

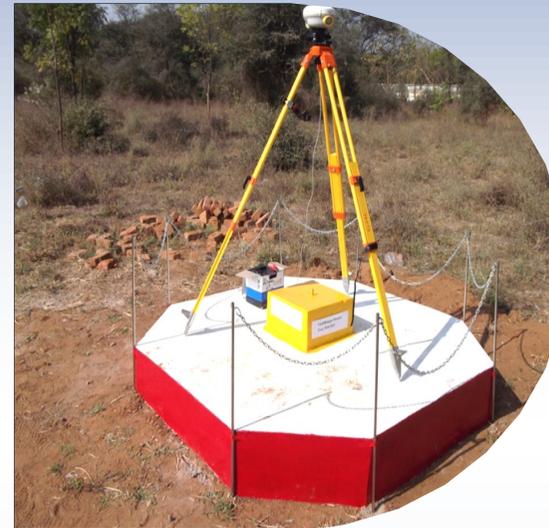
## About the Centre for Rural Studies

The Centre for Rural Studies (CRS) is a Research Centre of Lal Bahadur Shastri National Academy of Administration, Musoorie. It was set up in the year 1989 by the Ministry of Rural Development, Government of India, with a multifaceted agenda that included among others, the concurrent evaluation of the ever-unfolding ground realities pertaining to the implementation of the Land Reforms and Poverty Alleviation Programmes in India. Sensitizing of the officer trainees of the Indian Administrative Service in the process of evaluating of land reforms and poverty alleviation programmes by exposing them to the ground realities; setting up a forum for regular exchange of views on land reforms and poverty alleviation between academicians, administrators, activists and concerned citizens and creating awareness amongst the public about the various programmes initiated by the government of India through non-governmental organizations are also important objectives of the Centre for Rural Studies. A large number of books, reports related to land reforms, poverty alleviation programmes, rural socio-economic problems etc. published both externally and internally bear testimony to the excellent quality of the Centre.

## Documentation of Best Practices in Land Resources Management in India

Snehasis Mishra

Dr. Varsha Ganguly



registrar offices are streamlined and transparent

**CENTRE FOR RURAL STUDIES**

**LAL BAHADUR SHASTRI NATIONAL ACADEMY OF ADMINISTRATION  
MUSSOORIE-248179**

**Documentation of Best Practices in Land  
Resources Management in India**

**Edited by**

**Snehasis Mishra  
Dr. Varsha Ganguly**

**Centre for Rural Studies  
LBS National Academy of Administration  
Mussoorie**

**Documentation of Best Practices in Land  
Resources Management in India**

**Contributors**

**Snehasis Mishra  
Dr. Varunendra Vikram Singh  
Dr. Varsha Ganguly**

**Centre for Rural Studies  
LBS National Academy of Administration  
Mussoorie**



## Contents

1. Foreword	i
2. Acknowledgements	iii
3. Introduction: Best Practices for Land Resource Management in India	1
4. Mee-Seva in Andhra Pradesh Snehasis Mishra	4
5. Computerization of Registration by Hardware on Hire Method in Bihar Varunendra Vikram Singh	51
6. Innovative Methodologies in Improving Citizen Services in Sub Registrar Offices in Delhi and Its Impact on the Citizens Varunendra Vikram Singh	80
7. Integration of Land Records and Registration in GOA Snehasis Mishra	108
8. Survey by ETS & GPS in Gujarat and reconciliation of the newly generated data with the legacy data Varsha Bhagat-Ganguly	150
9. Conclusion and Way Forward	189

## **Foreword**

In recent times, the modernisation of land records has come to be seen as a crucial part of implementing land reforms programmes. After Independence, the entire focus of land administration was only on land reforms initiatives for increasing agricultural output and to equalize social strata of farmers by distributing land to them. However, land reforms initiatives were not reaching the goal due to several geo-political factors. Since Seventh Five Year Plan, it was widely debated that the objective of land reforms will never be fulfilled without proper records of land ownership. In the year 1988-89 Government of India (GOI) conceived the scheme of Computerisation of Land Records to overcome the problems of the manual system of maintenance and updation of land records. But even after twenty years still the problems of land related issues like agricultural productivity, poor management, lack of rural credit etc. persist. Apart from these technical factors which are related to the GDP growth, presumptive nature of land title, unresolved legal rights of tenant and share croppers still persist. To overcome these issues Central Government has designed a new policy of land records computerisation in the year 2008, when National Land Records Modernization Programme (NLRMP) was introduced. The programme was designed in a way where all attributes and organization would be integrated and work on similar platforms.

The problem of service delivery becomes severe when co-ordination between various actors and information storage and processing are not working at optimum level. So it is necessary to improve public delivery mechanism for timely

and corruption free services. This book is a compilation of different best practices which focus on different aspects of land administration and management. It discusses very scientifically about the mechanism adopted by the states for better land record management. It discusses service delivery mechanism adopted by Andhra Pradesh after implementing Mee-Seva which is indeed an emulatable model for the other states of India. How Computerisation of Registration in Bihar and service delivery through SROs in Delhi has completely altered public perception has been dealt in detail. The book also provides a vivid idea about the status of survey, dynamic land records management and integration with registration. The mechanism of integration of land records and registration followed by Goa and how modern survey and settlement operation in Gujarat has improved land records management has been documented in detail.

The book also examines state wise issues, challenges, and threats which become barriers for e-governance initiatives. We hope that it will be helpful for practitioners, and researchers.

C. Sridhar  
Deputy Director (Sr.)  
Centre for Rural Studies, LBSNAA  
Mussoorie

## **Acknowledgements**

We wish to express our sincere thanks and appreciation to Shri Rajeev Kapoor, Director of Lal Bahadur Shastri National Academy of Administration and Shri C. Sridhar, Centre Director, Centre for Rural Studies, LBSNAA for constant inspiration and encouragement to edit this book. We owe our gratitude to the Director of Department of Land Resources, MoRD for his valuable contribution throughout the entire process.

This book covers best practices on land resources management of five states. We indeed grateful to the Director of Land Records, Inspector General of Registration, National Informatics Centre of all the five states for their immense support and valuable contribution. We also like to thank Mee-Seva Department of Andhra Pradesh and District Collector Office of Krishna District for their contribution.

Nonetheless, the co-operation of all the faculty and staff of CRS is well appreciated. These persons have not only extended support but also their sincere effort on that topic make it easy.

## **Introduction: Best Practices for Land Resource Management in India**

The discourse of land resource management has witnessed major shift in last two decades, especially in the developing countries and in the twenty first century. Prior to 1980s, land management referred to land reforms initiatives, welfare measures for the farmers, increasing agricultural productivity, etc. In recent times, with modern technologies and IT involvements, i.e. digitization/computerization, idea of good governance focuses on e-governance and wider reaching out—citizen centric services and fulfilling needs of the market, and efficient management of resources in the era of rapid urbanization. Thus, the agenda of just providing land to the landless or tenants security has expanded to address larger concerns—economic growth and financial budget for providing services on land issues to the farmers as well as urban land owners. Now, the land market is seen as one of the key elements for economic development in the country. The land administration keeps technological involvement for maximizing lands utilities on priority with other concerns, such as, socio-economic equity and redistribution and consolidation of land. The issues of priority for the state are--to provide services to the citizens as well as industries (national and multi-national).

The Government of India (GoI) conceived the scheme of Computerisation of Land Records (CLR) for implementation by State Government to overcome the problems inherent in the manual system of maintenance

and updating of land records long years ago. But India still faced problems on land related issues like agricultural productivity, poor management, lack of credit, etc. Apart from these manual problems, there are important technical factors which have played crucial role in our low GDP growth e.g. lack of legal property rights, revision of the legal framework related to land titling or property rights, and such reasons.

Land administration in fact is a continuous flow of several activities; the challenges of land management are huge and diverse in nature. Land is a subject under State jurisdiction in India. Management of land becomes quite complex with respect to the fragmentation and number of sale and purchase of land, and due to the immense demand of land for the every citizen of India; from landless labour, corporates, and industries. It is an inevitable for the country to protect and/or manage such resource cautiously and systematically.

The Government of India took a historic decision on land administration and management by introducing National Land Records Modernization Programme (NLRMP) in 2008. This integrated programme aims at modernizing land records, minimizing scope of land disputes, bringing transparency on land related issues, and facilitating process of guaranteed titling of land. Every state has put their effort to achieve these aims in their own way. As the Department of Land Resources (DoLR) documents the process, i.e. how different states are administrating their land resources and provide hassle

free services to the citizens, this report is one of the components of this process of documentation.

This report is a compilation of state based five best practices study on Land Resources Management in India. Different aspects in land administration and management are discussed briefly. The report covers the following aspects: (i) how the efficient execution of survey and settlement operation done in Gujarat, which reduces litigation over property rights and creates an environment which is investment friendly; (ii) process of integration of land records and registration in Goa, which facilitates citizens centric services and efficient e-governance; (iii) the e-governance mechanism followed in Delhi for land records, which enhances citizen centric services; (iv) efforts of Government of Andhra Pradesh to provide maximum services to citizen timely through efficient e-governance; and (v) model of Computerization of Registration adopted by Bihar, which is more sustainable in nature for land management. All the studies are based upon the field data as well secondary data which covers different dimensions of land record management, and analyze the following: efforts of the government for suitable technology for updation of land records, bringing about technical reforms, and governance practices for land resource management, i.e. different mechanism and methods are employed to deal with the existing challenges in land management and constraints to provide transparent citizen services. Towards end, the report shares roadmap, potentials that could be explored for efficient and sustainable land resource management.

## **Mee-Seva in Andhra Pradesh**

# **Contents**

1. Introduction
  - 1.a Objectives of the study
2. Mee-Seva - ‘at your service’
  - 2.a Objectives of Mee-Seva
  - 2.b Architecture of Mee-Seva
  - 2.c Salient and Innovative Features of Mee-Seva
3. Implementation of the Mee-Seva Project
  - 3.a Evolution of Mee-Seva
4. Role of Mee-Seva in Revenue System
  - 4.a Land Records
  - 4.b Registration of Property
  - 4.c Survey/ Sub-divisions of land parcels
5. Challenges faced by MeeSeva
6. Key findings
7. Reason behind Good practices
8. SWOT Analysis on Mee-Seva Project
9. Conclusion and Way ahead

## **Abbreviations**

CARD	Computer-aided Administration of Registration Department
CCLA	Chief Commissioner of Land Administration
CSC	Common Service Centers
DeitY	Department of Electronics and Information Technology
e-FTS	Electronic Fund Transfer System
GHMC	Greater Hyderabad Municipal Corporation
PBSLA	Pending Beyond Service Level Agreement
PKI	Public Key Infrastructure
PWSLA	Pending Within Service Level Agreement
SCA	Service Centre Agency
SECR	State Electronic Certificate Repository
SLA	Service Level Agreement

## **List of Tables**

Table-1: Number of Revenue Services available in Mee-Seva

(See Annex-1)

Table-2: Expansion to Districts

Table-3: Service comparison: Before and After Mee-Seva

Table-4: Nature of Benefits through Mee-Seva

Table-5: Economic Sustainability (Head-Wise Sharing)

Table-6: Statistics of Revenue collection through Mee-Seva transactions

## **List of Figures**

Figure-1: Architecture of Mee-Seva

Figure-2: 'Category A' Services- Process Flow

Figure-3: 'Category B' Services- Process Flow

Figure-4: Simple diagram shows Mee-Seva process

## **1. Introduction**

Both the government—the Central and the State—put numerous efforts on good governance and e-governance for management of land resources. The management of land resources through ICTs (information and communication technologies) not only addresses the common issues of citizens' concerns, such as corruption, time consuming, erroneous and non-transparent etc. but also helps the entire revenue machinery. The Government of Andhra Pradesh (GoAP) has put sincere efforts to provide quality services to the citizen by introducing ICTs—Mee-Seva in the state. The transformation—creating investor friendly environment, employing large number of IT enabled personnel, etc. —through use of modern technology took place in the State is actually a result of years-long policy implementations.

Andhra Pradesh is coastal state of India, with has its own geographical and political importance. The state was reorganised in June, 2014—bifurcated into Telengana and Andhra Pradesh. Now, there are 13 districts with 49 revenue divisions and 664 Mandals (Tehsils).

### **1.a Objectives of the study**

The objectives of the study are as follows:

- a. Documenting evolution of Mee-Seva and understanding its architecture
- b. To understand how the services provided by the government enhanced community development, and
- c. Sharing important findings so as to consider whether the project components could be replicable.

In order to understand land resource management of the GoAP, especially impact of good e-governance schemes on citizens, entrepreneurs and government, review of existing literature is undertaken. The existing literatures critically examine the need of ICTs in communities' development. One of the fundamental critiques point out that the ICT for development agenda assumes that improved access to ICTs inevitably leads to enhanced involvement in economic and social development—an overly optimistic and unrealistic view that is not based on an adequate conceptual framework or rigorous empirical analysis of the actual impact of ICTs on developing countries and people's well-being (Avgerou 2003; Anderson et al. 1999; Heeks 1999, 2002; Benjamin, 2001; Gigler, 2015). On the other hand it is also an unavoidable truth that e-governance schemes helped the life style of citizens largely.

## **2. Mee-Seva - 'at your service'**

'Mee-Seva', in Telegu means—'at your service'; which means that the government services available at door-steps for every citizen. Instead of visiting different government offices and other places, various needs citizens could be fulfilled through e-governance (internet linkages). MeeSeva adopts the concept of central pooling of all Land records, Registration records and records of Socio-economic survey, digitally signing them with the digital signature certificates of the authorized officer, storing them in the database and rendering them using a web-service. All the documents rendered are digitally signed and electronically verifiable making them tamper proof. It is considered to be smart governance with the help of technology enabled processes and also named as 'one stop e-governance shop' (Jaju, 2103). It categorizes two types of services—'A' type services need no

processing time; 'B' type services are of the nature that require verification, which takes a day or two to complete the process.

As part of this process, the GoAP came out with a Governance Reforms and Public Management Strategy, with a commitment to transform governance and provide a citizen centric, clean, genuine and caring government. Mee-Seva has served 36 Departments and more than 350 types of services. There are 7,000 plus Mee-Seva offices to provide all kinds of services even in the interior areas of the state.

Prior to Mee-Seva implementation, the citizens were dissatisfied about the government services; the government had experienced huge mass-objection. The GoAP observed the time taken in delivering services was longer and other measures taken were not adequate. Since 2001, ICTs were emerged as a need of society and the GoAP initiated e-Seva programme in order to ensure e-governance services to the citizens. The e-Seva meant to provide online bill payment facilities to the citizens, for various Government Departments and Private organizations in urban parts of the State. With gradual success of the programme, the state government decided to adopt the same mechanism to provide all kinds of services to the citizens at their door steps. An updation of land records and services to the citizens have manifold impacts, such as, easy selling of land parcels by getting good prices, may use land as a credit component, increase government revenue, litigation and hassle free services to the investors and many other indirect benefits.

The GoAP took advantage of the National e-Governance Plan (NeGP) by introducing e-governance schemes. Some schemes worked exceptionally well while some did not perform well or in

another word, they could not attract citizens considerably. The e-Governance scheme comprises of suitable modern technologies, which aim at providing quality services to the citizens, bringing in more transparency and accountability to the citizens.

## **2. a Objectives of Mee-Seva**

1. The main objective of Mee-Seva is to make citizen services much easier and accessible, and to achieve high customer satisfaction level by providing, instant, transparent, corruption free and error free document within short time.
2. To justify concept of e-governance ‘anytime, anywhere service’—to provide various services to citizens through single portal, which omits inter-offices process-flow, and saves huge time and efforts, put in by citizens in accessing services.
3. To Achieve improved data security measures and to enhance transparency
4. Allied objectives, such as, employment generation, to introduce cost of pollution-free services, and to reduce traffic regulation related costs.

## **2.b Architecture of Mee-Seva**

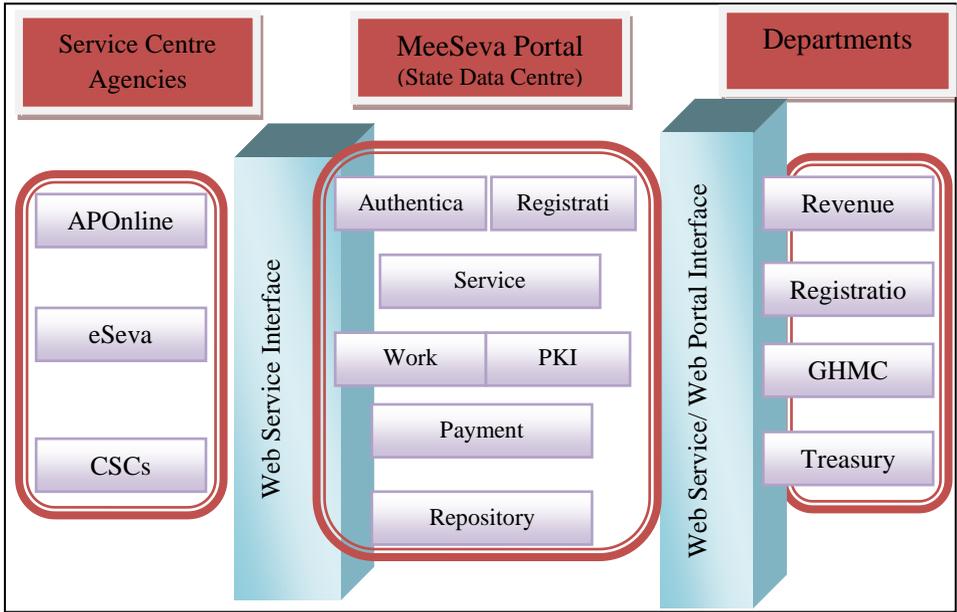
The Architecture of Mee-Seva is simple but robust in nature (Figure: 2), the entire architecture is developed in state of art manner. The basic idea is to create one data hub by which all departmental services would be integrated with the system, so that anytime anywhere services will be provided to the citizens.

