



THE INFORMATION TECHNOLOGY APPLICATION FOR MICRO-LEVEL PLANNING- EXPERIENCES FROM ATTAPPADY BLOCK PANCHAYATH, PALAKKAD KERALA

Jibin N

Assistant professor, Department of Computer Applications, M.E.S Advanced Institute of Management and Technology Aluva, Kerala.

Abstract

In the recent years the local self-governments (LSGI) has been playing a vital role in the process of inclusive reform of society, country's economic and legal system toward more effective and efficient institutional structure. The Information Kerala Mission (IKM), an autonomous institution under LSGI, that addresses the complete gamut of issues concerning local governance, decentralized planning, and economic development and it aims at placing the people at the helm of affairs and focuses on capacity building and empowerment as mechanism of improving performance. It tries to achieve this goal by the demystification of technologies by establishing adequate technical support system, not only computerizing the LSGIs but it is the application of technology for improving the productivity, ensuring better service delivery and performance and accountability.

The government of Kerala during the eleventh five year plan period has conducted a comprehensive survey to gather all information covering both the households and the habitats of the tribal population in Kerala. This survey has given a unique identity to all its members so that the data can be updated in future with the help of a software application. The author of this paper has got a chance to associate with Kerala Institute of Local Administration (KILA) in this second phase of the data updation with initially started in the three tribal dominated Panchayats of Attappady block in Palakkad district, Kerala. The experience gathered has given much. The experiences of the second phase survey have given enough materials to form a model for data updation of tribal dominated Panchayats in Kerala.

Therefore this paper attempts presents a web application model using the Geographic Information System (WebGIS) technology that aims to identify the various sectors in planning like Demographic features, Educational status, Livelihood, Health conditions and Infrastructure of the tribal people of Attappady block. The inquiry is expected to bring out a better social planning tool and supplement Tribal sub plan (TSP) in the area of Attappady. It also presents an application model that effectively manage the socio-economic data collected from the area, and the transformation of this information using the web based GIS mapping for easy and effective planning at the micro level and empowerment of human resources connected with the planning and implementation of this various programmes.

Keywords: GIS, Decentralized Planning, Attappady TSP, Tribal Development, Habitat Management.

1. Introduction

India have distinction of being an exceptional federal country providing three tier federal structure, Union Government at top, state government in the middle and Local Government that is Panchayats and Municipalities at grass-root level. Local Government forms a vital part of governance and administration in India that undertaking activities which either synchronized the conduct of the citizens or are in the nature of service such as provision of mass transport, construction of houses for the poor, supply of electricity, health centers, parks, play grounds etc. The Local Government Institutions are much more important in the common citizen than the state or central government. The LSGIs have taken an active part to renovate the entire ecosystem of public services through the use of information technology, with the vision to transform India into a digitally empowered society and knowledge economy through the advancement in areas of electronic services, products, manufacturing and job opportunities.

Information Kerala Mission (IKM) is an autonomous Institution under Local self-government Department, Government of Kerala which envisage computerizing and networking the 1223 local self-government institutions in Kerala, and has been in existence for a decade since August 1999. It addresses the entire range of issues regarding local body governance, decentralized planning, and economic development at local economic development. IKM focuses on demystification of technologies by not only be computerizing LSGIs but make sure improved service delivery guaranteeing faster and objective decision making thereby enhancing accountability. The IKM approach places people at the helm of affairs and focuses on capacity building and empowerment as the mechanism for improving performance. IKM have developed many software applications like Sulekha, Sevana, Sanchitha.etc, with a vision to establish efficient responsive system for good governance and improving public service and comprehensive citizen interface mechanisms. This paper attempts to present a web application using the Geographic information System that can be used a tool for micro-level planning and development of the target group.



The government of Kerala during the eleventh five year plan period has conducted a comprehensive survey to gather all information covering both the households and the habitats of the tribal population in Kerala. This survey has given a unique identification number to all its members so that the data can be updated in future with the help of a software application, so that each individual can be traced and monitored.

It was recognized by decision makers that the Scheduled Tribes are still way behind the mainstream development process. To eradicate this peculiar situation of the tribal people and for their socio-economic upliftment Tribal Sub-Plan (TSP) was initiated during Fifth Five Year Plan. The budget allocation for the TSP should be in proportion to the Tribal population. It has been intended to meet the family based genuine requirements of the target groups directly rather than forcing them to replicate the lifestyles of the larger society. The TSP also intended to check area development.

The principles of TSP and decentralized planning are centered on the participation of the people in the planning process at the grass-root level. Therefore the Government of Kerala decided to share the responsibility of TSP with Local Self Government Institution (LSGI) and issued guidelines accordingly from the start of ninth five year plan. Almost half the portion of the TSP fund is earmarked for LSGs.

