

SYSTEM OF LAND RECORDS USING GIS – A REVIEW

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ABSTRACT

Land is the habitat of men. As land is having a major share on earth it should have a proper system to gather, distribute and update information of land records. Land records is the bases of all land reforms and therefore it requires regular online update. It has been seen that the village maps are not geo-referenced. The present system is not good which creates problems in our system and we suffer from great loss. This leads to demand a system which keep the proper record of lands and it is available in time. For land records GIS is a effective tool. GIS technology is having capability of capturing, storing, analyzing and displaying geographically referenced information which is needed in present scenario. The objective of using GIS for land records sytem is to provide transparent, quick and secure access to land registration and land records through internet and other devices. The workload of the land registration offices will reduce and it will de-centralize the land registration process. Using GIS map of the village is mapped and attribute data is entered in data sheet which makes work easier for the citizens, various registration departments and planners. This paper brings out GIS as a tool which can be effectively used in land records. It integrates non-spatial and spatial datasets for query and better display. These maps which are geo-referenced are used in day-to-day life to make decisions at the base level.

Keywords - Geographic Information System(GIS), Land Administration, Land Information, Land Records, Land Registration.

I. INTRODUCTION

Land dispute has been a serious cause of conflict in India. The land records are maintained by the district administration for deciding ownership and boundaries of land. There is no proper land management system which covers detailed information of each and everything. There is still dependency on the old methods of maintaining and creating land records. This system of manual surveys, cloth bound cadastral maps, lack of qualified and dedicated people who can update and maintain these records, cannot meet these objectives. By using computers the solution to the problem can be given. In India, the government has already taken initiative to computerize land records. The scheme is being implemented in many districts for fast and easy working of the government. It has been from last decades, the existing village maps are not geo-referenced. Due to inefficient judiciary, poor records keeping and lack of proper land records management demanded in a high

demand of a system that keeps the accurate record of lands. There has to be a basic planning for the project to be executed at macro and micro levels. To do this task firstly the basic land information which is correct and available in time is required. The linking of the attribute data with village maps through GIS should be done.

II. LAND RECORDS MANAGEMENT

In India there is a lack of proper land records due to which we face many problems and because of which there are many cases which are being kept pending due to not having the record clearly. To avoid this it is required to have the land record system. Maximum potential benefits is to be taken out by carefully managing the land records. There are certain new techniques for data collection and processing, which have directed attention to the need for improved land record management strategies. Certain set of objectives are achieved by using such strategies which are concerned with the effective organization of resources. The objectives include the content, coverage, reliability of information of access to it, compatibility and integrating possibility with other data.

