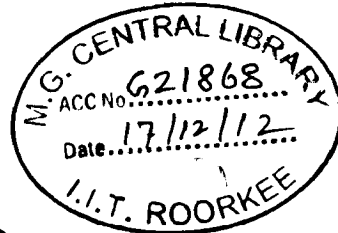# PLANNING FOR OPTIMUM GOVERNANCE
FOR
BHAGALPUR DISTRICT, BIHAR STATE

A DISSERTATION

Submitted in partial fulfillment of the
requirements for the award of the degree
of
MASTER OF URBAN AND RURAL PLANNING

By
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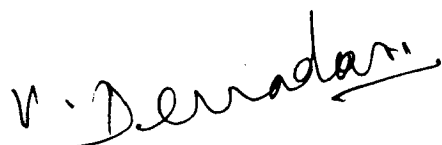
CERTIFICATE

Certified that the report entitled **"PLANNING FOR OPTIMUM GOVERNANCE FOR BHAGALPUR DISTRICT, BIHAR STATE"**, which has been submitted by **Mr. SHIVENDU SHEKHAR SINGH**, for partial fulfilment of the requirement for the award of the degree of **Master of Urban and Rural Planning**, submitted in the Department of Architecture and Planning, Indian Institute of Technology- Roorkee, is his own work done by him under my supervision and guidance. The matter embodied in this dissertation has not been submitted by him for the award of any other degree of this or any other institute.

Date: 15/05/2012

Place: Roorkee

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CANDIDATES DECLARATION

I hereby certify that this report entitled **"PLANNING FOR OPTIMUM GOVERNANCE FOR BHAGALPUR DISTRICT, BIHAR STATE"**,which has been submitted in partial fulfilment of the requirement for the award of the degree of **Master of urban and Rural Planning**, submitted in the Department of Architecture and Planning, Indian Institute of Technology-Roorkee, is an authentic record of my own work carried out during the period from July 2011 to June 2012, under the supervision and guidance of **DR. V. DEVADAS** , Department of Architecture and Planning, Indian Institute of Technology, Roorkee, India.

The matter embodied in this dissertation has not been submitted by me for the award of any other degree of this or any other institute.

Date: 15 | 05 | 2012

Place: Roorkee

(SHIVENDU SHEKHAR SINGH)

This is to certify that the above statement made by the candidate is correct to the best of our knowledge.

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I am thankful to my parents for always standing by my side. At last but not the least, I am grateful to almighty 'LORD SHIVA' for showering his mercy on me throughout this period.

Date:

Place: Roorkee

SHIVENDU SHEKHAR SINGH

M.U.R.P.

I

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ABSTRACT

Government and governance play a key role in building up and organise the nation, state, district and society as here governance manifests only democratic set up where it is by the people and for the people. All the development policies are formulated on the government level whether it is local level government or central or state and its proper implementation in the public domain becomes a challenging task for the implementing agency due to the various constraints existing in the system. Especially for the integrated development of district or region efficient & effective governance followed by successful implementation of plans & schemes is quintessence. Broad public participation, equity of opportunity, transparency, responsiveness, rule of law and accountability are insignia of good governance and administration, business and communication are the tools to achieve the above mentioned indicator in a region, district, urban or rural area. Recent global trends suggest capturing the immense potential of technology (Information &Communication Technology) in the governance process to achieve the target of administration & business. Information & Communication Technology not only augmenting the public delivery services but act as a complementary infrastructure and enabling the citizen & government in another way.ICTs are so widespread in this era so that even underdeveloped & developing nations are using the unleashed power of ICT.

The present work intends to understand the governance in a system "Bhagalpur District", a derelict district of "Bihar State", effort is made to study the factors, indicators of governance in the system & stress is lead on optimizing the governance within the system by ICT as a tool with literature study, surveys were conducted to quantify and analyse the need of citizen, need of various department of the district, e-readiness in the department with special study on municipality of the Bhagalpur City to set as study standard for other departments of the district for planning for the e-governance and plausible recommendations were given based on inclusive study of Bhagalpur Municipal Corporation and exclusive study of other departments of districts for the smooth functioning of district, so that citizen can get smooth access to delivered services by various department which finally will lead to comprehensive development of the system. The whole idea of the study is to optimise the governance in the Bhagalpur district delivered by various departments.

Chapter-1   INTRODUCTION

1.1 Introduction

People live in strangely paradoxical antediluvian times with regard to issues of governance. The aroused identities, technological change, process of globalization, make the governance itself a fairly complex issue. Government and governance play a key role in building up and organise the nation, state, district and society as here governance manifests only democratic set up where; it is by the people and for the people. All the development policies are formulated on the government level whether it is local level government or central or state and its proper implementation in the public domain becomes a challenging task for the implementing agency due to the various constraints and loopholes in the system, and as there is where implementation fails, plans and policies fails. Policy makers and planners more cognizant and result oriented go through the implementation strategy also and plan so that implementation be successful. In the era of information technology, ICT provide such a tool to planner and policy makers so that they not only make implement their plan successfully but they can optimize their results by proper monitoring the system and can create a benchmark for future and perspective planning through research and development.

An institutional set-up, organization or department public enterprises that ensures governance usually has the following features[1].

1. **Participation:** All men and women should have a voice in decision-making, either directly or through legitimate intermediate institutions that represent their interests. Such broad participation is built on freedom of association and speech, as well as capacities to participate constructively.

2. **Rule of Law:** Legal frameworks should be fair and enforced impartially, particularly laws on human rights.

3. **Transparency:** Transparency is built on the free flow of information. Processes, institutions and information are directly accessible to those concerned with them, and enough information is provided to understand and monitor them.

4. **Responsiveness:** Institutions and processes try to serve all stakeholders.

5. **Consensus Orientation:** Governance mediates differing interests to reach a broad consensus on what is in the best interests of the group and where possible, on policies and procedures.

6. **Equity:** All men and women have opportunities to improve or maintain their well-being.

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[1] Second Administrative Reform Commission, Sixth Report, October 2007 Government of India

7. Effectiveness and Efficiency: Processes and institutions produce results that make the best use of resources.

8. Accountability Decision-makers in government, the private sector and civil society organizations are accountable to the public, as well as to the institutional stakeholders. This accountability differs depending on the organization and whether the decision is internal or external to an organization.

9. Strategic Vision Leaders and the public have a broad and long-term perspective on good governance and human development, along with a sense of what is needed for such development. There is also an understanding of the historical, cultural and social complexities in which that perspective is grounded.

Above all the features of governance can be optimized by the application of Information & Communication Technology (ICT) at different levels in the department /organization/ institution. And this document covers, study, analysis and recommendation for all the strictures of above mentioned features for the department of Bhagalpur District.

The topic "Planning for optimum governance for Bhagalpur district Bihar State" intents to understand the governance in a system, characterize the governance and its optimization by using ICT as the tool i.e. e-governance. Key strictures of the good governance is taken into account for study & research purpose such as public participation, transparency, responsiveness, consensus orientation of the people, equity of opportunity, effectiveness and efficiency in the governance system, accountability of the government personnel and strategic vision of the government. Scientifically & technically all the received information were analysed to find out the ambiguity and gap in the governance to achieve at a conclusion and finally plausible & apposite recommendation were given to optimize the governance in the system with the advantage of ICT tool the electronic governance. A backward and derelict district Bhagalpur, Bihar state is selected for study & recommendation which was writhed with public disorder in the past as a district of state enunciated with BIMARU state. Existing governance & e-governance circumstance & scenario studied at different level in the department and exclusive studies are commenced on Urban Local Body i.e. Municipal Corporation of Bhagalpur (due to constriction of time) and for other department field survey & online survey are commenced for the recommendation of district as a whole. For the point of view of administration Bhagalpur City Area comes under the jurisdiction of Bhagalpur District, with regard of civic infrastructure Bhagalpur City comes under Bhagalpur Municipal Corporation. Bhagalpur Municipal Corporation as department for extensive study is selected from twenty eight departments so as to intervene on Urban Planning issues, what the Urban Planner concerns.

1.2 Identification of Problem

1.2.1 Global Perspective of e-Governance

E-governance plays a major role in development of human and to achieve the global development and millennium development goals. The altering ability of e-governance applied by many nations of world in transforming administration, management, leadership & civil services to more efficient, transparent & accountable .level. On the other hand nations slow in catching the e-governance practices remain trapped in institutional inefficient loop lead by sickness of supply oriented services and methods enhanced gap between government & citizen and opaque decision-making system. Recent mobile revolutions, high speed broadband and wireless access have manifold impact on the economy, even in developing/ underdeveloped nations of world are using this transformative power in great extent in strengthening the citizen centric services. An assessment of government websites of nations of the world revealed the fact that many nations are practicing dissemination of information through mobile or online rather than interactive services due to high expanse and complexity of services (2010, UN Survey report). E-participation remains in initial stage in the world, especially in developing countries; this is insignia of remoteness between citizen & government. Online polls, feedback forms on websites, discussion forums, and social networking sites are emerging as tools for decision making & public participation in many developed nations, many developing nations are untouched with such practices. Governments of Australia, Bahrain, Canada, Kazakistan, the Republic of Korea, Singapore, United Kingdom and United States have emerged leaders in e-governance practices. Lack of human capital (ICT professionals) is a major problem in implementing ICT innovations in e-governance in small and medium siza economy. Exponentially enhanced subscribers of mobile in last decade are not used by many nations of small scale economy in full pace.

1.2.2 National Perspective of e-governance

India finds itself in a unique situation regarding e-governance as from the word of A.P.J Abdul Kalam "Delivery of services to citizens is considered a primary function of the government. In a democratic nation of over one billion people like India, e-Governance should enable seamless.access to information and seamless flow of information across the state and central government in the federal set up. No country has so far implemented an e-Governance system for one billion people. It is a big challenge for us". Initial effort of India was towards implementation of e-governance was on networking of departments, integrating them and automation of offices towards a paperless offices. Andhra Pradesh, Karnataka, Tamilnadu, Kerala are leading from the front in –governance services & Gujarat, Maharastra, Madhya Pradesh, West Bengal and Rajasthan are following them, these ten states constitutes half of Indian population. The task of e-governance in India is in providing the service to about a billion people. At the moment, India is ranked 119th in the global e-government development ranking of 2010 (UN Survey 2010), which indicates substantial room for improvement.

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1.2.3 State Perspective of e-governance

Bihar state is widely believed to be a part of BIMARU (sick) state .Starting from approximately the same economic base as several states in western and southern India in early 1950's ,Bihar has lagged far behind .It's per capita income in 1970 was half of Gujarat and in 2007 it was about quarter. As the "governance" is one of the prime factors of development, the whole region is affected by lack of proper governance from 1950 and situation became worse after liberalization era 1991 when all other states economy up surged, Bihar faced inefficient or no governance & adverse effect. In 1980-1 growth rate was 4.7 per cent felled to 2.9 per cent in 1990-1 ,while growth rate of India spurted from 5.5 per cent per annum during 1980-1 to 6.5 per cent in 1990-1 & 7-8 per cent during 1991-2 to 1998-9.This era 1991-2 to 2004-5 was the era of inefficient governance in the state & district which lead maladies as corruption ,time & cost overruns ,insufficient and poor quality of public services ,frequent breakdowns of law and order ,dysfunction of administrative & revenue institutions. After 2005 onwards some positive steps were taken on state and district level, reforms were incorporated in governance .The health, law & order, literacy, taxation, have improved to the normal level and the governing institutions are functioning.

During the financial year 2010-11, the total outlay for the e-governance was Rs. 140 million The Department of Information Technology is executing GIS mapping through NIC, Beltron. Regional Institute of e-learning and Information Technology for DOEACC Society. The purpose of this initiative to prepare the Plan for optimum governance for Bhagalpur district Bihar state is to identify the existing Information Technology infrastructure that are still developing, underdeveloped or not have been developed. This document will provide an overall assessment as mentioned in the objective with actual ground reality and scope to move forward in near future.

1.2.4 District Perspective of e-governance

Bhagalpur is one of the districts out of 36 districts in state and out of 249 district of India which are legatees of Backward Regions Grant Fund . Not much development can be seen on the front of e-governance except few CSCs (Citizen Service Centres) and a district portal which is dysfunctional and less informative and not interactive. Vivacious need of e-governance at the district level is District e-governance Society (DeGS) is not articulated and established this shows dearth of leadership in arena of e-governance. In Registration Office new Updated software implemented for RTS Services. technical support for VAHAN and SARTHI. Technical Dealer Point Software implemented in department of transportation till end of the year 2011, such sporadic efforts are not sufficient but at district level but, an integrated effort is required at departmental level.

ULBs which play a major role in urban reform, management and governance and are vanguard in Citizen Centric Services itself suffering from malaise on the front of quality management. Staffing pattern is not optimized in the ULBs.

1.3 Need of the Study

Bihar State is one of the most densely populated state having the population of 10 crore 38 lakh with limited resources in the state due to certain geographic and demographic pattern of the state. In such a situation prime issue arises of the issue of governance as the governance is how the government/ authority interacts with citizen and other agency in another word, governance represents the public delivery efficiency of a system this becomes very important for the state like Bihar where government have to interact with more than hundred million of population, this cannot be done without use of appropriate technology and without an efficient model.

Thus decentralization and use of technology, both becomes need of governance and hence integrating both can certainly optimize the governance

1.4 Aim

To evolve a plan for effective and efficient governance by employing e-governance technique for Bhagalpur District, Bihar state.

1.5 Objectives

The following objectives are framed out from the above consideration

    i.   To assess the existing condition of the system.

    ii.   To assess the existing governance in the system.

    iii.   To assess the e-readiness in the system.

    iv.   To assess the feasibility of adopting e-governance in the system.

    v.   To evolve the set-up policy guidelines for optimum governance in the system for integrated development of the system.

1.6 Methodology

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                        ┌──────────────────┐
                        │ AIM & OBJECTIVE  │
                        └────────┬─────────┘
                                 ▼
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                      │ COLLECTION OF DATA │
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        SECONDRY                        PRIMARY DATA

 Literature   Case Studies   Data      Field     Online    Observation   Interview
 Review                      Obtained   Survey    Survey
                             from Other
     │            │             │         │         │          │            │
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                              │ ANALYSIS │
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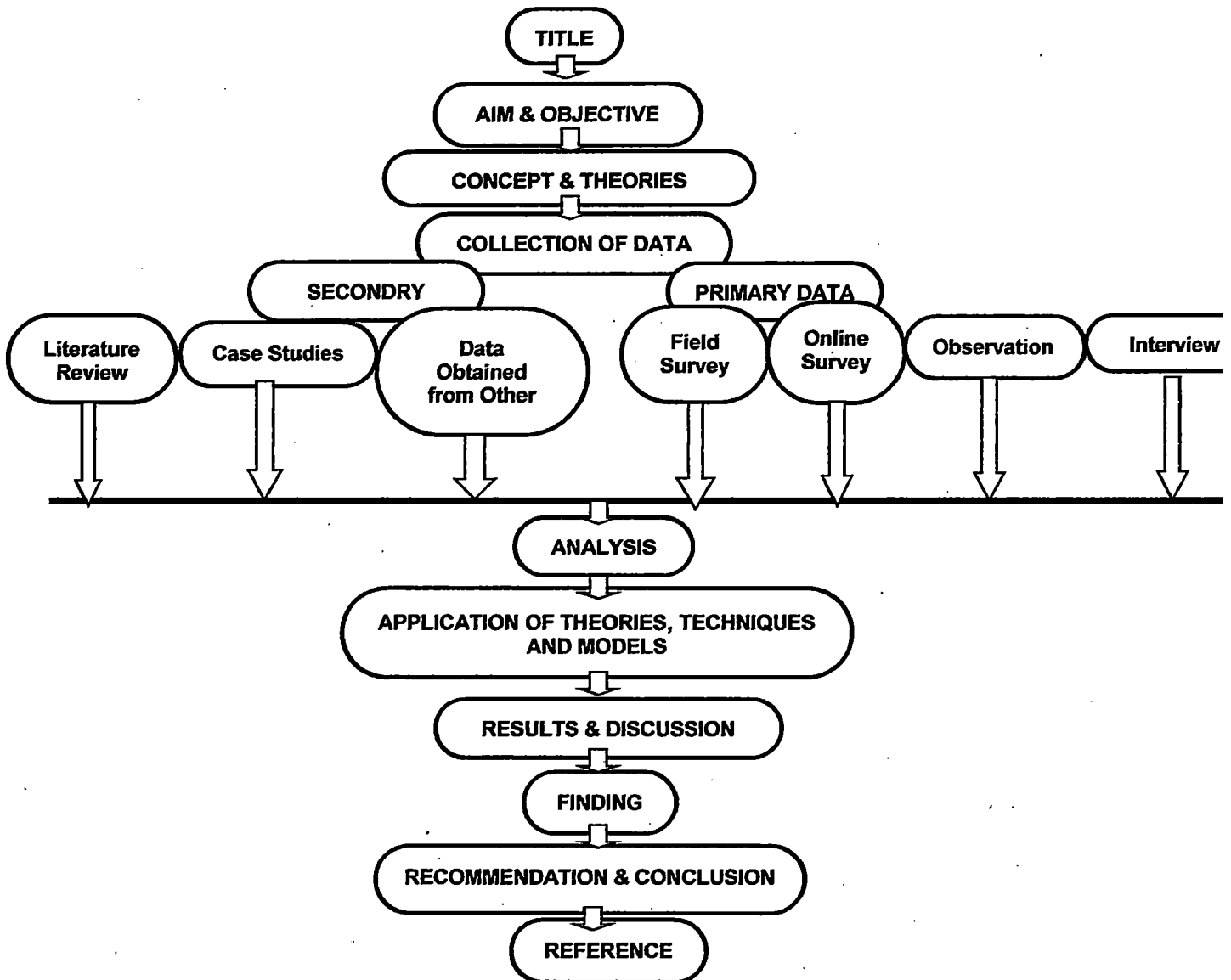
1.6.1 Data

1.6.1.1 Primary Source of Data

i.   Primary surveys and opinion polls were conducted at the grassroots level for collection of the data by employing survey tools and techniques.

ii. Online survey of government web sites of different departments were used to assess the condition of e-governance.

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1.6.1.2 Secondary source of Data

The secondary sources of data were collected from the following sources:

i.   Encyclopaedia
ii.   World Wide Web
iii.   Various publications of central, state, local governments
iv.   Various publications of foreign governments
v.   Books, journals and news papers
vi.   Technical journals
vii.   Reports prepared by research scholars, universities etc., in different fields
viii.   Reports published by various organizations
ix.   Public records, statistics
x.   Other published information.

1.6.2 Analysis

Comprehensive analysis is done in the interactive manner to find out the feasibility of using tools and techniques to identify the present problems, inadequacies, forecasting, probable solutions, requirements etc. for future development.

1.6.3 Application of theories/ models/ techniques

i.   To understand the real life situation different theories are implemented and e-governance model is applied.

ii.   For this, all the required techniques are applied.

1.6.4 Results and discussions

Results of all types of analysis, such as, literature review, Need Assessment Survey, household survey, online survey etc., according to the appropriateness would be discussed in detail to draw inferences.

1.6.5 Findings

Plausible findings are drawn for evolving a set of policy guidelines and for developing a feasible sustainable development plan.

1.6.6 Recommendations and conclusion

i.   Plausible recommendations are made to achieve sustainable development of the study area.

ii.   The study concluded with the plausible recommendations.

1.7 Scope of the Study

Citizens are becoming more and more conscious of their rights to get required services and as Central, State and Local governments recognize the need to deliver faster and efficient services to ordinary citizens, e-governance has emerged as an effective instrument of administration. But in smaller and backward district and cities neither people are aware of this revolutionary services nor the governments especially local governments are efficient enough to provide these services, as local governments are forefront in delivering the civic amenities and services.

The investigator hopes if the recommendation of this study is implemented systematically scientifically in time citizens can be made more aware and enabled, which would lead to the integrated development of the system.

1.8 Limitations of the Study

i. Study is based on primary and secondary sources of information and visual survey which may have limitations regarding to accuracy.

ii. The study is limited to Urban Local Body (Bhagalpur Municipal Corporation)as a department of Bhagalpur District for intensive study, out of district as a whole.

iii. The study is only limited to give recommendation on the basis of extensive study which will bring extemporaneity in the e-governance in remaining other departments which are administered by District administration in the Bhagalpur District.

Chapter-2   LITERATURE REVIEW

2.1 E-government

E-government refers to the delivery of national or local government information and services via the Internet or other digital means to citizens or businesses or other governmental agencies. E-government is a one-stop Internet gateway to major government services. World Bank (www.worldbank.org) definition: "E-Government refers to the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions." United Nations (www.unpan.org) definition: "E-government is defined as utilizing the Internet and the world-wide-web for delivering government information and services to citizens."

2.2 Governance

Governance" is a way of describing the links between government and its broader environment - political, social, and administrative." The application of electronic links means the interaction between government and citizens and government and businesses, as well as in internal government operations to simplify and improve democratic, government and business aspects of Governance (Kettl, 2002).

2.3 E-governance

E-governance, meaning 'electronic governance' is using information and communication technologies (ICTs) at various levels of the government and the public sector and beyond, for the purpose of enhancing governance (Bedi, Singh and Srivastava, 2001; Holmes, 2001; Okot-Uma, 2000).

2.4 E-Governance Vs e-Government: A discussion

According to some authors e-government constitutes only a subset of e-governance. E-governance is a broader concept and comprises of use of ICT by government and civil society to promote greater public participation in the governance of political institutions by the use of the Internet by politicians and political parties to bring about views from their constituencies in a well-organized way, or the publicizing of views by civil society organizations which are in conflict with the ruling powers (Howard, 2001 and Bannister and Walsh, 2002).E-Government's emphasis is on constituencies and stakeholders outside the organization, whether it is the government or public sector at the city, state, national, or international levels. While, e-governance focuses on administration and management within an organization, whether it is public or private, large or small.

E-governance concerns internally motivated application of information and internet technologies to manage organizational resources such as capital, human, material, machines and govern policies and procedures. Intranet enables e-governance

2.5 Models of e-Governance

In developing countries "e-governance models" are quintessence for right approach on implementation of e-governance. Generic models based on inherent characteristics of ICT are formulated for the widespread flow of information.

The five generic models of electronic governance in developing countries are:

1. Broadcasting / Wider Dissemination Model.

2. Critical Flow Model

3. Comparative Analysis Model

4. Mobilization and Lobbying Model

5. Interactive –Service Model

2.5.1 Broadcasting / Wider Dissemination Model
Principle

Convenient and wider dissemination of information is the prerequisite for good governance. Broadcasting model ensures more informed citizens who can understand the governance mechanism, get empowered by information, rights & responsibilities.

Applications

- Uploading government laws & legislation on World Wide Web.
- Uploading name, contacts, fax numbers, e-mail address of officials on World Wide Web.
- Online publication of key information about government plans, budget and government performances.
- Online publication of judgments or judicial statements that are of value to common citizens.

Examples Directory of official websites of Government of India: http://goidirectory.nic.in/ministry.html. National Informatics Centre (India) is the official website of the Government of India. It makes available information on government ministries- its projects and schemes, Indian laws and legislation, contact details of local government offices and key position holders online for public access.

2.5.2 Critical Flow Model

In this model specific type of information is bridged to targeted citizen as well as in wider public domain through information & communication technology. Information set is esoteric in nature, in this model as audiences are quite specific.

Applications

- Putting information on corruption of a particular government ministry or government officials, to its electoral constituency or to the concerned governing body (website of Central Vigilance Commission).
- Research studies, enquiry reports and evaluations commissioned by the government to the pretentious parties.
- Human rights violation and criminal prosecution records against government officials to NGOs and connected citizens.
- Environment related information to local communities.

Examples

Central Vigilance Committee (India): http://cvc.nic.in. An initiative on e-vigilance. The website provides free-access information to citizens about government officials who have been indicted on judicial charges relating to corruption and have been advised penalty. Publics can also file grievances against any government official who fall within the jurisdiction of the Commission.

2.5.3 Comparative Analysis Model

In this model, information set is obtained by comparing the information available in public or private domain and actual known information set and disseminated. Model continuously adds new information products which can be further used as benchmark in amendment in existing government actions and public policy.

Applications

- Assessing the effectiveness of current policies by learning from government policies and actions of the past.
- Establishing conditions of erstwhile precedence, especially in the case of judicial or legal decision-making and use it to influence future decision -making. This could be useful in resolving patent -related disputes, public goods ownership rights, etc.
- Enabling informed decision-making at all levels by enhancing the background knowledge and provide a rationale for future course of action.
- Assessing the performance record of a particular government official or ministry

Examples

Comparative Learning from Disasters

Comparative learning's from the earthquake of Kutch in 2001 and devastating earthquake of Latur in 1993 was put on online for all segments of society, such information & knowledge will help people to mitigate disaster in future. Disaster comparison made by an Officer of the Indian Administrative Service (IAS) is available at http://www.cddc.vt.edu/digitalgov/Latur-Gujarat.htm.

Green Ratings Project: The Centre for Science and Environment in India conducts a survey for green ratings of Indian industries. The Green Rating Project delivers an independent and fair assessment of the comparative environmental performance of companies, from a perspective which supports responsible industry and encourages poor performers to progress in this direction. Web address is http://www.oneworld.org/cse/html/eyou/eyou31.htm

2.5.4 Mobilization and Lobbying Model

Model is based on implication of ideas, excellence and resources of virtual world in real world by creating virtual community, forums. Diverse ideas, expertise, suggestion is strength of this model.

Applications

- Encouragement of public discussions on global matters, themes of upcoming conferences, agreements etc.
- Formation of pressure groups to compel policy-makers to take their common concerns into account
- Strengthening the voices of side-lined groups such as backward class or minorities who are conventionally relegated from the decision-making process.
- Encouraging widespread participation in decision –making practices.
- Evolving global proficiency on a particular leitmotif in absence of localized information to support decision-making.

Examples

Panchayats: A discussion forum run by Indian professionals to debate policy issues and case-studies relating to local livelihood strategies and regionalized natural resources management. The participation is open and the list generates useful discussion between practitioners, activists and policy makers. Web address is http://www.panchayats.org

Independent Media Centre: The Centre was established by various self-regulating and marginal media organisations to provide proletarian coverage of WTO-Seattle in 1999. The Centre functions as a source of information and news for journalists, and delivered minute to minute reports, photos, audio and video footage through its website. Web address is as -http://www.indymedia.org

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2.5.5 Interactive Service Model

Interactive-Service model is an aggregation of previous mentioned e-governance models and initiates way for public participation in governance process. This model fully manipulates the potential of ICT and leverages it for extended participation, efficiency and transparency in the working of the government and saves time and cost in decision making.

Applications

- Establishment of collaborative communication link with policy-makers by videoconferencing and online chat & linkage.
- Conducting electronic ballots for the election of government officials and other office bearers.
- Organising public discussions/opinion polls on matters of wider concern before formulation of policies and legislative agenda.
- Performing governance tasks online such as revenue collection, filing of taxes, governmental procurement, payment, payment transfers as well as filing of grievances petitions, response & reports by general public with concerned public body.

Example

Gyandoot: Gyandoot is an intranet based e-governance service in Dhar district of Madhya Pradesh connecting rural cybercafés catering to everyday needs of the masses based on Interactive Service Model. The web site provides numerous interactive governance services to the local people e.g. providing copies of land-maps, online registration of applications, and public grievance redressal. Governance is inching towards tele-centre based digital governance models. Website for Gyandoot is http://www.gyandoot.net/gyandoot/intranet.html

2.6   National e-Governance Plan-2005 (NeGP) : A Review

2.6.1   Introduction

National e-Governance Plan (NeGP) tends to create appropriate governance & institutional mechanism by setting the core infrastructures, policies and by implementing Mission Mode Projects (MMPs) which create a citizen- centric & business-centric atmosphere at all the governance levels. On 18th May, 2006 the Government of India approved the National e Governance Plan (NeGP) which consisted of 27 Mission Mode Projects (MMPs) and 8 components. The Government has rendered approval to the vision, approach, strategy, key components and implementation framework for the NeGP rather than the financial approval.

2.6.2   NeGP Vision Statement

NeGP vision statement states:

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

2.6.3   Major Components of the National E-Governance Plan

i.   Core Policies
ii.   Core Projects
iii.   Core Infrastructure
iv.   Support Infrastructure
v.   Human Resource Development and Training
vi.   Technical Assistance
vii.   Awareness & Assessment
viii.   Organisational Structures
ix.   R&D

2.6.4   Core Projects (Mission Mode Projects)

Central Government Core projects suggested by the NeGP and related departments are tabulated below and all the Core Projects (MMPs) are discussed below one by one which gives overall idea and department wise utility of e-governance projects

Table 2-1 Central Government Core Projects & related Departments

S.No	Central Government Projects	Line Ministries/ Departments responsible
01	E-Office	Department of Administrative Reforms & Public Grievances
02	Central Excise & Customs	Department of Revenue/Central Board of Excise & Custom
03	Income Tax	Ministry of Finance/Central Board of Direct Tax
04	MCA21	Department of Corporate Affairs
05	National ID	Ministry of Home Affairs
06	Passport Visa & Immigration Project	Ministry of External Affairs/Ministry of Home Affairs
07	Pensions	Department of Pensions & Pensioners welfare & Department of Expenditure
08	Banking	Department of Banking
09	Insurance	Department Of Banking

2.6.4.1   E-Office

The Government of India has recognized need to make office paperless and hence included the same as a core mission mode project (MMP) under the National e-Governance Plan (NeGP). The project was aimed to make the office paperless and incorporate office automation system in central departments in 5 years, but a lot more is yet to be done in this project.

2.6.4.2   Central Excise & Customs

The Central Board for Excise and Customs (CBEC) is instigating this MMP with a vision to expedite trade and industry by rationalisation and abridging Customs & Excise procedures and serving Indian businesses to augment its effectiveness and build a climate for voluntary amenability by providing supervision and erection of mutual trust. CBEC enables the taxpayers with up to date information relating to Customs, Central Excise, Service Tax Laws, forms etc. through internet as well as online transaction, electronic filing, electronic credit of the drawback amount & web tracking of the documents.
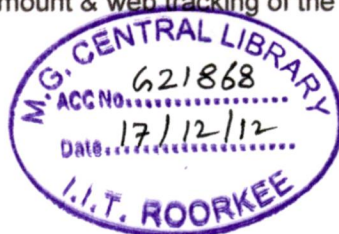
2.6.4.3 Income Tax

Income Tax department under MMPs have instigated a comprehensive plan to deploy ICT for setting up an excellent taxpayer service with the objective of promoting remote access to information and facilities to allow taxpayers and public to transact all businesses with department anywhere & anytime. National database, data centres, jurisdiction free filing of returns, online status of accounts and refunds are formed under this plan.

2.6.4.4 MCA 21

MCA 21 is the first MMP undertaken in the country. MCA 21 is an innovative MMP implemented by Ministry of Corporate Affairs, Government of India with the assistance from National Institute of Smart Governance (NISG) which is intended to provide anytime and anywhere services to businesses by Ministry of Company Affairs. Vision of the project is to put Indian business globally on competitive mode. The services currently provided comprises of:

- Registration and incorporation of novel companies
- Filing of annual returns/balance sheets/forms denoting change of names/address/director's details
- registration, modification and verification of charges
- inspection of public documents
- applications for various statutory services offered by the ministry
- Issue of certified copies, and redressal of investor grievances

The web portal enables e-filing of documents. Secure e-registry for storage and retrieval of records is done at the Data Centre established at Delhi & recovery of Data is done from Chennai by providing back-up support.

2.6.4.5 Unique ID (UID)

Project UID is a central MMP and Planning Commission initiative creates central database of the citizens above 18 years of age and generates Unique ID to all citizens above 18 years of age. UID is supposed to be used as a base for efficient delivery of services to persons below poverty line (BPL) as well as provide single system of verifying entitlement for all. Advantage of such a system envisaged is to overcome identity related fraud.

2.6.4.6 Passport & Immigration Visa

The Passport Seva Project is a Core infrastructure project intended to alter the delivery of all passport-related services across the nation, efficiently, citizen centred, with employee efficiency and system

transparency. This alteration is achieved by introducing ICT in citizen forefront processes identified for aggregation in the proposed Passport Facilitation Centres (PFCs) and in service-oriented processes rationalised for efficiency at present passport offices. The new passport issuance system will be taken cared in accordance with a citizen service centred approach.

2.6.4.7   Pensions

MMP comes under Ministry of Personnel, Public Grievances and Pension. A 'Pensioner's Portal' is designed to have the constituents a) Non-interactive that provide updated information on pension issues b) Interactive part that will monitor grievance redressal at three levels

      i.   Central level in Departmental of Pension & PW (nodal point)
      ii.   Central Ministries/Department level and
      iii.   Pensioners' Associations level (field level)

All the above three levels would be intertwined. The progress of the case can be monitored by both Pensioners as well as nodal officers and grievances can be registered if any discrepancies are found.

2.6.4.8   Banking

Core Banking evolved the convenience of anytime anywhere banking in India. The amalgamation of core banking solutions of various banks will lead to functioning efficiency, online fund settlement, diminish inter-bank clearing transactions, reduce time & effort involved in handling clearing transactions and their disbursement thereby expediting enhanced customer service & customer satisfaction; improved regulatory acquiescence, improved cash & fund management, standardization of processes across the banks and improved Management information system (MIS). The services provided under this MMP are as

- Electronic Central Registry under Sarfaesi Act, 2002
- One India One Account – for Public Sector Banks
- Electronic Mass Payment System

2.6.4.9   Insurance

The project has been conceived for the Department of Economic Affairs, Banking and Insurance Division. This MMP has been conceived with a view to improve services to customers in general insurance sector. The main objectives of the MMP are:

- To facilitate customer service through education, information, speedy processing of claims and online issuance of policies on web.
- To provide automated grievance reporting and redressal facility to customers

- To create and enlarge business opportunities
- To create holistic database of insurance users.
- To integrate insurance database with other government database to analyse social security aspects and facilitate service delivery
- The project is proposed to be implemented through the four PSU Insurance companies.

2.6.5 State Specific Projects

Table 2-2 State Specific Projects and Related Department

01	Land Records	Ministry of Rural Development
02	Road Transport	Ministry of Road Transport & Highway
03	Property Registration	Department of Land Resources
04	Agriculture	Department of Agriculture & Cooperation
05	Treasuries	Ministry of Finance
06	Municipalities	Ministry of Urban Development and Poverty Alleviation
07	Gram Panchayats	Ministry of Rural Development
08	Commercial Taxes	Ministry of Finance
09	Police (UTs initially)	Ministry of Home affairs
10	e-District	Department of Information Technology
11	Employment Exchange	Ministry of Labour & Employment

2.6.5.1 E-District

Districts are fore-front in government to citizen where citizen centric services are delivered. E-district aims at improving efficiencies of various departments in the delivery of citizen centric services. For successful implementation of e-districts, the redesigning of the existing processes and delivery mechanism to facilitate an efficient and effective service delivery structure, has been identified as a key activity. Objective of MMPs includes:

1. Backend computerization to enable efficient delivery of G2C services through CSCs
   - Digitisation of records
   - Automation of Workflow

- Value addition to services through process re-designs.

2. To proactively provide a system of spreading information on the Government schemes planned developmental activities and status of current activities. Front ends under the scheme are only to be built at District, Tehsil, Sub division and block level, in the form of citizen facilitation counters. Village level linkage would be established through Common Services Centres for delivery of services. Indicative services planned to be delivered through this MMP include:

  - Certificates: Creation and distribution of certificates for income, domicile, caste, Birth, Death etc.

  - Licenses: Arms Licenses etc

  - PDS: Issue of Ration Card etc.

  - Social Welfare Schemes: Issue of old age pensions, family pensions, widow Pensions etc.

  - Complaints: related to unfair prices, absentee teacher, non-availability of doctor. Online filing and receipt of Information relating to the Right to Information Act.

  - Linking with other e Government projects: Registration, Land Records, and Driving Licenses etc.

  - Information Dissemination: Disseminating Information relating to Government schemes, entitlements etc.

  - Assessment of taxes: Property tax, and other Government taxes

  - Utility Payment: Payments relating to electricity, water bills property taxes etc. Initially a few districts in some States are to be taken up for pilot implementation of the MMP, and once the pilots have been implemented, the contours of the e- district project would be finalized as a MMP, to be implemented across the country.

2.6.5.2   Agriculture

Agriculture is operationalized by Department of Agriculture and Cooperation (DAC). The typical services envisaged in Agriculture as an MMP provides information to farmers on:

- Seeds, fertilizers, pesticides
- Govt. Schemes
- Soil recommendations
- Crop management
- Weather and marketing of agriculture produce.

2.6.5.3   Property Registration

Incorporation of this MMP is result of successful implementation of the CARD (Computer Aided administration of Registration Department) implemented by Government of Andhra Prdesh as part of

Horizontal Transfer Programme. The project aimed at replacing manual system of verification and scrutiny of documents, valuation of properties, capturing and preserving copies of documents conducting searches and of maintaining back office records. Market Valuation (MV) calculator, payment of stamp duty fees, registration of documents all movable and immovable properties, issue of encumbrance certificate and issue of copies of certified documents are the core services proposed as part of MMPs.

2.6.5.4 Police

Increase in threat and enhanced crime graph compelled to include police as MMPs in the NeGP to improve the efficiency and effectiveness of police. Creation and sharing of crimes and criminal database, personnel management and inventory control included by MMPs. Large variations across the states lead to phased approach towards implementation of this MMPs. In the first phase functions across the states lead to phased approach towards implementation of this MMPs. In the first phase functions across states implemented by CrPC which comes under CIPA (Common Integrated Police Application). This MMP will reduce paper work by bringing efficiency in Police station operation.

2.6.5.5 Municipalities

Municipalities provide a large numbers of basis amenities for millions of people living in urban area of the country. The National Mission Mode Project (NMMP) for municipalities is one of the MMP. NMMPs for e-governance envisage to leverage ICT opportunities for important in municipal services to citizens for efficiency & effectiveness .NMMP envisages implementation of various application modules covering the following services/management functions within ULBs:

- Registration and issue of birth and death certificate
- Payment of property tax, Utility Bills and Management of Utilities that come under ULBs ,Water Supply and other Utilities
- Grievances and suggestions
- Building plan approvals
- Procurement and monitoring of projects
- Health program, Licenses, Solid Waste Management
- Accounting system
- Personnel Information System.
- Grievances handling, including implementation of the elements of the Right To Information Act, Acknowledgement, Resolution monitoring.
- Waste Management Services.

2.6.5.6 Gram Panchayat

India's rural population constitute Panchayat represents the first level of interaction for over 60 per cent of Indian populace i.e. the rural masses and provide a large number of basic services for millions of citizens living in India's rural centres, the National e-Governance Plan has identified Panchayat as one of the Mission Mode Projects(MMP). The MMP has been designed to overcome the challenges being faced in the villages such as lack of reliable communication infrastructure, delay in providing services to the citizens (Licenses, Certificate etc), Low revenue mobilization for implementing schemes at the Gram Panchayat level, lack of monitoring mechanism for the schemes. MMP envisages implementation of various application modules covering the following services/management functions within Gram Panchayat:

I. Services identified for citizens: -

- Issue of Trade Licenses and NoC
- House Related Services
- Certificate of Birth and Death, Income and Solvency
- Dissemination of Internal Process of Panchayat agenda, voting, resolution
- Copy of Proceedings of Gram Sabha and Action Taken Report
- Receipt of Funds / Progress Report

II. Services identified for functionaries:

- Dissemination of Data BPL, PF for Landless Agricultural Labourers, education, Health facilities & status
- Digitization of the Village Infrastructure on a Map
- A National Panchayat Portal has been developed by NIC which has a versatile frontend in terms of dynamic website for Panchayat, with information, content and services needed by people, links citizens with Panchayat, links Panchayat with each other, allows access to information & services provided by Ministry of PanchayatiRaj, State Panchayati Raj Departments. There are also some backend solutions currently available from NIC, which are being used in Panchayati Raj Institutions:
- Priasoft (Tamil Nadu, Orissa, Chattisgarh)
- PriaSoft-Aasthi (Karnataka)
- PriaSoft-ePanchayat (Andhra Pradesh)

2.6.5.7 Transport

Road Transport was included as one of the MMPs in the NeGP with a view to create a unified data schemes which could be used by all the States for computerisation of their transport offices for issuing Vehicle registration certificates.

- Driving licences
- The implementation agency NIC developed a Smart card Operating System for Transport Application (SCOSTA) to ensure inter-operability of smart card RC and DL documents across the States & UTs. The development involved the implementation of two software - VAHAN for vehicles registration activities and
- SARATHI for driving licence related activities.

2.6.5.8 Land Records

Maintenance of land records has now become more vital for administrators and creation of a land information system is one of the key issues facing governance today. Land records itself is a generic expression and could include records such as the Register of lands, Records of Rights, Tenancy and crop inspection register (RTC), Mutation Register, Disputed cases Register etc. It also includes primary information about land presented in terms of its geological information like the shape, size, landforms, soils; economic information related to land use irrigation and crops; and the information pertaining to the legal rights, registration and taxation.

Main objectives of MMP Land Records are:

- To facilitate easy maintenance and updating of changes which occur in land database such as changes due to availability of irrigation/natural calamities/consolidation/ or on account of legal changes like transfer of ownership, partition, land acquisition, lease etc. .
- To provide for comprehensive scrutiny to make land records tamper-proof, this may reduce the menace of litigation and social conflicts, associated with land disputes.
- To provide the required support for implementation of development programmes for which data about distribution of land holdings is vital.
- To facilitate detailed planning for infrastructural as well as environment development.
- To facilitate preparation of an annual set of records in the mechanised process and thereby producing accurate documents for recording details such as collection of land revenue, cropping pattern etc.
- To facilitate a variety of standard and ad-hoc queries on land data.
- To provide database for agricultural census.
- Core Services offered under the MMP are:

- Issue of copy of Records of Rights
- Crop, Irrigation and Soil details
- Filing and Tracking of Status of Mutation Cases
- Availability and submission of forms.

2.6.5.9 Commercial Tax

The maturity of VAT implementation varies across States and the need has been strongly felt for streamlining VAT administration through citizen-centric, service-oriented processes, and establishing a certain degree of standardization with respect to Commercial Tax (CT) administration. Since the CT departments mainly interface with businesses and often account for 60 per cent to 70 per cent of the total revenue of the States and UTs, their functioning can directly affect the attractiveness of a State as a business destination. In order to improve the efficiency of VAT administration, it is important that administrative procedures are simplified and processing timelines are reduced by usage of computerized systems. Faster grant of registration and electronic processing of VAT returns would be important. In this context the Commercial Taxes Mission-Mode Program (CT-MMP) has been conceived under the National e-Governance Plan (NeGP) of the GoI. The initiative is spearheaded by the Department of Revenue (DoR), Ministry of Finance, with the National Institute for Smart Government (NISG) and Ernst & Young as Strategic Consultants to the DoR. Some of the important e-Governance initiatives recommended as part of CT-MMP are:

- Online Application for Registration
- Electronic filing of returns
- Electronic clearance of refunds
- Electronic payment of tax
- Online dealer ledger
- Online dealer verification

2.6.6 Integrated Service Projects

Table 2-3 Integrated Service Projects

01	EDI (E-Commerce) Formatted transaction of business documents (invoice, Purchase and) electronically	Ministry of Commerce and Industry
02	E-Biz Single window Government to business portal offering services for the complete life cycle of business.	Department of Industrial Policy & Promotion / Department of Information Technology
03	e-Courts	Ministry of Home Affairs
04	e-Procurement	Director General of Supplies and

		Disposals (DGS&D),
05	Common Service Centres	Department of Information Technology
06	India Portal Single window web based delivery of information and Government services at the national level	Department of Information Technology / Department of Administrative Reforms and Public Grievances
07	National e-Governance Service Delivery Gateway	Department of Information Technology

2.6.7   Infrastructure Pillars of NeGP

- Connectivity: State Wide Area Networks (SWANs)/NICNET
- National Data Bank/ State Data Centres (SDCs)
- Common Service Centres (CSCs) primary mode of delivery
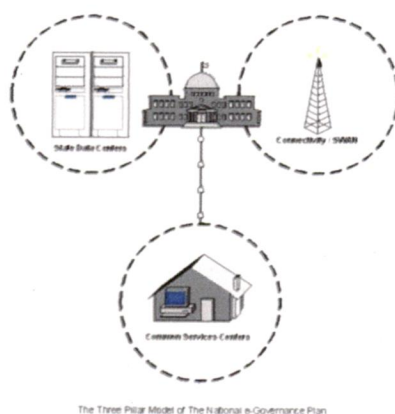
Fig. 2-1 Infrastructure Pillars of NeGP

2.6.7.1   SWAN (State Wide Area Network)

Key Infrastructure - Features

- Minimum 2 Mbps connectivity till Block level.
- Overall project outlay of Rs. 3334 Crore including State share.
- Around 7500 POPs and provision of Data, Voice and Video connectivity services to more than 100,000 Government offices.
- Two Implementation Options:
  - Option I : Public Private Partnership
  - Option II : NIC
- BSNL – Primary Bandwidth Service provider.
- Service Based Implementation and Operational Framework

SWANs across the country, when fully implemented, will create more than one million route km of network connecting more than 100, 000 government entities. This would bring a connected government space which is unprecedented and would bring a paradigm shift in the way the government works for itself and for the citizen. Success of various e-Government initiatives taken up at the State and the Central level would heavily depend on maximum utilization of SWANs.
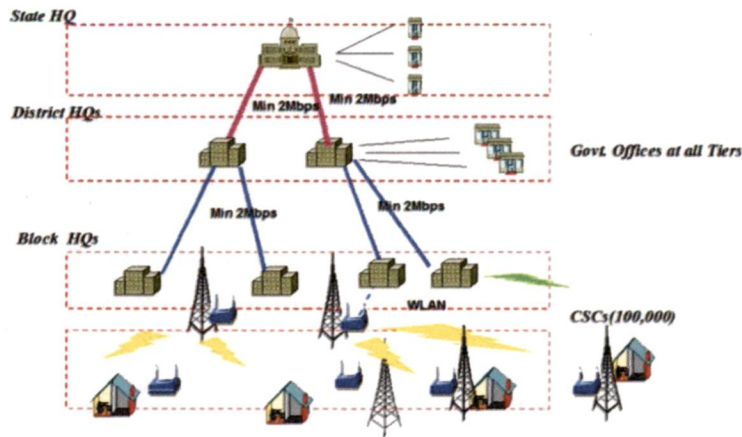
Fig. 2-2 SWANs connectivity till Block level

2.6.7.2   State Data Centre (SDC)

There has been a long-felt need for a common infrastructure for supporting the development and deployment of e-governance applications in states. Most notable being the State Data Centre (SDC) and State Wide Area Network (SWAN).

Need for Data Centres:

- To create a shared secure resource for consolidation of Data, Services, Applications & Infrastructure at the State/UT level to enable electronic delivery of G2G, G2C & G2B services.
- Ensure better Operations, Standardization of Systems & management control
- Aggregation of IT Infrastructure (Hardware, Storage, Networking and Software) and Management Resources leading to reduced costs of creating common Infrastructure and faster deployment
- Optimal Utilization by sharing of IT Infrastructure Resources to meet individual peak loads.

2.6.7.3   Common Service Centre (CSC)

The purpose of Common Service Centre is to create a low cost vehicle for Government Institutions so that easy, direct and cost-effective delivery of e-governance services to the rural citizen is possible. The aim is to create 1, 00,000 CSC across the country at village level.

2.7 Information & Communication Technology Policy 2011 (Bihar): A Review

2.7.1 Introduction

Bihar has largely been bypassed by exciting developments of IT/ ITES in many states of India. It is the intention of the State Government to provide good Governance through IT enablement and encourage development of the state by investment of the IT/ITES industries in Bihar, so that the people of Bihar enjoy the benefits of better citizen centric services at their doorstep and economic prosperity.

2.7.2 ICT vision of state

The Government's vision is to develop Bihar by rapid expansion and growth of knowledge based economy in the state, bridging the digital divide, by encouraging investment in IT/ ITES/ EHM industries and enabling the good governance through ICT enablement.

