



## 1. Introduction

Heavy metals have always occupied a central place in the activities of man starting with lead in Roman times. In fact, some attribute the fall of the Roman Empire to contamination of water with lead pipe and the use of lead glazed vessels for storing water. Today, heavy metals are commonly used: for instance, mercury for gold mining and also for making thermometers, cadmium for batteries and as a basic element to produce reactor control rods, and arsenic in the electro-plating industry. While the use of heavy metals brings its own advantages, it must be regarded as a mixed blessing because their indiscriminate use poses serious environmental hazards and health risks, especially to children.

Heavy metals represent an environmental hazard because once the metals enter the environment they cannot be destroyed. These metals then change from one form to another and persist in the environment. For instance, we are all familiar with the transformation of elemental inorganic mercury to toxic organic forms by aquatic animals.

Therefore, it is critical to assess the distribution of these metals in the environment and also their health effects. Severe heavy metal contaminations have been reported in South-East Asia: arsenic contamination of groundwater in major parts of Bangladesh, lead in gasoline in Indonesia, cadmium contamination of rice fields in Thailand, and mercury contamination from small-scale and industrial gold mining activities in Indonesia, and from medical instruments breakage in India. These represent but a few cases of the occupational and environmental risks due to of heavy metals that are of importance to us.