

## Use of Geo-spatial Information System for the Potential Location Analysis of Small Hydropower.

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### Abstract

The alarming climate change impacts are demanding the use of renewable energy sources like never before. Hydropower is one of the most cost-effective and environmental friendly energy technology recognized in the world. Big hydropower projects come up with the requirements of huge investment costs along with environmental impacts, whereas small hydropower(SHP) are considered a best solution for the economical source of energy. SHP, basically Run-of-River (RoR) type plants can be sustainable renewable energy sources and given the nature of perennial rivers flowing from steep gradient and rugged topography, feasibility of such plants is equally high in Nepal. The objective of this study is to determine the primary potential sites for the development of RoR type SHP sites using Geo-spatial Information System(GSIS). The use of GSIS enables precise survey of large area within a short period of time. This study has focused on the determination of locations by establishing defined criteria and methodologies and hence have located multiple locations rather than selecting one best location. The approach is applicable for the rapid initial screening of potential locations and results can facilitate detail feasibility study for the technical and economic analysis of SHP in the basin.

**Keywords : Location analysis, GSIS, Run-of-River, Small hydropower, Nepal.**

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