The author of this paper has got a chance to associate with Kerala Institute of Local Administration (KILA) in this second phase of the data updation with initially started in the three tribal dominated Panchayats of Attappady block in Palakkad district, Kerala. In order to create a TSP plan, we need a real time micro level database of the target group that can be updated whenever needed. We also need an effective mechanism to handle this socio-economic data for a better planning and development of the targeted group.

The geospatial information technologies comprising of Remote Sensing (RS), Geographic Information System (GIS) and Global Positioning System (GPS), was developed at startling pace over the last two decades, are playing a substantial role in the development and wide-ranging growth of the rural areas in India and these technologies can be used for effective micro level planning and monitoring.-

So, the State like Kerala, which has already implemented decentralized planning through empowering LSGIs, and large tribal settlements lagging behind in development like Attappady, straightaway needs a GIS based real time monitoring system such that it will help the government in planning, implementation and monitoring of various projects for development in different fields at much faster rate, which in turn will make the state technologically more developed.

2. Aims and Objectives

The main aim of the system is to provide the planners an accurate spatial view of the LSGI at different levels such as Block, Grama Panchayath and Ooru (Habitat) level and household and even up to individual level. The system support the planners to access detailed demographic data and education & health related data on desktop in a GIS environment. It should assist the decision makers' in preparing development/intervention projects and activities at grass root level, based on the field conditions.

The system developed is aimed to provide the updation and management of data of tribal communities in Attappady Block Panchayath with the power of GIS and also training to the manpower associated with this project such as the promoters from the tribal people, Tribal Extension Officers and secretaries from the panchayaths, plan coordinators and section clerks. The system is intended to identify the gaps between various sectors like Demographic features, Educational status, Livelihood, Health conditions and Infrastructure, well fare of the tribal people of Attappady block, Palakkad District, Kerala The system is expected to bring out better socio-economic planning and skill development for easy and efficient output in both tables and also by the creates of thematic maps of the area.

A unique identification number is assigned to each household and also to the individual so that it can be used Ward wise, Ooru wise, Household wise and the individual wise planning and development of the target area. This data can be used for the planning, finding the out the pathetic areas and can develop action plan to rectify those problems and also for skill development and empowerment of the target group in the survey. The table shows the educational status of the people.

Ward	Education Level						Total
	Not Applicable (Below 6)	General Education	Technical Education	Illiterate	Neo Literate	Dropout	
1	116	669	4	288	16	37	1130

2	55	327	1	100	26	5	514
3	66	406	8	303	13	13	809
4	30	254	6	150	10	15	465
5	82	443	2	335	3	19	884
6	84	498	4	379	20	64	1049
7	60	417	11	215	4	18	725
8	35	306	9	142	3	19	514
9	27	144	1	136	1	6	315
10	27	150	2	72	4	10	265
11	85	612	18	278	101	17	1111
12	64	350	4	276	0	59	753
13	44	357	6	179	5	21	612
14	42	207	4	108	3	22	386
15	75	369	13	291	67	21	836
16	50	400	6	260	10	30	756
17	15	105	3	44	4	5	176
18	24	140	2	87	3	7	263
19	40	181	2	55	1	8	287
21	52	253	2	96	16	13	432
Total	1073	6588	108	3794	310	409	12282

Table 1: Educational Status of people

The above table shows the educational status of the people in the Agali Grama Panchayath in Attappady block. Here the total population is classified based on their education classification. Suppose we want to know in detail about a particular classification, for example we need to find out who are all the dropout people it can be easily traced using the system and take necessary steps to rectify the problem. A sample table for dropout students is given below, in this way we can analyze the data and so that it easy to develop a development plan based on this table. The detailed data analysis reports can be accessed using the system.

Ward	Dropout-Educational Status								Total
	Primary Level	Secondary Level	Pre-Degree/ Plus Two Failed	Degree(UG)	Engineering(TTI/ Poly Diploma)	Other Nursing Courses	Other Professional Degrees	Other Certificate. Diploma Courses	
1	12	20	3	1	0	1	0	0	37
2	3	2	0	0	0	0	0	0	5
3	5	6	2	0	0	0	0	0	13
4	7	6	2	0	0	0	0	0	15
5	10	8	1	0	0	0	0	0	19
6	39	22	2	1	0	0	0	0	64
7	4	10	2	1	1	0	0	0	18
8	6	13	0	0	0	0	0	0	19
9	2	4	0	0	0	0	0	0	6



