

**ASSESSMENT OF THE CURRENT STATUS OF
WATER QUALITY AND POLLUTION LEVELS IN
HIKKADUWA, GALLE AND HAMBANTHOTA
FISHERY HARBOURS, SRI LANKA: A
COMPARATIVE STUDY**

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by
OBADA MUDALIGE MAYURI DILANI JAYAMPATHI

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Uva Wellassa University**

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Abstract

Fishery harbour in Sri Lanka has been polluting in many aspects from the recent past due to irregular monitoring of pollutants. This study was carried out with the objective of assessing the water quality and severity of the pollution level in three selected fishery harbours namely Galle, Hambanthota, Hikkaduwa located in the southern coast of Sri Lanka. The study was carried out from May 2014 to July 2014 and sampling was done on monthly basis from three stations from each harbour. Dissolve doxygen, water temperature, pH, turbidity, conductivity, total dissolved solids and salinity were determined in situ using Thermometer, pH meter, turbidity meter, conductivity and collected water samples were subjected to laboratory analysis using standard methods for the Examination of Water and Waste Water, (APHA 20th edition). The study identified the main contributors of deterioration of harbour water quality are vessel generated discharges, industrial, domestic waste water, user generated pollutants and external sources as natural phenomenon. pH, DO, Salinity, Nitrate - N, Nitrite - N, EC were within the acceptable standards in each harbour. Harbour water was characterized significantly high Biological Oxygen Demand ($9.67 \pm 0.7 \text{mg l}^{-1}$) ($7.1 \pm 0.43 \text{mg l}^{-1}$) ($9.17 \pm 0.25 \text{mg l}^{-1}$) respectively and high Chemical Oxygen Demand ($719.51 \pm 161.63 \text{mg l}^{-1}$), ($926.5 \pm 93.5 \text{mg l}^{-1}$), ($840.2 \pm 104.8 \text{mg l}^{-1}$). high oil and grease content ($13.1 \pm 0.6 \text{mg l}^{-1}$), ($17.9 \pm 0.2 \text{mg l}^{-1}$), ($17.8 \pm 1.2 \text{mg l}^{-1}$) in Hikkaduwa, Galle, Hambanthota respectively exceed the recommended level. MPN value of fecal coliforms 2400 /100 cfu/ml, which exceeded the recommended standards in Galle and Hambanthota and Hikkaduwa has 1600/100 cfu/ml. Diatoms and copepods were dominant in plankton studies of each harbour. Results of this study revealed that the harbour has been degraded in many aspects and harbour is subjected to severe oil pollution, organic pollution and microbial contamination