
UNIT 2 e-GOVERNANCE IN RURAL AND URBAN DEVELOPMENT

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2.1 INTRODUCTION

Generally speaking, e-governance or electronic governance in rural / urban development is the use of information and communication technologies (ICT) in the operation and maintenance of rural / urban services, respectively. ICT helps to introduce a wide range of ways for improving collaboration and cooperation between ministries; making government services more transparent, efficient and effective for the public by sharing accurate and up-to-date information and improving people's access to government services; boosting public sector accountability, transparency, efficiency and effectiveness. E-governance can also help streamline activities, cut costs and paperwork and help the city governments make more informed development decisions.

The initiative of the use of information technology (IT) in urban governance started in the late nineties, especially after the adoption of the 74th Constitutional Amendment Act (CAA) in 1994, when urban local bodies (ULBs) became constitutional entities of local governance. Prior to this, local governance was the mandate of the state governments where the ULBs were supposed to perform certain functions mandated to them by the state governments. The passage of the 74th CAA resulted in the increased role of the ULBs in local governance. Further, the central government launched the programme of Jawaharlal Nehru National Urban Renewal Mission (JNNURM) in 2005 where adoption of reform in e-governance became mandatory for all the 65 Mission cities (all State capitals, all million plus (population) cities and cities of historical interest). The use of ICT is expected to help the ULBs and state governments to curb corruption, reduce time for the provision of civic services and bring about transparency in urban management. Therefore, development professionals working in urban areas are expected to know about role of ICTs in urban development.

After studying this unit you should be able to:

- Discuss the meaning, concept and importance of e-governance in rural and urban development.
- Describe various initiatives of e-Governance in different development sub-sectors in rural and urban areas with the help of examples/case studies.

2.2 NATIONAL e-GOVERNANCE PLAN (NeGP)

The National e-Governance Plan (NeGP), takes a holistic view of e-Governance initiatives across the country, integrating them into a collective vision, a shared cause. Around this idea, a massive countrywide infrastructure reaching down to the remotest of villages is evolving, and large-scale digitization of records is taking place to enable easy, reliable access over the internet. The ultimate objective is to bring public services closer home to citizens.

NeGP Vision : Make all Government services accessible to the common man in his locality, through common service delivery outlets, and ensure efficiency, transparency, and reliability of such services at affordable costs to realise the basic needs of the common man.

Strategy to Realize Vision

- Centralized Initiative, Decentralized Implementation
- Focus on Services & Service levels
- Ownership and Central Role of Line Ministries/State Governments
- Emphasis on Public Private Partnerships (PPP)

The Government approved the National e-Governance Plan (NeGP), comprising of 27 Mission Mode Projects and 8 components in 2006. In the year 2011, 4 projects - Health, Education, PDS and Posts were introduced to make the list of 27 MMPs to 31 Mission Mode Projects (MMPs). The Government has accorded approval to the vision, approach, strategy, key components, implementation methodology, and management structure for NeGP.

In order to promote e-Governance in a holistic manner, various policy initiatives and projects have been undertaken to develop core and support infrastructure. The major core infrastructure components are :

- State Data Centres (SDCs)
 - o State of art Data Centers in all States/UTs
 - o Housing all applications and databases
 - o e-Delivery of G2G, G2C and G2B services
 - o State Portals, State Service Delivery Gateways
- State Wide Area Networks (SWAN)
 - o Secured network for Government work
 - o Connecting State HQs ,District HQs, Blocks HQs
 - o Minimum 2 Mbps Broadband Connectivity

- Common Services Centres (CSCs)
 - o More than 100,000 tele-centers in 600,000 villages.
 - o Broad band internet enabled connectivity
 - o Implementation through PPP
- National e-Governance Service Delivery Gateway (NSDG)
- State e-Governance Service Delivery Gateway (SSDG)
- Mobile e-Governance Service Delivery Gateway (MSDG)

The important support components include Core policies and guidelines on Security, HR, Citizen Engagement, Social Media as well as Standards related to Metadata, Interoperability, Enterprise Architecture, Information Security etc. New initiatives include a framework for authentication, viz. e-Pramaan and G-I cloud, an initiative which will ensure benefits of cloud computing for e-Governance projects (Source : Ministry of Electronics and Information Technology, 2018)

2.3 IMPORTANCE OF e-GOVERNANCE IN RURAL AND URBAN DEVELOPMENT

2.3.1 Importance of e-Governance in Rural Development

E-Governance which is a short form for electronic governance, also known as digital governance or online governance refers to the use of ICT to provide and improve government services, transactions and interactions with citizens, businesses, and other arms of government. While e-governance is often thought of as *online governance* or *Internet-based governance*, many non-Internet *electronic* technologies can be used in this context, like telephone, fax, wireless networks and services etc.

As per the latest census, about 69 per cent of people live in rural areas. Therefore, focusing on the all round wellbeing of villages has been the principal objective of various government policies over the years. As part of e-governance for rural development, government has opened common service centers (CSCs) at village level across India under National e-Governance Plan (NeGP). As a follow-up to the e-governance initiative of the Union government, many state governments have provided the necessary information to the people in villages. The e-governance measure has enabled people to access government services easily and in a cost-effective way to address their grievances.

e-Panchayat as Tool of Rural Development

Because of the large size and diversity of the country, public services delivery becomes a tough challenge in remote rural areas. The NeGP envisages the establishment of e-Panchayats. The e-Panchayats for the villages aim to provide numerous basic services for the rural population across the country.

