or causing the addition of matter to the water or altering the temperature, the physical, chemical or biological characteristics of the water are changed to any reasonable purpose, or its environmental value is demonstrably depreciated (Fish, 1970).

The Water (Prevention and Control of Pollution) Act 1974, (hereinafter refer as Water Act.) describes pollution as "such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or any liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to create nuisance or render such water harmful or injurious to public health or society or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or

of aquatic organisms”

## **MAJOR CAUSES**

All major rivers and lakes in India are today highly polluted, including the Ganga, which believers feel “can never be defiled”. In the developed world the major causes of water pollution are indiscriminate industrialisation and high living standard of people, which is responsible for enhanced generation of garbage and other house-hold wastes. Trade and Industrial wastes and garbage contribute largely for this pollution. In Kashmir valley, where industry is yet to start functioning on broader spectrum as compared to other developed states, major causes of water pollution constitute:

- a) Human Wastes and Garbage
- b) Population Explosion in the Catchment Area,
- c) Deforestation
- d) Washed away Agricultural Chemicals
- e) Detergents
- f) Industrial Effluent

### **a) Human Wastes and Garbage**

Contrary to the common belief, it has been estimated that the community wastes account for four times as much waste as industrial effluent. Most of these wastes are untreated discharges into the water course. Out of India's 3110 towns and cities, only 209 have partial and 8 are having full sewage treatment facilities. 57% of the population of Class I cities and 88% of Class II cities of India lack sewage treatment facilities (Shastry, 1986). The per capita solid waste reaching disposal sites in Bombay, Calcutta, Madras and Delhi range from 0.45 to 0.60 kg. per day. In Hyderabad the per capita value is 0.33 kg. / day. In other Indian cities the per capita contribution ranges from 0.15 to 0.33 kg/day.

It is common in our State that the latrine opens in a water body itself, wherever possible, or else the opening is in a drain. Virtually drains terminate either in a bigger drain, that ends in a water body or the primary drain carries the raw human excreta and sewage into the water body directly, be it a lake, river or its tributary. This shameful practice is supplemented by the transportation of interior city untreated human excreta collected by Srinagar Municipality into Dal, where it is used as a natural manure and major portion of it finds its way into the water as washed away product. The portion of nutrients which outflows from the lake finds its way into river Jhelum and its tributaries ultimately enhances mineral

contents of Asia's Major Fresh Water Lake i.e. Wular.

Further, we generate tremendous quantities of domestic sewage. This grey-coloured, dirty looking water, usually with some quantity of household solids and detergents, gives foul smell if not readily taken care off. This also, finds its way into public sewers and is transported into the nearest water body through them. Thus it also adds to the pollution of that water body. Dumping of human waste and garbage, by the Srinagar Municipality and other agencies responsible for cleanliness of cities and towns, into rivers and lakes is causing tremendous inconvenience to all those who use water of these water bodies particularly the Villagers and Boatmen (Kishtibash). Even ground water is not immune from this menace. The direct way of polluting ground water is to dump sewage effluent into underground strata, but in J&K, ground water gets polluted due to seepage or percolation from the surface i.e. seepage from improperly constructed or wrongly placed septic tanks, cesspools or/and leaking sewer pipes. "Even the dumping and covering of vegetable materials and garbage results in their decomposition and the carrying down of decomposed product, including carbon dioxide gas. This process pollutes underlying ground water bodies" (UNO, 1967).

## **b) Population Explosion**

Population increase is a world wide phenomena, "In 1950, the world population was about 2.5 Billion, in 1968 it was 5 Billion, and is now well over 6.2 Billion. Due to this population explosion Indian Cities have been growing at an alarming rate. Mass exodus from Villages to the Cities is natural corollary of the process of modern economic growth, particularly through Industrialization. The Cities in India are, consequently facing the traditional environmental problems - shortage of water supply, services, lack of sanitation, open space and recreational area, pollution of air and water, refusal disposal, traffic congestion and the like.

