C-12 Evaluation of suitability of Samanalawewa water (reservoir and leakage) for irrigation

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Samanalawewa reservoir water flowing down Walawe ganga is being used for irrigation purpose by farmers downstream. With increased use of agrochemicals in modern farming and increased pollution due to man's activities the quality of water in these resources may be affected. Thus an evaluation of water quality parameters of Samanalawewa Reservoir has been carried out based on the guidelines set by WHO for suitability of the water for irrigation purposes and an attempt has also been made to forecast the effect of wet blanketing on these parameters while irrigation water is released: (a) through the leakage only; (b) through the leakage and irrigation valve.

Samples of reservoir water and the leakage water collected at monthly intervals from January 1994 to July 1997 were analysed. The analyses included electrical conductivity measurements by conductivity meter, total hardness, alkalinity, chloride, sulphate and silicate by titrimetric methods, pH value by pH meter, sodium and potassium by DR 2000 spectrophotometer.

SAR values and adj. SAR values have been calculated on the results of water analysis to find if the water has any adverse effect on soil fertility. Results were compared with the specifications set by WHO for irrigation water.

Water quality parameters for reservoir and leakage water were found to be well below the limiting values set by WHO for irrigation water. Due to increased man's activities a slight gradual increase in SAR values is noted. Unless preventive measures are taken these values may rise in the future due to wet blanketing and affect the soil fertility. Leakage water was found to be acceptable for irrigation purpose. During the drought season, release of water for irrigation is usually limited to leakage only. However until leakage is combated by wet blanketing, leakage water is available to the farmers at Kaltota in addition to direct releases through the irrigation valve.

It is recommended that irrigation release during wet blanketing until sealing is achieved, should be limited to the leakage to ensure minimum adverse impact of wet blanketing on the paddy cultivation at Kaltota.