2.7.3 Objectives

To fulfil the ICT vision of the state by 2016, the following objectives need to be attained

- To create a talented pool of Human Resources by promoting computer literacy at the school level and IT enablement of employable youth by providing them appropriate training.
- To create jobs for the local youths by attracting investments from IT/ITES/EHM units in the state
- To create a world class IT infrastructure in the state
- To promote the e-Governance initiatives under NeGP and State Department of IT to bring maximum Government departments citizen services in interactive online mode.
- To promote investment in the IT/ITES/EHM Units by Private industry to accelerate the pace of IT enablement of the state.
- To provide a conducive environment of business for the IT/ITES/EHM Units by extending support from the Government and increasing opportunities in the state.
- To devise appropriate legal and regulatory framework for efficient administration of IT/ITES/EHM Units and prevent the misuse of IT and protect intellectual property rights, patents & trademarks.

2.7.4 ICT Policy for Governance (E-Governance Framework)

The Government endeavouring setting up of Electronics Governance and Citizen Facilitation to provide better services and improved quality of governance and citizen facilitation. BSWAN under NeGP core infrastructure initiative aims at providing 4 Mbps vertical connectivity between State Headquarter & District Headquarter and 2 Mbps between District Headquarter & Block Headquarter. DIT is also taking steps to connect all the departmental offices across Bihar to the nearest BSWAN PoP through Horizontal

Connectivity (BHSWAN). BHSWAN will become a useful tool to ensure the participation of Panchayat level official machinery for MNREGA, IAY and other high impact schemes. Every department shall endeavour to put all Government regulations, schemes, forms, tenders etc. on the Internet on a common web portal.

2.7.5 Capacity Building & Change Management

Capacity Building has been identified as the prominent precursor for the implementation of the e-Governance Plan. DIT will ensure that the outcome of the Capacity Building programme justifies the following

- Ensuring provision of necessary training across various levels to the identified stakeholders
- Creation of institutional capacities across the State for implementing the e-Governance plan at the State level by constituting the State e-Governance Mission Teams.
- All Government Departments will prepare 5 year IT plans with yearly deliverables containing details of investments envisaged in the IT infrastructure, training of personnel, etc.
- Government Departments providing high volume of citizen centric services will earmark 3% percentage of its planned budget and one Nodal IT Officer to coordinate with the IT Department for conceptualization and implementation of State IT Projects.

2.7.6 Adoption of M-Governance

Extensive adoption of M-Governance by State Govt. Departments for making all G2G, G2C and C2G transaction information real time so as to facilitate instant citizen services through SMS in Automatic, Anywhere – Anytime – Anyone mode. Govt of Bihar envisages adopting the M-governance platform on the managed service model which can be made to go-live very quickly in a short duration.

2.7.7 E-Governance Monitoring

- Department of IT will render all necessary assistance to other departments for implementation of the e-Governance programme.
- District e-Governance Society (DeGS) will be constituted in each District under the chairmanship of the District Magistrate with representation of various departments including NIC to formulate, monitor and implement IT schemes/ programmes at the district level.
- Bihar State Electronics Development Corporation Ltd. (BSEDC) is would form JVs with private agencies with a view to facilitating e-Governance implementation and rendering IT services.
- State e-Governance Project Steering Council - SeGP Steering Council is an Apex body constituted under the chair of Chief Minister of State for providing over all vision, broad policy directions and guidance to the state. Members of this council shall be officials from State Government, IT professionals and person nominated by Chief Minister, Government of Bihar.

Chapter-3	CASE STUDIES

3.1 E-Seva in TWIN Cities & Ranga Reddy District.

The Government of Andhra Pradesh has taken several initiatives in area of e-governance with view to take the benefits of IT to the common man. E-Seva, one of the e-governance initiatives, offers a wide spectrum of citizen – friendly services to save citizen the trouble of running around various departments. It provides a one-stop venue for services of various state and central government departments in an efficient, reliable, transparent and integrated manner on a sustained basis by easy access through a chain of computerized Integrated Citizen Service Centres (ICSCs).

3.1.1 Salient Features of E-Seva

Following are the salient features of e-Seva

- Provide real time online transaction.
- 51 e-Seva centres (with 400 service counters) spread over the Twin Cities and Ranga Reddy District.
- All service counters are facilitated with an electronic queuing system reduces waiting time.
- Integrated Citizen Services Centres (ICSCs) Operating from 8.00 am to 8.00 pm, on all working days and 9.00am to 1.00pm on holidays (Second Saturdays & Sundays).
- 'One-stop-shop' for over 66 G2C and B2C services.
- No jurisdiction limits - any citizen in the twin cities can avail of the services at any of the 51 e - Seva service centres.
- Online services: e-Forms, e-Filing, e-Payments. Payments by cash/cheque/DD/credit card/Internet.

3.1.2 Implementation Model

- Public Private Partnership model.
- Technology based on 3-tier architecture
- Transaction done on real-time basis.
- Servers of different departments are connected to the e-Seva data centre, which in turn connected to different ICDCs.
- Each ICDC has 10-14 computerized manned counters with one PC, printer, bar-code reader per counter to handle services

3.1.3 Services Available

3.1.3.1 Payment of Utilities Bills

 i. Electricity bills

 ii. Water and sewerage bills

 iii. Telephone bills (BSNL & TATA Tele Services)

 iv. Property Tax

 v. Sales Tax

 vi. Filing for CST returns

 vii. Collection of examination fee, affiliation fee and recognition fee of Board Intermediate.

 viii. Filing for IT returns of salaried class.

 ix. Sale of prepaid parking tickets of MCH.

3.1.3.2 Certificates

 i. Registration of births / deaths

 ii. Issue of birth / death certificates

3.1.3.3 Permits / Licenses

 i. Issue / renewal of trade licences

 ii. Registration of new trade licences.

 iii. Change of address of vehicle owner

 iv. Transfer of ownership of a vehicle

 v. Issue of learner licences

 vi. Issue of driving licences

 vii. Renewal of driving licences

 viii. Lifetime tax payments of new vehicles.

3.1.3.4 Reservation

 i. Reservation of APSRTC bus tickets

 ii. HMWSSB: Reservation of water tanker

 iii. Tourism: Reservation of tickets/ accommodation

3.1.3.5 Other Services at eSeva Centres

 i. Sale of passport application forms

 ii. Receipt of passport applications

 iii. Registration Department: Sale of non-judicial stamps

 iv. Sale of national Games Ticket

v.   Sale of EAMCET applications.

vi.   Sale of entry ticket for WTA.

3.1.3.6   B2C Services

i.   ATM: Cash withdrawals and deposits

ii.   Mutual Funds: Transfer of shares

iii.   Cell Phone Bill Payments

3.1.3.7   Additional Services Proposed

i.   Raliway reservation

ii.   Sale of movie tickets

iii.   Payment of traffic related offences

iv.   Payment of degree examination fees of Open University

v.   Sale of I-CET applications

vi.   Online reservation of darshan tickets for Lord Venkateshwara at Tirumala

vii.   Market value assistance

viii.   General insurance

ix.   Reservation of tourism tickets for accommodation.

x.   Reservation of tourism bus ticket.

3.1.4   Locations of Services

Fig. 3-1 E-Seva Centre Location in Hyderabad.

3.1.5 Investments in E-Seva Project

Table 3-1 Total Investment in E-Seva Project

	Rate (Rs.million)	Number	Total Cost (Rs.million)
Central Data Centre- building, interiors and hardware	5	1	5
e-Seva Centre - building and interiors	1.5	43	64.5
Hardware Development	1.5	43	64.5
Software Development / Customization	2		2
Replication to Districts			
Central District Data Center	4	21	84
e-Seva Centre	1	230	230
Hardware	0.5	230	115
Software Customisation	5		5

3.1.6 Transaction Details

Table 3-2 Transaction details in first 20 months are summarized in following table

Month	Year	No. of Transactions	Value of Collection (Rs, Million)
August	2001	4764	4.3
September	2001	26,965	29
October	2001	55,076	68
November	2001	81,113	97
December	2001	121,169	136
January	2002	145,577	162
February	2002	146,542	183
March	2002	196,726	254
April	2002	188,092	250.4
May	2002	264,676	371.2
June	2002	249,549	399.4
July	2002	431,887	539.7
August	2002	465,552	471
September	2002	490,583	514.2
October	2002	643,440	572.1
November	2002	564,889	1295.1
December	2002	700,088	5037.3
January	2003	748,910	4319.9
February	2003	730,756	4277.0
March	2003	750,403	4351.7
Total		70,06,802	23333.3

The above transaction details in the table shows the trend of increasing number of transaction, means the service getting popularize day by day, and also amount of collection also increased continuously. And in the year 2005 the total number of transaction recorded was 37,020,000, which was five times the total transaction till March 2003 which keeps this project as one of the most successful & popular e-governance project.

3.1.7 Conclusion

E-Seva is the most successful among all projects in India that have reached common man with essential services of the government, Municipality and also Utility Companies, all under one roof.

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3.2 Bhoomi : Computerization of Land Records

Rural Population (which is 80% of total population) in India depends upon agriculture, an activity based upon Bhoomi or land, the primary asset. The cultivation or ownership right of farmers on the land depends upon the land records maintained by the revenue department. Any mismanagement of this important document lead the farmers to hopeless condition as many of them are illiterate or powerless.In Karnataka, there are 17 million land record documents covering 20 million farmers. Karnataka has 27 districts with 177 taluks covering around 800 hoblis and 29,000 villages. This land record document has valuable information, which includes ownership, tenancy, cultivation, irrigation, tree, liabilities, crop and soil details including the details of government lands.

3.2.1 Importance of Land Records

Land records are required for the following purposes & reasons:

- Official Land Record is required to be produced for obtaining crop loans from any recognized financial institution as a proof of ownership and existing liabilities.
- Traditionally, people are satisfied with their ownership on land by having the Land Record issued by the Revenue Department
- Most of the legal disputes are settled based on the time sequence of the Land Records issued for a survey number.
- The government has a duty and responsibility to protect the ownership of land based on its information maintained in 'Land Records Registers".
- The Survey Department maintains the schedule of property in terms of dimensions, and carries out sub-division of land for any survey number based on public demand due to inheritance, partition, etc. and accordingly informs the Revenue Department.
- Revenue Department collects revenue from the respective owners according to the extent of land owned by them.
- The Registration Department registers the sale-deed after verifying ownership from the copy of Land Record produced by the seller.

3.2.2 Features of BHOOMI---- Land Records Management Software

BHOOMI, the software for land management, has been fully designed and developed in-house by NIC, Banglore, DoIT, Ministry of Communication and Information Technology, Government of India, using state-of-the –art technology. The following features are incorporated into the BHOOMI software:

- BHOOMI is an online system to carry out mutation on the live data.
- It has built-in workflow automation, which moves transactions from one office to another on the system

- It facilitates scanning of the field mutation order passed by revenue authorities and notice served on the public and storing into database so that it can be referred easily in future for various purposes.

- It has also been integrated with Fingerprint (Biometrics) technology to ensure better authentication system instead of traditional password system. This enforces the concept of non-repudiation.

- The software is in local language (Kannada) for easy use by officials

- Approval of the transaction is on first-in-first-out basis.

- Transactions will be pushed into next approval authority if it had not been approved by the concerned personnel after specific period.

- The process of mutation on the BHOOMI is fully synchronized with the fieldwork done by the revenue officials.
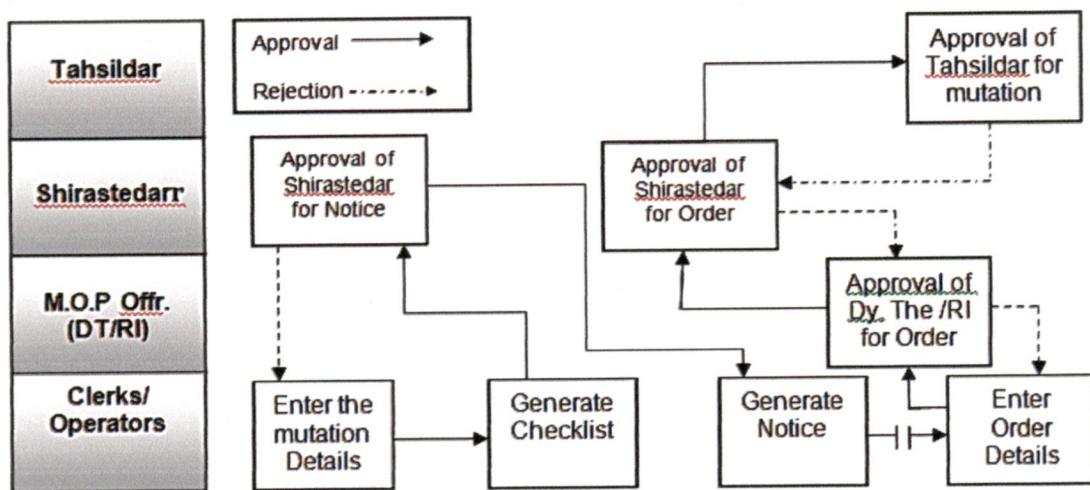
Fig. 3-2 Workflow of BHOOMI Software
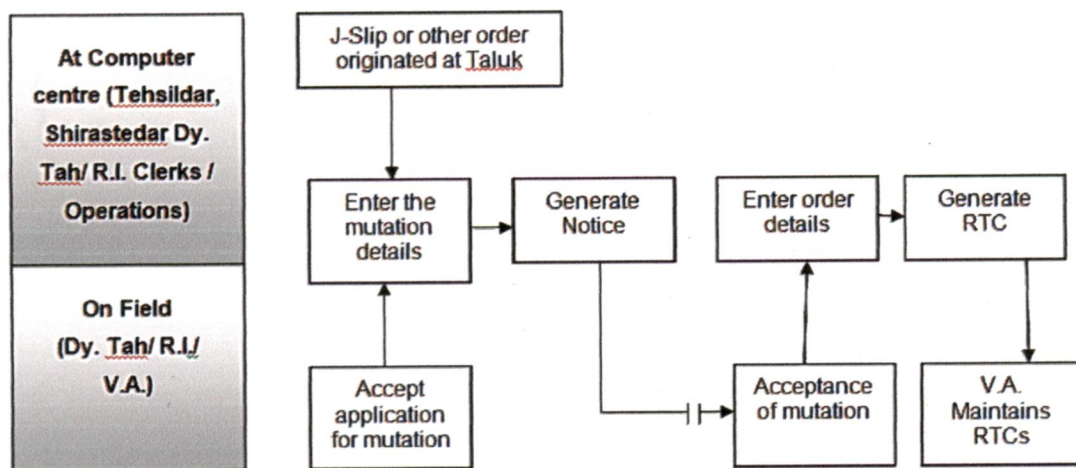
Fig. 3-3 Workflow of Mutation in BHOOMI

3.2.3 Input/ Output documents

Input documents to BHOOMI

- Mutation transactions
- Crop detais
- Mutation order of Revenue Inspector
- Objection Details

Output documents of BHOOMI

- Current RTC
- Old RTC
- Mutation Order Extract
- Khatha Extract of an owner in a village
- Status of ongoing mutation.

3.2.4 Modules of BHOOMI

It has two modules for public Interface:

- One module is used by revenue officials at Land records Centre to issue the land records documents on demand from the public and accept the request application for mutation from the public.
- The other module runs on a Touch Screen Kiosk, set up taluka/block office. This module is easy operable by even the person / farmer having little knowledge of computer as this is developed using "Keep It Simple" (KIS) concept.

3.2.5 Implementation Strategy

The Government of Karnataka has set up a Technical Advisory Panel (TAP) under the chairmanship of Principal Secretary (Revenue) to take major policy decisions in respect of financial, technical and administrative issues. In addition to this, a BHOOMI Advisory Committee has been set up under the chairmanship of Divisional Commissioner of the rank of Secretary, to decide and review the software requirements of BHOOMI modules.

3.2.6 Implementation process in BHOOMI
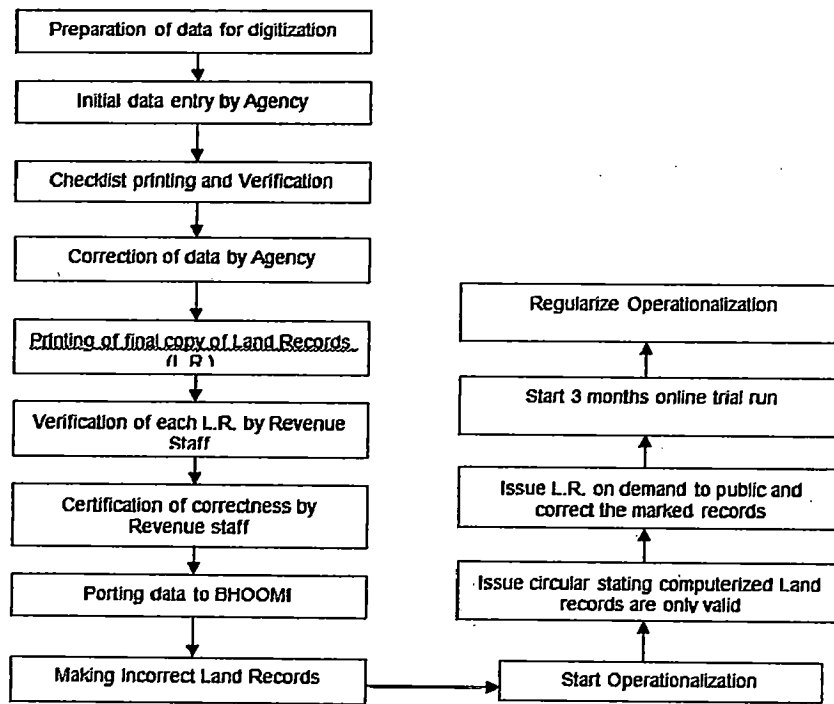
Fig. 3-4 Implementation Flow Chart of BHOOMI

3.2.7 Taluka/ Block Level Infrastructure

The BHOOMI project has following components in the taluka;

- The first component is the back-end where the revenue officials will carry out updation activities on the BHOOMI. To support these activities, server, client, printer and scanner with UPS are integrated.

- The second component is the Land Record Centre; set up at the entrance of taluka/block office with a client, a printer and UPS, is operated by village Accountant. This provides the public

- Interface from where one can collect the signed land records document on demand or submit a request to carry out the mutation on his/her hand. The authenticity of the printed RTC is the signature of the Revenue Assistant designed in the centre of certification.

- The third component is the Touch Screen Kiosk, established at the entrance of taluka/block office. The farmer can use this to see his document and the status of the mutation-in-process without intervention of Revenue Officials.

- As BHOOMI works on Client/ Server architecture, all the clients and kiosk interact with the server through an Ethernet based local area network (LAN). The back-end computer centre has 1.5 tonne air conditioner, 1.5 KVA Online UPS and 2/3 KVA Generator are also supplied to provide better and continuous power supply.

3.2.8 Other Features of BHOOMI

- Farmers pay a charge of Rs. 15 for every service they avail.
- All services are availed from kiosks only.
- Land record centre in each taluk.
- Online updation to ensure that the RTCs provided to the farmers is in sync with the time.
- Fully online system to carry out mutations on land records data.
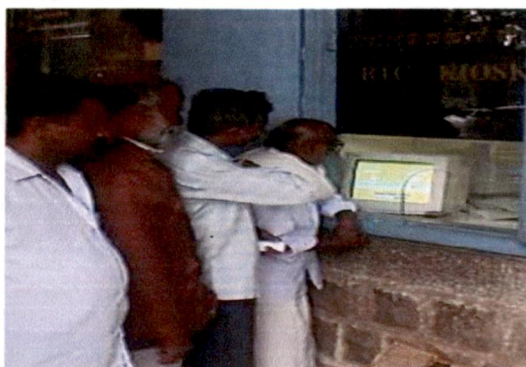
Fig. 3-5 People Visiting RTC Kiosk
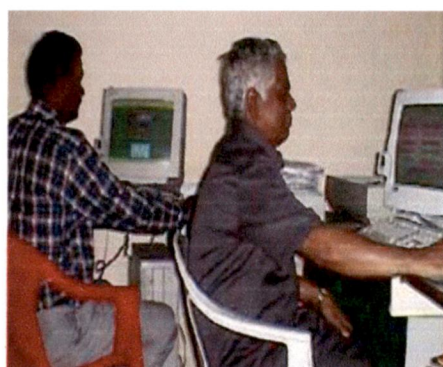
Fig. 3-6 Officers using Work Flow

- Finger print biometrics authentication to ensure fool proof authentication system and to enforce the concept of non-repudiation.
- Facility to scan the field mutation order passed by revenue authorities and the notice served on the public.
- Provision for interfacing of Touch Screen Kiosk at taluka office.
- The system generates various types of reports on land ownership by size, type of crop/soil, gender etc. which is useful in planning poverty alleviation programmes and supplying agriculture inputs.

3.2.9 Outcome Analysis

Table 3-3 Summary of Project Outcome

Cost per kiosk (after data entry of RTC's)	Rs. 10 lacks
Per kiosk exp. on computer hardware, construction of computer rooms and kiosks	Rs. 6.4 lacks
Cost of processing a RTC including stationary, cartridges and electricity (assuming a life of 5 years for hardware and a total of 2 million RTC issued)	Rs. 13
User fee per RTC	Rs. 15
No. of users since inception (till 2006)	12 million
Total collection against the investment of 244 million	180 million
No. of person days/wages saved per annum	1.32 million/Rs 66 million
Weighted average of bribe paid in Manual system Vs. BHOOMI	Rs. 152.46 Vs. Rs. 3.09

The mutation process cycle time decreased	from 90-180 days to 30-45 days
The generation time of the RTC has been reduced	15 minutes Vs one to 30 days
Crop record updating has increased	80-100 per cent from 50-70 per cent
People using Bhoomi centres every month	0.7 million
Monthly user charges collected amount	Rs. 10 million

3.2.10 Graphical Outcome Analysis of of BHOOMI

3.2.10.1 Ease in Use of BHOOMI Kiosks

The below graphical analysis is done on the basis of survey conducted in the Karnataka state   Source: (E-Government: From Vision to Implementation by Subhash Bhatnagar). The below pie-chart shows the ease in use of BHOOMI kiosks by the users.
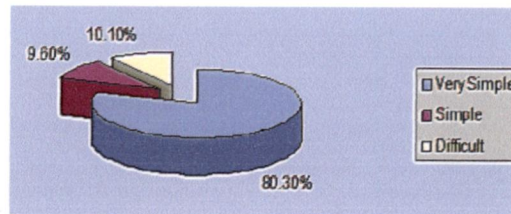
Fig. 3-7 Ease in use of Kiosks by people

Pie- graph shows that about 90 per cent people/ users find the Use of Kiosk very simple or simple, while for only 10 per cent people it is difficult to use.

3.2.10.2 Complexity of Procedure

The below graph compares the complexity of procedures in BHOOMI and Manual (conventional system) on the basis of the number of times people/user/farmer had to encounter staff/officials
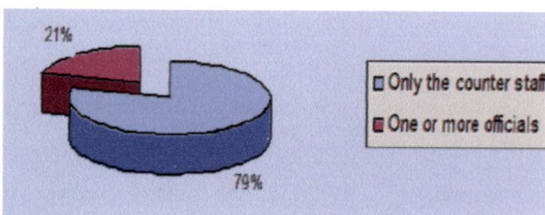
Fig. 3-8 Complexity of Procedures in BHOOMI   **Fig. 3-9 Complexity of Procedures in Manual System**
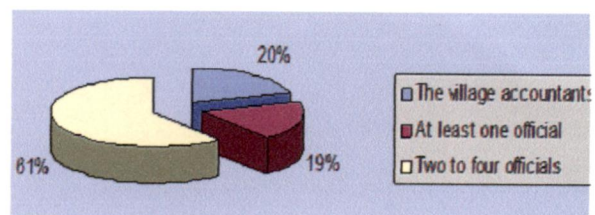
The above graph suggests that in BHOOMI 79 per cent persons responded that they have to meet one or more officials and 21 per cent said they had to meet only the counter staff through the whole official process of registration and mutation of Land.

3.2.10.3 Error-free Documents

The below graph shows the possibility of getting error free document when used by the user
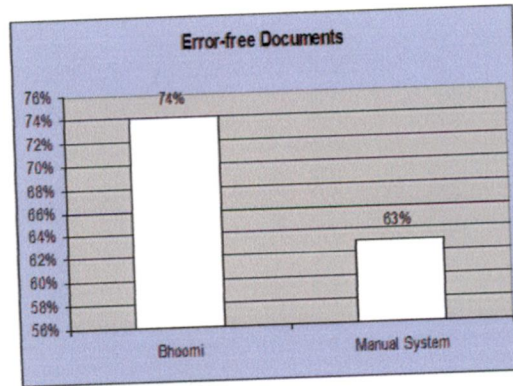
Fig. 3-10 Error free documents

Above graph reveals that through BHOOMI 11 per cent more people are getting error-free document than Manual system.

3.2.10.4 RTC Received on First Visit

The below graph shows the possibility of getting Record of Rights, Tenancy and Crop Information (RTC) on first visit
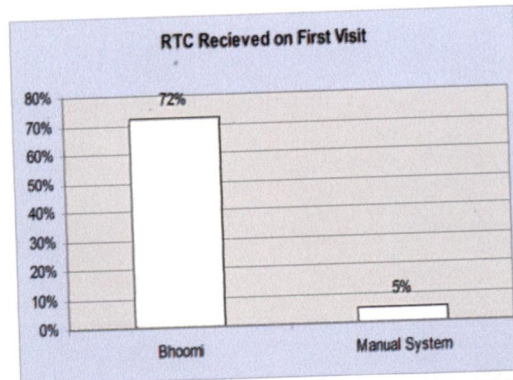
Fig. 3-11 RTC Visit on the first visit Manual Vs BHOOMI

Above graph shows that there is a lot of possibility of getting RTC on first visit and it shows a huge gap between BHOOMI and manual system. This reduces the numbers of trips by the user/ person seeking RTC.

3.2.10.5 Payment of Bribe

The below graph shows the Payment of Bribe by the user to avail the service comparatively in BHOOMI and Manual System
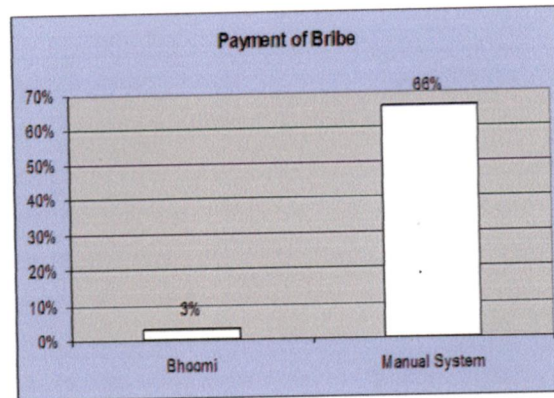
Fig. 3-12 Payment of Bribe BHOOMI Vs Manual System

Above Graph shows there is drastic fall in bribery after using BHOOMI, hence it also acts as a tool to fight against corruption.

3.2.10.6 Confidence to Complain in Cases of Error

The below graph shows the confidence to Complain in cases of error by the people.
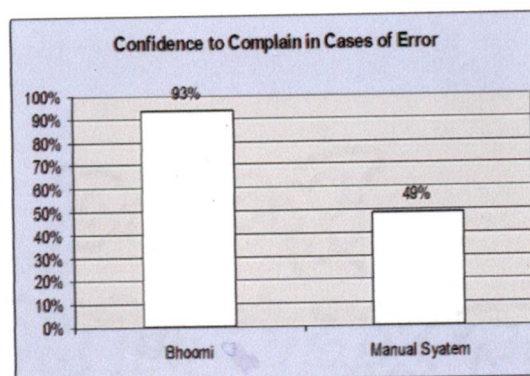
Fig. 3-13 Confidence to Complain in Cases of Error

Earlier in manual System person/ farmer were not confident enough to complain in cases of error as many of the farmers are illiterate or powerless, but after BHOOMI person/ farmer are enough confident to complain in cases of Error.

3.2.10.7 Response after the Complaint

The below graph shows the response of the Authority after Complain in cases of error.
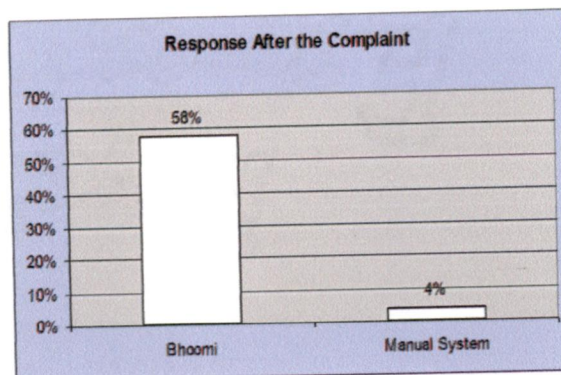
Fig. 3-14 Response after Complain

The above graph shows the response of the Authority after Complain in cases of error in BHOOMI is quite good with respect to the manual system.

3.2.11 Key Learning's from the project BHOOMI
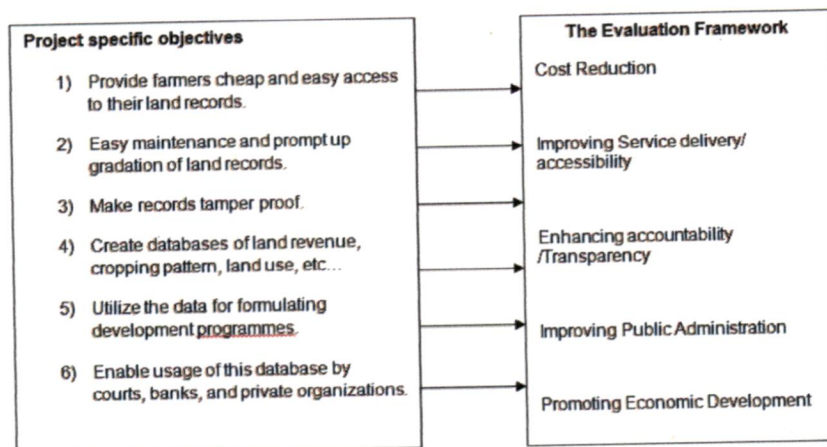
Fig. 3-15 Shows Project Specific Objectives and their Evaluation Framework

- Objectives should be SMART.
- Identify the stakeholders and their felt need after a participatory consultation. Helps one identify the point where the vicious circle can be broken.
- Specific, measurable, achievable, realistic and time bound.
- Aim at incremental change and not radical. Should be planned properly.
- Harness political support for your effort.
- Emphasis on training of personnel and human resource management.
- Back-end computerisation of the process is as important as the front-end.

3.3 SMART Municipality (Greater Hyderabad Municipal Corporation)

3.3.1 Introduction

The urban local bodies in the towns and cities of the country are autonomous and are managed by elected representatives. These bodies, are also known as Municipalities, are responsible for the management and upkeep of the civic amenities in the town or the city. For this purpose they collect taxes such as property tax, water tax, etc. which form the revenue for the local body/ municipality

Following is the list of functions executed by municipality/ local body:

- Births and deaths registrations
- Property tax
- Court cases monitoring
- Water tap connections and charges
- Advertisement tax
- Financial accounting
- Building Permissions
- Grievance redressal
- Project and Work monitoring systems (PROMS)
- Dangerous and offensive trade licences.
- Assets and inventory

The NIC, under the department of Information Technology of the Ministry of Communications and Technology, Government of India has taken the lead in constituting a national level project called "SMART Nagarpalika" wherein all the the above subjects have been studied in –depth with Andhra Pradesh as the pilot state. A detailed systems requirement specifications (SRS) report has been prepared and the same has been utilized as basis for developing the software on the above subjects.

3.3.2 Births and Deaths Registrations

Registration of Births and Deaths is one of the major activities of Municipality and is done in compliance with the AP registrations of Births and Deaths rules 1999, which are drawn from the Registration of Births and Deaths Central Act 1969. Registrar –General appointed by central or State Government maintains the registers of births and deaths recorded. In a municipality, the Commissioner is the Registrar-General. Birth or death occurring within the geographical zone of municipality has to be reported to that municipality within 14 days in case of births and 7 days in case of deaths.

3.3.2.1 Objectives of births and deaths registration module

- Capturing of legal and statistical details of births and deaths from birth and death report forms 1 and 2
- Registering of births and deaths.
- Issuing of birth, death and non-availability certificates.
- Generation of check list.
- Generation of field verification report.
- Generation of birth and death registers
- Generation of monthly and yearly statistical report
- Closure of registers at the end of the year.
- Provision of inclusion of name.

3.3.2.2 Salient Features

The following are the salient features of the births and deaths registration module:

- Maintaining the fee collection.
- Standardization of master details
- Maintenance of statistical information
- Printing of acknowledgement / receipt
- Online status enquiry.

3.3.3 Property Tax

Property tax is one of the prime revenue source of municipalities. Property tax is levied by all municipalities' by a resolution of Municipal Council. The tax comprises components such as tax for general purpose, water and drainage, lighting and scavenging. Annual Rent Value (ARV) of buildings and lands is the basis for levy of property tax. Fixation of ARV building location, type of construction, nature of usage, plinth area and building age.

Provision in the software for full integration with the other applications of the municipality such as building permission, court cases, financial accounting etc is made .Functions of citizen charter can be availed from service centres such as e-seva, citizen interface counters kiosks etc.

3.3.3.1 Objectives

- Standardization of procedures and norms for assessment and collection leading to uniformity.
- Standardization of revenue zones, wards, blocks, locality, complex apartments, building age and depreciation.

- Ease of tracking demand and collection of assessments category-wise.
- Fixation of monthly rental values, tax standards, penalty rate and tax components.
- Comprehensive computerization of revenue section for monitoring property tax assessments, collections ,title transfers, revision petitions etc.
- Receipt book authentication with respect to bill collector.
- Keeping track of check payments.
- Acceptance of title transfer petitions and generation endorsements
- Automatic computerization of arrears.
- Easy and faster generation of demand notices in bill-cum –challan form.

3.3.3.2 Salient Features

- Uniform codification
- Assessment of property tax and vacant land tax
- Title transfers
- Warrants and distraints
- Suits
- Collection of tax/fees
- Generation of demand notices/ special notices/ Acknowledgements/ receipts/ registers
- MIS reports.

3.3.4 Water Tap Connections and Charges

The Municipalities on request issue water tap connections to the owners of the buildings. Connections are sanctioned based on the category and availability of resources by the municipal commissioner. Connection charges and deposits are to be paid by the citizen .Water tap connections are of four types : Domestic non-metered tap, domestic metered tap, commercial metered tap, industrial metered tap. Tap connections can be issued in two categories viz. general category and OYT category.

The various functions concerning water tap connections and charges are issuing water tap connections, regularization of illegal tap connections, work orders, demand/ arrear raising and collection of tariff, etc.all achieve the following objectives.

3.3.4.1 Objectives

- Water tap connections as per citizen charter
- Standardization of OYT and general category users as
- Domestic users
- Commercial users
- Industrial users

- Commercial bulk users
- Industrial bulk users
  - Flexibility to adapt local standards based on council's decisions
  - Charges for
- Application and donation
- Metered and non-metered connections
- Reconnections
- Regularizations
  - Generation of
- Application acknowledgement
- Checklist
- Work order
- Endorsement
- Demand notice
  - Generation of registers for
- Applicants
- House Service Connections
- Demand
- Arrears
- Daily collections
  - Reports of approved water tap connections

3.3.4.2 Salient Features

Salient features of water tap connections include

- Uniform codification
- Issue of new connections
- Regularization of connections
- Disconnections
- Meter Reading
- Automatic generation of arrears
- Collection of water charges/ donations/ deposits
- Generation of demand notices /acknowledgments/receipts/registers/ DCB

3.3.5 Conclusion

E-Seva is the most successful among all projects in India that have reached common man with essential services of the Government , Municipality and also Utility Companies, all under one roof The Case study surveys the software for computerization of Urban Local Bodoies (Municipalities) under the title "SMART

Nagarpalika— Computerization of Urban Local Bodies (Municipalities)". Various Subjects such as Births and Deaths, Property Tax, Water Tap Connections and Charges, Advertisement Tax, Financing Accounting etc are covered in detail in terms of their software functionality and capabilities. This software is being implemented in many Municipalities in the country. It is also being supported by the Ministry of Urban development.

Such a reform in the Public Delivery System will optimize the work of government agency and fulfil the aim and future perspective of e-government goal. SMART in "SMART Government" or "SMART Nagarpalika" have shown its utility as making governance more Simple, Moral, Accountable, Reliable and Transparent Government which really mean it. As the e- governance means electronic governance but from above studies it can be said that it is effective and efficient governance in real means.

3.4 A Case Study of E-Governance in Nashik District, Maharashtra

Nashik District a part of Nashik Administrative division has an area of 15,530 sq. km having population of 49, 93,796 (2001) lies in the Deccan Plateau. In Nashik District almost all the departments have their own websites.

Under NeGP (National e-Governance Plan) Mission Mode Projects (MMPs) were launched for all the central government departments as well as for state government departments. For the following department MMPs are launched to optimise the performance of department at district level.

1. Department of Agriculture
2. Department of Revenue & Forest
3. Department of Transport
4. Department of Sales Tax
5. Gram Panchayats
6. Nashik Municipal Corporation
7. Department of Maharashtra Police
8. Department of Employment & Self Employment
9. District Collector ate
10. Unique Identity Card
11. District Court

Apart from these E-District, a Mission Mode Project (MMP) under NeGP were launched in Nashik District, Maharashtra which aims to provide technical support to district administration and enable G to C service to provide citizen Centric Services at the citizen's door step. Under E-District following core services are delivered to citizen of Nashik District Maharashtra state

1) Issue of Certificates such as domicile, caste, marriage, income certificates are delivered
2) Pensions - Social Welfare Pensions, Old Age, widow, handicap etc.
3) Revenue Court- information regarding case listing, Case adjournment, final orders etc.

4) Government dues and recovery as part of Land revenue- issue of notices, record payment etc.

5) Public Distribution system- Ration Card related services

6) RTI services and Redressal of Grievances- Application trading, monitoring, Redressal Appeals etc.

3.4.1 Details of fund allotted to e-District project

Details of funds allotted to e-District

- ☐ Hardware
- ■ System S/w
- ☐ Appln. S/w
- ☐ Data Digit.
- ■ BPR & Consult.
- ▣ Site Preparation
- ■ Training
- ☐ Connectivity
- ■ Admn.Expenses
- ■ Seed money
- ☐ Other
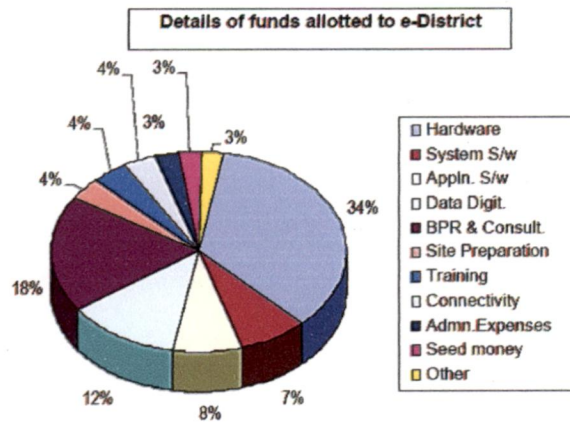
Fig. 3-16 Percentage break up of utilization of fund in e-district project Nasik District

Maximum fund were invested in purchasing Hardware i.e.34 per cent, then 18 per cent of funding were done for Business Process Re-engineering & 12 per cent on data digitization as these three are basics of any e-governance project in terms of finances.

3.4.2 Role of Literacy:

Male literacy was found to be 83.65 per cent & female literacy 64.35 per cent.

- ■ Male ■ Female
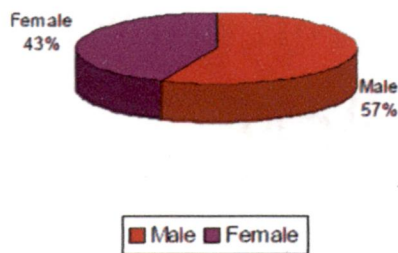
Fig. 3-17 Break-up of gender literacy in Nashik District

Literacy rate is decides the fast implementation of any e-government project in a district.

3.4.3 Government department who initiated the e-governance project

Sr. No.	Name of Department	Initiative of e-Governance project
1.	Nashik Municipal Corporation	Nashik Municipal Corporation has started six various online services.
2.	District Collectorate	Selected for the project
3.	Gram Panchayats	None
4.	Department of Revenue & Forest	- LMIS property card software implemented maps are digitized but not GIS based - 'SARITA' application implemented
5.	Department of Transport	'Vahan' & 'Sarathi' are being implemented. Data entry activity outsourced.

6.	Department of Maharashtra Police	CCIS implemented. All police stations proposed to be connected through MSWAN
7.	Department of Food, Civil Suppliers & Consumer Protection	Food & Civil Supplies Information System available
8.	Dept. of Agriculture	Website status operational current market price available
9.	Department of Sales Tax - Commercial Taxes	'Mahavikas' application to become operational
10.	Department of Employment & Self Employment	Rojgar Mitra application
11.	District Court	Implemented in the court.
12.	Unique Identity Card	Not yet started

Fig. 3-18 Shows various initiatives taken by various departments of district.

3.4.4 SETU – The services to citizens & Its impact

It has been observed that due to project under the e-Governance –SETU, in Nashik District, the quality of the basic services provided to the citizens is much improved with enhancement of transparency & accountability. SETU facilitated the interconnectivity & inter communication between various government departments as District Collectorate, Panchayats, Revenue, Mantralaya, Forest, Nashik Municipal Corporations and the Citizens.

Sr. No.	Particulars / Item	Before e Governance SETU	After e-Governance SETU
1.	Labor Intensiveness	Very High	Very Low
2.	Corruption	High	Negligible
3.	Harassment	Very High	Negligible
4.	Average Delivery Rate	30 to 50 Application	Average 350 and Peak Period >2000
5.	Complaints	Multiple	Very few
6.	Public Satisfaction	Very low	Very Satisfied
7.	Processing	By hand	Computerized
8.	Transparency	Low	High
9.	Accountability	Low	High
10.	Delivery Time	Not fix	One to Seven Days (including Sundays and Holidays)
11.	Cost	--	Predefined depend on service

Fig. 3-19 Impact of the e-governance project SETU on various dimension.

Major impact of implementation of SETU was reduction of time in delivery of services and reduction of corruption.

3.4.5 Implementation problems in e-Governance project

For the implementation of ICT projects in the government departments, the stages associated with the projects are

- Study of the existing system
- System analysis- Fact Finding Techniques
- Requirement analysis
- Requirement determination
- Feasibility Study
- Designing the system
- System Implementation
- System maintenance

ICT professionals in the e-governance implementation play very important role. Understanding the system requirement is important in planning a new e-governance system, lack of professional related to system analysis is a major problem. Insufficient system requirements lead to in improper proposal of the demands of the funds, improper standard for selecting experts in e-Governance project. These two problems affect the efficiency of the project. After implementation of the project, there is requirement of such staff/ official who can handle the new technology and upgrade this time to time.

| Chapter-4 | PROFILE OF THE STUDY AREA |

4.1 Bhagalpur District Profile

4.1.1 Location

Bhagalpur district is one of the thirty-eight districts of Bihar state, India, and Bhagalpur town is the administrative headquarters of this district.
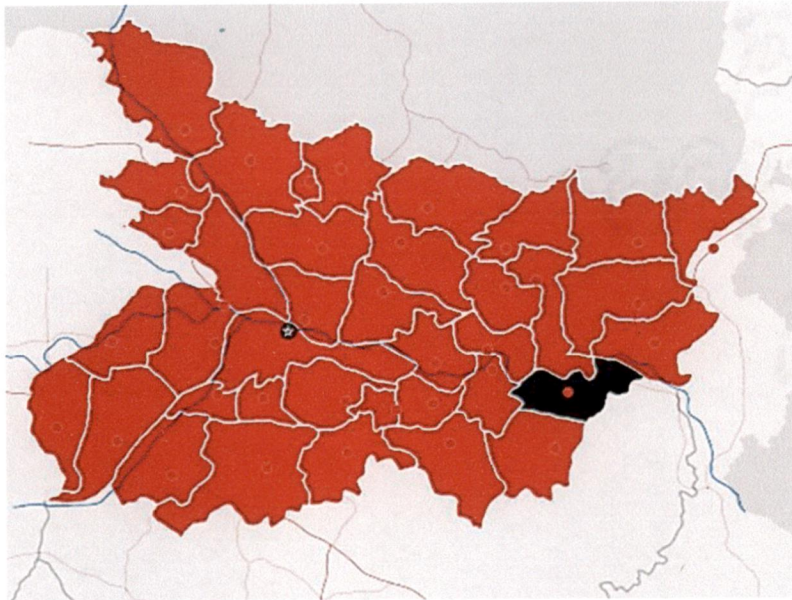
Map 4-1 Location of Bhagalpur District in Bihar State

Located on the bank of river Ganga on south east part of Bihar State With a latitude of 25^0 9" North Longitude $86^0 54$".

4.1.2 Topography

The Bhagalpur district is divided into two parts by the river Ganga. The northern part is composed of an alluvial plain for the most part. The drainage is from west to east. The land of north Bhagalpur is very fertile. The southern part has a generally level surface, except on the southern border, where the land is hilly. Of the many streams that traverse this area, Chandan is the most important. The town of Bhagalpur is situated on a raised belt of limestone, extending along the southern bank of Ganga. According to the district gazetteer this forms a natural barrier against the incursion of the river.

Map 4-2 Relief and Slope in Bhagalpur District[2]

4.1.3 Soil

The Bihar plain consists of a thick alluvial mantle of drift origin overlying in most part. The soil is mainly young loam rejuvenated every year by constant deposition of silt, clay and sand brought by different streams. This soil is deficient in phosphoric acid, nitrogen and humus, but potash and lime are usually present in sufficient quantity. The Bhagalpur district is covered by gangetic alluvium, both new as well as old. The gangetic plains are very fertile and the main crops include rice, wheat, maize, barley, and oilseeds. The economy of Bhagalpur is dependent mainly on agriculture and silk. Spatial distribution of the major soil types in the district is shown in the map.

REFERENCES
ENTISOLS
■ Recent Alluvium (Non Calcareous)
■ Recent Alluvium (Calcareous)
■ Tal Land Soils
■ Old Alluvium
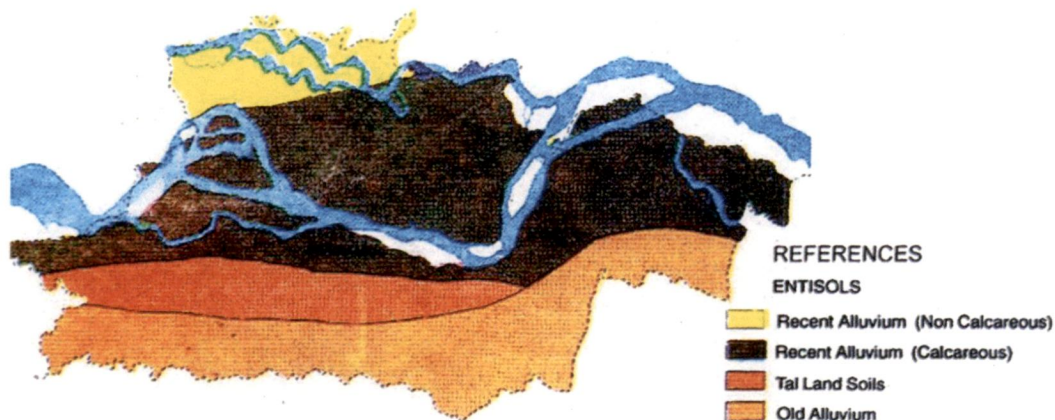
Map 4-3 Major Soil type in the Bhagalpur District

[2] *Source Survey of India*

4.1.4 The river system

The river system of the district consists of a reach of the Ganga about sixty miles in length on the north side; on the southern side there are a few hill streams, which are sandy narrow water courses for most part of the year, but are torrential during monsoons. The main rivers include:

The Ganga: The Ganges flows from west to east cutting the district in its northern side. In the middle, a great mass of granite divides the river into two great bends, one northward round of the town of Bhagalpur, the second southwards to Colgong, where it meets a range of hills and again moves northwards. At the edge of district it joins up with other tributaries. Ganga is navigable for the whole year. The average width of its bed is three miles. During summer, the watercourse is only half a mile wide, whereas during monsoons, it is five to ten miles wide.

The Chandan: The Chandan is the largest of the hill streams in the south of the district. It originates from the hills of North Parganas, and joins the Ganga. It floods the plains of south Bhagalpur during the rainy season.

