Identification Of Backward Areas In Kasaragod District, Kerala Using GIS

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ABSTRACT

Kasaragod is one of the backward districts of Kerala. Within the district, there are variations in natural conditions and socio-economic and demographic conditions. Some areas in the district are well developed and the others are in poor condition. In this paper an attempt has been made to identify backward areas in Kasaragod district using GIS.

This district is the northern most district of Kerala State. It has an area of 1961.30 sq. km with a population of 12,03,342 (Census, 2001). It has two taluks, four blocks, 39 Panchayats and two municipalities. Panchayat and municipalities are considered as basic units for the study of distribution of various parameters.

Parameters like density of population, occupational structure, health, educational and communication facilities, distribution of ration shops, availability of electricity to the residential houses, density of roads, and types of houses were considered for the identification of backwardness. Backwardness is correlated with the relief and other natural conditions. MapInfo GIS software is used for the analysis.

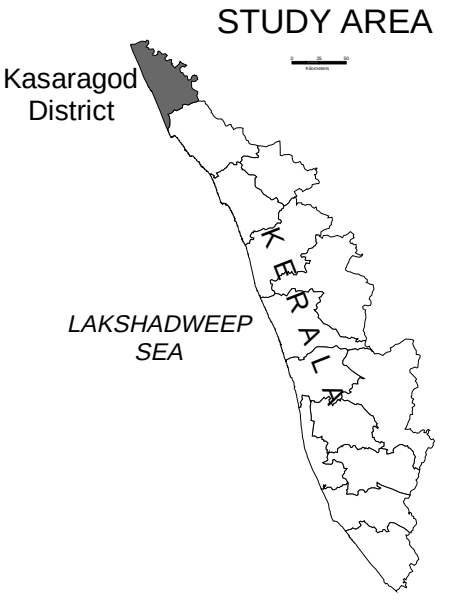
It is found that the coastal region in the west is well developed whereas mid and highlands are less developed. The midland region is occupied by the hard laterite known as "Duricurst". People do not occupy these areas as they face water scarcity during summer. Moreover in these areas cultivation is difficult. High land is steeply sloped with vegetation cover.

INTRODUCTION

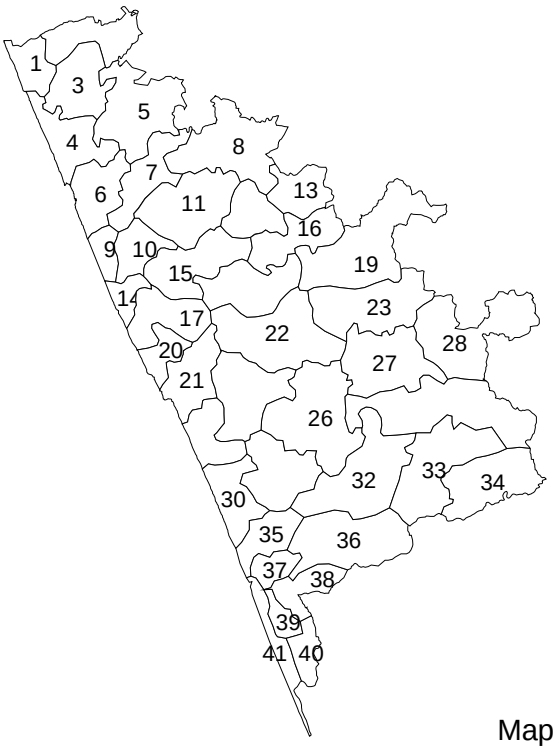
Regional developmental plan needs areal classification and application of regional concept as a descriptive device. The identification of regions is a long-established mode of geographical synthesis. Geographical Information System (GIS) has given regional geography a shot in the arm, providing means of analyzing much larger amount of information than could be used in the traditional summaries of areal differentiation. Many people have attempted to identify backward areas. They have used different parameters and different methodology. In this paper an attempt has been made to apply GIS for identification of backward areas in Kasaragod district, Kerala.

