ENVIRONMENTAL IMPACT IDENTIFICATION AND POSSIBLE MITIGATING STRATEGY FOR BORALESGAMUWA LAKE

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The degradation of lake environments and resources is now a world-wide issue. Efforts urgently have to be made to restore the friendly coexistence of lakes and humankind through appropriate management of lake/watershed systems to assure the sustainable use of their resources.In this project the Boralesgamuwa Lake, which is one of the most distinctive landmarks within the town limits of Maharagama had been studied. The rapid urbanization of the town has led to the environmental deterioration of the lake exacerbated by numerous out falls discharging nutrient rich water into this stagnant body of water.

Objectives of the study were identification of sources of polluting the Boralesgamuwa lake, significant impact of pollution, and designing and developing a suitable mitigating strategy. There isn't any water quality monitored data relating to the Boralesgamuwa lake. During this study, pH, conductivity, temperature, DO, BOD, COD, nitrate, phosphate and the *coliform* levels of the lake water were examined & also several sources of polluting the lake were identified. About 30 surface water samples were analysed during Feb. 2000 to July 2000. Heavy metal pollution of the lake was also examined. Physicochemical characteristics of the Boralesgamuwa lake water showed significant site-specific & time-bound variations during the study period.

The phosphate concentration in surface water close to wastewater discharging point of one garment factory is comparatively high. During the month of April phosphate concentration at that point was comparatively low, because at that time the factory was not working. At the point, where the urban waste water drainage line is entering the lake, the nitrate concentration is fairly high. Most of the lake surface is covered with macrophytes and with very high amount of the water hyacinth (*Eichornia).* The coli form count of the lake is also very high. The MPN (Most Probable Number) is more than 1000 per 100 ml for the most of the locations. The faecal coli form count is also very high. Unauthorized settlers and enchroachments are common factors of the lake reservation.

The industry concerned is already doing primary treatments and they are discharging their effluents according to the CEA standards. But the problem is still there. There are no industrial effluent standards for phosphate in Sri Lanka.

Proposed mitigating strategies for these negative impacts

1.For phosphate reduction 1.1Chemical treatment
1.2Biological treatment

2.For urban waste water 2.1 A central waste water treatment plant should be installed

3.For reduction of faecal contamination3.1 A sewerage system should be designed

4.Unauthorized settlers and enchroachments 4.1 Unauthorized settlers and enchroachers should be resettled.