4.1.5 Climate

A hot summer and pleasant winter season characterize climate of the district. The cold season starts from November and lasts till January. The period from March to June is the summer season. The Monsoons last from July to September. Other months are transition months. Annual temperature varies from a maximum of 43.05 0C to a minimum of 7.03 0C. The district receives an average rainfall of 1435.02 mm per annum. The climatic condition of the Bhagalpur district is shown in Map.
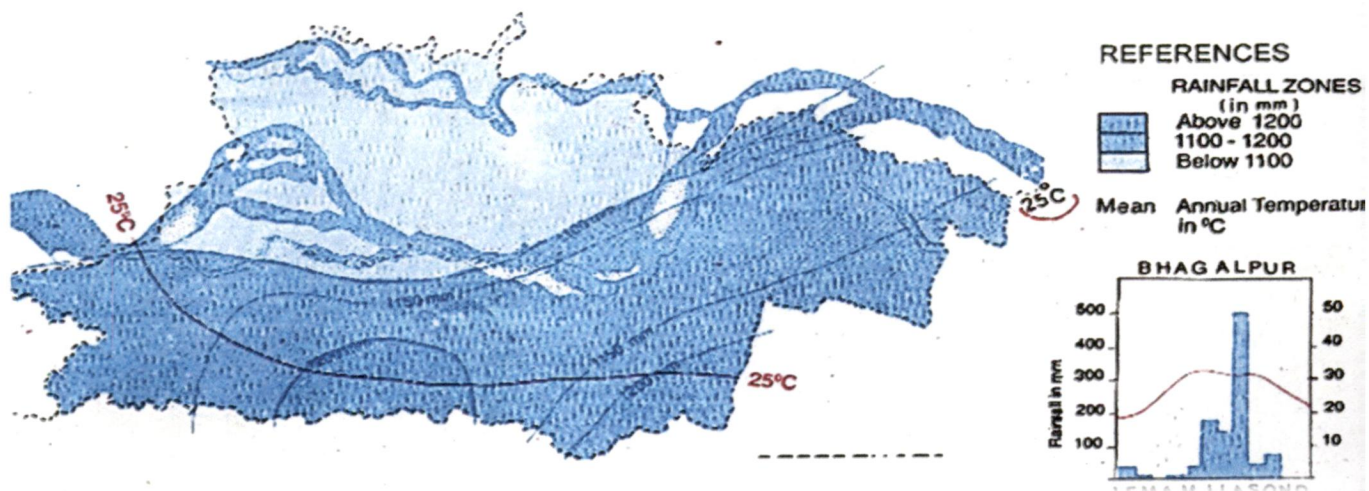
Map 4-4 Climatic Conditions in Bhagalpur District

4.1.6 Demography

Table 4-1 Shows summary of demography in Year 2001-2011of Bhagalpur District.

S.No.	Description	2011	2001
1	Actual Population	3,032,226	2,423,172
2	Male	1,614,014	1,291,658
3	Female	1,418,212	1,131,514
4	Population Growth (per cent)	25.13	27.24
5	Area Sq. km	2,570	2,570
6	Density/ Sq km	1,180	943
7	Proportion to Bihar Population (per cent)	2.92	2.92
8	Sex Ratio (Per 1000)	879	876
9	Child Sex Ratio (0-6 Age)	934	966
10	Average Literacy	64.96	49.50
11	Male Literacy	72.30	59.22
12	Female Literacy	56.49	38.13
13	Total Child population (0-6 Age)	532,307	472,126
14	Male Population (0-6 Age)	275,248	240,132
15	Female Population (0-6 Age)	257,059	231,994
16	Literates	1,623,909	965,683
17	Male Literates	967,924	622,679
18	Female Literates	655,985	343,004
19	Child Proportion (0-6 Age) (per cent)	17.55	19.48
20	Boys Proportion (0-6 Age) (per cent)	17.05	18.59
21	Girls Proportion (0-6 Age) (per cent)	18.13	20.50

The district shows a Decadal Growth of 27.24 per cent in Year 1991-2001, and decadal growth of 25.13 per cent in year 2001-2010. Sex ratio shows a mild increase of 3 per thousand.

Average literacy of the district increased by 15.56 per cent. Children under 0-6 formed 17.55 per cent of Bhagalpur District compared to 19.48 per cent of 2001. There was net change of -1.93 per cent in this compared to previous census of India.

4.1.7 Social Sector (Education)

Table 4-2 Shows Actual Population & literates increase in a decade in the district.

	1991	2001	2011	Increase
Actual population	1,909,967	24,23,172	30,32,226	6,09,054
Literates	7,99,130	9,65,683	16,23,909	6,58,226

The above table depicts a very interesting figure about the district that during the decade 1991-2001 population increased by 5, 13,205 and literate population increased by 1, 66,553. District showed

increase **in actual population of 6, 09,054 in a decade (2001-2011) while the number of literates increased are 6, 58,226** that is more than the increase in actual population, this suggests a lot of policy reforms[3] were done in last decade in terms of literacy, efforts were taken in the field of adult education as well as education of women also.

4.1.8 Economy

In 2006 the Indian government named Bhagalpur one of the country's 250 most backward districts (out of a total of 640). It is one of the 36 districts in Bihar currently receiving funds from the Backward Regions Grant Fund Programme[4] (BRGF).Economic growth leads to higher living standards and greater prosperity for individuals, generally improving the quality of life. Gross District Domestic Product (GDDP) indicates the overall health of the district, districts contribution to GSDP can also be used as a proxy to measure district growth[5].

Table 4-3 Shows GDDP (at 2004-05 Prices) of Bhagalpur District

	2005-06	2006-07	2007-08
Bhagalpur	2298.2	3095.8	3393.7
Patna (Max)	16142.8	22659.3	26560.4
Seohar (Min)	202.7	288.8	339.8
Total	66979.2	91305.8	99052.6

Table 4-4 Shows Per Capita GDDP (at 2004-05 Prices) of Bhagalpur District

	2006-07	2007-08
Bhagalpur	Rs.11665	Rs.12609
Patna (Max)	Rs.43177	Rs.49765
Seohar (Min)	Rs.4903	Rs.5647
Total	Rs.9965	Rs.10643

The measure for district overall growth is GDDP, and further showing the improvement in quality of life is GDDP per capita. And the above table shows the trend of improvement in GDDP per capita.

4.1.9 Population Distribution

As per the census 2001 the total population of the Bhagalpur District stands at 24, 30,331. The majority chunk of the population resides in rural area of the district, as evident from the chart.

The average population density per square kilometre is 946.In context of the social composition of the population of Bhagalpur district, it can be seen from the chart below that 11% of total population belong to

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[3] According to the amended Bihar Municipal Act 2007, any elected representative of any civic body may face disqualification if he or she has more than two children.

[4] The Backward Regions Grant Fund is designed to redress regional imbalances in development. The fund will provide financial resources for supplementing and converging existing developmental inflows into 250 identified districts, so as to bridge critical gaps in local infrastructure and other development requirements that are not being adequately met through existing inflows. Strengthen, to this end Panchayat and Municipality level governance with more appropriate capacity building, to facilitate participatory planning, decision making, implementation and monitoring, to reflect local felt needs.

[5] Rajeev Parmar, 2003 CGG collected working papers: Volume I, District Development indicators,

Schedule caste category. Schedule Tribe population is almost negligible and stands at 2% only. The census 2001 does not give detail on the size of OBC population but it forms the major chunk of district's population.
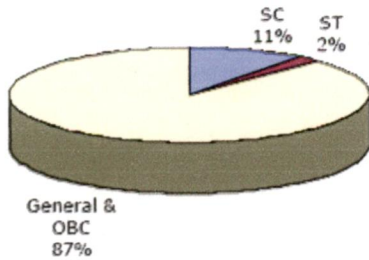
Fig. 4-1 Showing population distribution
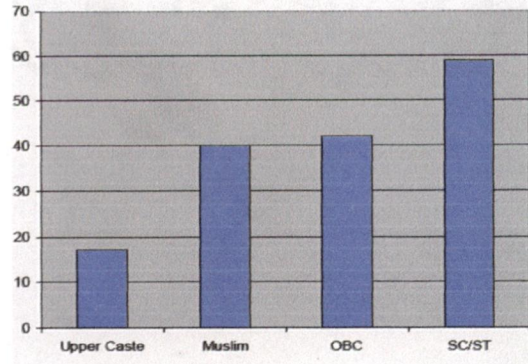
Fig. 4-2 Poverty amongst Social Groups

Analysis of the incidence of poverty among social group have shown that poverty is dominantly present across social groups which are traditionally termed as "backward" in caste configuration of Bihar's social fabric. The Bihar Development Report 2003, has shown that the incidence of poverty among SC/STs groups is 59% and among OBC category it is 42 per cent.

4.1.10 Occupational pattern

Table 4-5 Number of total workers, main workers, marginal workers, non-workers, cultivators, agricultural labours and household industries workers in the district.

	Persons	Male	Female
Total Workers	859,563	617,115	242,448
Main Workers	583,886	491,909	91,977
Marginal Workers	275,677	125,206	150,471
Non Workers	1,570,768	677,077	893,691
Cultivators	168,766	130,878	37,888
Agricultural Labours	415,963	262,560	153,403
Household Industries	63,881	39,959	23,922
Others Workers	210,953	183,718	27,235

Analysis of the occupation pattern in the district presents an interesting picture. As per the census 2001, out of the 855345 working population, the distribution of work force is as depicted as.

Occupation Pattern In Bhagalpur

- Cultivators
- Agricultural Labours
- Household Industries
- Others Workers

25% 20%

7% 48%
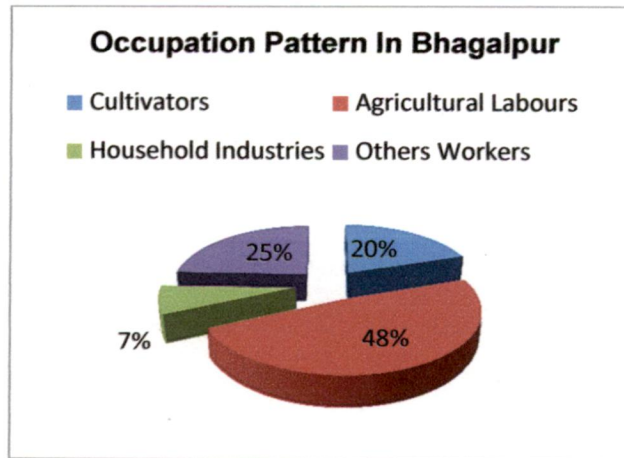
Fig. 4-3 Occupation Pattern in Bhagalpur District

It can be seen from the chart above that though 68 per cent of the working population is directly dependent on agriculture, 48 per cent are agriculture labour. This point's towards an important aspect that despite of agriculture being the primary occupation almost half of workers don't have land. This should be kept as an important bearing in mind while **designing any intervention based on occupation sector (Capacity building, support etc).** One more important revelation of the census 2001 is that out of the total workforce of Bhagalpur, only 28 per cent comprises of female worker.

A very small size of the working population is related to cottage industry. This point towards the fact that cottage industries have received very low priority in the district as a source of occupation/livelihood, despite of the fact that district houses the famous silk business of the state. A large chunk of the working population, which stands at 25 per cent works in highly fragmented sector. It is also evident from the occupation distribution that industry based employment is non-existent in the district.

	Persons	Male	Female
Total Workers	859,563	617,115	242,448
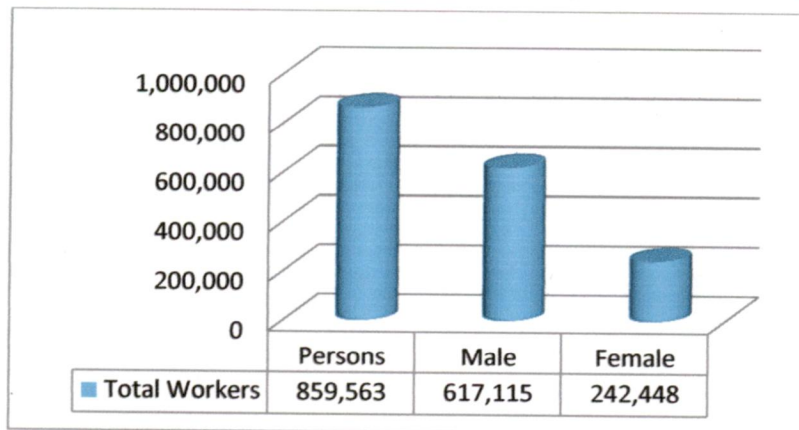
Fig. 4-4 Gender Classification Workers

Out of total workforce in Bhagalpur, only 28 per cent comprises of women worker.

4.1.11 Administrative Set Up

The Collectorate of Bhagalpur was started in the year 1775. The district comprises of three administrative Sub-divisions namely Bhagalpur, Kahalgaon and Naugachia and two Police districts namely Bhagalpur and Naugachia. The river Ganga divides the district into two physiographic parts.
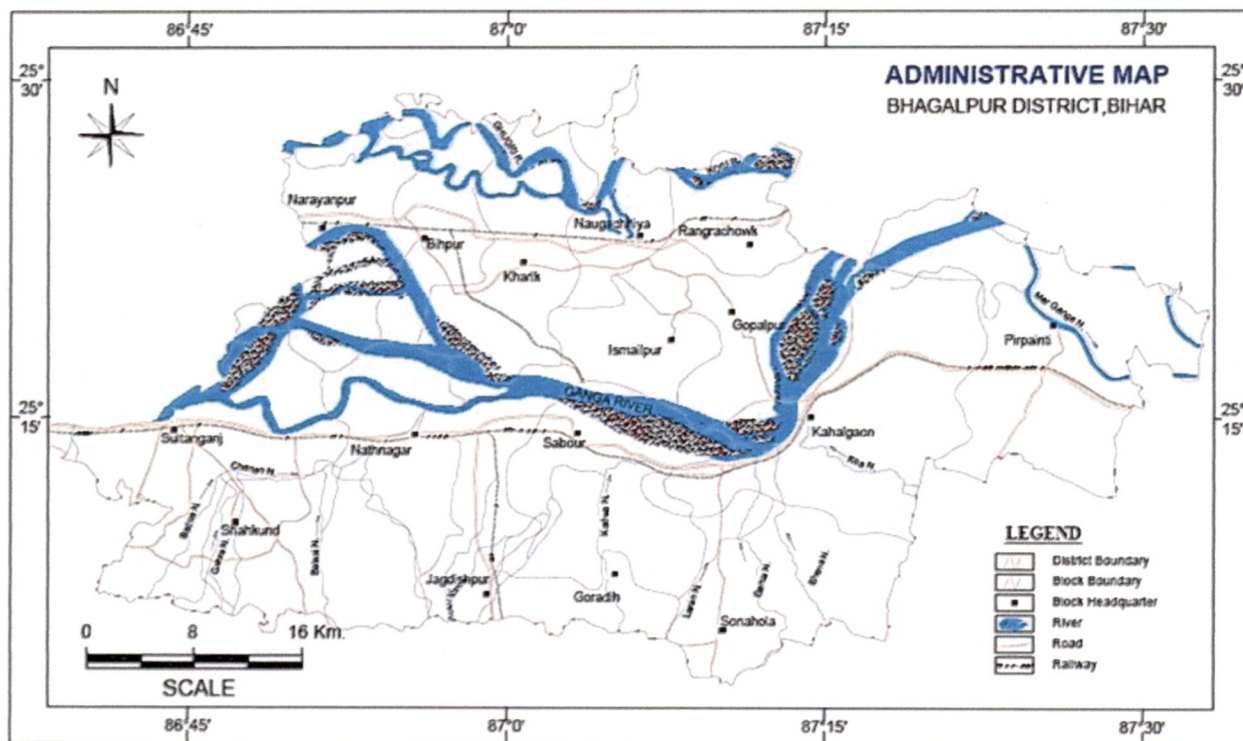
Map 4-5 Administrative Map of Bhagalpur District

The district consists of 16 Blocks and 16 Anchals. It has 242 panchayats and 1536 villages. There are altogether 250 Post offices, 14 Telegraph offices and 125 Banks etc.The construction of Vikramshila Bridge across Ganga, is the means of communication between north & south part. Naugachia subdivision as well as police district is located on the north bank of the river Ganga. Owing to its topographical configuration and vast Diara terrain of the River Ganga; the subdivision of Naugachia was up-graded to Police district in the year 1991-92 for more effective policing. Sadar and Kahalgaon subdivisions of this district are located along the south bank of the river Ganga.The entire district can be divided into three broad natural divisions. These are as follows:

i.   The land of Naugachia subdivision on the North of Ganga river is plain. In spite of being flood prone, region is a principal centre of trade in grains.

ii.   The Diara area is located in the south of Naugachia subdivision and in the north of Sultanganj, Nathnagar, Sabour, Kahalgaon and Pirpainti blocks.

iii.   The plain land region is located in the middle of Sultanganj and Pirpainti blocks, and entire south portion of the Sadar and Kahalgaon subdivisions.
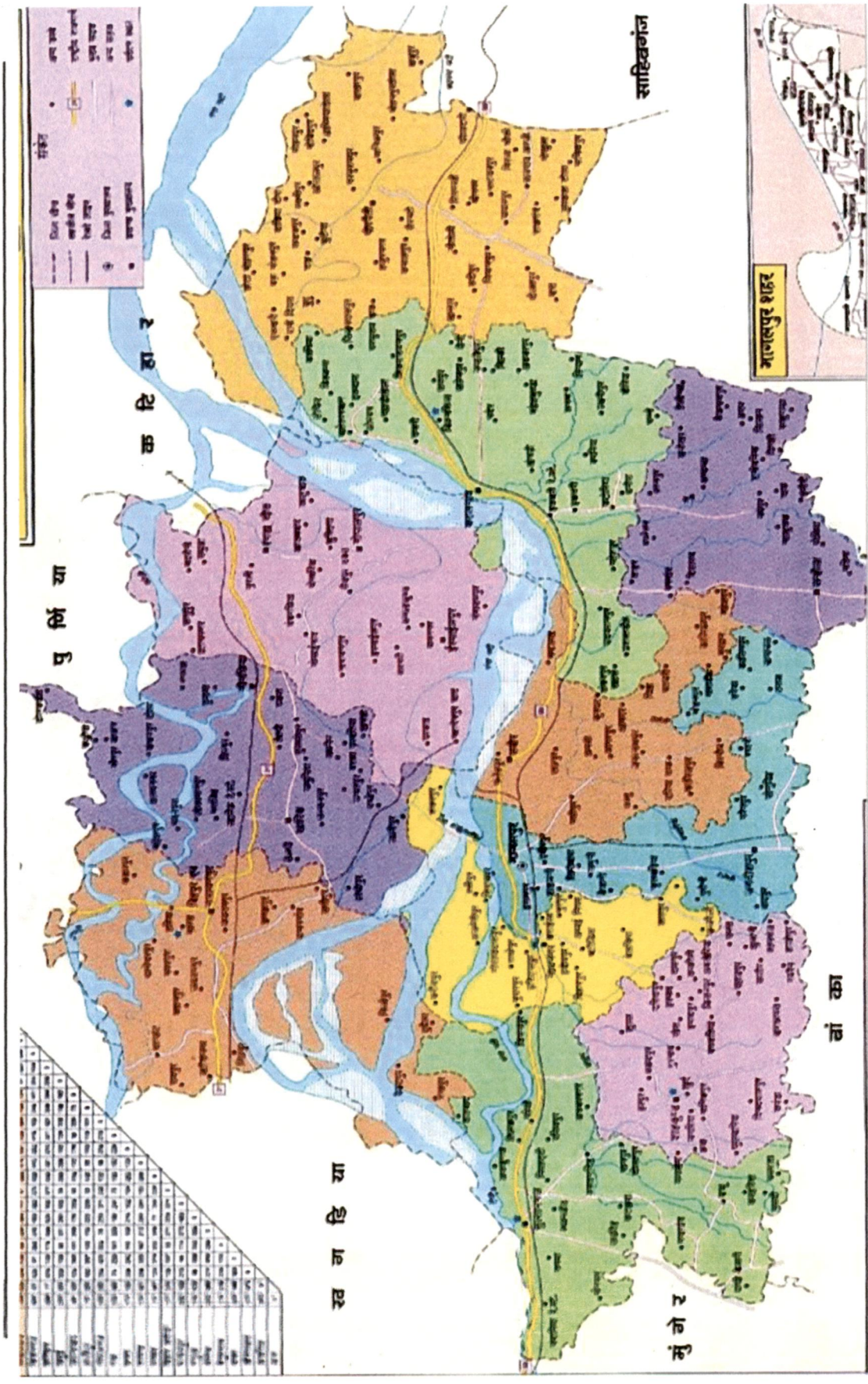
Map 4-6 showing the sub division and Blocks of Bhagalpur district

4.1.12 Block Wise Demography Of Bhagalpur District

Table 4-6 Block Wise Demographic Data Of Bhagalpur District

Name of Sub Divison	Name of the blocks	Total Population	No. of Gram Panchyat	Revenue Village	Per cent of Literates	Per cent of SC population	Per cent of ST population	Sex Ratio
Sadar Bhagalpur	Jagdishpur	124471	15	164	67.1	9	—	873
	Nathnagar	125267	14	153	45.43	11	—	876
	Sahkund	156554	19	170	46.79	13	2.8	895
	Sultangaunj	149771	19	150	54.74	17	—	876
	Goradih	115816	15	119	38.82	14	—	872
	Sabour	112782	14	84	51.22	12	0.2	863
Kahalgaon	Kahalgaon	294970	28	211	47.93	13	4.4	868
	Pirpaiti	222706	29	113	42.65	11	14.8	875
	Sanhoulla	154083	18	177	40.12	13	—	912
Naugachhia	Naugachiya	125956	10	22	47.7	6	0.1	864
	Narayanpur	85118	11	31	44.68	6	—	881
	Bihpur	100180	13	42	48.59	9	—	881
	Kharik	105972	13	35	42.06	8	—	881
	Ismilepur	40752	5	15	34.98	5	—	877
	Gopalpur	79567	9	20	47.19	8	0.5	875
	Rangra	75927	10	11	43.88	8	3.9	862

Bhagalpur is administratively divided into three sub-divisions – Bhagalpur Sadar, Kahalgaon and Naugachhia. As shown in the table, six blocks come under Bhagalpur Sadar, three under Kahalgaon and seven under Naugachhia. Kahalgaon has the highest population around three lakhs. Average Literacy rate in the district is 45per cent. Jagdishpur has highest literacy rate of 67% followed by Sultanganj at 54 per cent.

4.1.13 Block Wise Status of Drinking Water

Table 4-7 Block wise Status of Drinking Water in Bhagalpur District

Block	Total nos. of habitation	Functional source of drinking water	Category wise functional sources		
			Hand pump	Tube well	Piped Water
Jagdishpur	373	1022	1019	3	3
Nathnagar	279	1048	1047	1	1
Sahkund	409	1159	1159	2	3
Sultangaunj	400	1184	1181	3	2
Goradih	208	1015	1014	1	1
Sabour	195	1048	1044	4	4
Kahalgaon	208	1985	1982	3	4
Pirpaiti	288	2102	2102	0	0
Sanhoulla	157	1126	1122	4	4
Naugachiya	46	907	905	2	2
Narayanpur	28	819	819	0	0
Bihpur	46	1175	1175	0	0
Kharik	50	1121	1121	0	0
Ismilepur	28	345	345	0	0
Gopalpur	28	700	700	0	0
Rangra	31	579	578	1	1

Safe drinking water is essential for maintenance of good health. Availability of safe drinking water is an important Public Health requirement. In Bhagalpur, a large number of people have access to functional sources of water. Most of the people us wells, rivers and hand pumps and the provisioning of piped water is very low. The poor people have to commute to fetch water for their use. The Dalits and landless people, marginal farmers are dependent on other classes and communities for availing water. The wells and tube wells are not regularly cleaned and sanitized. In the interest of the common people, and reduce frequent disease occurrences in the district, it is very important that more and more people are provided with safe drinking water.

4.1.14 Block Wise School Infrastructure[6]

Table 4-8 Block Wise School Infrastructure in Bhagalpur District

S.No.	Block	Total Nos of schools	Schools without own building (per cent)	School without drinking water facility (per cent)	School without toilet facility (per cent)	School without kitchen for mid-day meal (per cent)
1	Jagdishpur	108	12.96	16.67	36.11	67.59
2	Nathnagar	106	9.43	9.43	16.04	45.28
3	Sahkund	153	3.27	4.58	13.73	49.02
4	Sultangaunj	167	9.58	10.78	23.95	57.49
5	Goradih	105	10.48	7.62	19.05	53.33
6	Sabour	70	7.14	4.29	12.86	7.14
7	Kahalgaon	186	11.83	13.98	24.19	62.37
8	Pirpaiti	184	8.15	9.24	20.65	52.72
9	Sanhoulla	144	13.19	15.97	36.81	43.06
10	Naugachiya	91	13.19	12.09	21.98	64.84
11	Narayanpur	67	14.93	12.5	26.87	55.22
12	Bihpur	81	12.35	12.35	19.75	45.68
13	Kharik	72	20.83	2.94	25	54.17
14	Ismilepur	34	5.88	8.33	17.65	47.06
15	Gopalpur	60	8.33	8.33	30	33.33
16	Rangra	46	2.17	8.7	23.99	54.35
	Total	1823	10.85	11.1	23.85	51.52

Education plays a complementary role in Public Participation and thus in governance. If people are educated, they become more aware of their rights and entitlements, become more asserting in demanding their rights. Thus an educated citizenry strengthens the functioning of government system. Education also inculcates behavior of hygiene, sanitation in personal life and citizens understand the actual causes of disease and illness.

In Bhagalpur district, the public schooling system is functional, but the quality of education and school infrastructure still needs a lot of improvement. A large number of schools in Bhagalpur do not have a proper school building which a very minimal and basic requirement of any schooling system. Of the 1823 schools in the district, a large number of schools of districts do not either drinking water facility or toilets. Unavailability of these basic infrastructures is an impediment in enhancing both awareness and education of the people of Bhagalpur.

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[6] Source: Sarva Shikha Abhiyaan, Bihar Education Promotion Department, Bhagalpur

4.1.15 Block Wise Status of PDS Beneficiaries

Table 4-9 Block Wise Status of PDS Beneficiaries

S.No.	Block	Total BPL Cards	No. of AAY[7] Cards	No. of APL Cards	No. of Annapurna Cards
1	·Jagdishpur	17307	3049	17954	193
2	Nathnagar	13169	2392	14182	80
3	Sahkund	18184	3451	16159	163
4	Sultangaunj	. 22863	4221	19623	413
5	Goradih	16290	2978	9075	127
6	Sabour	12616	2198	14459	84
7	Kahalgaon	31590	5382	33437	248
8	Pirpaiti	32606	5431	27917	39
9	Sanhoulla	20475	3977	12384	121
10	Naugachiya	11050	1803	9879	94
11	Narayanpur	9013	1436	14997	51
12	Bihpur	13562	2405	13129	84
13	·Kharik	15475	2541	12771	102
14	Ismilepur	4684	650	4753	58
15	Gopalpur	8985	1434	9795	74
16	Rangra	9939	1813	7311	96
17	Bhagalpur Town	21076	5974	70411	282
18	Sultangunj town	7134	2022	4804	78
19	Kahalgaon Town	2386	676	4524	18
20	Naugachiya Town	7135	2022	3439	18
	Total	**295539**	**55855**	**321000**	**2423**

Though Bihar's share in India's population is one-twelfths, it accounts for one-seventh of those living below the poverty line, and one-sixth of the malnourished children. The Public Distribution System **(PDS)** is an important public provisioning of food grains for the poor people of the country. From the data above, it cannot not be said that the whether all the needy people of the district are covered under the scheme, though the likelihood of the deserving poor remaining excluded is very high. There are 29 lakhs 55 thousand BPL card holders in the district and 321000 Above Poverty line beneficiaries. There are 55855 beneficiaries of Antodaya Anna Yojna. There are 2423 beneficiaries of Annapurna Yojna.

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[7] Antyoday Aahar Yojna

4.1.16 Urban Local Bodies

Bhagalpur being the indispensable part of Bihar has level of urbanization around 10.5 percent against national average 27.68, per capita income Rs.4397 against national average of Rs 9660 where as urban poverty is 32.91% against national average 23.62% and slum urban population 5.85 against national data 14.12.The above details shows that Bhagalpur even denominated as municipal corporation but it is far behind the national average.

4.1.16.1 ULBs in the district

Bhagalpur district has four ULBs which comprises the population of 4, 10,210 out of total district population of 30, 32,226 this urban population contributes in multiple terms for enhancing the per capita income of the district. It valuably ropes the various economic activities being carried out not only in

Urban areas but also to the rural areas. It is a place where mostly value addition activities are done. Well defined from definition more than 75 per cent male are engaged with various other economic activities other than agriculture which will require multi-pronged initiatives to worth them, protect from negligent use or misappropriation of resources.,This can only be possible if reflection from various segments of urban community is captured through mass and decentralized consultations. For planning purposes constitutionally recognized unit is "ward". Also an Elected Counsellor represents a ward. So to realize the real essence of the need ward level exercise requires to be done in coordination with respective counsellor.

There are four ULBs in this district

1. Bhagalpur Municipal Corporation

2. Sultanganj Municipal Council

3. Navgachia Nagar Panchayat

4. Kahalgaon Nagar Panchayat.

Table 4-10 ULB's, blocks, no. of wards, area, populations of Bhagalpur District

Name of Municipal Body	District	Nearest Subdivision/ Block	Number of Wards	Area (in Kms)	Population (As per census of 1991)	Population (As per census of 2001)	Population (As per census of 2011)
Bhagalpur Municipal Corporation	Bhagalpur	Bhagalpur	51	30.17	2,53,225	3,40,349	4,10,210
Sultanganj Nagar Parishad	Bhagalpur	Sultangunj	25	12.29	34,181	41,812	———
Kahalgaon Nagar Panchayat	Bhagalpur	Kahalgaon	17	0.63	17,899	22,110	———
Naugachiya Nagar Panchayat	Bhagalpur	Naugachiya	23	11.24	31,250	38,288	———

4.2 Profile of Bhagalpur Town

The Bhagalpur town geographically located at $25^{\circ}15"0"N$, $87^{\circ}0"0"E$, It is the administrative headquarters of Bhagalpur district. It is a class-I town. The town is situated at the southern bank of the river Ganga.It is one of the ancient and largest towns of Bihar. It is situated at a distance of about 225 km from state capital city Patna. It is connected to different cities and towns of Bihar by broad gauge railway lines and roadways. The Project Area considered in this report is the area covered under the present boundary of the Bhagalpur Municipality which is 30.18 sqkm. Road length of the town is 251 km, having width of 3m-4m of 109km, 4m-7m of 60km, above 7m of 52km and below 3 meter of 30 km.

4.2.1 Location

The Bhagalpur town, one of the oldest towns of Bihar, is the administrative headquarters of Bhagalpur district. The Location of Bhagalpur town in Bhagalpur district is shown in Map below. It is a located 220 km from Patna, the capital of Bihar state.

4.2.2 Administrative Boundaries

The Bhagalpur town forms a part of the Jagdishpur C.D. block (Bhagalpur Sadar sub division), which accommodates 19.45 per cent of the total population of the Bhagalpur district. The area of Bhagalpur Municipal Corporation is 30.17 sq.km.. According to Census of India 2011, the Bhagalpur town is divided into 51 wards.

4.2.3 Regional Linkages

Bhagalpur, headquarter of Bhagalpur district, is situated roughly at a distance of 220 km east of State capital Patna and 410 km North West of Kolkata. It is well connected with other important cities of the country through rail and road communication.

4.2.4 Roadways

National Highway no. 80 runs through the city and connects it directly to Patna, the state capital.

4.2.5 Railways

Bhagalpur district lies on the broad-gauge loop line of the Eastern railway running from Kiul to Burdwan. Important stations in this district include Sultanganj, Bhagalpur, Sabour, Kahalgaon. A branch line runs from Bhagalpur to Mandar Hill (21 Kms.). North Bhagalpur is served by the Barauni-Katihar section of the North Eastern Frontier Railway.

Airways: At present Bhagalpur town has a landing ground on the eastern side of the city.
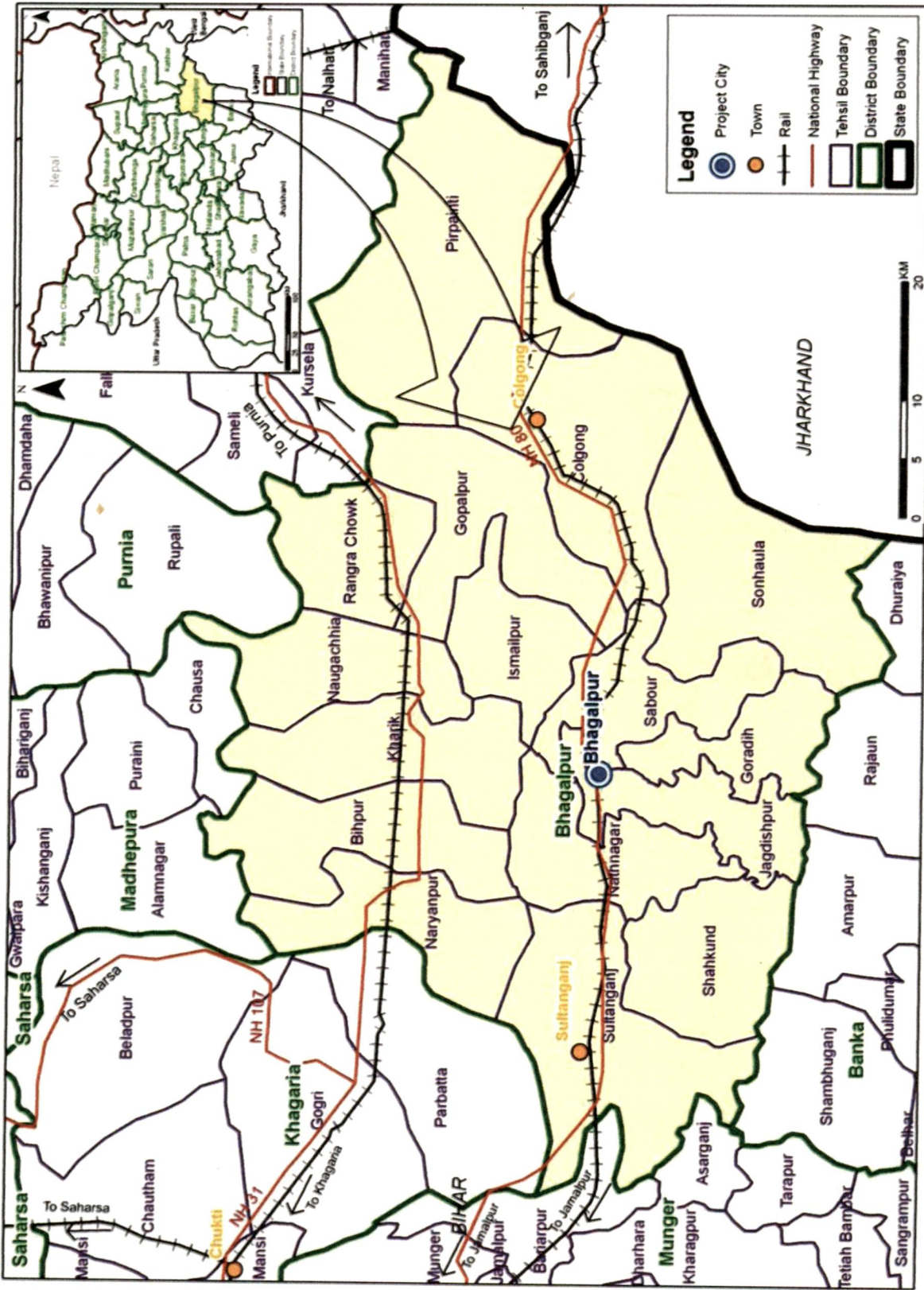
Map 4-7 Location Map of Bhagalpur Town
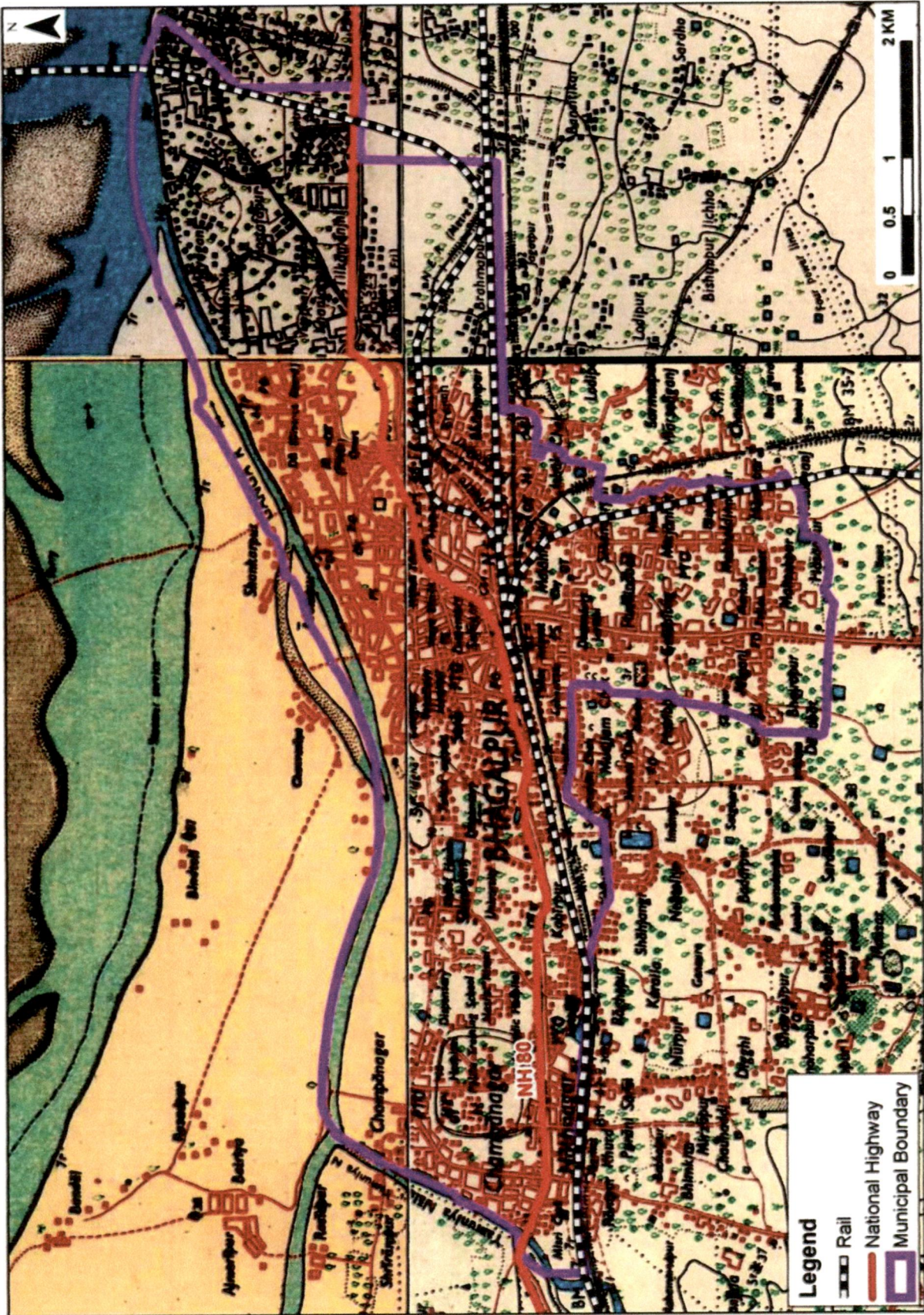
Map 4-8 Town Map Bhagalpur Town.

Legend
Rail
National Highway
Municipal Boundary

4.2.6   Demography

The demographic profile and population growth trend of the Bhagalpur town has been studied in order to better understand the imperatives that will govern the growth of population in future and the direction for socio-economic development of the town.

Table 4-11 Bhagalpur Urban Agglomeration[8]

	Total	Male	Female
Population	4,10,210	2,18,284	1,91,926
Literates	2,86,125	1,60,720	1,25,405
Children (0-6)	55,898	29,081	26,817
Average Literacy (%)	80.76	84.95	75.95
Sex Ratio	879		
Child Sex Ratio	922		

Table 4-12 Bhagalpur City

	Total	Male	Female
Population	3,98,138	2,12,005	186,133
Literates	2,79,469	157,049	122,420
Children (0-6)	53,775	28,061	25,714
Average Literacy (%)	81.16	85.38	76.31
Sex Ratio	878		
Child Sex Ratio	916		

4.2.6.1   Population Trend

Bhagalpur is a Class- I town as per Census definition and has a total population of 3, 98,138 as per Census 2011. The town alone accounts for 13.13 per cent of the total population of the district. And the Urban Agglomeration accounts 13.52 per cent of total population of the district. The area of the Bhagalpur Municipal Corporation is 30.17 sq.km. Thus the gross density of the town is about 11300 persons per sq km or 113 persons per Ha in 2001. The population of Bhagalpur Municipal Area has increased from 172202 in 1971 to 340767 in 2001. However, the growth trend is not consistent over the years. The decadal growth rate was 30.70 per cent in 1971-81 which dropped sharply in 1981-1991 to 12.51per cent. There has again been a reversal of trend and the city recorded a very high growth rate of 34.57 per cent in 1991-2001

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[8] Urban agglomeration is a continuous urban spread constituting a town and its adjoining urban outgrowths (OGs), or two or more physical contiguous towns together and any adjoining urban outgrowths of such towns. Examples of Outgrowth are railway colonies, university campuses, port area, military camps etc. that may have come up near a statutory town or city but within the revenue limits of a village or villages contiguous to the town or city. For Census of India, 2001, it was decided that the core town or at least one of the constituent towns of an urban agglomeration should necessarily be a statutory town and the total population of all the constituents should not be less than 20,000 (as per 1991 Census). With these two basic criteria having been met, the following are the possible different situations in which urban agglomerations could be constituted. i) a city or town with one or more contiguous outgrowths; ii) two or more adjoining towns with or without their outgrowths; iii) a city and one or more adjoining towns with their outgrowths all of which form a continuous spread.

Table 4-13 Per cent of BMC population in the district in consecutive decade

Year	Population of BMC	Population of the district	Per cent of BMC population in the District
1991	2,53,225	1,909,967	13.25
2001	3,40,767	24,30,331	14.02
2011	3,98,138	3,032,226	13.13

Above table shows that the per cent of BMC population in the district in year 1991 was 13.25 per cent which increased to 14.02 per cent in year 2001 and further decreased to 13.13 per cent in year 2011.
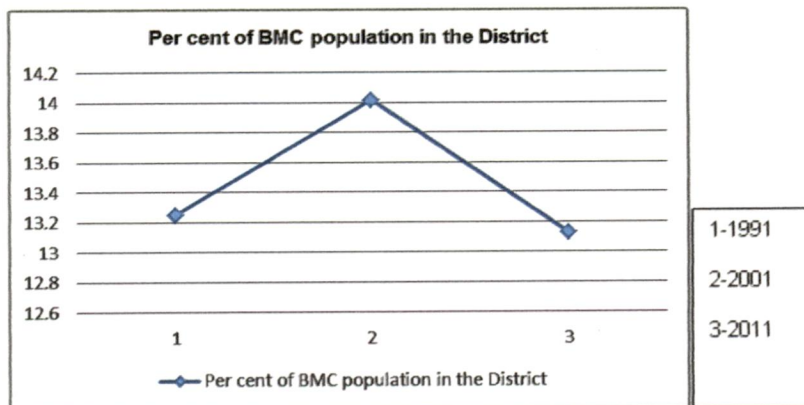
Fig. 4-5 Per cent of BMC population in the district

Table 4-14 Population Decadal Growth Rate (per cent) of Bhagalpur Municipal Area

Year	Population	Decadal Growth Rate (%)
1971	1,72,202	-----
1981	2,25,062	30.7
1991	2,53,225	12.51
2001	3,40,767	34.57
2011	3,98,138	16.84

1,72,202	2,25,062	2,53,225	3,40,767	3,98,138
1971	1981	1991	2001	2011
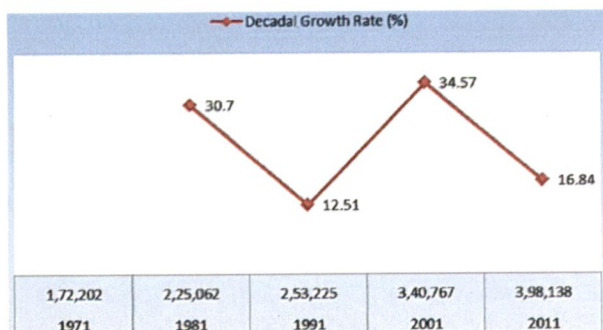
Fig. 4-6 Decadal growth rate of population
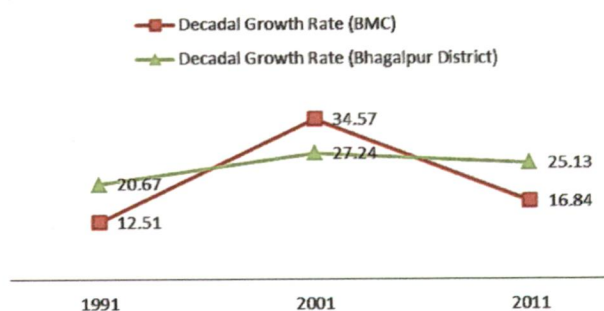
Fig. 4-7 Decadal Growth rate (per cent) Comparison

Above chart shows the comparison of decadal growth rate (per cent) between the whole district and BMC, chart describes drastic increase in the decadal growth rate of BMC and drastic decrease in the growth rate of in next decade i.e. 2001-2011, but the district shows a steady change in decadal growth rate of district population it shows decrease in 2.11 per cent of decadal growth rate, which suggests the policy level reforms as well as grass root level social reforms, especially in rural part of the district in terms of health (family planning measures) and education especially literacy in women. It also gives the sign of reverse migration (with in the district) as a result of recent reforms in rural development policy of government and more focus on agriculture.

4.2.7 Social Sector (Education)

Table 4-15 Comparison of increase in BMC's actual population and literates.

Year	Actual Population of BMC	Literates[9] in BMC
2001	3,40,767	2,14,061
2011	3,98,138	2,79,469
Increase	57,371	65,408

BMC showed increase in actual population of 57,371 in a decade (2001-2011) while the number of literates increased is 65,408 that is more than the increase in actual population, this reveals the efforts were taken in the field of adult education as well as education of women also.

Table 4-16 School infrastructure in BMC

Total Nos. of schools	Schools without own building (per cent)	School without drinking water facility (per cent)	School without toilet facility (per cent)	School without kitchen for mid-day meal (per cent)
149	20.81	30.87	36.91	83.22

[9] Literates constitute having age seven years or more than seven years.

Chapter-5 STUDY & ANALYSIS OF E-GOVERNANCE SITUATION IN BIHAR STATE

The Government of Bihar is not only working on core infrastructure like SWAN, CSC (NeGP) but also focusing on projects like secretariat LAN, prison modernization, land registration, treasury management, VAT management and NREGA computerization. The secretary LAN connects seven-secretariat buildings using optical fiber and WiMAX. There is an independent Department of Information Technology in the state to execute e-Governance related activities and for expansion of information technology in the state. Both infrastructure and projects related to IT are being developed by the Department.