## **c) Deforestation**

Forests are valuable natural renewable resource and the prosperity of any nation depends upon the scientific management and proper use of its natural resources including forests. However, till late 19<sup>th</sup> century nobody thought about the scientific management of its Forests and only in 1884 first Forest Policy was enunciated, which was revised in 1952 and recently in 1988. It envisages that the National goal should be to have a minimum of one third (1/3) of the total area of the Country under forest or tree cover. In the hills and in mountainous regions, the aim should be to maintain two third (2/3) of the area under such ever in-order to prevent

erosion and land degradation and to ensure the stability of the fragile eco-system. Against the above targets, provided in the revised Forest policy of 1988, the actual figure of areas under the tree cover, in India, is less than one fifth (1/5) of the total land. India has almost 15% of the total population of the World, the forest areas in India, however, are merely 1.8% of the total forest - less than 0.14 hectare per person against the World average of 1.1 hectare per person.

Of all the environmental problems facing India the problem of deforestation has rightly received the maximum public attention and no definite Government policy in the field of environment has attracted greater public attention than the policies for a forestation, and people have shown their concern for the proper implementation of the a forestation programme. The shortage of wood has rendered it beyond the common man's buying capacity. The Tamil Nadu fisher folk find it difficult to make catamarans; Karnataka villagers are unable to buy bullock carts; Andhra Pradesh crafts man find it out of their reach to make toys and Kashmiri city dweller finds timber very dear to roof his house.

The Kail forests along with Deodar are subject to heavy biotic interference due to proximity to habitation, easy slope and easy accessibility. The damage to Kail forests because of illicit felling of trees is worst. The problem of illicit felling in J&K is increasing day by day because of increase in population. The requirement of the local people are also mostly met from the forest under the State law.

Another problem which is more peculiar to Kail forests due to its proximity to habitation is illegal encroachment. It is difficult to control because people involved are numerous and generally do not have alternative source of income. The lopping of Kail trees for firewood and charcoal is common in Kashmir valley. Lopping is so heavy that it reduces the growth of trees besides making it more susceptible to the fungal attack. Blue Pine suffers more from grazing and browsing than any other Himalayan conifer. The cattle particularly damages the natural regeneration. If the present biotic interference in the Kail forest continues, it seems that the species will become extinct from Kashmir valley within a few decades.

Unscientific slaughter of trees is the business not only of public but the Government agencies. These also, do not hesitate to resort to this practice. The fire wood and timber etc. supplied by the Government Forest Depots to the public is being obtained from the nearby forests and timber covers. This unplanned onslaught, has led to the alarming deforestation in the Jammu and Kashmir State in general and Dal water catchment areas, in particular, resulting to the large scale land erosions in these areas in particular, and siltation in the water bodies.

#### **d) Industrial Effluent**

Almost all industries generate waste-water at some stage of their manufacturing process. The quantity of waste-water produced varies with the type of industry, process used and economy in utilisation of process water. Water requirements also vary from industry to industry. Industries, such as, Steel, Oil refineries, Power generation, Pulp and Paper, Tannery, Distillery and Textiles are known to use large quantities of water for processing and cooling purposes. The waste flow from the dairies vary from 2 to 8 times the volume of milk processed. These contain large quantities of organic matter and almost all nutrients essential for bacterial life. The quantity of waste water let out from Indian Tanneries worked out at 3008 to 3324 litres per 100kg of hides processed.

Slaughter-Houses and Poultry Industry does not lag behind in the generation of wastes leading to water pollution. During the killing and dressing of meat, quantities of blood and other wastes are produced, and large quantities of water are used for washing purposes. These wastes are highly putrefactive, have highly disagreeable odour and become septic quickly.

#### **e) Washed Away Agricultural Chemicals**

One of the main factors responsible for environmental pollution is the factor of "GROWTH ETHOS". It is economic growth at any/all costs, a primary pillar of modern culture. And this growth is considered panacea for all present day sufferings and exploitations of man. It is felt that the only means to gain prosperity, happiness and rightful place in the community of Nations is this growth. This modern growth culture has induced a sense of scarcity of time and space vis-à-vis the rate of growth, resulting in many menaces, including indiscriminate use of Agricultural Chemicals, Fertilizers, Herbicides and Pesticides etc., to accelerate and enhance growth of Agricultural produce. During the past 40 years, nearly 10,000 Chemicals have been synthesized, worldwide, every year. We know nothing about the Toxicity of 80% of the Chemicals in use and India uses nearly 100,000 Mts. of pesticides annually. This indiscriminate use of Fertilizers and other artificial Chemicals has produced grave biological consequences. Cash crop cultivation in the catchment areas in all the three division of J&K, due to population explosion, scarcity of food stuff and above all man's greed to have more and more, has enhanced this problem of increasing nutrient concentration in water bodies, the best example is provided by the Dal, Jehlum and the Wular.

