

6. PREFACE

Open surface water bodies are susceptible to climatic change and human activity, even though they are crucial to agricultural and industrial productivity. At local, regional, and global scales, open surface water bodies have been extensively mapped using remote sensing data. Most successful and efficient way for examining water resources, assessing flood and drought risks, and planning for water has been water body extraction utilizing remote sensing. Timely monitoring and dissemination of data on surface water dynamics is crucial for the designing policy and decision-making processes. Water is a vital human requirement, and despite the rain, water shortage exists in major urban centers as well as rural regions. The only approach to address this issue is to save as much accessible water as possible. To protect this, dams, weirs, Bandharas, and river barriers must be built. The cost of building these structures is high. There has to be a better option; in this case, we can simply raise the height of the current dams and increase the capacity of the water utilizing drone and GIS technologies. Following that, we worked on the Harcheri KT weir, which is located in the Ratnagiri area of the Kokan region, where the rainfall is modest but there is still a water shortage. Water consumption has grown as a result of population growth and industrial expansion. To raise the height of the Hacheri KT weir, we employed geospatial and drone technologies. The Harcheri KT weir feasibility study, which used GIS-based integrated mapping and area capacity graphs, assisted the authority in distributing water fairly, improving service delivery, and meeting standard requirements.