5.1 Plan Outlay for Information Technology Department

Table 5-1 Plan Outlay for Information Technology Department (2009-10 and 2010-11)

2009-10		2010-11	
Projects	Amount (Rs. Lakh)	Projects	Amount (Rs. Lakh)
BHSWAN		BHSWAN	Rs. 10000.00
BSWAN	186.48	BSWAN	900.00
Common Service Centre (CSC)	1500.00	Common Service Centre CSC,(NeGP)	3051.00
SDC	100.00	SDC	500.00
Sec-LAN	222.00	Sec-LAN	1000.00
e-Governance	2358.00	e-Governance (State Projects)	1400
Knowledge City	885.00	Knowledge City	500.00
IT Bhawan	300.00	IT Bhawan	500.00
Capacity Building	100.00	Capacity Building	580.00
State Portal	200.00	State Portal	200.00
e-Procurement	100.00	DPR Preparation	479.25
DPR Preparation	0.32	e-Purchase	500.00
Chief Minister's Grievances Cell	0.20	e-District	500.00
Total	5952.00	Total	20110.25

Source: Department of Information Technology, GOB

Above table suggest that in year 2009-10, 39 per cent of outlay was planned on state e-governance projects and next 25 per cent was planned for Common Service Centre (CSC), but in year 2010-11, **50 per cent of outlay was planned for BHSWAN, and 15 per cent of outlay was planned for Common Service Centre (CSC)**, as Common Service Centre (CSC) reduces the **digital divide** among Urban &

Rural, Literate & Illiterate and rich & poor and provide deep penetration of information even at the village level.
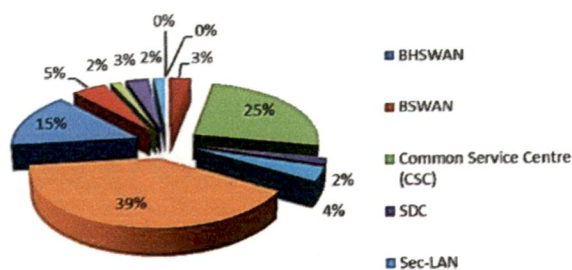
Fig. 5-1 Plan Outlay for Bihar State (2009-10)
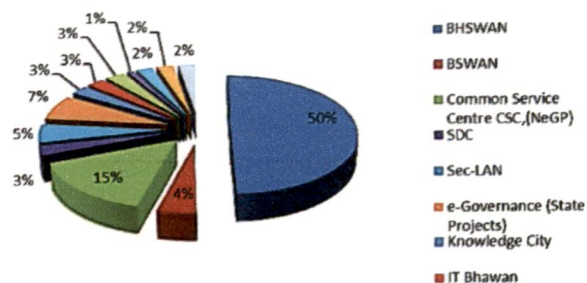
Fig. 5-2 Plan Outlay for Bihar State (2010-11)

5.2 Progress of e-governance Schemes in Bihar State

E-governance schemes have been undertaken up in Bihar and their progress up to 2010-11 is as

Table 5-2 Progresses of e-Governance Schemes till September 2011.

Name of Project	Unit	Target	Achievement
CSC	8463 (CSC)	8463	7952
BSWAN	533 (PoP)	533	484
e-District	94CFC	94	64
Sec-LAN	3300(Data Points)	3300	3300
e-Procurement	5 departments	5 departments	558 Tenders
iWDMS	20 departments	20 departments	20 departments

Source: Department of Information Technology, GOB

Above table shows the progress in e-governance schemes up to September 2011, which shows the speedy implementation of various e-governance schemes as e-governance schemes were launched in year 2008 AD.The Department of Information Technology is executing the plan through Beltron, Integrated Web Development Made Simple (IWDMS), Regional Institute of e-Learning and Information Technology, and DOEACC Society.

5.2.1 Bihar State Wide Area Network (BSWAN)

This project was started in 2007-08. The basic infrastructure for this network is being set up with 2 mbps bandwidth being provided by BSNL. There are a total of 533 Points of Presence (PoP) at state, 37 at districts and 495 at block levels. Total project outlay is Rs. 256 crore, with a state share of Rs. 97 crore towards bandwidth cost and site preparation for PoPs and horizontal offices. In 2011-12, an outlay of Rs. 25.00 crore has been earmarked for BSWAN. During 2011-12, out of 533 PoPs at the state level, 484 have been established till September, 2011. The remaining 49 PoPs will be completed during this financial year only. Out of 49 PoPs, 41 have already been taken up.

5.2.2   Common Service Centre (CSC)

Under this project, 'Vasudha Kendras' are to be established in the entire state up to the Panchayat level with the help of the central government. The total estimated cost of this project is Rs. 30.51 crore. According to terms and conditions of this project, the share of the state government is 50 per cent of the total cost. Out of 8463 Vasudha Kendras planned, 7952 (94 per cent) have already been established and rest 511 will be established in 2011-12.
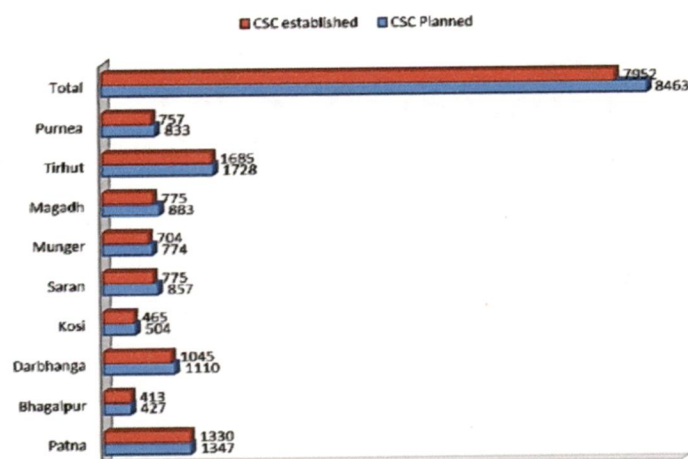
Fig. 5-3 Status of Common Service Centre Projects (2011-12, up to September 2011)

5.2.3   Secretariat LAN

All secretariat offices, including CM residence and residential office are being connected with a fibre optic Local Area Network (LAN). An outlay of Rs. 10.00 crore has been planned for the project in 2010-11. A total of 3300 Data Points have been completed successfully.

5.2.4   E-District

Under this Project, Common Facilitation Centres (CFC) are to be established in the districts of Nalanda, Aurangabad, Madhubani and Gaya. A total of 67 CFCs have already been established and rest of 27 CFC will be established during 2011-12. BSWAN connectivity has been given to 64 CFCs, and at 44 CFCs have been provided with required manpower.

Chapter-6   DEPARTMENT WISE STUDY AND ANALYSIS OF KEY SERVICES IN BHAGALPUR DISTRICT, BIHAR STATE.

From the field survey & online survey of 28 departments of the district, 225 key services are identified and studied of various state level, district level & Panchayat level analysed, other Indian state's existing IT solutions in various district by the concerned department are studied and delivery channel in the district of other state are identified and mentioned in below tabulated form discussed & analysed below with respect to the condition of web portal of the concerned department.

6.1.1   Department of Agriculture

Table 6-1 showing the Agriculture Key Services, existing IT solutions & other Indian state's existing IT solutions

	Agriculture Key Services	Existing IT Solutions in the district	Other Indian State's Existing IT Solutions in the district	Delivery Channel in the district of other state
1	Agriculture Extension Services & Transfer of Technology • Trainings. • Demonstrations. • Organizing Exhibitions. • Mass Media support, Literature.	1. Static web portal used for- • Mass Media support, • Literature. Demonstrations. 2. CSC[10] available at Panchayat Level	OLTP (Online Transaction Processing) State Government of Andhra Pradesh.	Web portal, CSC, Kiosks
2	Implementation of soil & water Conservation program.			
3	Implementation of various subsidy Schemes.			
4	Monitoring the outbreak of pest and diseases.			
5	Implementing and Monitoring departmental organizations. • Bihar State Micro-Irrigation Project (BSMIP) • Bihar Rajya Beej Nigam (BRBN) • Bihar State Seed Certification Agency (BSSCA)			
6	Managing theses indicatives • E-Kisan Bhabans. • Mini Weather Stations. • Agro Business Centre.			
7	Citizen interfacing services • Agricultural Market intelligence. • Mandi information.			

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[10] Common Service Centre, Vasudha Kendra

In the above table seven major citizen centric services are recognized from the department of agriculture, which is delivered to citizen through state web portal, the web portal is interactive in terms of information but the model adopted is the critical flow model & wider dissemination model, information asset declaration, transfers order letter are uploaded for transparency, weekly weather report is updated on the web portal. The web portal provides services G2C, G2B, G2G on its website with regular update of the site .Department of Agriculture facilitates the citizen through common Service Centre, Vasudha Kendra a t the Panchayat Level on minimum charges, Vasudha Kendra is PPP initiative by government.

Number of visits to the site is only 5,11,6244 which is 0.5 per cent of total population of Bihar; this reveals the fact peoples are not aware of the information provided by e-governance initiative and a lot to do to bridge the gap of digital divide. Awareness about the benefit of e-governance is yet to be disseminating among the people.

District level or block level information is not available as district level portal or links from the district portal may beneficial in terms dissemination of information.

6.1.2 Department of Animal and Fisheries Resources

Table 6-2 showing the Animal & Fisheries Key Services, existing IT solutions & other Indian state's existing IT solutions

	Animal &Fisheries Key Services	Existing IT Solutions in the district	Other Indian State's Existing IT Solutions in the district	Delivery Channel in the district of other state
1	Implementation of programs and schemes related to health, protection conservation, and development of livestock in the state.	.	No initiatives for this department · by any state in India	No initiatives for this department by any state in India.
2	Monitoring ■ Fish seed production units. ■ Post Harvesting Marketing. ■ H. Offices.			
3	Implementing various schemes & programs ■ Para Extension Workers Scheme ■ Fisheries Research Scheme ■ Crop Insurance Scheme ■ Door to Door Vaccination and Drenching Program ■ Group Accident Insurance Security to Active Fishermen. ■ Bihar Livestock Development Agency (BLDA)			
4	Knowledge Dissemination ■ Training of Farmers ■ Demonstration of Integrated Fish Farming.	■ Static web portal for information and massages ■ CSC available at Panchayat Level		

In the above table four major citizen centric services are recognized from the department of agriculture, which is delivered to citizen through state web portal, the web portal is based on wider dissemination model only information is provided through the web portal and is linked with state web portal. Most of the web pages are under construction stage. Site was prepared in year 2008. Total peoples who visited this site till 19 April 2012 is 1, 63,297 which is merely 0.16 present of total population of Bihar State.

6.1.3 Department of Commercial Taxes

Table 6-3 showing the commercial taxes Key Services, existing IT solutions & other Indian state's existing IT solutions

	Commercial Taxes Key Services	Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Issue of Tax Clearance Certificates.			
2	Issue of statutory forms.			
3	Issue of registration certificates to the dealers.			
4	Issue of registration to citizens and business unit's like • Vat registration. • CST registration. • PT employer registration. • PT person registration. • Hotel tax registration.	Static web portal used for- • Rules and guideline viewing. • Rate Schedules viewing. • Web portal for commercial taxes • Used for online tax payment and other facilities. • VICTORY (software managing commercial tax revenue) • VAT Import Manager. • VAT Return Manager.	• e-Filing State Government of Andhra Pradesh • E-Mitra State Government of Rajasthan • Friends State Government of Kerala	Web portal, CSC, Kiosks, Departmental Service Centre/ Counter
5	Tracking case status by citizens.			
6	Facilitating some important services like. • Amendment • Cancelation request. Transfer in business place. • Dealer search.			
7	Sharing of reports like commodity list, return defaulters, all registered dealers etc.			

In the above table seven major citizen centric services are identified from the department of commercial Taxes, which is delivered to citizen through state web portal, the web portal is interactive in terms of information but the model adopted is interactive model as people can pay online tax , information asset declaration, transfers order letter are uploaded for transparency. VICTORY[11] (software managing commercial tax revenue) It helped in scrutinizing of returns and validation of Input Tax Credit (ITC) from seller and purchaser data in centralized way thus speeding up the refund process. are used for internal department management of commercial tax.

Online visit to the web portal till 19th April 2012 was 24, 79,135 which is 2.389 per cent of total population of state and portal was last updated on 17th April as monitored on 19th April 2012. VICTORY is functional at District level

6.1.4 Department of Co-operative

Table 6-4 showing the key services of department of co-operative, existing IT solutions & other Indian state's existing IT solutions

	Co-operative department Key Services	Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Implementation of Policies and Schemes	Existing IT Solutions: • Static web portal used for- • Mass Media support, Literature. • Demonstrations.		
2	Collection of MIS reports by all types of societies on a periodic basis.			
3	Registration of a co-operative Society • Co-operative Societies (including Co-operative Bank), • Co-operative Marketing Societies • Union's Co-operative Processing Societies • Industrial Co-operatives		• Sahakara Darpana State Government of Karnataka. • Digital Payment System of State Government of Maharashtra.	Web portal, CSC, Kiosks, Department counter
4	Manage and monitor undertakings of the department. • The Warehousing Corporation, • Land Development Bank and Co-operative Marketing Union. • Administrative charge of all buildings occupied by Cooperative Department.	COIN (Co-operative Banking In-Place)		

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[11] *VAT Information Computerization To Optimize Revenue Yields*

In the above table four major citizen centric services are recognized from the department of Co-operative which is delivered to citizen through state web portal, the web portal is based on wider dissemination model only information is provided through the web portal and is linked with state web portal. Most of the web pages are under construction stage. Site was prepared in year 2008.visit to this static web portal is 0.038 per cent which is quite low. As the web site gives the information about procurement of wheat, declaration of property of ministers & officials, telephone numbers of joint registrar of the district, and district co-operative officers.

6.1.5 Department of Health & Family Welfare

Table 6-5 showing the Key services of department of Health & Family Welfare Services, existing IT solutions & other Indian state's existing IT solutions

	Health & Family welfare Key Services:	Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Spreading awareness regarding AIDS, Pulse Polio Immunization, Malaria, typhoid and other communicable diseases through media, advertisements, rallies etc.	Static web portal used for- • Mass Media support, Literature.	▪ Online Blood Donor List State Government of Himachal Pradesh.	
2	Prepare various reports of disease surveillance.	District wise central reporting system (SHSB reporting system)		
3	Family planning services (vasectomy, tubectomy etc).		▪ Online Medical database State Government of Sikkim.	
4	Beds Availability in Government and Private Hospitals	District wise central reporting system (SHSB reporting system)		Web portal, CSC, Kiosks, Department counter
5	Doctor's database.	District wise central reporting system (SHSB reporting system)		
6	Blood Bank locations & Availability.	District wise central reporting system (SHSB reporting system)		
7	Vaccination Schedule.	Static Web Portal, District wise central reporting system (SHSB reporting system)		
8	Ambulance Services Information.	Static Web Portal, District wise central reporting system (SHSB reporting system)		
9	Forward application for death /birth Certificates.			
10	Maternal/infant/child Health care services.			

In the above table ten major citizen centric services are recognized from the department of Health & Family Welfare, which is delivered to citizen through state web portal, the web portal is based on wider dissemination model only information is provided through the web portal and is linked with state web portal. Most of the web pages are under construction stage. Site was prepared in year 2008. 1.15 per cent of total population of state have visited the static portal which is low count visitors (as seen on 19. April 2012).

The Department e-governance penetration can be seen at the district level and Block level, as monitoring of each and every hospital in the district is done by district wise central reporting system (State Health Society of Bihar reporting System).

6.1.6 Department of Energy

Table 6-6 showing the key services of department of Energy Services, existing IT solutions & other Indian state's existing IT solutions

	Energy Key Services	Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Public grievance redressal on issues of billing, error in meter readings etc.	Static web portal used for- • Mass Media support, Literature. • Demonstrations.	▪ Electricity tariff calculator State Governmen t of Kerala	
2	Application for new electricity connections for domestic, commercial, industrial, agriculture / irrigation purposes.		▪ MSEB State Governmen t of Maharashtr a.	
3	Preparation of schemes on electricity generation, transmission & distribution.			
4	Conducting survey for this purpose and prepares the schemes on hydroelectric power generation.			Web portal, CSC, Kiosks, Department counter
5	Implementing Development of schemes on non- conventional energy sources.			
6	Implementing Remote village electrification program.			
7	Maintenance of the electrical system of the govt. buildings in the state through the Electric Works Department.			
8	Manage and monitor undertakings of the department. ▪ Bihar State Electricity Board ▪ Bihar State Hydroelectric Power Corporation ▪ Bihar Renewable Energy Development Agency	Online Electricity bill payment		

In the above table eight major citizen centric services are recognized from the department of Energy, which is delivered to citizen through state web portal, the web portal is based on wider dissemination model only information is provided through the web portal and is linked with state web portal. Most of the web pages are under construction stage. Web Portal was prepared in year 2008.

Main attraction of the department of energy is Online Electricity bill payment through the web portal.

6.1.7 Department of Human Resource Development

Table 6-7 showing the key services of department of Human Resource Development, existing IT solutions & other Indian state's existing IT solutions

	Human Resource Department Key Services.	Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Application for jobs as part of recruitment.	Static web portal	• MANAB-SAMPAD State Government of Assam • BATON State Government of Assam • Examination Result State Government of Himachal Pradesh • Niyukti Online Seva State Government of Uttar Pradesh	Web portal, CSC, Kiosks, Department counter
2	. Primary Education - • To hold examinations for school, publish the results of such examinations and grant certificates to persons who have passed these examinations. • Activities related to school employees, HR issues like salaries, transfers, promotions loans, medical bill, allowances, deductions etc.			
3	Technical Education - • Registration of applications • Permission to enhance the seats • Issue of Marks memos to Students	Static web portal		
4	Result of various level of examination, conducting by state government agencies.	Static web portal, Chanakya Project (University Computerization)		
5	For candidates: Online registration facility to get employment news regularly.	Static web portal , VIDYA SAGAR (A Virtual Classroom program)		
6	For employers: Post their vacancy to choose right candidate.	Static web portal		
7	Career counselling and latest vacancies notice.	Static web portal, SC		
8	Information on Self-Employment Scheme.	Static web portal, CSC		
9	Job search/New vacancy.	Static web portal, SC		
10	Books are in downloadable format.	Static web portal		

In the above table ten major citizen centric services are identified from the department of Human Resource Development, which is delivered to citizen through state web portal, the web portal is based on wider dissemination model only information is provided through the web portal and is linked with state web portal. Most of the web pages are under construction stage.

6.1.8 Department of Labour Resource

Table 6-8 showing the key services department of Labour Resource, existing IT solutions & other Indian state's existing IT solutions

Department of Labour Resource Key Services		Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Registration of Shops & Commercial.	Static web portal	▪ Employee Information System (EIM) State Government of Andhra Pradesh ▪ Rojgar Wahini State Government of Maharashtra	Web portal, CSC, Kiosks, Department counter
2	Registration of the employers / licensing of contractors.			
3	Registration of trade unions under the Trade Union Act.			
4	Registration of employers and licensing of contractors(if they employ 5 or more than 5 migrant employees) under the Inter State Migrant Workers (Regulation of Employment & Conditions of Service) Act, 1979 to regulate the conditions of employment of migrant workers.			
5	Registration of Motor Transport workers under the Motor Transport Workers Act.			
6	Bidi / Cigar worker Act 1966 – Licenses.			
7	Certification of standing orders under the Industrial Employment Standing Orders Act.			
8	Fixation/ Revision of minimum wages under Minimum Wages Act.			
9	Grants permission for layoff/retrenchment of workers in industrial establishments employing hundred or more workers.			
10	Decision on appeals under payment of Gratuity Act.			
11	Grants permission for closure of industrial establishments employing hundred or more workers.			

In the above table eleven major citizen centric services are recognized from the department of Labour Resource, which is delivered to citizen through state web portal, the web portal is based on wider

dissemination model only information is provided through the web portal and is linked with state web portal. Most of the web pages are under construction stage. Site was prepared in year 2008

6.1.9 Department of Minority Welfare Department

Table 6-9 showing the key services of department of Labour Resource, existing IT solutions & other Indian state's existing IT solutions

Department of Minority Welfare Key Services		Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Implementation of Integrated Child Development Service Programs.	Static informative web portal.	▪ Minority and OBC department State Government of Manipur. ▪ E-Scholarship State Government of Uttar Pradesh.	Web portal, CSC, Kiosks, Department counter
2	Detailed information on Pre Metric, Post Metric scholarship for OBC candidates and other schemes started for that category			
3	Electronic transfer of scholarships to OBC & SC/ST candidate's bank accounts			
4	Application form for scholarship.			
5	List of nodal officer for Scholarship Project to OBC & SC/ST			
6	Issuing the minority community certificate.			
7	Quarterly Progress Report Performa on the implementation of Multi-Sectorial Development Program.			
8	Accepting Income Certificate issued by authorized officials of State Government / UT Administration for Scholarship Schemes			
9	Revision/modification of scholarship schemes for Minority Communities			
10	States-Status of disbursement of various schemes for minorities.			

In the above table ten major citizen centric services are recognized from the department of Minority Welfare, which is delivered to citizen through state web portal, the web portal is based on wider dissemination model only information is provided through the web portal and is linked with state web portal. Most of the web pages are under construction stage. Site was prepared in year 2008

6.1.10 Department of Public Health Engineering

Table 6-10 showing the key services department of Public Health Engineering, existing IT solutions & other Indian state's existing IT solutions

Department of Public Health Engineering Key Services		Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Collection of water and sewerage bills	Static web portal used for- • Mass Media support, Literature. • Demonstrations.	▪ No special initiatives taken for this department by any state in India.	Web portal, CSC, Kiosks, Department counter
2	. Application for new connections (drinking water etc.) for household/ business/industrial purpose.			
3	General information about the department and its schemes/fee structures /forms /procedures.			
4	Status of pipe water supply, Spot Source, Habitation Covered, House Connections			
5	Coverage Status of Non- Municipal Water Supply and Status of Non-Municipal Water Supply-Scheme wise.			
6	Water Quality Standards and water quality survey reports.			
7	Investment on Municipalities and Mitigation Measures.			
8	Storm Water Disposal in Towns and Sanitary Installations & Amenities in Government Buildings			
9	Construction of Sewage Treatment Plants			
10	Water Supply & Sewerage Connection Application Forms			

In the above table ten major citizen centric services are recognized from the department of Public Health Engineering, which is delivered to citizen through state web portal, the web portal is based on wider dissemination model only information is provided through the web portal and is linked with state web portal. Most of the web pages are under construction stage. Site was prepared in year 2008, but not maintained properly.

6.1.11 Department of Planning & Development

Table 6-11 showing the Key Services of department of Planning & Development , existing IT solutions & other Indian state's existing IT solutions

Department of Planning & Development Key Services		Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Giving appropriate advice to various departments for effective implementation of plans and schemes.	Static web portal used for- • Mass Media support, Literature. • Demonstrations.	▪ Prithvi Geographical Information System (GIS) State Government of Assam.	Web portal, CSC, Kiosks, Department counter
2	Allocation of the available financial resources to different administrative departments after determining the priorities of development.			
3	Monitoring of the various schemes under implementation			
4	Web GIS Server facility for sustainable planning even at the cadastral level.		▪ GIS based Planning Atlas State Government of Uttar Pradesh.	
5	Bi-lingual maps based on development/socioeconomic indicators.			
6	Online dynamic map query based on indicators.			
7	Districts and ward maps.			

In the above table seven major citizen centric services are recognized from the department of Planning & Development, which is delivered to citizen through state web portal, the web portal is based on wider dissemination model only information is provided through the web portal and is linked with state web portal. Most of the web pages are under construction stage. Site was prepared in year 2008, but not updated since.

6.1.12 Department of Industry

Table 6-12 showing the Key Services of department of Industry , existing IT solutions & other Indian state's existing IT solutions

	Department of Industry Key Services.	Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Implementation of various Subsidy Schemes.	Static web portal	Udyog Ratna State Government of Assam.	Web portal, CSC, Kiosks, Department counter
2	Sales Tax Exemption and price preference to SSIs.			
3	Registration of small scale industries.			
4	Loans and grants to handloom cooperative.			
5	Implementation of Rural Haat Scheme of Govt. of India and other developmental schemes.			
6	Monitoring the performance of the District Industries Centers (DICs).			
7	Monthly progress reports of different schemes.			
8	Industrial Policy, Expenditure Statement.			
9	Availability of data to the Directors of Industries and the GMs of the DICs for use in planning.			

In the above table nine major citizen centric services are recognized from the department of industry, which is delivered to citizen through state web portal, the web portal is based on wider dissemination model only information is provided through the web portal and is linked with state web portal. Most of the web pages are under construction stage. Site was prepared in year 2008 some sections are maintained.

6.1.13 Department of Excise & Prohibitions

Table 6-13 showing the Key Services of department of excise and Prohibitions, existing IT solutions & other Indian state's existing IT solutions

	Department of Excise & Prohibitions	Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Stock levels at distilleries and wholesalers/contractors.	Static web portal used for- • Mass Media support, Literature. • Demonstrations.	• No special initiatives taken for this department by any state in India.	Web portal, CSC, Kiosks, Department counter
2	EPA fulfilment of contractors.			
3	Bank challan deposits.			
4	Revenue collection monitoring.			
5	Wholesaler – contractor invoicing			
6	Issue of permit for import /export of excise goods.			

7	Issue of liquor transport permits (TP's).			
8	Issue of molasses permits.			
9	Issue of country liquor and Bhang permits.			
10	Issue of IMFL permits.			

In the above table ten major citizen centric services are recognized from the department of Excise & Prohibitions which is delivered to citizen through state web portal, the web portal is based on wider interactive service model only information is provided through the web portal and is linked with state web portal. Most of the web pages are under construction stage. Site was prepared in year 2008, but not maintained properly.

6.1.14 Department of Registration & Stamp

Table 6-14 showing the Key Services of department of excise and Prohibitions, existing IT solutions & other Indian state's existing IT solutions

Department of Registration & Stamp		Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Registration under Hindu Marriage Act[12].	▪ Static web portal.	▪ E-Nibandhan State Government of Jharkhand.	Web portal, CSC, Kiosks, Department counter
2	Sale of Stamp Papers.			
3	Issue of Market Values Certificates.	▪ SCORE (System for Computerized Registration).		
4	Issue of EC (Encumbrance Certificates).		▪ Raj stamps State Government of Rajasthan.	
5	Registration of all Documents Movable or Immovable as per the Registration Act.			
6	Online calculation of stamp duty for a particular land and specific area			
7	Availability of Non-Encumbrance certificate, copy of deeds etc		▪ SARITA State Government of Maharashtra.	

In the above table seven major citizen centric services are recognized from the department of Registration & Stamp, which is delivered to citizen through state web portal, the web portal is interactive in terms of information but the model adopted is the critical flow model & wider dissemination model, information asset declaration, transfers order letter are uploaded for transparency, weekly weather report is updated on the web portal. The web portal provides services G2C, G2B, G2G on its website with regular update of the site .Department of Registration & stamp facilitates .

SCORE (System for Computerized Registration) is used for internal function of the department at district level also.

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[12] Marriages of Sikhs along with those of Buddhists and Jains are currently registered under Hindu Marriage Act.

6.1.15 Department of Food & Consumer

Table 6-15 showing the Key Services of department of Food & Consumer, existing IT solutions & other Indian state's existing IT solutions

	Department of Food & Consumer Key Services	Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Issue of New Ration Card and other services like change of address, inclusion of names, deletion of names etc.	Static web portal used for- ▪ Mass Media support, Literature. ▪ Demonstrations. SMS based PDS monitoring system. Computerization of PDS outlets.	▪ Ahara State Government of Karnataka. ▪ GRIHA-LAKSHMI State Government of Assam. ▪ Online civil supplies department online civil supplies department.	Web portal, CSC, Kiosks, Department counter
2	To bring awareness among the consumers and redressal of their grievances under The Consumer Protection Act.			
3	Information on prices of essential commodities.			
4	Information about various distribution points for various commodities like kerosene etc			
5	List of fair price shops			
6	Application form and Renewal form for ration card and for other utility			
7	Variation in Daily and weekly Retail Prices.			
8	Comparative Statement Of Wholesale/Retail Prices.			
9	District wise allotment of food grains.			
10	Citizens Charter and Scheme details TPDS and other particulars.			

In the above table ten major citizen centric services are recognized from the department of Food & Consumer, which is delivered to citizen through state web portal, the web portal is interactive in terms of information but the model adopted is the critical flow model & wider dissemination model, information asset declaration, transfers order letter are uploaded for transparency, weekly weather report is updated on the web portal. The web portal provides services G2C, G2B, G2G on its website with regular update of the site .Department of Food & Consumer facilitates the citizen through common Service Centre, Vasudha Kendra a t the Panchayat Level on minimum charges,& web portal. In an innovating practice towards e-governance SMS based monitoring of PDS is implemented with computerization of PDS outlets. Monitoring can be done from Village level to state level.

6.1.16 Department of Land & Revenue Reforms

Table 6-16 showing the Key Services of department of Land & Revenue Reforms, existing IT solutions & other Indian state's existing IT solutions

Department of Land & Revenue Reforms Key Services		Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Updations / Corrections to Land Records.	▪ Static web portal. ▪ Bhu-abhilekh (land records computerization) ▪ SPECTRUM(Evaluation Customized To TRUE Monitoring for Revenue & Land Reforms Department).	▪ Land Records Management System State Government of Punjab. ▪ Dev bhoomi State Government of Uttarakhand. ▪ Bhu-Lekh – UP State Government of Uttar Pradesh. ▪ e-Dhara State Government of Gujarat. ▪ Bhoomi State Government of Karnataka.	Web portal,CSC, Kiosks, Department counter
2	Issue of Pattadar Passbook.			
3	Copy of Land Map and Boundaries.			
4	Mutation of Land Ownership			
5	Issue of Record of Rights.			
6	Issue of Village Maps.			
7	Issue of computerized cadastral plans.			
8	Statements of NR/conversion/eviction cases.			
9	Non-Encumbrance Certificate			
10	Transfer of urban evacuee property by auction.			
11	Division and partition of land.			
12	Attestation of mutations.			

In the above table twelve major citizen centric services are identified from the department of Revenue & Land Reform, which is delivered to citizen through state web portal, the web portal is interactive in terms of information but the model adopted is interactive model as people can pay online tax , information asset declaration, transfers order letter are uploaded for transparency. Back end office is managed by Bhu Abhilekh(land record Computerization) and SPECTRUM for monitoring of Revenue & Land Reform Department.

Online visit to the web portal till 19th April 2012 was 24, 79,135 which is 2.389 per cent of total population of state and portal was last updated on 17th April as monitored on 19th April 2012.

6.1.17 Department of Rural Development.

Table 6-17 showing the Key Services of department of Rural development, existing IT solutions & other Indian state's existing IT solutions

Department of Rural Development		Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Distribution of Budget/Grant-in-aid to Districts.	Static web portal. ■ NIRMAL (Networked Information for Rural Mass).	■ Gyandoot State Government of Madhya Pradesh. ■ GRAMUNNAYAN State Government of Assam. ■ Online Market Information State Government of Uttarakhand.	Web portal, CSC, Kiosks, Department counter
2	Preparing Annual Accounts and Budgets.			
3	Implementations of Welfare Schemes in the grass root level.			
4	Enables access and review of progress in Blocks, Tehsils, Districts.			
5	Provides information on prevailing Govt./ Market rates of agricultural and allied produce.			
6	Provides information on various new rural technologies.			
7	Monitors administration in different District Rural Development Agencies (DRDAs).			
8	Wide range of services for elevation rural mass that include. ■ Agricultural information. ■ Market information. ■ Health. ■ Education. ■ Women's issues. ■ Affirmative action			

In the above table eight major citizen centric services are recognized from the department of Rural Development, which is delivered to citizen through state web portal, the web portal is based on wider dissemination model only information is provided through the web portal . The information is disseminated through the CSCs at the Panchayat Level. NIRMAL is one of the effort to make the rural Bihar information enabled. Implementation of SMS based monitoring in the rural development projects like National Rural Employment Guarantee Scheme (NREGS) have reduced the migration from rural Bihar as there are ample of job available in rural area[13].

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[13]Punjab farmers offer free cell phones to lure Bihari workers http://www.hindu.com/thehindu/holnus/004200810021531.htm October 2, 2008.

6.1.18 Department of Social Welfare

Table 6-18 showing the Key Services of department of Social Welfare, existing IT solutions & other Indian state's existing IT solutions

Department of Social Welfare Key Services		Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Old age pension.	Static web portal used for- • Mass Media support, Literature. • Demonstrations.	▪ Social welfare department State Government of Manipur. ▪ Online Pensioner's Helpline State Government of Himachal Pradesh. ▪ E-Shishu State Government of Orissa.	Web portal, CSC, Kiosks, Department counter
2	Issue of Identity Cards to Senior Citizens for availing facilities in hospitals, libraries, buses etc.			
3	Polio correction camps.			
4	Application for hostels for working women, SC/ST and OBC.			
5	Detailed information on women, children, disabled, old aged and informs welfare schemes.			
6	Contact address of respective officer to whom application has to be submitted for scheme benefit.			
7	Information on centrally sponsored schemes i.e. ▪ National social assistance program. ▪ Integrated child development services programs. ▪ Balika Samridhi yojana etc.			
8	Pension amount details for the respective financial year.			
9	Child Tracking system (CTS).			
10	Intervention monitoring & Information system (IMIS)			

In the above table ten major citizen centric services are recognized from the department of Social Welfare, which is delivered to citizen through state web portal, the web portal is based on wider dissemination model only information is provided through the web portal and is linked with state web portal. Most of the web pages are under construction stage. Site was prepared in year 2008

6.1.19 Department of Transport

Table 6-19 showing the Key Services of department of Transport, existing IT solutions & other Indian state's existing IT solutions

Department of Transport Key Services		Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Issue and renewal of learner's license under the Motor Vehicles Act.	Static web portal. ■ Vahan sarathi ■ (driving license with biometrics).	■ Online CFST State Government of Andhra Pradesh. ■ ITIMS State Government of Orissa. Smart Card State Government of West-Bengal. ■ Transport Services State Government of Mizoram.	Web portal,CSC, Kiosks, Department counter
2	Issue and renewal of fresh/duplicate driving license under the Motor Vehicles Act.			
3	Reservation of Registration numbers under the Motor Vehicles Act.			
4	Issue and renewal of new/duplicate registration certificates of vehicles under the Motor Vehicles Act.			
5	Registration certificates of vehicles under the Motor Vehicles Act.			
6	Transfer of ownership under the Motor Vehicles Act.			
7	Change of address of registered owner (home / other state) under the Motor Vehicles Act.			
8	Noting hire purchase agreements under the Motor Vehicles Act.			
9	Termination of hire purchase agreements under the Motor Vehicles Act.			
10	Issue of fresh registration certificates in the name of the financier under the Motor Vehicles Act.			
11	.Receiving and accounting of Challans written against any vehicle by the executive staff of the office under the Motor Vehicles Act.			

In the above table eleven major citizen centric services are recognized from the department of Transport, which is delivered to citizen through state web portal, the web portal is based on interactive service model only information is provided through the web portal and is linked with state web portal. Most of the web pages are under construction stage. Site was prepared in year 2008

6.1.20 Department of Tourism

Table 6-20 showing the Key Services of department of Tourism, existing IT solutions & other Indian state's existing IT solutions

	Department of Transport Key Services	Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Online booking facilities for accommodations and transportation.	Static web portal.	▪ Tourism department of union territory of Goa.	Web portal,CSC, Kiosks, Department counter
2	Collect, compile, store, retrieve and disseminate information relevant to tourism and commerce.			
3	Provide back-up information to all staff about meetings, press conferences, press releases etc.			
4	Maintain the Department's library task which includes compiled lists of upcoming development projects, airport passenger statistics, visa statistics and etc.			
5	Transfer and posting of employees			
6	Formulation and updating of the Tourism Master Plan, effective implementation, evaluation of the performance of the Tourism Master Plan.			
7	Co-ordination with the private sector and other government institutions for developing and conceptualizing new products and investment opportunities designed to enhance tourist sites and facilities.			
8	Supervises the overseas field offices established to implement and enhance the tourism development and promotion program.			
9	Approve and monitor associated bodies like- ▪ Approved travel agents ▪ Approved inbound tour operators. ▪ Approved Tourist Transport Operators ▪ Approved Domestic Tour Operators ▪ Approved Hotels			

6.1.21 Department of Water Resources

Table 6-21 showing the Key Services of department of Water Resources, existing IT solutions & other Indian state's existing IT solutions

Department of Water Resources Key Services		Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	On-going projects development and requirements info requirements info.	Static web portal. Functions, Achievement & Program, Inter-State Issues, Water Level of Reservoir, River Basins etc.	E-City (AMC) State Government of Gujarat	Web portal,CSC, Kiosks, Department counter
2	Rainfall and floods information.			
3	Department is responsible to collect, process, store and disseminate water resources data.			
4	Identification and dissimilation of ■ Flood affected areas ■ Flood prone areas ■ Drought prone areas ■ Status of irrigation in drought prone area			
5	Manage monitor deferent sectors under this department. ■ Command Area Development and Water Management Program ■ Major & Medium Irrigation Sector ■ Flood Control Sector			

In the above table five major citizen centric services are recognized from the department of Water Resource, which is delivered to citizen through state web portal, the web portal is based on wider dissemination model only information is provided through the web portal and is linked with state web portal. Most of the web pages are under construction stage. Site was prepared in year 2008 many sections are not updated since.

6.1.22 Department of Police

Table 6-22 showing the Key Services of department of Police, existing IT solutions & other Indian state's existing IT solutions

	Department of Police Key Services	Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Verification of domestic servants, tenants, job seekers etc.	Static web portal used for- ‧ Mass Media support, Literature.	■ HP Police web portal State Government of Himachal Pradesh.	Web portal,CSC, Kiosks, Department counter
2	Information on missing persons / dead bodies under Criminal Procedure Act.			
3	Application for new/ renewal of arms license.		■ Rajasthan Police State Government of ‧ Rajasthan.	
4	Status of applications /requests for various services.			
5	Issue of an FIR (First Information Report) under the Criminal Procedure Code.			
6	Status of police verification for Passport			
7	Online traffic challan payment.		■ Kolkata Police Intranet State Government of West-Bengal.	
8	Online criminal gazette.			
9	Status of applications can be seen by district wise.			

In the above table nine major citizen centric services are recognized from the department of Labour Resource, which is delivered to citizen through state web portal, the web portal is based on wider dissemination model only information is provided through the web portal and is linked with state web portal. Most of the web pages are under construction stage. Site was prepared in year 2008.

6.1.23 Municipal Corporations

Table 6-23 showing the Key Services of department of Municipal Corporations, existing IT solutions & other Indian state's existing IT solutions

	Municipal Corporations Key Services	Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	House Tax Assessment, Billing and Collection.	Static web portal used for- • Mass Media support, Literature. • MUDRA (revenue administration of municipal corporation)	• SMART Nagarpalika, Hyderabad in Andhra Pradesh • Kolakata Municipal Corporation e-governance prctice	Web portal,CSC, Kiosks, Department counter
2	Maintain records of Land & property.			
3	Issue of Birth Certificates.			
4	Issue of Death Certificates.			
5	Registration & Attorneys of properties.			
6	Review and approval authority for site plans			
7	Review and approval authority for special permits (optional			
8	Review and approval authority for use variances			

In the above table eight major citizen centric services are recognized from the department of Municipal Corporation, which is delivered to citizen through state web portal, the web portal is based on wider dissemination model only information is .provided through the web portal and is linked with state web portal. Municipal Corporation as a department of local government is enabled to incorporate reform by its own but in the state only two Municipal Corporation provides the e-governance service Most of the web pages are under construction stage.

6.1.24 Department of Law

Table 6-24 showing the Key Services of department of Law, existing IT solutions & other Indian state's existing IT solutions

Department of Law Key Services		Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	The drafting of official Bills and Ordinances is undertaken by the Department in accordance with the instructions of the Department to which the subject matter of the legislation relates.	■ Static web portal. ■ ISHPAT (Integrated Software for High Court Patna).	■ High Court Judgment and orders State Government of Madhya Pradesh.	Web portal,CSC, Kiosks, Department counter
2	Legislative measures to codify and consolidate existing enactments and legislation of a formal character such as repealing and amending Bills etc.	■ Online Computerized Filing System. ■ Cause List Information's Management System (CLIMS).	■ Online High Court Judgment State Government of Manipur. ■ VIDHAN Magistracy Case	
3	Initiation of proposals for legislation in regard to personal laws or any other matter of a general nature not pertaining to any other departments.			
4	Appointment and re-appointment of notaries, verification of annual returns of notaries, preparation of yearly notaries list.	■ Court Room Management Information System (CRMIS). ■ Payroll	Management System State Government of Assam.	
5	Whenever any department of the Secretariat proposes: ■ to issue a statutory rule, notification or order; or ■ to sanction under a statutory power the issue of any rules, bye-law, notification or order by a subordinate authority ■ to submit to the Central Government any draft, statutory rule, notification or order	Software for selected sections at Patna High Court.		
6	Automates the process of taking-up magistracy cases by the magistracy branch of district magistrate's office.			
7	Facilitates online query of case-status and generation of various reports.			

In the above table seven major citizen centric services are recognized from the department of Law, which is delivered to citizen through state web portal, the web portal is based on wider dissemination model only information is provided through the web portal and is linked with state web portal. Most of the web pages are under construction stage.

6.1.25 Panchayati Raj Department

Table 6-25 showing the Key Services of department of Panchayati Raj , existing IT solutions & other Indian state's existing IT solutions

	Department of Panchayat Raj Key Services	Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Issue of Birth/Death certificate		Samanya	Web portal,CSC,
2	Application for inclusion of name in Voter list.	Static web portal used for-	Mahiti State	Kiosks,
3	Conducting various welfare schemes for the poor and needy sections of the society.	▪ Mass Media support, Literature. ▪ Demonstrations.	Government of Karnataka E-Gram Viswa Gram Project	Department counter
4	Execution, Supervision and Monitoring of different rural development schemes.		State Government of	
5	Preparing district wise planning, implementing those plan, and review for success.		Gujarat	
6	To provide wage employment to the needy from amongst the poorest section of the rural society.			
7	Taking new innovative projects for building community assets, strengthening the existing occupational strategies of the poor farmers and cultivators.			
8	Monitoring some of the important schemes and programs. ▪ Rural wage employment programs. ▪ Self-employment program. ▪ Rural energy programs. ▪ Rural communication (roads). ▪ Rural water supply and sanitation.			

6.1.26 Treasury

Table 6-26 showing the Key Services of department of Treasury , existing IT solutions & other Indian state's existing IT solutions

Treasury Key Services		Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Maintenance of banking accounts of local bodies and non-governmental institutions.	Static web portal ▪ E-khajana (treasury revenue & accounting system).	Koshwani State Government of Uttar Pradesh	Web portal, CSC, Kiosks, Department counter
2	Reconciliation of departmental transactions.			
3	Payments to banks against the payment to pensioners.			
4	Payments of claims against Government on Bills / Cheques.			
5	Receipts from the public and departments for credit to Govt. through banks.			
6	Monitoring of disbursement of Pension through the bank			
7	Payment of bills a. Receiving claims from Drawing and Disbursing Officers. b. Scrutiny of claims as per (databases maintained in the computer) Punjab Treasury Rules, Financial Rules and other relevant rules. c. On-line generation / issuance of cheques.			
8	Receipts a. Entry of credit scroll received from Banks against challans deposited. b. Refund of Revenue as per advice issued by Competent Authority.			
9	Account Preparation a. Preparation of Receipt and Payment Accounts up to detailed Head of Accounts. b. Incorporation of Sub-Treasury accounts in Treasury accounts. c. Submission of accounts to AGPB. d. Providing a monthly			

In the above table nine major citizen centric services are identified from the department of treasury, which is delivered to citizen through state web portal, the web portal is interactive in terms of information but the model adopted is interactive model .Static Web Portals are available for dissemination of information, while for E-Khazana was introduced for internal functions of the Treasury, for revenue & accounting.

6.1.27 Department of Information & Public Relation

Table 6-27 showing the Key Services of department of Information & Public Relation , existing IT solutions & other Indian state's existing IT solutions

Department of Information & Public Relation Key Services	Existing IT Solutions	Other Indian State's Existing IT Solutions	Delivery Channel in other state
1	Receiving enquiries for Information under RTI Act	Static web portal ■ Jankari Phone based RTI support system	Prajavani (AP) State Government of Andhra Pradesh	Web portal,CSC, Kiosks, Department counter
2	Application Drafting under the RTI Act.			
3	Sorting of Application filled based on department concerned.			
4	Forwarding the RTI Application filled by applicant to the concerned department.			
5	Filling appeal ■ Filling first appeal against appellate authorities under RTI Act. ■ Filling second appeal against appellate authorities under RTI Act.			
6	The information received at the call centre is used for the redressal of public grievances			
7	Overcome Linguistics variations for filling Application under RTI Act by the Facilitation Center.			
8	Overcome differences in local culture for filling Application under RTI Act.			

In the above table eight major citizen centric services are identified from the department of Information & Public Relation, which is delivered to citizen through state web portal, the web portal is interactive in terms of information but the model adopted is interactive model .

The state delivers one of the most innovative services through the project Jaankari, a Phone based RTI support System any person illiterate, literate, from any place can file the RTI at any time as it is call centre based service showed a high popularity and success . .

E-Governance is now mainly seen as a key element of the country's governance and administrative reform itinerary. Recognizing that e-Governance is playing an increasingly important role in modern Governance, various agencies of the Government and civil society organizations have taken a large number of initiatives across the country. In the context of Bihar state government many successful e-governance initiative were implemented and recognized nationally. More over this paper is to take district level governance one step ahead on the road of complete e-governance of the district identifying various opportunities of minimizing the gap between legislative government and the common man of the district of Bihar state. Here focus is given on 28 public interfacing departments of the state and tried to map between current eminences of e-governance to its future opportunities and consequences. However, implementing the e-Governance agenda needs to be seen in the context of the federal structure of the States, State and Local Bodies/Authorities and its e-readiness. To follow an Integrated and Holistic Approach towards implementing e-Governance Solutions the government must have a multi-year, multi-service, long-term, outcome based IT Service Engagement to ensure that government derives maximum benefits from e-governance initiatives and suggested to use sustainable PPP models to bring private sector investments and expertise into the e-governance domain. And for the successful e- E-governance we have to find out and understand real difficulties of people of Bihar state By technical and demographical survey across the district with a potential questionnaires and Cognitive analysis of the database of survey only can give us the right track to move forward and to achieve a conclusion

The above study and analysis shows that e-governance in the state is highly centralized, that is the reason service penetration among the people is very low, digital divide is quite evident in the system, in this study efforts would be to explore the possibilities of reform in the local government level and gauge the level of readiness for reform of the a local government.

This study will certainly pave the way for implementation of ICT based reform as a tool for small & Medium towns in which local governance are generally in malaise condition.

Chapter-7 · BHAGALPUR MUNICIPAL AREA AS STUDY AREA

Urban local bodies in India are the primary delivery mechanism for providing services to urban citizens in the areas of public health, education, tax collection, services & utilities like power, water, telecommunications, sanitation, solid waste disposal, land development, transportation, housing development and many other essential services[14] For the application ICTs local municipalities are a luxuriant ground. They are at the front lines of government in their service-oriented interaction with the public and business, often in transaction based systems with many, interlinked components. As such, municipalities have considerable potential to assist in the process of integration of ICTs into the daily lives of its citizens. Municipal operations from an Information Technology viewpoint can be divided into three areas

1) Internal

2) Intergovernmental, and

3) External (public interface).

The study of Municipal Corporation of Bhagalpur is conducted by considering all the above perspective especially Internal by assessing e-Readiness in the department and external by Need assessment Survey among the citizen with the sample survey with scientifically and technically designed questionnaires

7.1 Aim of study

The aim for implementing e-Governance in Bhagalpur Municipal Corporation (BMC) is to:

- Emphasis on noticeably recognized citizen services that would be covered with clearly laid down service levels and outcomes to be attained.

- Mend efficiency and effectiveness in interaction between local government and its citizens and other stakeholders

- Improve eminence of internal local government operations and management information systems to support and encourage good governance

7.2 Objective

The key objectives of the e-Governance initiative are to:

- Deliver single window system for delivery of services and information to citizens

- Deliver unified and simplified services to citizens on anytime, anywhere basis

- Devolve service delivery and develop accessibility of information to citizens

- Re-engineer processes for excellence in service delivery

- Integrate data and services of various departments with BMC.

- Enhance efficient inter-departmental harmonization and synchronization within the BMC.

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[14] **D. Krishna Sundar & Shashank Garg, M-Governance:A Framework for Indian Urban Local Bodies**

E-Governance is now mainly seen as a key element of the country's governance and administrative reform itinerary. Recognizing that e-Governance is playing an increasingly important role in modern Governance, various agencies of the Government and civil society organizations have taken a large number of initiatives across the country. In the context of Bihar state government many successful e-governance initiative were implemented and recognized nationally. More over this paper is to take district level governance one step ahead on the road of complete e-governance of the district identifying various opportunities of minimizing the gap between legislative government and the common man of the district of Bihar state. Here focus is given on 28 public interfacing departments of the state and tried to map between current eminences of e-governance to its future opportunities and consequences. However, implementing the e-Governance agenda needs to be seen in the context of the federal structure of the States, State and Local Bodies/Authorities and its e-readiness. To follow an Integrated and Holistic Approach towards implementing e-Governance Solutions the government must have a multi-year, multi-service, long-term, outcome based IT Service Engagement to ensure that government derives maximum benefits from e-governance initiatives and suggested to use sustainable PPP models to bring private sector investments and expertise into the e-governance domain. And for the successful e- E-governance we have to find out and understand real difficulties of people of Bihar state By technical and demographical survey across the district with a potential questionnaires and Cognitive analysis of the database of survey only can give us the right track to move forward and to achieve a conclusion

The above study and analysis shows that e-governance in the state is highly centralized, that is the reason service penetration among the people is very low, digital divide is quite evident in the system, in this study efforts would be to explore the possibilities of reform in the local government level and gauge the level of readiness for reform of the a local government .

