# Evaluation of functional capacity of wetlands and its application in Environmental Impact Assessment (EIA)

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Determination of the pre-development base-line environmental conditions is an essential first step in EIA. Impacts due to development activities are predicted and evaluated with reference to the base-line. The base-line for a wetland is appropriate to be characterized with their functions and values. The present study is an attempt to develop a pragmatic model for the purpose.

Eight functions and values were used to characterize wetland environments and the baseline conditions are evaluated by the capacity to perform each function. Questionnaire checklists were used to screen the potential functions of wetlands. Environmental parameters appropriate to predict the functional status were identified and scaled-weighted checklists were adopted to ascertain their relative magnitude. The relative contribution (weight) of each variable to the functional capacity was determined using a pairwise comparison technique. The products of scale and weight for each predictor variable of function were added, expressed as a percentage to the maximum possible functional capacity value and then converted to a 1-10 scale.

Social significance of each function was determined using a questionnaire checklists and interpretation keys and expressed in a 1-3 scale. The products of percentage functional value and social significance values were aggregated to derive a total wetland value. For comparison with other wetlands, total value was expressed as a percentage overall value against a hypothetical 'super wetland'.

Baseline data on Tabbowa, a man-made freshwater wetland in north western Sri Lanka were collected and analyzed to test the applicability of the methodology. It was found that secondary data gathered from various sources and the primary data generated through field surveys were sufficient to evaluate the major wetland functions.

The attempt to use the same methodology to rank the wetlands according to their functional capacities revealed that it provides a practical means of organizing base-line information for rational development planning.