Objectives : The objective of e-Panchayat is to effectively tackle the tasks that confront rural villages in general. The challenges include lack of reliable communication infrastructure, inordinate delays in delivery of the services, little revenue realization at Gram Panchayat level, and absence of a meaningful monitoring system.

Benefits : e-Panchayat yields various benefits where adopted. The benefits include the following:

- 1) **Efficiency:** Public services delivery has improved because of the adoption of e-governance. It has led to easy access for people at minimal cost and delays. Processing of payment of property tax, user charges (water, electricity, etc.), getting license grievances addressed etc has become easier and cost effective. It would make services delivery transparent, and free from abuses and corruption.
- 2) **Better financial management:** The 73rd Amendment to the Constitution provides special financial powers to Panchayat bodies. Under the new rules, Panchayats are empowered to levy, collect and expend tax revenue, tolls, fees and the like. A software application, is being deployed to process the financial transaction of e-Panchayats. The software application would help in the collection of revenues and enable the authorities to track the expenditure by funding authorities.
- 3) **Monitoring the programs:** Evaluating and monitoring the various development programs constitutes a significant task for the authorities. e-Panchayats help the authorities use ICT to do the job efficiently and in a timely manner. Further, it helps create a database of all development programs.
- 4) **Disseminating information:** e-Panchayat leads to easy access to information with respect to the function of Panchayats and other services. Citizens can access the internal tasks done by e-panchayats, such as meetings for agenda setting, voting on proposals, the decisions taken and so on. Further, information pertaining to Pensions, BPL food grains, Census data can be provided and also be accessed. Further, it makes dissemination of information faster among all levels within the Panchayats and government departments.
- 5) **More participatory:** e-Panchayat makes the village local bodies more participatory – women and weaker sections get the opportunity to join in the economic growth process. This leads to equitable and inclusive growth. Information becomes available to all with respect to social services/schemes without bureaucratic interference.

2.3.2 Importance of e-Governance in Urban Development

E-Governance has become an essential tool for urban development by involving the use of IT in:

- Improving transparency;
- Providing information to the citizen speedily;
- Improving administrative efficiency;
- Improving public service such as transportation, power, health, water, security and panchayat / municipal services.

One of the important components of e-Governance solution is the Geographical Information System (GIS). The GIS has helped in systematic mapping of four aspects:

- **Revenue mapping** – showing details of all taxes and charges like property tax levied on various assets. This will help the officials by improving assessment and thereby increasing collection of revenues.
- **Infrastructure mapping** – showing the details of infrastructure like roads, solid waste management system, streetlight, housing, etc.
- **Resource and assets mapping** – showing specifically the assets for optimum utilization and hence providing better services to the citizens.
- **Poverty mapping**– showing socio-economic attributes of the poor households. This will help in targeting the correct citizens for the correct services.

Urban areas are currently the largest contributors to global energy consumption and climate change. The world's 20 largest cities alone – each with a population exceeding 10 million – are responsible for 75 percent of the planet's energy use. Added to this is the rapid development of metropolitan areas around the globe as well as the need to renew outdated 20th century infrastructures in cities. The scope of ICT in addressing these urban challenges is tremendous.

The further development of the information/knowledge/network society is now a common goal of many authorities round the world. Modern telecommunications can be seen not only as a new way of working but also as a new form of urban management. Delivery and management of urban services can be better done by e-governance. This may be true for property tax collection; vehicle tracking or efficient transport services. The quality and diversity of conventional transportation networks and services are important locational factors for many industries and activities. Therefore, analogously, one may suppose that ICT and its applications will, over the course of time, similarly come to affect spatial development and thus one may argue that with this in mind, ICT should already now be taken into account in all future spatial planning processes. In the policies and plans for sustainability and eco responsibility in cities, much attention has been directed to three sectors: the built environment, energy, and mobility. At the commencement of the 21st century, it is obvious that a fourth, equally important element must be addressed: ICT.

This era is the start of a dialogue about how cities can create coherent, long term policies and plans to manage the environmental impacts of ICT and utilize ICT strategically to create sustainable 21st century cities. ICT products and systems are a significant and rapidly growing part of the environmental footprint of modern urban life. They are resource intensive in manufacturing and distribution, consuming ever greater amounts of energy while in use, and producing escalating volumes of solid and toxic waste.

ICT products, systems and networks are the essential drivers of productivity improvements and innovation for the 21st century. They will be the enablers of sustainability solutions in all networks of urban life: buildings, energy production and use, mobility, water and sewage, open spaces, education, and public health and safety. ICT innovation is also the catalyst for changes in personal, work and community life that will be a fundamental requirement for sustainable economic development.

Until now, little attention has been given to measuring the eco footprint of ICT in cities, or to clearly understand its role in enabling other sustainability initiatives.

Because ICT systems and products are literally everywhere in modern life, it is difficult to see and understand that each device is part of a whole system globally linked by networks to create, manipulate, store, move and present information for humans and machines. To successfully manage the ICT environmental footprint and realize the benefits for enabling sustainability, a city must have a vision and strategy for ICT that encompasses all organizations and constituencies.