Mushroom growth of floating gardens for vegetable and timber growth is the

main source of inflow of agricultural chemicals in Dal. The run-off from these Gardens has increased the volume of Nitrates and Phosphates flowing into the Lake water, thus stimulating weed growth.

## **f) Detergents**

Tonnes of detergents find its way into the water bodies, through the drains opening into them. When we bathe or wash our clothes, the water full of detergents and dirt is either directly deposited in water body or finds its way in to sewer pits dug out in the modern colonies. One feels dejected to see people, washing their dirty vehicles on the Dal shore, depositing not only the dirt and detergent but also the hydrocarbons in the shape of washed away oils and fuel.

## **EFFECTS**

Pollution affects water bodies and its users in many ways. These are classified for our present purposes as follows:

1. Effect on public health and safety,
2. Effect on aquatic and other life,

### **1) Effects on Public Health and Safety**

The principal hazard to public health from polluted water is the presence of pathogenic bacteria from domestic sewage and untreated municipal sewage. Health hazard caused by industrial waste is pollution with toxic materials, which may enter a municipal water supply or may be harmful to people using the stream for recreational purposes or its water for drinking, bathing and/or washing purposes.

Danger to public health from polluted waters comes not only from direct use of the water but also from fish that lives in the polluted stream. Many poisonous substances are absorbed by the fish, often in the concentrated form, hence the eating of fish from polluted waters may be even more hazardous than the drinking water. It is an established fact that there is direct relationship between water supply and various diseases like Cholera, Typhoid, Bacillary Dysentery etc. Between 20 to 30 different infective diseases may be caused by change in water supply. Thus the hazards from polluted water are much greater than we envisage.

### **2) Effects on Aquatic and Other Life**

Pollution of natural waters may be disastrous to fish and other organisms naturally

inhabiting there. With mild pollution fish may acquire a flavour that renders their flesh unfit for food use. Whereas with more severe contamination the fish are skinned or killed. It is not uncommon for thousands of fish to be killed because pollution in the water body. Polluted waters are also a hazard to land animals that drink from the stream.

## ENVIRONMENTAL ATTITUDE

Our collective conscious, popular perception and natural expectation is that “though I will create pollution (for that matter any other or every menace) someone else will take care of it particularly the Government”. Though our system is devoid of any genuine accountability, inadequacy or vacuum in the existing system in meeting the challenges posed by a problem situation is not taken care of by anyone. We consciously pass the buck. This type of attitude is not only harmful for the development of dependable and accountable system, but also has and is characterized by the hordes of lacunae in the present set of job accomplishments. Ours is a unique situation where there is Lack of vision in foreseeing environmental problems. We never evolved appropriate policies, plans and programmes. Whatever little we do, it is non-dynamic, reactive rather than being pro-active. Law is an accepted strong medium of regulating behaviour of people, but our environmental legislative laws, in tackling the complex and ever challenging environmental issues and problems appear to be lacking either motivation for non-polluters or deterrence for the polluters or both. No consistent and logical path of serious deliberation at the stage of drafting and consideration on the floor of legislatures, before becoming the law of the land, is in vogue. Several Bills are presented and rushed through the legislatures with the members devoting very little of their quality-time to deliberate, debate and decide on their contents and impacts.(Ramesh, 2002).

This unassertive attitude has made us a great imitator, because creativity, inventions and discoveries demand commitment – mental and physical - time and energy, diligence and honesty. We are imitating West in the environmental laws, unfortunately based on the Western experiences, which usually, do not match to our situations and experiences. The water (prevention and control of pollution) Act 1974, is illustrative of this inspired effort. A Scottish law enacted in early 1950's was the source for the Indian effort. But the most astonishing, if not perplexing aspect of this development is that the Scots repealed their law in 1973 and enacted a new law. (Ramesh,2002). Environmental law enforcement, being a highly specialized area of implementation, has been entrusted to different agencies under different laws, resulting in overlapping of jurisdictional areas. A plethora of authorities enforce different aspects of laws on the same issue. The pollution related laws are primarily enforced by the pollution control boards and the forest related laws by the forest and wildlife authorities and management of other aspects of environment are entrusted



to a variety of agencies. The general administration has the power to deal with every conceivable aspect of public nuisance; the State Pollution Control Board is empowered to tackle pollution.