STUDY AREA

Kasaragod district occupies the northern most part of Kerala State (Map.1). The area of the district is 1961.30 sq km. It comprises of two taluks of Kasaragod and Hosdurg, There are 39 panchayats in four blocks namely Manjeshwar, Kasaragod, Kanhangad and Nileshwar. The district has only two municipalities of Kasaragod and Kanhangad. The district extends from the seacoast in the west to the Western Ghats in the east. The major portion of the district lies between 20m and 300m above mean sea level. The district is drained by 12



Map.1



Panchayats and Municipalities

1. Majeshwar
2. Vorkady
3. Meenja
4. Mangalpady
5. Paivalike
6. Kumbla
7. Puthige
8. Enmakaje
9. Mogral-Puthur
10. Madhur
11. Badiaduka
12. Kubadaje
13. Belloor
14. Kasaragod
15. Chengala
16. Karadka
17. Chemnad
18. Muliyar
19. Delampady
20. Uduma
21. Pallikara
22. Bedadka
23. Kuttikole
24. Ajanur
25. Pullur-Periya
26. Belur
27. Kallar
28. Pananthady
29. Balal
30. Kanhangad
31. Madikai
32. Kinnaur-Karindalam
33. West Eleri
34. East Eleri
35. Nileshwar
36. Cheemeni
37. Cheruvathur
38. Pilicode
39. Padne
40. Thrikarippur
41. Valiyaparamba

Map 2

rivers, the longest being Chandragiri. The temperature of the district ranges from 20°C to 26°C and the mean annual rainfall of 353 cm are mainly received during South West monsoon. The district of Kasaragod is the backward district. Before Kerala state formation in 1956, Kasaragod was part of Malabar district of Madras Presidency.

METHODOLOGY

The functional facilities of the Panchayats and the demography data of the panchayat was considered to identify the developed and backward Panchayats in Kasaragod district, The facilities were grouped as Health, Financial Communication, and Cultural facilities. Demographic parameters were also considered along with the facilities. Aspects considered under each group are

Health

1. Family Welfare Centre
2. Dispensary
3. Primary Health Centre
4. Community Welfare centre/ Ayurvedic Hospital
5. Allopathic Hospital

Communication

6. Post Office
7. Head Post office
8. Telegraph office
9. Telephone Exchange

Financial Institutions

10. Co-operative Societies
11. Co-operative Banks/Scheduled Bank
12. Nationalised Bank

Socio-cultural

13. Reading Room
14. Library
15. Community Hall
16. Cinema Theatre

Demographic Aspects

17. Density of population
18. Literacy

For each group weightage was given in a hierarchy. Lower order facilities were given lower score and the higher order facilities were given higher score. For example, in Communication facilities Post office was given score of 1, Head Post office was given the score 2, Telegraphic office 3 and Telephone Exchange 4. If there are more than one function the function is multiplied with the score for example 10 Post office (10x1). Levels of development were assessed by

assigning weigtages to the facilities in hierarchical order in each Panchayat as mentioned above. Total score for each Panchayat were added up and classified into High, Moderate and Low. Maps were prepared in GIS environment by digitizing all the Panchayats as polygons and scores as attribute values.

