

Assessing the Land Potential Utilization Status of Watershed Area

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Abstract

The planning and management of the watershed environment require huge amount of information regarding almost all aspects of natural and manmade features of the area. Until lately this study could be achieved through days of exhaustive surveys map generation and tedious calculations. Remote sensing and GIS provides huge temporal database for an area and GIS provides the powerful tool for spatial and non-spatial analysis of remotely sensed data. The paper highlights the assessment of land potentiality using weighed overlay analysis with drainage density, soil, slope and lineament, LULC map was used to identify the utilization area of the watershed. The arithmetic overlay analysis was performed with potential and utilization layer to assess the availability of land for the future development.

Keywords : Drainage density, Weighted, Arithmetic overlay analysis

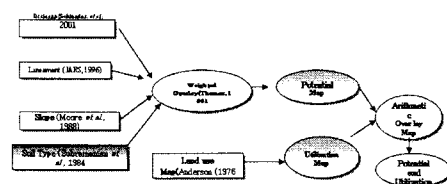
1. Introduction

Watershed, as a unit for development planning, is the natural choice of present time. The sustainable development of the resources in a watershed depends on the maintenance of the fragile balance between the productivity function and conservation. Remote Sensing and GIS have proved to be useful tools for such management practices (Sharma *et al.* 2001). The presently available cadastral maps could not be used for deriving land parcel level mapping and analysis. Therefore this study was undertaken with the aim assessment of land potential and utilization status of the watershed using

high-resolution satellite data.

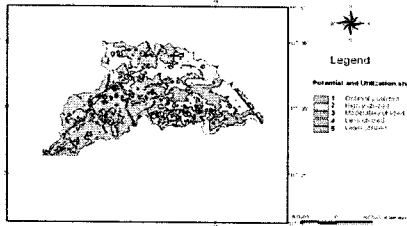
2. Methodology

The flow chart explain the general methodology.



3. Results

The resultant map and table gives the potential and utilization status for the future development of the watershed area.



Map: 1 Land Resources and potential status of watershed

Table.1 Land Resources Potential and Utilization Status of Watershed

Sl. No	Class	Area in hectare	Percentage of total area	Percentage of resource availability
1	Optimally Utilized	1587	47.5	Nil
2	Highly Utilized	60	1.79	10~20
3	Moderately Utilized	432	14.4	30~40
4	Less Utilized	1090	32.67	50~60
5	Least Utilized	149	4.4	70~80
6	Over Utilized	-	0	Nil

4. Conclusion

It is clear that integrated resources assessment in any region is important before planning for the conservation and sustainable utilization. The use of the satellite data, which gives the subtle details on a larger scale, can be best suggested for such studies. In the watershed area, the less utilized have the most available resources i.e., 50-60%. Therefore, this area should be prioritized for the optimal utilization and sustainable development. This endeavor demonstrates the application of GIS and RS techniques in studying potential and utilization status of the watershed area and its dynamics.

5. References

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