## ENVIRONMENTAL ETHICS

Now, we are living at the edge of the planet. We have to answer, whether "conserving bio-diversity is more important than having more people and is it important than the needs or even the welfare of existing people"? "Shall we give priority to the conservation of bio-diversity, which is precondition for the flourishing of humanity or enjoy it to the fullest extent, without any regard to the consequences? The answer to these and similar questions will define our environmental ethics.

In many parts of the world, the population is growing at rates that cannot be sustained by available environmental resources and by this trend productive potential of the ecosystems is threatened. The issue is not just the size of the population, but how the number of people relates to available resources. An additional person in an industrial country consumes far more and places far greater pressure on natural resources than an additional person in the third world. Therefore, the World Commission argues that governments need to develop long-term population policies, because "sustainable development can only be pursued if population size and growth are in harmony with the changing productive potential of the ecosystem". That is to say, our responsibility towards other people and future human generations requires, what we can call, a "stabilization policy": we must ensure that the size of the population stabilizes at a level compatible with the productive capacity of the supporting ecosystems (Stenmark, 2002). This analogy holds good for other factors which are responsible for Dal pollution.

Biological conservation is a field in which scientific facts and human values are entangled. Both science – in the form of ecology – and ethics and politics are required to arrive at guidelines for human interaction with nature. The precise relation and even more the connection of these realms, however, is still a problematic one. The aim is to foster communication between scientists, ethicists and environmentalists (Kurt, 2002). It is possible to accomplish by way of realization of the problem. But most of us, for that matter majority among us, take a stance of avoidance in response to the environmental crisis. In spite of all the evidence that says otherwise many choose to accept false and unrealistic hope that technology will fix whatever problems there are, even if technology is at the root of those very problems. Unconsciously we know things are so bad that if we were to begin caring about them, we would find that we are deeply ingrained in a process of self-destruction. "If I start crying I may

never stop” so we act like the child who closes his eyes hoping the problem will go away. But denial “sucks the integrity out of us. To the extent we live in denial our lives are a little empty, just because somewhere we sense what we are doing” (Carey, 2002) .This type of attitude is playing havoc with us in every sphere of life.

Further, it gives rise to blind acceptance of the status quo, which in turn develops a peculiar type of mindset that psychologist Heinz Kohut labeled “ the company man.” They merely want to fit in. It is enough for them to collect a pay cheque and to meet the expectations of conventional society. To do so they are willing to develop products and support organizations that are spreading toxic chemicals around the globe, spilling oil into the sea, and altering the food chain. While enjoying “respectability” among the social conventions that are in place, they perpetuate the destruction of the earth. So the solution of the problem is not to avoid and be a silent spectator but a well informed citizen who is ready to resist lawfully, if required.

### ACKNOWLEDGEMENTS

Help extended by Dr. Sidarth Koul, Director, Ministry of Environment, GOI, by allowing the author to use the departmental library, at Delhi, is gratefully acknowledged.

### REFERENCES

- Carey, Seamus. 2002. Book reviews. *Environmental Ethics*. 24 (No.2): 214.
- Fish H. 1970. “Water Pollution” Royal Institute of Chemical Review 3:105.
- Kurt, Jax. 2002. Book reviews on conservation ethics: An introduction to practical application. *Environmental Ethics*. 24 (No.2): 209
- Ramesh, M.K. 2002. Environmental Justice Delivery in India. *The Indian Journal of Environmental Law*. 2(No.2): 1-14.
- Shastry, C.A. 1986. Water Pollution in Urban India. *Pollution Control Hand Book*. pp.39.
- Stenmark Mikael. 2002. The relevance of environmental ethical theories for policy making. *Environmental Ethics*. 24 (No.2):24.
- UNO. 1967. *Methods and Techniques of ground water investigation development*. United Nations. pp.68.
- Wani, F. A. 1998. Jurisprudential Perspective of the Law relating to Water Pollution – A Technological Analysis. *Kashmir University Law Review* 5:182.