

INDUSTRY AND WASTE MANAGEMENT

MAJOR INDUSTRIES

Many industries on the Coast are based on primary production and process agricultural products both for export and for local consumption. These industries include cashew husking works, pineapple canneries, rice mills, copra drying facilities and other light processing or export preparation facilities for other crops such as coffee, groundnuts, cotton and sisal. Other industries include cement manufacture, steel rolling mills, iron smelting and oil refining.

Chemical plants located near Mombasa pose a risk of toxic effluents and spillages which may carry complex organics and heavy metals into the coastal environment. Textile mills which are also found near Mombasa, are another potential source of concern through the toxic dyes which they often discharge. On the other hand, the effluents from fish processing plants which are also common on the coast, are not expected to be toxic but they are high in Biochemical Oxygen Demand and organic nutrients leading to anoxic conditions and eutrophication respectively in the receiving waters.

The growing level of industrialization in greater Mombasa is causing considerable concern as a result of its environmental impacts. The discharge of industrial and domestic wastewater in the Creek has resulted in pollution and chemicals are known to leach from the solid waste dump established in the mangrove forest. Tar balls have also been common on some beaches.

Table 9 (below) gives an idea of the categories of industries in Coast Province and the numbers of registered firms in each category.

Table 9 : Numbers of registered firms by industry category for Coast Province

industry	registered firms
Vegetable and animal oil	13
Grain mill products	10
Bakery products	11
Textiles, knitting & weaving	24
Pulp, paper & board	6
Printing & publishing	6
Chemicals, paints, plastics & rubber	22
Sawmills & timber products	6
Petroleum refining	2
Metal products	21
Ship-building & repairs	2
Generation of electricity	3
Soap, perfume & cosmetics	3
Food, malt & soft drink	12
Cement lime & quarrying	9
Other	9
total	159

SOLID WASTE MANAGEMENT

Coastal urban centres that have refuse collection services are Mombasa, Kilifi, Malindi and Lamu. Solid waste from the Mombasa Municipality and Lamu, includes sludges from septic tanks and soakage pits, domestic rubbish and even industrial waste. This waste is disposed of at dump sites located in mangrove swamps. Refuse from Kilifi and Malindi is tipped on land sites.

LIQUID WASTE MANAGEMENT

Domestic sewage

Mombasa Municipality has separate sewerage systems for domestic sewage and storm water runoff. The domestic sewerage system was designed to serve about 17% of the current population. There are two treatment plants one located on the island and the other on the west mainland. These are designed for primary and secondary treatment, respectively. The outfalls for domestic sewage and storm water runoff are located in the Kilindini and Tudor Creeks. The rest of the town utilizes pit latrines (59%) and septic tank/soakage pit systems (24%). Sludges from septic tanks and pit latrines are usually disposed of at the Kibarani dump site on the shores of Makupa Creek.

In other coastal urban centres, the methods of domestic sewage disposal are mostly pit latrine, septic tanks and soakage pit systems.

Industrial sewage

Industrial activities are concentrated in the Mombasa District. With the establishment of Export Processing zones, industrial development is progressing beyond the District boundaries to Mazeras and Mariakani in Kilifi District. There are very few industries that have facilities for effluent pre-treatment before disposal and among those that have treatment systems is the petroleum refinery. A number of industries use septic tank/soakage pits, vertical drains or direct discharge into the sea.



Figure 56 : In addition to discharges from land-based sources there are also frequent operational and accidental discharges from ships