

IMPACT OF E-GOVERNANCE IN GEOGRAPHICAL INFORMATION SYSTEM (GIS)

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'e'-has now become an inseparable part of governance around the world. Without e-governance, world tend to lag behind and lose whatever power they have. And GIS is increasingly forming a part of the entire e-governance movement. GIS provides spatial planning and decision making system to get visual presentation of different facts in the form of multi temporal maps and comparison maps. It requires a combination of software tools for group decision support, individual decision support and geographic analysis of various geographic projects. It can provide a better solution of many governance related issues of distribution, resource allocation and site determination for the public welfare projects. GIS provides a lot of empowerment to communities in solving developmental problems. This paper presents the impact of e-governance in geographic information centre and the existing projects of e-governance with GIS system in India. It also presents a brief introduction of pGIS and its importance in establishing transparent and accountable governance.

Keywords: GIS(Geographic Information System), e-Governance, ITC(Information Communication), pGIS(Passive Geographic Information System).

1. INTRODUCTION

Geographical Information System is tool to replicate the digital copy of image, map and other numerical information about the spaces and locality. Hence, it has evolved rapidly as decision making tool. As a platform for wide range of spatial data integration, GIS has been established very useful in planning. The web-applications of GIS have made more access to spatial data though e-channel. GIS alone cannot solve all the problems in a planning process, but their integration with other ICT tools seems to offer the spatial data infrastructure for developing decision making process (Campagna & Deplano, 2002). The GIS and information and communication technology (ITC) together have potential to reach the masses and include them in governance process. Informatics has emerged as the thrust area for the Government as it can enable the administration to re-engineer and improve its processes, connect citizens and build interactions with and within the society by bringing radical changes in its functioning leading to Simple, Moral, Accountable, Responsive and Transparent (SMART) governance. This new way of governance adopted by the public administration for the delivery of services on the Internet and Intranet, constitute the concept of Electronic Governance (E-Governance) in GIS system.

2. GOVERNANCE (E-GOVERNANCE) IN GIS SYSTEM

The basis for e-Governance is fusion of information with communication technologies (ICT) supporting and

transforming the governance by processing and communicating Data in the field of geographic sphere.

Geomatics in e-Governance

Geomatics or Geographic Informatics encompasses all aspects of geo-referenced data viz. acquisition, integration, decision support and dissemination. Its applications are fundamental to population growth, economic development and consumption of natural resources. Geomatics addresses the vital elements of any information system viz. geographic measurement, geo-accounting, spatial analysis and integrated decision-making. Geomatics comprises of remote sensing, photogrammetry, geographical information system (GIS), cartography and GPS. Currently, it addresses market of ten billion-dollar in the area of services and software products.

Functions of e-Governance include planning, preparation and approval of mega-plans, management of existing infrastructure and restructuring of facilities. 80%-90% of government data is geographic in nature-containing an address, service boundary, pin code, or latitude and longitude co-ordinates. In local government, city planners view maps for development plan; engineers need information on utilities to forecast how serving a new colony will affect overall service; and the estate office updates data with measurements taken from a recent survey.

Geomatics link government departments and users to a central network so that everyone has access to the same set of files at the same time for different applications. Easy access to complete information with common geographic-reference using high-speed communication network (including Internet) helps employees to improve their efficiency and government to make better decisions.

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3. EXISTING PROJECT OF E-GOVERNANCE IN GIS SYSTEM

There are numerous project to execute e-governance concept in India. Since all these are based on the use of ITC in governance; have similar importance. Many of them are evolving as village/district information system. Few of them are:

A. Gyandoot

It is one of the knowledge based e-governance project started in Dhar district, Madhya Pradesh. It provides wide range of information on various aspects including Mandi/ Marketing Information, information regarding certificates, landholder's passbook of land rights and loans. Hindi email services, forms of government schemes, Rural News Paper also included in Gyandoot. Recently information regarding driving license and organic fertilizer has been included. The web address of this project is <http://www.gyandoot.nic.in>.