- The architecture has been designed in a way where all kind of security measures were taken care of, so that data loss will never happened. As the system run through the web-based

application so connectivity of data centre and departmental/ mee-Seva centres is through leased circuits and ISDN lines.

- The design of the portal is developed in such a manner where all kind of operable devices which may be through AP Online, CSCs or Mobile devices; they all can get services in same time.
- PKI integrated architecture capable to provide services from anywhere whether from SCA servers or APSWAN or may be from e-Seva servers.
- It renders two types of service category in a single time 'Category A' and 'Category B' services.

**Figure-1: Architecture of Mee-Seva**



**Table-1: Number of Revenue Services available in Mee-Seva (See Annex-1)**

Total Services (Revenue related)	62
<b>Category A</b>	11
<b>Category B</b>	51

## **2.c Salient and Innovative Features of Mee-Seva**

### **A. Categorization of Services**

Service level category is an exemplary initiative and result of finest administrative decision. As per the need, importance and timing GoAP hosted all databases in a two-category; instant service or available document is called as Category-A, whereas verification is required to issue documents and certificated that is called as Category-B. Category 'B' services are not available with electronic repository its required proper application, verification and after completion of all survey; citizens provided the services through Mee-Seva. The distinction is well drawn and citizens are quite aware of it; they approached to the nearest Mee-Seva centre and applies for both the services. The distinctions are based on certain parameters which are discussed below.

#### **'Category A' Services**

- This service is given to the citizens on request basis and instant mode at the kiosks.
- Scanned and digitally signed document are already available in the central databases so that they can get easily
- For getting the service citizen not required any documents
- State data centre connected with all the kiosks operator throughout the state; so they can get all services uninterruptedly
- Applicant purchase the application form from the kiosks mentioning what services they required

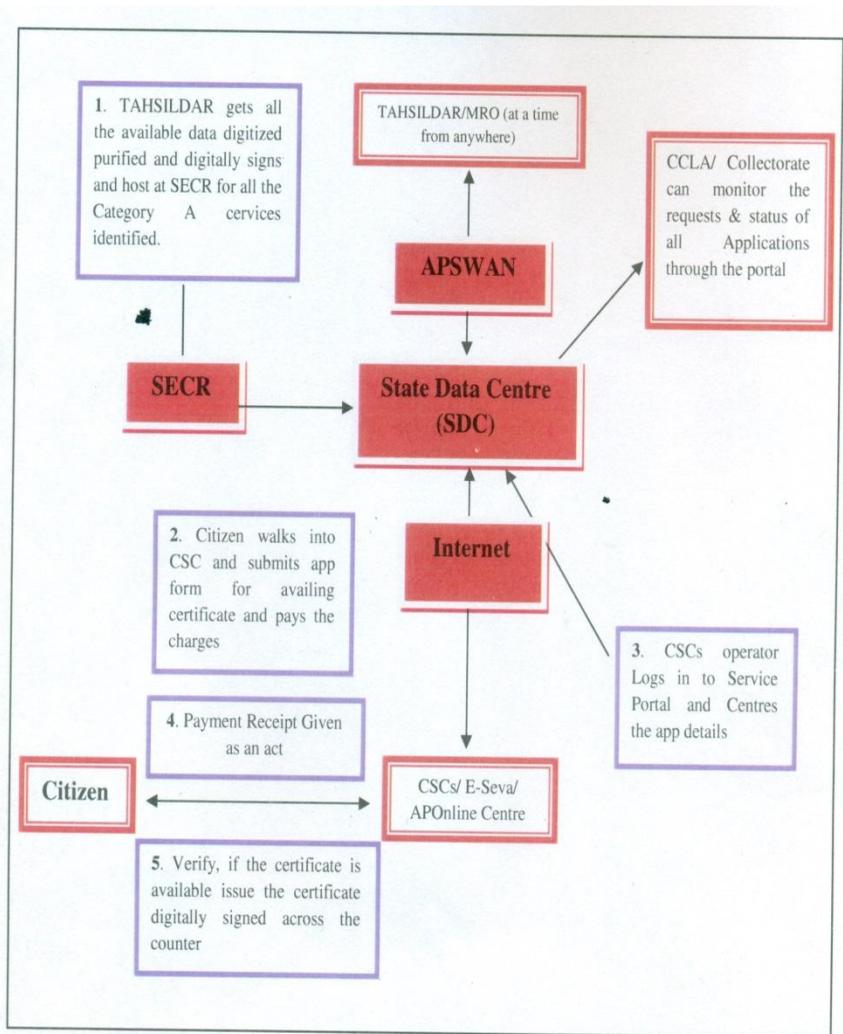
- Kiosks operator must provide digital document and digital receipt to the citizens.

### **‘Category B’ Services**

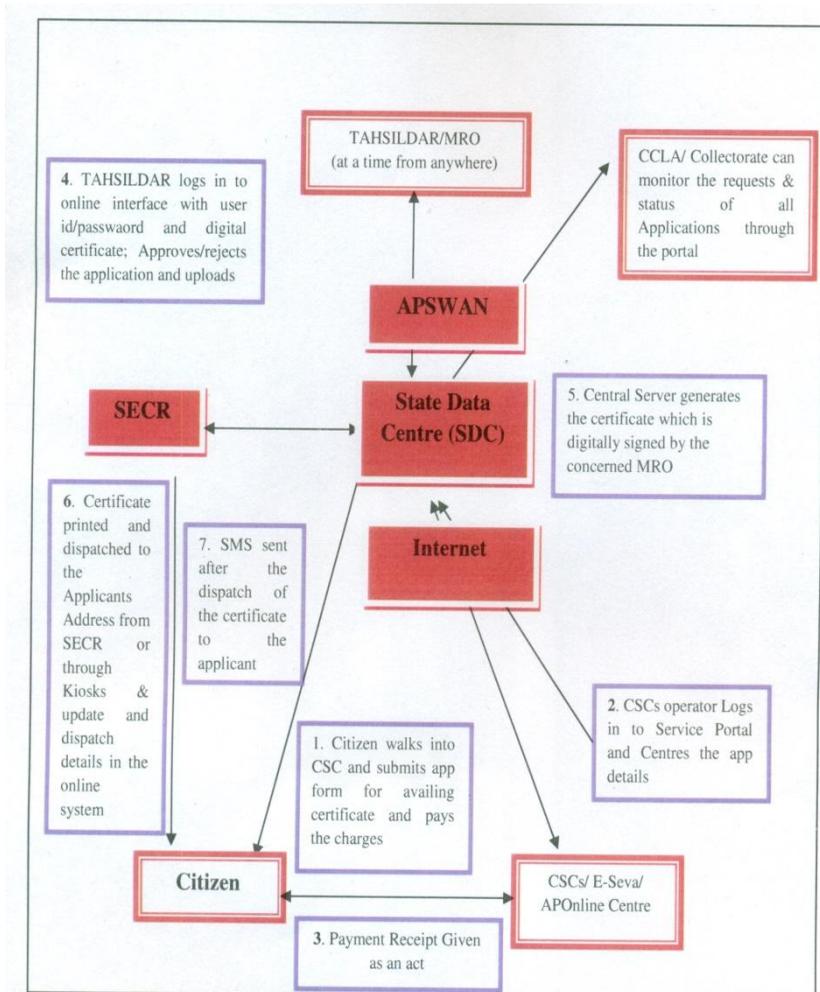
This service is different than the earlier, it requires verification, authority approval so that pendency of services is greater.

- It follows ‘Service level agreements’ as far as time limit of service delivery is concerned.
- The services requires to serve notices to the concerned parties, provision for objection hearings, and other security measures before preparing final document
- But the important thing is that citizen can apply through the Kiosks for getting the services
- Kiosks automatically transfer citizens application to the nodal departments online and issue a confirmation receipt
- Government department will check automatically and download the application, further approval/rejection as per the existing rules.
- After that citizens get certificates or documents through Kiosks or dispatched to the applicant address.

**Figure-2: ‘Category A’ Services – Process Flow (Source: CCLA Office)**



**Figure-3: ‘Category A’ Services – Process Flow  
(Source: CCLA Office)**



## **B. Building State Electronic Certificate Repository**

Second innovative features of Mee-Seva is that creation of State data repository, by which all kinds of digital data stored in a state level data centre for uninterrupted services through Mee-Sevacentres. All certificates and application routed through this repository so that verification can be done easily by using unique number.

## **C. Digital signing in bulk**

Department are ported all their ready documents/ certificates in the digital database hub with digitally signed. Central database stored all departmental databases with are pre-signed, for that purpose GoAP issued digital sign facility to the Officials to sign in the relevant certificates. Bulk signing for the same is used by the state for the first time which eases the regular certificate signing workload.

## **D. Security measures**

The entire workflow has been maintained by using tight security measures so that duplication of certificates can be stopped. Online verification of documents, transparency followed at each steps and avoid fraud cases the system is secured of these following contemporary problem.

## **3. Implementation of the Mee-Seva Project**

The state has developed a solution which provides most of the governmental services in a secure, electronic and user friendly manner. The Government channelized the demands came from the citizens into an effective service delivery, which thus

became citizen centric service. Prior to inception of the project, a set of expected outcomes were prepared. The expected outcomes of the Mee-Seva project were:

- Government Departments make sure that all the services that are possible to provide electronically, must be provided in a time limit manner.
- The quality of services must be ensured by the departments.
- Bring quality, efficiency and responsiveness in service delivery mechanism.

### **3. a Evolution of Mee-Seva**

Before implementation of the project, the State Government had faced large numbers of citizen movements demanding better and transparent governance, which is citizen centric. This became prime reason for designing this project. After due processes and series of consultations between different governmental departments for launch of e-governance, the project was started in Chittor District in November, 2011.

**Table-2: Expansion to Districts**

<b>Month and Year</b>	<b>Number</b>	<b>District Name</b>
November, 2011	1	Chittoor
April, 2012	2	Ranga Reddy
	3	Nellore
May, 2012	4	Krishna
	5	Medak
	6	Nalgonda
	7	Mahbubnagar
	8	Khammam
	June, 2012	9
10		Srikakulam
11		Adilabad
12		Warangal
13		Nizamabad
14		West Godavari
July, 2012	15	Kadapa
	16	Prakasam
	17	Anantapur
	18	Guntur
	19	Kurnool
August, 2012	20	Vizianagaram
	21	Hyderabad
	22	East Godavari
	23	Visakhapatnam

The implementation of e-Seva received wide acceptance among the citizens, which encouraged the entire government machinery of Andhra Pradesh to bring all government services in a place and handles through a single window. A single

window was expected to increase service quality, revenue of the government, easy monitoring of department works, etc. With such thinking, the government started citizen/common service centres (CSCs) concept to provide service delivery in rural areas, which did not get that much success, mainly due to improper management. Eventually, the government re-considered various options and decided to deploy another umbrella concept; a solution which aimed at providing all departmental services through a single portal. Necessary infrastructural support was developed—establishment of State Data Centre, Wide Area Network under the NeGP Plan.

### **Initial Stages of the project**

Before Mee-Sevawas started, delivery system was manual; several problems were faced by the government, almost every day. The basic issues of citizens were—unavailability of government officers for due authorization of the documents, overcrowded offices where error free services was not possible, inefficient staff, corruption at every stages and many others. Soon after with greater interaction with the ITE&C Department, the Department designed the project under G2C service category in a transparent, fast and secure way.

The GoAP conducted a baseline study before finalizing the framework of the project. In the following stage, the GoAP identified the departments which had high public interfaces, such as Revenue, Police, Urban Local Bodies, Health, Education, Social welfare, and Rural Development. In the next stage, it identified services that citizens were asking for and the problems often faced by the citizens. The GoAP constituted a

team called Strategy & Performance Innovation Units (SPIUs) to facilitate those departments that were facing more problems in delivering services to citizens. Such Departments werebrought under e-governance environment by providing technical support and consultancy. The SPIU also identified the services where citizen had to pay bribes. As a solution to this problem, the SPIU started the process of digitization of documents and computerization of services, aiming at reduction in corruption. Simultaneously, the GoAP started building capacity of the staff so that they could handle the entire project in every stage in organized and efficient manner.

### **Later Stage of the project**

The initial stages of the project receivedgreater attention of citizens; the department covered in the first phase achieved higher targets compared to expected outcomes. After that, all the departments of the state werebrought under the project in order to provide quality services to citizens and increasing departmental revenues.

Mee-Seva added 12 more services (Annexure-III) and additional 2500+ centers were established across 23 districts in 2012-13. Mee-Seva continued adding departments and services to its list and by November 2012, when it became one year old, it had around 5,000 centers, 53 services and had already crossed 75,00,000 transactions mark. The number of Mee-Seva Centres between June, 2012 to June 2013 increased from 400 to 7,097; number of transactions were raised from 59,000 to more than 250,000 and Services offered in January, 2012 was 12, which was increased to 157 in August, 2013.

**Table-3: Service comparison: Before and After Mee-Seva**

<b>Services</b>	<b>In Manual process</b>	<b>Through Mee-Seva</b>
Adangal copy	Rs. 300-1000 (varies) multiple visits required	Rs. 25 within 15 minutes
RoR/ 1B copy	500-1000	
Birth Certificate	500-1000	
Registration certificate	500-1000	

#### **4. Role of Mee-Seva in Revenue System**

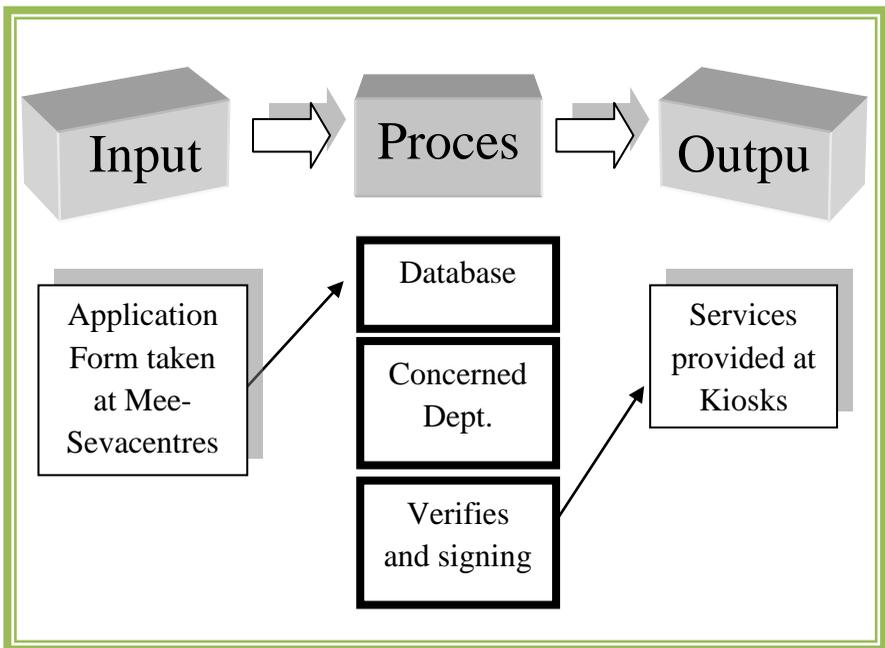
The Revenue Department is one of the busiest departments in Andhra Pradesh, as large numbers of transactions take place, every day. The revenue system depends not only with the land records or survey-settlement operations its largely depends on the registration process too. Mee-Seva is fills the gaps of Registration–Land Records integration. Prior to Mee-Seva project, the land records were kept at every tehsil office and tehsildar used to provide Records of Rights on plain paper with manual sign; no other security procedures (verification, fraudulent transactions, etc.) were followed. One of the recent reports mentions that out of 4.4 crores of requests coming from the Kiosks, 3.27 crores of requests belong to the Revenue Department.

After installing the idea of kiosk-centres, data are hosted at the data centres with necessary security features. Thus, dependence on tehsildar has reduced considerably.

Mee-Seva provides all kinds of revenue services including records related and registration related. It is well-known that

land administration in our country is largely supported by the four inter-dependent components which are diversified in nature but interlinked; they are—land records, survey and settlement, registration of property and mutation or changing ownership records. Through Mee-Seva all components have been integrated with each other so that citizen services become instant, error free and transparent. Time-less services provided through the Kiosks after getting prior signatures and documents from the Revenue or Registration Department makes their life easier as far as getting land records from the respective offices were concerned.

