

Industrial pollution

[Environment](#), [Pollution](#)



ENVIRONMENTAL SCIENCE TERM PAPER: INDUSTRIAL POLLUTION AND ITS EFFECTS ON THE ENVIRONMENT. (A Case study of pesticides poisoning fish in Lake Naivasha). Introduction. Pollution may be defined as any direct or indirect alteration of the physical, thermal, biological or radioactive properties of the environment that creates an actual or potential hazard to the health safety or welfare of any living species. Also pollution may be said to be any inserting of any foreign matter in the wrong place and in quantities that are too large which eventually cause harm human and other living organism. Waste from people and animals pollute water. Air becomes polluted from smoke, dust and automobile exhaust gases. Pollution can therefore be simply put or viewed as any interference that prevents the beneficial use of air, water, plants and animals. Industrial pollution of the environment may be divided into the following:- - Water pollution - Soil pollution - Air pollution - Noise pollution In about two and half years ago, thousands of fish were dying in Lake Naivasha a world renowned rift valley lake famous for diversity of birds. The lake although protected by the government for global importance, concerns have been raised about the impacts of developments around the lake which had gone un-heeded for years. Witnesses on the ground and the Member of Parliament in the area claimed that the flower companies extracted water from the lake and at the same time dumped the pesticides laden wastes into the lake. This leads us to water pollution by the flower companies. In the right place and in the right quantity, a given substance may be beneficial. Pesticides and fertilizers are beneficial in the farmer's field but not in lake where they will promote the growth of algae which reduce the commercial, domestic and aesthetic value

of the water. The growth of flower firms around Lake Naivasha leads to increased demand for clean water and at the same time, the very same firms dissipate waste water and individual waste into the drainage system which is polluted by lead, mercury, acids, ammonia and oil. As a result if there is any sewerage treatment or refuse disposal facilities are quickly outdone. Over centuries the water masses in the world have been regarded as suitable dumping sites for all sorts of waste. Flower export growth has led to need for increased production and this results to heavier application of pesticides, herbicides and nitrate fertilizers. This means more pollutants find their way into streams, rivers, lakes, sea and even underground water and this becomes a real hazard to the users and the living organisms like fish and others living in the waters.

Soil Pollution. Pesticides often kill a higher proportion of the non – target population other than the pests. Because some synthetic pesticides have a toxic effect on so many other non – target organisms they are at times labeled “ Biocides”. The effects of pollutants on soil are difficult to evaluate because the soil itself are extra ordinary complex ecosystems. There are numerous and varied micro-organisms in the soil and yet only several million in each acre e. g. mites, arthropods, bacteria and the micro flora are essential for the soil fertility as they play various roles in the ecology of the soil. Micro-organisms are responsible for the conversion of nitrogen, phosphorous and sulphur into useful nutrients for the plants. Most of the complex physical and chemical processes responsible for soil fertility are dependent upon the soil organisms. Soil treated with deadly and persistent poisons are cause of great concern. Constant use of pesticides is certainly reducing fertility and these pesticides find their way to the rivers

and lakes which cause harm to water organism as may be the case of Lake Naivasha. The growth of firms as also led to solid waste which is any worthless, unwanted or discarded material either liquid or gas. It includes expired drugs and chemicals, crop residues, bottles, plastics e. t. c. Throwing away resource rich solid waste often amounts to squandering the earth's finite resources as well as being a massive waste of energy and considerable economic loss. Solid waste has become an aesthetic disaster whether is piled up to disintegrate or burnt to dispose of it the air becomes unpleasantly polluted. Water percolating through burnt solid waste soon becomes polluted and provides breeding grounds for disease bearing organisms such flies, rats and cockroaches. Many governments are not interested in whatever happens to the domestic business and industrial waste as long as it is disposed of in a place where they will neither see it nor smell it. In urban waste dump sites are generally poorly managed. Local authorities collect the waste and transport them in trucks to be dumped somewhere. The liquid waste dumped in the dumping site find their way to underground water resources and eventually to rivers and lakes as the case for Lake Naivasha. Uncontrolled dumping of toxic waste i. e. outdated or expired medicine is very common and often the wastes often carry infectious diseases which are easily transmitted by human beings and animals scavenging on the dump site. Burning waste heaps and rotting litter often produces unpleasant smoke and smell. The public health situation caused by domestic liquid and solid waste in urban centers is a major concern to their inhabitants. However governments are making an effort to address this challenge. Air Pollution Chemicals such as carbon monoxide from motor vehicle and other gases

from machinery in firms or industries and factories including sulphur oxide, nitrogen oxide and hydro carbonates are continuously discharge into the atmosphere. Pulp and paper mills, iron and chemical plants also add toxic substances to the air. The situations are made even more worse by fuel and thrash burning. Cities in developing countries soon fall into this predicament. For instance Naivasha and its environment sometime very cold, is said to be becoming much warmer. Human beings face the hazards of fumes coming from the vehicles, especially in urban areas with heavy traffic. The exhaust fumes from the diesel burning vehicles contain carbon oxides of nitrogen. Also these kinds of vehicles produce black smoke if the engine is poorly managed. Petrol engine produce a mixture of hydrocarbons, including carbon monoxide and oxides of nitrogen and lead. Where air is stagnant, exhaust gases from vehicles and generators will accumulate leading to eye irritation, plant damage and even fatalities. The deposit of pollutants to the atmosphere leads to acid rain. This is when water interacts with sulphur and nitrous oxide and sulphuric acid and nitric acid are formed falls with rain forming the acid rain. Acid rain as a major effect to the soil and also the aquatic life as the case may be in the Lake Naivashs scenario. The acid rain may cause death of the fish and also some of the aquatic plants. Noise Pollution. Some modern technologies are excessively noisy. Vehicles, generators and aircraft produce noise that id detrimental to man’s hearing. The machines are used in the farming firms in order to increase the production but have the noise that may cause serious effects on the workers who are operating the machines in case they don’t have the protective gadgets as the case for Lake Naivasha where the workers were protesting so

as to be equipped with protective gadgets. Excessive noise can cause both temporary and permanent loss of hearing. WHAT CAN BE DONE. ♦– Strengthen legislation on packing, labeling and proper storage of chemicals and their products. ♦– Ensure that all firms incorporate treatment of waste in their production systems and they should be frequently monitored to enhance compliance. ♦– Encourage cleaner production technologies by providing incentives. ♦– Reduce gas emissions in the firms by minimizing using or consumption of fossil fuels and promoting afforestation and re — afforestation programs. ♦– Implement the Kyoto Protocol with a view to accessing the clean development Mechanism. REFERENCES: 1) Introduction to Environmental Education by J. E. Otiende, W. P. Ezaza and R. Biosvent 1991. 2) Goggle I. E. Biological Effects of pollution. 3) State of the world Environment (Nairobi: UNEP 1987) 4) State of the Environment Kenya 2003 pg. 104