

## CHAPTER 1

### INTRODUCTION

#### 1.1 Background of Study

Clean water is vital for our healthy living. All human beings on earth need an adequate supply of fresh and clean drinking water and it is a basic need. Still, hundreds of millions of people worldwide are lacked of clean water. Based on The United Nations World Water Development Report in 2014, there is only 2.53 percent is freshwater while the remainder is saltwater. There are about two thirds of the freshwater is being locked up in glaciers and permanent snow cover. With the population increasing, freshwater resources are in demand and even further reduced by pollution. There are some 2 million tons of waste per day are disposed of within receiving waters like industrial wastes and chemical, agricultural waste and human waste. Our world will face critical challenges in coping up with progressive water shortages and water pollution (UN, 2014).

River is the life line of human settlement all over the globe. Civilizations have been founded upon the banks of rivers in the earliest times. Due to the advent of civilization and increasing human populations, the range of requirements for water has increased with higher demands for higher water quality. The river water quality has degraded by several human activities like; clearing of forests and natural vegetation for agriculture activities, timber harvesting, excessive use of fertilizers and pesticide with the development of agriculture plantations, excessive use of fertilizers and pesticide with the development of agriculture plantations in peat

Klang River is located within the state of Selangor and Kuala Lumpur in Malaysia and connected to the Straits of Malacca. The river has an approximate length of one-hundred and twenty kilometers. Klang river basin has twelve rivers flowing in it that makes it has twelve river basins. Among these twelve river basins, two of them are

classifies as clean, another five of them are classified as slightly and the rest of them are classified as polluted. (DOE, 2013).

Klang River is an essential river for Klang Valley residents since there are two major dams at upstream of the river known as Batu Dam and Klang Gates Dam. This dam function as main water supply to the people of Klang Valley. Hence, it is essential to monitor the water quality by test the water regularly in order to maintain safe and reliable sources of water for the residents.

## **1.2 Problem Statement**

The main culprits that are fouling Klang River are effluent from sewerage treatment plants (80%); commercial and residential centers (9%); industries and workshops (5%); food industries, restaurants and wet markets (4.2%); and squatters and others (1.8%). There are also 77 000 tons of rubbish end up in the river annually which lead the river being polluted (P.Aruna, 2014). Besides, the presence of impurity substance such as El Nino may cause of shortage of water supply that occur during the 1998 Klang Valley water crisis. Human activities such as sand-washing activities, dumping of silt and waste one of the factor Klang River being polluted (Faridah, 2014). The activities lead the waste, consisting of mud and silt dumped into the river. Hence, an integrated assessment of the Klang River water quality should done for environment improvement.

## **1.3 Significant of Study**

The research about water quality of the Klang River is important to determine the current water quality of the river. Klang River that is classifies, as a polluted river has to fulfill the specification in order to safe to be use as a recreational purpose. The specification and the standards water quality for recreational purpose should have at class II (DOE, 2010)

Generally, Klang River water quality is the main consideration of this research where it is important to determine whether the water may suitable to be use for a recreational purpose without harming the person who has a body contact with the water. Hence, it is also essential to identify the sources of contamination, recommend precautions and actions to taken to consider the level water quality.

Klang River will be transform for a recreational purpose under River of Live project that is under Economic Transformation Programme. The river will use as an alternative transportation among the Klang Valley residents and will be part of tourist attraction towards our country. Hence, a study on the water quality improvement of the river may assists the authority department to conduct the project.

#### **1.4 Objectives**

- To determine the water quality of the Klang River via physical, chemical and biological test based on NWQS and WQI
- To identify the sources of contamination and actions to taken to consider the level of water quality

#### **1.5 Scope of Study**

The study will conducted at Klang River that is located at Kuala Lumpur. The sample of the water taken and tested in order to determine the water quality. The sample will tested at Universiti Malaysia Pahang laboratory with the equipment and facilities available.

#### **1.6 Expected Outcome**

- The result for the research done will be useful for Dewan Bandaraya Kuala Lumpur (DBKL) in their attempt to clean up the Klang River to ensure a quality water supply among Klang Valley.
- A proper environmental management steps will be a guideline to maintain the river water quality.
- An assessment on the Klang River water quality on the latest updated result that may be useful in the further research.