**Figure-4: Simple Diagram Shows Mee-Seva Process**



The diagram makes clear to understand the workflow of Mee-Seva. It works like a central-service provider of all kinds of revenue related services, including land records, village maps, request for re-survey of property, registration details transfer for Mutation, etc. The services provided by the Revenue Department through Mee-Seva are described below:

#### **4.a Land Records**

During the period of 1995–1998, data entry of *Adangal* in all districts has been completed through Land Records Management and Information System (LRMIS) and 36 million records have been captured. Since 1999–2000, entire land records data has been ported with other line departments to respective Mandals for getting easy crop-loans and other welfare schemes.

- **Web-land project:** In 2011, the GoAP decided to port all the land records which are available in tehsil office. Every record was verified, corrected and digitally signed to be a part of the state data centre. After that, a web based application ‘Web-land’ was developed to provide RoR-1B copy and *Adangal* copy through Mee-Seva counters to the citizens. The land records which were earlier stored in the respective tehsil offices now all records stored in web-land and issued through Mee-Seva. As entire set of the state land record data are stored on the single server, planning of any developmental projects in the state becomes easier; the farmers can easily access their records, which are records tamper proof.

This system of land records eases the entire day to day work-pressure of tehsil offices. Maintenance and updating

land records are carried out through the web-land. All digitized land records are stored in the Web-land server for future needs. Online correction after each mutation is carried out through web-land. Sharing of land records with other line departments whenever and whichever required also takes place through the web-land. This holistic approach facilitates process of integration and ensuring instant service deliveries to the citizens, which is a prime example of G2C (Government to Citizen) services. Retrieval of land records data in a very short time/instantly is possible through the web-land.

- Managing of all government lands (Sarkari-bhumi): this is one of the comprehensive system which protects govt. land from public encroachment and also provides regular management of data, data of vacant lands, and alienation details.
- Automated mutation and issuance of e-pattadar passbook
- Launching of Mee-Bhoomi in June 2015 helps in viewing of land records. All the records are dynamically integrated with Web-land. *Adangal* copy, Village 1B, Individual 1B, Village Map, Individual *Adangal*, FMB etc. are the key components of Mee-Bhoomi.
- By organizing Gram Sabhas in every revenue village, the disputes and objections raised by the farmers were resolved; forest, WAKF and endowment land too were reconciled along with the privately owned land related records.

- Adhaar seeding with land records is one of the prime examples of good-land governance of the state. This step narrows down the corruption and increase authenticity over the ownership rights. It is helpful for land ceiling cases and preventing other fraud practices.

#### **4.b Registration of Property**

There are 16 services available on Registration and Stamps through Mee-Seva. As far as revenue or land registration is concerned, it provides most of the online services to the citizens, such as, Encumbrance Certificate, Certified Copies of Registration Document, and Slot Booking for Registration. This eases citizens' efforts and reduces the bribe-tendency of middleman. The integration of the land records with the Registration Department helps for automatic mutation. Citizens are benefitted at every stages of property registration from mutation through the online kiosk centres.

#### **4.c Survey/ Sub-divisions of land parcels**

The Survey or Sub-divisions of land parcel is available with Mee-Seva. Any land owner can receive necessary information about the land owned by him/her by applying at the Kiosks counter with proper Survey number. The application automatically comes to the concerned Mandal Office, by which they can arrange schedule for the Surveyor to measure the land; the date and time of appointment is informed through SMS to the applicant.

## **5. Challenges Faced by Mee-Seva**

The challenges faced by the project were

- Establishing inter-departmental co-ordination was one of the biggest challenge
- As Andhra Pradesh has wider geographic areas to cover, documents to be digitized for all the departments became a mammoth task. Each department has to deal with different set of activities and needs of citizens. Therefore there was no uniformity in maintaining the data. Thus, record keeping in database server was a tough challenge for the authority.
- The internet connectivity and other hardware installation capacity were not adequate. Connectivity establishment and hardware installation in every province of the state was also a big challenge.
- Training of staff and line officers for all the departments was seen as a major issue to deal with.
- Digital signing of all available documents to upload into the state data centre.
- Creation of citizen awareness towards the new innovative programme was one of the prime hurdles.

In spite of having tremendous departmental pressure and other factors, the GoAP succeeded to implement the programme in almost every corner of the state to provide effective and smart governance to the citizens.

## 6. Key Findings

Mee-Seva is to provide services from lading govt. departments to the citizens, with that Revenue related works has done mostly. After Independence every state has started initiatives for improving their land resources for maximizing its utilisation. Though after a long year the experience on land administration is highly varies because of so many reasons such as; bureaucratic inefficiency, political pressure, less knowledge of management and so on. It is inevitable to mention that in the regard of management and computerization process of land records, Government of Andhra Pradesh has done well job; whether its on land records computerization or registration or smart services regarding land records to the citizens and farmers. In the context of Neo-liberal era where everything based on market economy, land cannot be untouched. So that proper management is required. Proper management comes from transparency, without distinction of land records and ground reality and the last but not the least citizen can get all kind of services in door step. In that way, GoAP introduces smart governance after implementing Mee-Seva where along with Revenue service all other services are available.

- GoAP designed their legal framework to work the project smoothly, as in 2011 they provide legal sanctity to the digitally signed certificates or documents. Apart from technological and managerial achievement, amendments of legal policies help to sustain any project.

- Preparedness of department is also a key part, because most of the states are facing the problem of in-between co-ordination between departments, however the steady political will and strong bureaucracy helps to build co-ordination between departments.
- Digitization of huge data records from several departments would also a tough task to do, but they have managed very well.
- Delivery channel establishment between all departments with the kiosks for the entire AP. Not only establishment but also maintenance and
- Capacity building of Officers, staff, kiosks operator and field functionaries about project implementation, troubleshooting and further enhancement. Intense training and conducting workshops among all the stakeholders and regular meeting helps to manage and understand the current scenario and issues. They have used several mechanisms for training and building capacity such as video conferencing, satellite channels used for large-scale training operations. Not only that they have prepared different modes of training such as hand-on, field-level etc.
- Easy payment transfer: Mee-Seva enabled to automatic transfer through the kiosks, the statutory charges collected to respective department accounts. Through the Electronic Fund Transfer system (eFTS), it consolidate all funds collected in the Mee-Seva centres, then SCAs collects the money from Mee-Seva Pooling Account and transfer to the Nodal Banks, then Banks as per the Official order transfer the amount to the respective departments as per their shares. The fund

transfer to Department accounts is processed through RBI gateway using RTGS and NEFT systems.

- GoAP has initiated programmes to increase awareness about the programme and its several services. In the initial years they have broadcast it on TV, Radio, now they have published it on social media, newspaper etc. to show if new services is launched at the Mee-Seva.
- As there are several departments involves in service providing through Mee-Seva it would not be so easy to manage by a individual authority, so that they have decided to control of data with their respective departments. It eases the entire process and stop the chance to contaminate the original records.
- GoAP took a historical decision to decentralize the power of service delivery mechanism by introducing District e-Governance Societies. The societies were formed to look after the entire mechanism of Mee-Seva at their level. Not only service providing the societies are used for quality training provider and spreading IT awareness of officers on issuing Digital signatures.
- Feedback mechanism of Mee-Seva is also centrally controlled and closely monitored in the state. Citizens/kiosk operators can call customer care people where feedback/grievance details were registered detailing the issues and tickets were raised and redirected to concerned agency or government department for problem resolution.
- Service of ‘Mobile Mee-Seva’ (See Annex-2) currently introduced by the state administration, aimed to utilize the large area coverage of Mobile devices, by which services or information may provided to the common people. Policy has been designed by the Govt. to

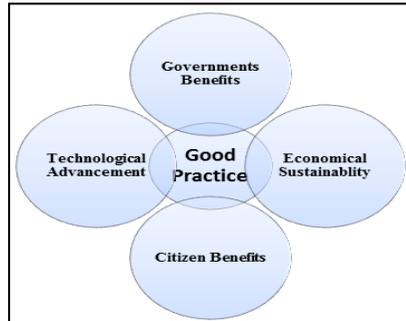
shifting towards e-governance to m-governance to provide services at 24 X 7 modes.

- Through Mee-SevaGoAP issued pattadar passbook, this is digitally signed. E-Passbook is a latest innovation of State's Land Records Dept. Pattadar can easily apply through Kiosks for their passbook and through automatic integration with Web-land, Dept. can (within 30 days) issue that. Apart from that pattadar see their passbook application status online. The service helps not only the citizens of the State but also the Govt. as it identifies fake passbook or fraud pattadar, earlier fake passbook were easily issued to anyone. E-passbook also helps farmers for getting crop-loan and others welfare related benefits.

It is been accessed from the field-visit that though there are ample of good stories told regarding Mee-Seva but there found a mix experience among the citizens who feels that the solution does not stop corruption entirely; but the good things are timely service and reduces inconvenience of non-availability of services at offices.

## 7. Reason behind Good practices

Social or economical policy implementation and successful completion is depends on so many factors. The entire system or ecology is interlinked with each other and they have immensely contributes for policy success or failure. Bureaucracy from Centre-State level to the village



level and the citizens all are the important part of it. Mee-Seva is one of the innovative service providers for the citizen of Andhra Pradesh since it was started. Good practices can be accessed through the aspects of technological advancement, economical stability, citizen services benefits, government benefits etc.

**Technological advancement:** Mee-Seva is an outcome of technological advancement by and large, ICTs involves a greater role for the successful implementation of the project. This project is widely acceptance techniques used and easier methodology followed. PKI enabled integrated solution brings all the service centre points in a individual location by using state and central initiatives like; Mission-mode Projects like State Data Centre (SDC), State Wide Area Network (SWAN) and Common Service centres (CSCs) of the National e-governance Plan (NeGP) of Government of India. The efficiency of the project is depends largely on the GPRs as identification of various department, creates a common platform to deliver their services etc. On that way, it incorporates WEBLAND for Revenue Department, ISES certificates (for caste, income and nativity), Centralized CARD for Registration Department and Universal Birth & Death Certificate for Municipality & Panchayats and Centralized CDMA system (Commissioner & Director of Municipal Administration) etc. to eliminates multiple visits of citizens by developing one system software application. Therefore it eases citizens delivery system by means of unnecessary filling up application forms, multiple sign at every stages, departmental process etc.

Technological advancement helps to pull all kind of land record, registration, socio-economic survey related data, digital signatures certificates etc. through which anyone from any location can fetch data at any time. Technological advancement provides citizen services as well as good governance and decentralized governance will help to reduce litigation and dispute related cases.

Another point of technological sustainability is that all kinds of data and certificates are belongs to the own department, and data stored in their respective servers in a high secured State Data Centre. Digital signatures are provided to not only the signing authority but also to the Kiosks operator for timely delivery of certificates. The project is designed and implemented in such a manner where advancement of using ICTs taken place at the same time technological sustainability is also taken care of.

**Citizen Benefits:** The main objective of the project is to provide door-step delivery of all kinds of regular government services. Time taken for getting regular-needed services reduces largely, application procedures and waiting time for approval also reduces after the implementation of the project. Earlier system of manual methods not only takes huge time but corruption at every stage becomes a huge issue of governance. But after introducing the system with categorization of services and prompt service provided in the Kiosks enrich the degree of citizen services. 342 types of services (**Annex-1**) from different department with prescribed time limit and service charges ensured citizen benefits and help to reduce corruption level.

As Mee-Seva is developed to serve all sections of society so that it includes all level of services for Youth, Women, Poorer section, Working groups, Schedule Class communities, Framers etc. Basically it largely benefitted to the poorer section of the society where they are largely depends on the various welfare schemes of governments but in the earlier manual process they were deprived for getting that. It includes and integrates with education department so that certificate issuing or other issues become sorted out very easily through the portal even during before School Examination and College entrance. The benefits which have been provided are listed below:

**Table-4: Nature of Benefits through Mee-Seva**

---

<i>Employment Generation</i>	- Act as a medium of employment generation to thousands of youths - Employment of Women as 10% of Kiosks operators reserved for Women
<i>Benefits to Farmers</i>	- Land Records get easily - Use for Loan and Mortgage
<i>Benefits to BPL Citizens</i>	Income certificates provided to the BPL families instantly
<i>Benefits to Students</i>	- Issuance of Income Certificate and Residence Certificate which may required for education purpose

---

**Economic Sustainability:** In the initial stages of implementation Mee-Seva a few financial supports has been given but after steady initializing and user-fee collection, the revenue generation increased greatly. Revenue collected from the project used for maintenance, development and upgrading of services. Economic sustainability by the means of lesser

user charges for services, creation of new jobs and after expense little amount citizen get all kind of services in his door step. The project is designed scientifically by putting ample efforts on financial sharing of the fund to all the stakeholders. The idea was profit margin would be lesser and increase number of transaction in a day; so that profit will be maximized; on that thought it has recovered all the investment cost from the user charges. More than 28%/20% (A/B Category) is shared with respective departments (to maintain the databases, necessary infrastructure, capacity building), 26%/14% (A/B Category) with Director, ESD (to maintain Mee-Seva Infrastructure/application maintenance), 14%/9% (A/B Category) with Authorized Service Providers (SCA, Monitoring & Infrastructure) while the majority of 32%/57% (A/B Category) is shared with the Mee-Seva centre which is a cutting edge interface at the local level. This has made the project self-sustainable.

**Table-5: Economic Sustainability  
(Head-Wise Sharing)**

Category	% of Breakup	Kiosk	SCA	Infra	Department	Total user charges with Service Tax
A	Amount	8	4	6	7	25
	% Share	32	14	26	28	100
B	Amount	20	3	5	7	35
	% Share	57	9	14	20	100

**Governmental Benefits:** It is been analysed that due to the Mee-Seva implementation the entire government machinery benefitted largely. The project increases Revenue collection, as

well as monitoring, evaluation, decision making and other developmental plan become easier.

**Table-6**  
**Statistics of Revenue collection through Mee-Seva transactions**

<b>Total Transactions</b>	<b>6, 31, 32, 791 (Dec' 15)</b>
<b>Revenue Department</b>	<b>4, 53, 60, 310 (72% of total)</b>
<b>Category A</b>	<b>1, 71, 03, 560 (37.6%)</b>
<b>Category B</b>	<b>2, 82, 56, 750 (62.4%)</b>
Rejected	16, 94, 977(6%)
Approved	2, 59, 83, 100 (92%)
PWSLA	3, 27, 665 (1.20%)
PBSLA	2, 45, 055 (0.8%)

*Increasing revenue and No. of Transactions:* Revenue department is one of the largest among the others as far as collection of revenue from Mee-Seva Kiosks and service requests numbers are concerned. Till now the Dept. provides 64 kinds of services through 4572 centres and total 45.3 millions no. of transactions has been done.

*Monitoring and Decision making:* Earlier there were a huge issue faced by the then Govt. regarding service delivery and citizens asked that what was the exact status of their application, but authority failed to answer. Now after Mee-Seva GoAP easily monitor and evaluate the cases individually; so that delay between departments can be easily solved. Decision making capability also been increased as the entire mechanism online connects with the departments.

## 8. SWOT Analysis on Mee-Seva Project

Andhra Pradesh since after introducing e-Seva, they have entered into the e-governance era and Mee-Seva is the final outcome; so, service delivery mechanism what the state has developed has replicated by many other states in India. By applying SWOT analysis technique it helps to understand on the best way to achieve future growth of the programme, which is efficient in character and sustainable in nature. The process involves identifying the strengths and weaknesses of the programme or overall the organization, and opportunities and threats present in the available system.

<p style="text-align: center;"><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• Strong Inter-departmental co-ordination</li> <li>• Wide acceptance of Technology reforms by citizens and staffs</li> <li>• Successful implementation of ICTs at every stage</li> <li>• The objectives of the programme largely and genuinely met</li> <li>• Regular monitoring and meetings for sharing updates and thoughts</li> <li>• Awareness campaign launched widely</li> <li>• Revenue sharing to all the Stakeholders instantly and statutorily</li> </ul>	<p style="text-align: center;"><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>• Still corruption issue is not ended-up completely</li> <li>• Due to vendor driven, staff and officials have less interests on technicalities about the programme</li> </ul> <hr/> <p style="text-align: center;"><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>• As far as revenue dept. is concerned, all databases stored in a central server</li> <li>• Land Acquisition and other land related issue can solve easily</li> <li>• Employment generation and women empowerment</li> <li>• Web-land services are also incorporate with Mee-</li> </ul>
--	---

<ul style="list-style-type: none"> <li>• Categorization of services ‘instant mode’ and ‘eventually’.</li> <li>• Faster Internet connectivity up-to village level</li> </ul>	<p>Seva, so agricultural details and other crop related activities also been monitored on regular basis.</p>
<p style="text-align: center;"><b>Threats:</b></p> <ul style="list-style-type: none"> <li>• Workload and service related activities are minimizes in local offices (Tehsil), so that the interests among the staff and official are lesser on service delivery</li> <li>• Entirely depends on the Outsider technocrats/ vendor</li> </ul>	

It is been analysed through primary, secondary and field information that the programme largely benefited to all the stakeholders and citizens of all sections, however SWOT analysis find some threats which must be looked upon at earliest basis, because if not then it hampers the sustainability of the programme.

