B-25: Water quality in the Dutch Canal, the main water source for shrimp farming in Sri Lanka

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More than 70% of the existing shrimp farms of Sri Lanka depend on the Dutch Canal as the source of brackish water supply. The canal also serves as a receiving body for farm effluents.

The present water quality conditions in the Dutch canal and the trends observed over the past 5 years, are described.

Several water quality criteria - nitrites (0.030 - 0.084 mg/l), sulphides (0.21 - 0.60 mg/l) total suspended solids (100 - 175 mg/l) and BOD (11.6 - 40.8 mg/l) - were found to be in sub optimal levels for shrimp farming during dry weather periods of the year. Other parameters studied - nitrates (0.001-0.025 mg/l), phosphates (0.015 - 0.070 mg/l), dissolved oxygen (4.0 - 9.0 mg/l) and salinity (15 - 38 ppt) were within acceptable ranges during dry seasons.

During wet weather periods nitrite (0.009 - 0.025 mg/l), BOD (4.8 - 12.5 mg/l) and sulphide levels (0.10 - 0.24 mg/l) were within acceptable ranges while salinity (2 - 10 ppt) decreased to sub optimal levels.

A general trend was observed with increase in toxic metabolites and pH in the Dutch canal during the past 5 years.

Deterioration in the water quality conditions has to be considered in the broader context of future planning and siting of the shrimp farming systems in this region.