ANALYSIS

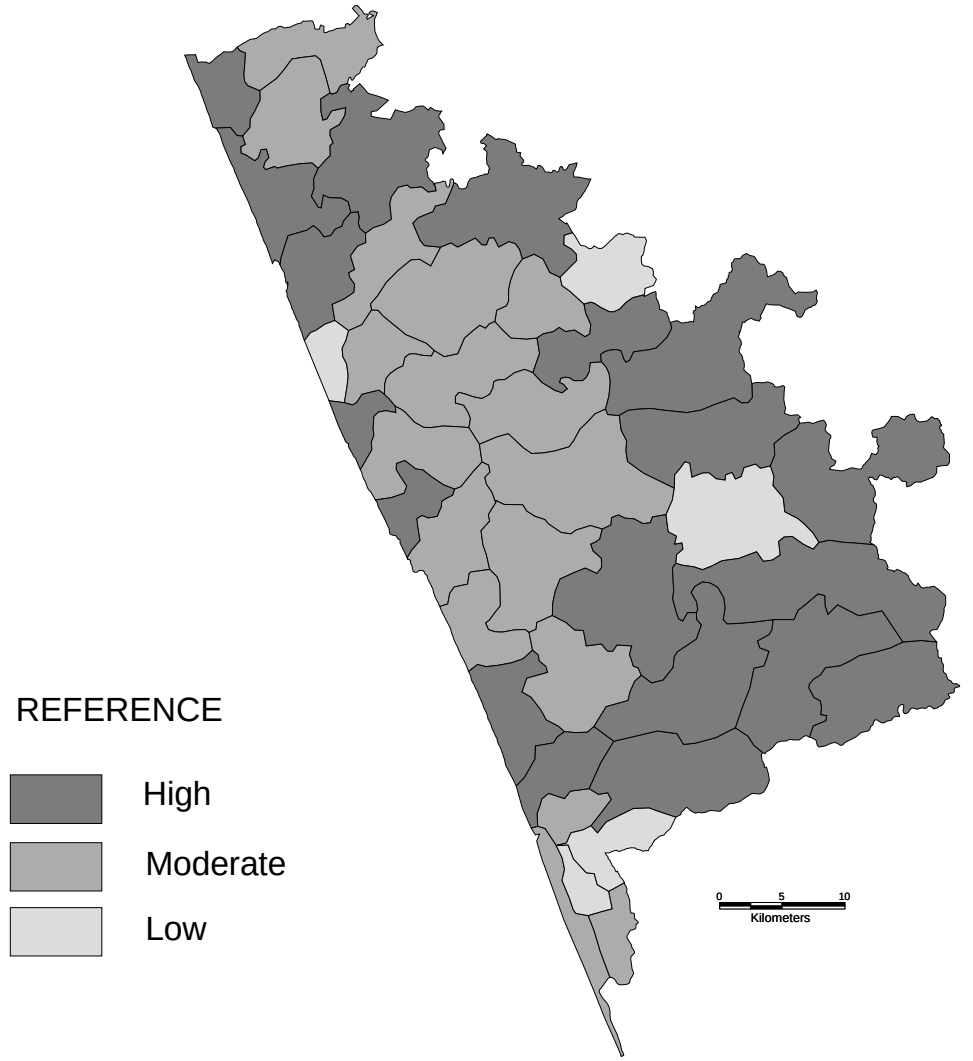
Health facilities are found high in the coastal panchayats and municipalities (Map.3). Communication facilities are found in almost all the panchayats except in Mogral-Puthur, Belloor, Kallar, Pilicode and Padne (Map.4). Financial institutions are found high in the coastal panchayats of mangalpady and Uduma and Nileshwar and in the municipalities of Kasaragod and Kanhangad (Map.5). Cultural facilities are found high in the southern panchayats of Hosdurg taluk than the Kasaragod Taluk (Map.6). High density of populaton is found in the coastal panchayats (Map.7). High literacy is found in all the panchayats in the southern taluk and coastal panchayats. A few panchayats in the eastern part have low literacy (Map.8). The district has two panchayats namely Kasaragod and Hosdurg. Panchayats in Hosdurg taluk is more developed than Kasaragod taluk. Panchayats in the west along the coast are well developed than Panchayats in the east along the Western Ghats except Balal, East and West Eleri (Map.9). The developed Panchayats in the east are the entry points to Kasaragod district from Karnataka State. The Western coastal plain is well connected by roads and railway. Between the two municipalities, Kanhangad Municipality is more developed than Kasaragod Municipality. Kasaragod is less developed due to the influence of the Port City of Mangalore situated in the north. Most of the interior panchayats are less developed due to the presence of "Duricrust" in the midland region of the district. Duricrust areas are difficult to cultivate and have sparse settlement due to poor availability of water for drinking and cultivation. These areas get very heavy rainfall during southwest monsoon and relatively dry during the rest of the period. Since most of the areas are occupied by duricrust formation over lateritic mounds, most of the rainwater is carried away by surface run off.