## 9. Conclusion and Way ahead

Andhra Pradesh by adopting the G2C services mechanism after introducing Mee-Seva has secured a prime place in national level. As far as land records and its management are concerned the state adopted steady, secure and efficient ICTs to provide hassle free services to the citizens. The journey of the state is long and the road is hard; but strong political will

and supreme bureaucracy helped it immensely. At very beginning the state adopted to digitize all available land records data and hosted in a secure database centre. Through Web-land they have provided uninterrupted services to the citizens, along with, security of land records also been maintained by incorporating Adhaar integration, and purification of land records by doing ground truthing and conducting Gram-Sabhas. Issuing e-passbook to all the pattadars also help to stop corruption at very early stages.

Mee-Seva currently extends several services from several departments of GoAP, and Organizations are willing to expand much larger way, on that direction the concerned departments are started working. From the very beginning the acceptance of citizens towards Mee-Seva is higher. The project delivers benefits to all the stakeholders and fulfils its mandate. Mee-Seva has already accepted as a National model for delivering G2C services. Moreover 5 states of India replicated the current mechanism of Mee-Seva and develops as per their need. In a greater way, through the Mee-Seva land resource management become more efficient than earlier days, now several services can be reached directly to the beneficiaries address through it. The achievements like Distribution of ROR1B to all Farmers, collection of Aadhar Numbers / Mobile Numbers/Bank A/c Collection of Missing Entries in Adangal etc. helped the entire administration to manage and run land administration effectively.

## REFERENCES AND WEB LINKS

- Faizi, AAA and Snehasis Mishra. (eds.). (2015). *Conclusive Land Titling: A need for reforms in land administration*, New Delhi: Manak Publication
- Gigler Bjorn-Soren. (2015). *Development as freedom in a Digital Age: Experiences of the Rural Poor in Bolivia*, World Bank Group. Retrieved from <http://www.slideshare.net/SorenGigler/development-as-freedom-in-a-digital-age>(Accessed on 10 February 2016).
- Habibullah, Wajahat and Manoj Ahuja. (eds.). (2005). *Land Reforms in India: Computerization of Land Records: Volume-10*, New Delhi: Sage Publications.
- Singh, Anoop. (2012). Integrated Service Delivery Model MeeSeva. November. Retrieved from <http://www.meeseva.gov.in> (Accessed on 10 January 2016).
- . 17th National Conference on e-Governance- Governance-Vision to Implementation Best Practices in e-Governance: MeeSeva 11/30/2013: Sanjay Jaju. Retrieved from <http://ap.meeseva.gov.in/DeptPortal/Downloads/Mseva%20Docs/v3.%2017th%20Conference%20Paper.pdf>(Accessed on 12 January 2016).
- . Handbook on Mee-Seva Services: (<http://www.meeseva.gov.in>)
- . National Awards for e-Governance 2013-14 MeeSeva: Department of Department of Information Technology and Communications, Government of Andhra Pradesh.

**Annex-1**

<b>Mee-Seva Services - Revenue Department</b>	
<b>Sl.</b>	<b>Service Name</b>
1	AGRICULTURAL LAND VALUE APPLICATION
2	AGRICULTURE INCOME CERTIFICATE
3	APATHBANDHU SCHEME
4	APPEALS ON DEMARCATION
5	CC OF ROM
6	CERTIFIED COPIES ISSUED BY RDO
7	CERTIFIED COPIES OF TSLR
8	CERTIFIED COPIES OF PANCHANAMA
9	CHANGE OF NAME APPLICATION
10	COMPUTERIZED ADANGAL
11	CORRECTIONS IN CURRENT ADANGAL
12	CRACKERS LICENSE FOR DIWALI
13	DUPLICATE COPY OF CERTIFICATE - INCOME
14	DUPLICATE COPY OF CERTIFICATE - INTEGRATED
15	DUPLICATE COPY OF CERTIFICATE - RESIDENCE
16	EBC CERTIFICATE
17	EPASBOOK-REPLACEMENT
18	EPASSBOOK-DUPLICATE
19	EPASSBOOK-NEW
20	EXTRACT OF D FORM PATTA
21	EXTRACT OF HOUSE SITE PATTA
22	EXTRACT OF NOC UNDER EXPLOSIVE ACT
23	EXTRACT OF NOC UNDER PETROLEUM ACT
24	EXTRACT OF ORC
25	FAMILY MEMBER CERTIFICATE

26	INCOME CERTIFICATE
27	INTEGRATED CERTIFICATE
28	ISSUE OF ARM LICENCE(FRESH)
29	ISSUE OF ARM LICENCE(RENEWAL)
30	ISSUE OF NOC FOR STORING OF PETROLEUM PRODUCTS
31	ISSUE OF OCCUPANCY RIGHTS CERT FOR INAM LANDS
32	ISSUE OF SMALL AND MARGINAL FARMER CERTIFICATE
33	ISSUE OF TONCH MAP
34	LAND CONVERSION
35	LATE REGISTRATION OF BIRTH
36	LATE REGISTRATION OF DEATH
37	LOAN ELIGIBILITY CARD
38	MANUAL ADANGAL
39	MONEY LENDING
40	MUTATION AND E-PASSBOOK
41	NFBS APPLICATION
42	NO EARNING CERTIFICATE
43	NO OBJECTION CERTIFICATE
44	NO PROPERTY APPLICATION SERVICE
45	NOC FOR CONSTRUCTION OF CINEMA HALL
46	OBC CERTIFICATE
47	PAWN BROKER
48	PERMISSION FOR DIGGING AGRI/DRINKING WELL
49	PERMISSION TO RUN THE BENEFIT SHOW
50	POSSESSION CERTIFICATE
51	PRAJAVANI
52	REFUND OF TRADE DEPOSIT

53	REGULARIZATION OF ENCROACHMENT IN GOVERNMENT LAND
54	REISSUANCE OF EBC
55	REISSUANCE OF INTEGRATED CERTIFICATE
56	REISSUANCE OF OBC
57	RENEWAL OF CINEMA LICENCE
58	RESIDENCE CERTIFICATE - GENERAL
59	RESIDENCE CERTIFICATE - PASSPORT
60	ROR - 1B
61	SETHWAR/ SUPPLEMENTARY SETHWAR/RESETTLEMENT REGISTER/FLR
62	STORAGE OF EXPLOSIVE MATERIAL LICENSE

## Annex-II

<b>Mobile Mee-Seva Services - Revenue Department</b>	
<b>Sl.</b>	<b>Services</b>
1	Adangal copy
2	ROR1B
3	No Earning Members Certificate
4	Income Certificate
5	Possession Certificate
6	Agriculture Income certificate
7	EBC Certificate
8	OBC Certificate
9	Integrated Certificate.
10	Family Members Certificate

## Annex-III

### Major Services Provided by Mee-Seva; GoAP Departments

<p style="text-align: center;"><b>Education</b></p> <ol style="list-style-type: none"><li>1. Application for issue of Age Certificate</li><li>2. Application for duplicate Memo of Marks</li><li>3. Application for Re-Counting of Marks</li><li>4. Application for Migration Certificate</li></ol>	<p style="text-align: center;"><b>Transport</b></p> <ol style="list-style-type: none"><li>1. LL Slot Booking with Fee Payment</li><li>2. DL Slot Booking with Fee Payment</li><li>3. RC Abstract</li><li>4. DL Abstract</li></ol>
<p style="text-align: center;"><b>UIADI</b></p> <ol style="list-style-type: none"><li>1. Know your Aadhaar</li><li>2. Aadhaar Seeding</li></ol>	<p style="text-align: center;"><b>Agriculture</b></p> <ol style="list-style-type: none"><li>1. Application for Crop Seed Subsidy</li><li>2. Application for Crop Insurance</li></ol>
<p style="text-align: center;"><b>Power:</b></p> <ol style="list-style-type: none"><li>1. Name change</li><li>2. New connection - 6a – street lights</li><li>3. New connection - 6b – public water works</li><li>4. New connection - general purpose</li><li>5. New connection - religious places (temples, church, mosque, govt. schools etc.)</li><li>6. New connection commercial</li></ol>	<p style="text-align: center;"><b>Registration</b></p> <ol style="list-style-type: none"><li>1. Issue of Encumbrance Certificate</li><li>2. Certified copy of Registration Document</li><li>3. Slot booking for Registration</li><li>4. Certified copy of Bye Laws</li><li>5. Certified copies of Society registration</li><li>6. Certified copies of Firm</li></ol>

<ul style="list-style-type: none"> <li>7. New connection commercial- hoardings</li> <li>8. New connection domestic</li> <li>9. Load change</li> <li>10. Category load change</li> <li>11. Category change</li> </ul>	<ul style="list-style-type: none"> <li>registration</li> <li>7. Registration of Society</li> <li>8. Registration of Firm</li> <li>9. Submission of Appeals</li> <li>10. Amendment of Society</li> <li>11. Firm Name Change</li> <li>12. Change in Constitution Firm</li> </ul>
<p style="text-align: center;"><b>Municipality (CDMA)</b></p> <ul style="list-style-type: none"> <li>1. Birth Certificate Corrections</li> <li>2. Death Certificate Corrections</li> <li>3. Child Name Inclusion</li> <li>4. Permission for Water Connections</li> <li>5. Transfer Of Title Deeds</li> <li>6. Applying for Trade license</li> <li>7. Applying for Building permission</li> <li>8. New Assessment request</li> <li>9. Sub-Division requests</li> <li>10. Non Availability Certificate – Birth</li> <li>11. Non Availability Certificate – Death</li> <li>12. Exemption request</li> <li>13. Vacation remission</li> <li>14. Birth Certificate Corrections</li> <li>15.        Death        Certificate Corrections</li> </ul>	<p style="text-align: center;"><b>Information &amp;Communication</b></p> <ul style="list-style-type: none"> <li>1. 25% Power Subsidy</li> <li>2. Conversion to Industrial Power Tariff</li> <li>3. 100%/50% Stamp duty Refund</li> <li>4.4) Recruitment Assistance</li> <li>5. 50% Exhibition Rental Refund</li> <li>6. Tier II/III Location Anchor Company Incentive</li> <li>7. Reimbursement of Patent filing cost</li> <li>8. Reimbursement of Quality Certification expenditure</li> <li>9. Declaration of IT Park Status</li> <li>10. Specific Incentives for SC/ST/Women Entrepreneurs</li> <li>11. Allotment of land</li> </ul>

<p><b>Industry and Commerce:</b></p> <ol style="list-style-type: none"> <li>1. Investment Subsidy</li> <li>2. Pavalavaddi</li> <li>3. Power cost reimbursement</li> <li>4. Sales tax reimbursement</li> <li>5. Stamp Duty/Land Conversion charges/Mortgage Duty</li> <li>6. Cleaner production measures</li> <li>7. Skills upgradation</li> <li>8. ISO/BIS certification</li> </ol>	<p><b>Municipality (GHMC)</b></p> <ol style="list-style-type: none"> <li>1. Birth Certificate</li> <li>2. Death Certificate</li> <li>3. Birth Certificate Corrections</li> <li>4. Death Certificate Corrections</li> <li>5. Child Name inclusion</li> <li>6. Non Availability Certificate - Birth</li> <li>7. Non Availability Certificate – Death</li> </ol>
<p><b>Civil Supplies Department</b></p> <ol style="list-style-type: none"> <li>1. Ration Card Mutations - DOB Correction</li> <li>2. Print Ration card</li> <li>3. Fair Price Shop Renewal</li> </ol>	<p><b>Police</b></p> <ol style="list-style-type: none"> <li>1. Missing or Lost Documents / Articles</li> <li>2. Permission for Event Bandhobust</li> <li>3. Issuance of Certificates</li> <li>4. Fresh Licenses or Renewals</li> </ol>
<p><b>Social Welfare:</b></p> <ol style="list-style-type: none"> <li>1. EPASS – Renewal (Post Matric)</li> <li>2. EPASS – Renewal ( Pre Matric )</li> <li>3. APPLICATION FOR STUDENT SCHOLARSHIP(FRESH)</li> </ol>	<p><b>Labour</b></p> <ol style="list-style-type: none"> <li>1. Registration of Establishment / Shop (Form - I)</li> <li>2. Renewal of Establishment / Shop (Form - III)</li> <li>3. Issuance of duplicate certificate for Registered</li> <li>4. Establishment / Shop Notice of Change</li> </ol>

<p style="text-align: center;"><b>Election Commission</b></p> <ol style="list-style-type: none"> <li>1. Issue of Voter Certificate/I-Card</li> <li>2. Application for inclusion of Name in the Electoral Roles</li> <li>3. Application of change of details</li> <li>4. Application of transposition</li> <li>5. APPLICATION FOR OBJECTION/ DELETION OF NAME IN THE ELECTORAL ROLL ( FORM -7)</li> </ol>	<p style="text-align: center;"><b>Mining and Geology</b></p> <ol style="list-style-type: none"> <li>1. Reconnaissance permit</li> <li>2. Prospecting License</li> <li>3. Mining Lease</li> <li>4. Granite Quarry Lease</li> <li>5. Marble Quarry Lease</li> <li>6. Other Quarry Lease</li> <li>7. Mineral Dealer License</li> </ol>
--	---

## Annex-IV

### State wise comparison of Total e-Transactions at National Level, 01-01-2013 to 23-07-2013 (Source: etaal.gov.in, managed by DeiTY- GoI)

Sl.	State Governments	No. of e-Transactions	Sl.	State Governments	No. of e-Transactions
1	Andaman and Nicobar	8712	19	Lakshadweep	523796
2	<b>Andhra Pradesh</b>	<b>53274192</b>	20	Maharashtra	14965561
3	Arunachal Pradesh	13431	21	Meghalaya	683903
4	Assam	16285835	22	Manipur	19582
5	Bihar	2786824	23	Madhya Pradesh	2790095
6	Chattisgarh	3485997	24	Mizoram	97845
7	Chandigarh	423853	25	Nagaland	28546
8	Daman and Diu	8968	26	Odisha	1903710
9	Delhi	3702178	27	Punjab	560163
10	Dadar and Nagar Haveli	20245	28	Puducherry	44389
11	Goa	184966	29	Rajasthan	10853213
12	Gujarat	86546207	30	Sikkim	10897
13	Himachal Pradesh	269644	31	Tamil Nadu	5971599
14	Haryana	31943030	32	Tripura	726348
15	Jharkhand	1314631	33	Uttarakhand	302480
16	Jammu and Kashmir	1026216	34	Uttar Pradesh	7736280
17	Karnataka	21380288	35	West Bengal	5087570
18	Kerala	2995755			
<b>Total e-Transactions from 01-01-2013 to 23-07-2013</b>			<b>277976949</b>		

**Computerization of Registration by  
Hardware on Hire Method  
in Bihar**

# Contents

- I. Introduction
- II. Implementation of the Practice
  - A. Patna Pilot Project/Model
  - B. Additional Pilot Project
  - C. Muzaffarpur Pilot Project/Model
  - D. Disagreements with System for Computerized Registration
  - E. Capacity building of the project
- III. Results of the Practice- Outputs and Outcomes
- IV. Lessons Learnt
- V. Conclusion and Way Ahead

## Appendices

- 1. Bank Challan
- 2. Biometric Information
- 3. Receipt of Fee paid.
- 4. Endorsement of Certificate of Admissibility
- 5. Summary of Endorsement
- 6. Memo of Presentation of Document

## List of Figures

Figure-1: Process flow of SCORE

Figure-2: Revenue collection increases year-wise

## List of Tables

Table-1: Timeline of the project implementation

Table-2: Comparative Analysis of SCORE v2.0 & v3.0

Table-3: Revenue statement and scanning of Documents Year-wise

## **I. Introduction**

Registration of land parcels is one of the powerful instrument of land administration; it is been debated from long years and then felt that being an important part of land administration the registration of property process must be hassle free, authentic, computerized and transparent process should be followed. Every state has developed their own model to ease the entire registration process with their limited expertise and financial support considering of cost effectiveness, sustainable and profitable for govt. as well as transparent for citizens. Before implementation of the computerization process of registration, it is been observed that villagers or farmers were not reluctant to register their property due to bribes that had been asked for, time consuming, move here and there, filing process and the behaviors of the officers and staffs etc. but after implementation; the scenario has been largely changed. Registration of property provides legal ownership and reduces fraud and risks, so that the process follows “n” number of activities including paper submission, rectifying of stamp-duty and registration fees, authentication of buyers and sellers, keeping information etc. means that the person in whose name the property is registered is the lawful owner of that property and is fully in charge of it in all respects. The registration of documents includes sale, lease, transfer or any other form of disposal of a property and it is enforced by law under section 17 of the Indian registration Act, 1908. The documents which are not duly registered have not any bearing on the property under section 49 of the Indian Registration Act, 1908. The law does not give any rights over such property.