B. Bhoomi

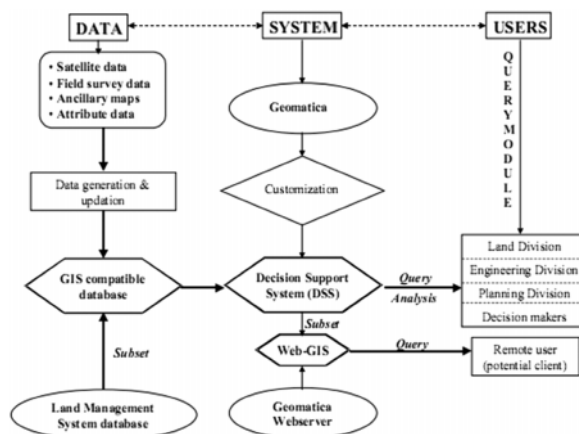
It is the E-Governance project of Karnataka Government for land records. Under this project, all 20 million land records of 6.7 million land owners in 176 taluks of Karnataka have been computerized. The first online Kiosk of India was started in Sakleshpur. This system works with the software called "BHOOMI" designed fully in house by National Informatics Center, Bangalore.

C. Akshaya

The e-governance project of State of Kerala involves setting up around 5000 multi purpose community technology centres called Akshaya e-kendras across the state. It includes services like e-payment, e-krisi, content development and computer aided learning for students.

D. Land Management System for MIDC in Maharashtra

Mandates of Industrial Development Agencies/Corporations include planning layouts of industrial sites, attracting entrepreneurs for investment, leasing of industrial plot, construction and maintenance of infrastructure and amenities such as roads, drainage systems, providing streetlights, water supply and other amenities such as built-up accommodation for banks, post offices, telecom facilities, police station, fire station, medical facilities, canteens, shops etc. in the industrial areas in the State. GIS enabled Land Management System was developed for Maharashtra Industrial Development Corporation (MIDC), Mumbai using RDBMS and Geomatics as shown in figure given below.



E. Development of Knowledge Corridor Along Mumbai-Pune Express Way

In the wake of global development of Information Technology(IT), Maharashtra government has taken initiative to develop a "Knowledge Corridor" along newly developed Mumbai-Pune expressway. The same is important, as IT industries have been sprawling in the outskirts of Mumbai and Pune, towards the expressway. This has led expressway a potential destination for IT industries.

F. Site Selection for Disposal of Solid Hazardous Waste from Industrial Area of Shendre, Aurangabad

The main aim of the project is to identify suitable sites for disposal of solid hazardous waste (SHW) from the industrial area of Shendre in Aurangabad using Geomatics. The SHW disposal site shall not be located within a certain distance of geographic features like drainage, lakes and wells. The sites should be preferably located in areas of low population density, low alternative land use value and low groundwater contamination potential.

4. EFFECTIVE pGIS

These all existing projects are based on the secondary data, collected by officials. None of them include the local view in any regard. It makes a passive e-governance, which is there to give only one way information. The lack of participation of stakeholders creates a lacuna for such projects, particularly with spatial information. pGIS provide better platform and alternative way of e-governance by involving local mass.

5. FUTURE PROSPECTS OF EFFECTIVE pGIS

To find the scope for applying pGIS in villages, a preliminary map making exercise was done during surveys. The participation of local people was very encouraging and

people shared the information which was never available on any land record. Beside street maps they also helped researcher to prepare historical map of natural resources. But it was not the same experience for all existing villages. The better response was received from some villages and locality, while in some people were not interested in sharing the details. It became more difficult in absence of any community building organization (CBO) over there. The systematic meeting and functions of Gram Panchay added advantage in Indian villages. Any similar project can be implemented with very less efforts. The records and data at block level were also easily accessible. The unity and plan execution for drinking water problem was very good. There were seven women self help groups, each of them have knowledge about the market demand and agricultural produce. The men's CBOs include youth committee and self help group. They all have forthrightly meeting. But at large scale we have faced many impediments. In absence of CBO or any self help group, people hardly meet and discuss the village level issues and problems. The function of Gram Panchayat was not systematic. Relative of women Serpanch was acting behalf of her. And no one was accountable for Panchayat's work. Lekpal and even Block Development Officer has no information regarding the village specific programs.

6. CONCLUSION

Systematic and decentralized institutional setups are required for creating locality information systems based on pGIS. The existing community institutions are very helpful in

executing any pGIS projects as it involves all stakeholders including local government officials and various section of local population. The better administration is definitely an advantage for it. However, the recent developments like- Right to information act, advancement of ITC have great impact on transparency and accountability. The participation of local population will have a dynamic added advantage, as it will include more issues in a democratic way. The need of trained manpower can be easily solved as India has largest number of IT professionals. The technological adaptabilities for open source software will be very much suitable in applying pGIS at large scale. Potential of Geomatics Technology has been demonstrated in all above areas. However, there is need to spread awareness along with offering customized and turnkey solution in order to ensure successful exploitation of technology to make E-Governance sufficiently responsive and accountable.

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