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Chapter-7   BHAGALPUR MUNICIPAL AREA AS STUDY AREA

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- Devolve service delivery and develop accessibility of information to citizens
- Re-engineer processes for excellence in service delivery
- Integrate data and services of various departments with BMC.
- Enhance efficient inter-departmental harmonization and synchronization within the BMC.

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[14] **D. Krishna Sundar & Shashank Garg, M-Governance:A Framework for Indian Urban Local Bodies**

7.3 Organizational Chart of Bhagalpur Municipal Corporation
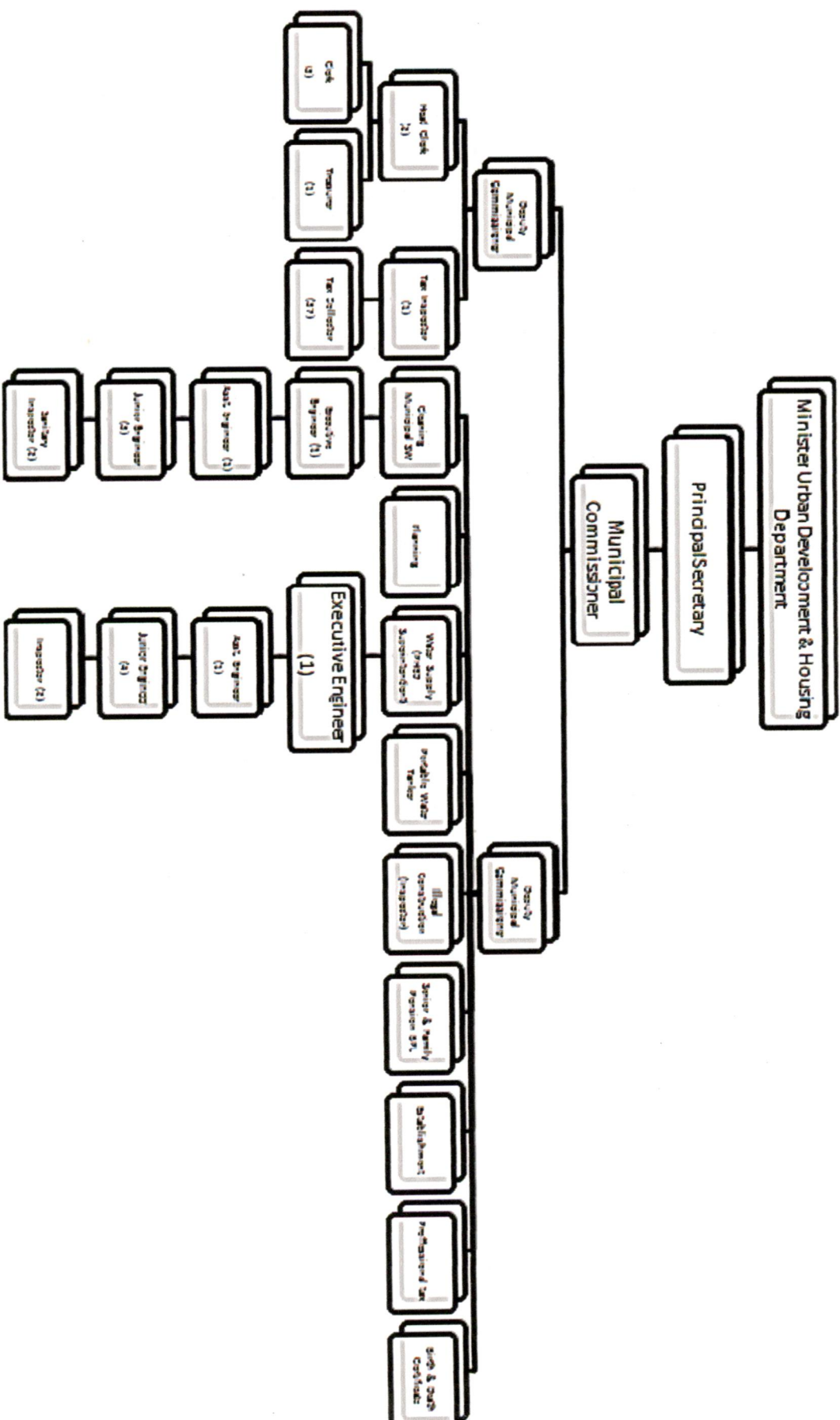
Fig. 7-1 Organizational Chart of Bhagalpur Municipal Corporation.

Other departments under deputy Municipal Commissioner are Municipal Corporation Control Room, Copyrights, Data Entry and Power.

7.4 Study of Internal Operation of Various Sectors of BMC

7.4.1 Citizen Centric Services Assessment

Table 7-1 Number of applications / cases received and disposed by the Bhagalpur Municipal Corporation regarding various municipal services in last three financial years 2008-2011.

Municipal Services	Application/ Cases Received			Application/ Cases Disposed			Total Pending
	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11	
Birth Certificates	429	310	209	411	302	209	26
Death Certificates	137	59	64	129	58	64	9
Building regulation/ Approval of Plan	1229	1310	1543	1210	1249	1498	125
Water Supply New Tap Connection/ Repair etc.	1446	1339	1551	842	769	1075	1650
Drainage & Sewerage	734	831	329	631	540	329	394
Solid Wastes / Cleaning	117	89	74	117	89	74	0
Transport System accessories such as application for street light /furniture etc.	---	69	71	----	53	67	20
Regarding promotion of educational, sports and cultural activities	----	----	43	---	----	43	0
Market & Slaughterhouses	38	47	67	38	47	67	0
Permits	127	294	329	122	234	329	65
Other Citizen Centric Services	--	---	----	---	---	----	----
Total	4257	4348	4280				2289

Source: BMC

7.4.1.1 Issue of Birth/Death Certificate

Above table showing the status of various citizen Centric Services, issue of Birth/ Death certificates are vital services to the citizen, but above table shows 35 pending cases of issue of birth/death certificate, on inquiry it was found that due to some technical problem or inability to provide proper and valid information lead to pending of the issuance.

Above table shows low number of issue of certificate in BMC. Reason of issue of death and birth certificate is less number of registration of birth and death registration due to lack of awareness in citizen which is done in Municipal Hospitals/ by paramedical staffs as shown in above figure (source: BMC)
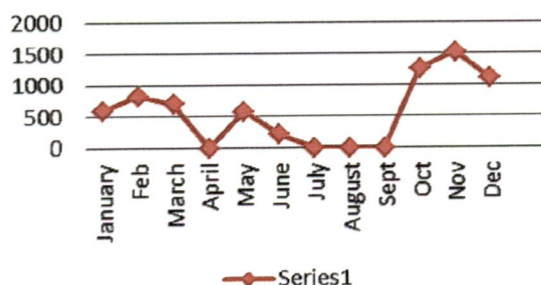
Fig. 7-2 Month Wise Status of Death Registration.
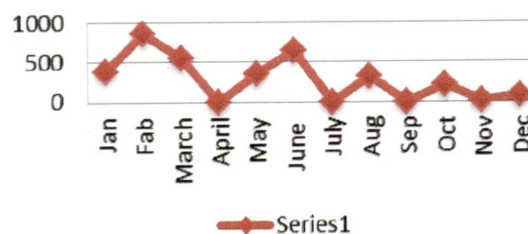
Fig. 7-3 Month Wise Status of Birth Registration

7.4.1.2 Approval of Building Plan

In Bihar, in order to bring pace in construction activity, Architects have got authority of approval of Plan under Bihar Municipal Act, 2007. There are 20 certified Architects[15] empaneled under Bhagalpur Municipal Corporation, None of them have their office in Bhagalpur Municipal Area. List of all certified Architects are mentioned on the website of Department of Urban Development & Housing but due to absence of website of BMC people are less aware and they have to apply in BMC.

7.4.1.2.1 Issues

Absence of BMC website.

Absence of online submission, acceptance and status of application report.

Absence of flow of information from BMC regarding Urban Services.

7.4.1.3 Water Supply

Above table shows a large number of pending cases 1650 regarding new tap connection and repair of pipes etc. This is due to lack of proper infrastructure as mentioned in earlier section & lack of technical staff in the BMC[16]

Bhagalpur City has surface water and ground water based water supply. City receives about 17.1 MLD of piped water from the River Ganga 18 MLD from tube well and 2.25 MLD from hand pumps. 37.35 MLD of supplied covers 18.36 per cent of the town. Current installed storage capacity is 67 per cent of the supply and 7 over head tanks. Per capita water supply is 33 lpcd and supply is for 7 hours a day.

7.4.1.3.1 Salient points of Water Supply in BMC[17]

- Total pipe length of present distribution system is approximately 55 Km in city is laid on the basis of decentralized water supply system covering by single or group of tube wells. Absence of defined zoning in the existing network and surface water is fed in same network.

- The distribution system is of CI pipes, diameter ranging from 100 mm to 300 mm diameter.

- The distribution network is quite timeworn, installed during 1885 to 1970, and it trickles. The network has significant corrosion problem, and require replacement.

- The pressure head at consumer end is about 1-5 m head. Water supply is around 4-6 hours per day.

7.4.1.3.2 Service Coverage in Bhagalpur City

Municipal water reaches to almost 81 percent of city population while others depend on private tube wells.

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[15] Source : Website Bihar Urban Development & Housing Department
[16] As told by Municipal Commissioner
[17] Source: Bhagalpur Municipal Corporation

7.4.1.3.3 Household Connection in Bhagalpur City

Out of the 64067 households, 52071 households are connected to municipal water supply and household connections are not metered.

7.4.1.3.4 System Leakage and UFW[18] in Bhagalpur City

UFW = (a) Actual losses (from transmission mains, storage facilities, distribution mains, connections), (b) Apparent losses (unauthorized connections, water theft, metering inaccuracy), (c) unbilled authorized consumption. Actual loss in the system leakage is 25 per cent as reported by BMC.

Unauthorized connections + water theft = 15 per cent approx.

UFW = 25+15= 40 per cent

7.4.1.3.5 Water Supply Service Level in Bhagalpur City

The service level is much below the desired level, against the per capita supply of 135 lpcd, the present service level is 38 lpcd. The quality of water at the monsoon end is reported to be turbid. As stated earlier municipal water supply serves about 81% of the population and supply is limited to 4-6 hours per day.

7.4.1.3.6 Operation and Maintenance

BMC does not keep the details of the annual Operation & Maintenance costs separately for water supply. BMC maintains the accounts of all municipal services together.

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[18] Unaccounted for water

Map 7-1 Water Infrastructure of Bhagalpur Municipal Corporation

Water Infrastructure

- Main Transmission Line
- Newly Installed Tubewell
- Water Treatment Plant
- Overhead Tank
- Intake Well

Legend

- National Highway
- State Highway
- Major Road
- Other Internal Road
- Rail
- Municipal Boundary
- Tehsil Boundary
- Ward Boundary
- Waterbody

Champa Nala

To Sultanganj

To Sultanganj

To Amarpur

Bhagwan Mahavir Path

Upper Champa Nagar Path

SH 25

To Banka

SH 19

To Banka

SH 20

To Rajauli

Raja Ram Mohan Path

Surya Mohan Prakash Path

Bose Road

Subash Chandra NH 80

To Khalgaon

To Khalgaon

To Naugachia

To Naugachia

R. Ganga

Nathnagar

Sabour

Goradih

Jandisbaur

N

0   0.5   1   2 KM

7.4.1.4   Municipal Solid Waste Management

Quality of life of the citizens of a city largely depends upon the Municipal Solid waste management of the Urban Local Bodies. Solid Waste management is one of the vital services provided by the Municipalities.

7.4.1.4.1   Solid Waste generation:

Bhagalpur generates about 225 tonnes of waste daily of which 87 per cent (196 tonnes) is collected. BMC had introduced door to door collection and transportation, road sweeping and drain cleaning through a private operator in 10 wards of the town in the year 2010. BMC has limited equipment at present for solid waste management – 12 tractors, 1 JCB, 1 road roller and 220 hand carts only. Treatment of garbage before disposal is not done but BMC is planning for establishment of a plant, which can generate electricity from garbage.

7.4.1.4.2   Issues with Solid waste Management

- Lack of segregation practices is available neither at source nor at collection or disposal level.
- Absence of house-to-house collection system.
- Poor collection at the overall town level.
- Absence of organized/scientifically managed dumping yards, thereby resulting in open and adhoc dumping by the municipal team.

7.4.1.5   Sewerage & Sanitation

Bhagalpur City generates 44.29MLD waste water and has only one treatment plant with an installed capacity of 11 MLD. Only 4 MLD of waste water is collected and treated, the rest is discharged into the River Ganga without treatment. In Bhagalpur City 75 per cent households have individual toilets with septic tanks and soak pits, 20 per cent households practice open defecation and 5 per cent use dry toilets. The City has 26 community toilets of 10 seats each but all are poorly maintained and has merely 20 per cent of sewage network services. Bhagalpur is beneficiary of World Bank supported sewerage and sanitation programme, the National Ganga River Basin Authority project, due its location on River Ganga.

7.4.1.6   Storm Water Drainage

The total drainage network in BMC area covers 162kms out of which 112kms drains are pucca open drains and 50kms are kutcha open drains. Drains are on one side of the road hence it may be accounted half. The present drainage system is highly choked by undiscerning garbage dumping and silting. All discharge from the drains is disposed directly into the River Ganga. The storm water drains carry waste water from households as well.

Above table shows 394 pending application regarding Sewerage and drainage, this is due to lack of proper infrastructure and lack of staffs at different levels.

Map 7-2 Sewerage Infrastructure of Bhagalpur City

Legend

National Highway
State Highway
Major Road
Other Internal Road
Rail

Tehsil Boundary
Municipal Boundary
Ward Boundary
Waterbody

Sewerage Infrastructure

Proposed Sewerage
Treatment Plant
Sewerage Pumping Station
Sewerage Treatment Plant

Champa Nala

To Amarpur
To Sultanganj
To Sultanganj

Bhagwan Mahavir Path

Upper Champa Nagal Path

Saheb Ganj

SH 25
To Banka

SH 19
To Banka

To Rajnaui

Naya Bazar

C.M.S.

Kolla Ghat

Raja Ram
Mohan Path

Maharaja Ghat

Surya Mohan Prakash Path

Subash Chandra
Bose Road

NH 80

To Khalgaon

To Khalgaon

To Naugachia
To Naugachia

R. Ganga

Natnagar

Sabour

Goradih

0   0.5   1   2 Km

7.4.2 Assessment of E-Readiness in the Bhagalpur Municipal Corporation

A survey was conducted among the ten staff of BMC of the BMC on the base of questionnaire **(Annexure-III)**, in order to access the e-readiness in the BMC. Survey was conducted among only the staff at clerical level and above among fifteen responder staffs of BMC.

7.4.2.1 Age

Table 7-2 showing age of the staff of BMC

Age	18-35	36-50	51-65
Nos. of staff	3	6	6
Percentage of staff	20	40	40

Above table shows the different age group of staff working at BMC, shows 3 staff are between age 18 to 35 which is 20 per cent of sample size, 6 staff have age 36 to 50 which are 40 per cent of the sample size and another 6 having age between 51 to 65 which is 40 per cent of total staff surveyed.

Above table and analysis reveals that 80 per cent of staff are more than 35 years of age, in which 40 per cent are more than 50 years of age, the staffing pattern suggests more aged staff, as aged staff are less flexible towards new technological change, the staffing pattern should be taken in account in designing capacity building programme.
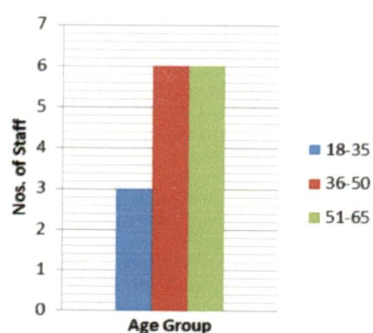
Fig. 7-4 Nos. of Staff among various age group in BMC.
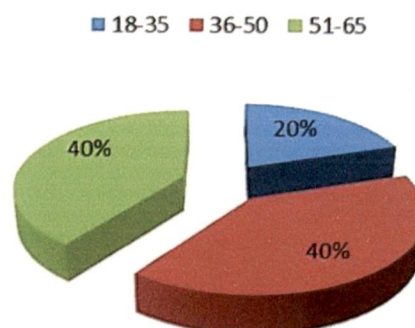
Fig. 7-5 Percentage of staff among various age group.

Above table and analysis reveals that 80 per cent of staff are more than 35 years of age, in which 40 per cent are more than 50 years of age, the staffing pattern suggests more aged staff, as aged staff are less flexible towards new technological change, the staffing pattern should be taken in account in designing capacity building programme.

7.4.2.2 Sex

Table 7-3 showing sex wise numbers of staff

Sex	Nos. of staff	Per cent
Male	12	80
Female	3	20

Above table represents number of male and female staff in the BMC, 12 male staff which is 80 per cent of total sample size, 3 are female staffs which is 20 per cent of total surveyed staff.
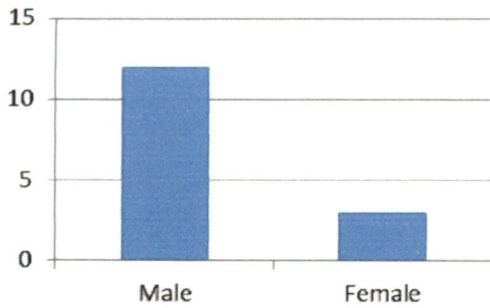
Fig. 7-6 Male & Female staff in BMC.
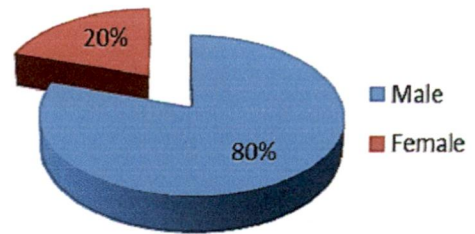
Fig.7-7 Percentage of female staff

Above analysis shows low sex ratio among staff i.e. 4:1 in the BMC

7.4.2.3   Education among the staff

Table 7-4 showing education among the staffs

Education	No. of staff	Percent
High School	0	0
Intermediate	4	26.67
Diploma	1	6.66
Graduate or more	10	66.67

Above table shows the education qualification among staff, which shows 4 are educated to intermediate level which is 26.67 per cent, one which is 6.66 per cent of total sample size are diploma, and rest 66.67 per cent are graduate or more educated.
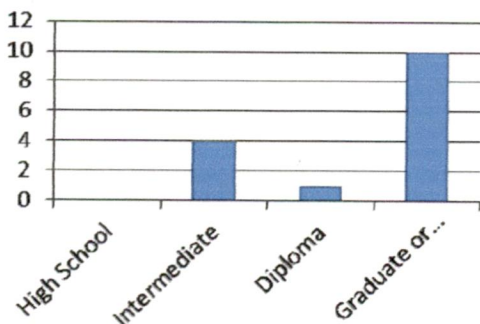
Fig. 7-8 Education among the staffs.
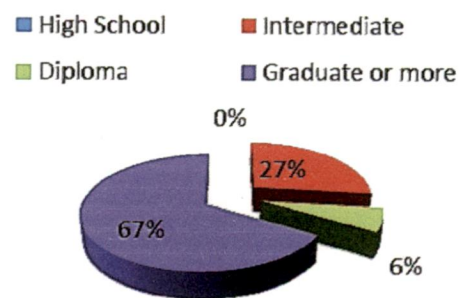
Fig. 7-9 Percentage of staff in different category

7.4.2.4   Knowledge of E-governance among staff

Each and every staff of the BMC have the knowledge of e-governance directly or indirectly, by the other term such as computerization or automation, investigator illustrated the term e-governance before go for question.

7.4.2.5 Source of Knowledge of E-governance among staff

Table 7-5 Shows source of knowledge among the staff

Source of Knowledge	Nos. of staff
Colleague	2
Television	0
Newspaper	2
Trainings	11

Above table shows source of knowledge of e-governance service 2 staff get the knowledge about e-governance service from their colleague, two staff from the newspaper and remaining 11 from the training.
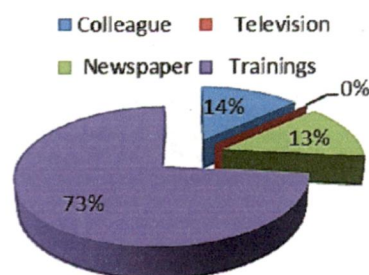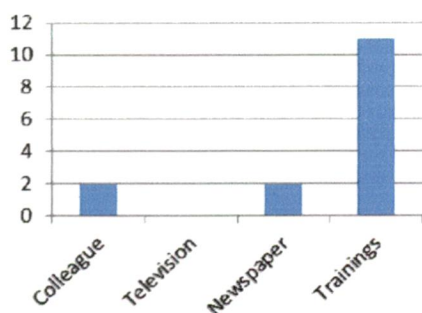
Fig. 7-9 Source of knowledge among the staff.   **Fig. 7-10 Percentage of staff & knowledge among staff**

Above analysis dhows a positive trend among staff about updating their knowledge, this trend should be taken into account for designing for capacity building.

7.4.2.6 Participation in Training/ workshop

Table 7-6 showing number of staff attaining the training/ workshop

Participation in Training	Nos. of respondent
Yes	13
No	2

Above table shows that 13 staff out of 15 have attained training/ workshop regarding IT education of the staffs, which is 86.67 per cent of number of total staff surveyed in the BMC

7.4.2.7 Types of training done by the staff

Table 7-7 showing the training/workshop attained by the staff

Training Type	Nos. of staffs
Private Training	0
Department facility	0

State recommended training	13
DIT	0
None	2

Above table shows that all the 13 staffs have attained the state recommended training /workshop regarding different skill development in IT, while remaining two has not attained any seminar/ workshop. Above discussion shows that on the state level government is taking much initiative to make staff & Citizen IT enabled but these efforts are lagging at the lower level of departments, in the district level.

7.4.2.8   Preferences of Staff Computer Vs Manual

Table 7-8 showing the preference of staffs

Preference	Number of staff	Percentage
Computer	9	60
Manual	6	40

Above table shows, 9 staffs 60 per cent of sample size preferred to work with computer as they felt comfortable with computer rather than manual, while the other 40 per cent preferred to work manually as they found computer more complicated suggests a favourable trend for e-governance in the department.
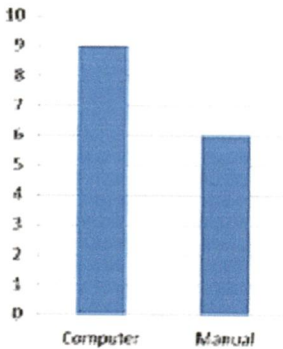
Fig. 7-10 Preferences of Staff
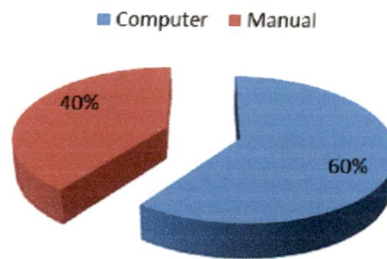
Fig. 7-11 Percentage of staffs preferring Computer Vs Manual

7.4.2.9   Level of IT skill among the staff member

Table 7-9 showing the level of IT among staff in BMC

Level of IT Skill among Staff	Nos. of staff	Percentage
e-mail, internet	7	46.67
Word processing	6	40
Advance level software/Hardware	0	0
Maintain web portals	0	0
None	2	13.33

Above table shows level of IT skills among the staffs of BMC, in which 7 staffs can do regular work on e-mail, internet searches, uploading and downloading which constitutes 46.67 per cent of total sample size while, 6 staff which are 40 per cent of total sample size can work with software of word processing while another 2 staff, which are 13.33 per cent of total sample size have no IT skill.
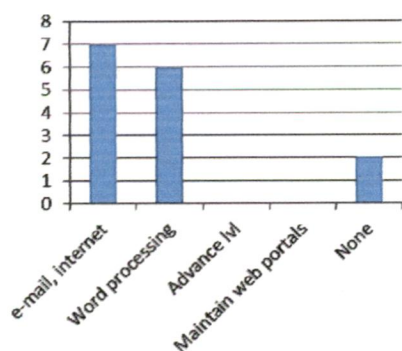
Fig. 7-12 Percentage of Staffs with IT skills.
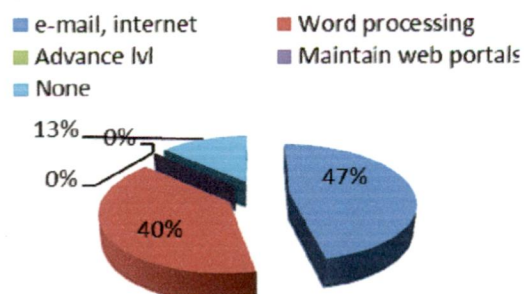
Fig. 7-13 Level of IT Skills among staffs.

7.4.2.10   IT penetration Ratio in the BMC

$$\text{IT penetration Ratio} = \frac{\text{Total Number of Computers in the department}}{\text{Total numbers of employees' clerk \& above}}$$

Total numbers of computers in the department are 8 only. Total numbers of employees clerk & above in the department are 32 **IT penetration in the department is 0.25 only.** This suggests very low level of IT penetration in the BMC.

7.4.3   Financial position of the Bhagalpur Municipal Corporation

7.4.3.1   Revenue Receipts from various sources

Income from Tax Sources (In Rs. Lakhs)		
Source	5 years Average (FY 2005-06 to FY 2009-10)	Percentage to Total Revenue Income
Property tax	84.71	8.60
Water tax	67.76	6.90
Latrine tax	67.76	6.90
Education Tax	42.36	4.30
Health Tax	42.36	4.30
Professional Tax	5.27	0.50
Other Taxes	2.49	0.20
Total Tax Income	**312.71**	**31.80**
		Income from Non-tax source
Income from properties	30.52	3.00
Other Income	37.05	3.10
Miscellaneous	3.95	0.40
Total Non-Tax Income	71.52	6.50

Table 7-10 Revenue Receipts from various sources of BMC

7.4.4 Revenue Expenditure on various services

Table 7-11 Revenue Expenditure on various services of Bhagalpur Municipal Corporation

Revenue Expenditure (In Rs. Lakhs)		
Items	5 years Average (FY 2005-06 to FY 2009-10)	Percentage to Total Revenue Income
Establishment	726.83	76.60
Operation and Maintenance	275.53	22.90
Debt Servicing	10.00	0.50
Total Tax Income	1012.36	100
Capital Expenditure (In Rs. Lakhs)		
Construction Works and PWD	41.92	21.54
Water Supply	4.27	4.90
Street Lighting/ Electricity	3.26	3.45
Others	85.97	70.11
Total Non-Tax Income	135.42	100

7.4.4.1 Key Parameters of financial position

Table 7-12 Key Parameters of financial position of Bhagalpur Municipal Corporation

Indicators	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	Average
Per Capita Revenue Income	Rs.141.02	Rs 169.26	Rs.218.86	Rs.293.21	Rs.453.59	Rs.255.19
Per Capita Revenue Expenditure	Rs.183.18	Rs.122.12	Rs.138.39	Rs.198.85	Rs.612.55	Rs.251.02
Income Generated Internally (per cent)	50	38	40	20	43	38
Dependency on Grants (per cent)	50	44	47	72	44	52
Operating Ratio (Revenue Expenditure/ Revenue Income)	1.30	0.72	0.63	0.68	1.35	0.90
Capital Utilization Ratio	0.7	0.9	0.0	0.5	55.7	11.60
Establishment Cost as per cent of revenue Expenditure	50	87	90	91	65	77
Establishment Cost as per cent of Revenue Income	65	63	57	62	88	67

The Bhagalpur Municipal Corporation has shown an increase in income from Rs. 830.65 lakhs in 2005-06 to Rs. 1372.95 lakhs in 2008-09. The total expenditure too has been increasing – from Rs. 934.67 lakhs in 2005-06 to Rs. 891.90 lakhs in 2008-09. Grants and subsidies comprise 62 per cent of the total revenue income. The 5-year average contribution of property tax to municipal income was 8.60 per cent. Establishment accounted for an average 77 per cent of the revenue expenditure in the last 5 years.

Key Findings:

The key findings in municipal finance identified are:

- Revenue income registered a 34.50 per cent growth with an increment of Rs. 160.38 per capita from the Financial Year 2008-09 to 2009-10.
- 38.29 per cent is average increase in contribution of 'own sources' to total income
- High dependency on grants and subsidies – 62per cent.
- **Property tax contribution to the municipal income was 8.60 per cent** *despite poor collection ratio of property tax – 25.94 per cent,* **suggests a good potential in future earning of BMC.**
- **Annual net income of BMC in the Financial Year 2008-09 was 481.05 lakhs, which was in a net loss of 104.02 lakhs in year 2005-06 .**

The Bhagalpur Municipal Corporation has total income of Rs. 1372.95 lakhs in 2008-09. The total expenditure too has been Rs. 891.90 lakhs in 2008-09.

Table 7-13 Showing Net Income from various sources to BMC

Total Income from Tax and Non-tax sources	Rs. 1372.95 lakhs
Total Expenditure in Establishments, Operation and Maintenance	Rs. 891.90 lakhs
Net Income	Rs. 481 lakhs
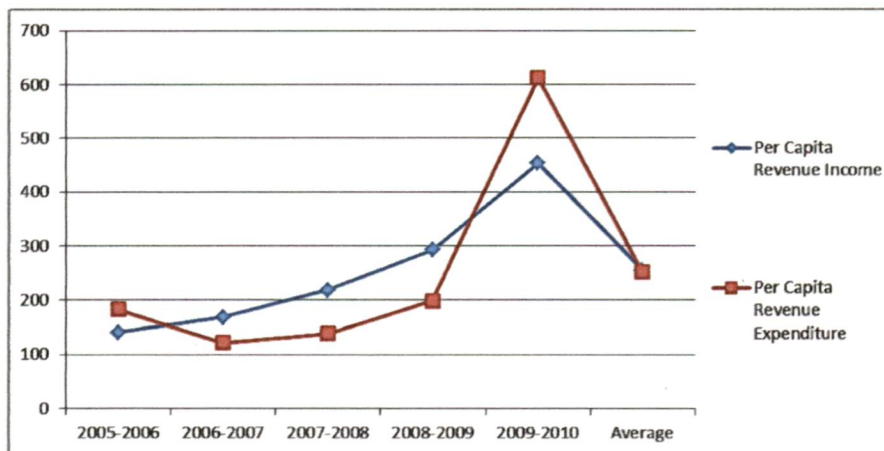
Fig. 7-12 Showing Per Capita Revenue Income Vs Per Capita Expenditure of five consecutive Financial Year

7.5 Overall Assessment of Internal operation of various Sectors of BMC[19]

Table 7-14 Overall Assessment of BMC on various parameters

S.No.	Parameter	Indicators	Category	Colour Code for status
1	Status of Infrastructure and Service Delivery Levels	Coverage of water Supply	11 to 30 %	⬛
		Per Capita Availability of Water	Less than 40 lpcd	🟥
		Continuity of Water Supply	Above 4 hrs	🟩
		Coverage of Individual Toilets	Above 60 %	🟩
		Door to Door Collection of SWM	21 to 40 %	⬛
		Collection Efficiency of Solid Waste	Above 70 %	🟩
2	Financial Management	Operating Ratio	Less than 1	🟥
		Growth in Revenue Income	Above 15 %	🟩
3	Poverty Level	% of Poverty Line (BPL) Population	21 to 40%	⬛
4	Organization Structure	Staffing pattern, availability of sufficient staff, competency level of existing staff for implementing proposed projects	Observation Based	⬛
5	Leadership	Leadership quality, awareness and understanding regarding urban sector, proactive approach for implementing reform measures	Observation Based	⬛
6	Economic Development Potential	Potential for Development, linkages to the state capital and other cities, status of existing infrastructure	Observation Based	🟩
7	Environment Sustainability	Status of Environment, quality of water, air	Observation Based	🟦
8	Participation	Level of Participation from Citizen/Citizen Forums/Welfare Association in municipal affairs	Observation Based	⬛
9	Compliance with Reforms	Status of reform implementation and preparedness for implementation	Consultant's Analysis	⬛

Alarming	Average	Below Average	Good
🟥	🟦	⬛	🟩
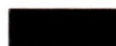
Overall assessment of existing Service delivery levels on various indicators. It is observed that in Bhagalpur town most of the service levels are Good and Below Average.

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[19] Bhagalpur Municipal Corporation

7.6 Study & Assessment of External (Public) perspective of Services at BMC

To assess the public (need) interface of Bhagalpur Municipal Corporation in terms of public delivery of service a Need Assessment Survey was conducted by the investigator among the people of BMC in different wards randomly with the sample size of 90 and questionnaire (annexure-II) designed by the investigator as per need and demand of study.

7.6.1 Introduction

7.6.1.1 Age

Table 7-15 Number of Respondent according to their age

Age	18-35	36-50	51-65	66-80
No.of Respondent	31	33	20	6
Percentage of Respondent	34.44	36.66	22.22	6.67

The above table shows that number of respondent between 18 to 35 was 31 and respondent between 36 to 50 was 33 and respondent between 51-65 was 20 . Survey was conducted between the major working populations of BMC as number of respondent between 18-50 years of age are 71 per cent this certainly give the clear picture of BMC in terms of public delivery services.
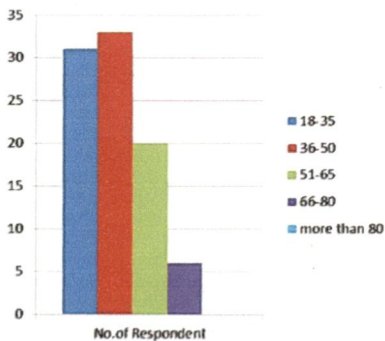
Fig. 7-13 Number of Responder as per age.
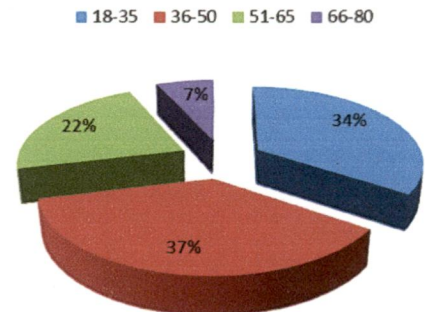
Fig. 7-14 Percentage of Responder as per their age.

7.6.1.2 Participation of Women

Table 7-16 Participation of Female in the Need Assessment Survey

Sex	No. Respondent	Per cent
Male	74	82
Female	16	18

Above table shows the number of female respondent are 16 and male respondent 74 with participation of 82 per cent of male and 18 per cent of female. The participation of women plays a major role in any planning especially in ULBs.

115
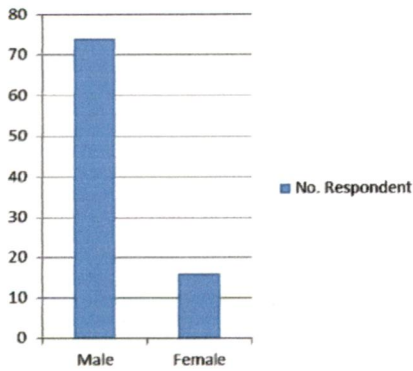
Fig. 7-15 Women Participation in Survey
Survey
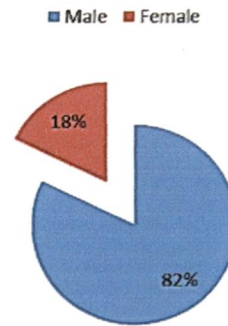
Fig. 7-16Percentage Participation of Women in

7.6.1.3 Educational background

Table 7-17 Participation of people with educational background Need Assessment Survey

Education	Nos. of respondent
Illiterate	1
Primary	1
High School	6
Intermediate	10
Diploma	13
Graduate or more	59

Above table shows the education qualification of responders, which has graduate with highest number of 59 constitute 66 per cent of the sample size 13 are diploma constitute 14 per cent of total sample size 10 are intermediate which constitute 11 per cent of sample size and one illiterate and one respondent was qualified to only primary level.
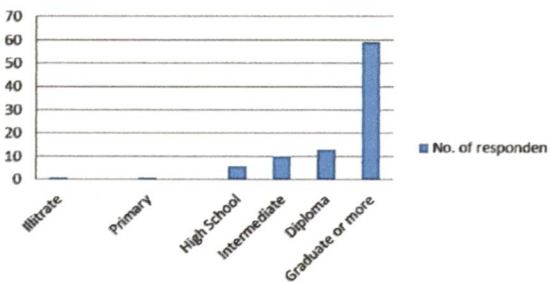
Fig. 7-17 People with educational background
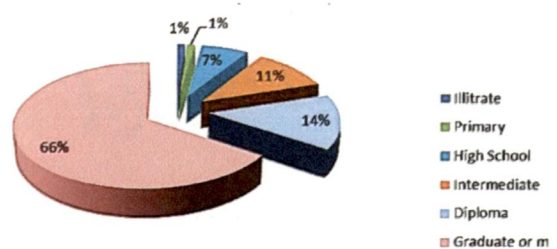
Fig. 7-18 Percentage of people with educational background

7.6.1.4 Monthly Income

Table 7-18 Monthly Income of the responder

Monthly Income	No. of responder	Percentage
<5000	4	5
5001-10000	11	12

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10,001-20,000	47	52
>20,000	28	31

The above table shows the number of respondent with their monthly income 47 respondents have monthly income of Rs. 10001 to 20,000 which constitute 52 per cent of sample size , while 28 respondents having monthly income greater than 20, 000 which constitute 31 per cent of total number of respondent
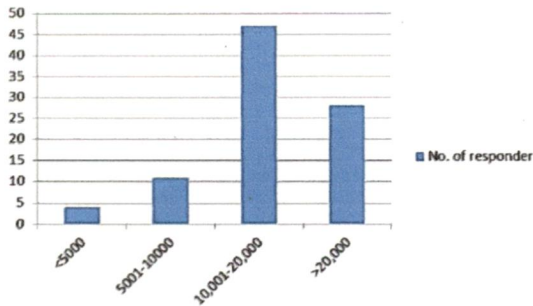
Fig. 7-19 Monthly Income of the responder
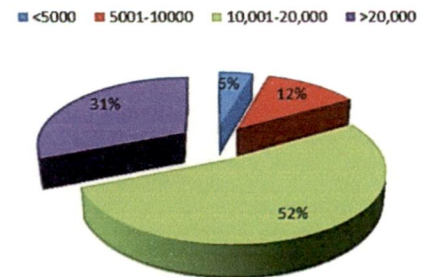
Fig. 7-20 Percentage of responder with their Monthly Income

7.6.1.5   IT/ Computer Enabled Citizen

Table 7-19 Number of respondent with their level of IT/Computer skills

Computer/ IT Education	No. of Respondent
Illiterate[20]	30
Below Average[21]	41
Average[22]	15
Above Average[23]	3

Above table shows the qualification of the responder as computer / IT education which suggests 30 persons are illiterate in computer education which constitute 34 per cent of total sample size, respondent with below average in computer qualification are 46 per cent (who can work with some assistance), 17per cent of respondent are with average IT/ Computer and 3percent are above average.

The above study indicate towards the need of capacity building in the view of any e-governance project, but also suggests some untapped potential as 66 per cent of respondents are any way computer literate

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[20] Illiterate :Never worked on computer
[21]Below Average: Worked sometimes with assistance
[22] Average Can work on basic functions of computer without assistance:
[23] Can work independently with other software
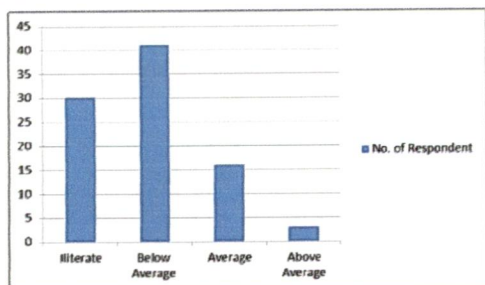
Fig. 7-21 IT enabled Citizen
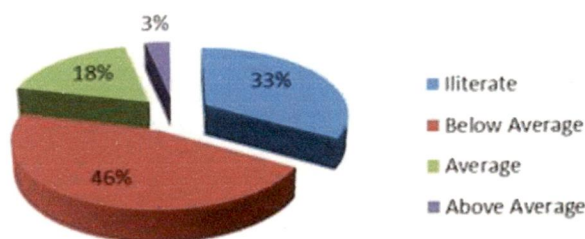
Fig. 7-22 Level of computer Literacy among Citizen

7.6.1.6 Electronic Gadget in households

Table 7-20 Electronic Gadget in households having potential as ICT tool

Home Appliances / Electronic Gadgets	Numbers
Television	85
Computers	20
Telephone	42
Mobiles	73
Tabs	2

Above table and bar chart shows that out of 90 respondent 85 have television 20 have computers in their home and 42 have landline telephone connection and 73 have mobile and only 2 have tabs. 94.44 per cent people television (as television is considered as a source of information) secondly 81.11 per cent of respondents are cell phone user and 46.67 per cent people have Telephone in their home. The above trend shows among respondents 84 per cent were cell phone user and 46.67 per cent were telephone user, this imply to have citizen centric services based on telephone or mobile (SMS) based i.e. tele-governance and mobile Governance, for the efficient delivery of public services.

The number of respondent who have internet connection in their home are 21, internet connection are broadband mobile based 2G/3G/GPRS connections.
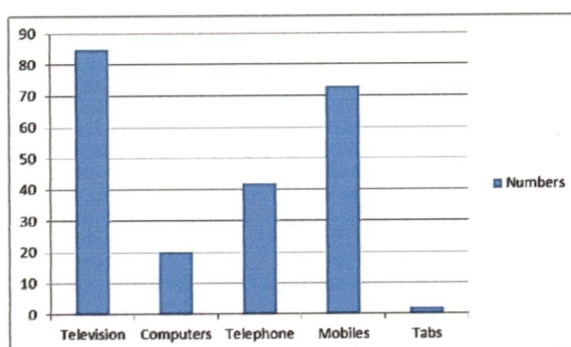
Fig. 7-23 Potential ICT tool having the citizen.

7.6.2 Municipal Services Awareness & Use of Municipal Services

7.6.2.1 Source of Information

Table 7-21 Source of Information about BMC services to the people

Source of Knowledge	Numbers
Television	0
Newspaper	19
Internet[24]	2
Neighbors/ relatives	37
Government Employee	38
Other Information Source	10

Above table shows the source of knowledge for different respondents, which suggests that 19 people got acknowledged about Municipal Services of Bhagalpur from the newspaper, 2 from the internet (it is mentioned in the district portal of Bhagalpur), 37 people got information about municipal services from neighbours/ relatives, 38 people get informed from the government employee and 10 from other information sources.
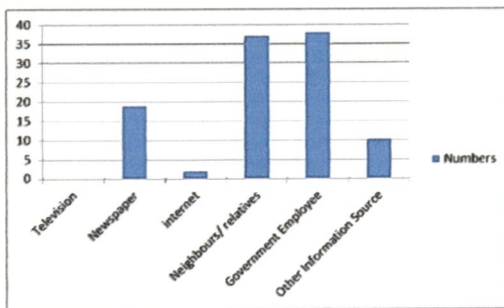
Fig. 7-24 Source of Knowledge about BMC
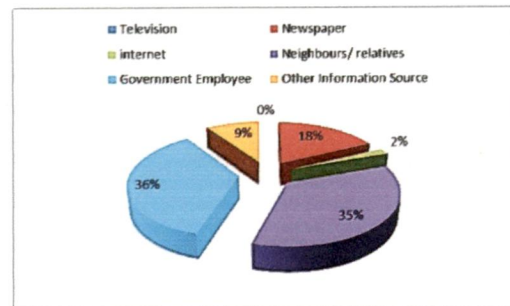
Fig. 7-25 Percentage of citizen with source of knowledge about BMC

The above trend suggest Municipal Corporation is not using the mass media or very less using the mass media to give information about their services and lack of corporate or professional approach in their working. The Municipal Corporation serving a population of more than 4 lakh must use different mass medias also there should be consideration about people residing outside the state and country who can get information about their area through the BMC.

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[24] BMC have not its own website

7.6.2.2 Depth of Information in Citizen

Table 7-22 Knowledge among the people about Municipal Services

Depth of Knowledge of Services around	Numbers
None	0
Few	5
Some	43
Large number	38
All	4

Above table shows the depth of knowledge of services of Municipal Corporation around, in order to guess it peoples were asked to guess about other people around who know about the municipal services, 43 people guessed some people around know about municipal services and 38 guessed a large number of people know about Municipal Services. And 4 people guessed that all people around are knowing about the municipal services.

From the above table it implies that maximum number of people in the urban area is aware of the service provided by Municipality.
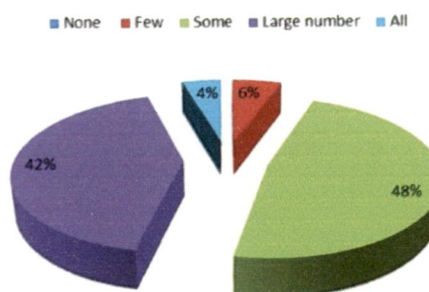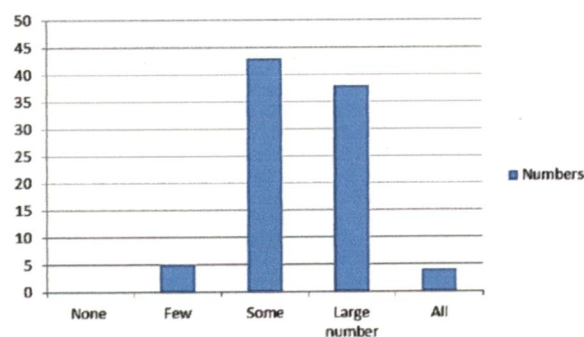
Fig. 7-26 Depth of Information about Municipal Services. Fig. 7-27 Citizen Information about Municipal Services

7.6.2.3 Municipal Service Centre

All the responders have to come to BMC to avail the service in absence of other sub centre or ward level centre.

7.6.2.4 Frequency of visits for Municipal Services

Table 7-23 Frequency of service availed by the responder

No. of times service availed	No of Responder
<2	15
2 –3 times	48
>3	27

Above table suggests how frequent the responders in availing the municipal services are. 15 responders visited only one or not visited yet for municipal services, 48 responders visited 2 to 3 times and 27 responders said that they have visited more than 3 times for municipal services. The above analysis shows the necessity of municipal services for the people living in urban area.
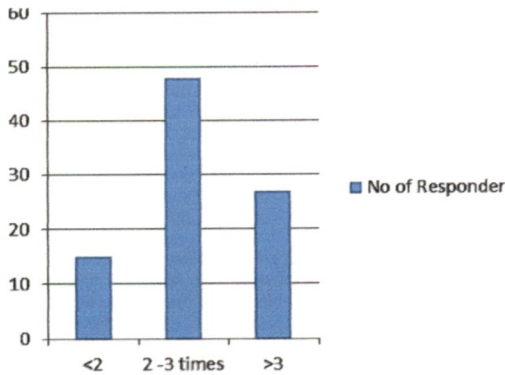
Fig. 7-28 Frequency of Services availed by the Citizen.
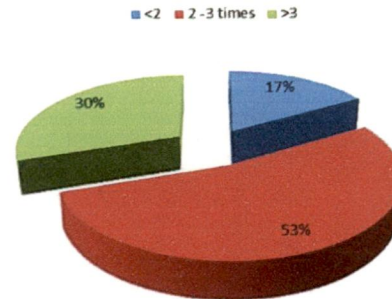
Fig. 7-29 Frequency of services

7.6.3   Cost in Availing the Municipal Services

7.6.3.1   Distance of BMC to home

Table 7-24 shows responders with respect to distance of BMC to home

Distance of BMC to home	No. of Responder
<2 Km	8
2-5Km	33
5-10Km	33
>10 Km	16

Above table indicate the distance of the home of the responder to the BMC, 8 responder have home to BMC distance less than 2 km, 33 responders have home to BMC distance 2 to 5 km and other 33 responders have home to BMC distance 5 to 10 km and 16 respondents have home to BMC distance more than 10 km.
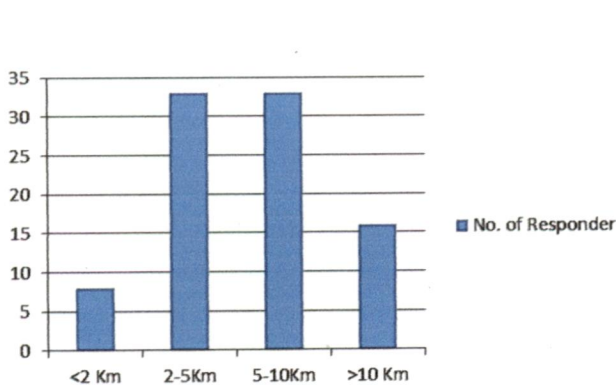
Fig. 7-30 Distance of BMC to home.
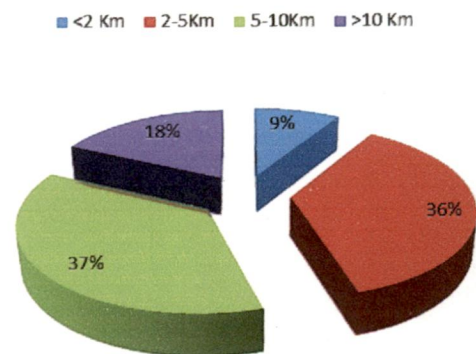
Fig. 7-31 Percentage of citizen having home to BMC distances

Most of the people have home to BMC an average distance of 5.5 Km. Overall average distance between home to BMC is 5.01 Km which is not a walking distance.