Government of India with the active support of respective states has implemented schemes like SRA & ULR and NLRMP a newly addition of it, that were aiming to prosper and rejuvenate the entire registration system. The Registration process is now being computerized in most of the states in India owing to the various shortcomings and public dissatisfaction in the conventional manual system of registration. Since 1908 and even before that during British period these weaknesses in the government system used to disturb the smooth functioning of the registration departments and causing public troubles. Obsolete functioning likewise manual copying and indexing of documents, ill-storage of paper form was a common picture of registration departments across India. The registrar offices occupy a lot of physical space and documents stored were also prone to decline with time and repetitive handling. Before implementation of the project the state had followed the registration system of 18<sup>th</sup> Century. Presenting of documents and getting approval was a herculean task for the buyers, but in 2000 the system was slightly modified to make possible to deliver the original documents same day or very next day.

Growing awareness and public demands forced government to reform the age old registration process with the modern and easy system. The state government of Bihar decided to computerize the registration process of land and property in March 2005. The aim was to deliver efficient, reliable, speedy and transparent services to the people. Bihar state took steps to introduce computerized process of registration as it was professed a way to improve the services of the registration department. Today in Bihar there are 123 registration offices and all are computerized, to provide instant and transparent services as well as providing e-

governance to the citizens. Main functions of the department, which is carried out through these offices are registration of all type of Instruments, administration of the Duties related to Stamps, court fees along with Registration of Societies and Partnership firms etc. These offices are the nodal points to carry out work under the Registration Act, 1908, Indian Stamp Act, 1899, Societies Registration Act 1960, Partnership Act, 1932, Special Marriage Act, 1954, Birth, Death and Marriage Registration Act 1886, Bengal Mohammedan Marriage & Divorce Registration Act, 1876, Quazis Act, 1880, Parsi Marriage and Divorce Act, 1936, and Indian Christian Marriage Act, 1872. On an average, a District Registry Office registers 60-100 documents per day whereas a Sub-Registry Office registers 25-75 documents per day. Annually close a million documents are registered, which usually comprises of 6 to 8 pages. Handling such tedious task with the help of traditional pen and book method was not only time consuming but also erroneous sometime.

The Registration department and National Informatics Centre (NIC), Bihar studied the different advance states where computerized registration system was already under function. The software for computerized registration was also developed by the NIC, Bihar. State government decided to undertake a pilot project named as Patna Model/ BOT (Build-Operate-Transfer) model to evaluate the cost and effects before implementing it for the entire state.

## **Implementation of the Practice**

### **A. Patna Pilot Project/Model**

The government of Bihar nominated a Government of India recognized Public Service Undertaking (PSU) to take up the project on a Build-Operate-Transfer (BOT) basis. The

Evaluation Committee of the government has suggested the PSU to take the pilot project at District Registration Office, Patna itself. The proposals and brief overviews as provided by Registration Department, Government of Bihar, of the project were as follows:

1. Contract for 5 years.
2. Minimum Guarantee for scanning of 35 lakh pages in a year.
3. Service Charge @25/- per page.
4. Escalation of Rs. 1/- per year in service charge.
5. Operator to transfer hardware after contract period.
6. Software was to be provided by state government.
7. Responsibility of state government to make rooms available for computerization.
8. No manual and additional scheme of registration is acceptable during contract period nor could it be given to other agencies.
9. PSU to have liberty of having a private partner.
10. A pilot project to be run in 1 registry office.

The Patna model project was commenced on 5<sup>th</sup> September 2005 in District Registration office, Patna. The Registration department and National Informatics Centre Bihar evaluated the PSU offerings and accordingly prepared the software jointly. The project could not yield satisfactory outcomes and shortcomings were observed right from the beginning of the project. The software was slow and the PSU staff was also not efficient to do service delivery in time. The processing of application was time taking and due to this situation only 50 registrations were done in 17 days whereas the average requirement was to deliver 70 registrations per day. In this thwarting situation immediate steps were undertaken by the state government to improve the functioning by installing extra

hardware which has to be completed in 15 days. District Sub Registrar was transferred to appoint new more techno friendly DSR who has given additional staff to each data entry operator. In this way the project conceded on and carried on.

#### B. Additional Pilot Project

The Evaluation Committee of the Bihar government examined the 'Patna Pilot Project' on cost effective analysis basis. The Evaluation Committee observed the proposal of the PSU and found that it was not sound enough to fulfill the aims and objectives of the agenda for computerization of the registration system in Bihar. The PSU functioning reduced the involvement of the staff of the Registration Department where as the staff was permanent and taking salary without doing any work. The situation was very critical and it gave direction to the state government to rethink for some other full proof option. In this way the idea of Hardware on Hire Basis (HOHB) came into picture.

#### C. Muzaffarpur Pilot Project/Model

The HOHB pilot project was started by the Registration department itself as a parallel project with the Patna Model Project. The Registration department initiated this project at Sub Registrar office of Muzaffarpur where pressure of registration of deed is high all the time, but the success of HOHB model was remarkable, after that Govt. approved two other districts Hajipur and Danapur for implementing the same process. The same software as developed by the NIC for Patna Model was used and hardware was taken on hire basis. Training was given to the departmental employees and only one data entry operator was appointed to speed up the data entry work seeing the limitations of the departmental

employees. Service charges were fixed to meet the expenditure of consumables and hardware system. It was taken into care to avoid unemployment of deed writers and stamp vendors. Partial use of stamp paper was permitted. To avoid the corruption computers of Registrar offices and banks were inter linked. This helped a lot to eradicate the forged receipt of challan. The practice of automatic valuation of the property, payment of registration fees in the bank and instant delivery of deed introduced smooth and hassle free functioning. The best things are that Govt. of Bihar has not incurred any amount of money for implementing of the project; on the contrary the societies earned huge amount money which was used for employment and maintenance of the hardware and other miscellaneous uses.

Process of registration of HOHB pilot project was trouble-free and transparent. It starts when parties involved, befall on a mutual agreement. Firstly, parties have to submit instrument and challan fee than the data entered by computer operator for the generation of the memo which indicates that the appropriate stamp duty etc. has been deposited. The 4 endorsements needed by sub registrar printed on separate sheet and payment of appropriate stamp duty etc. is checked. After this digital photograph of Parties and identifier is captured with finger prints of Parties and thumb impression of identifier. Both parties submit the signed memo and all 4 endorsements to Registrar who sits in the same or adjoining room. He verifies the category of instrument. Operator prints photograph and finger prints of parties on second page of documents. Sub Registrar takes signatures of parties and identifiers for admission of execution than hand over the deed to the operator. Operator gives registration number and prints a gist of endorsements on the first page of deed. The document is

scanned for electronic preservation with a printed copy of the document for physical storage.

### **Aims and Objectives**

1. Complete stoppage of manual registration for all types of documents; which were not error-free and tedious. In a paper, author mentioned that still there were 20-25 lakhs of documents were still to be copied, which means presenter will be able to get his original documents after 7-8 years.<sup>1</sup>
2. Intensive and scientific used of ICTs to provide accuracy, instantaneous service deliveries and considered all sort of security issues like web camera, finger print scanners etc.
3. Simplification, transparency, accountability to be achieved through Business Process Re-engineering
7. Software solution for stamp duty, registration fees and other useful tools for simplifying registration process where archive of documents becomes so easier.
8. Statistical reports for which is been useful for decision making and monitoring.

#### **D. Disagreements with System for Computerized Registration**

When the information of the System for Computerized Registration spread in the public, lot of rumors started

---

<sup>1</sup> System for Computerised Registration – SCORE\*Saurabh Gupta, Sr Technical Director & State Informatics Officer, NIC Technology Bhawan, Bailey Road, Patna, Bihar Bihar State Centre, Patna. N K Prasad, Sanjay Kumar

emerging and people with vested interest felt that their monopoly will be under crises if the HOHB Muzaffarpur model will prove to run successfully. A Public Interest Litigation was filed in the Honorable High Court to defy the course of action. Along with other complaints and allegations a petition was also filed by the deed writers as they were ill-advised that they will loose their employment. Honorable High Court abruptly rejected and dismissed all these baseless complaints. Personal allegations were faced by the Registration department and these were also treated as unjustified and overlooked.

**Comparison between BOOT and HOHB Models:** The basic objectives for computerization of registration process id to provide timely and transparent services to the citizen as well as increased Govt. earnings. After intensive study on effectiveness between the two model of computerization it is been found that Hardware on Hire Basis (HOHB) as a variant of Public Private Partnership (PPP) is efficient on both cost effectiveness as well quality of services than the earlier BOOT model.

- ***Return on Investment:*** The comparison on Return on Investments between the two different models revealed that; that in the HOHB model, expenditure being incurred is only 8 per cent of the total expenditure for one year through BOOT, whereas the remaining 92 per cent is the income generated through HOHB.
- ***Expenditure and Savings:*** Comparative analysis between the two model shows that the expenditure for running BOOT model is 83.33% and savings become only 16.67% whereas in HOHB model the total

expenditure is quite lesser only 10.26% and other higher savings percentage of 89.74.

Revenue collection and expenditure-savings comparison between the two highlights the sustainability of the HOHB model. It is intended to use this fund for developing the infrastructure of the registry offices, facilitating best possible public facilities to the parties coming for registration of deeds. It is expected that if manual process stopped completely than the model would be sustained in long term and benefitted all the stakeholders.

**Implementation of Hardware on Hire Basis (HOHB):  
Table-1: Timeline of the project implementation**

<b>05-09-05</b>	<b>05-12-05</b>	<b>05-02-06</b>	<b>11-04-06</b>	<b>05-07-06</b>
Inauguration of ECIL's pilot project in Patna	Inauguration of HOHB pilot project in Muzaffarpur	Govt. decision to introduce HOHB model in all offices	5th office computerized on HOHB model	50 <sup>th</sup> office computerized on HOHB model

The advantages and weakness of both the pilot projects i.e. Patna model and Muzaffarpur model were brought into the notice of the Bihar government. The government of Bihar studied the advantages and disadvantages of both the pilot projects. On 5<sup>th</sup> February 2006, the Bihar government rejected the BOT model and approved the Muzaffarpur model for extending it to all Registration offices of Bihar. The state government directed the Registration department to registered societies at state and district levels to hire hardware collect service charges and find out ways to meet the expenses on consumables etc. The state level society was empowered to collect savings from the district level societies and use it for sustaining the software etc. It was also kept into practice that only 10 Registration offices will be served by 1 hardware supplier. Though the Patna Model had been rejected but the basic of the model like software development was done by National Informatics Centre, Bihar and state government has to pay the cost on civil items are the two points where they have agreed. For only hardware supply and appointing data entry

operators was the responsibility of the PSU, which can very easily be managed by the Registration department.

**Figure-1: Process flow of SCORE**



**Technological Advancements of SCORE:** Continuous developments done by the concerned department to advance the current architecture with new facilities and delete some existing features after getting enormous objections from the stakeholders. On that way they have developed the newer version of SCORE v3.0 which is advanced from the earlier v2.0. The newer version must not be only considered as a next version of SCORE with added some Tweak UIs or a patch with some add-ons.

**Table-2: Comparative Analysis of SCORE v2.0 & v3.0**

<i>Tools, Platform and Languages used</i>	<ul style="list-style-type: none"> <li>• Database- Oracle 8i</li> <li>• User Interface – Developer 2000</li> <li>• Platform –</li> <li>• Server- Windows Server 2000/2003 (Not above than Server 2003)</li> <li>• Client – Windows 2000/XP ( Not above than XP SP2)</li> </ul>	<ul style="list-style-type: none"> <li>• Database- Oracle 10g</li> <li>• User Interface – ASP.net (Visual Studio 2008- Dot Net Framework 3.5)</li> <li>• Platform –</li> <li>• Server- Windows Server 2003 or above</li> <li>• Client – Windows XP/7</li> </ul>
<i>Architecture</i>	<p>Category of client-server or <u>Two Tier Architecture</u>. Oracle database server acts as a Server and Oracle developer 2000 acts as Client</p> <p>- Which slowed down during high-operations</p>	<p>3 tier architecture contains Presentation Layer (User Interface)- Business Logic Layer Data Access Layer</p> <p>- Superior performance for medium to high volume environment</p>
<i>Application server</i>	<p>Does not have application server as it uses two-tier system</p>	<p>- The first layer is the user layer with the individual users would add and</p>

		<p>retrieving data.</p> <ul style="list-style-type: none"> <li>- The middle layer is the Application Server layer which would take each user data, stored on the web server, and inserting those records into the database offline.</li> <li>- Last layer is the database itself as the data repository of the candidate application.</li> </ul>
<i>Code Optimization</i>	only integrated Functions and sub-Routines; no application using Code Optimization techniques	Dot Net framework and Object Oriented system paradigm provides code-optimization facility
<i>IT Audit Compliance</i>	Not very wider	<p>There are lots of new feature improved:</p> <ul style="list-style-type: none"> <li>• Authentication</li> <li>• Log Maintenance</li> <li>• Mandatory Fields</li> <li>• Validation &amp; Checks</li> </ul>

**Strategies Adopted for making the project successful:**

1. Hardware on Hire Basis the model demands to adopt the hiring method would be transparent and in spite of big firms, local small vendors would be a part of it so that local employment would be possible; on that way Government of Bihar develops the tendering process for hiring hardware.
2. The vendors were selected based on their merit and they have been directed to provide not only quality training to the staff but also provide technical p[erson so that registration process would be hamper proof.

3. The running and maintenance of the system was entrusted to a District level Society called (Name of the District) SCORE under Societies Registration Act, 1860. A state level society was also created which is called BISCORE to guide and monitor the function of district level societies.
4. With the introduction of computerized system of registration, the system of realizing registration fee etc in cash was also abolished. For this purpose the system of depositing registration fee directly into the bank through a specific challan was introduced and for this purpose, the Finance Department of Government of Bihar made some amendments in Treasury Code.
5. Though the system of payment of stamp duty through stamp paper was allowed to continue, the system of depositing Stamp duty either wholly or partly directly into the bank through the same challan was also made available to the registrant public

#### E. Capacity building of the project

Involving ICTs and cutting edge technologies requires quality training not only for the officers but definitely for the staff who actually uses it on the field. Govt. of Bihar provides training at district level Sub Registrar office to all employees by the NIC scientists. Registration department officials were also involved in training process to facilitate the NIC scientists and societies/suppliers. The hardware was checked and disseminated for settling down the work smoothly. Executing body and district level Societies (SCOREs) were formed to run and sustain the system. A State level society (BISCORE) was also formed for safeguarding and renewing the software and to

lead and supervise the implementation of district level societies.

**Good things of the project:** SCORE simplifies the process of deed registration; as well as it helps Govt. to reduce expenses of registration offices and helps to initiate e-governance for the public. Some innovative things of the project implementation are;

1. HOHB model was first time used in the country with no liability (either financial or technical or other) on the Government.
2. The payment of registration and other fees through cash in the registration offices was completely stopped and a new system of deposit of registration and all kinds of fees including stamp duty directly into the designated banks was introduced.
3. The option to pay stamp duty either through stamp paper or through deposit in bank or partly through stamp paper and partly through deposit in bank was also made available.
4. The system of making endorsements on the stamp paper was also changed from back page to the front page. This reduced around half of the scanning work.
5. Amendments in Bihar Stamp (Prevention of Undervaluation of instruments) Rules, 1995 were made in order to make MVR (Minimum Value Registrar) of properties.
6. Amendment in Section 47- A of the Indian Stamp Act was also made which provides for referring the documents undervalued after registering it. This has put a curb on the power of Registering Officer to refer a document even when there was not sufficient reason to do so.

7. For the successful implementation of the project and to stop the litigation or disputes regarding new rules of computerized registration process, Govt. of Bihar amended several registration related rules.

### III. Results of the Practice- Outputs and Outcomes

In the System for Computerized Registration, stakeholders are considered as a person, group and organization that may involve or may be affected by the activities, aims and rules of the department. The stake of all stakeholders in the registration department it varies due to their role, concern and interest but important in nature. Some of the key stakeholders of the Registration department are given in the following figure-2.

