



Use of Computer in Higher Education in Rural Area

Chief - Editor

Asst. Prof. Suresh J. Patil

Art's, Commerce & Science College, Kowad
Tal. Chandgad, Dist. Kolhapur.



The ccount higher education system in rural area is suffering from lack awareness of information technologh. The use of computers in higher education opens a new area of knowledge and offers a tool that the potential to change some of the existing educational methods. The use of computer technology in education makes us prepared for the future. Computers as used in education allow the learners to learn modern tools and knowledge that will make him or her ready for the Possible techonological change in the future.



Sanwad Pro. Pvt. Ltd.

873, C/2, Siddhishri Plaza, Rajaram Road, Kolhapur - 416002
Mob. 9890554340

₹ 300/-

ISBN : 978-93-87322-09-7



ईवाड प्रकाशित प्रा. लि.
sanwadpro@gmail.com

**UGC New Delhi
And
Art's, Commerce & Science College, Kowad
Tal. Chandgad, Dist. Kolhapur.**

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Rural Area**

DATE : 9th &10th OCT 2017

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Publisher

Principal

Dr. R.S. Nilpankar

Art's, Commerce & Science College, Kowad
Tal. Chandgad, Dist. Kolhapur.

&

Nirmiti Sanwad Pro. Pvt. Ltd.

873, C/2, Siddhishri Plaza,
Rajaram Road, Kolhapur - 416002
Mob. 9890554340

E-mail. nirmitisanwad@gamil.com

Typesetting : Supriya Kosambi

Cover : Gangadhar Mhamane

First Edition : 2017

ISBN: 978-93-87322-09-7

Price : Rs. 300/-

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APPLICATION OF GIS INFORMATION SYSTEM IN RURAL AND URBAN ADMINISTRATION

Dr. Abhay M. Patil, Head, Dept. of Geography,
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INTRODUCTION: GIS as a Tool in Administration

Geographic Information System is a discipline for capturing, storing, analyzing, managing and presenting data and associated attributes which are spatially referenced to the Earth. Geographic Information System is to analyze object and event on the earth and visualize them with real coordinates on the map. In another definition of GIS it is abbreviation of three words: Geography + Information + System. Geography relates to all the features and process that occur on the surface of the earth. Information is the heart of GIS, where vast amount of data are stored and analyzed (Audet & Ludwing, 2000, p. 6). Therefore GIS makes geographic analysis and location analysis easier, so users of GIS application increases and the scope expands.

1. GIS helps make the presentation of data more attractive than traditional static maps.
2. Projecting tabular data onto maps helps in recognizing “unexpected” situations which, now noticed, call for closer examination.
3. Through considering geographical (spatial) factors, the analysis becomes “finer” and more precise, increasing the likelihood that ensuing strategies will be more pertinent.
4. More flexible assistance can be provided in prospective planning at multiple levels or units of analysis: national, regional, provincial/district, and local.

Primary data

The primary data comprises different map layers of the study area. The layers are boundary (base map), bin locations, land use, road network, environmentally sensitive areas and shops. The primary data has both spatial and attribute information.

- The bin location includes the location of both existing bins and the open dumps. These are represented in point features.
- The land use includes the locations of different buildings in different layers. They are schools, hospitals, religious buildings, theatres, marriage halls and offices. In this study schools, hotels and hospitals are represented in point features.
- This layer shows the road network of the case study area which is represented in line feature.
- The environmentally sensitive areas are two natural water streams which are represented by line feature.
- The shops are represented in point feature. Each polygon represents a group of shops and there is a classification of all the shops in three categories which is based on their category of waste generation.

A. Analysis

The model covers five analyses which are to be made on the available primary data. These analyses are proposed for suggesting some improvement in the existing waste management system. The results of the analysis made on the available data will help as a decision support in planning the allocation of new recyclable waste bins and relocation of the existing bins whose presence at that location is causing inconvenience to the citizens and also risk to the environment.

a. Inconvenience due to waste bin proximity:

There are certain areas which need to be kept away from the waste bins. In the case study area the bins are located according to the consideration of sustaining a distance from these areas. So this factor will be analysed for existing bins and it would be also a guideline for proposing new waste bin in future. This analysis will cover the

factor of inconvenience to a particular category of land use due to the proximity of municipal waste bin.

b. Convenient distance to bins for all users:

This analysis will consider the function of monitoring the convenient distance for a user to the waste bins. The statistics obtained from the questionnaires to the case study area residents, it is seen that the preference of majority of people for a maximum convenient distance for a waste bin from their places is 100 meters. For this analysis a buffer will be created around all the waste bins of the study area. The areas which come in the buffer zone are within the convenient distance to use the bin, so these areas need not have to be considered for any changes in the bin location or allocation of new bins.

c. Proximity from environmentally sensitive areas

There are two natural water streams passing through the study area. A few waste bins are in a close proximity of the streams due to which the natural water gets polluted. To avoid this situation the waste bins which lie in the close proximity of the stream should be detected. These bins need to be relocated from their locations and it should be considered that no waste bin or open dump is placed in the water stream's buffer range in future.

d. Recyclable bins for buildings:

This analysis will help to find out the areas where there is a requirement of the recyclable waste bin. The areas which come under the land uses like cinema theatres, offices, marriage halls and educational institutions generate recyclable waste. So there should be a recyclable waste collecting bin for these land uses. In this analysis a buffer will be created around these buildings. For selecting the nearest located waste bin to a building from the selected bins, the buffer can be applied in bands of different distances. This will make it convenient to make a comparison between more than one bin in a close proximity of a building. The closest placed municipal bins to those buildings can be suitable for providing new bins along with the existing municipal waste bins.

e. Recyclable bins for shops:

The categorisation of shops has made it convenient to analyse the type of waste generated in a group of shops. This was an attempt to categorise the groups of shops according to the type of waste it generates. This was intended to achieve two aims; to have an idea about the requirement of recyclable waste bins in the areas and to minimise the amount of waste going to the dumping ground. From the groups of shops those groups have to be identified which generate recyclable and mixed type of waste.

B. Model implementation on case study data and results

This is a discussion of the implementation of GIS workflow model on the case study area data and the results of the analysis. This model is implemented on the data using GIS software Arc GIS 10 and Arc Map. The collected data of Belgaum city has been implemented on the proposed model in the case study area of about 4 sq. km.

The model proposed in this case study was designed for planning the allocation of waste bins in Belgaum City. There were several aspects taken into consideration in planning the waste management by evaluating the bin allocation. First was to analyse the location of the existing waste bins in the area. The planning concern was to verify the convenience and inconvenience of the users from the existing bin location. This was done by checking the location of bins for a convenient proximity distance for all the users and also for the inconvenience to the users due to close proximity of the bins to sensitive land uses. The planning of waste bin allocation also included the segregation of waste in two categories and for this, the provision of recyclable bins was proposed. The proposal was intended to provide the recyclable waste collection bins to those areas which generate recyclable waste. The identification of those land uses was carried which generate recyclable waste and then find the suitable location for placing those bins so it would be convenient of the users. The analysis showed the required results which are useful for relocating

the existing bins and for locating the new ones for a refined waste management system.

- a. There are five municipal waste bins in proximity of 20 meters of school buildings.
- b. There are only two municipal waste bins in proximity of 20 meters of hotels.
- c. There is only one municipal waste bins in proximity of 20 meters of religious buildings.
- d. There are fifteen municipal waste bins in proximity of 30 meters of hospital buildings.

In all there are 21 waste bins in the case study area which are in close proximity of schools, hotels, hospitals and religious buildings. These are required to be moved out of the buffer range of the respective buildings.

The second analysis is to check the waste bins proximity from the users to provide the bins at a convenient distance from all the users. For this a buffer of 100 meters is created around all the waste bins.

Figure 2: Waste bins within close proximity of sensitive buildings.

Figure 3 : Areas which do not have waste bin within a distance of 100 meters.

In the result of the analysis in figure 3 it is seen that most of the case study area is covered under the buffer except some areas. So the areas which do not come in the buffer range indicate that these areas do not have waste bins within a distance of 100 meters. So these areas require new waste bins within a distance of 100 meters. The allocation of bins can be done by finding a suitable location in the areas which needs waste bins. This will provide bins within a convenient distance range to all the residents.

Fourth analysis is for selecting the location for recyclable waste collection bins for recyclable waste generating land uses. It is a required to make analysis for the availability of a proximity organic waste bin to

provide recyclable waste bins along with them for buildings which generate the recyclable waste. A buffer of 75 meters is applied around the school and hotel buildings.

Conclusion:

The efficient and effective administration associated to the resources depends upon the availability of good information. Many countries are computerising their cadastral records and creating large, national databases. Land-related data are now being integrated, analysed, and distributed in ways that until recently were not possible.

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