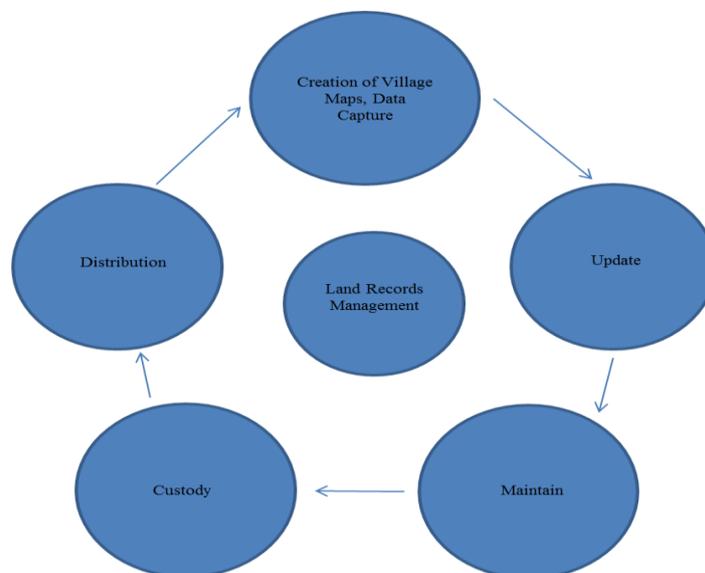


Fig. 1. Land Record Management Cycle

III. ROLE OF GIS IN LAND RECORDS MANAGEMENT

GIS is a tool which is used effectively for higher level image and spatial analysis applications. Maps are a powerful medium for designing, analysis and observation. It integrates non-spatial and spatial datasets for query and higher show. Registry maps is used on a regular basis by decision-makers at grass root level. The information of registry survey forms the premise for generation of any correct high-level map. Since last decades, its been completed that the present village maps are not geo-referred. On the opposite hand, policy manufacturers, planners, land directors and individual voters all have a dire need for right information. Today's need are using GIS technology which is having capability of capturing, storing and analyzing and displaying geographically referenced information. As nowadays, each people are using computer and its minute click to get the any information regarding their subject. In GIS map of village is mapped and attribute information is entered in datasheet which can be useful to the planners, policy makers and individual citizens to find out records within minute.

IV. GEOGRAPHIC INFORMATION SYSTEM

Geographical Information Systems (GIS) is a computer- based systems that change users to gather, store and analyse information. A GIS references these real-world spatial data elements to a co-ordinate system. These features can be separated into different layers. A GIS system stores each category of information in a separate layer for ease of maintainance, analysis and visualization. GIS is defined as a computer system capable of manipulating, assembling, storing and displaying geographically referenced information.

V. LITERATURE REVIEW

A. The study highlights concerning the village maps that are not geo-referenced. Land which is most vital for everyone does not have a correct system of record and a gathered data is being not provided for land records. Due to lack of correct land records, poor records keeping and insufficient judiciary makes regarding system susceptible to high loss and it demands a system that keeps the correct record of lands and makes it obtainable in time. Records must be rigorously managed to maximize its potential advantages. Finally the study brings out the importance of land records and management system in India. It would serve the right and timely data of land records. GIS tools for land records management would be extremely effective in India wherever land problems are predominant. The use of the GIS software system however it benefited the land homeowners, planners, call manufacturers and land directors by rising the effectiveness and potency of land records management. It is fascinating to possess properly geo documented land records information and its integration with different land parameters for coming up with and decision-making. Controversial cases in land titles ought to even be determined at the earliest. Computerisation method ought to integrate registration of land titles. Land laws/mutation method ought to be simplified for simple and quick implement.^[1]

B. The study have targeted on the African nation, there's general undiscipline and lack of transparency within the land market. This can be characterised by multiple sales of residential parcels, land encroachments and haphazard development. Land records kind the bases of all land reforms and thus regular on-line update of land records is crucial. The objective of the web-based land records system thus was to supply a fast, secure and clear access to land records and land registration via the web and alternative communication devices. This will decentralize the land registration method and therefore cut back the employment on the land registration offices. This will additionally encourage land registration or legal parcel documentation as a result of the pliability and ease of the system. The outcome of this study may be a easy web-based land records from that licensed users and subscribers will visualize and access a secured land records within the country. The new system can bring transparency and improve the manner land records area unit maintained and administered within the country. It seeks to wake up the eye of all stakeholders as a matter of urgency, the requirement to possess all data ashore documented. This at the instant is being undertaken by the Land Administration Project. However from the studies, it's been ascertained that unscrupulous land homeowners can still swindle the general public before one could resolve. This project seeks to create data ashore without delay obtainable to individuals curious about effort land through mediums like the web. This may within the long-standing time cut back pricey proceedings, as a result of one area going to be alert to the standing of land being bought or chartered. Qualified land registration employees and surveyors should be obtainable since the upkeep of the land registration system

depends heavily on competent employees. It seeks to wake up the eye of all stakeholders as a matter of urgency, the requirement to possess all data ashore documented. This at the instant is being undertaken by the Land Administration Project. However from the studies, it's been ascertained that unscrupulous land homeowners can still swindle the general public before one could resolve. This project seeks to create data ashore without delay obtainable to individuals curious about effort land through mediums like the web. This may within the long-standing time cut back pricey proceedings, as a result of one area going to be alert to the standing of land being bought or chartered. Qualified land registration employees and surveyors should be obtainable since the upkeep of the land registration system depends heavily on competent employees^[2]