10	4	3	2	0	0	0	1	0	10
11	9	3	4	0	1	0	0	0	17
12	15	32	10	2	0	0	0	0	59
13	9	8	3	0	0	0	0	1	21
14	7	13	2	0	0	0	0	0	22
15	14	7	0	0	0	0	0	0	21
16	21	9	0	0	0	0	0	0	30
17	4	1	0	0	0	0	0	0	5
18	7	0	0	0	0	0	0	0	7
19	2	6	0	0	0	0	0	0	8
21	11	2	0	0	0	0	0	0	13
Total	191	175	33	5	2	1	1	1	409

Table: 2 Dropout Details of Students

Thematic maps are created using Geographical Information Systems GIS from the above data which is available at different levels it can be used to identify the weak areas lagging development and can plan accordingly.

3. Materials and Methods

The database file was converted into spreadsheet/csv format and then used as a separate non-geometry database/layer for Q-GIS. The tables of both spatial village map and non-spatial census information were joined together, with the help of user-defined unique ids, using table-join function. Thus, an information system has been generated for the Block, Panchayath, District wise maps with its boundaries and the relevant census information containing socio-economic details. Similarly, consolidated tables were created for Panchayath level and ward level data and merged with the maps to generate thematic status maps of wards and Panchayaths.

GIS does more than just displaying the data; it enables the user to dynamically analyze and update the information linked to those locations spatially and can further strengthen the TSP Planning Strategy and objective of the system.

3.1 Transforming data into information

The preprocessed data of the households was linked with the GPS data of the households and map was created depicting the status for the variable. The system helps in monitoring and performs trend analysis for various selected variables. It is a framework for planning and monitoring of various intervention activities.-

The developed system can be implemented in micro level as well as macro level Decision Support System. The socio economic data collected can be updated easily and analyzed quickly. The results/findings that emerged from these studies are found to be very useful for micro level planning for TSP.

4. Results and Discussion

The work proved that GIS technology is a very effective tool for the TSP planning and development and also for continuous monitoring of the targeted area.

4.1 WebGIS as tool for TSP Planning

Based on investigating the necessity of using GIS in the new rural planning a variety of thematic maps were used to study the application of GIS in the new rural planning. The application of GIS in country planning and the dominance of using GIS in rural planning were discussed. It was proved that the powerful spatial analysis of GIS efficient mapping functions scientific planning and management technology were applied to the new rural planning study. Through reasonable and effective application of GIS, the scientific, practical, normative and accuracy performance of new rural planning were improved.

4.2 Findings of the Study

The analysis work was done using Statistical Package for the Social Sciences (SPSS) in the above mentioned areas and detailed tables were created using the tool and these tables are represented in the thematic maps created. The maps were

created in all three Panchayats separately. A Sample thematic map of Agali Grama panchayath with educational status is shown below.