ICT helps develop an innovative combination of advanced technologies that meet the unique needs and vision for each urban area. Some of these technologies include:

- Vehicle tracking/identification systems;
- Dynamic congestion-charging programmes;
- Video communication solutions;
- Integrated transportation management systems;
- Global positioning system (GPS), radio frequency identification (RFID) and other sensor technologies;
- Broadband, wireless and intelligent infrastructures;
- Collaboration technologies in the creation of innovative work environments;

A study about the relationship between the quality of local e-government services and the levels of Internet access in the 12 regions of the United Kingdom reveals that lower quality of local e-government services correlate with low levels of Internet access. In Taiwan, electronic tax-filing systems, the implications of technology acceptance and perceived credibility of the systems are positive factors that influence adoption of e-government services. Whether e-government in the future will be a method for including more citizens in a government or excluding less technologically educated citizens remains a concern. Many information policy issues are likely to present significant challenges to the development of e-government. These are:

- Ensuring ability to use required technologies;
- Educating citizens about the value of e-government;
- Ensuring access to useful information and services;
- Coordinating local, regional and national e-government initiatives;
- Developing methods and performance indicators to assess the services and standards of e-government;
- Providing consistent and reliable electricity, telecommunications, and Internet access;
- Addressing issues of language and communication;
- Preventing e-government from lessening responsiveness of government officials; including individuals with disabilities in e-government.

Akshaya e-Literacy Project in Kerala

The e-literacy project in Kerala is the only initiative that aims to make ordinary citizens e-literate in India. The project aimed at making at least one member in each of the families e-literate. The pilot project started in

Mallapuram in 2002 and has been extended to other districts like Kollam, Kozhikode, Thrissur, Kasargodu. Total e-literacy was achieved in eight districts in Phase I and the project has been a great success. The Akshaya project has three distinct phases. The first phase enables the masses with the basic skill in computer operations and familiarising them with the internet, besides, hand on skill in operating a computer. The e-literacy initiative in Kerala have been recognised and appreciated globally.

Source: <http://www.akshaya.kerala.gov.in/index.php/e-literacy>, 2017

2.4 INITIATIVES OF E-GOVERNANCE: INTERNATIONAL EXPERIENCES

Examples of e-Governance practices followed in some of the developed countries are given below:

2.4.1 Automated Building Plan Approval: Case of Singapore

Singapore is a key hub in the development of the global information and knowledge economy. Part of the developing e-Business capability in Singapore is the Construction and Real Estate Network project (CORENET). This world's leading initiative has changed the entire perception of building planning in Singapore. Key to the success of CORENET is Automated Code Checking, which allows automated approval of building plans over the Internet. Received data is stored and checked within EXPRESS Data Manager software.

CORENET is a major IT initiative undertaken by the Singapore Ministry of National Development to re-engineer the business processes of the construction industry and achieve a quantum leap in turnaround time, productivity and quality. CORENET centres on developing IT systems to integrate the four major processes of a building project life cycle, supported by key infrastructures, to provide a *One-Stop Submission Centre* (OSSC) to facilitate electronic submission, processing and approval of building project documents over the Internet.

The specific objectives of CORENET are:

- To speed up the business planning and project evaluation processes in the building industry by making all relevant information readily available to all players in the industry.
- To streamline the design-related processes by having all industry professionals work with one common set of electronic plans instead of separate paper and electronic plans presently used.
- To evaluate the compliance of building design to statutory requirements with minimal intervention and guidance from the regulatory authorities.
- To move towards common procurement procedures and document standards.
- Integrated Building Plan and Building Services System (IBP/IBS).

One of the major projects in CORENET is the IBP/IBS which is an expert system that automatically performs checks on digital plans for compliance with building plan and building services regulatory requirements. The design checking and

approval process using the manual approach is time-consuming and inefficient. Automating this process eliminates potential delays as well as avoids inconsistencies in code interpretation.

One-Stop Plan Submission of Building Plans:

It is a virtual submission centre to facilitate round the clock electronic submission and approval of digital building plans. It will be an advanced e-government solution for industry professionals such as architects, structural, mechanical and electrical engineers. Automated compliance checks are performed on the relevant parameters of the proposed building against the building codes and compliance regulations. Payment of fees is electronic. The system saves the industry travelling time to the 13 regulatory agencies and brings about significant manpower and cost savings to both industry and agencies.

2.4.2 Smart Work Centers: Amsterdam

This network of Smart Work Centers (SWC) is part of collaboration between Cisco and the City of Amsterdam under the Connected Urban Development program (CUD), which serves to address modern urban challenges including mobility, climate, energy and sustainable ways of urban management. The Double U Smartwork aims at a one stop shop for location providers, individual users, independent professionals and corporate users, where all SWCs can be booked directly by a central booking tool.

SWCs comprise a regional network of neighbourhood professional work and community centres supporting travel virtualization and enabling mobile working practices. SWCs offer a professional work environment near residential areas to lower energy use and carbon emissions. Estimates revealed that users have saved on an average of 66 minutes of commuting time per day.

An SWC is a physical facility where high quality workplace solutions are offered to professional workers in a neutral, centrally located and easily accessible environment. To minimize traffic, an SWC is located in the vicinity of roads, traffic junctions, stations and residential areas. Currently, there are several providers of SWC-like facilities in the Netherlands. The Double U Smartwork Foundation serves as a coordinating platform for SWC providers and aims to develop a national network. Users, regardless of where they live or reside, should have access to a good workplace within biking distance. Until recently, existing SWCs were too fragmented and locally focused, therefore, employers operating on national level were not interested in offering their employees an alternative working spot. Double U links a network of over 50 open and SWCs, with the plan to extend to 100 national centres.

Smart Work Centers are well equipped and go beyond providing a workplace. The services and facilities are not only meant to facilitate work itself, but also to provide work related services as day-care and catering facilities.