The System for Computerized Registration in Bihar has proven to be a best practice through its management, functioning and methodology that has resulted to achieve desired success. The state government's commitment to apply the best practices in the field of computerized registration has ensured success. The main achievement in the implementation process was to start the project at almost nil cost. The Bihar government only sanctioned Rs. 1.36 Crore in the beginning for setting up the rooms in all offices. The government revenue generated through stamp duty and registration fees etc. has

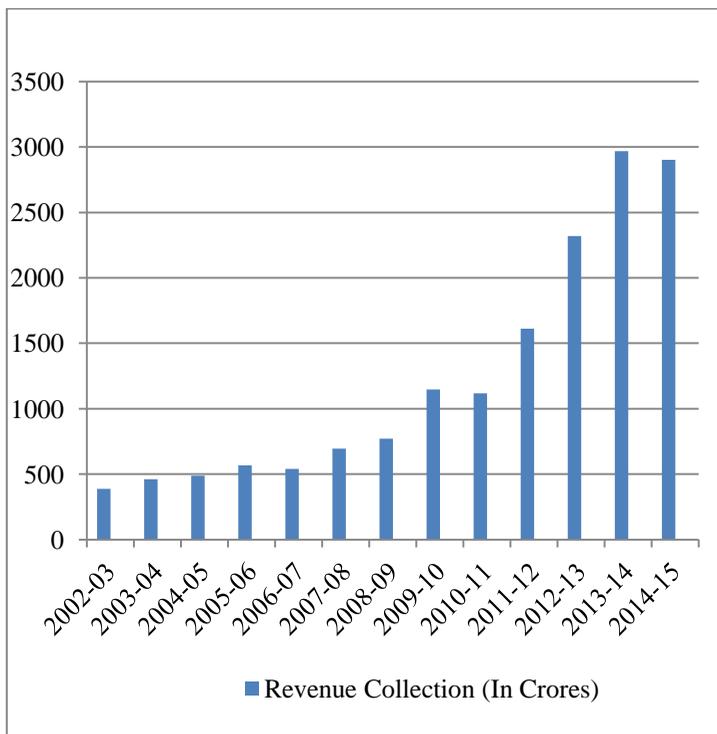


credited sufficient amount to sustain the System for Computerized Registration in Bihar. The Revenue collection before and after introduce of SCORE has emerged tremendous growth in just ten years (Table-2). This system has made a remarkable success in competence and delivery of the Registration department. In almost five months the all Registration offices of Bihar state were covered for System for Computerized Registration without any displacement of the stakeholders.

**Table-3: Revenue statement and scanning of Documents  
Year-wise**

<b>Year</b>	<b>Revenue Collection (in crore)</b>	<b>Scanning of Document (No.)</b>
2002-03	387.49	10,38,325
2003-04	462.21	10,20,132
2004-05	487.31	9,89,859
2005-06	566.36	10,04,263
2006-07	540.37	8,83,491
2007-08	694.75	10,98,524
2008-09	770.65	8,89,798
2009-10	1,147.95	10,00,847
2010-11	1,116.47	9,92,540
2011-12	1,610.36	10,18,655
2012-13	2,318.91	11,67,894
2013-14	2,968.02	10,98,524
2014-15	2,903.04	10,37,458

**Figure-2: Revenue collection increases year-wise**



#### **IV. Lessons Learnt**

It is a self-sustained and cost effective system which is maintaining its operation independently and separately from the Bihar state budget. The homogeneous and consistent system of registration throughout the state of Bihar has significantly reduced the expenditure on printing, shipping and storage of stamp papers etc. The Registration department became techno-friendly and due to digital archiving the search of records became easier by using computerized indexes. The following features made this system sustainable:

1. The System for Computerized Registration is being mentioned by a district level society i.e. SCORE, under the chairmanship of Collector-cum- District Registrar.
2. The SCORE is supervised by the BISCORE, which is a state level registered society.
3. A service charge for scanning is being charged by the SCORE to operate and sustain the system.
4. Restricts the dominance of the stamp vendors and treasury staff.
5. Brings to an end the practice of fake stamps and black marketing of stamps.
6. The employment of Deed writer and Stamp vendor is unaffected.

The transparency and trustworthiness of the Registration department increased due to new practice of depositing the stamp fee and registration fee etc. in bank by way of online authentication. The significant aspect was to return the original deed to the parties in just 30 minutes time. In this system registered documents were scanned for maintaining permanent record in soft copy with a supplementary hard copy. A provision was also made for automated generation of rates as per the future market rates of land and other properties. Registration department's commitment to create employment opportunities for the local people got success and scope for insecurity and unemployment was avoided successfully. This has brought to an end the rumors which were spread in the public and government staff from the beginning. Maintaining and creating the facilities for the daily public which comes to the Registration departments was the primary concern of the

state government and for this local savings were kept at Registration offices. The amount was spent in purchasing chairs, fans, drinking water facility, toilets etc. for public utility.

The scope of corruption was fully removed since the System for Computerized Registration is innovative and developmental in its nature. The steps likewise removal of cash transactions, prerequisite stamp duty in bank fully and partially if partially the rest of it should be submitted through the stamp paper and the introduction of Challans and stamp vender's endorsement on stamp paper on front side reduced the scanning work and ambiguity substantially. The scientific method of 3 Dimensional matrixes for calculating value of construction is proved to be very much innovative in this system.

## **V. Conclusion and Way Ahead**

The System for Computerized registration in Bihar has motivated the state government to do the similar changes in other public dealing departments. Often earlier, the importance of user friendly and technologically advanced services was not clearly understood in the backward states like Bihar and the outcomes were therefore disappointing. In this system first time in Bihar Computerization of Registration by Hardware on Hire Method was used for the specific goal of facilitating the department to provide smooth services to the public. Corruption was eliminated to a significant degree though the Registration department that sets out to encounter greater resistance from the people who stand to lose. Anticorruption approach of the System for Computerized Registration is an advantage of the project which is fully achieved. The project succeeds because satisfaction of all the stakeholders is taken

care of. The Registration department had shown a clear, coherent and rationale plan with effective management. In the beginning Registration department faced expected and difficult opposition from the agents who stood to lose from the computerization of Registration. The system never confronted them directly, but in due course of time they eliminated gradually as there is no scope left for them to work. Though success is achieved in this project but there are few key modifications which still needed attention of the Registration Department:

1. Software and system up-gradation.
2. Digitization and scanning of old records at the earliest.
3. Inter-connectivity of all the registration departments of the state.
4. Need for enquiry counters and information Kiosk for all Registration offices.

# Appendice-1

<b>THIRD COPY</b> ( For the use of Registry Office )	<b>APPENDIX - A</b> <b>Form No. - 1</b> [ See Rule -4(2) ]	<b>Non Standard</b> <b>REGISTRY OFFICE'S COPY</b>
<b>Under Rs. 15551</b> Rupees Fifteen Thousand Five Hundred and Fifty One Only		
<b>Government of Bihar</b> <b>Department of Registration, Excise and Prohibition (Registration)</b>		
Bank challan for payment of Stamp duty / Registration fee and Landlord's Registration fee for registration of instruments		
<b>01. Name --</b> Cjhvgjhcxgjkjg <b>Address of Party --</b> Kjgcv (on whose behalf it is being deposited )		
<b>02. Kind of document --</b> Sale / Conveyance--23		
<b>03. registration office--</b> Sub registry office, Patna City		
<b>04. Name of the Bank and Branch--</b> S.B.I.Gulzarbagh, Patna-7 (1496)		
<b>05. Details of amount to be paid --</b>		
<b>Sl.No.</b>	<b>Item of Payment and head</b>	<b>Amount</b>
(a)	Stamp duty - Major Head - 0030-Stamp and Registration-Sub Major Head- 02- Stamp Non- Judicial -Minor Head-103-payment of stamp duty on instruments - Sub Head-0001-Total receipt primary unit-75 49-Total receipt- Bill Code - <b>R0030021030001</b>	<b>10000</b> A/C No. of Stamp Duty Head
(b)	Registration fee - Major Head - 0030-Stamp and Registration-Sub Major Head- 03-Registration fee- Minor Head-104-Registration fee for registration of documents--Sub Head-0001-Total receipt primary unit-ments-75 49- Total receipt-Bill Code - <b>R0030031040001</b>	<b>5000</b> A/C No. of Reg Fee. Head
(c)	Land Lord's fee - Major Head - 0029-Land Revenue-Minor Head-800-other receipts documents--Sub Head-0006- other receipt -primary unit-75 49- income from registration of land-Bill Code - <b>R0029008000006</b>	<b>550</b> A/C No. of LLR Fee. Head
	Mode of Payment: Cash/Cheque/Draft	
	Total Amount in words -	<b>15550</b>
Place -----		Name and signature of depositor
Date -----		
* Give details of Cheque/Draft on the back.		
*Cheque/Draft shall be acceptable after transfer.		
<b>FOR USE OF THE BANK</b>		
Scroll No. -----	Date-----	Received Rs.----- ( in words
Rupees -----		
Jas per detail given in above column 5.		Seal and signature of the authorized officer
<b>To be maintained by the Bank charge for registration</b>		<b>Details of deposits against service</b>
Name - Cjhvgjhcxgjkjg and address of the depositor--Kjgcv		ESCROW A/C No.--
Amount Rs. <b>200/- Rupees Two Hundred Only</b>		
Date of deposit -----		
Bank scroll no. -----		
Date of deposit -----		Date of receipt of bank
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <b>280120150723001</b> </div>		

## Appendice-2

Sub District Registry Office, Patna City							
Token Number 5555	Reg. Year 2015	Serial Number 5528	Deed Number 5427				
PresType	Name	Photo	Thumb	Index	Middle	Ring	Little
Claimant	Raj Bhaskar Bhushan						
Sig.							
Executant	Poonam Sinha	<input checked="" type="checkbox"/> Photo	<input checked="" type="checkbox"/> Thumb	<input checked="" type="checkbox"/> Index	<input checked="" type="checkbox"/> Middle	<input checked="" type="checkbox"/> Ring	<input checked="" type="checkbox"/> Little
Sig.							
Presented By	Poonam Sinha						
Sig.							
Identified By	Vinay Kumar Sinha						
Sig.							
SCORE Ver.3.0		Powered by InfoSystem and Solutions, Patna			Biometric Captured By 2801sop002		

# Appendice-3

Govt. of Bihar Sub-Registrar, Office, Patna City [ See Rules 25(2), 37(2), 87(2) and 7 ] Receipt under section 52, clause (b)		Govt. of Bihar Sub-Registrar, Office, Patna City [ See Rules 25(2), 37(2), 87(2) and 7 ] Receipt under section 52, clause (b)	
Token No	5555	Token No	5555
Serial No.	5528	Serial No.	5528
Deed No.	5427	Deed No.	5427
Book No.	1	Book No.	1
Doc. Presented by	Poonam Sinha	Doc. Presented by	Poonam Sinha
Presented on	03/07/2015	Presented on	03/07/2015
Executant	Poonam Sinha	Executant	Poonam Sinha
Claimant	Raj Bhaskar Bhushan	Claimant	Raj Bhaskar Bhushan
<b>Fee Details:</b>		<b>Fee Details:</b>	
Fee A1	150000	Fee Liil	0
Fee AB	0	Fee Mb	0
Fee A9	0	Fee Na	0
Fee A10	0	Scan Fee	250
Fee E	0	LLR	500
Fee I	0	Proc Fee	50
Fee J1	0	Fee B	0
Fee K1a	0	Fee C	0
Fee K1b	0	Fee D	0
Fee K1c	0	Fee DD	0
Fee K2	0	Fee H1a	0
Fee Li	0	Fee H1b	0
Fee Lii	0	Fee H2	0
Dated : 03/07/2015		Dated: 03/07/2015	
Sub-Registrar		Sub-Registrar	
		Pl. handover the document to	
		Received the document	
		Signature	
SCORE Ver.3.0 Receipt On:23/07/2015		SCORE Ver.3.0 Receipt On:23/07/2015	

## Appendice-4

### Endorsement of Certificate of Admissibility

Admissible under Rule 5 : duly Stamped ( or exempted from or does not require stamp duty ) under the Indian Stamp Act, 1899, Schedule I or I-A, No. '23'. Also admissible under section 26(a) of the B. T. Act.

Stamp duty paid under Indian Stamp Act <b>Rs. 450000/-</b>	Amt.Paid By N.J Stamp Paper	<b>Rs. 1000/-</b>
Addl.Stamp duty paid under Municipal Act. <b>Rs. 150000/-</b>	Amt.paid through bank Challan	<b>Rs. 749800/-</b>

Registration Fee										LLR + Proc Fee	Service Charge	
LEPAID	A1	150000	C	0	H1b	0	K1a	0	Lil	0	LLR	500
	A8	0	D	0	H2	0	K1b	0	Lil	0	Proc.Fee	50
	A9	0	DD	0	I	0	K1c	0	Mb	0	Total	550
	A10	0	E	0	J1	0	K2	0	Na	0		
	B	0	H1a	0	J2	0	Li	0				
<b>Total amount paid (Reg. fee+LLR, Proc+Service Charge) in Rs. -</b>											<b>150800</b>	

Date: 03/07/2015

Registering Officer  
Patna City

### Endorsement under section 52

Presented for registration at Registration Office, Patna City on Friday, 03rd July 2015 by Poonam Sinha Sri Vinay Kumar Sinha by profession Others. Status - Executant

Signature/L.T.I. of Presentant

Date:03/07/2015

Registering Officer  
Patna City

### Endorsement under section 58

Execution is admitted by those Executants and Identified by the person ( Identified by 'Vinay Kumar Sinha' age '50' Sex 'M', 'Deonandan Prasad Sinha', resident of 'Jhunari Talaiya, Kodarama'. ), whose Names, Photographs, Fingerprints and Signatures are affixed as such on back page / pages of the instrument.

Date : 23/07/2015

Registering Officer  
Patna City

### Endorsement of Certificate of Registration under section 60

Registered at Registration Office Patna City in Book 1. Volume No. 100 on pages on 527 -536 , for the year 2015 and stored in CD volume No. CD-16 year 2015. The document no. is printed on the Front Page of the document.

Date : 03/07/2015

Registering Officer  
Patna City

Token No. : 5555      Year : 2015      S.No. : 5528      SCORE Ver.3.0

Deed No. : 5427

Serial No. 5528	Deed No. 5427
 <b>Govt. of Bihar</b> <b>Sub Registry Office, Patna City</b> <b>Summary of Endorsement</b>	
<p>This document was presented for registration on 03/07/2015 by Poonam Sinha A Stamp Duty of Rs. 600000/- and other Fees of Rs. 150800/- has been paid in it. The document was found admissible. The Names, Photographs, Fingerprints and Signatures of the Executants and their Identifier, who have admitted execution before me, are affixed on the reverse page.</p>	
<p>The document has been registered as Deed No. 5427 in Book No. 1, Volume No. 100 on pages from 527 to 536 and has been preserved in total 10 pages in C.D. No. 16 / Year 2015</p>	
Date: 03/07/2015	Token No: 5555 / 2015
	Signature with Date (Switi Suman ) Registering Officer, Patna City

## Appendice-6

Memo of Presentation of Document			
Token No. :	6079	Req Year :	2015
Filing Date :	23/07/2015	Doc. Presented on :	23/07/2015
<b>(1) Document Details :</b>			
<b>Deed Type</b>	: Sale / Conveyance - 23		
Deed Category	: General		
DSRO /SRO Name	: Patna City		
Transaction Type	: Sale		
Procedure	: Register As original		
	<b>CHALLAN DETAILS</b>	<b>STAMP DETAILS</b>	
	No. : 15.16.18	Purc. Date :	22/07/2015
	Date : 23/07/2015	Exec. Date :	23/07/2015
	Amount : 53300	Amount :	1000
<b>(2) Presentant Details :</b>			
Present Name	: Pruchottam Kumar	Sex	: M
Fath/Hus Name	: Late: Kameshwar Prasad	Prof:	: Others
Address	: Gauripundah, Ps- Fatuha, Dist- Patna.		
		<b>Bank Code</b>	: 1496
		On Behalf of	: Executant
		In Cap. of	: (Self)
<b>(3) Party Details :</b>			
Executant Name	: Prushottam Kumar	Fath/Hus Name	: Late. Kameshwar Prasad
Sex: M	Age:	Profession	: Others
Address	: Gauripundah, Ps- Fatuha, Dist- Patna.		
Claimant Name	: Shyambabu Singh	Fath/Hus Name	: Fakira Singh
Sex: M	Age:	Profession	: Others
Address	: Gauripundah, Ps- Fatuha, Dist- Patna.		
<b>(4) Property Details :</b>			
Property No	: 1	PropertyType	: Land
Land Cost	: 132000	Structure Cost	: 0
PSRO	: 001	Corp/Mun./NAC	:
Psro Name	: Patna City	Tauzi No.	: 8142
Circle	: 02	Ward No	:
Circle Name	: Fatuha	Seat No.	:
Thana Name	: Gauripundah	Khata No.	: 82
Local Body	: 01	House No	:
Local Body Name	: Rural	P. No/ M. P. No.	: 1050
Land Type	: 06	Flat No	:
Land Type Name	: Agriculture	Khewat No	:
Khesara P.L.Code	: N.A.	Khesara Panji No	: N.A.
K.P.Land Name	: N.A.		:
<b>Chauhaddi</b>			
North:	Deebhara mahto	East:	Dhaga atl. mahto
South:	Pramanand mahto	West:	Bakhori choudhary
<b>Calculation of chargeable value:</b>			
SCORE Ver:3.0      Powered by: InfoSystem and Solution, Patna      Report Run On : 23/07/2015 12:19:38			

**Innovative Methodologies in Improving  
Citizen Services in Sub Registrar Offices in  
Delhi and Its Impact on the Citizens**

## **Contents**

1. Introduction
  - A. Historical Background
  - B. Land Resource Management in Delhi
  - C. Organizational Set-Up of Sub Registrar Office
2. Implementation of the Practice
  - A. Citizen Friendly Interface
  - B. Objectives
  - C. Identified Tasks
  - D. Set Up of E-Sub Registrar Office:
  - E. Launch of E-Stamp Paper of all values
  - F. Launch of E-Court Fee
3. Results of the Practice- Outputs and outcomes
  - A. Property registration made simple
  - B. Issuance of Certified copy
  - C. Inspection of Records
  - D. Custody Fee of Documents
  - E. NO Objection Certificate
  - F. Home Presentation Fee
  - G. Revenue Collection

4. Lessons Learnt
5. Conclusion and Way Forward

## **List of Tables**

Table-1: A Comparison of Facilities

Table-2: Year-wise Revenue Collection

## **Appendices**

Appendice-1: Appointment Management System on Website

Appendice-2: List of Appointments on Website

Appendice-3: Revenue Department Budget Expenditure, Delhi

Appendice-4: Staff Position in Revenue department, Delhi

Appendice-5: Old Record Room at Sub Registrar Office,  
Kashmiri Gate, Delhi

Appendice-6: Tout Free Frontal View of E- Sub Registrar  
Office, New Delhi

Appendice-7: Appointment Slip in Appointment Management  
System

Appendice-8: Display Board at Waiting Hall

## **1. Introduction**

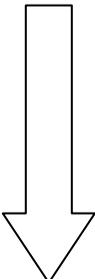
The property registration in Delhi is carried out by the Sub Registrar Offices as per the provisions of Indian Registration Act of 1908. Section 17 of this act gives direction to the type of documents required during registration. Sub Registrar office mainly save guard the proof in the form of documents and provides assurance from prevention of fraud. The concerned parties have to be present in front of the Sub Registrar by themselves. There are so many documents and clearances from government are required and total functioning of the Sub Registrar offices were operated in a 'typical Sarkari way'. Actually property registration was a very tedious process before the opening of e-registration system. E-registration system is basically developed for improving the citizen services in the Sub Registrar offices of Delhi. Property registration traditionally was a very time consuming process since lack of time is a factor in Delhi and under pressure people tend to involve an agent which usually was a cost affective affair.