CONCLUSION

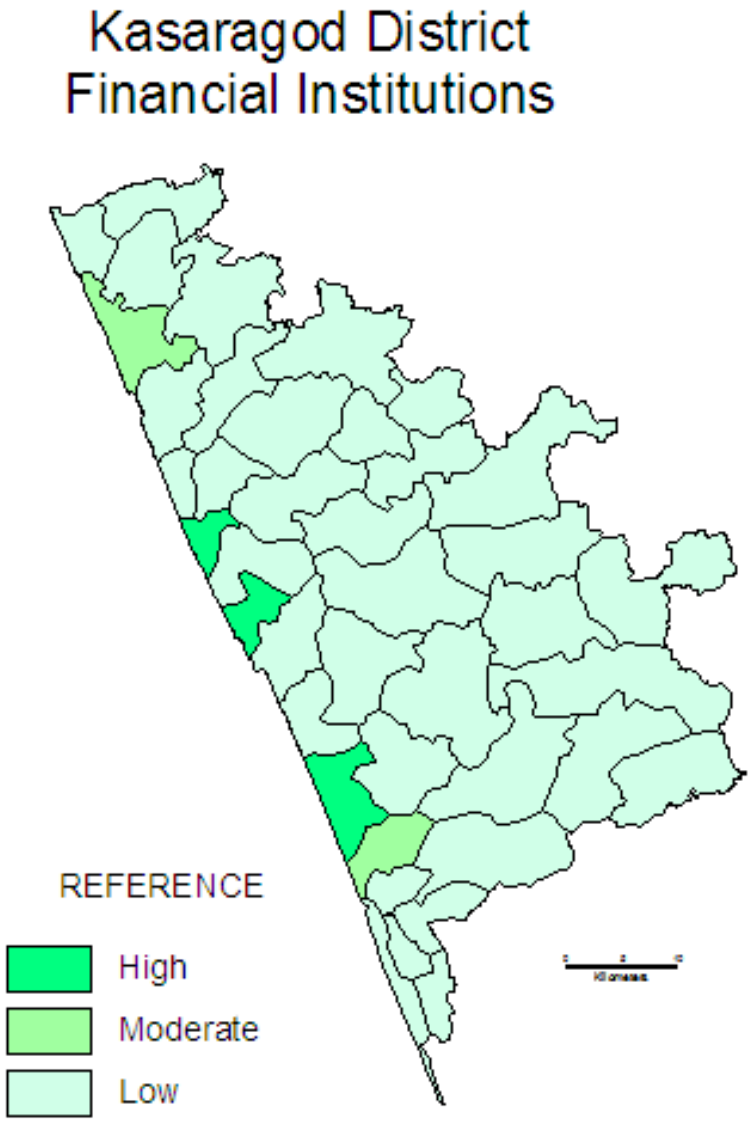
From the analysis, it is found that Vorkady, Meenja, Putige, Mogral-Puthur, Madhur, Kumbadje, Belloor and Kallar are the backward Panchayats in over all development. Application of GIS is found easy for the regional analysis by giving attribute values to the Panchayats on various aspects. It is a very good tool that could be used for the planning purpose. Spatial analysis like overlaying different themes and over all weightage analysis could be very well made with the help of GIS. Making query and multi-query analysis is possible than the conventional method of extracting information.