Anyone can use the facilities offered by one simple online booking system. Through the portal, users can quickly find the nearest location with the right facilities, whether they are on the road or at their workplace. The available providers are automatically displayed.

2.4.3 An Energy Efficient City: Madrid

Madrid is one of the first pilot projects carried out in Spain within the Connected Urban Development program (CUD), in which companies and cities partner to contribute to the development of sustainable, efficient and innovative cities through the use of connectivity and new technologies. Promoted by the Municipal Company for Housing and Lands of Madrid; Cisco and technology partner Telvent, have deployed network infrastructure, connectivity and control systems in a pilot, apartment building in the city. The development is intended as temporary housing on a rental basis to young people in Madrid.

The *Energy Efficiency Manager* installed in homes can, at any time and in real time, manage energy consumption, controlling emissions of carbon dioxide and make decisions about the way in which residents make use of energy both at the individual apartment level and throughout the building. In the future, this is intended to extend across the urban community. The solution, which allows consumers to set limits and comparisons of weekly, monthly or yearly consumption, provides to citizens and municipal managers, daily tips to improve efficiency and be more environmentally responsible.

Urban Eco-Map is part of the global Urban Services Platform approach toward which visionary cities and the ICT industry are moving. Urban Eco-Map provides real-time environmental intelligence to enable citizens, communities, cities, countries and businesses alike to make smart ecological decisions and to develop policies that improve the sustainability of cities. Through this comprehensive view of eco-data, we can now take a global *pulse* of the eco-health of our planet.

2.4.4 Urban Eco Map: San Francisco

Urban Eco-Map: A pilot co-developed with the City and County of San Francisco, Urban Eco-Map provides cities with relevant data regarding primary greenhouse gas contributors – transportation, waste and energy – to help city residents take action to reduce their emissions.

2.4.5 Personal Travel Assistant: Seoul

Personal Travel Assistant (PTA): PTA is a Web-based service that allows residents in Seoul and Amsterdam to make on-the-go travel decisions based on time, cost and carbon impact. It offers *virtual assistant* features that provide transit guidance based on user preferences via any Web-enabled device, from any location.

Check Your Progress 1

Note: a) Use the spaces given below for your answers.

b) Check your answers with those given at the end of the unit.

1) What do you mean by e-governance?

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- 2) Explain the importance of e-governance and how e-governance has helped urban management across countries with examples.

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2.5 INITIATIVES OF E-GOVERNANCE: NATIONAL EXPERIENCES

Examples of e-Governance practices in some of the Indian states are narrated below:

2.5.1 Computer-Aided Registration of Deeds and Stamp Duties: An initiative of the Andhra Pradesh Government

E-governance has helped the state revenue departments to register properties in less time, store information scientifically and bring about transparency in the system. Such an initiative was taken in Andhra Pradesh in the late eighties, where the Computer-aided Administration of Registration Department (CARD) project has brought about computerized counters at land registration offices throughout Andhra Pradesh. The project aimed at altering the antiquated procedures that had governed the registration system of the state, which included the laborious copying and indexing of documents as well as their unscientific space-consuming preservation in ill-maintained backrooms. The state had a flourishing business of brokers and middlemen who exploited citizens selling or buying property. The CARD project is an attempt to reform this system through the use of IT¹. With the introduction of CARD, citizens now complete registration formalities within a few hours. The CARD project illustrates some of the key implementation issues the state and national governments may face in their efforts to use IT to improve citizen-government interfaces and serves as a best practice to be replicated by them (Satyanarayana, 2002).

The idea of introducing computers originated in 1988 in Andhra Pradesh when a project was initiated to computerize the process of issuing Encumbrance Certificates. A 386 server operating with 14 terminals was set up at a cost of about \$31,000 (Rs 1.33 million). Data entry of index registers of the twin cities of Hyderabad and Secunderabad (now in Telangana) was initiated. The National Informatics Centre (NIC) provided the technical assistance. The entry of 15 years of data went on until 1995 when a pilot scheme for issuing computerized Encumbrance Certificates was launched in one of the city offices. The feasibility of taking up a comprehensive Registration Department computerization project to address other registration formalities and problems was established in a study conducted by J. Satyanarayana² in August 1996. The study brought out methods

¹ The CARD project was funded entirely by the government of Andhra Pradesh. The original outlay was about US\$3 million (Rs.130 million).

² Commissioner & Inspector General of Registration and Stamps C.T. & Excise Complex, M.J. Road, Nampally, Hyderabad

by which the various registration services could be delivered electronically across the counter in an integrated manner and showed a road map as to how the process of valuation could be consigned to the computer and also introduced the concept of electronic document management as an essential part of computerizing the registration process.

Objectives of the CARD Project

CARD is a major IT project designed to eliminate the maladies affecting the system of registration through electronic delivery of all the registration services. It was based on the primary objectives outlined below.

- Demystify the registration process;
- Introduce a transparent system of valuation of properties, easily accessible to citizens;
- Bring in speed, efficiency, consistency and reliability;
- Replace the manual system of copying and filing of documents with a sophisticated document management system that uses imaging technology;
- Replace the manual system of indexing, accounting and reporting;
- Introduce electronic document writing; and
- Substantially improved the citizen interface.