When Delhi Revenue Department announced in an innovative way to launch e-registration system in all Sub registrar offices of Delhi the whole scenario is changed. E-registration was taken as a welcome move by the public and it was accepted to certainly bring in transparency and agility in the system. Under this system the buyers and sellers won't have to depend on mediators and brokers to get the registration done. First step in this regard was taken in the year 2012 when Delhi became the first state to have opened online system to apply date and time for property registration. The Delhi Revenue Department conducted a presentation on the actions of e- registration and

has started a trial run of the software which was quite successful. It gave momentum to launch the project so early. The new e-registration system is now proved as major citizen service reform which invented a process of zero revenue leakage and minimum disputes and empowered Sub Registrar offices and increased transparency. In few states the e-registration of property for both taking up online appointments as well as the complete registration process is now started whereas other states are now expected to follow Delhi's path to make property registration as a complete user friendly experience.

#### A. Historical Background

The population survey and settlement of land was completed in the year 1842 in Delhi. The first Deputy Commissioner, Mr. John Lawrence was appointed in 1844. In the settlement done again in 1880 Tehsil Mehrauli was shown under State of Punjab. Later on area beyond Yamuna river was also covered in the settlement. The year wise historical perspective of the development of revenue department is illustrated below:



1911	Delhi became capital of India
1915	Villages beyond Yamuna River merged in Delhi
1916	Villages beyond Yamuna River merged in Delhi
1954	Delhi Land Reforms Act was implemented
1996	09 Districts were created
2012	Shahdara and South- East Districts created
2015	Delhi has 11 Districts, 33 Sub-Divisions and Tehsils and 365 villages

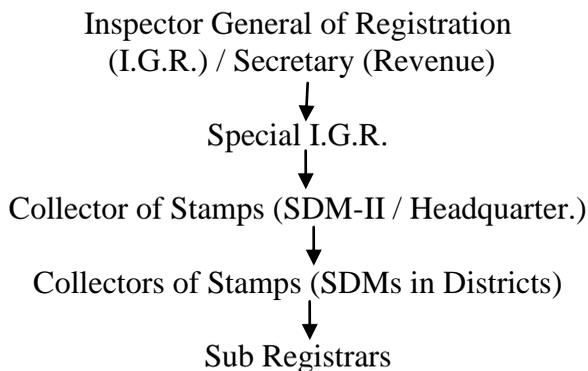
## B. Land Resource Management in Delhi

The maintenance of land record in Delhi has been started since time immemorial by Rajput rulers though Sher Shah Suri (1540-1545) attempted a major development of measurement of land and fixing of land revenue. The revenue system was again modified by Akbar's revenue minister Raja Todarmal (1556-1605) by introducing technique for shaping land class and land revenue. British rule introduced land administration system by establishing Survey and Settlement departments in all states and made on track the survey & settlement process. They could not form uniform land laws for throughout the country. They instead strengthened land act to serve local needs which raised inconsistency in maintaining of land records. After independence, India inherited the land records management system from British and adopted it with little modifications. In India land record system is state subject and therefore maintenance of land records is the accountability of particular state government. These land records are documented through survey and settlement process. This manual system of land records is not free from flaws. Due to these lacunas government took initiatives in doing Computerization of Land Records to improve the inadequately maintained land record system.

In Delhi it was taken as a combined project of Delhi government and National Informatics Centre and Ministry of Rural Development, Government of India. It was thought that this will facilitate access to accurate and transparent information, hassle-free property transfer, simple and up to date property records, trouble-free access to information, quick retrieval, minimal visits, protection along with non-interfere,

reduced monopoly and more responsibility in Governance. Presently in Delhi Land records of 51 villages have gone online and remaining villages targeted to be completed in December 2015. As per the statement made by the department, the Cadastral maps are already digitized for entire Delhi and textual data is being linked to the maps.

### C. Organizational Set-Up of Sub Registrar Office



## 2. Implementation of the Practice

### A. Citizen Friendly Interface

The plan behind the innovation was to put into practice a user friendly system of e-registration since property ownership is critical in Delhi. The vision was to establish e-Sub Registrar offices to bring higher levels of transparency, effectiveness, efficiency and accountability in the over all registration system keeping at the centre the enhanced quality of services and benefit of the people. The main customers of Sub-Registrar

offices in Delhi are citizens, legal representatives, fiscal establishments, companies, local authorities and private firms.

#### B. Objectives

- To make the registration process consumer friendly.
- To avoid long queues and huge crowd at Sub Registrar offices.
- To provide good basic amenities.
- To stop the several visits for people to Sub Registrar offices.
- To avoid the long list of pendency.
- To get rid of the touts and middlemen.
- To make entire registration process transparent and reachable.

#### C. Identified Tasks:

- To simplify the process to make use of Sub Registrar Offices for people.
- To put a ceiling on entry into the e-Sub Registrar offices.
- To start a new public interface- website, information kiosk and reception counter.
- To put all relevant information on website to assist the people before the presentation with Sub-Registrar.
- To reduce the discretion of the officials.
- To design the new software and need for re-engineering the registration process.
- To give decision on the presented document same day.

#### D. Set Up of E-Sub Registrar Offices

The Sub-Registrar Offices provides a public service to the people therefore it has been proposed by the department to modernize the Sub Registrar Offices with good citizen centric facilities. Consequently, modernization and up-gradation of Sub-Registrar Offices has been projected in the year 2012-13. For doing entire registration process computerized set up of e-Sub Registrar offices was planned out. Presently in this process 10 e-Sub Registrar offices are already under operation and remaining to be set up by the end of this year i.e. 2015. It has totally stopped the work of deed writers, advocates and agents who usually were used to hang out at the gate of the Sub Registrar offices. In the old Sub Registrar offices no provision was made to have relief from the heat and rains. There were no toilet and water facilities provided properly. These new e-Sub Registrar offices have made all the difference. A green landscape around the building, a ramp followed by a broad stairway, civil defense volunteer at the reception counter to attend the visitors is a common picture of an e-Sub Registrar office in Delhi. Online appointment system is provided through a link on the website of Delhi Revenue Department (<http://revenue.delhi.gov.in>) or by approaching the Reception Desk/kiosk at the e-Sub-Registrar Office. A unique ID number is generated as the reference for the appointment day. For giving better comfort to the people the Sub Registrar offices are made fully air-conditioned with screens flashing all type of the information to the visitors. Now in these e-Sub Registrar offices people need to watch the screen rather than seek information from here and there. All the data of the documents registered is stored securely in a computer to stop the possibility for data loss and change. The

Will Registration process is now video-graphed to avoid the disputes over properties later on. The facility of wall-mounted LED screens also has been provided which shows CCTV image of the various sections of the e-Sub-Registrar's office to ensure complete transparency. With these user friendly e- Sub Registrar offices people are getting a totally different experience and they also get registration on the same day. The following table compares the facilities provided in e-Sub Registrar offices with the traditional/conventional Sub Registrar offices:

**Table-1: A Comparison of Facilities**

<b>Sl.</b>	<b>e-Sub Registrar Offices</b>	<b>Traditional/Conventional Sub Registrar Offices</b>
1.	Entire registration process has been computerized	Not all processes
2.	Audio video WILL recording system for WILL Deeds	Not available
3.	Scanning of all registered documents	Not available
4.	Same day delivery of registered documents	Not applicable
5.	Appointment system and Token system	Not available
6.	Proper air conditioned sitting environment for public	Not available
7.	New record rooms for proper record keeping	Not available
8.	Help desk/reception	Not available
9.	Model deeds available at website	Same may be used
10.	Appointments may be taken from mobile devices, computers or information kiosks at e-SR offices	Not applicable
11.	Access control door (Access through swipe cards), Tout free environment	Not applicable
12.	CCTV coverage	Not applicable

#### E. Launch of E-Stamp Paper of all values

The old system of physical stamp paper is already replaced by e-stamping system in the Sub Registrar offices of Delhi. The e-stamping of judicial and non-judicial stamp papers of denominations of Rs. 5 and above have been introduced. It is a computerized way of paying stamp duty to the Government. These e-Stamps can be generated within few minutes and these are tamper proof and their validity can be checked through recommended site. For buying of e-stamp paper of correct value people have to visit the nearest Stock Holding Corporation of India Ltd. (SHCIL) centre or their Authorised Collection Centre(ACC). The information of the nearest centre can be checked on the website [www.shcilestamp.com](http://www.shcilestamp.com) . ACC is authorised to issue e-stamp up to Rs. 500 denomination and authorised banks / SHCIL issues for Rs. 500 and above denominations.

#### F. Launch of E-Court Fee

In its forward march towards providing the citizens paperless and hassle-free delivery system an internet based application of paying court fees initiated in Delhi. E-court fee system is secure, reliable and customer-friendly. After payment for court fee a receipt is immediately issued with unique number and a bar code. Once the verification is done, the number would get locked, removing the possibility of its reuse. This is basically designed to prevent fraudulent practices.

### **3. Results of the Practice- Outputs and outcomes**

#### **A. Property registration made simple**

The following processes and steps for registration of documents adopted in different e-Sub Registrar offices of Delhi:

**Step 1:** Public takes online appointment from Revenue Department of Delhi Government website through ‘Appointment. Management System’ and receives their date and time for presentation in e-Sub Registrar Office of property Jurisdiction.

**Step 2:** Executants, Executee and witnesses attend in e-Sub Registrar office on appointed date and time on reception counter of e-sub Registrar with their document and identity proof.

**Step 3:** Staff of reception counter checks the documents and issue the Token Number to the document in respect of Slip No. of the appointment and handovers the documents to the Executants with Token No. and Counter No. and a printout of receipt.

**Step 4:** Executants, Executees and Witness attend the waiting hall and wait for their token number which are being displayed on display board.

**Step 5:** After displaying token No. and counter No. document is submitted at the displayed counter for entry of details through DORIS Software.

**Step 6:** After Completion of entry Executants, Executees and witnesses wait in waiting hall for presentation of documents before Sub Registrar. After displaying the token number on display board for presentation of the document, staff of e-Sub

Registrar pick the document and go for presentation with parties related to the documents.

**Step 7:** Sub Registrar takes thumb impression of all parties on back side of documents and check any type of dispute on the property. Then Sub Registrar sees the identity proof of parties which are presenting before him after satisfaction he accept the documents for generating the fee receipt. If Sub Registrar found any fault cause of which document cannot be presented then he can reject the document through DORIS Software and documents are returned to the party.

**Step 8:** After acceptance of the document all parties go for photography in Biometric room. After photography, parties pay the registration fee on cash counter and receive the cash receipt.

**Step 9:** After deposition of Registration Fee the stamp paper used in document is locked through the Stockholding website.

**Step 10:** After locking the stamp paper, Section 52 and Section 58 are printed on backside of documents paper.

**Step 11:** Then Sub Registrar makes signature on Section 52 stamp and again check the documents. If he finds everything is OK then he signs the Section 58 Stamp and registers the document through DORIS Software. After issuance of registration number Section 60 are printed and after signature of section 60 stamped documents delivered to the party.

**Step 12:** After Signature of section 52 if Sub Registrar finds that Stamp duty is not as per the prescribed duty then the documents sent to Collector of Stamps for payment of short duty after registration.

**Step 13:** If Sub Registrar understands that documents are not fulfilling the criteria of registration then he refuses the documents and documents are registered in book II.

**Step 14:** After Signature on Section 60, original documents are delivered to the party or agents authorized by parties and office copies are scanned through DORIS Software. After Completion of the registration process the scanned office copies are pasted in Volumes and sent to record room for future use.

#### B. Issuance of Certified copy

For issuance of certified copies applications are required to attach a Stamp Paper worth of Rs. 10/- with a court fee of Rs. 10/-. The official procedure adopted is as follows:

1. For record related in Book I any public can apply for receiving the certified copy. Any public apply on the B Book Counter with details of Registration number, Book number and Volume number. Pages and date of registration with five other details are mandatory for generating the fee receipt through B book Software. After paying the Rs. 10/- per page receipt can be received.
2. For Record related from book III only executants or any agent authorized by executants can receive the certified copy. Photographs are captured of person who is applying for certified copy of record of Book III. For applying Registration number, Book number, Volume number and number of pages with date of registration of documents and Identity proof of

applicant is mandatory. After paying the Rs. 10/- per page receipt can be received. If Executants is not alive then any person can apply for certified copy after showing the death certificate of executants.

3. For record related from book IV only Executants, Executee or any agent authorized by executants or executee can receive the certified copy. Photographs are captured of the persons who is applying for the certified copy of record of Book IV. For applying Registration Number, Book number, Volume number, number of pages and date of registration of documents with Identity proof of applicant is mandatory. After paying the Rs. 10/- per page the receipt can be received. If Executee and Executants are not alive then no certified copy can be received.
4. After issuance of cash receipt record keeper searches the related documents form record room and copy of related documents and print the details of application on Ten Rupee Stamp Paper. After signature of Sub Registrar with printed stamp, record keeper delivers the certified copy to the applicant.

### C. Inspection of Records

Any person can inspect Peshi Register of Book I. Only Executants can inspect the Record of Book III and only Executant and Executee can inspect the Pshi Register of Book IV after paying Rs. 100/- for per year. If Executee of Book III Documents is not alive then any person can apply for inspection after showing the death certificate of executants. If

Executant and Executee are not alive then no inspection of Peshi register of Book IV can be made.

#### D. Custody Fee of Documents

If party or his Agent comes to collect the registered document after one week of registration then custody fee of Rs. 50/- per week and maximum Rs. 500/- is charged for delivery of documents.

#### E. No Objection Certificate

For checking the status of Kharsa Number of Agricultural Land, Applicant can apply for receiving the No Objection Certificate from LAC after deposition of Rs. 100/- for each case. Later than online application is sent to Additional District Magistrate office by officials of Sub Registrar.

#### F. Home Presentation Fee

If any party is not in a position to be present in Sub Registrar office then he/she can apply for Home presentation. Fee of Home presentation is Rs. 10/- per KM from sub Registrar office to place of presentation of the Party plus Rs. 500/- fixed Charge.

#### G. Revenue Collection

Registration fee is important tax revenue of the Delhi government. In terms of revenue earning Revenue Department is second largest department after department of Trade & Taxes in Delhi. The stamp duty on registration of documents is

charged under Schedule 1A of the Indian Stamps Act. The rate of Stamp Duty in case of sale deed is 3% and 2% for male and female respectively. The court fee was increased through an amendment in August 2012 but it was struck down by Honorable Supreme Court. The stamp duty is also levied on issuance of Share Certificate, Debenture and Broker note.

**Table-2: Year-wise Revenue Collection**

<b>S. No.</b>	<b>Year</b>	<b>Revenue Collection (in Rupees)</b>
1.	2011-2012	2882 cr.
2.	2012-2013	3051 cr.
3.	2013-2014	2939

#### **4. Lessons Learnt**

It is a fact that in Delhi the people who have used both the manual and e-Registration systems have given an overwhelming preference for the e- Registration system. In e-Registration system the cost of accessing service has been reduced because the number of trips that needed to be made to the Sub Registrar offices and waiting time has been reduced significantly. Quality of service delivery and quality of governance is also improved significantly. E-registration has simplified the process and facilitated the property transactions in a way to prevent the unlawful disposal of land. E- Sub Registrar offices have successfully solved the various underlying problems and loopholes which were prevalent in the traditional registration process.