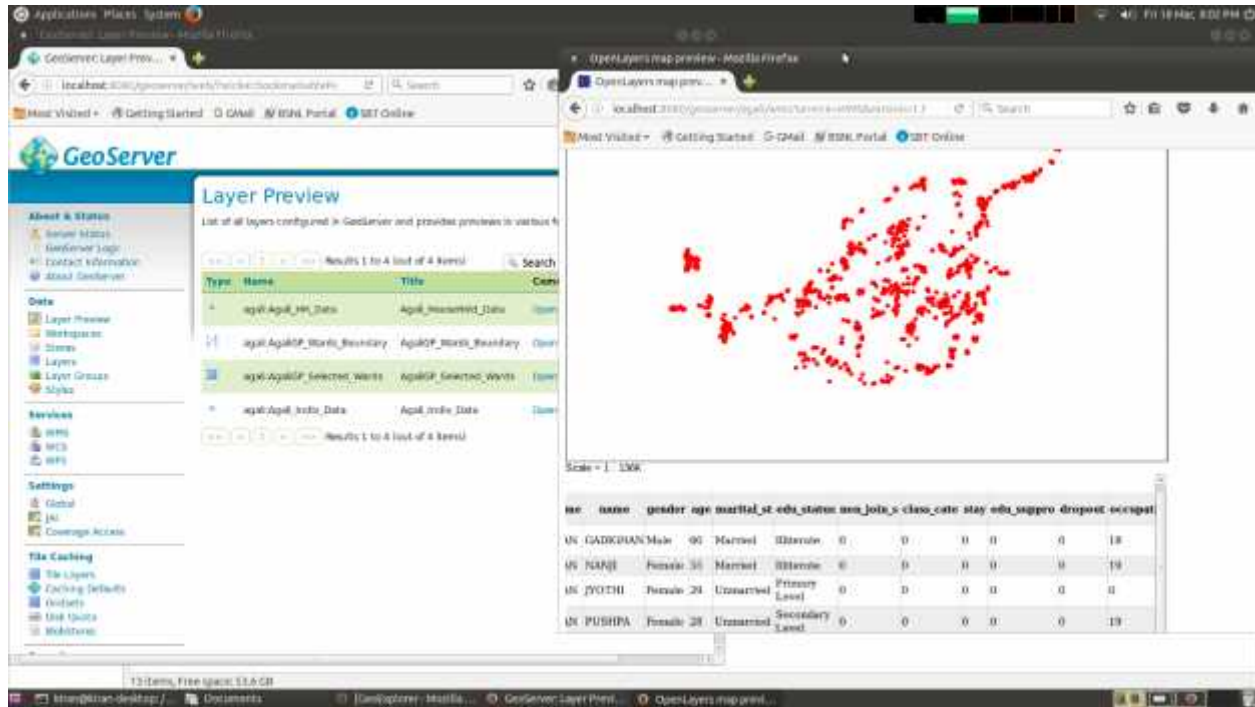


Figure.1 Thematic GIS Map for Educational Status

An integrated approach of all line departments is necessary for the overall development of the tribal population. A real understanding of the critical gaps can help the planners to shape the vision clearly. The developmental inputs will make changes at all levels and the emerging problem has to be identified for policy changes also. Therefore a regular monitoring can avoid major pitfalls. A clear understanding of the ground reality and the experiences from the implementation process would help for the future enhancements. The data can be updated and regulated accordingly.

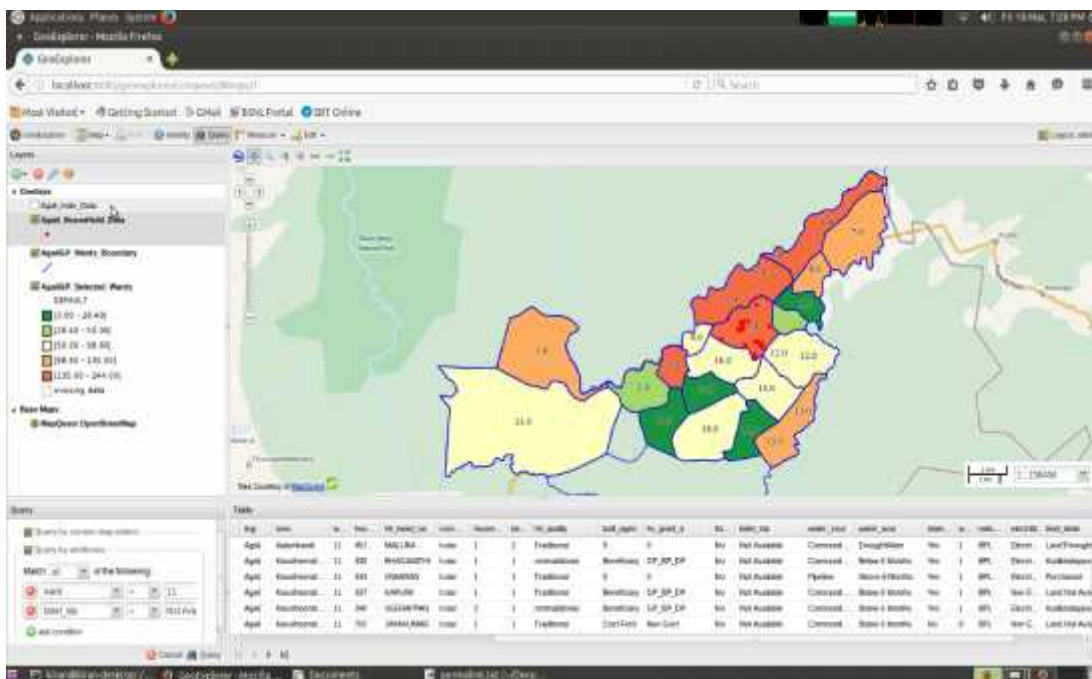


Figure 2. Thematic map of Agali Grama Panchayath depicting ward-wise Population



5. Conclusion

This work demonstrates a real time a web based application model for Attappady , which helps the tribal population residing in remote areas so as to the LSGIs and the State Government in planning, implementation and monitoring of various projects. This model is directed to help the development in different fields a much faster rate, which in turn will enhance the entire planning process so as to transform and the society and ameliorate the present situation.

The presented study demonstrates and emphasizes the power of GIS technology which will help the Local as well as State Governments for better understanding and evaluation of spatial data by creating thematic maps and queries. The various maps and tables created can be used for a better understanding of the area, population and their critical development issues so that it will promote a scientific approach for the planning and development process.

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