

## **SUMMARY**

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The study was conducted with the financial collaboration of Overseas Environmental Cooperation Center (OECC), Japan to examine the impact of urbanization on environment.

Hayatabad Township was chosen as a typical role model for the present study. Help was sorted from different departments to incorporate the relevant data in this study.

A detail survey was conducted by Pak-EPA team members with NWFP-EPA assistance for both water environment and solid waste characteristics. To see the water quality from domestic and industrial discharges and the surface water quality, seven different points were selected for water sampling. Spot testing were performed for certain parameters. Organic pollutants like BOD and COD in these water channels vary from 47.5 to 323.5 mg/l and 221.0 to 2240.0 mg/l respectively. Highest BOD and COD concentrations were found at sampling point P1, which are 323.5 mg/l and 2240 mg/l respectively. The concentrations of heavy toxic metals like Lead, Chromium, Zinc and Copper vary among different locations. Arsenic and Cadmium could not be detected by AAS. By going through the analytical results of the water samples, it is concluded that the water discharge from Hayatabad Township is seriously degrading the down stream water bodies and ultimately River Kabul.

A leachate sample was collected to examine the chemical and bacteriological parameters. Highest organic and inorganic pollutants were found in leachate sample. By analyzing the analytical data, it revealed the low relative biodegradability of the leachate of the dumping site.

Seven days consecutive survey on Solid Waste characteristics of Quantity and Quality, generated a very useful data. To know the waste generation in residential area, model houses were divided in different categories. According to the survey waste generated per house is 5.5 Kg, where as waste generated per capita per day 0.66 Kg. It is estimated from the survey that the total generation of solid waste is 66,000 Kg per day in residential area. It is also estimated that the commercial and park areas generate an additional 1000 Kg of solid waste per day. The mode of transportation of solid waste is mainly donkey carts to the dumping site, situated at Phase-VII, which is now abandoned. Two garbage trucks are also used for waste collection from parks and commercial areas. These trucks also collect waste from some primary collection points. The donkey carts are collecting garbage from door to door. This service is provided by the owners of the donkey carts for their own interest to segregate the saleable items from this garbage. Most of the solid waste about 90% comprised is organic such as vegetables/fruits and other kitchen waste.

Saleable or recycled items from solid waste generated in Hayatabad township is only 5.5%. Big chunk of solid waste, which is organic are also taken out before going to dumping site by the scavengers to use as a feed to animals.

Presently there is no proper dumping site of solid waste in Hayatabad after shutting down the Phase-VII site. Now these two trucks are only dumping waste approximately 10 to 15 tons per day to the site located some 15 Km away from Hayatabad. Donkey carts owners are dumping garbage waste in ditches and excavated areas of Hayatabad Township until filing this report.