



**SUMMARY OF FINAL REPORT OF
MINOR RESEARCH PROJECT**

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TITLE

**“The Geomorphological study on disappearing lakes
of Kabini River Basin using Geo spatial tools”**

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The objective of the research is to know the trend of drying and vanishing of lakes the chronological sequence. On account of this the oldest and reliable primary data available is used that is 1:250000 topological maps. Based on sequential disappearance and drying up of lakes, an analysis is done to understand the reasons behind the drying of lakes, and to cross verified.

The research area is demarcated under the Geomorphological aspects. The condition of a lake at a given time is the result of the interaction of many factors like watershed, climate, geology, human influence and characteristics of the lake itself. The geological conditions in the survival and non-survival of lakes and also the factors causing vanishing of lakes, which

has been addressed both from the point of view of human induced angle and as far as natural or climatic disorder.

The study depends on Geomorphology of the study area. It is essential to understand the drainage network, stream path, slope to analyze the formation of lakes and assemblage of lakes. Based on the topographical situation and gradient can be divided into three categories. They are

1. Water divide terrain
2. Hilly terrain
3. Stream path terrain

TIN is generated for the study area. Elevation is checked under this. The larger part falls under 600mts to 900 mts from msl. The elevated height of 900mts to 1800mts falls under this section. In the lower elevation of 300mts to 600mts river is stretched. The kabini river stream falls on sixth order.

Geographical information system is an effective tool in the study of river basin and management of resources. The GIS tools help to analyze the drainage network, stream order of the basin. Geomorphology helps to understand the formation, assemblage of lakes on different slope. Slope analysis, change detection, fishnet, average nearest neighbor analysis is performed to analyse the formation of lakes, density of lakes, survival of lakes. To build artificial lakes the slope analysis is important. The objectives of the study is achieved and given insight of the river basin, how physiographic condition has formed and distribution of the lakes.

Past two decades, there is acute shortage of rainfall in the southern districts of Karnataka. The change in monsoon over time and space as resulted in dry condition in southern districts of Karnataka such as Mysore and Chamarajnagar districts. Because of the drought condition the Cauveri river basin is undergoing a drastic change in climate. This could be seen in the form of drying lakes. .

The fresh water availability is very less and the fresh water resources are disappearing. Many of the countries lack with the drinking water availability. In the case study of the basin conducted in Heggadadevanakote, Hunsur, Nanjangud, Mysore and Gundlupet taluks

total area of lakes are reduced and some lakes are newly formed after 1930 when the kabini Dam was constructed. Lingabudi lake, Vijayapura aminkere lake are located in the urban centres and the lakes are encroached and getting dried as the inlets are closed to the lake. Marse lake, Chinnadagundi village lake, varuna lake, pillahalli lake, kalale lake, Hadinaru lake, Baragi village lake, kuthanur lake, uddur kaval lake are partially filled with water during rainfall season and they are dried in the non rainfall season. Some lakes are formed in the basin after the construction of Kabini Dam. They are Hakklapura lake, Hullepura lake, Berambadi in Gundlupete taluk. The results are shown in the table no-

In the recent years government of Karnataka has initiated the programme of refilling of lakes by lifting water from Kabini River canals in the Gundlupete Taluk because many of the lakes and the bore wells are dried due to continuous drought occurred from last four years. The Bandipur state forest lakes was rejuvenated by lifting water from bore wells using solar pumps. Even in the Taluks of Chamrajanagar such as harave, haradanahalli and kasaba hobli and in Nanjangud taluk, for the kavalande hobli the water was lifted from Alamburu to provide drinking water in 2014-15.

Climate change such as droughts, floods, deforestation, increased pollution, blocking of inlet ducts, Eutrophication due to Industrial effluents and agricultural wastes, siltation, encroachment of dried lake, deforestation, dumping of waste and linking of sewage untreated water is resulting in the natural hydrological variability. Many countries are facing severe health effects, negative economic growth, imbalance in the environment, alarming reduction of underground water due to drying lakes and pollution. The city of Los Angeles has paid more than \$ 1.2 billion to minimize the health hazards of windblown dust coming off the dried lake bed. Drying of lakes, fresh water resources are leading the world to inadequate access, to safe drinking water, sanitation.

Hence to overcome the problems of drying lakes, Karnataka government in 2013 decided to establish "Lake Development Authority" for orderly development of lakes and crack down on encroachments. Lake rejuvenation, unblocking the inlet ducts, silt removal before monsoon, construction of sewage treatment plants has to be performed to avoid the

pollution and vanishing of lakes during droughts. Water resources management is effective to control the excessive use of water for different purposes. Each and every person should have the awareness of water availability and rational use of water is essential.

Contribution to the society: In the study area many lakes are under the process of vanishing and this can be the evidence to the Government to initiate lake rejuvenation programme. The lakes which are polluted will cause many water borne diseases. Awareness can be created in the people and the society by explaining problems of fresh water resources importance and scarcity.