# INTRODUCTION

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## 1.1. GENERAL REMARKS.

The term "water pollution" is referred to the addition to water of an excess of material (or heat) that is harmful to humans, animals or desire able aquatic life or otherwise causes significant departures from the normal activities of various living communities in or near bodies of water. It was stated that " water gets polluted if it has been not of sufficiently high quality to be suitable for the highest uses people wish to make of it at present or in the future". A precise definition is " water pollution is every impact which changes the quality of our surface and subsoil waters to such a degree that its suitability either for human consumption or for the support of man's natural life processes will decrease or cease." [1]

## 1.2. SOURCES OF CONTAMINATION OF WATER POLLUTION:

The major of water contamination have been domestic, industrial and agricultural waste, as well as solid waste, thermal pollution, shipping water pollution and radioactive waste [2].

### 1.2.1. Domestic Water Pollution:

It includes waste water from homes and commercial establishments. Domestic waste water arises from many small sources spread over a fairly wide area but is transmitted by sewers to a municipal waste treatment plant.

Generally, the impurities in domestic wastes get diluted and seldom total more than 0.1 % of the total mass. This material has been largely organic and gets oxidized by bacterial decomposition to nitrate, phosphate, carbon dioxide and water. As this type of decomposition needs the use of dissolved oxygen, it places an oxygen demand on the system .

### 1.2.2. Industrial Water Pollution:

This occurs in large amounts in specific locations, making collection and treatment fairly simple to accomplish. There are water–using factories which are discharging wastes with a total biological oxygen demand (BOD) load about three to four times as large as the load from the sewered population. Only about 7 or 8 % of industrial waste waters have been disposed of in municipal sewer systems. Wastes from textile manufacturing processes could be generated from the washing out of the impurities in the fibers, as well as in the discarding of chemicals used in the processing of the fibers. Generally, these wastes have been organic, have a high BOD, and are extremely alkaline .

Food–processing wastes from meat, dairy and sugar-beet processing, as well as brewing, distilling and canning operations, generate large amounts of organic by- products that have been disposed of in waste water. When the waste water is discarded, along with these by- products, it leads to high BODs and a consequent oxygen depletion in the receiving water via the same bacterial processes involved in the decomposition of domestic wastes .

The effluent released from pulp and paper processing operations has been a mixture of chemicals used in the digestion of raw wood chips, cellulose fibers, and dissolved lignin. This waste water also has paper