

**INCEPTION WORKSHOP – MERCURY STORAGE AND
DISPOSAL PROJECT IN THE CARIBBEAN
(JAMAICA, SURINAME, TRINIDAD AND TOBAGO)**

**AUGUST 12-13, 2015
PORT-OF-SPAIN, TRINIDAD AND TOBAGO**

**COUNTRY PROFILE: TRINIDAD AND TOBAGO
PRESENTED BY: ENVIRONMENTAL MANAGEMENT AUTHORITY**



Sources of Mercury Wastes

- The National Hazardous Waste Inventory for Trinidad and Tobago (2009) reported that a large number of generators recorded small quantities of mercury wastes (wastes contaminated with mercury and mercury compounds) for the period 2004-2008.
- The main activities which contributed to the generation of mercury wastes were:
 1. Electrical maintenance and the changing of fluorescent bulbs (76.29%)
 2. Laboratory analysis (22.76%)
 3. General cleaning of building and equipment (0.48%)
 4. Electronics repair including phones and medical equipment and broken thermometers (0.39%)
 5. Cleaning of medical facilities and equipment (0.07%)
 6. Amalgam used for dentistry (0.01%)

Sources of Mercury Wastes (cont'd)

- The main economic sectors which conducted activities that generated mercury wastes are shown in Figure 1.