7.6.3.2 Number of trips made to avail the Service

Table 7-25 Number of trip/trips made by responder to avail the service

No. of Trips made to get service	No. of Responder	Percentage
1	7	7.77
2	29	32.23
3	38	42.22
>3	16	17.78

Above table shows the number of trips made by the responder to avail the service, the data collected for different services from the respondents of different ward suggests that 7 responder made only one trip to avail the municipal service another 29 respondent have to make 2 trips to avail the service and next 38 which is the highest of all number have to make 3 trips to avail the services, and 16 people have to make more than 3 trips to avail the service.

Average trips per responder is more than 2.7 say 3 which is conspicuous from the table that maximum number of people have to make 3 trips.
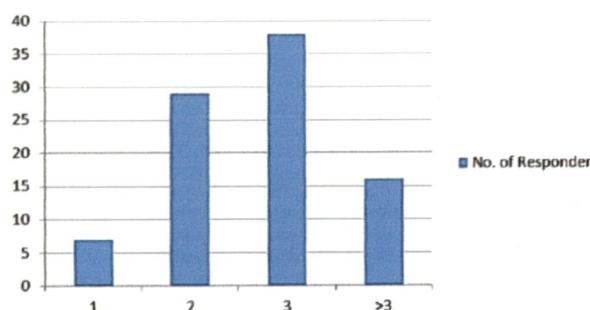
Fig. 7-32 Nos. of trip made to avail the Service.
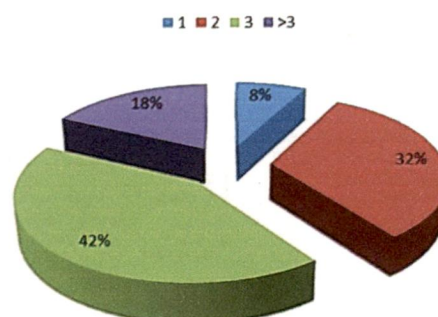
Fig. 7-33 Nos. of trips by responders.

7.6.3.3 Cost of trips to avail the Service

Table 7-26 Cost of the trip in availing the particular service

Cost of a trip	Nos. of Responder	Percentage
< Rs 10	27	30
Rs 10- 20	20	22.22
Rs 21-30	29	32.22
> Rs 30	14	15.56

Above table shows the cost of a trip made by the responder with number of respective responders, which shows 27 responder 30 per cent spend less than Rs. 10 to access the service, 20 responder 22.22 per cent spend less than Rs 10 to 20 to access the service while 29 responder spend Rs 21 to 30 and 14 spend more than Rs. 30 in a trip to access the service. Average cost of a trip per

responder is Rs.20,suggests that to avail a service in BMC each responder have spent Rs. 20 in only transportation. Despite the fact that many services provided by the Municipal is free of cost.
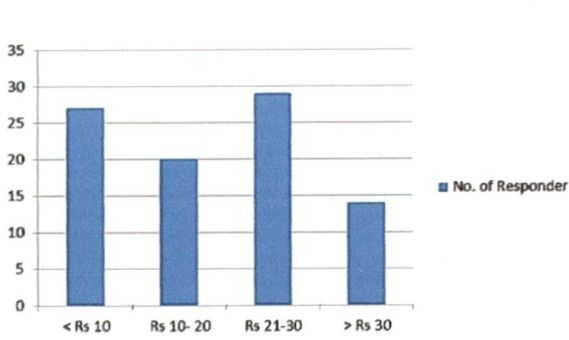
Fig. 7-34 Cost of trip in availing services by responders
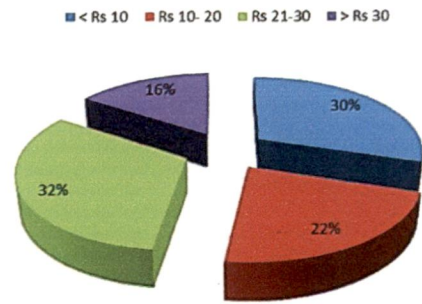
Fig. 7-35 Cost of a trip in availing Services

7.6.3.4 Time of a trip

Table 7-27 Time of a trip in availing the particular service

Time of a trip	No. of Responder	Percentage
< 15 minutes	25	27.78
15-30 minutes	50	55.55
30 minute -1hr	15	16.67
> 1 hour	0	0.00

Above table shows time of a trip in availing the particular service, which reveals 27.78 per cent of respondent 25 of the respondent reach to the BMC from home in less than 15 minute, 50 respondents takes 15 to 30 minutes of time to make a trip while 15 respondents which constitute only 16.67 per cent of sample takes 15 minutes to reach the BMC from home.
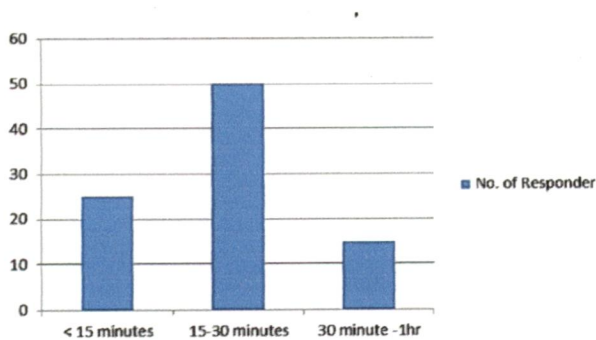
Fig. 7-36 Time taken to make a trip.
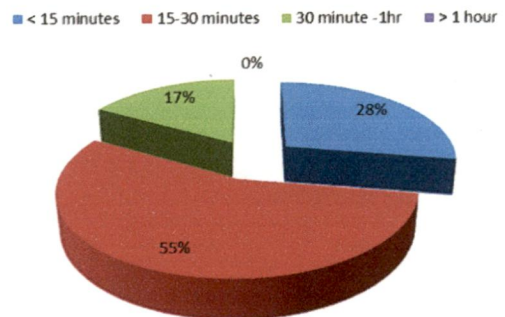
Fig. 7-37 Time taken to make a trip by different responders

7.6.3.5   Mode of Travel

Table 7-28 Mode of travel and corresponding numbers of responder

Mode of travel	Nos. of Responder	Percentage
Walk	13	14.44
Bicycle	12	13.33
Motor Bike	18	20
Rikshaw	29	32.22
Auto- Rikshaw	10	11.11
Other	18	20

Above table shows the mode of travel by different responders, suggests 13 responder travel by walk to the BMC from the home which are 14.44 per cent, 12 respondents travel by bicycle which is 13.33 per cent of total number of respondents, 18 respondents which are 20 per cent of total respondent travel by motor bike, 29 respondent travel by Riksahaw which is 32.22 per cent of respondents and 11.11 per cent 10 respondent travel by Auto –Rikshaw while 18 respondent which is 20 per cent of respondent travel by other means of travel.

The above trend suggests most of the people travel by Rikshaw motorbike and other means of travel i.e. own car which constitute 72.22 per cent of modal split.
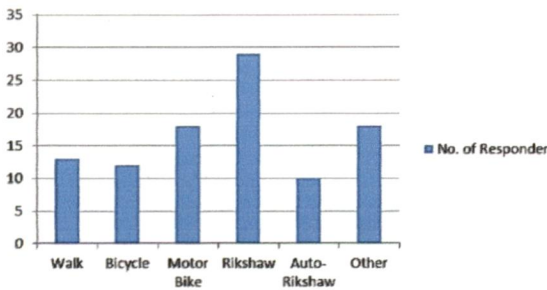
Fig. 7-38 Different mode of travel by the responder
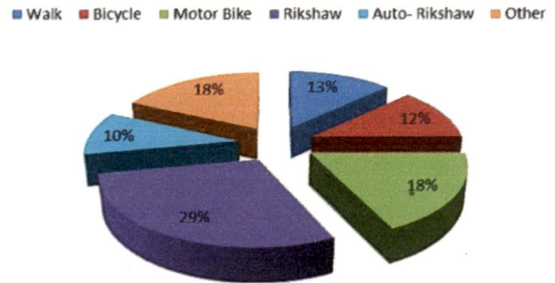
Fig. 7-39 Modal Split

7.6.3.6   Waiting time

Table 7-29 Waiting time in availing the particular service

Waiting time	No. of Responder	Percentage
< 15 minutes	5	5.56
15-30 minutes	39	43.33
30 minute -1hr	37	41.11
> 1 hour	9	10

Above table shows the waiting time to avail the service, where 5 people have to wait less than 15 minute, 39 people have to wait 15 to 30 minute which constitute 43.33 per cent of total number of respondent, 37 respondent which constitute 41.11 per cent of sample waited 30 minute to one hour for their service and 9 people waited more than one hour to get their service done.
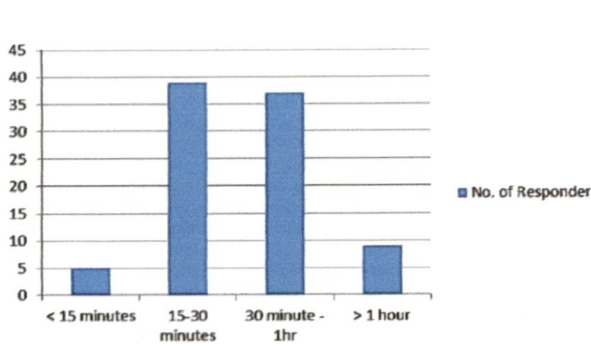
Fig. 7-40 Waiting time in availing services
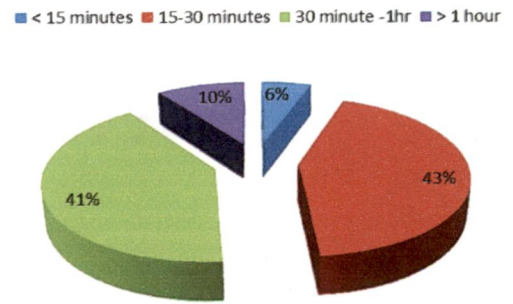
Fig. 7-41 Different percentage of people waiting

7.6.3.7 Bribe Paid to official/ Staff

Table 7-30 Bribe Paid

Bribe paid	No. of Responder
Yes	42
No	48

On investigation about the bribe paid to the official or staff 42 responder said that they have paid bribe in any form and 48 said that they have not paid bribe till now regarding Municipal services.

7.6.3.8 Amount of bribe paid to official or staff in BMC

Table 7-31 Amount of bribe paid to the official or staff

Amount of Bribe paid	No. of Responder
< Rs 100	2
Rs. 100-200	11
Rs. 201-500	26
> Rs.500	3

Above table shows the amount of bribe paid by 42 respondents, where 2 respondents paid less than Rs.100, 11 respondents paid between Rs.100 to 200 and 26 respondent paid an amount of bribe between Rs. 201 to 500, while e respondent have paid an amount of Rs.500 as the bribe. **An Average of Rs. 137.22 as bribe is paid by each respondent to avail each service.**
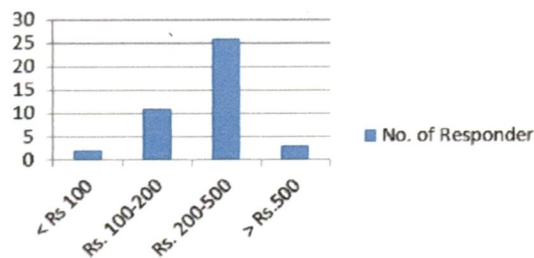
Fig. 7-42 Amount of Bribe Paid by responder
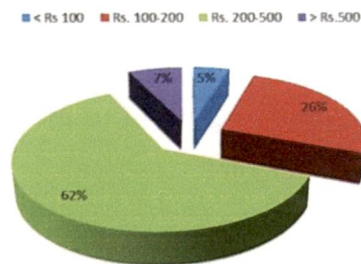
Fig. 7-43 Amount of Bribe Paid by responder

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7.6.3.9 Reason for Bribe

Table 7-32 Reason for Bribe for different responder

Reason for Bribe	No. of Responder
Quick Commencement of work	11
Work to be done earlier than the number	18
To influence the staff/ official	9
Another reason	4

Above table investigates the reason for bribe which suggests the trend that , 11 persons have paid bribe for the quick commencement of work, 18 respondents pay for work to be done earlier than the number, 9 respondents maximum paid bribe to influence the staff/ official, and 4 people paid for another reason or no reason.

Maximum number of responder 18 have paid bribe for work to be done earlier than number and 11 quick commencement of work this *suggests the inefficient back office system and also indicate towards delay in service due to absence of proper system.*
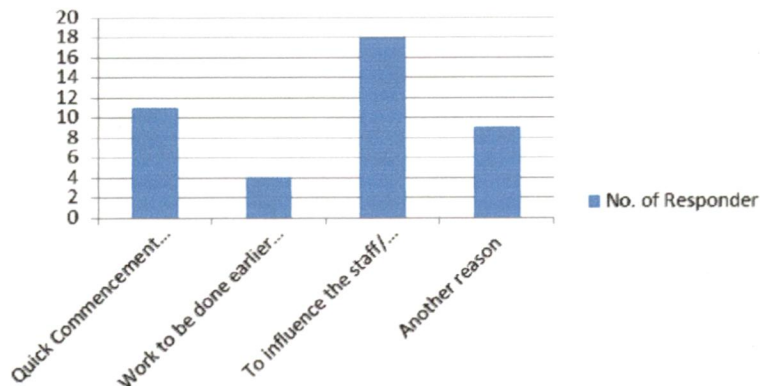
Fig. 7-44 Reason for bribe for different responders

7.6.3.10 Need of Mediator

On investigation about the need of mediator to avail the service, it is found that 48 responders needed mediator to commence their work or to avail the service.

7.6.3.11 Amount paid to mediator

Table 7-33 Amount of Money Paid to mediator

Money paid to mediator	Nos. of Responder
< Rs 100	19
Rs. 100-200	14
Rs. 201-500	15

Above table shows that out of 48 responder 19 people have paid less than Rs.100, 14 people have paid money Rs.100 to 200 and 15 people have paid money from Rs. 201 to 500.

From the above scenario *it is conspicuous that front office system is either absent or in haphazard condition, it also indicates toward the urgent need of single window clearance system of all the services.*The numbers of responders who have paid both bribe and need mediator are 26
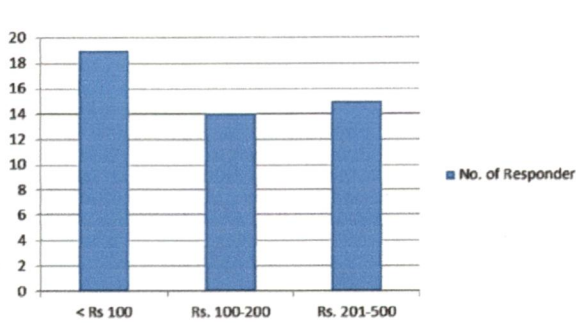
Fig. 7-45 Amount Paid to mediator to avail the service.
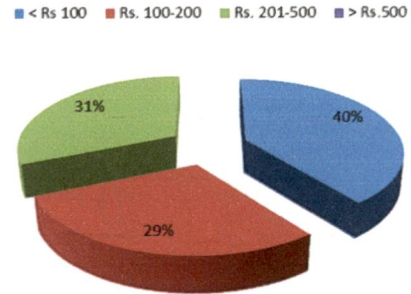
Fig. 7-46 Amount Paid to mediator to avail services

7.6.3.12 Time from the date of apply to get service

Table 7-34 Time from the date of apply to get service

Time from the date of apply to get service	Nos. of Responders
< A week	24
A Week	24
2 week	28
> 2 week	14

Above table shows that 24 responders get their work done in less than a week, while another 24 get their work done in a week time and 28 responders get their work done in 2 week and 14 responder get their work done in more than 2 week more than a month in some cases.
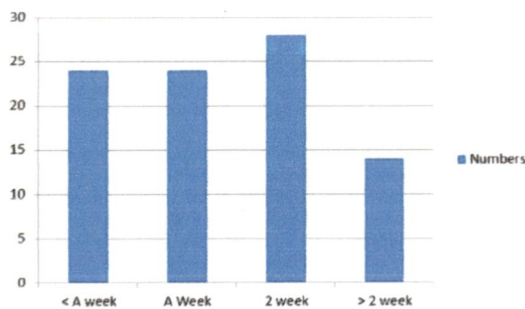
Fig. 7-47 Time from the date of apply to get service
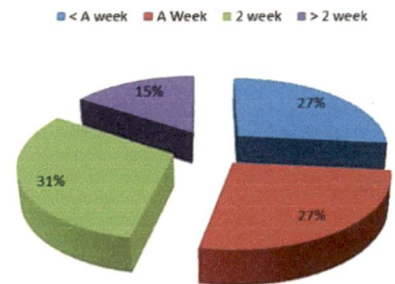
Fig. 7-48 Time from date of apply to get service

7.6.3.13 Suffering of the Citizen

Table 7-35 Suffering due to delay of Service

Suffering due to delay of service	No. Of Responder
Little	35
Negotiable	12
Much	43

Above table shows the suffering of responder due to delay in service that how much they suffered from the delay in service , suggests 35 people suffered a little 12 people suffered negotiable and 43 suffered a lot due to their delay in service.
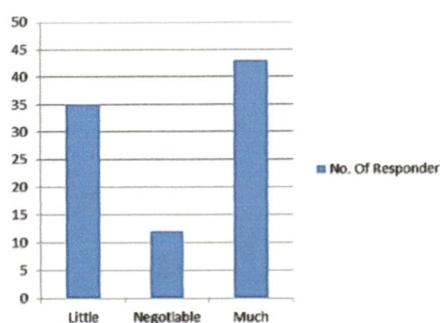
Fig. 7-49 Amount of Suffering due to delay.
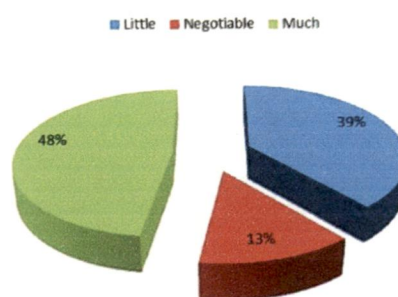
Fig. 7-50 Amount of Suffering due to delay of Service.

7.6.3.14 Errors in the document

The numbers of respondent who got error in their document (due to manual system of registration, or issue of certificate etc.) were 9 which constitute 10 per cent of total sample size.

7.6.3.15 Extra trips for correction of error

Table 7-36 Extra trip for correction of error

Extra trips for correction of errors	No. of Responder
1	7
2	2

Above table shows that 7 responder have to go for correction in their document and got correction in one go while other two have to go two times for correction.

7.6.3.16 Extra cost in availing a service after correction

Table 7-37 Extra cost in availing a service after correction

Total Extra Cost in availing a service after correction	No. of Responder
< Rs 100	7
Rs. 100-200	2

Rs. 200-500	0
> Rs.500	0

Above table shows that 7 responder have to go for correction in their document and got correction with extra cost of less than Rs.100 while other two have to go two times for correction and extra cost in availing the service after correction was Rs. 100 to 200.

7.6.3.17 Extra Cost in availing the services

Table 7-38 Extra Cost in availing the services

Extra Cost in availing a service	No. of Responder	percentage
< Rs 100	10	11.11
Rs. 100-200	9	10
Rs. 201-500	36	40
> Rs.500	13	14.44
NA	22	24.45

Above table shows total extra cost in availing the service, which suggests 10 responder which constitute 11.11 per cent of sample size spent less than Rs. 100 for service, 9 responder which constitute 10 per cent of total sample size spend Rs.100 to Rs 200 in availing service while maximum number of responder 36 and 40 per cent of sample size spend Rs. 201-500 in availing the service and 14.44 per cent means 13 responder spend more than Rs. 500 in getting benefit of the service and 22 responder need not to spend any extra money for availing the service.
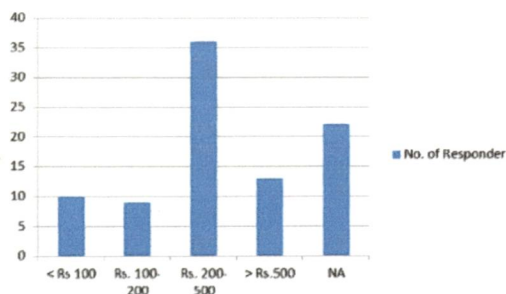
Fig. 7-51 Extra cost in availing the services
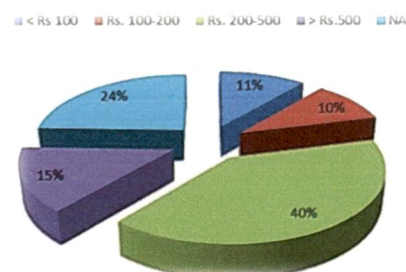
Fig. 7-52 Extra cost in availing the services

7.6.4 Qualification of Municipal Services

7.6.4.1 Location of BMC

After investigation it was found that 64 responders were agree with the present location of BHC which constitute 71 per cent and 24 were not agree with the location of BMC which constitute 29 per cent of total sample size.

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7.6.4.2 Comfort with working hour

After investigation it was found that 61 responders were comfortable with the working hour of BHC which constitute 67.78 per cent and 29 were not comfortable with the working hour of BMC which constitute 32 .22 per cent of total sample size.

7.6.4.3 Official staff helpful

Table 7-39 Shows how official staff is helpful to responder

Official/ staff helpful	No. of Response
Never	3
Rare	26
Sometimes	37
Many times	22
Always	2

Above table shows how official/ staff are helpful to responder, 3 of the responder says official/ staff are never helpful 26 said they are helpful rarely, 37 said official/ staff are helpful sometimes, 22 said they have helped many times and 2 said they are always helpful. 37 responder maximum have said official/staff are sometimes helpful.

7.6.4.4 Response on time

On inquiry about the response on time it was found that 32.22 per cent responder 29 get responses on time from the official/ staff while remaining 67.78 per cent didn't get response of their grievances This shows the low level of responsiveness from the staff/ official.

7.6.4.5 Satisfaction with service level

33 responder were satisfied with the service level which constitutes 36.67 per cent of sample size while other 57 responder were unsatisfied with the level of service.

7.6.5 Qualification of Administration

7.6.5.1 Level of Corruption in BMC

Responders were asked to guess the level of corruption in order to investigate the real figure of actual corruption in BMC. Below table shows five level of corruption with corresponding number of response on them.

Table 7-40 Level of Corruption in the BMC

Level of Corruption	Nos. of Responder	Percent
No Corruption	9	10
Little Corrupt	32	35.56

Neutral	8	8.89
Substantially Corrupt	25	27.78
Highly Corrupt	16	17.78

Above table shows level of corruption in the BMC, as 9 responder said that there is "No corruption" in the BMC which is 10 per cent of sample size 32 responder which constitute 35.56 per cent of total sample size said system is "Little corrupt" where 8 respondent were neutral on this issue 25 respondent which constitute 27.78 per cent of the sample said system is "Substantially Corrupt" where 16 responder said system is highly corrupt.

Above table shows the significant amount of corruption in the BMC as 45 per cent of respondent are indicating toward substantially & High level of corruption.
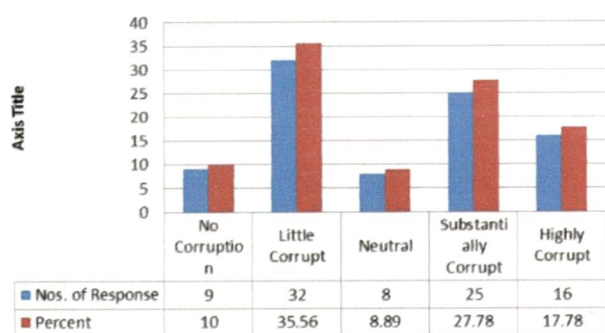
Fig. 7-53 Level of Corruption in the BMC
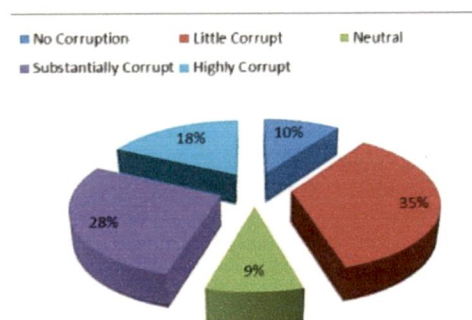
Fig. 7-54 Percentage Level of Corruption in BMC

7.6.5.2 Citizen Charter Awareness

In order to gauge the level of Citizen Charter Awareness, it was found among the responders, that 73 responders who constitute 81 per cent of sample size were aware of Citizen Charter.

7.6.5.3 Time Limit in which the Services are provided

Table 7-41 Shows how much Citizen Charter in followed in delivery of the services

Time limit of services provided	Nos. of Response	per cent
Never	38	52.05
Sometimes	22	30.14
Many times	10	13.7
Always	3	4.11

Above table shows how many times Citizen Charter followed in delivery of citizen Centric Services if they are within the time limit or out of time limit, responses can be described as, 38 respondent who constitute 52 per cent of sample size said they never get service delivered according to Citizen Charter, 22 responders (30.14 per cent) said they sometimes received the services within the time limit of Citizen Charter. While 10 responders who constitute 13.7 per cent of sample size said they get services many times according to citizen charter. In the BMC Citizen Charter is not displayed properly in public domain any responders only guessed the time limit and gave response.

Above condition shows the failure of BMC on the front of delivery of information among the people & lack of transparency in giving information and service.
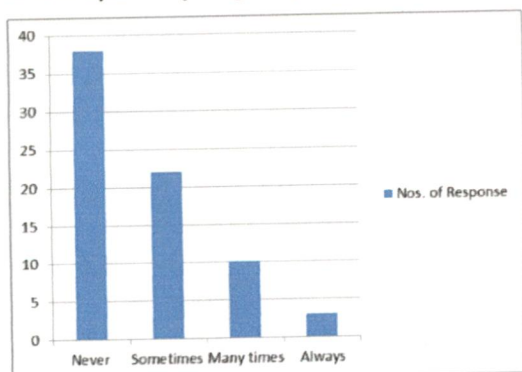
Fig. 7-55 Time limit of services.
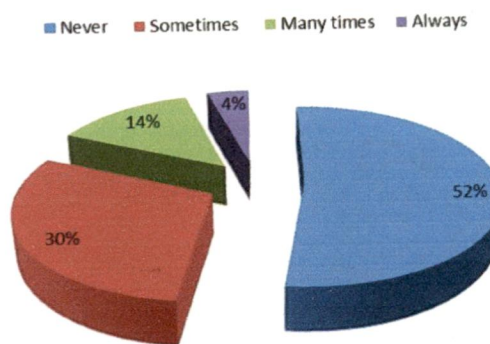
Fig. 7-56 People getting the services according to the time limit

7.6.5.4 Sincerity of official/ staff

In order of investigating the sincerity of the staff/official, 21 responders said that official/staff are sincere which constitute 23.33 per cent of the sample size while remaining 69 says staff/ officials are not sincere.

7.6.5.5 Illustration of rules & regulation at the department

Each and very responder said that rules & regulation at the department is not mentioned properly or not well illustrated.

7.6.5.6 Responsiveness of Administration (for the credibility of information)

Investigating for the responsiveness of administration for the credibility of information, 23 responder gave response in favour of the administration while remaining 67 gave response in against of the administration.

Table 7-42 Showing responder who gave suggestion to staff/officer

	Number of Responder
Suggestion to staff/ Officer	52
Response to suggestion	16

Above table suggests that 52 responder have given suggestion to staff/ officer for reform in the system, out of which 16 responder get the response of their suggestion which constitutes 30.76 per cent of response.

7.6.5.7   Impact on rule, regulation & policy of public suggestion

Table 7-43 Response on Impact & policy of Public Suggestion

Impact on rule, regulation & policy of public suggestion	Nos. of response	Per cent
Never	7	7.77
Very less	17	18.89
Sometimes	37	41.11
Always	13	14.44
Can't Say	16	17.77

Above table summarizes the responders on the possibility of impact on rule, regulation & policy of their suggestion in which 7 responder which constitute 7.77 per cent of sample size, 17 responder said there is "very less" possibility of impact on rule, regulation & policy of public suggestion, 37 responder which constitute highest per cent of responder said that "sometimes" there is possibility of impact on rule, regulation & policy of their suggestion, 13 responder (14.44 per cent) said there is always possibility of impact on rule, regulation & policy of public suggestion. 16 respondents can't say anything about this.

The above discussion and analysis points towards the view of public on the issue public participation which will further help in design the intervention of people in decision making.

7.6.6   Citizen's Awareness & View on E-Governance

7.6.6.1   Knowledge of e-governance

Table 7-44 Citizen's having knowledge of e-governance

Responder having knowledge of e-governance[25]	69
Percent of responder	76.67

Above table shows the number of respondent having the knowledge of e-governance, 69 respondent said they have knowledge of e-governance which constitute of 76.67 per cent of total responder and remaining 21 were unaware of e-governance service.

7.6.6.2   Benefit of e-governance to citizen

Table 7-45 Showing the number of responder who have been ever benefited from e-governance service

Benefit of e-governance to citizen	50
Percent	55.55%

Above table shows the number of respondent having benefited from e-governance services, 50 respondent have been benefited from other e-governance services such as RTI service, Jaankari, electronic submission of electrical bills, railway reservation etc.

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[25] In order to investigate the responder's Knowledge of E-governance it was found by the investigator that people were directly not acknowledged with the word "e-governance "but on illustration an setting the example of e-governance project (i.e. Jaankari, RTI system)people can easily identify the term, computerization or automation word were more identified by the responder than e-governance as it was more elaborated in the questionnaire.

7.6.6.3   Medium of acknowledgement of e-governance

Table 7-46 Showing the number of responder and medium by which responders are getting acknowledged

Medium of acknowledgement of e-governance	Number of respondent	Percentage
Newspaper	62	68.88
Television	6	6.67
Neighbors/ relatives	3	3.33
Government employees	4	4.44
others	9	10

Above table shows the medium by which people are getting acknowledged of e-governance services, 62 respondent, constituting 68.88 per cent of sample size are acknowledged by e-governance and services by newspaper,6 respondents by television, 3 from their neighbour or relatives, 4 by government employees and 9 which is 10 per cent of sample size got acknowledged about e-governance by other means such as internet, school, college etc.
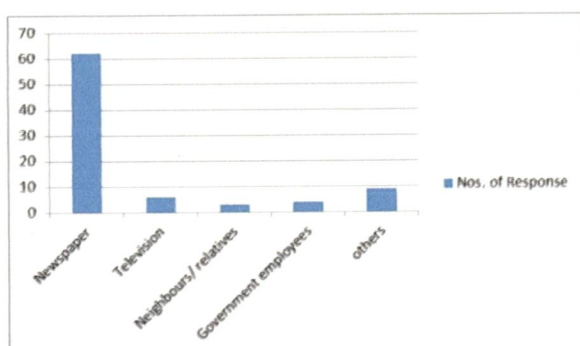
Fig. 7-57 Medium of knowledge of e-governance.   Fig. 7-58 Medium of knowledge of e-governance
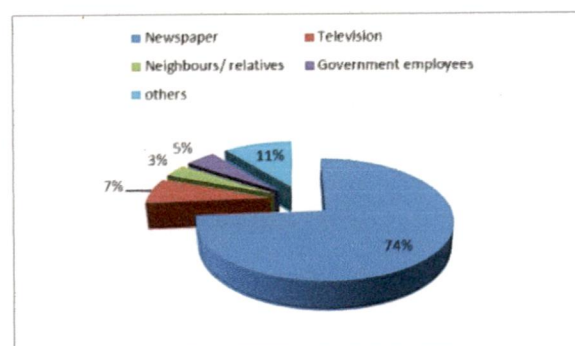
7.6.6.4   Level of Awareness about e-governance in the society or among citizen

Table 7-47 Showing level of awareness about e-governance in the society or among citizen

Awareness around	Nos. of Response
Very less	13
few	16
Some	58
Many	2
All	0

Above table shows different level of awareness about e-governance in the society, 13 respondent said "very less" people knows about e-governance services around, 16 respondents said few people know about e-governance services, 58 respondent said that some people have knowledge of e-governance service around.

7.6.6.5 E-governance and image of government

Table 7-48 Showing responders view about impact on image of government of e-governance project

Statement	Agree	Neutral	Disagree
e-governance uplift Image of Government	77	8	5
Percentage	85.56	8.88	5.56

Above table shows the agreement, disagreement and neutrality over the issue of e-governance, in which 77 responder which constitutes 85.56 per cent of respondent were agree over the statement that **e-governance have uplifted the image of government,** 8 respondent were neutral or unable to answer the statement and 5 responder constituting 5.56 per cent were disagree over this statement.

From the above table analysis it is clear that maximum respondent thinks that e-government will certainly uplift the image of government by providing. good governance (equity, flow of information, transparency, responsiveness, accountability).

7.6.6.6 Investment in e-governance projects

Table 7-49 Showing responders view about government's investment in e-governance project

Statement	Agree	Neutral	Disagree
Government should invest more in e-governance	78	10	2
Percentage	86.67	11.11	2.22

Above table shows the agreement, disagreement and neutrality over the issue of e-governance in which78 responder which constitutes 86.67 per cent of respondent were agree over the statement that government **should invest more in e-governance project.**11.11 per cent responder were neutral on this issue and 2 responder (2.22 per cent) disagreed on the issue.

7.6.6.7 Computerization of BMC

Table 7-50 Showing responders view about Computerization of BMC

Statement	Agree	Neutral	Disagree
BMC should be computerized	86	4	0
Percentage	95.55	4.45	0

Above table shows the agreement, disagreement and neutrality over the issue of e-governance in which 86 responder which constitute 95.5 per cent of respondent were agree over the statement that **BMC should be computerized,** 4 responder were neutral on the issue which constitute 4.45 per cent and non-disagreed on this issue.

From the above table analysis it is clear that maximum respondent thinks that BMC should be computerized this certainly will bring equity, flow of information, transparency, responsiveness, accountability among the citizen.

7.6.6.8   On Computerization is wastage of money

Table 7-51 Showing responders view about computerization of BMC

Statement	Agree	Neutral	Disagree
computerization is a wastage of money	3	23	64
Percentage	3.33	25.55	71.12

Above table shows the agreement, disagreement and neutrality over the issue of e-governance in which 71.12 per cent responder which are 64 in number disagreed with statement that computerization is wastage of money, 23 were neutral on this statement and 3 agreed on this issue

7.6.6.9   Investment on e-governance projects

Table 7-52 Showing responders view about e-governance

Statement	Agree	Neutral	Disagree
e-governance amount should be invested on other government project	5	23	62
Percentage	5.5	25.5	69

Above table shows the agreement, disagreement and neutrality over the issue of e-governance in which 69 per cent, 62 responder were disagree with the statement that e-government amount should be invested on other government project, 25.5 per cent 23 responder were neutral about the statement and 5 were agreed with the statement.

7.6.6.10   Benefit from computerization

Table 7-53 Showing responders view on computerization

Statement	Agree	Neutral	Disagree
Computerization will benefit only rich & influential people	6	13	71
Percentage	6.7	14.5	78.8

Above table shows the agreement, disagreement and neutrality over the issue of e-governance in which 78.8 per cent, 71 responder were disagree with the statement that computerization will benefit only rich and influential people, 14.5 per cent 13 responder were neutral about the statement and 6 were agreed with the statement.

7.7 Correlation Analysis between the Variables

Correlation analysis shows the relation between the variables

7.7.1 Correlation between the variables distance between home to BMC & the Extra money paid (bribe / mediator) money paid by the responder.
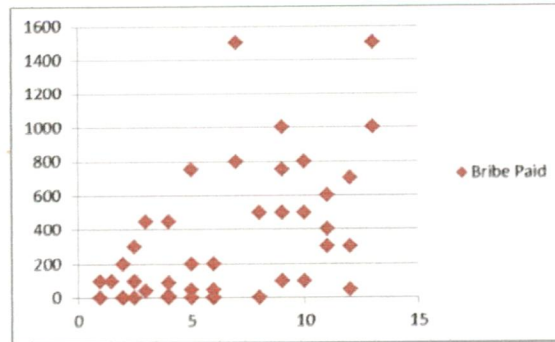
Fig. 7-59 Scatter Diagram shows correlation between distance from home to centre Vs Extra money paid

The correlation coefficient comes 0.519021 which shows a positive correlation and medium correlation between the variables.

7.7.2 Correlation between the variables distance between home to BMC & number of trips made to avail the services
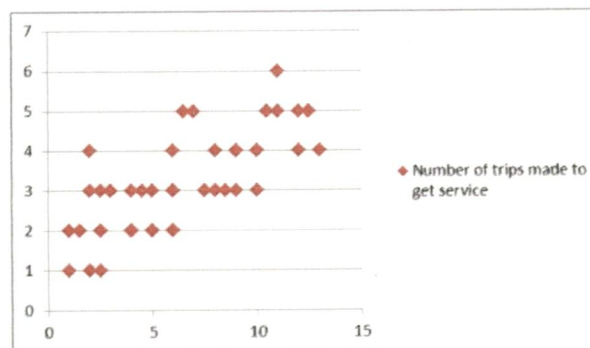
Fig. 7-60 Scatter Diagram correlation between distances from home to centre Vs number of trips made to avail service

The correlation coefficient comes 0.74948 which shows a positive correlation and medium correlation between the variables.

7.7.3 Correlation between distances from home to centre and waiting time on the centre
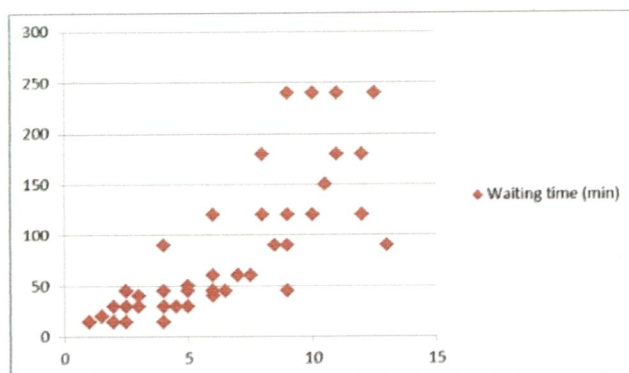
Fig. 7-61 Scatter Diagram shows correlation between distances from home to centre Vs waiting time on the centre

The correlation coefficient comes 0.801864 which shows a positive correlation and strong correlation between the variables.

7.7.4 Conclusion

The above three correlation analysis with one variable as distance from home to BMC Vs Bribe paid, number of trips made and waiting time the outcome will surely help planners & policy maker in making decision to reduce the distance from home to centre and making decision about decentralizing the Citizen Centric services by providing Citizen Service Centre at the ward level so that citizens get benefit from the municipal services.

7.8 Cost Benefit Analysis of Implementing E-Governance in BMC

7.8.1 Cost to BMC in implementing e-governance in BMC

E-government projects are IT intensive, the initial investments are extremely high, and thus they strongly affect the overall profitability of the project[26]. So, therefore it is significant to interpret all types of costs, both initial investments and operational expenses. The detailed cost estimates are provided in Annexure- VI.

There are three major categories of costs:

1. Internal investments to move to computerized databases and information management (Prerequisite to a successful digital delivery of government services)

2. Organizational and restructuring of work-process.

3. Costs of building an e-government portal (Implementation costs)

4. Portal administration and maintenance costs (Operational costs)

7.8.1.1 Internal investments to move to computerized databases and information management

Bhagalpur Municipal Corporation forms a complex organization, with numerous agencies, departments and offices, employing hundreds of knowledge workers, storing hundreds of databases and often performing overlapping tasks. The major expenses will be:

i. **Hardware**: servers and workstations, peripherals, networking and communication infrastructure.

ii. **Software**: General computer operation and communications software, information sharing and data management software. Task specific software: database management, ERP[27] CRM[28] etc.

iii. **Data digitization** – data digitization is lengthy and costly process.

iv. **Personnel Training** – learning new skills & technology is quintessential for implementing e-governance in the department.

v. **Recruitment of new people** –new people will have to be recruited as existing personnel are not ready to accept new technology.

vi. **Wage increases** in order to encourage people to accept the changes and then to retain them wage increase would be required once they acquire new skills.

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[26] May 2003,Sorin Kertesz Cost-Benefit Analysis of e-Government Investments

[27] Enterprise resource planning (ERP) systems integrate internal and external management information across an entire organization, embracing finance/accounting, manufacturing, sales and service, customer relationship management, etc.

[28] CRM is an acronym that stands for Customer Relationship Management. It describes the strategy that a company uses to handle customer interactions

7.8.1.2 Organizational and restructuring of work-process.

This may be "the most difficult impediment for e-government", as William Matthews notes. The governance structures of many governments are not designed to support multidepartment initiatives such as e-government[29]

i.   Outside consultants may be required

ii.   Offices may need to be re-equipped.

iii. Additional services may be contracted after the reorganization

iv.   Outsourcing of work can also be done with superfluous expenses.

7.8.1.3 Costs of building the e-government portal[30]

The construction of a web portal is an expensive undertaking and presents a significant financial and administrative challenge[31]. These represent one-time capital investments and they are usually high (especially for complex portals), but nevertheless much lower than the prerequisite internal investments.

i.   **Hardware and software** to support the website servers, server operating software, transmission/bandwidth

ii.   **Design and creation of website:** if outsourced, this will require some staff assigned to manage development; staff members should also be involved in the testing of the website which may lead to increases in staffing and/or wages.

iii. **Data digitization/migration and integration** between off-line and on-line systems – even if all agencies have transferred their information into computerized databases, portal will require many of these databases to work together. In the first stage of implementation, new digital and old paper-based databases will have to be used together until all filing and handling is migrated to computerized platforms. Migration and Integration of databases is a difficult and costly process and it often requires the hiring of expensive outside consultants.

7.8.1.4 Portal administration and maintenance costs

Most cost-benefit analyses of e-government only include operational costs related to the processing of the requests posted, or the applications filled in. In addition to these, operational costs should also include the costs of website maintenance and administration.

i.   **Maintenance and support** –Several technical employees will have to provide maintenance and support for the hardware and software used as per intricacy of the website. Extra costs would be

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[29] William Matthews, "Study: E-gov prone to falter", Federal Computer Week, May 6, 2002.

[30] For more details on the hardware/software/labor "Costs of an E-commerce Site", see Baseline Handbook Spring 2002, Project Planner Case 001: "E-commerce Sites" (http://www.baselinemag.com/001_planner).. Labor costs should be regarded with caution, since they are specific for the US, and will greatly vary depending on the country where the project is run. However, hardware and software costs are barely influenced by the country of analysis.

[31] (January 2002) Diana Burley Gant, Jon P. Gant, Craig L. Johnson , "State Web Portals: Delivering and Financing EService", Pricewaterhouse Coopers

accounted for the analysis and Service Levels Agreements that is included in the contracts if these services are outsourced.

ii.   **Updating** –Updating would be crucial if online transactions are made, since the inflation rate leads to frequent price changes. Information delivery pages will have to be updated often too, which will require many persons to work full-time on updating, while agencies involved need to stay committed to providing the required updates in a timely manner.

iii.   **Modernizing and upgrades** –Pace of progress in the IT and Internet world is fast and companies upgrade their websites every few years similar expectation will be there from the citizen , new features, and faster processing capabilities on annual basis should be provided.

iv.   **Security issues** – Local Government will need to pay special attention to increase the security features of their websites to save the websites from hacker.

v.   **Training of the people (user) on using the Internet and the new websites:** there are high costs of reaching out to the people. Some of the training & education would ultimately be performed by non-profits and the private sector, but the costs of this training & education should be accounted.

vi.   **Universal access** –In the region with low Internet penetration rates, poor acceptance and usage by people is the biggest threat to e-government project. To reduce this threat local government may provide incentives and subsidies to stimulate the spread of computer and Internet usage. Public access sites are also an option another option may be establishment of citizen centres to access the internet.

7.8.2   Benefits

When citizens and businesses get on-line instead of waiting in line, they can obtain faster, more convenient access to government services, and with fewer errors[32] Cost-benefit analyses have mostly focused on the revenues generated through the online channel, ignoring the cannibalizing effect on other delivery channels, while failing to account for the effects on:

- Citizens/customers (time gains, satisfaction with service, increased control over the operations);
- Agency and personnel (improved work efficiency, automation, less complaints, personnel reduction);
- In general transparency, incentives for increased Internet penetration, increased interaction citizen-government are difficult to predict and quantify, but for the valuation of project it has to be estimated.

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[32] Al-Kibsi, Gassan; de Boer, Kito, Mourshed, Mona; Rea, Nigel P.; "Putting citizens on-line, not in line", Mc Kinsey Quarterly, 2001

7.8.2.1 Benefits to the governmental agency

i.   **Reduction in delivery costs for information and services** –As e-business has proven it before (especially in the field of media and information publishing) the costs of online delivery are lower than those of traditional channels. "Some of the most dramatic reductions in transaction costs, the first category, are found in the differences between web-based and traditional methods of bill payment and document submission."[33]

ii.   **Improvement in work efficiency**

Shorten delivery times – time spent per form is shortened by automation of the filing and verification processes which allows the elimination of routine tasks. When designing the website engine, the agency can determine what routine tasks would be eliminated. Knowing each task length and its frequency in customary form processing, the agency can estimate the time saved.

Benefit = hourly wages * (task length * frequency)

iii. **Reduction in crowd at BMC** –Number of people who apply in person will decrease by the number of people who apply online. Departments will have to serve less people than before the project and thus, reduce crowd or department space. In cases the department runs on rented offices benefit can be gauged as

Benefit = % online * total rent for offices

iv.   **Reduction of personnel** - less people are served in person, less employees will be needed to serve them. This will allow personnel reductions and thus savings on the wages.

Benefit = % online * total wages for customer representatives

v.   *Decrease in the number of grievances and the employee-time devoted to handling them* – since the online form filing gives the user more autonomy and allows more self-service, grievances are usually reduced. The savings can be estimated based on the time spent on grievances and the decrease in grievances for online delivery.

Benefit = % online * % decrease in grievances * total time spent on grievances

vi.   **Faster and improved collection of revenues of BMC.**

The inconvenience of the traditional revenue collection methods regularly makes people postpone payments more than they would normally do. The offices can't process all the requests in due time, and thus the government does not collect the revenues in by the deadline (and often ends up extending the deadline).

Benefit = % online * total amount of taxes collected late * average time of delay * interest rate

vii. **Allows development of new services, integration, and automation.**

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[33] The Brookings Task Force on the Internet, "The Economic Payoff of the Internet Revolution", Brookings Institution Press, 2001

As governmental agencies cooperate to build a common web portal, they will be able to assimilate their services in one inclusive structure. This allow them to link services along with information from different forms, and automate some approval processes based on approval of other applications or collective data. They could also create new services, starting with newsletters and advice on services related to the application like companies for people who apply for address changes, job search websites or training programs for people who file redundancy entitlements, and enduring with inventive services that have no correspondent in the customary world.

viii. **Creates prospects for new revenues** from advertising banners, links to other websites subscriptions to specialized services, information etc. These are likely to bring some surplus benefits, but revenues obtained this way are small. The revenues will be highly correlated with the number of users for the website.

Benefit = Number of website visitors * ad market rate per visitor * Numbers of ads

7.8.2.2   Benefits to the Citizen /Customer

"Citizens and business save on the costs of compliance including search costs, travel costs, repetitive entry of information, and verification of task completion. E-government best practice examples strive to increase responsiveness to clients by eliminating process steps, redundancy, and confusion for the user."[34] The main benefits to the citizens/ Customers are:

i. **More self-service –**   In the traditional system for the citizens sometimes it is impossible to come out from the bureaucratic loop specially in case of approval. Benefit from the self-services can be gauged as

Benefit = % online * (average time spent in person – time spent online) * average wages

ii.   **Customer / Citizen Satisfaction:**

- *24x7 accesses to the service.*

- *Improved and more information.*

- *Cheaper service* is often mentioned, but depends on the creativity of the department of implementing agency.

