

Thesis title:

A GIS base method for the identification of optimum locations to install mini/micro hydropower plants in Sri Lanka

Abstract:

With the increase of the population, the requirement of alternative renewable sources for power generation is further emphasized. Among the available alternative energy resources, hydropower generation is one of the most important renewable energy sources in the modern world. When compared with the other countries, Sri Lanka consists of 103 major rivers that radially diverge from central hill-lands with favourable hydro-geological features which can readily be used to generate hydropower. However, most of the available potential renewable energy sources in most major basins have already been exploited and due to possible adverse environmental impacts and financial viability, developing additional locations for renewable energy generation is now limited.

This research study focuses on to develop a method based on an automated algorithm to identify the possible locations to install small hydropower plants considering both run-of-the-river schemes and with small impoundments while simultaneously addressing environmental constraints as well.