

# NITTE GRAMASWARAJ- A GEOSPATIAL TOOL

[Project sponsored by Karnataka State Council for Science and Technology, Bangalore  
under 37<sup>th</sup> Student Project Programme]

*Project Report Submitted by*

**Keerthan Prabhu  
(4NM10CV020)**

**Shelton Crasta  
(4NM10CV069)**

**Sushmitha  
(4NM10CV071)**

**Trishila Panigrahi  
(4NM10CV070)**

UNDER THE GUIDANCE OF

**Dr. Radhakrishnan K.  
Professor**

*in partial fulfillment of the requirements for the award of the Degree of*

***Bachelor of Engineering (Civil)***

*from*

***Visvesvaraya Technological University, Belgaum***



**DEPARTMENT OF CIVIL ENGINEERING  
N.M.A.M. INSTITUTE OF TECHNOLOGY**

(An Autonomous Institution under VTU, Belgaum)  
(AICTE approved, NBA Accredited, ISO 9001:2008 Certified)  
**NITTE -574 110, Udupi District, KARNATAKA**

**April 2014**

## ABSTRACT

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**Keywords:** *Geospatial Mapping, Resource Mapping and Management, Gramaswaraj, Remote Sensing, GIS, GPS, Thematic maps, DEM.*

**Introduction:** “Gramaswaraj” is a concept dreamt by Mahatma Gandhi for Indian villages to be self-sufficient by itself. Every village is blessed with its resources whether it is natural or man-made. But little has been achieved in self-sufficiency due to the improper data compilation and its accessibility with reference to its location. For proper planning, development and management of panchayat resources, mapping of these resources in an easy to access geospatial format is required which a common man, a planner or an executive can understand and manage. With the advancement of geospatial technologies, surveying, mapping, analysing, displaying, accessing, updating and disseminating data became easy and can be done in a user friendly format. Nitte Panchayat, situated in Karkala taluk of Udupi district in Karnataka resting at the foot hills of Western Ghats, being blessed with varied natural and manmade resources, is not mapped properly or utilised its resources for sustainable development to establish gramaswaraj. Nitte gramaswaraj could be achieved through geospatial mapping tools which is attempted in this project.

**Objectives:**

1. Creation of a detailed Resource map of Nitte Panchayat and its spatial attributes
2. Identification of various resource potential of Nitte Panchayat and preparing a Gramaswaraj development tool for Nitte.
3. Showing the efficacy of open access imageries and open GIS such as Google earth and Bhuvan for Panchayat Resource mapping and Gramaswaraj Geospatial tools

**Methodology:**

1. Delineation of geographical and political boundary of Nitte Panchayat through satellite imageries and reconnaissance survey.

2. Collection of attribute data from various sources such as National Population Census, Zilla Panchayat Office, Taluk Panchayat, Gram Panchayat Office, etc.,
3. Georeferencing of the cadastral map, SOI topographic Map, and satellite imageries such as Google earth and Bhuvan for the proper identification, location, delineation and mapping of the resource potential.
4. Preparation of various thematic maps such as contour maps, slope and aspect maps, DEM, drainage networks, Land use/Land cover, road networks, village boundaries, educational institutions, centres of socialising, centres of worship, primary health centres, etc.,
5. Preparation of GIS, overlay analysis and linking the spatial data with non-spatial data such as human resource potential and other attributes.

**Results and Conclusions:**

1. An interactive, user friendly geospatial tool for Nitte Gramswaraj has been developed.
2. It can be updated and utilised as a linking unit between Nitte Panchayat and other Government bodies
3. Sustainable development and management of resources in Nitte Panchayat can be implemented based on spatial and attribute data collected.