- *Assimilated services, avoiding repetition of processes.*

iii.   **General/ mutual benefits**

- Transparency, decreasing of bureaucracy
- Better relationship between the local governance and customer, more interaction and opinion from the people is inevitable.

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[34] The Brookings Task Force on the Internet, "The Economic Payoff of the Internet Revolution", Brookings Institution Press, 2001

- High-value web content will provide additional incentives for people to use the web, leading to an increase in Internet penetration rates. "In addition to transaction cost savings, positive network externalities associated with Internet penetration increase the estimated savings."[35]

7.8.3 Risks

A risk assessment should also be performed, analysing all types of risks associated with such e-government projects.[36]

7.8.3.1 Political risk

Political desire is most important aspect in implementing any public interface project .An enormous risk lies in the alteration of government after elections.

7.8.3.2 Organizational risk

Retraining and re-staffing programs pose severe challenges on employees despite of political support. In public sector enterprises the employees repeals the change especially technological change which interfere their work culture. This creates the risk of organization if not handled the situation effectively and by proper planning.

7.8.3.3 User risk

There is possibility that Users/ Customers may not clasp the new technology. The possible reasons for such failure may be:

- Lack of Internet access,
- Very slow connections,
- Lack of Internet navigation/Computer operation skills,
- Issues of security or privacy,
- Payment methods. A low level of user acceptance can significantly decrease all the benefits derived from the projects.

7.8.3.4 Technological risk

Technology in the present era is improving day by day in all aspects, so there is risk of time to time up gradation & being update regarding the IT and other related fields. So there is always the risk of being obsolete in short term.

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[35] The Brookings Task Force on the Internet, "The Economic Payoff of the Internet Revolution", Brookings Institution Press, 2001
[36] The typology of risk presented below is based on a risk assessment model used by Gartner, Inc.: B. Keller, "Is IT Worth It? Presenting the Public-Sector Business Case", February 2002

7.8.3.5   Vendor risk

The life span of IT industries are quite unpredictable so there is always a question mark on the services, operation & maintenance provided by these IT/ICT firms or industries wheather it is local or multinational.

7.8.3.6   Execution risk

The risks associated with the project implementation such as failure to gather people and funding, cash-flow issues, not meeting deadlines, exceeding the budget etc. are often ignored. E-government often takes more money, planning, leadership and sustained focus than government officials anticipate, and without those key ingredients, e-government initiatives are likely to falter[37].This can significantly increase the costs of building the e-government portal.

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[37] William Matthews, "Study: E-governance prone to falter", Federal Computer Week, May 6, 2002.

| Chapter-8 | **RECOMMENDATIONS** |

8.1 Recommendations for Bhagalpur Municipal Corporation

8.1.1 Establishment of E-Governance Cell

Establishment of e-governance cell in the BMC

8.1.1.1 Functioning of e-Governance-Cell should be

i. Upkeep the hardware and software installed in the various departments of BMC.

ii. Captivating the backup of whole data & information of BMC at the end of the day.

iii. Bring up to date and reload the BMC web-site from time to time.

iv. Maintaining online/LAN services in the BMC.

v. Providing the essential feedbacks for development of Software.

vi. Troubleshooting of the computer systems of BMC

vii. Providing necessary help and training to the staff of various departments of BMC.

viii. Maintaining and providing whole electronic information of BMC

ix. Providing essential help in infrastructure development projects of BMC.

8.1.2 Capacity Building for e-governance in the Department

8.1.2.1 Issues with Current functionality

Lack of personnel with appropriate skill sets:

After the assessment of e-readiness & IT penetration in BMC it was found that the personnel engaged in management of urban affairs and municipal services are not trained in their specific areas identified for attention are socio-economic planning, environmental management, urban planning, citizen participation, public relations, urban reforms, municipal accounting and financial management, e-Governance, municipal service delivery including water supply, solid waste management, sewerage and sanitation. At another level, there is an acute shortage of trained manpower masons and plumbers.

8.1.2.2 Addressing the functionality

1. In defining priority ICT based training needs and modules, the extremely limited ICT literacy and access to ICTs amongst the municipal staff prerequisites to be taken into account. Thus further basic ICT access and literacy support will also likely be required before more advanced training will have any significant impact. Due to the limited resources available, it will also be important to involve other agencies to provide the additional resources required for addressing these basic ICT training and infrastructure requirements.

2. Due to the limited familiarity of the municipal executive with ICTs and e-governance, initial training modules could focus on awareness raising of the possible applications for e-governance and their benefits

3. The most ostensible application-specific e-governance training that would likely be of most immediate benefit would be to focus on the human resource development needed to ensure that there is capacity amongst the staff to load and update the web site with basic municipal information and to be able to convert 'hard copy' municipal application forms and documents forms to web-based formats. This should include training to impart understanding of the prominence of adopting commonly agreed standards for document storage and display, and to automate as far as possible the process of making these available on the municipal web site.

4. Elected representatives of ULBs have to play a major role in ensuring proper service delivery to citizens. Performing the responsibilities of an elected representative needs considerable expertise and knowledge[38]. Therefore, they require a systematic training pertaining to attitude, skill and knowledge in urban governance & e-governance which would enable them to discharge their duties and responsibilities effectively without losing time. To achieve optimum benefit of the scheme it is recommended that the training should be imparted to newly elected representatives of ULBs.

8.1.2.3 Addressing the issue of Finance

5. The Capacity Building Scheme for Urban Local Bodies is a Central Sector Scheme, 100 per cent financial support under the capacity building programme, financial support under the capacity building programme shall be extended to the identified institutions/Cities/States for the setting up of Centre of Excellence, and municipal reforms by implementation of e-governance.

6. Bhagalpur district is beneficiary of BRGF Fund, which is used primarily to build capacity in planning, implementation, monitoring, accounting and improving accountability and transparency which include arrangement of contracting and outsourcing[39] BRGF allocates fund of 250 crore per annum for Capacity Building for preparation of multi layered GIS based database for local planning.

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[38] Capacity Building Scheme for Urban Local Bodies, Ministry of Urban Development Government of India.
[39] Backward region Grant Fund Programme Guidelines

8.1.3 Providing e-governance services through the front-end service delivery

8.1.3.1 Issues with Current functionality

i. To avail the services in the department people have to meet individual officer or in charge personnel, this create inconvenience to both the citizen and officer

ii. Many people have to travel 13 km to assess the service, and from the correlation scatter graph it is evident that there is strong relation between distance from home to the centre and waiting time so, the waiting time also increases.

8.1.3.2 Addressing the Issue

Providing e-governance services through the front-end service delivery nodes for rendering important services such as:

- Payments of user charges (telephone, electricity, water supply and other bills), fees, property taxes, solid waste charge etc.
- Online submission and tracking of applications (along with the name of officer with whom pending).
- Online invitation of tenders and transparency in the process of selection of suppliers and contractors.
- Complaints and grievances sent online to concerned departments, which after a fixed date gets automatically reported to the next higher authority
- Scheme related information like list of beneficiaries, criteria of selection, entitlements under schemes etc.
- Provision of single window clearance system in the department by integration of all the Citizen Centric services of BMC as well as other major services like reservation, booking of ticket, multiplex ticket, payment of bills, cell phone recharge through the web portal and Citizen Service Centres.

8.1.4 Mobile governance, paradigm shift from e-governance

8.1.4.1 Issues with Current functionality

Digital divide

8.1.4.2 Addressing the Issue

1. SMS based service by service on hand system (PDS system in Bihar is already on run)
2. The ULB provides several services to its citizens for which there are usage charges to be paid, like:

- Property Registration
- Utilities like Electricity, Water and Gas
- Urban Transport
- Solid-waste Management

Field level transaction enabling applications (clients) for the above mentioned services are being developed on indigenously developed mobile devices Simputer and wireless tablet like Aakash and many applications are available on the cell phone

Fig. 8-1 Citizen's Municipal Taxes on Simputer/ Mobiles/Tabs

Fig. 8-2 A Utilities Billing Client on the Simputer/Mobile/Tabs

3. Call centre based services (RTI, "Jaankari" is already a successful e-governance system in Bihar)
4. **CSC established at zonal level of BMC will bridge the gap of digital divide among the citizen**

8.1.5 Geographic Information System

8.1.5.1 Issues with Current functionality

i. Poor collection Ratio of property tax 25.94 per cent .
ii. Lack of monitoring mechanism in the BMC

iii. Lack of effective tools to measure unauthorized construction.

iv. Lack of Efficient maintenance of Public utilities like Roads, Street Light, Water Supply Network, Sewerage Network, etc.

v. Suitable site selection for solid waste dumping and other various purposes.

8.1.5.2 Addressing the Issue

i. Issue of Poor collection of property tax collection can be resolved by the application of GIS. Reform of property tax with GIS, so that it becomes major source of revenue for Urban Local Bodies (ULBs) and arrangements for its effective implementation so that collection efficiency reaches at least 85% within next seven years[40].

ii. Introduction of system of e-governance using IT applications like, GIS and MIS for various services provided by ULBs.

iii. Adoption of modern, accrual-based double entry system of accounting in Urban Local Bodies.

8.1.5.3 Addressing the issue of Finance

The sharing of funds would be in the ratio of 80:10 between Central Government & State Government and the balance 10% could be raised by the nodal/implementing agencies from the financial institutions[41].

8.1.6 Solid waste Management by GIS

The basic responsibility of the Solid waste management department of BMC is the collection, transportation and disposal of solid waste. Solid waste collection in BMC is handled through primary & secondary collection. Primary involves house to house collection while secondary is through the containers placed at identified locations in the BMC limits. Secondary collections through containers are phased based on the location, the expected waste generated in the area and the availability of vehicles for collection.

8.1.6.1 Issues with current functionality

1. There is no provision of tracking of vehicles for Garbage pick and dump.

2. There are no organized places of solid waste disposal, and a random dumping is attempted by the municipal team. The wastes are dumped in low lying areas, along the road sides and also along the open drains too.

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[40] Schedule 13.1.1 Urban Infrastructure Development Scheme for small & medium town, UIDSSMT Guidelines, under mandatory reforms of ULBs.
[41] UIDSSMT Guidelines

8.1.6.2   Address the issue with ICT as tool

Online Tracking of Vehicles, Linking of SWM vehicles with Dust Bins, The vehicles can be fitted with GPRS SIM cards and the vehicles can be traced through GPS (Global Positioning System) via satellite which can be sent to server and centrally monitored.

8.1.6.3   Site Selection for Dumping Ground through GIS[42].

Overlaying of constraint map and factor map produces the suitability map which leads to the identification of location or site that may present suitable conditions to the disposal of the wastes. Map 7-3 shows the suitability map in which adopted criteria's are the spatial data. Thus the best suitable sites for landfill are depicted, where the classes occur as gradient of suitability from extremely restricted to highly suitable site. Restricted areas appeared in red colour where landfills were ecologically and economically not viable. Different degrees of suitability were represented in different shades. The most ideal and suitable landfill site was marked in black which was located outskirts of the main township within municipal limits. The highly suitable site gave the area of 1.5 km^2 which makes only 0.30% of the total area. The Bhagalpur municipal corporation needed 0.02 km^2 as it demanded from the government for the disposal of MSW. But, here it is 1.5 km^2 which is 61 times the land area demanded by the Bhagalpur Municipal Corporation. Out of 1.5 km^2, 0.31 km^2 was suitable according to all criteria being used and taking the range of study area. Most Site Suitability Analysis for the Bhagalpur area was about 0.31 km^2 as outcome from the final result. Thus, Municipal Corporation could give a better service to the people by disposing off Municipal Solid Waste at suitable site. Among the suitable sites, the one selected was in the south direction and the other sites are either at the corner of the study area beyond far away from municipal limit and they were costlier for the disposal facility. This study was a contribution towards growing dense urban settlement for municipal solid waste disposal and utilization of land properly.

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[42] 2010, Prem Chandra Pandey Laxmi Kant Sharma Mahindra Singh Nathawat Geospatial strategy for sustainable management of municipal solid waste for growing urban environment

Legend

Vacant land
Waterlogged area
Marshy sandy area
Sandy_area

Protected forest
River
Streams
Man-made waterbodies

Barren land
Crop land
Fallowland
Plantation

Railroad
Road
Airport
Builtup area

N

Kilometers
0 1 2 4 6 8
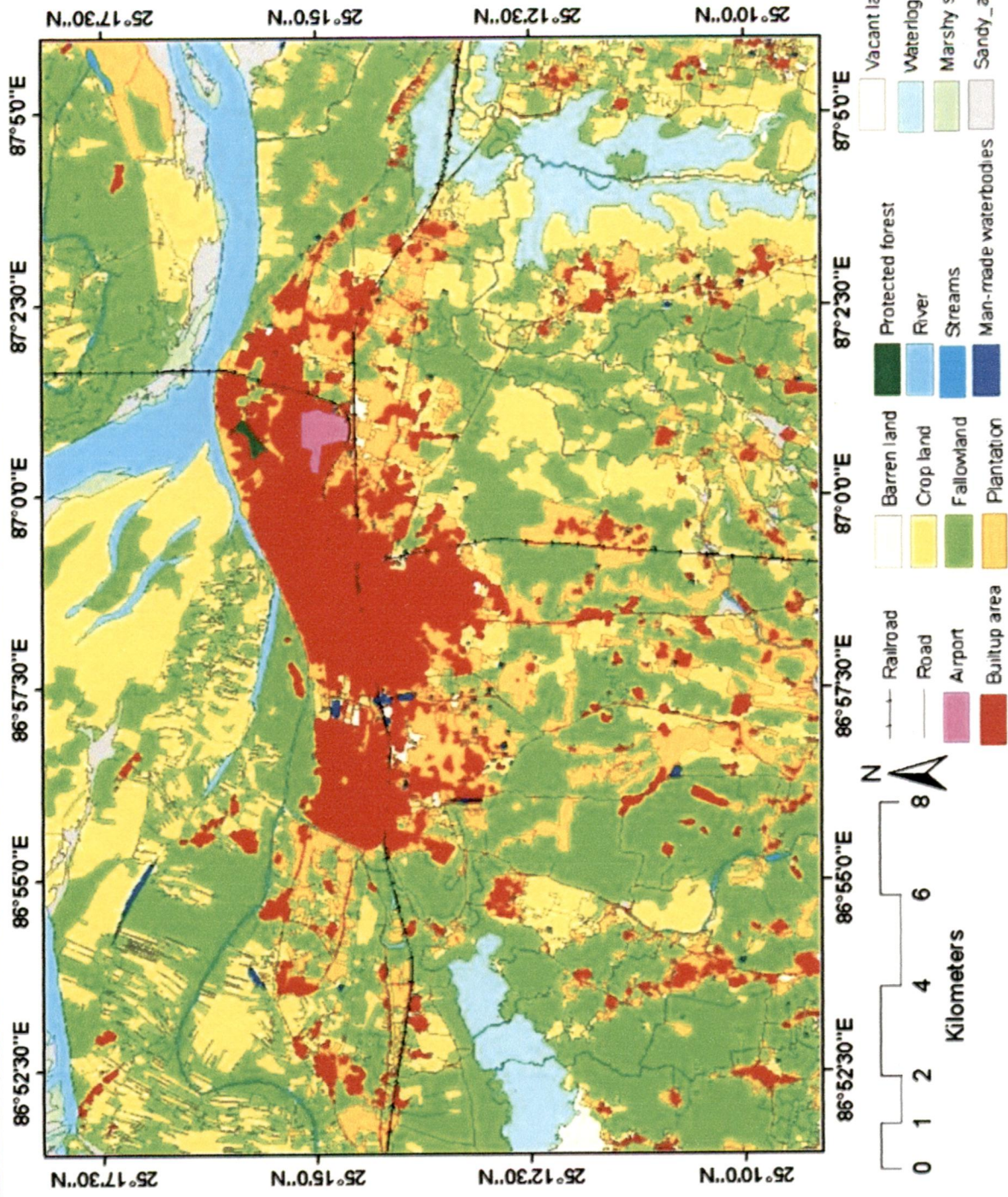
Map 8-1 Land Use/ Land Cover Map of Bhagalpur Municipal Area

(a) Road Network

(a) Constraint Map

(c) Distance Map of Rail

(a) Rail Network

(b) Constraint Map

(c) Distance map of Road

(a)Surface Water

(b) Constraint Map

(c) Distance map of surface water
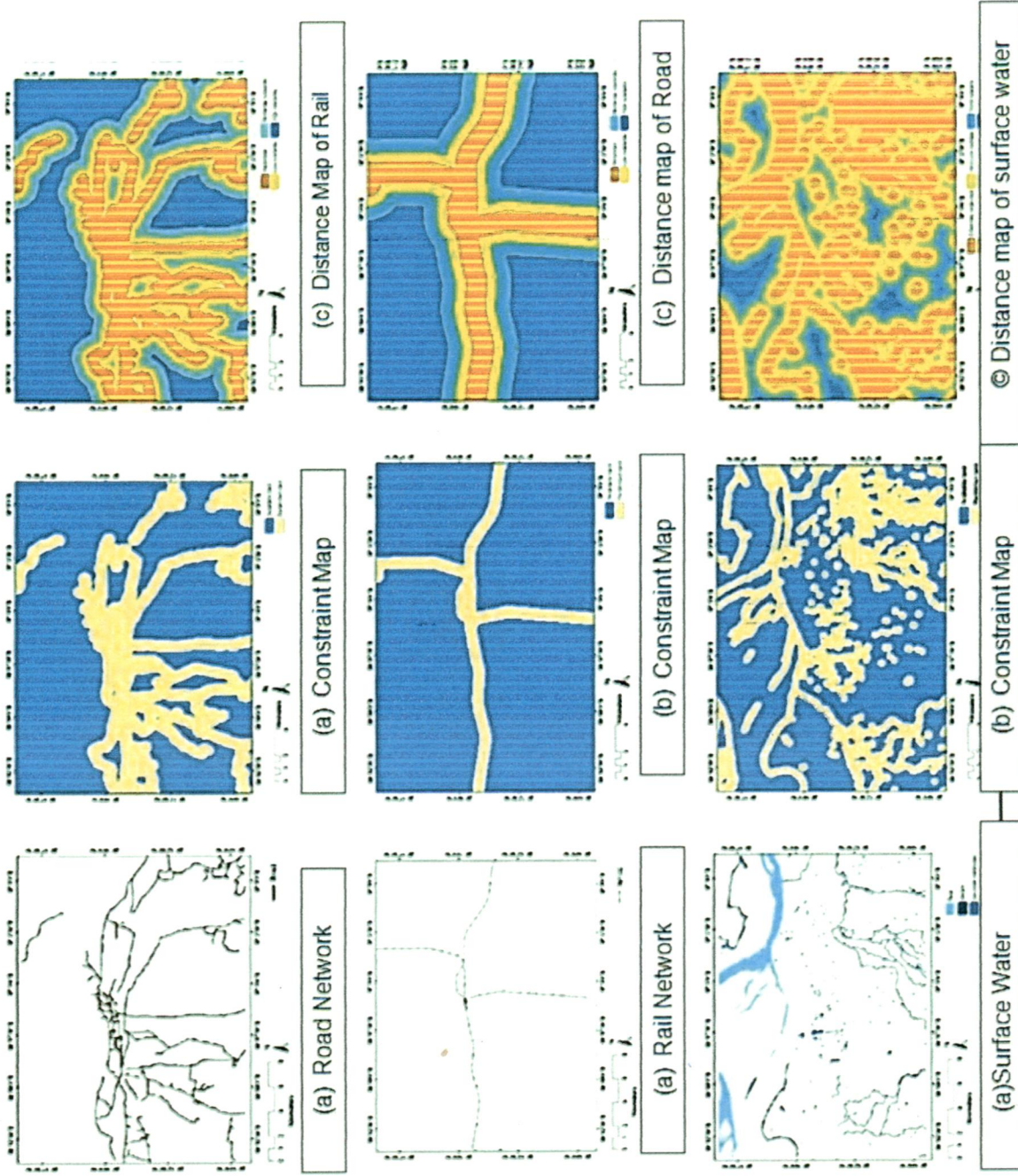
Map 8-2 Theme Map, Constraint Map and Distance Map of Bhagalpur City
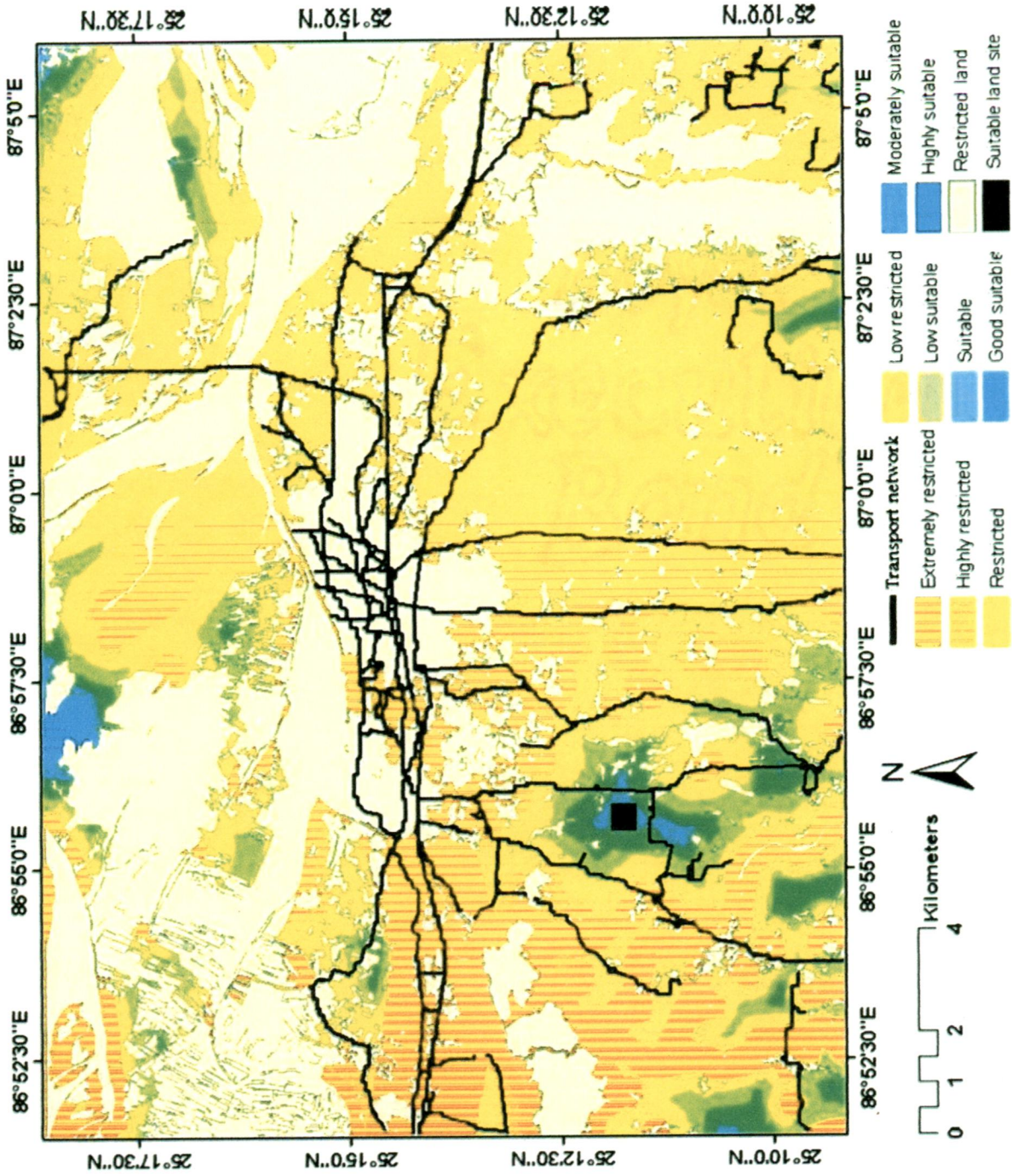
Map 8-3 Final Landfill suitability map of Bhagalpur City obtained with GIS application

8.1.7 Web Portal Module for BMC

Web portal is the single window for the outside world to interact with the corporation online. Various services can be accessed and delivered through the secure web portal. Web portal has departmental links for detailed information. Using the web portal citizen can pay the Property tax, apply for any service, and launch a complain and many more other activity.

8.1.7.1 Issues with current functionality

There is not web portal for BMC

8.1.7.2 Addressing the functionality with web Portal

Functionality	Integration Required with
(a) Home Page	
Message from Mayor, Commissioner	
Vision, Mission, Objectives	
• Link to various sub-sections • City Information • Online Services • About BMC • Projects • Citizen Grievances • RTI	

(b) City Information
    • History of Bhagalpur
    • Tourist Locations
    • City Map with citizen related GIS information	

	GIS
(c) About BMC • Administrative Information • Information on Elected Representatives, Various Committees	
(d) RTI • Names of Public Information Officer. • Departments/Wards: Intro, Objectives, responsibilities, powers & duties of officers, employees with gross salary, activities, time limit, and • directory with telephone no. • Committee: Members, purpose, type, freq. of meeting,docs available for public. • Projects/ Activities: Budget head, work activities, allocated	Projects, Accounts, HRMS, Material Mgmt., Asset Mgmt.

amount, current statistics. ■ Details of concessions, subsidies given, and computerization done in various departments Integration required for updation of data for RTI with projects, accounts, HRMS, Fleet, material, asset. ■ Scope as per RTI Act 2005 sec. 4(1). ■ Opinion Poll ■ Photo Gallery ■ Tenders ■ FAQ's ■ Emergency Information ■ Employee Login using LDAP ■ Feedback ■ Contact Us	
	Accounts, Projects
	HRMS
(e) Online Services	
Application acceptance for various services / certificates ■ Birth / Death Certificates ■ Duplicate Bills ■ Building Permission related services ■ Water Connection ■ No Dues Certificates	Accounts, Corresponding Module
■ Downloading of Forms ■ Online Tendering ✓ Sale of Tender Forms ✓ Acceptance of Tenders ■ Complaints ✓ Acceptance ✓ Status Tracking ■ Status on Applications / Complaints ■ Payment Details, Bill Details ■ Online Payments	
■ Self-Assessment of property tax	Property Tax Module

8.1.8   Citizen Facilitation Centre

8.1.8.1   Issue with Current functionality

As it was found in earlier analysis correlation with other variables, the distance is one of the major factor for inconvenience to the citizen, as distance reasons other issues like increase in waiting time ,extra amount for citizen , extra trips for citizen so from research & analysis distance is found key issue in the current functionality of the system.

8.1.8.2   Addressing the Issue

i)   By providing Citizen Facilitation Centres, one stop service in the city to decentralize the service provided by the BMC and other government department.

ii)   Planned & strategic location to be provided for the CFCs for the ease and convenience of citizen and so that it can cater all the service to all the citizen

iii)   CFCs to be provided at Planning Zone Level[43] (as mentioned in the Master Plan and UDPFI guideline).

iv)   Key stakeholders should be general public, especially farmers, labourers, small entrepreneurs and students who require certificates and permits. They want hassle free services with minimum delay and fewer visits to government offices. Other stakeholders are the NGO, and government officials.

8.1.8.3   Planning Location of CFCs

For planning zones Population ranges from 45,000-60,000 persons[44]

Bhagalpur City is divided in twelve planning zone, where Zone X, XI & XII are urban extension as shown in the Map 7-6

Table 8-1 the projected population nine Planning Zones of Bhagalpur

Zones	Wards	Areas Sq km	2001	2011	2026	2041
ZONE I	1,2,3,6,7	1.2	33818	37998	39029	35742
ZONEII	4,5,8,9,10	3.93	32577	40646	58981	80237
ZONE III	11,12,13,17	2.25	26677	35291	49605	70797
ZONE IV	34,35,36,37,38	1.74	34250	41058	49091	51958
ZONE V	14,15,16,18,19,20,21	2.48	45965	55184	67397	72655
ZONE VI	22,23,24,25,27	3.69	38719	43804	69172	105413
ZONE VII	28,29,30,31,32,33	6.65	43121	58657	94682	155936
ZONE VIII	39,40,46,47,48	2.44	32996	39357	52901	69599
ZONE IX	41,42,43,44,45,49,50,51	2.6	52644	65684	83519	132801

[43] References from the study of other Municipalities of India.
[44] UDPFI Guideline.

			41432			·
ZONE X	Villages falling in SW Urban extension		41432			·
ZONE XI	Villages falling in SE Urban extension		11971			
ZONE XII	Villages falling in east Urban extension		31015			
					·	

Table 8-2 Proposal and Location of CFCs in Bhagalpur Municipal Corporation Area

Zones	Wards	Areas Sq km	2001	2011	2026	2041	Location of CFC Ward number, Location
ZONE I	1,2,3,6,7	1.2	33818	37998	39029	35742	Ward no.(2) Upper champa Nagar Path
ZONE II	4,5,8,9,10	3.93	32577	40646	58981	80237	Ward no.(5) Bhagwan Mahavir Path
ZONE III	11,12,13,17	2.25	26677	35291	49605	70797	Ward No. (13) Upper Champa Nagar Path
ZONE IV	34,35,36,37,38	1.74	34250	41058	49091	51958	Ward No.(36) Rai Bahadur Shankar Sahaya Road, Near Railway Station
ZONE V	14,15,16,18,19,20,21	2.48	45965	55184	67397	72655	Ward No. (21) Swami Vivekanand Path (Jokshar Chowk)
ZONE VI	22,23,24,25,27	3.69	38719	43804	69172	105413	Ward No.(23) Bhagalpur Municipal Corporation
ZONE VII	28,29,30,31,32,33	6.65	43121	58657	94682	155936	Ward No (28) Surya Mohan Prakash Path
ZONE VIII	39,40,46,47,48	2.44	32996	39357	52901	69599	Ward No (40) State Highway 25
ZONE IX	41,42,43,44,45,49,50,51	2.6	52644	65684	83519	132801	Ward No (50) Mirjan haat Road

8.1.8.4 Consideration & Methodology adopted to decide the ward number, location of the CFCs.

1. CFCs are placed by considering Planning Zones, as each planning zone has population or projected population between 45000 to 60,000.
2. Secondly, ward density more dense wards in the planning zone are preferred.
3. Thirdly, Road in the ward is preferred for properly locating the CFC as it gives easy access to the people all around.
4. By considering other constraints such as forest area, water bodies, playground, graveyard, airport railway line etc.
5. All the above three maps are overlapped to get a suitability map for the CFCs
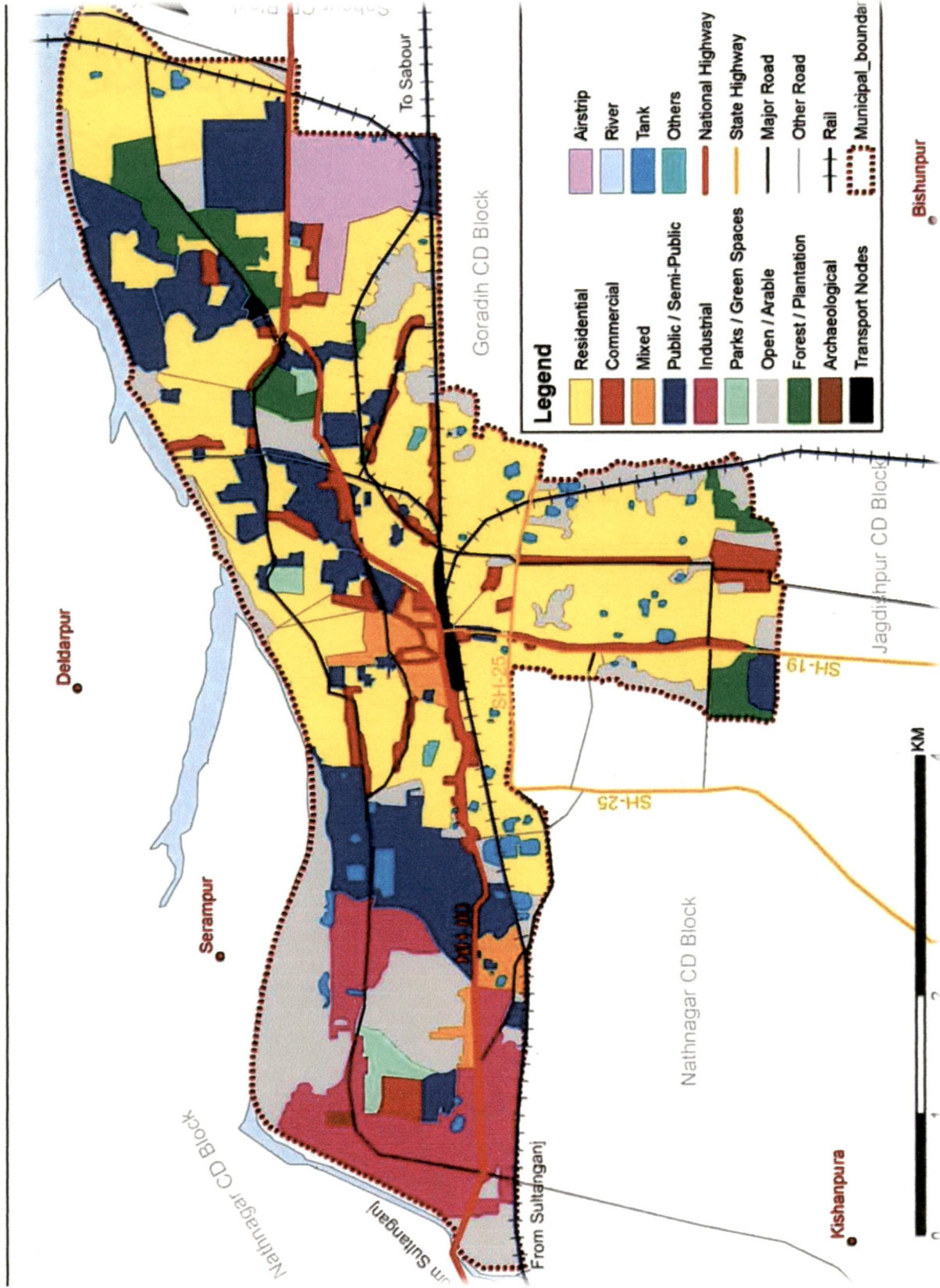
Map 8-4 Land Use Map of Bhagalpur Municipal Area

Legend

Residential		Airstrip
Commercial		River
Mixed		Tank
Public / Semi-Public		Others
Industrial		National Highway
Parks / Green Spaces		State Highway
Open / Arable		Major Road
Forest / Plantation		Other Road
Archaeological		Rail
Transport Nodes		Municipal_boundary

Goradih CD Block

Jagdishpur CD Block

Nathnagar CD Block

Nathnagar CD Block

To Sabour

From Sultanganj

From Sultanganj

Deldarpur

Serampur

Bishunpur

Kishanpura

SH-19

SH-25

SH-25

NH-80

KM

160

Training for optimum governance for sustenance of minimum density District Urban State

Legend

- National Highway
- State Highway
- Major Road
- Other Internal Road
- Rail
- Tehsil Boundary
- Municipal Boundary
- Ward Boundary
- Waterbody

Population Density (2007) (Persons/Hectare) (Wardwise)

- Less than – 100
- 100 – 200
- 200 – 300
- More than 300

Bhagalpur Municipal Corporation

Map 8-5 Ward Wise Population Density Map & Location Of Bhagalpur Municipal Corporation

Planning for optimum governance for Bhagalpur District, Bihar State

Map 8-6 Planning Zones Of Bhagalpur Municipal Corporation

Bhagalpur Municipal Corporation
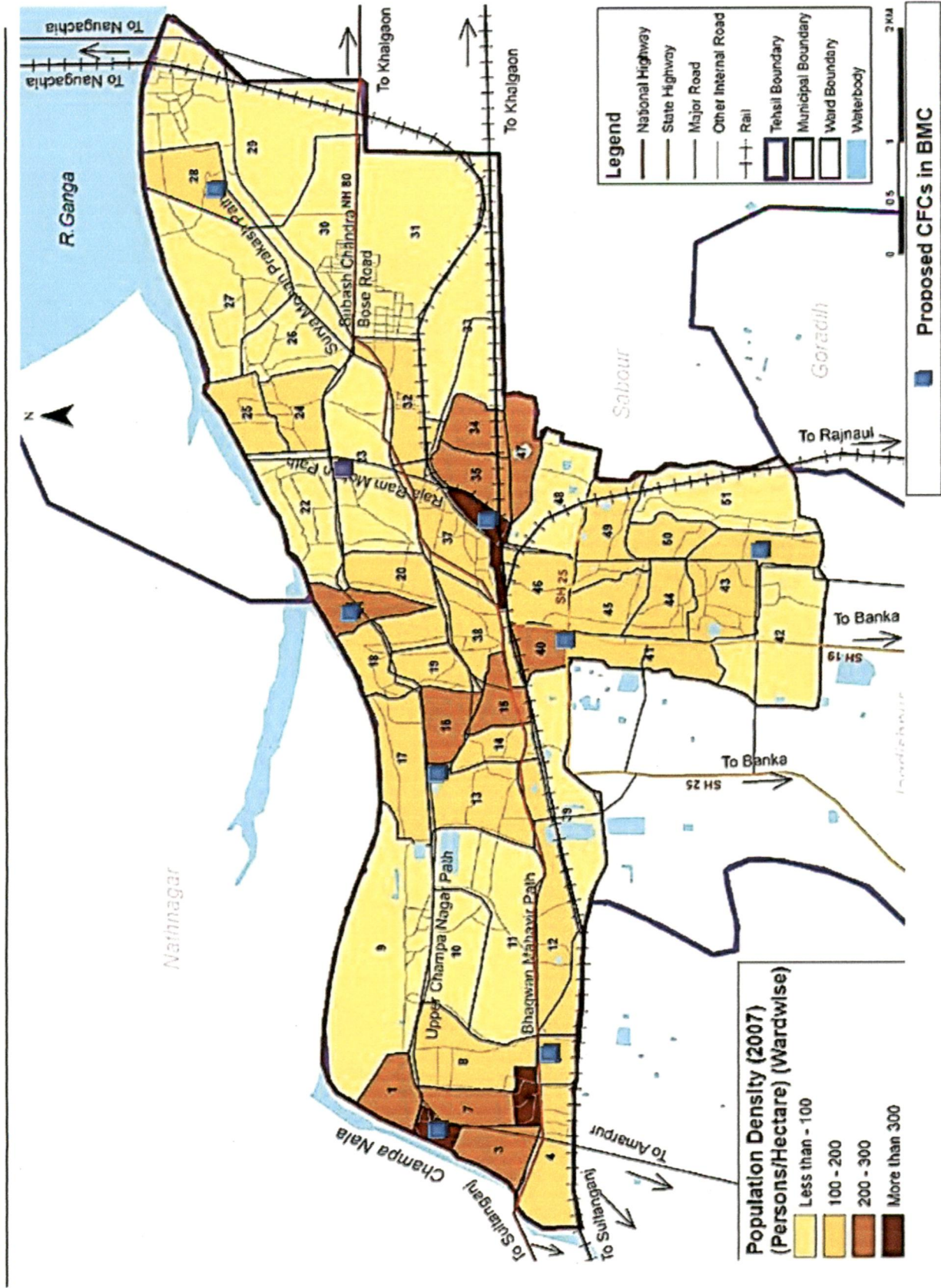
Map 8-7 Proposed location of Citizen Facilitation Centres in the Bhagalpur Municipal Corporation Area.

Legend

- National Highway
- State Highway
- Major Road
- Other Internal Road
- Rail
- Tehsil Boundary
- Municipal Boundary
- Ward Boundary
- Waterbody

Proposed CFCs in BMC

Population Density (2007) (Persons/Hectare) (Wardwise)

- Less than – 100
- 100 – 200
- 200 – 300
- More than 300

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From the above study, analysis and recommendation of Bhagalpur Municipal Corporation it was seen how the governance (internal & external) provided by department, organization or institution can be improved and make good as possible (optimized) by using ICT as tool by augmenting features of optimum governance

Public Participation: All men and women should have a voice in decision-making, either directly or through legitimate intermediate institutions that represent their interests. Such broad participation is built on freedom of association and speech, as well as capacities to participate constructively. Study regarding public participation commenced through the questionnaire, Need Assessment Survey Part-6 (Refer Annexure 10.2) and plausible recommendation for the web portal module for the BMC is provided in section 8.1.7 in chapter 8, as master plan can or budget can be uploaded on website and can be asked for public opinion, government in other state and also government of Bihar seeks public opinion through web portal and newspaper. Here web portal will act as an ICT tool in enhancing as well as optimizing the public participation.

Rule of Law (within the department): Legal frameworks should be fair and enforced impartially, particularly laws on human rights. Study regarding rule of law in the department is conducted through questionnaire, *Need Assessment Survey Part-6 (refer annexure 10.2),* where question regarding corruption and Citizen Charter, illustrations on rules of department were asked and recommendations were provided after analysis of response of people by front end-delivery service & single widow clearance system (integration of all BMC services at one widow) in *section 8.1.3 in chapter 8.*

Transparency: Transparency is built on the free flow of information. Processes, institutions and information are directly accessible to those concerned with them, and enough information is provided to understand and monitor them. . Study regarding rule of law in the department is conducted through questionnaire, *Need Assessment Survey Part-6, Part-3 & Part-7(refer annexure 10.2), where question were asked regarding illustration of rules & regulation by the department, medium of information, Citizen Chart, need of mediator. Recommendations* were provided after analysis of response of people by front end-delivery service & single widow clearance system (integration of all BMC services at one widow) in *section 8.1.3 in chapter 8, providing services through M-governance and web portal as a medium of information in section 8.1.4 and8.1.7.Thus transparency can enhanced by the use of ICT as tool & hence governance can be optimized.*

Responsiveness: Institutions and processes try to serve all stakeholders. Study regarding responsiveness in the department is conducted through questionnaire, *Need Assessment Survey (refer annexure 10.2), where question were asked regarding way of service deliver by the department, response of official/staff, satisfaction level gauged. Recommendations* were provided after analysis of response of people by front end-delivery service & single widow clearance system (integration of all BMC

services at one widow) in *section 8.1.3 in chapter 8 and web portal as a medium of information in section 8.1.7*. Thus responsiveness can be optimized in the department by the application of ICT.

Consensus Orientation: Governance mediates differing interests to reach a broad consensus on what is in the best interests of the group and where possible, on policies and procedures. Study regarding Consensus Orientation commenced through the questionnaire, Need Assessment Survey Part-6 (Refer. Annexure 10.2) and plausible recommendation for the web portal module for the BMC is provided in section 8.1.7 in chapter 8, as master plan can or budget can be uploaded on website and can be asked for consensus Orientation, Opinion poll survey can be conducted through websites. Consensus Orientation can be guessed by authority.

Equity (in availing the services of department): All men and women have opportunities to improve or maintain their well-being by availing the services of department. Study regarding equity conducted through the questionnaire, Need Assessment Survey, Part-7(Refer Annexure 10.2), issue recognized as "digital divide" and plausible recommendations were given in chapter 8 sections 8.1.8, establishment of Citizen Facilitation Centre can reduce digital divide and equity be attained and aim of optimizing the governance be fulfilled.

Effectiveness and Efficiency: Processes and institutions produce results that make the best use of resources. In case of BMC and other departments/ institutions/organizations, effectiveness and efficiency lies in their internal operation & mechanism, which is studied and analyzed in section 7.5 of chapter 7 and plausible recommendations given on section 8.1.5 & 8.1.6 by identifying the issue, for enhancing the performance in internal operation, which ultimately lead to optimize the functions in terms of effectiveness and efficiency of system by the application of GIS (an ICT tool).

Accountability Decision-makers in government, the private sector and civil society organizations are accountable to the public, as well as to the institutional stakeholders. This accountability differs depending on the organization and whether the decision is internal or external to an organization. Right to Information act 2005, is itself a tool and big leap in terms of making the departments accountable. In recommendation section 8.1.7 online facilities for RTI filing is provided.

Strategic Vision Leaders and the public have a broad and long-term perspective on good governance and human development, along with a sense of what is needed for such development. There is also an understanding of the historical, cultural and social complexities in which that perspective is grounded.

8.2 Recommendations for e- governance for Bhagalpur District

Planning for the e-governance for whole district requires intensive study (Need Assessment Survey, measuring e-governance in the all the department of the district) as done for BMC in earlier section but as it is not possible to do all the study for all departments, above study of BMC can be taken in account for further study of other remaining department. In this section, recommendations are formulated based on analysis of various departments (extensive study of other remaining department) in section 6 of the document and the role of NeGP is very important in designing & planning the e-governance at different levels, so NeGP and ICT Policy are taken in account for recommendation purpose.

8.2.1 Establishment of District e-governance Society

8.2.1.1 Issues with Current functionality

Absence of District e-Governance Society in Bhagalpur District.

8.2.1.2 Addressing the functionality

A District e-Governance Society (DeGS), headed by the Collector/District Magistrate should be established in each district by district administration and register under Societies Act and ICT Policy,2011 Bihar state also gives indicative towards this initiative. The DeGS will be accountable for implementation of the e-governance project at district level. The DeGS will also play major role in operation & maintenance phase of the scheme.

The Roles & Responsibilities of District e-Government Society (DeGS) will be:

i. The DeGS will implement the Project and ensure close linkages and co-ordination amongst the various stakeholders in the Project at field level.

ii. Provide overall guidance to the Project at District Level.

iii. Work closely with the system Integrator/ Implementing agency to undertake the field work, comprehend the requirements, document the observation, prepare roadmap and redesign the process.

iv. Build Capacity Staff at various level of district administration

8.2.2 E-District

8.2.2.1 Issues with Current Functionality

1. Digital Divide

2. Absence of single window clearance system/ one stop service for all the departmental services in the district.

8.2.2.2 Addressing the functionality

Implementation of e-District project

E-District is one of the 27 Mission Mode Projects under NeGP under the Department of IT, Government of India, e-District aims at providing support to the basic administrative unit i.e. "District Administration" to enable content development of G2C services, which would optimally leverage and utilize the three infrastructure pillars, to deliver services to the citizen at his doorstep. For delivery of "web-enabled" anytime anywhere access to information and service across the country, NeGP envisions 3 pillars of e-Governance infrastructure. These are State Wide Area Networks (SWAN), State Data Centre for secure and fail safe data storage, and Common Service Centers (CSCs) as the primary front-ends for service delivery.

The scheme has been articulated on the proposition that
1. Districts are the primary unit for citizen services at one go.
2. An integrated approach is need of time to improve service quality.
3. Capacity building of the district administrative functions and processes is required for the enhancement of efficiency of staff personnel of various departments.
4. Automated work flow and would necessarily involve significant process redesign.
5. A Central data depository should be created at the district level, wherein data and information would be collected, stored, retrieved, used and exchanged in an efficient manner at all levels.
6. Enabling backend computerization for delivery of G2C services will ensure optimal leveraging and utilization of the core and support infrastructure such as Common Service Centers, State Data Centre.

8.2.3 Department wise recommendations in Bhagalpur District, Bihar State

8.2.3.1 Department of Agriculture

Issue with current functionality:

Existing Static web portal used for mass media support, literature demonstrations have done the remarkable job in the delivery of public services, but penetration of information is not widespread despite of CSC as Vasudha Kendra at the Panchayat level.

Addressing the functionality by ICT

a) This functionality can be addressed by the provision of web portal of Department of agriculture at district level with block level information on land, crop, fauna & tenancy, as it is addressed in the case of Nashik District, Maharashtra.
b) SMS based or mobile based services like information on rainfall, flood (as mentioned earlier that district is flood hit) & weather should be provided.

c) Mobile based market price of the crop & nearby market information should be provided on daily basis.

8.2.3.2 Department of Health & Family Welfare

Issue with current functionality:

Existing Static web portal used for mass media support, literature demonstrations have done the remarkable job in the delivery of public services, but penetration of information is not widespread. Health & family welfare is not on priority in the district.

Addressing the functionality by ICT

a) Provision of district level website with list of all the hospitals (Allopathic, Ayurveda, Homeopathy etc.), healthcare institutes, medical colleges, clinics with proper interactive map should be provided.
b) Applications/software should be such as nearby hospitals and clinics could be tracked.
c) GPS/ GPRS enabled ambulance should be provided to track any time-any place basis.
d) Tele-medicine facility should be provided and availability should be assured through web portal.