Map 3

Kasaragod District: Communication Facilities

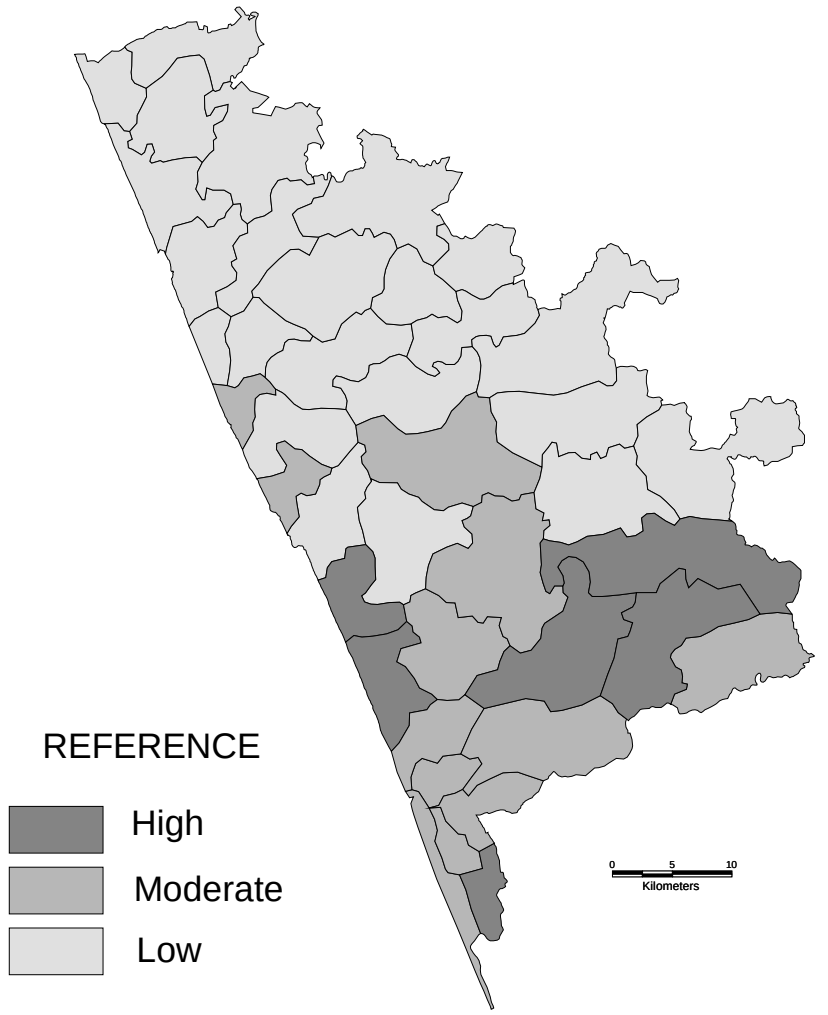


Map 4


Kasaragod District
Financial Institutions
REFERENCE
High
Moderate
Low

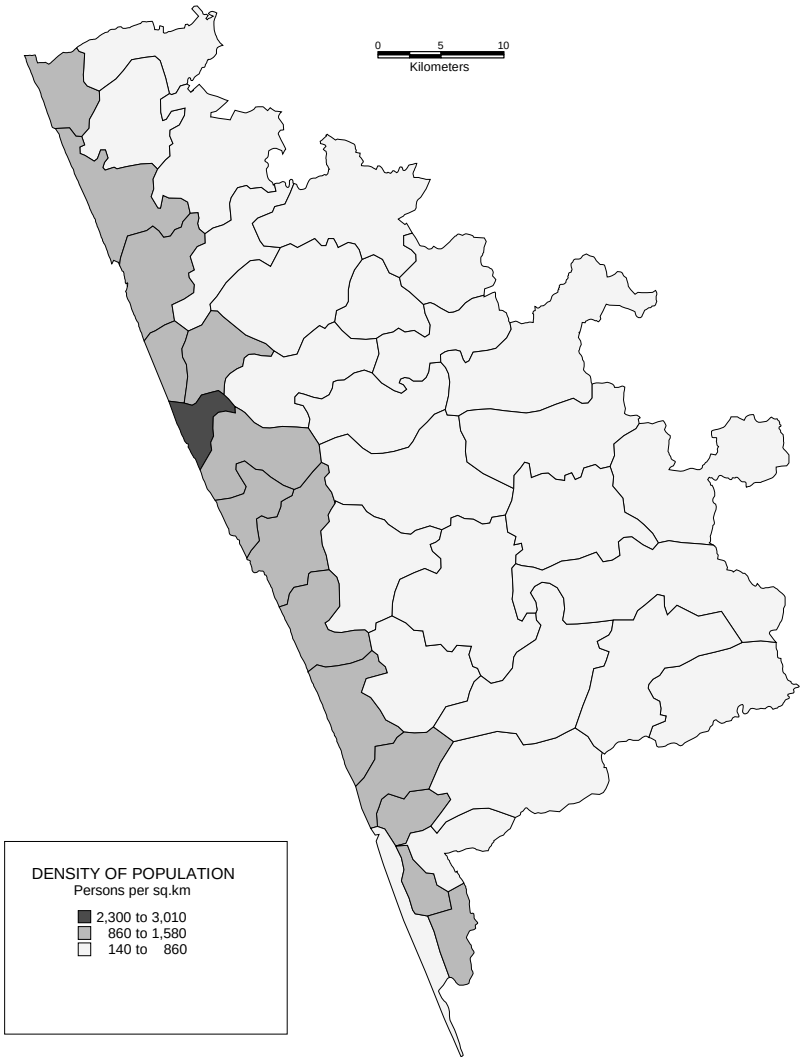
Map 5

Kasaragod District
