

## **PREFACE**

The hydrological and morphological aspects of any location can be understood by looking at the drainage morphometric parameters. Understanding the hydrological and morphological traits in various basins or watersheds with more or less diverse morpho-climatic settings is the goal of all the related studies.

Applications in the field of water resource management are discussed and appraised for effective future research and development in order to emphasize the significance of GIS in water resource management. The basics of GIS are outlined, and the development of GIS in the context of water resources is examined throughout history. Modeling of surface hydrologic and groundwater resources, water supply and sewage systems, stormwater runoff and nonpoint source pollution for urban and rural areas, as well as other related applications, are some of the current GIS applications that are described.

Freshwater, which makes up only 2.6% of the water on Earth, is essential to all life. Only a small portion of the freshwater is readily accessible because the majority of it is frozen. As a result, it is crucial that we carefully manage and conserve our water resources. Water resource management has been a very important and essential part of GIS when integrated with hydrological studies.

The following study was conducted to obtain the drainage basin setting of the river. For this purpose, several parameters were incorporated with GIS to conduct the study. The morphometric parameters of two basins were considered. Accordingly, data was collected. First hand processing was done using GIS software. The processed data was then used to calculate all the necessary parameters of basin analysis.

With the help of mathematical formulas analysis could be done to understand the basin structure and drainage network.

I would like to mention here that major guidance for completion of this paper work has been possible because of Dr. Dharmaveer Singh of Symbiosis International University.