C. Indian cities are experiencing associate accelerated pace of growth that has created opportunities for technocrats and planners alike to guide and develop the method of planned development and management of cities. Economical urban data system could be a important pre-requisite for planned development because the ever increasing demands in urban designing and management require co-ordinate application of Geographic data system (GIS), for property development of urban areas. The supply of satellite pictures from google earth has revolutionized the method of thematic mapping and abstraction knowledge base creation, specially, within the context of urban and regional designing. Technologies like GIS have emerged as a robust tool in integration and analyzing varied thematic layers together with attribute data to make various designing eventualities for higher cognitive process. In this project, data has been provided regarding the extent of land cowl, utilities, spiritual places, and communication network in Boduppall and Pirzadiguda space within the kind of a geographic data system. Analysis has additionally been performed within the kind of proximity analysis around hospitals, and network analysis for the road network. This analysis is incredibly helpful in fitting of specific zones around purpose options, to line up check posts, and to estimate the shortest route between two places, etc. This GIS may be employed by the general public for getting basic data regarding utilities, spiritual places and academic establishments, and additionally for route analysis. It may also be employed by urban planners alike. The method of victimization GIS for urban designing can revolutionize urban development, that is understood to place confidence in the pen and paper methodology or obsolete knowledge assortment methodology. It may be all over that GIS services area unit vital in mapping and evaluating crucial knowledge which will very contribute to the event of any location. It would be prudent if any public organization were to require take note of the huge scope. GIS offers and are requested to devise programs that increase the net worth of the city.^[3]

D. The basis for the study is about the need for information, which is the basic necessity for carrying out planning, development and management activity, will hardly be over-emphasized. With relation to the developing nations with inadequate resources, the necessity for having a reliable information base is even a lot of vital. The absence of the correct land records within the real land market is another problem being long-faced by several developing countries. The necessity for a functioning land market opens the manner not just for non-public development however conjointly for public land acquisition and different suggests that of guaranteeing that land is out there for dwelling house and different urban desires. Land record data system may be a vital step in higher and considered use of natural resource. This can facilitate user to access information anytime, anywhere. Integration with revenue and registration system can facilitate users work exhausted a scientific manner and therefore individuals are inspired to use the services. The advantages square measure huge and with

knowledge sharing between completely different agencies, it will facilitate in political beliefs choices, forestall frauds and facilitate individuals to understand regarding their land holding rights in an exceedingly higher manner. However with smart coming up with and implementation approach the challenges is overcome to make an outsized land record management system. From this overall study it's been complete that ALARM (Advanced Land Record Management) knowledge model has flexibility that it is remodeled into any atmosphere consistent with the wants of the system. This model has almost all functionalities and attributes which a digitized cadastral information system should have in itself^[4]

E. The study have generation of enormous quantity of geo-spatial knowledge and its sharing on net through server to be used in varied coming up with processes needs an oversized quantity of paying. During this study generation and sharing of information is accomplished victimisation open supply software's. Shopper will simply access spatial knowledge from server and might simply access, find, and update the information victimisation question. Open supply GIS software package, net server and knowledge base will freely use this net GIS application. GIS permits you to link databases and maps to form dynamic displays. Search tool which may be performed on the map layer wise and results shown in geographical type. Pan and zoom tool offers facility to handle zoom level and handling map. Layer choice panel offers facility to pick and deselect the layer. Main website shows completely different thematic layers on the map in numerous layers^[5]

F. The study have highlighted the goal of the work is to make internet GIS model for geospatial data of Bhopal town and providing some practicality that is gift in interactive web GIS application like pan, zoom, and basic question analysis. Additional the fundamental practicality conjointly extended with the assistance of POSTGIS information and open layers libraries. GIS has capabilities to integrate information, statistics, remote sensing, maps with advance graphics for visual image and analysis abstraction information like land use, soil, rainfall, geology, transportation, topography, human ecology and socioeconomic is also enforced for higher choices in resource or facilities designing and management. The Governmental organizations or agencies (Mandal Revenue Offices, don't keep the digital information properly (i.e., at microlevel scale) and it's terribly troublesome to induce some usable basic data from the obtainable sources. The knowledge necessary to create obtainable all types of information associated with the village, simply and briefly for designing at micro- level. It conjointly helps in regular updation of information over the fundamental measure to confirm higher availableness of village data.^[6]