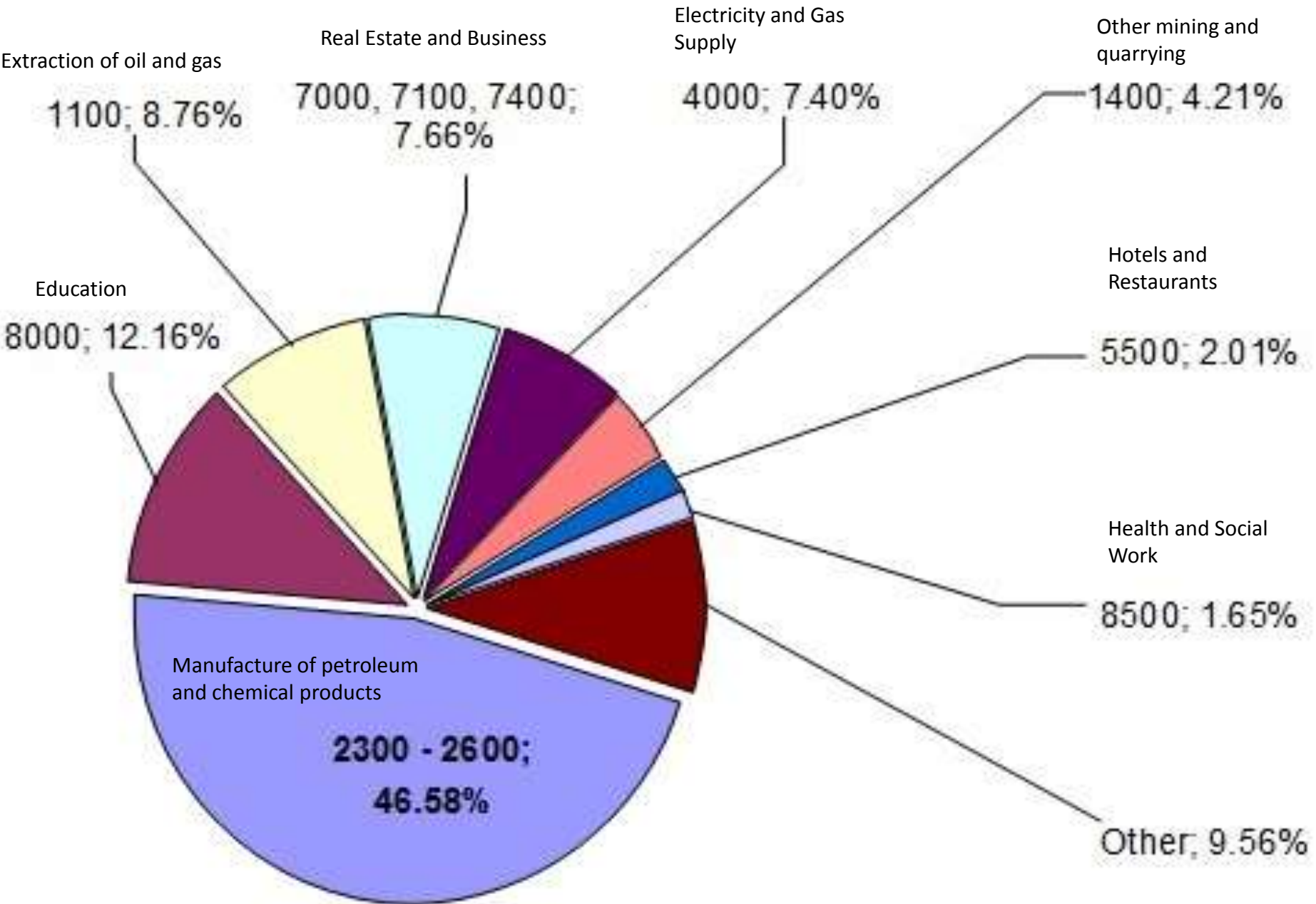


Figure 1: Contribution by Economic Sector to Mercury Waste generated for the period 2004-2008.

Other Studies on Mercury Contamination

Findings of studies on heavy metal concentrations including mercury in the environment:

- Mohammed et al. (2011): The study focused on heavy metal concentrations in nearshore marine sediments and fish tissue from the Sea Lots harbour, the Point Lisas harbour and offshore of the Caroni Swamp. It was found that there was a strong positive correlation between metal concentrations in fish tissue with sediment metals. Zinc, copper and mercury had a bioaccumulation factor (BAF) greater than one, which suggests a high bioaccumulation potential for these metals.
- Norville (2005): The study focused on heavy metal concentrations in sediments in the Gulf of Paria. Samples from the mouths of major rivers that flow into the Gulf of Paria were also analyzed. It was found that sediments at the river mouths tended to accumulate copper, lead, zinc and mercury while sediments further from the coast tended to accumulate iron, aluminium, manganese and chromium.

Other Studies on Mercury Contamination (cont'd)

- Astudillo et al. (2005): The study focused on heavy metals concentrations in oysters, green mussels and sediments from the Gulf of Paria. It was found that mercury in sediments at all sites in Trinidad and Venezuela exceeded United States National Oceanic and Atmospheric Administration Guidelines and Canadian Sediment Quality Guidelines. The findings of the study suggested that mussels may be better biological indicators of heavy metal pollution in sediments. The study also mentioned that the elevated concentrations of mercury in sediments from the Gulf of Paria and Northern Venezuela may be due to run-off from gold mining operations in the Orinoco River watershed.
- Astudillo et al. (2002): Heavy metal concentrations were monitored in edible soft tissues of shellfish (green mussel and oysters) from Trinidad and Venezuela. It was found that the highest mercury concentrations in oysters were from Chaguaramas but did not exceed the maximum permissible limit for human consumption.

Other Studies on Mercury Contamination (cont'd)

- Klekowski et al. (1999): The study focused on an association of mangrove mutation, scarlet ibis and mercury contamination in Trinidad. The study found biological pathways of transport of mercury via the scarlet ibis which had a six-fold higher concentration of mercury, thought to be methylmercury, compared to black-crowned night-heron which also nested at that site. It was found that decades of molted feathers of ibises promoted an unusually high incidence of mutations in a local population of red mangroves in Trinidad due to locally elevated mercury levels in the underlying sediments. The high concentrations of mercury were probably acquired by the birds during their annual migration to wetlands in South America contaminated with run-off from gold mining operations.

Management of Mercury Wastes

- The Hazardous Waste Inventory found that large generators contracted local waste handlers to collect, treat and dispose of wastes, while small generators generally discarded the waste in the municipal waste stream.
- The treatment and disposal methods used to manage wastes generated by main activities highlighted earlier were as follows:
 - *Electrical Maintenance and Lighting*: Wastes were either encapsulated or discarded as municipal waste.
 - *Dental Amalgam* : The waste was sent to the hospitals for disposal via incineration.
 - *Laboratories*: The waste was collected, treated and disposed of by waste handlers.
 - *Cleaning of facilities and equipment*: The waste was discharged into

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