Cultural Facilities



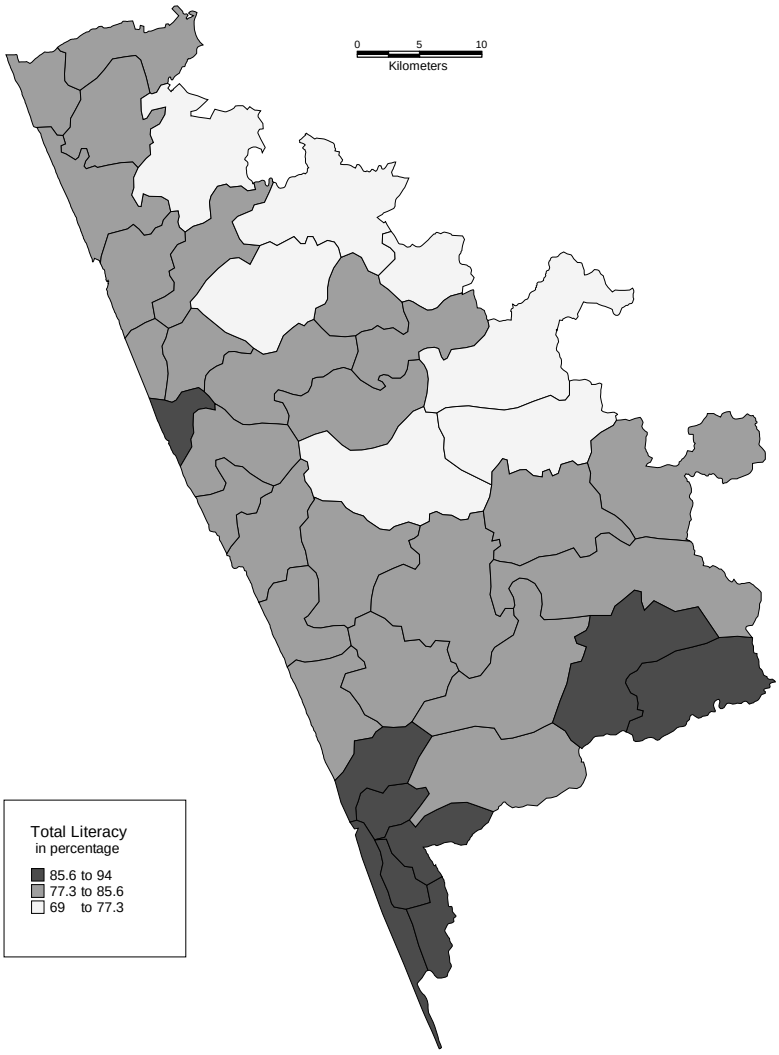
Map 6

KASARAGOD DISTRICT
Density of Population



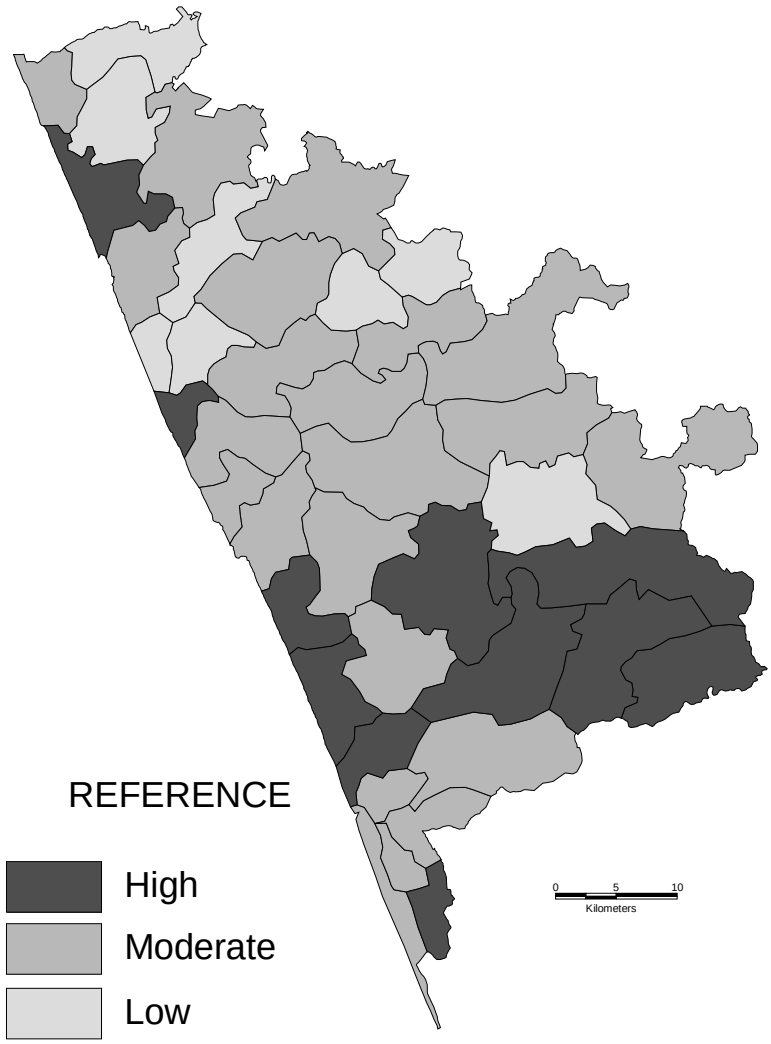
Map 7

KASARAGOD DISTRICT
Total Literacy



Map 8

Kasaragod District
Development Regions



Map 9