G. The distance between any two residential areas, infrastructure services to the villages, and as a future growth with the main points out there, we will get the shortest means among the system. Not solely the road network details, will we tend to acquire the complete details of the study space. As an example, we will get the, details of farmer classes, transportation, telephone, land info, livestock, instructional facilities and demographic details (village wise) at one place. This type of labor more are often used as a reproduction for different rural village within the state for the event of rural areas. In the study it is seen that the choice manufacturers beside planners, policy manufacturers and directors feel helpless whereas coming up with the natural and social wealth of an area, within the absence of correct information regarding all types of resources at village level. On the opposite hand coming up with is currently wide accepted as the way to handle complicated issues of resource

allocation and higher cognitive process. For the aim each spatial and non-spatial information is needed. Remote sensing and GIS is a robust tool for storage, handling, retrieving and analysis of spatially related information.^[7]

H. For the event of an internet primarily based data system, massive volume of knowledge is gathered and integrated inside geographic data system. Village data system is that the study of village at small level and technique of remote sensing and GIS build this work easier. The forming and sustaining of the knowledge systems in an efficient manner depends on construction of up-to-date and correct base map in digital atmosphere. The demand for fast info is encouraging the event of recent instruments and takes advantage of the fast advancement in laptop and data technology.^[8]

I. It has been seen the incontrovertible fact that republic of India lives in her villages and would still do therefore. However speedy urbanization and subsequent haphazard growth of cities has resulted in neglecting of villages. It cause deterioration of infrastructure facilities, health hazards, loss of agricultural land and water bodies, besides several micro-climatic changes perturbing the ecological balance. Further, there's exodus of population, driven by lack of adequate facilities/opportunities in villages, from rural to urban areas. Although the urban regions have developed quicker as compared to rural, the fundamental objective of a balanced development of various regions has still remained a foreign dream. Instead, this has widened the gulf between the developed (urban) and also the less developed regions (rural), thereby making islands of prosperity. Therefore there's associate imperative got to cut back the cleavage between the agricultural and also the urban areas through acceptable development designing for the villages. The information technology is one such important creation that has modified the size of man's thinking and created him terribly powerful for the capabilities of IT on data, analysis, storage, sharing, transmission, presentation and higher cognitive process anytime anyplace. Village GIS tool, with a proverb 'turning information into information', generated within the gift study integration the abstraction village maps with non-spatial or tabular data from the NIC system, has incontestable its potential for grass-root level development designing taking into thought the native desires and constraints.^[9]

VI. METHODOLOGY

To collect the village maps and attribute data for the project to develop a land records management system using GIS technology.

- Decide the case study area.
- Collect data regarding land records (spatial and attribute data).
- The attribute data which is generated through data entry process is to be linked with the village map using QGIS.
- Using QGIS develop GIS based land records management model for case study area.
- On the developed model queries are run.
- Conclusions are made based on the models.

VII. CONCLUSION

This study bring out the importance of land records management system in India. GIS tools for land records management would be highly effective in India where land issues are predominant. In the above study we come to know that there are some points which are being neglected because of which it is been important to study deeply the land records management system. The hurdles for the infrastructure development can be solved. The land acquisition problem will be solved. The duplication of land will not come as people will have a proper record of it. Computerisation process integrate registration of land titles. Land law process should be simplified for easy and fast implement. The cadastral survey should be done using the latest technology. The deep study of the land records management system is to be done so that a proper system is being developed which will reduce the work load as well as help in every process.

VIII. FUTURE SCOPE

The overall study from above shows that there is system needed for the land records. The land record for the study is to be collected. By using QGIS software the land records are to be maintained and the maps are to be scanned, digitized & edited & overlaid. The spatial & attribute data is linked together to develop the rural level information. A 7/12 form is to be developed to introduce a new registration process for the land.

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