Benefits of CARD

The CARD project aims at providing improved quality of the services at the registration department by providing a computer interface between citizens and government. The tedious procedures that took weeks have been replaced by a system that can be accomplished in just a few minutes. The market value assistance and issuing of the Encumbrance Certificate (EC) takes five minutes each. The sale of stamp papers, document writing and registration of the documents takes ten minutes, thirty minutes and one hour respectively. The positive impact of the CARD project on the efficiency of registration operations can be gauged from the following table:

Quantitative Benefits of CARD

Description of Registration Service	Time Taken in Manual System	Time Taken in CARD System
Encumbrance Certificate	1 to 5 Days	10 Minutes
Valuation of Properties	1 Hr	10 Minutes
Sale of stamp paper	30 Minutes	10 Minutes
Document writing	1 Day	30 Minutes
Registration	1 to 7 days	1 Hr
Certified copies of documents (registration under CARD)	1 to 3 days	10 Minutes

Source: Based on CARD (Satyanarayana, 2002)

2.5.2 KAVERI in Karnataka (Karnataka Valuation and e-Registration Project)

KAVERI Online service is a web based application of Department of Stamps & Registration, Government of Karnataka that provides interface to the citizen to enter details and book appointment for document registration and also provides facility to search for required Index and registered copies. These services enable citizen to download Index (List of transactions on the searched property) and copy of the document. Citizens can also book appointment for registering documents. This will help citizen to check the present owners of the properties, helps citizen in checking the authenticity of the registered document and also helps citizens to book appointment for document registration (Department of Stamps & Registration, Government of Karnataka, 2018).

For the last five decades, the process of registration of documents was done manually and involved the following steps:

- Stamping,
- Presentation,
- Admission of execution,
- Identification by witnesses and
- Registration, as prescribed in Karnataka Stamp Act, 1957 and Registration Act, 1908

Features of KAVERI

Automated Kiosks with touch screen operation facility were installed in every Sub-Registrar's Office, through which public can have access to the following information in Kannada and English.

- Market value of land in all villages, towns and cities in the state.
- Model formats of commonly used deeds and forms required for Registration of Marriage.
- Model byelaws of Societies and Associations.
- Frequently asked questions and exhaustive answers.
- Fee for Registration of documents/Registration of Societies/Firms/Marriages.
- Acts and Rules bearing on registration of documents.

(Source: Department of Stamps & Registration, Government of Karnataka, 2018)

Under the manual registration process, the documents registered were copied manually in specified books. After that, they were verified with the original documents, and the hand written documents were authenticated by Registering Officers. The registered book would serve as a public document. Since the manual procedure involved writing each document that was to be registered, the time taken for the entire registration procedure was anywhere between two to three months. Moreover, it also meant 2–3 trips to the registration office to check if the document was ready. The solution lay in finding an alternative procedure that would meet the statutory requirements and also speed up the process while preserving the accuracy of the manual procedure. Computerization was the way

forward. The Department of Stamps & Registration, Government of Karnataka set up automated registration process in the state in the year 2002. More than 200 Sub-Registrar Offices in Karnataka came under computerization under an outsourced model whereby the vendor could complete the registration process within 30 minutes. The software was aptly called KAVERI, after the river Cavery³

Centre for Development of Advanced Computing, Pune (C-DAC) provided the technical support in developing suitable software to cover the following aspects of registration: Registration of properties, Valuation of properties, Scanning and Archival of Documents, Reports, Vendor management system, Utilities, Website, Societies, Firms and Marriage Registration and Data Transmission.

After the introduction of KAVERI the department has registered documents and returned the same to the parties concerned within 30 minutes of its presentation. There was a significant growth in the revenue to the state exchequer after the introduction of KAVERI in spite of reduction in stamp duty and registration fee.

Case Study: E-governance in Land Administration – Karnataka

(Source: Manasi, et al., 2015)

The E-governance initiative in land administration has brought in a paradigm shift over the traditional practices through the usage of electronic systems. The new system of information availability has made service delivery and the governing process simpler and translucent. All the services are available in a single window to the citizens for better office and record management. E-governance initiatives for land administration began with the computerisation of land records and registration for creating a system of spatial record followed by the establishment of linkages between different wings of land record management agencies. The first E-governance initiative undertaken is ‘Bhoomi’ followed by ‘KAVERI’ (Karnataka Valuation and e-registration Project), ‘Mojini and Bhoomi-KAVERI-Mojini integration’.

The Bhoomi-KAVERI-Mojini, regarded as ‘three pillars’ of Karnataka Land Revenue administration, reveals the intricacies involved in the policy formulation and implementation of these mechanisms.

- Bhoomi, implemented at the taluk level since the late 1990s, has enabled the availability of Record of Rights, Cropping and Tenancy (RTCs) in a digital form as against the physical format.
- KAVERI, an initiative undertaken in the Registration Department, in the year 2004-05, is intended for computerising land registration system with separate software. Along with this, the documents available in the Sub- Registrar’s Office (SROs) have also been digitised.
- Mojini, initiated in 2008-09, aims to computerise the functioning of the Survey Department.

³ Centre for Development of Advanced Computing, Pune (C-DAC) provided the technical support in developing suitable software to cover the following aspects of registration: Registration of properties, Valuation of properties, Scanning and Archival of Documents, Reports, Vendor management system, Utilities, Website, Societies, Firms and Marriage Registration and Data Transmission.