8.2.3.3 Department of Energy

Issue with current functionality:

Energy (electricity) is an important issue in the overall Bihar state, as the state is facing tough situation regarding electricity (power). Department is promoting the alternative energy sources(especially solar power) but awareness is lacking among local people due to unavailability of proper information in public domain.

Addressing the functionality by ICT

a) Proper information on district level website with information on alternative energy sources, agency which provide solar panel or other alternative sources of energy, subsidy provided by the state government etc.
b) Online application for new connection & grievances redressal system at district level.
c) Mobile based or SMS based electricity bill information should be started.

8.2.3.4 Department of Human Resource Development

Issue with current functionality

Existing Static web portal used for mass media support, literature demonstrations have done the remarkable job in the delivery of public services, but penetration of information is not widespread and users are rare.

Addressing the functionality by ICT

a) Establishment of web portal of Human Resource Development at district level

b) Information about various post and vacancy, employee & employer should be provided at district level.

c) Web portal should be used as open source for employee & employer this will mobilise the Human resource within the district.

d) Mobile can be integrated for the dissemination of information.

8.2.3.5 Department of Planning & Development

Issue with current functionality

District has not online database either district level or ward level. Absence of spatial database

Absence of public participation in policy or plan formulation at district level.

Addressing the functionality by ICT

a) Digitization of existing database and maps.

b) Monitoring of development of schemes under implementation & display online.

c) Web site should be based on interactive model so that people can give feedback to policy maker and play a role in decision making process.

d) Design the website to establish e-participation by opinion polls, online survey, online discussions, expert comment etc.

e) SMS based opinion polls should be conducted

8.2.3.6 Department of Food & Consumer

Issue with current functionality

Transparency in distribution of commodity (kerosene, food grain distribution etc.) is always a challenge hence proper monitoring is required at each level in Public Distribution System (PDS)

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Addressing the functionality by ICT

a) Monitoring of PDS can be done by mobile/ SMS system by making proper reporting mechanism.

b) Automation & computerization of PDS retail shops.

8.2.3.7 Department of Disaster Management

Issue with current functionality

Bhagalpur District is one of the flood prone districts of Bihar State and hit by frequent flood every year takes lives of many. There is not any information system which can make aware & educate people about how to face the situation.

Addressing the functionality by ICT

a) District level web portal which would provide mass media support, information on disaster mitigation.

b) Mobile or SMS based disaster alarm system can save a lot of lives.

c) Web portal should be based on "comparative analysis model" so that a lot of information could be extracted by the citizen as well as experts.

8.2.3.8 Department of Tourism

Issue with current functionality

Bhagalpur District has potential to be excellence in tourism & eco-tourism, situated on the bank of River Ganga (Home of Dolphins) has many visiting sites such as Mandar Hills, Ruins of Vikramshila University, traditional villages etc. but lack of tourism plan at district level, dissemination of information makes this sector ineffective & inefficient.

Addressing the functionality by ICT

Development of district web portal for tourism, with universal access should contain information about tourism plan, innovative tourism practice, and eco-tourism practice with site map, location, route map etc

BIBLIOGRAPHY

8.3 Books

Bhatnagar, Subhash.2004,E-Government from vision to implementation: Sage Publication,2004

Bhatnagar, Subhash.2007,Impact assessment study of e-governance project in India: Centre of e-governance, IIM Ahmedabad January 2007

C.S.R.Prabhu .2011, E-Governance Concept & Case Studies, PHI Learning Pvt Ltd. 2011

G.P.Sahu.2006, Delivering E-Government: GIFT Publishing, 2006

HUDCO.(India). 2007Draft Master Plan Bhagalpur Town, 2007

India: Preparing the Bihar Urban Development Project, Final Subproject Appraisal Report for Bhagalpur Water Supply. May 2011

Lee Associates (New Delhi).2011, City Development Plan of Bhagalpur City, 2011.

R.K.Baggga, Piyush Gupta. 2009, Transforming Governance-e-government initiatives in India: The ICFAI University Press, 2009

8.4 Published Papers & Journals

Bhattnagar, S C [Indian Institute of Management, Ahmedabad, India], 'BHOOMI: Closing the digital divide through innovative reforms and partnership', 11th International Anti-Corruption Conference, Seoul, Republic of Korea, May 25-28, 2003

Burns, A. C. & R. F. Bush. 2000. *Marketing research*. Prentice- Hall, Upper Saddle River, New Jersey

Chawla, Rajeev and Bhatnagar, Subhash, .Bhoomi: Online Delivery of Land Titles in Karnataka, India., Case study available on World Bank.s E-Government website.
Source URL: http://www1.worldbank.org/publicsector/egov/bhoomi_cs.htm

Prem Chandra Pandey · Laxmi Kant Sharma ·Mahendra Singh Nathawat.2010. Geospatial strategy for sustainable management of municipal solid waste for growing urban environment: Springer Science Business Media B.V. 2011

Prem Pangotra. Astha Govil.2008. Urban Development Strategy for Bihar: A Management Perspective:IIM Ahmedabad,2008

Walker, R.H., M. Craig-Lees, R. Hecker & H. Francis. 2002. Technology-enabled service delivery: An investigation of the reasons affecting customer adoption and rejection. *International Journal of Service Industry Management*.

Sorin Kertesz.2003. Cost-Benefit Analysis of e-Government Investments. May 2003.

ANNEXURES

8.5 Bhagalpur District at a Glance

Particulars	Data		
Number of Sub-Division	3		
Number of Blocks	16		
Number of Municipality	4		
Number of Gram Panchayat	242		
Number of Police Station	48		
Number of Inhibited Villages	951		
Number of Uninhibited Villages	585		
Number of Villages	1536		
Number of Households	Total 492573	Rural 389132	Urban 103441
Type of house (%)		Pucca (24.70)	Kaccha (75.30)
Number of Electrified Villages	445		
Number of Villages with primary school	1054		
Number of Villages with Middle School	793		
Number of Villages with High School	111		
Villages with Mud Approach Road	804		
Percentage of net area sown to geographical area 2006-07	56.65		
Sex Ratio	879		
Percentage of total state population and Rank	2.92 & 15		

8.6 Need Assessment Survey

NEED ASSESSMENT SURVEY
(E-Governance in Bhagalpur Municipal Corporation)

PART-1 (INTRODUCTION)

Serial No. ....
Name of the Respondent.........................   Position of the Respondent
Address: ....
....   Relation with Head of the Family
....
....
Ward No.   ....
Dated: ....

PART-2 (DESCRIPTION OF RESPONDENT)

1	Age	
2	Sex (Male/Female)	
3	Education	Illiterate............................ Less than Primary............ Primary........................... Middle............................ High School...................... Intermediate.................... Diploma.......................... Graduate or more.............. Other.............................
4	Computer Education	Illiterate........................... Below Average.............. Average......................... Above Average............... Proficient........................
5	Profession	
6	Monthly Income	Less than 5000................. 5000 to 10,000................. 10,000 to 20,000.............. More than 20,000..............

7	Home Appliances or Electronic Gadgets	1. Television..................... 2. Computers.................. 3. Mobiles...................... 4. Telephones............... 5. Tabs......................... 6. Telephones............... 7. Others......................
8	Internet Connection	No
		Yes
		If Yes,
		1 | Wi Fi..................
		2 | Broadband............
		3 | Mobile 2G/3G/GPRS.........

PART-3 (MUNICIPAL SERVICES AWARENESS & USE OF MUNICIPAL SERVICES)

1	Do You Know about Municipal Services? Yes-1, No-0	
2	Name any Municipal service you have used.	
3	How did you know about Municipal services?	Newspaper................... Television..................... Neighbour/Relatives....... .... Government employee.... .... Other...........................
4	How many people around you know about the Municipal services?	None......................... Few........................... Some .... Many........................ All.............................
5	Where You go for Municipal service?	
6	With whom you go for Municipal services?	Self.......................... Family Member.......... Friend....................... Servant..................... Other........................
7	How many times you or your family members have availed the Municipal services?	

PART-4 (COST IN AVAILING THE MUNICIPAL SERVICES)

Name of the Municipal Service		
1	Distance between Your home & Municipality	
2	How many trip you have to make to get benefit of the facility?	
3	Your means of travel is Walk-1, Bicycle-2, Bike-3, Auto-4, Rikshaw-5, Other-6	
4	How much does a trip costs?	
5	How much time it takes to make a trip?	
6	How much time you have to wait on the centre/office for service?	
7	How much you loss in the salary to get benefit of the service?	

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8	How much it total cost to take benefit of the service?	
9	Have you got errors in the document you get? Yes-1 ; No-2 ;	
10	How many times you have to go for the correction of errors?	
11	How much did the service cost total?	
12	Have you bribed any staff/official? Yes-1; No-2;	
13	How much money you paid as a bribe?	
14	Why the bribe was paid? For quick accomplish of work............................. For work to be done earlier than your number.............. To influence the staff...................................... Another Reason...	
15	Have you needed any mediator? Yes-1; No-2;	
16	How much money you paid to mediator?	
17	How much time it takes from date of apply to get service?	
18	How much you suffer due to delay in service delivery?	

PART-5 (QUALIFICATION OF THE MUNICIPAL SERVICES)

1	Do you agree with present location of Municipal Corporation? Agree-1; Disagree-2	
2	Working hour of the MC service centre is comfortable for you? Yes-1; No-2	
3	Are officials/staff helpful? Never-1; Very less-2;sometimes-3;Often -4;Always-5	
4	Does the official/staff response on time on your service request Yes-1; No-2	
5	Are you satisfied with the overall level of service? Yes-1; No-2	
6	Do you feel that all the information about you is kept confidential? Yes-1; No-2	

PART-6 (QUALIFICATION OF ADMINISTRATION)

1	Guess the level of Corruption Highly Corrupt-1, Little corrupt-2, Neutral-3,More corrupt-4 No Corruption-5	
2	Are you aware of Citizen Charter? Yes-1; No-2	
3	The time limit in which the services are provided to you are according to Citizen Charter Never-1; sometimes-2; Many times-3; Always-4	
4	Does the departmental officers/staff perform their duty sincerely Yes-1; No-2	
5	Are the Rules and work system on the department/centre well illustrated? Yes-1;No-2	
6	Does the administration is responsible for the credibility of information Yes-1;No-2	
7	Have you ever suggested any officer/Staff? Yes-1;No-2	
8	Have you got response on your suggestion?	

	Yes-1; No-2	
9	Do you think that your suggestion can change rule, regulation and policy? Never-1;very less-2;sometimes-3;Often-4; Always-5	

PART-7 (RESPONDER'S AWARENESS & VIEWS ON E-GOVERNANCE)

1	Do You Know about e-governance Services? Yes-1; No-2	
2	Have you ever get benefit from e-governance services? Yes-1; No-2	
3	If Yes, then name the service.	
4	How did you know about e-governance services?	Newspaper.................... Television..................... Neighbour/Relatives....... .... Government employee.... .... Other............................
5	How many people around you know about the e-governance services?	Very Less.................... Less........................... Some .... Many.......................... All............................

		Agree	Neutral	Disagree
6	E-governance services uplifted the image of governance.			
7	Government should invest more in e-governance projects.			
8	Municipal Corporation should be computerized also			
9	Computerization of government department is wastage of money.			
10	Amount invested on e-governance should be invested on other government projects.			
11	Computerization of the Municipal Corporation will benefit only rich and influential people			

Responder's Suggestion

Responder's Signature/ Thumb mark

8.7 Assessment of E-Readiness

Assessment of E-Readiness
(E-Governance in Bhagalpur Municipal Corporation)

Serial No. ....

Name of the Staff ....   <u>Position of the Staff</u>

Address: ....

....

....

Dated: ....

1	Age	
2	Sex (Male/Female)	
3	Education	High School..................... .... Intermediate.................... .... Diploma.......................... .... Graduate or more............ .... Other.............................

4. Do you know about e-governance services?

           Yes ☐   No ☐

3. How did you know about e-governance services?
   a) Colleague
   b) Television
   c) Newspaper
   d) Trainings
   e) Others

4. Ever participated in IT training sessions?

           Yes ☐   No ☐

5. If Yes where
   a) Private Training Institute
   b) Department training facilities
   c) State recommended training
   d) Department of IT
   e) None

7. Will you feel comfortable with computerized applications?   Yes ☐   No ☐

8. Level of computer/IT skill
   a) Can do regular work e-mail, internet, searches, uploading, downloading.
   b) Can work with software of word processing
   c) Can work with some advance software
   d) Can maintain web portals.

8.8 Excel Sheet of Variables

Variable key

Code	Group	Description
V1	Description of Respondents	Age
V2		Sex
V3		Education
V4		Computer Education
V5		Monthly Income
V6	Gadgets	Television
V7		Computers
V8		Telephone
V9		Mobile
V10		Others
V11		Internet Connections
V12	Use of Municipal Services	Knowledge of Municipal Services
V13	Source of Knowledge	Television
V14		Newspaper
V15		Internet
V16		Neighbours/ Relative
V17		Government Employees
V18		Other Information Source
V19		Depth of Municipal Services in public domain
V20		BMC service location
V20a		No. of times service availed
V21	Cost in availing the Municipal Service	Distance of BMC to home
V22		No. of Trips made to get service
V23		Cost of a trip
V24		Waiting Time
V25		Time of a trip
V26		Mode of travel
V27		Extra Cost in availing a service
V28		Errors in the document
V29		Extra trips for correction of errors
V30		Total Cost in availing a service after correction
V31		Bribe Paid
V32		Amount of Bribe Paid
V33		Reason for Bribe
V34		Need of mediator
V35		Money paid to mediator
V36		Time from the date of apply to get service
V37		Suffering due to delay of service

Data

Sch	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V20a	V21	V22	V23	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	V35	V36	V37
1	2	1	8	1	3	1	0	1	1	0	0	1	0	0	0	0	1	0	2	1	2	3	3	3	3	2	3	3	0	×	×	×	×	×	1	3	2	2
2	2	1	7	1	2	1	0	0	1	0	0	1	0	0	0	0	1	0	4	1	1	2	2	2	1	2	3	1	0	×	×	×	×	×	×	1	1	1
3	2	1	3	0	1	1	0	0	1	0	0	1	0	0	0	0	1	0	0	×	1	2	3	3	1	4	3	2	1	0	×	×	×	×	×	×	2	2
4	2	1	6	0	2	1	0	0	1	0	0	1	0	0	0	0	1	0	4	1	1	3	4	2	4	2	5	3	0	×	×	1	3	3	0	×	4	2
5	2	1	8	1	4	1	1	1	1	0	1	1	0	0	0	0	0	1	3	1	2	2	2	1	1	1	6	3	0	×	×	1	3	3	1	0	2	0
6	1	1	8	1	4	1	1	0	1	0	1	1	0	0	0	0	1	0	2	1	1	3	3	3	2	4	3	0	×	×	×	1	3	3	1	3	3	0
7	2	1	1	0	1	1	0	0	1	0	0	1	0	0	0	0	1	0	1	1	1	2	1	1	2	2	1	0	×	×	×	0	×	×	0	×	2	0
8	1	1	8	2	3	1	0	0	1	0	0	1	0	0	0	0	1	0	2	1	1	2	3	2	2	2	5	3	0	×	×	1	3	3	1	2	4	2
9	2	2	5	0	3	1	0	0	1	0	0	1	0	0	0	0	1	0	2	1	2	4	4	2	2	3	3	0	×	×	×	1	3	4	0	×	4	2
10	2	1	8	1	3	1	0	0	1	0	0	1	0	0	0	0	1	0	3	1	2	4	2	2	1	2	1	1	0	×	×	0	×	×	1	1	3	0
11	3	1	8	0	4	1	0	0	1	0	0	1	0	0	0	0	1	0	2	1	1	1	2	2	1	1	2	1	0	×	×	0	×	×	0	×	1	1
12	2	1	8	1	2	0	0	0	1	0	0	1	0	0	0	0	1	0	2	1	0	2	2	2	3	2	5	×	0	×	×	×	1	3	1	1	1	1
13	2	1	8	1	4	1	1	0	1	0	1	1	0	0	0	0	1	0	2	1	2	3	3	3	1	6	3	0	×	×	1	3	1	1	1	3	1
14	3	1	8	0	3	1	0	1	1	0	0	1	0	0	0	0	1	0	2	1	2	2	3	3	2	1	3	3	1	1	1	1	3	3	1	2	3	0
15	1	2	7	2	3	1	0	0	1	0	1	1	0	0	0	0	1	0	3	1	0	2	2	1	2	2	×	0	×	×	×	0	×	×	0	×	1	0
16	3	1	8	1	4	1	0	0	1	1	0	1	0	0	0	0	1	0	2	1	2	3	3	3	2	4	3	0	×	×	1	3	2	1	0	3	2
17	1	2	8	2	3	1	1	1	0	0	0	1	0	0	0	0	1	0	3	1	1	4	1	3	3	0	×	×	1	3	3	1	2	2	2			
18	1	1	8	1	3	1	0	0	1	0	0	1	0	0	0	0	1	0	2	1	2	2	3	2	2	2	1	1	1	1	0	×	×	1	1	4	2
19	1	1	6	0	2	1	0	0	1	0	0	1	0	0	0	0	1	0	2	1	1	3	1	2	2	4	1	0	×	×	×	0	×	×	1	1	1	
20	1	1	8	2	3	1	0	0	1	0	1	1	0	0	0	0	1	0	1	1	2	2	4	1	3	2	1	4	1	1	2	1	4	1	1	3	2
21	1	2	8	2	1	1	0	0	1	0	0	1	0	0	0	0	1	0	2	1	0	3	2	3	3	2	4	1	0	×	×	0	×	×	1	1	2	2
22	1	1	8	1	3	1	0	0	1	0	0	1	0	0	0	0	0	1	1	1	1	3	3	4	4	3	4	×	0	×	×	0	×	×	1	1	2	2
23	2	1	6	1	3	1	0	1	1	0	0	1	0	0	0	0	1	0	2	1	1	3	2	1	2	2	2	×	0	×	×	0	×	×	0	×	1	1
24	1	1	8	2	3	1	1	0	1	0	0	1	0	0	0	0	1	0	2	1	1	3	3	2	4	1	0	×	×	0	×	×	1	1	1	0		
25	1	1	5	0	2	1	0	0	1	0	0	1	0	0	0	0	1	0	2	1	0	4	4	4	3	4	3	0	×	×	×	0	×	×	1	3	3	2
26	2	1	8	0	3	1	0	1	1	0	0	1	0	1	0	0	0	0	2	1	1	4	3	3	4	3	1	1	1	0	×	×	×	1	3	3	2	
27	2	1	8	0	3	1	0	1	1	0	0	1	0	1	0	0	0	0	2	1	1	4	3	3	4	3	0	×	×	1	2	3	1	2	2	2		
28	3	1	8	1	4	1	1	0	1	0	0	1	0	0	0	0	1	0	2	1	1	4	3	3	4	3	0	×	×	0	×	×	1	3	3	2		
29	2	1	8	1	3	1	0	0	1	0	0	1	0	0	0	0	1	0	3	1	3	3	4	3	4	4	0	×	×	1	2	3	1	2	2	0		
30	1	1	5	1	2	1	0	1	1	0	0	1	0	0	0	0	1	0	3	2	2	3	2	4	×	0	×	×	0	×	×	1	0	0				
31	1	1	6	1	2	1	0	0	1	0	0	1	0	0	0	0	1	0	2	1	1	4	2	3	2	4	3	0	×	×	1	2	4	0	×	2	2	
32	1	2	8	1	3	1	0	0	1	0	0	1	0	0	0	0	1	0	2	1	3	3	3	2	4	×	0	×	×	0	×	×	1	0	0			
33	1	1	8	0	3	1	0	1	1	0	0	1	0	0	0	0	1	0	2	1	1	2	3	4	2	5	1	0	×	×	0	×	×	1	0	0		
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35	4	1	8	0	4	1	0	0	1	0	0	1	0	0	0	0	1	0	3	1	1	4	3	3	1	3	2	0	×	×	0	×	×	1	1	3	0
36	2	1	6	0	3	1	0	0	1	0	0	1	0	0	0	0	1	0	3	1	0	2	4	2	3	×	0	×	×	0	×	×	1	1	1			
37	2	2	8	1	4	1	1	0	1	0	1	1	0	0	0	0	1	0	3	1	0	3	2	4	2	1	6	×	0	×	×	0	×	×	2	0		
38	2	1	8	1	4	1	1	1	1	0	1	1	0	0	0	0	1	0	3	1	2	2	1	2	1	1	3	0	×	×	0	×	×	1	1	1	0
39	1	2	8	3	4	1	1	1	1	0	0	1	0	0	0	0	1	0	3	1	0	2	3	1	5	1	0	×	×	0	×	×	1	1	1	0		
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42	1	1	8	1	4	1	1	1	1	0	0	1	0	0	0	0	1	0	3	1	2	4	3	4	2	3	4	0	×	×	1	2	4	1	3	4	2
43	1	2	6	0	1	1	0	0	1	0	0	1	0	0	0	0	1	0	3	1	2	3	2	2	1	2	0	×	×	0	×	×	1	2	3	1		
44	1	1	8	2	3	1	1	1	1	0	0	1	0	0	0	0	1	0	3	1	2	2	2	2	1	×	0	×	×	0	×	×	0	×	1	0		
45	3	1	8	1	4	1	0	1	1	0	0	1	0	0	0	0	0	1	3	1	2	4	2	2	2	4	0	×	×	1	2	1	0	×	3	0		
46	2	1	6	0	2	1	0	0	1	0	0	1	0	0	0	0	0	1	4	1	1	3	4	2	4	2	5	3	0	×	×	1	3	3	0	×	4	2
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48	4	1	8	0	4	1	0	1	1	0	0	1	0	0	0	0	1	0	2	1	1	4	3	3	1	3	2	0	×	×	1	3	3	1	2	2	2
49	1	1	8	2	3	1	1	1	1	0	0	1	0	0	0	0	1	0	3	1	1	4	1	3	3	1	3	0	×	×	1	3	3	1	2	2	2
50	1	2	8	2	3	0	1	1	1	0	0	1	0	0	0	0	1	0	3	1	2	1	4	1	3	1	3	0	×	×	1	2	3	1	2	2	2
51	2	1	8	0	3	1	0	1	0	0	0	1	0	1	0	1	0	0	1	0	3	3	3	4	4	0	×	×	1	3	3	1	2	2	2			
52	2	2	8	1	4	1	1	0	1	0	1	1	0	0	0	0	1	0	3	1	0	3	2	4	2	1	6	×	0	×	×	0	×	×	0	×	2	0
53	1	1	8	2	3	1	0	0	1	0	0	1	0	0	0	0	1	0	1	1	2	2	4	1	3	2	1	1	2	1	4	1	1	3	2		
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55	2	1	8	1	3	1	0	0	1	0	0	1	0	0	0	0	1	0	3	1	2	4	2	2	3	3	0	×	×	1	3	4	0	×	4	2		
56	1	1	7	3	3	0	1	1	1	0	0	1	0	0	0	0	1	0	3	1	1	4	3	3	2	4	4	0	×	×	1	2	4	0	×	4	2
57	3	1	8	1	4	1	0	0	1	0	1	1	0	0	0	0	1	0	2	1	2	3	3	3	2	4	3	0	×	×	1	3	2	1	2	2	2
58	2	1	8	1	4	1	1	1	1	0	0	1	0	0	0	0	0	1	3	1	2	2	1	1	6	3	0	×	×	1	3	1	0	×	2	0		
59	3	1	8	0	3	1	0	1	1	0	0	1	0	0	0	0	1	0	3	1	2	3	3	2	1	3	3	1	1	1	1	3	1	2	3	0		
60	1	2	7	2	3	1	0	0	1	0	0	1	0	0	0	0	1	0	3	1	0	2	2	1	2	×	0	×	×	0	×	×	0	×	1	0		
61	4	1	8	0	4	1	0	1	1	0	0	1	0	0	0	0	1	0	3	1	1	3	4	3	1	2	2	0	×	×	0	×	×	1	1	3	0
62	3	1	8	0	3	1	0	0	1	0	0	1	0	0	0	0	1	0	3	1	2	2	1	3	1	2	×	0	×	×	0	×	×	0	×	1	0	
63	2	2	7	2	3	1	0	0	1	0	1	1	0	0	0	0	1	0	3	1	0	2	1	3	1	2	×	0	×	×	1	1	1	0	×	3	2	
64	2	1	8	0	3	1	0	1	0	0	0	1	0	1	0	0	0	0	2	1	1	4	3	3	2	3	4	0	×	×	1	2	3	1	2	2	2
65	3	1	8	0	3	1	0	1	0	0	0	1	0	1	0	0	0	0	2	1	2	4	3	3	2	3	4	0	×	×	0	×	×	1	3	3	2
66	3	1	8	1	4	1	1	0	1	0	0	1	0	0	0	0	1	0	2	1	2	4	3	3	2	3	0	×	×	1	2	3	1	1	2	0		
67	2	1	8	1	3	1	0	0	1	0	0	1	0	0	0	0	1	0	3	1	1	3	3	4	3	4	0	×	×	1	2	3	1	1	2	0		
68	1	2	5	1	2	1	0	0	1	0	0	1	0	1	0	0	0	0	2	1	1	3	2	2	4	×	0	×	×	0	×	×	1	0				
69	1	2	7	2	3	1	0	0	1	0	1	1	0	0	0	0	1	0	3	1	0	2	2	1	1	2	×	0	×	×	0	×	×	1	0			
70	3	1	7	1	4	1	0	0	1	0	1	1	0	0	0	0	1	0	2	1	2	3	3	2	1	2	4	0	×	×	1	3	2	1	2	3	0
71	4	1	8	0	4	1	0	1	1	0	0	1	0	0	0	0	0	1	2	1	1	3	3	2	1	3	2	0	×	×	0	×	×	1	1	3	0
72	1	1	8	2	3	1	0	1	1	0	0	1	0	0	0	0	1	0	2	1	1	2	2	2	2	1	×	0	×	×	0	×	×	0	×	2	0	
73	3	1	8	0	4	1	0	1	1	0	0	1	0	0	0	0	0	1	2	1	1	3	4	3	2	2	3	0	×	×	0	×	×	1	1	3	0
74	2	1	6	0	3	1	0	0	1	0	0	1	0	0	0	0	0	1	3	1	0	3	2	4	2	3	×	0	×	×	0	×	×	1	1	1		
75	1	1	8	1	3	0	0	1	1	0	0	1	0	0	0	0	1	0	2	1	2	3	3	3	2	×	0	×	×	×	×	1	3	2	2			
76	1	2	7	2	3	1	0	0	1	0	1	1	0	0	0	0	1	0	3	1	0	2	2	1	2	×	0	×	×	0	×	×	1	0				
77	4	1	8	0	4	1	0	1	1	0	0	1	0	0	0	0	1	0	2	1	1	4	3	3	1	2	0	×	×	0	×	×	1	1	3	0		
78	3	1	8	1	3	1	0	0	1	0	0	1	0	0	0	0	1	0	2	1	2	4	3	3	2	2	3	2	0	×	×	1	3	2	3	2	2	
79	3	1	8	1	3	1	0	0	1	0	0	1	0	1	0	0	1	0	2	1	2	4	3	4	2	2	3	0	×	×	1	3	4	0	×	4	2	
80	3	1	8	0	4	1	0	1	0	0	0	1	0	1	0	0	0	0	2	1	1	2	3	2	2	1	1	0	×	×	1	3	3	1	2	3	0
81	3	1	7	0	3	1	0	1	1	0	0	1	0	1	0	0	0	0	2	1	1	2	3	2	2	3	3	1	1	1	1	3	3	1	2	3	0
82	3	1	6	1	3	1	0	1	1	0	0	1	0	1	0	0	0	0	2	1	1	2	3	4	2	2	×	0	×	×	1	2	4	1	2	2	2
83	2	1	6	1	2	1	0	1	1	0	0	1	0	1	0	0	0	0	2	1	1	2	4	2	2	3	3	0	×	×	1	1	1	0	×	3	0
84	3	1	8	1	4	1	0	1	1	0	0	1	0	0	0	0	0	1	2	1	2	4	2	2	3	3	0	×	×	1	2	1	0	×	2	0	
85	2	1	7	1	3	1	0	0	1	0	0	1	0	0	0	0	1	0	2	1	2	2	3	2	2	4	×	0	×	×	0	×	×	1	0			
86	3	2	5	0	3	1	0	0	1	0	0	1	0	0	0	0	1	0	2	1	1	2	3	2	2	5	3	0	×	×	1	3	3	1	2	4	2
87	2	1	8	1	3	1	0	0	1	0	0	1	0	0	0	0	1	0	2	1	2	3	4	2	2	3	3	0	×	×	1	3	4	0	×	4	2
88	4	1	7	0	4	1	0	1	1	0	0	1	0	0	0	0	1	0	2	1	1	2	1	2	2	1	1	0	×	×	0	×	×	1	1	3	0
89	3	1	8	1	2	0	0	0	1	0	0	1	0	0	0	0	1	0	2	1	2	3	3	2	5	×	0	×	×	0	×	×	1	3	1	1		
90	2	1	8	1	4	1	0	1	0	0	1	1	0	0	0	0	1	0	2	3	1	2	3	3	3	1	6	3	0	×	×	1	3	1	1	3	1	1

	USE OF MUNICIPAL SERVICES						ADMINISTRATOR'S QUALIFICATION									RESPONDER'S VIEW ON E-GOVERNANCE									
V38	V39	V40	V41	V42	V43	V44	V45	V46	V47	V48	V49	V50	V51	V52	V53	V54	V55	V56	V57	V58	V59	V60	V61	V62
Location of BMC	Comfortable with working hour	Official/ staff helpful	Response on time	Satisfaction with Service Level	Confidentiality of information	Level of Corruption	Citizen Charter Awareness	Time limit of services provided	Sincerity of official/ staff	Illustration of rules & regulation at the d...	Responsiveness of Administration (for the credibility of information)	Suggestion to staff/ Officer	Response on suggestion	Impact on rule, regulation & policy of pu...	Knowledge of e-governance	Benefit of e-governance to citizen	Medium of acknowledgement of e-gove...	Awareness around	e-governance uplift Image of Governme...	Government should invest more in e-go...	BMC should be computerized	computerization is a wastage of money	e-governance amount should be investe...	Computerization will benefit only rich &...
0	1	2	0	0	0	4	1	2	0	0	0	0	×	2	1	1	1	3	1	1	1	3	3	2
0	0	3	0	0	0	1	1	2	0	0	0	1	0	3	0	1	1	3	1	1	1	3	3	2
1	1	2	0	0	0	1	0	×	0	0	1	0	×	×	0	0	5	1	2	1	2	2	2	1
1	0	2	0	0	0	4	0	×	0	0	0	0	×	×	0	1	5	1	2	2	1	3	3	3
1	1	4	1	1	1	3	1	3	1	0	1	1	1	5	1	0	1	3	1	1	1	3	3	3
0	0	2	0	0	0	1	1	1	0	0	0	0	×	3	1	1	1	3	1	1	1	3	3	3
0	0	2	0	0	0	5	0	×	0	0	0	0	×	2	0	0	×	2	2	2	2	2	2	1
1	1	4	0	1	0	4	1	3	1	0	0	1	1	5	0	1	5	3	1	1	1	3	2	2
1	1	3	0	0	0	2	0	×	0	0	0	0	×	1	0	0	×	1	2	2	1	1	1	1
0	0	3	1	0	1	2	1	2	0	0	0	1	1	4	1	1	1	3	1	1	1	3	3	3
1	1	4	1	1	1	4	1	3	1	0	0	0	×	3	1	0	1	3	1	1	1	2	2	3
1	0	3	0	1	0	2	1	3	1	0	0	0	×	2	1	0	1	3	1	1	1	3	3	3
1	1	3	0	1	1	5	1	1	0	0	0	1	0	4	1	1	1	4	1	1	1	3	3	3
1	1	4	1	1	1	4	1	2	1	0	0	1	1	3	1	1	1	3	1	1	1	3	3	3
1	1	4	1	1	0	2	1	2	1	0	1	0	×	2	1	0	1	3	1	1	1	3	3	3
1	0	3	0	0	0	1	1	1	0	0	0	1	0	3	1	1	1	3	1	1	1	3	3	3
1	1	3	0	0	0	5	1	1	0	0	0	1	0	3	1	0	1	3	1	1	1	3	3	3
1	2	0	0	1	2	2	1	1	0	0	0	1	0	3	1	1	1	2	1	1	1	3	3	3
1	1	3	1	1	0	5	1	2	1	0	1	0	×	2	0	0	1	2	2	2	1	2	2	2
1	1	2	0	0	1	3	1	1	0	0	0	1	0	4	1	0	1	2	1	1	1	2	2	3
0	0	2	0	0	1	5	0	×	0	0	0	0	×	1	1	0	2	3	1	1	1	3	3	3
0	1	2	0	0	2	2	1	1	0	0	0	1	0	3	1	1	1	1	1	1	1	3	3	3
0	0	4	1	1	1	4	0	×	1	0	1	0	×	2	0	1	1	2	3	2	1	3	1	2
0	0	4	0	0	0	3	1	2	0	0	0	1	0	3	1	0	1	3	1	1	1	3	3	3
0	0	4	1	0	1	3	0	×	0	0	0	0	×	3	0	0	×	1	2	2	2	2	2	2
0	1	4	0	0	0	2	1	1	0	0	0	1	1	2	1	1	1	2	1	1	1	3	3	3
0	0	2	0	0	2	2	1	1	0	0	0	1	0	3	1	0	1	3	1	1	1	3	3	3
1	1	3	0	0	0	4	1	1	0	0	0	1	0	3	1	1	1	2	1	1	1	3	3	3
1	1	2	0	0	0	4	1	1	0	0	0	0	×	3	1	0	1	3	1	1	1	2	2	2
1	1	2	0	0	1	4	0	1	0	0	0	0	×	1	0	1	5	3	1	1	1	2	2	2
1	1	3	0	0	0	2	0	×	0	0	0	0	×	×	0	0	5	1	1	1	1	2	2	3
1	1	3	0	1	1	3	1	2	1	0	0	1	0	2	1	0	1	1	1	1	1	3	2	3
1	1	3	0	0	0	2	1	1	0	0	0	1	1	4	1	1	1	3	1	1	1	3	3	3
0	0	1	0	0	0	2	1	1	0	0	0	1	0	1	1	0	1	3	1	1	1	3	3	3
1	1	3	0	0	1	5	1	1	0	0	0	1	0	3	1	0	1	3	1	1	1	3	3	3
0	1	5	1	1	1	4	1	4	1	0	1	0	×	×	1	1	1	3	1	1	1	3	3	3
1	1	3	1	1	1	1	1	2	1	0	1	0	×	×	1	1	2	3	1	1	1	3	3	3
1	1	3	1	1	1	2	1	3	1	0	1	1	1	3	1	1	1	3	1	2	2	3	3	3
1	1	3	0	1	1	2	1	2	0	0	1	0	×	×	0	0	5	1	1	2	1	3	2	1
1	1	2	0	1	0	2	1	2	0	0	0	0	×	×	×	×	×	1	0	1	1	3	2	3
0	0	2	0	0	0	2	1	1	0	0	1	1	0	3	1	1	2	2	1	1	1	3	3	3
0	0	2	0	0	0	5	1	1	0	0	1	1	0	3	1	1	2	2	1	1	1	3	3	3
1	1	2	1	1	1	5	0	×	1	0	0	0	×	×	0	0	×	1	1	1	1	2	2	2
1	1	3	0	0	0	2	1	2	0	0	1	0	×	×	1	1	1	3	1	1	1	3	3	3
1	0	2	0	0	0	4	1	1	0	0	0	1	0	4	1	1	1	3	1	1	1	3	3	3
1	1	1	0	0	1	1	1	1	0	0	0	1	0	3	1	1	1	3	1	1	1	3	3	2
1	0	2	0	0	0	4	0	×	0	0	0	0	×	×	0	1	5	1	2	2	1	3	3	3
1	1	3	0	0	1	5	1	1	0	0	0	1	0	3	1	0	1	3	1	1	1	3	3	3
1	1	4	0	1	0	4	1	3	1	0	0	1	1	5	0	1	5	3	1	1	1	3	2	3
1	1	3	0	0	1	5	1	1	0	0	0	1	0	3	1	0	1	3	1	1	1	3	3	3
1	1	4	1	1	0	3	1	2	1	0	1	0	×	2	1	0	3	3	1	1	1	3	3	3
1	1	3	0	1	1	5	1	1	0	0	0	1	1	5	0	1	5	3	1	1	1	3	3	3
1	1	4	0	1	0	4	1	3	1	0	0	1	0	3	1	0	1	3	1	1	1	3	3	3
0	1	5	1	1	1	4	1	4	1	0	1	0	×	2	1	1	1	3	1	1	1	3	3	3
0	1	2	0	0	0	4	1	2	0	0	0	0	×	2	1	1	1	3	1	1	1	3	3	3
1	1	4	1	1	0	2	1	2	1	0	1	0	×	2	1	0	1	3	1	1	1	3	3	3
1	1	3	0	0	1	5	1	1	0	0	0	1	0	3	1	0	1	3	1	1	1	3	3	3
1	0	3	0	0	0	1	1	1	0	0	0	1	0	3	1	1	1	3	1	1	1	3	2	3
0	0	3	1	0	1	2	1	2	0	0	0	1	1	4	1	1	1	3	1	1	1	3	2	3
1	1	4	1	1	1	4	1	3	1	0	0	0	×	3	1	0	1	3	1	1	1	2	2	3
0	0	4	1	1	1	4	1	2	1	0	1	0	×	2	0	1	1	2	3	2	1	3	1	2
1	1	3	0	0	0	2	0	×	0	0	0	0	×	×	0	0	5	1	1	1	1	2	2	3
1	0	2	0	0	0	2	1	2	0	0	0	1	0	4	1	1	4	2	1	1	1	3	2	3
1	1	1	0	0	1	4	1	1	0	0	0	1	0	4	1	1	1	3	1	1	1	3	2	3
1	0	3	0	1	0	2	0	×	0	0	0	0	×	3	1	0	1	3	1	1	1	2	3	3
0	0	3	1	0	1	2	1	2	0	0	0	1	1	4	1	1	1	3	1	1	1	3	2	3
1	1	4	1	1	1	4	1	3	1	0	0	0	×	3	1	0	1	3	1	1	1	2	2	2
1	1	3	0	1	0	2	1	3	1	0	0	0	×	3	1	0	1	3	1	1	1	2	3	3
1	1	3	0	1	1	5	1	1	0	0	0	1	0	4	1	1	1	4	1	1	1	3	3	3

8.9 Guidelines for Data Analysis

Variable no.	Variable	Code
	Guidelines for Data Analysis	
	V = Variable	
Variable no.	Variable	Code
V1	Age	Code
	Age 18 to 35 years (Persons)	1
	Age 36 to 50 years (Persons)	2
	Age 51 to 65 years (Persons)	3
	Age 66 to 80 years (Persons)	4
	Age >80 years (Persons)	5

V2	Sex	Code
	Male	1
	Female	2

V3	Education	Code
	Illitrate	1
	Less than Primary	2
	Primary	3
	Middle	4
	High School	5
	Intermediate	6
	Diploma	7
	Graduate or more	8
	Other	9

V4	Computer Education	Code
	Illitrate	0
	Below Average	1
	Average	2
	Above Average	3
	Proficient	4

V5	Monthly Income	Code
	<5000	1
	5001-10000	2
	10,001-20,000	3
	>20,000	4

	Home Appliances Code/ Electronic Gdgets	
	Yes-1	
	No-0	
V6	Television	code
V7	Computers	Code
V8	Telephone	Code
V9	Mobiles	Code
V10	Tabs	Code

V11	Internet Connections	
	No	0
	Wi-Fi	1
	Broadband	2
	GPRS	3
	Other	4

MUNICIPAL SERVICES AWARENESS & USE OF MUNICIPAL SERVICES

V12	Knowledge of Municipal Services	
	Yes-1	
	No-0	

	Source of Knowledge	
V13	Television	code
V14	Newspaper	code
V15	Internet	code
V16	Neighbours/ Relatives	code
V17	Government employees	code
V18	Other information source	code
		code

V19	Depth of Knowledge of Services around	code
	None	0
	Few	1
	Some	2
	Some	3
	All	4

V20	Municipal Service Centre	code
	BMC	1
	Middleman	2
	Others	3

V20a	No. of times service availed	code
	<2	0
	2 -3 times	1
	>3	2

	COST IN AVAILING THE MUNICIPAL SERVICES	
V21	**Distance of BMC to home**	**code**
	<2 Km	1
	2-5Km	2
	5-10 Km	3
	>10 Km	4

	No. of Trips made to get service	**code**
V22	1	1
	2	2
	3	3
	>3	4

	Cost of a trip	**code**
V23	< Rs 10	1
	Rs 10- 20	2
	Rs 21-30	3
	> Rs 30	4

	Waiting Time	**code**
V24	< 15 minutes	1
	15-30 minutes	2
	30 minute -1hr	3
	> 1 hour	4

	Time of a trip	**code**
V25	< 15 minutes	1
	15-30 minutes	2
	30 minute -1hr	3
	> 1 hour	4

	Mode of travel	**code**
V26	Walk	1
	Bicycle	2
	Bicycle	3
	Rikshaw	4
	Auto- Rikshaw	5
	Other	6

	Extra Cost in availing a service	**code**
V27	< Rs 100	1
	Rs. 100-200	2
	Rs. 200-500	3
	> Rs.500	4

	Errors in the document	
V28	Yes-1	
	No-0	

	Extra trips for correction of errors	**code**
V29	1	1
	2	2
	> 2	3

	Total Cost in availing a service after correction	**code**
V30	< Rs 100	1
	Rs. 100-200	2
	Rs. 200-500	3
	> Rs.500	4

V31	Bribe paid	
	Yes-1	
	No-0	

V32	Amount of Bribe paid	code
	< Rs 100	1
	Rs. 100-200	2
	Rs. 200-500	3
	> Rs.500	4

V33	Reason for Bribe	
	Quick Commencement of work	1
	Work to be done earlier than the number	2
	To influence the staff/ official	3
	Another reason	4

V34	Need of mediator	
	Yes-1	
	No-0	

V35	Money paid to mediator	code
	< Rs 100	1
	Rs. 100-200	2
	Rs. 200-500	3
	> Rs.500	4

V36	Time from the date of apply to get service	
	< A week	1
	A Week	2
	2 week	3
	> 2 week	4

V37	Suffering due to delay of service	
	Little	0
	Negotiable	1
	Much	2

QUALIFICATION OF MUNICIPAL SERVICES

V38	Location of BMC	
	Agree-1	
	Disagree-0	

V39	Comfortable with working hour	
	Yes-1	
	No-0	
V40	Official/ staff helpful	
	Never	1
	Rare	2
	Sometimes	3
	Many times	4
	Always	5
V41	Response on time	
	Yes-1	
	No-0	
V42	Satisfaction with Service Level	
	Yes-1	
	No-0	
V43	Confidantiality of information	
	Yes-1	
	No-0	
	QUALIFICATION OF ADMINISTRATION	
V44	Level of Corruption	
	No Corruption	1
	Little Corrupt	2
	Neutral	3
	Substantially Corrupt	4
	Highly Corrupt	5
V45	Citizen Charter Awareness	
	Yes-1	
	No-0	
V46	Time limit of services provided	
	Never	1
	Sometimes	2
	Many times	3
	Always	4
V47	Sincerity of official/ staff	
	Yes-1	
	No-0	
V48	Illustration of rules & regulation at the department	
	Yes-1	
	No-0	
V49	Responsivness of Administration (for the credibility of information)	
	Yes-1	
	No-0	
V50	Suggestion to staff/ Officer	
	Yes-1	
	No-0	

V51	Response on suggestion	
	Yes-1	
	No-0	

V52	Impact on rule,regulation & policy of public suggestion	
	Never	1
	Very less	2
	Sometimes	3
	Always	4

	RESPONDER'S AWARENESS & VIEW ON E-GOVERNANCE	
V53	Knowledge of e-governance	
	Yes-1	
	No-0	

V54	Benefit of e-governance to citizen	
	Yes-1	
	No-0	

V55	Medium of acknowledgement of e-governance	
	Newspaper	1
	Television	2
	Neighbours/ relatives	3
	Government employees	4
	others	5

V56	Awareness around	
	Very less	1
	Less	2
	Some	3
	Many	4
	All	5

V57	e-governance uplift Image of Government	
	Agree	1
	Neutral	2
	Disagree	3

V58	Government should invest more in e-governance	
	Agree	1
	Neutral	2
	Disagree	3

V59	BMC should be computerized	
	Agree	1
	Neutral	2
	Disagree	3

V60	computerization is a wastage of money	
	Agree	1
	Neutral	2
	Disagree	3

V61	e-governance amount should be invested on other government project	
	Agree	1
	Neutral	2
	Disagree	3

V62	Computerization will benefit only rich & influential people	
	Agree	1
	Neutral	2
	Disagree	3

8.10 Cost Estimates Capital Cost & Operational Expenditure

Server Infrastructure Costs[45]

Component	Unit Cost	No.	Total
Civil Work & Electrical			
Civil & Furniture Work for the Data Centre	20,00,000	–	20,00,000
Electrical & LAN	100,000	–	100,000
UPS (15 KVA with 2 hrs backup)	10,00,000	2	20,00,000
Sub-Total			**41,00,000**
IT Infrastructure Components			
Racks	75,000	2	150,000
Firewall	7,50,000	1	7,50,000
Intrusion Protection System	15,00,000	1	15,00,000
Center Core Switch	400,000	1	400,000
SAN	25,00,000	1	25,00,000
NAS	25,00,000	1	25,00,000
Database Server	20,00,000	2	40,00,000
Application Server for MIS	15,00,000	1	15,00,000
Application Server for GIS	15,00,000	1	15,00,000
Web Server	15,00,000	1	15,00,000
Domain Server	5,00,000	1	5,00,000
Backup Device	1,00,000	1	1,00,000
Backup Media	10,000	5	50,000
PCs	25,000	100	25,00,000
Scanners (with ADF)	12,000	50	6,00,000
Desktop Laser Printers	10,000	50	5,00,000
Router	67,200	1	67,200
Sub-Total			**193,97,200**
Software (CPU based Licenses)			
RDBMS (Production & Backup Server)	18,00,000	4	72,00,000
Application Server (MIS)	9,00,000	2	18,00,000
Network Management System	12,00,000	1	12,00,000
Sub-Total			**102,00,000**
Total			**336,97,200**

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[45] *Based on the Detail Project Report ,on December 2010 rates*

MIS

Sr. No.	Components	License / Development Cost	Customisation Cost	Total
1	License Cost of the Basic ERP Modules (Approx. 1000 Licenses)	850,00,000	212,50,000	1062,50,000
2	Hospital Management System	50,00,000	12,50,000	62,50,000
3	Fleet Management System	60,00,000	2,50,000	62,50,000
4	Bespoke Development & Implementation	150,00,000	-	150,00,000
	Total			1337,50,000

MIS

Sr. No.	GIS Components	Estimated Expenditure
1	Enterprise GIS Software for Web Based GIS Implementation	48,00,000
2	Customised GIS Software	30,00,000
3	Latest Satellite Image (0.6 mtr resolution) & Preparation of Base Map	500,000
4	Physical Survey and Creation of various Layers of Geo-Spatial Information	200,00,000
	Total	283,00,000

Other

Sr. No.	Details	Estimated Expenditure
1	e-Governance consultancy for preparation of DPR, Bid Management and Project Management	98,50,500
2	Training (MIS)	10,00,000

3	Training (GIS)	500,000
4	Data Entry	25,00,000
5	Implementation (MIS)	24,00,000
6	Implementation (MIS)	13,00,000
7	IT Audit Cost	500,000
	Total	**180,50,500**

Total Capital Cost

Sr. No.	Details	Estimated Expenditure
1	Server Infrastructure Costs	336,97,200
2	MIS	1337,50,000
3	GIS	283,00,000
4	Other Costs	180,50,500
	Total	**2137,97,700**

Operational Expenditure (per Year)

Key Components	Amount
Post implementation support for MIS (@ 22% of License Costs)	294,25,000
Post implementation support for GIS (@ 22% of License Costs)	17,16,000
ATS for Database, Application Servers (@ 22% of License Costs)	22,44,000
Maintenance of IT Infrastructure (@ 10% of Capital Costs)	21,39,720
Connectivity Costs for DR Site (2 MBPS Lease Line)	25,180
Total	**355,49,900**