- Integration of Bhoomi, KAVERI and Mojini, since September, 2011, aims to bridge the crucial gap between the textual and spatial data in terms of addressing mismatches, if any, with regard to boundary disputes among joint owners or adjoining properties.
- '*Nemmadi Kendra*' - kiosks is a public-private partnership initiative to support the dispensation of various services

Key Outcomes

Bhoomi: With respect to Bhoomi, disposal of applications were fast, there was significant improvement in the Bhoomi operation. Disposal of applications related to land transactions indicated an improved performance during post integration phase. It indicated that land administration system in the state showed a visible improvement in service delivery. Besides, there were Minimal Delays in Mutation Process. Bhoomi operator receives and processes a complete list of mutation details on a daily basis obtained from the Village Accountant. However, the processes need further streamlining in utilisation of Bhoomi/*Nemmadi Kendra* services. Consequent upon setting up of computerised land record kiosks - both Bhoomi and *Nemmadi kendras*, 80 to 83% of clients utilised the services. The present model of Bhoomi kiosk and method of operation are satisfactory in terms of accuracy, transparency, convenience besides time and cost saving. Also there was minimal time taken for issuing RTC and Mutation copies besides ensuring safety and transparency.

KAVERI: Computerised registration system is better than manual process and was evident. Majority of the clients managed to complete registration process with one visit. Further, registration of documents took less time as compared to obtaining Encumbrance Certificate (EC). However, there were some issues pertaining to outsourcing for maintaining quality control. With respect to availability of Kiosks and usage of services at SRO, more than 75% of clients were satisfied with services. However, there were complaints about lack of infrastructure, advanced computers, spacious buildings and basic facilities.

Mojini: Pendency status is a matter of concern. Demand for land has increased due to recent developments resulting in high sales transactions; hence, pendency level as a percentage of average monthly receipt of applications is higher. The notice-period for issuing 11-E sketches is limited to 45 days, about 58% of applicants could get their 11-E sketches within 1-2 months in Tiptur indicating fair service delivery while in Gulbarga and Navalgunda 47% of applicants waited for up to 3 months indicating insufficient number of licensed surveyors and well established infrastructure facilities. Survey and Work quality of licensed surveyors was good. Tatkal system aided in reducing pendency in respect of Phodi cases. At present, though digitisation of survey records data was in progress the level of achievements varied. Damaged original survey sketches and poor quality papers made it complex and varied across the districts and ranged from 20% to 50%. Also, inadequate Monitoring process caused pendency and delays in disposal of applications.

BKM Integration: This enabled faster service besides verification of property details easily, safety of documents and improvement in access. First-in-First-Out (FIFO) is working well and prevented misuse. However, integration process of Bhoomi and Mojini data needs improvements by better coordination between Bhoomi and KAVERI, improve data access problem during registration of documents. Speed money remains an issue as middlemen still play a major role in the processing of documents; however, the introduction of ID system for potential applicants has reduced their role considerably. To sum up, the extension of Bhoomi, Kaveri, Mojini Integration makes it further remarkable in putting the land records in place. To reach the stage of perfection, process constraints are to be addressed and evolved to make it more effective and efficient.

2.5.3 E-Suvidha – e-Governance Initiatives of Pimpri Chinchwad Municipal Corporation

The Pimpri Chinchwad Municipal Corporation (PCMC) has introduced an integrated e-Governance Programme to ensure improved transparency to build citizen centric governance. The implementation of e-governance gave new set of responsibilities to PCMC's employees. This project has involved around 11 corporation departments, which are computerized. Citizen Facilitation Centre (CFC) is the most successful project, which provides services to citizens with more than 99% efficiency. Another Innovative project is PCMC@home, which provides services of corporation directly at home through PCMC personnel.

The initiative under E-Suvidha has considerably reduced the hassles faced by the citizens. Citizens take minimum time and cost for availing the civic services. Citizens avail the facility on a mouse click from home or office or any remote location-avoiding visit to Corporation office or division office. Payment of charges and taxes directly online through payment gateway facilities reduces the travelling cost and valuable time. Citizens save about 3–4 hours of time through availing E-Suvidha facilities and in some cases citizens save days by availing the online facilities of the PCMC.

Kiosks set up in different wards, zonal offices and other public places have helped the citizens who are not proficient with net banking and who are not able to avail web based facilities. Visit to Kiosks at the nearest point helps the citizens to avail the facilities, services and payment of different charges, taxes and bills. The web based application helps the citizens to locate their properties for assessment details and for payment of taxes online. The utility mapping has helped the PCMC to monitor the delivery of essential services such as water supply, drainage lines, roads, streetlights, garbage bins, etc. This has increased the overall service delivery improvement to provide services and identify the areas which do not avail these services and utilities.

The following section provides details of the services provided under E-Suvidha initiative:

- **Property and water revenue management:** The property assessment details and water charges are available online, with online payment facility. This has reduced number of visits by the citizens to the corporation office.

- **e-Tendering:** PCMC has initiated the online tendering system for all projects and procurements to be taken up for the development works under its limits. Submission of tenders and documents can be done online.
- **Dashboard for works management:** Dashboard of work management is an integrated web based software for monitoring and tracking the progress of work. This module is also integrated with financial data like budget approved for works, cost incurred and other information, which helps in keeping a track of the projects undertaken by PCMC. Necessary decisions are taken from time to time depending upon the progress of projects and works.
- **Citizens Facilitation Centre (CFC):** PCMC's Citizens Facilitation Centre (CFC) provides 79 different citizen centric services for 12 departments of the Corporation. The CFCs work on single window basis to provide one stop service to the citizens for PCMC. CFCs also provide services of the District Collectorate like caste certificates, domicile certificate, ration card, and also provides value added services of Road Transport Office like issuance of learning licenses and collection of Maharashtra State Electricity Board bills, collection of BSNL bills, collection of insurance premiums and railway ticket booking.
- **SMS-based complaint monitoring system:** To reduce the difficulties of citizens and to send a complaint to PCMC, a SMS based complaint system has been initiated. A citizen can send a complaint by SMS and scrutiny of received complaints takes place through PCMC administration. An SMS as well as an email immediately goes to the related officer for addressing the complaint. This has reduced PCMC's response time considerably.
- **Solid waste management with vehicle tracking** PCMC has also started GPS vehicle tracking system. This GPS system has been integrated with an interface, which will assign waste pick up job and duty management. The system also monitors and registers the auto job picks adherence via geo reference and stop at pick up bin location. Vehicles trip/job report gets generated for number of trips per vehicle per driver and as well as contractor. Pick up adherence report; exception report on missed bins also gets generated for the authority to monitor the collection of solid waste from bins. Tracking report, stoppage, over-speed reports, detention reports etc., are getting generated for continuous monitoring of collection and transportation of vehicles.
- **Geographical Information System:** PCMC has a GIS mapping of 182 sq. km area. This has been done through geo-referencing of the Quick Bird satellite map of 0.6 m resolution map. This mapping has been developed for GISDA by Science and Technology Park (STP) and on terms of integration with various databases and application services. GISDA runs from a centrally located system, which can be accessed through web. GISDA provides core web technology and a GIS platform that is used by all other applications to provide Web-GIS based Citizen Centric Services.
- **Property and water revenue management:** Through this service:
 - Citizens can view their bills online;
 - Taxes can be paid online from home;
 - High level of transparency is achieved;

- Strong MIS and administration control;
- Citizens can pay or use any office of corporation;
- Easy Property Registration for tax assessment;
- Ability to create/copy rate profile for different tax years;
- Property Tax calculations;
- Self-Assessment of Property Tax;
- Provisional Tax and Notice generation.
- **e-Tendering:** This facility helps:
 - All the departments publish tenders online;
 - Bidders can view/download tenders online;
 - Bidders pay fees online;
 - Bidders bid online using digital signature;
 - Bidding is controlled through parameters like bidding capacity;
 - Tenders only opened by Tender committee using digital signatures online;
 - Lowest financial bids are published online to all bidders;
 - The Bidder registration is one time process;
 - Tender-Committee can be defined per tender;
 - Department wise Bidder Registration as well as common bidders;
 - Bidding Capacity and Tender limits are configurable with Rate Contracts;
 - Integration with Accounting;
 - Generation of comparative statement;
 - Facility to define multiple manufacturers for single item and bidders can bid for multiple manufacturers for single item;
 - The comparative statement is generated for all manufacturers;
 - The EMD and Tender Fees are auto-calculated based on Tendering Rules;
 - Bidders can pay the EMD and Tender Fees online through online payment gateway.
- **Building permission management:** The broad uses of the building permission management system are:
 - Creation of new projects for the developed drawings and project attributes;
 - The Auto DCR system reads the drawing and extracts the geometrical information of layouts and building plans;
 - Single window to get all N.O.C. The application is integrated internally with all departments;
 - Integrated with digital signature key – the applicant signs the application digitally and then it is encrypted;

Based on the project attributes the graphical object information is mapped to the relevant development control rules.

- Final detailed rules verification report is produced, indicating passed/failed status for each rule;
- Reduces the architect's/authority's effort for drawing and calculations;
- Permission status is available online to the applicant;
- Eliminates the human errors and manipulation and produces accurate reports;
- Tremendously reduced the time cycle of approval;
- Alerts on unnecessary delays;
- Standardizes the drawing process;
- Detailed user friendly dynamic reports.

● **Dashboard for Works Management:** This facility offers following services:

- Every work has unique identification number generated by the system to be used for all purposes;
- Budget is loaded in the system;
- The workflow of various stages of the work is configured in the system;
- At every stage the person who is in charge of that work needs to update its status;
- It is linked to e-tendering application;
- The work flows through various stages of approval. Once it is approved and work order is issued the work can be commenced;
- Work in progress can be tracked for its completion, bills raised, payments made and funds allocated.

● **Solid waste management with vehicle tracking:** The system includes benefits like:

- Bin wise service efficiency report;
- Business specific alerts via SMS/email;
- Vehicle being dispatched to trip;
- Vehicle reaching assigned waste bins locations;
- Unloading at land fill site;
- Vehicle stoppage time in various locations and breakdown.

Activity 1: Visit a near by corporation / municipal office and find out whether e-governance has been introduced in your city/town. If yes, what are the civic services, which are delivered through e-governance?

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Check Your Progress 2

Note: a) Use the spaces given below for your answers.

b) Check your answers with those given at the end of the unit.

- 1) Taking Pimpri Chinchwad Municipal Corporation as a case study, name various initiatives of e-Governance taken in different development sub-sectors in the city.

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2.6 CHALLENGES IN E-GOVERNANCE

Though this unit has presented discussions of interesting and innovative e-government initiatives, e-government still faces many challenges as it continues to develop. In designing and implementing e-government sites, a government must consider elements of policy, including regulatory issues, economic issues, and the rights of users.

The major challenges to e-governance as per Anil Kumar Vaddiraju and Manasi, (2017) are :

Economic inequality: Economic inequality is a major barrier to access e-governance. Unless the equipment used in e-governance becomes cheaper, economic inequality can enable some to access e-governance better than others. This is partly also a problem of digital-divide. The inequality in access to economic resources also translates into digital divide and non-economic sources of inequality add to this.

Inequality other than economic: Inequality in India is complex and multi-dimensional. There are social inequality, educational inequality, inequality of literacy; inequality of regions and places and inequality among various socio-economic groups owing to all these which in turn affect equal access to e-governance. Ironically, information is supposed to level these inequalities so far as governance and delivery of public services is concerned. Information society is supposed to be a ‘flat society’ without the hierarchies of the social order coming in the way of reach of information to individuals. However, how far this is true in a society, like that of India, is open to question.

Resistance from traditional bureaucracy: There is often resistance from bureaucracy which does not appreciate transparency. In an unequal society information too is a privilege. Bureaucracy feels insecure with increasing digitisation and likely to fear either retrenchment or reduced recruitment. It is indeed true that the governments want a thinner bureaucracy and less of state bureaucracy than earlier times.

Lack of regulation of e-governance: Electronic governance also requires vigilance. Cyber crimes are a reality. With increasing online transactions, trade

and commerce taking place via electronic means, the vulnerability of ordinary citizens to cyber crimes too has become a reality. This is the major reason why electronic governance needs cyber security.

Lack of privacy laws: When electronic governance is introduced, strict privacy laws for protecting individual from the overreach of the state and non-state entities too is necessary. Mostly, it appears that developing countries are introducing Electronic governance enthusiastically but commensurate privacy laws are either missing or still in the preparation. This dimension of governance is important as much as the protection of individual dignity and rights is concerned.

Other challenges to implementing e-governance are:

- Sustaining committed executive leadership
- Building effective e-governance business cases
- Maintaining a citizen focus
- Protecting personal privacy
- Implementing appropriate security controls
- Maintaining electronic records
- Maintaining a robust technical infrastructure
- Addressing IT human capital concerns, and
- Ensuring uniform service to the public.

2.7 LET US SUM UP

E- governance or electronic governance in urban development is the use of ICT in the operation and maintenance of urban services. This initiative of the use of information technology (IT) in rural and urban governance started in the late nineties, especially after the adoption of the 73rd and 74th Constitutional Amendment Acts, when rural and urban local bodies became constitutional entities of local governance. The Government of India has launched the National e-Governance Plan (NeGP) with the intent to support the growth of e-governance within the country. The introduction of e-governance has facilitated the state and local governments in the country in successfully delivering rural and urban services to its citizens in a transparent and efficient manner.

2.8 KEY WORDS

E-governance : E- governance or electronic governance in urban development is the use of information and communication technologies (ICT) in the operation and maintenance of urban services.

JNNURM : Launched in 2005, Jawaharlal Nehru National Urban Renewal Mission (JNNURM) is a central government reform linked programme wherein adoption of reform in e-governance is mandatory for all the 65 Mission cities (all State capitals, all million plus cities and cities of historical interest).

CARD

- : The CARD is a project aimed at altering the antiquated procedures that had governed the registration system of the state of Andhra Pradesh, which included the laborious copying, and indexing of documents as well as their unscientific space-consuming preservation in ill-maintained backrooms. The state had a flourishing business of brokers and middlemen who exploited citizens selling or buying property. The CARD project is an attempt to reform this system through the use of IT.

KAVERI

- : The Department of Stamps & Registration, Government of Karnataka set up automated registration process in the state in the year 2002, wherein 202 Sub-Registrar Offices in Karnataka came under computerization whereby the vendor could complete the registration process within 30 minutes. The software was aptly called KAVERI, after the river Cavery.

E-Stamping

- : To prevent fraudulent practices in stamp paper based transactions and registrations, e-stamping has been introduced in some states where the entire exercise of stamp duty payment and generation of stamp duty certificate takes less than 3 minutes. It offers a secure and reliable stamp duty collection mechanism, and stores information in secured electronic form and builds up a central data repository to facilitate easy verification.

E-Suvidha

- : Development of an integrated e-Governance programme to ensure improved, transparent and efficient way of building citizen centric governance.

2.9 REFERENCES / SELECTED READINGS

Anil Kumar Vaddiraju and Manasi, S. (2017). From e-Governance to Digitisation: Some Reflections and Concerns. Working Paper 404, The Institute for Social and Economic Change, Bangalore.

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JNNRUM programme, Ministry of UD, GOI, www.urbanindia.nic.in

Municipal e-Design Document, Ministry of UD, GOI, www.urbanindia.nic.in

NeGP, Department of IT, Ministry of Communication & IT, GOI, www.mit.gov.in

NISG Knowledge Center, www.nisg.org

2.10 CHECK YOUR PROGRESS – POSSIBLE ANSWERS

Check Your Progress 1

- 1) E- governance or electronic governance in urban development is the use of information and communication technologies (ICT) in the operation and maintenance of urban services.
- 2) Two examples of the use of IT in the field of property registration are CARD in Andhra Pradesh and KAVERI in Karnataka. The CARD is a project aimed at altering the antiquated procedures that had governed the registration system of the state of Andhra Pradesh, which included the laborious copying, and indexing of documents as well as their unscientific space-consuming preservation in ill-maintained backrooms.

Check Your Progress 2

- 1) Property and water revenue management; e-Tendering; Dashboard for works management; Citizens Facilitation Centre (CFC); SMS-based complaint monitoring system; Solid waste management with vehicle tracking; Geographical Information System; Property and water revenue management; e-Tendering; Building permission management.

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