The following areas are identified where concrete benefits have accrued to the people of Delhi:

1. Appointment Management System (AMS) provides facility to the user for taking appointment as per his /her own choice of date & times. AMS provides the facility to take prior appointment for registration, register the appointment in First-In-First-Out order, reduces the crowd in the sub-registrar offices and eliminates the long queues in the Sub Registrar offices.
2. The person who asks for appointment in the e-Sub Registrar offices is updated through the web portal of Appointment Management System. It also informs about the additional documents required for registration and nature of the documents.
3. Appointment with the Sub-Registrar may be taken from anywhere including WAP/GPRS enabled handheld devices by using internet.
4. In the Appointment Management System a token system is also introduced which effectively manage the queue of the turns of appointment seeker.
5. In a major revamp in the existing registration system Delhi government made the tout-free registration of property / documents which is first of its kind in the country. It offers a seamless property registration experience through a highly secured system. E- Sub Registrar offices has replaced the decade old system of hiring of touts and offered great comfort to the public.

## **5. Conclusion and Way Forward**

### **6.**

The governance on different attributes of quality such as responsiveness of staff, convenience of staff, work timings and facilities at the Sub Registrar offices etc have significantly improved in the e-Sub Registrar offices. The transparency, fairness of treatment with public, quality of feedback and level of accountability is also improved. Operating costs and investment per registration came down in the e-Registration system. In Delhi the e-Registration system is successful as most of the people are techno friendly and it is serving mostly urban clients. There are significant numbers of rural clients in Delhi who also do not have different service delivery demand pattern in comparison to the urban population. Overall the quality of governance is improved as it is evident in the following developments:

1. Crowds at Sub Registrar offices have been dealt properly by using the web portal of Appointment Management System. It displays token number on the display screen in the waiting hall to avoid the huge crowds and serpentine queues. In the traditional system lack of basic infrastructure like proper seating, drinking water and toilet facilities etc. made trouble to the people and even after going through this ordeal, public has to make several rounds of the sub-registrar offices and have to hang around till the deed is registered and delivered. The new system envisages a process in which each person appears at the e-sub registrar office with an already taken appointment. On reaching the office, the public is provided best infrastructure. New system also gives importance to the persons with

special needs and also to the differently-able persons. To make the entire process of registration hassle free the registration system had been re-engineered.

2. Sub Registrar is enabled to view the list of documents to be registered on the particular day, well in advance for proper administration of office management.
3. Registration of document can not be refused with out giving the applicant adequate hearing. A person trying to register a property, a will, or any other document is authenticated by accessing information from e-stamp number or by a SMS on the mobile phone or an e-mail.
4. Less procedural layers, authorized entry, strict discipline and order have made the e-Sub Registrar offices convenient for the people of Delhi.
5. Improved turnaround time & saving the energy of people.
6. Saving in terms of money.
7. Efficient service delivery to people.
8. Minimum human interference.

# Appendice-1: Appointment Management System on Website

**AMS SnapShots**

File Edit View History Bookmarks Yahoo! Tools Help YAHOO!

Revenue Department: Appoint... X +

districts.delhi.gov.in/ams/

YAHOO! Yahoo Search

**REVENUE DEPARTMENT**
**APPOINTMENT MANAGEMENT SYSTEM**

Beta Version..... Re-appointment n

**Alert - Requirement of e stamp paper/mobile number has been updated/modified in AMS Portal for the purpose of authentication & online appointment for registration of documents in e-Sub Registrar Offices...**

Select Your District: EAST Sub-Registrar: Sub-Registrar-VIII-A-Preet Vihar

Select your Area: EAST

Purpose for: SOUTH

SNo	Documents_Required
1	Original Documents with one set of Xerox copies
2	Two Passport Size Photograph on both copies of documents (Seller & Purchaser)
3	e-Stamp paper with correct value of Stamp duty
4	Bank Draft of Registration fee with undertaking / Affidavit
5	If transaction is for more than Rs. 500000/- self attested copy of Pan Card or Form 60
6	Original ID Proof of the concerned Parties (Seller, Purchaser and Witness) like voter card, pan card, Passport, Driving License , Adhar Card and in case of companies, power of attorney/board resolution
7	in case of agriculture Land, NOC required
8	AADHAAR No. is compulsory, if AADHAAR No. is not available; provide the AADHAAR Enrolment Slip No.

Are all the mentioned documents READY ? NO

**Related Links:**

- [Revenue Department](#)
- [Departmental Login](#)
- [लॉगिन](#)
- [Request for Appointment with Sub-Registrar](#)
- [Click here to print your Appointment Token Slip](#)
- [Category wise Circle Rate](#)
- [Form 60](#)
- [Procedure for Registration in e-Sub Registrar Office](#)
- [Rates of Stamp Duty](#)
- [Contact Us](#)

## Appendice-2: List of Appointments on Website

# List of Appointments for Sub Registrar

Revenue Department: Appointment Management System - Mozilla Firefox

File Edit View History Bookmarks Yahoo! Tools Help

Revenue Department: Appointment Ma...

discouth.dehigout.nic.in/ims/p\_daily\_report.aspx

Yahoo Search

Welcome: sr5h [Logout](#)

Schedule of Sub Registrar Office for the Date : 09/01/2013

[Print Schedule](#)

Clickable For 10 Office

APPOINT_NO	estappno	estappstatus	First party	Second Party	Property address	Deed type	Taken up	PAY	Time	REMARK
95121300001	DC-2L46114581013082500		SATYAJIT PRASAD, 304A, Ramganga One, Saket New Delhi-1100307317	NALPRA, Ramganga One, Saket New Delhi-1100307317	304	Trust Deed	1	HALT243132	1000	
951213000174	DC-2L461076494201871217000		NEERA KUMAR AND OTHER, W-47, GREATER KAILASH PART-2, NEW DELHI-110049, 901790249	5-6 FLOOR, 2ND FLOOR, 1001, 1001, 1004 TO 2446 FLOOR, 1-158 CHED FLOOR, BANK STREET, KAROL BAGH, NEW DELHI-110018, 9011102594	10-47, GREATER KAILASH, PART-2, NEW DELHI	Gift Deed	1	AND29041440	1000	
951213000101	DC-2L4610986747310182000		SARDINESH LAL, 111-5 YOUNG BARAJU, 899970170	105 BOTAL, ASSOCIATES CREMATION PUSHP SARAJU NEW DELHI, 9011049710	PROP NO. 111, SHIP ON GROUND FLOOR, BEHARUA NO. 33, PUSHP SARAJU, NEW DELHI	Lease	11		1000	
951213000136	0		SMIT DSHARAN KALICH, HOUSE NO-40 FROUNT, 2ND SERAPUR, JAKH NEW DELHI-110049, 899118154	-	-	Relinquishment Deed Without Consideration	5		1000	
951213000132	0		NAS BEGANAYA INDIVYATE, C-1, PRESTO ENCLAVE, SAKET, NEW DELHI, 6540138134	-	-	Relinquishment Deed	4		1000	
951213000133	0		NAS BEGANAYA INDIVYATE, C-1, PRESTO ENCLAVE, SAKET, NEW DELHI, 6540138134	-	-	ERA GDA, ERA Share/Relation	6		1000	
951213000134	0		NAS BEGANAYA INDIVYATE, C-1, PRESTO ENCLAVE, SAKET, NEW DELHI, 6540138134	-	-	ERA GDA, ERA Share/Relation	5		1015	
951213000135	0		tanu rohan and wife, k-113 banu kha new delhi, 901108212	-	-	Relinquishment Deed Without Consideration	7		1015	
951213000138	DC-2L464010591124801118400		SMIT DSHARAN KALICH, 5th substage area rd, 9011051573	SMIT DSHARAN KALICH, 8th substage area rd, 9011191937	PROPERTY NO. 781 IN BEHARUA NO. 431 AT EXTENDED LAL DORA OF VILLAGE SULTANPUR, NEW DELHI	Lease	8	FORM-61	1015	
951213000137	DC-2L4640549071051110000		RAJIT KOTIAR, WARD NO 1, NEERAJI, NEW DELHI, 9011011715	SANDEEPA, NETAJI, ASHT PUSHP GARJE, DELHI-110049, 901017711	1008-B WARD NO 1, NEERAJI, NEW DELHI	Gift Deed	18	14Q49PC1913	1015	
951213000138	0		RAJESH BEHARU AND OTHERS, W-1 VILLAGE SERAPUR, NEW DELHI, 110049, 9011011717	-	-	Relinquishment Deed Without Consideration	17		1015	
951213000139	0		Chin Saha, 10-B, Sarita, Naga, New Delhi, 911401321	-	-	Relinquishment Deed Without Consideration	10		1015	
951213000138	DC-2L461010254671112140000		VARUN SALLU, B-40, Dharma New Delhi, 901111171	RESHMI VANDISTHA AND OTHERS, J-2, Post Pone Ganga, Ganga New Delhi, 9011142425	5-41, SEHWALIK, NEW DELHI	Gift Deed	9	SC-24395301	1010	
951213000131	DC-2L461011044124013210000		SHREY BEHARUA, 88-41, WARD NO 1, NEERAJI, NEW DELHI, 9011041013	ASHA BEHARUA, 403-1, NEERAJI, NEW DELHI, 9011041017	404 WARD NO 1, NEERAJI, NEW DELHI	Gift Deed	12	FORM-61	1200	
951213000130	DC-2L461010901701818181000		SADINA JOEL AND ACTA JOEL, 747, Dina Ram, Malviya Nagar, New Delhi, 9011021179	SERVISI ANDREA AND PROTIA BACOLA-D, 2nd part time app substage area delhi, 9011021179	5-10-1 NALUYA NAGAR, NEW DELHI	Lease	13		1200	
951213000131	0		NALANDEA SURESH, B10, BHALANU NO 1 NEW TONE 1	-	-	Relinquishment Deed	14		1200	

Revenue Depart... Microsoft PowerP...

11:50 2013-01-10

**Appendice-3: Revenue Department Budget Expenditure,  
Delhi**

**Status of Budget/Expenditure for FY 2014-15**

NON-PLAN				Amount Rupees in Thousands	
S.No.	Office/Department	Expenditure 2013-14	Expenditure 2014-15	BE 2014-15	Modified RE 2014-15
1	Civil Defence	47065	48940	59440	52000
2	Rajya Sanik Board	24279	21196	34150	21975
3	Directorate of Panchyat	38325	44999	56637	48692
4	Revenue Department (HQ & District)	10354311	12200347	14313333	13084152
	<b>Total:</b>	<b>10463980</b>	<b>12315482</b>	<b>14463560</b>	<b>13206819</b>
<b>PLAN</b>					
1	Civil Defence	1253	1265	30000	20000
2	Rajya Sanik Board	0	0	0	0
3	Directorate of Panchyat	84	90	200	700
4	Revenue Department (HQ & District)	485222	458171	1097800	654300
	<b>Total:</b>	<b>486559</b>	<b>459526</b>	<b>1128000</b>	<b>675000</b>

## Appendice-4: Staff Position in Revenue department, Delhi

(As on dated 3-5-2015)

### Staff Positions

Regular

**Sanctioned Post**            **1702**

**Filled**                            **884**

**Vacant**                           **818**

### Misc. (Ex-cadre)

Patwari : 123

Kanungo : 24

Bailiff : 102

### Major Vacancies

Sub-Registrar (Pritampura, Geeta Colony, Palika Bhawan) : 3

Tehsildar (Mehrauli, Seelampur, Punjabi Bagh) : 3

Superintendent : 17

Legal Asstt. : 9

Head Clerk & Naib Tehsildar: 59

UDC : 70

Steno Gr. III : 48

LDC : 152

### Misc/Others : 209

- Staff working on diverted capacity in other Depts : 03
- Contractual/Outsource Staff Overall : 343
  - (Asstt. Programmer 12, Driver 21, Data Entry Operator 310)
- Legal Consultant: 6
- DDMA : 44

**Appendice-5: Old Record Room at Sub Registrar Office,  
Kashmiri Gate, Delhi**



**Appendice-6: Taut Free Frontal View of E- Sub Registrar Office, New Delhi**



## Appendice-7: Appointment Slip in Appointment Management System

Revenue Department Govt. of NCT of DELHI S. Sham Nath Marg, Delhi-110054	
Applied on : Date : 10/01/2013	
<u>Acknowledgement slip for appointment</u>	
District : NORTH WEST	Sub-Registrar Office : Sub-Registrar-VI-D-Rohini
	Locality : Kamhawa
Your Id Number:	956413000001
Your e-Stamp Number:	IN-DL65729654344244L
Purpose of Visit at SR Office:	Presentation of Sale Deed
Details of First Party:	Sh. Smt. MUKESH JAIN R.o 594, VPO Barwala Delhi-110039, Mobile: 9716883399
Details of Second Party:	Sh. Smt. MAHARANI YADAV R.o VIII Sultan Pur Dabas Delhi - 110039, Mobile: 9868876102
Address of Property to be Registered:	2220/169 TRUNAGAR DELHI
Date/Time Alloted:	Date: 10.01.2013 Time Alloted: 12:00 Noon
NOTE : You are requested to reach the Sub-Registrar office Reception 15 minutes before your appointment time otherwise your appointment is liable to be cancelled and you are requested to come with copy of this slip or keep above mentioned Your Id Number.	
<input type="button" value="Print"/>	

## Appendice-8: Display Board at Waiting Hall



The screenshot shows a web browser window displaying the Revenue Department Appointment Management System. The browser's address bar shows the URL `discouth.dehigout.nic.in/oms/displayL.aspx`. The page header includes the text "REVENUE DEPARTMENT" and "APPOINTMENT MANAGEMENT SYSTEM". A "Logout" button is visible on the left. The main content area features a "Facilitation Counter" table with the following data:

Counter Number	Token number
1	10
2	6
3	7

The browser's taskbar at the bottom shows the system tray with the time 11:53 and date 2012-01-10. The taskbar includes icons for Internet Explorer, Google Chrome, and Microsoft PowerPoint.

## **Integration of Land Records and Registration in GOA**

## **Contents**

1. Introduction
  - 1.a Background
  - 1.b Recent Developments
2. Innovative methodologies used in Computerisation Process
  - 2.a Dharani Project for Management of Goa Land Records
  - 2.b Objectives
  - 2.c Present status of Dharani
  - 2.d M-Governance; a bench-mark towards Smart Governance on Land Administration
3. Computerisation of Cadastral Maps to provide on-line and real time maps to the citizens
  - 3.a Objectives
  - 3.b Implementing a Computerized Land Management through Dharnaksh Application
4. Computerization of Registration Process
  - 4.a Features at a glance of GAURI
5. Integration of Land Records and Registration
  - 5.a Why Integration of Dharani and GAURI
  - 5.b Existing Workflow

5.c Proposed System

6. Results of the Practice – Outputs and Outcomes

7. Lessons learnt and Future Benefits

8. Major Points and Way forward

## **Abbreviations**

Form I and XIV: Record of Rights includes ownership details along-with class and types of agriculture. (Rural)

Form D: Record of Rights includes Property Details, Easements, (Original) Holders Lessees Encumbrances, and (Mutated) Holders Lessees Encumbrances.

XML: Extensible Markup Language

SRO: Sub-Registrar Office

CDAC: Centre for Development of Advanced Computing

Form XV: Integrated land records with cadastral maps (Rural)

Form J: Integrated land records with cadastral maps (Urban)

GBBN: Goa Broad-band Network

SWAN: State Wide Area Network

PT Sheets: Plain Table Sheets, map contains area or location of property

Index II Records: Search of documents related to registration and past transactions

Form XIII: Intimation of details for the change of ownership (Urban)

Form XII: Intimation of details for the change of ownership (Rural)

## **List of Tables**

Table-1: State at a glance

Table-2: Service offered by Dhranaksh: Land Records from Anywhere

Table-3: Year-wise revenue generation after implementing GAURI

Table-4: Comparative Analysis of Measures

## **List of Figures**

Figure-1: Cadastral Maps of Goa under Portuguese regimes

Figure-2: Mahiti Ghars offering different land-related services to the citizens of Goa

Figure-3: Official Schema of Computerisation of Registration Process

Figure-4: Existing workflow for sending Form XIII to Land Records Department

Figure-5: Proposed Integration with Land Records Department-GBBN

Figure-6: Integration of Payment gateway with DSLR Website (snap-shot only)

## 1. Introduction

Districts	Two; North and South
Population	1457723
Decadal Population growth (2001-11)	8.17 per cent
Rural	5.52 lakh
Urban	9.07 lakh
Population Density (per sq. km.)	394
No. of Blocks	12
No. of Villages	421
No. of Cities	4

Goa was a Portuguese colony for over 400 years until it became a part of India in 1961. The state is considered one of the advanced state of the country due to it's all around development and growth; evident from all developmental indicators like, high literacy rate, high per capita income and above all there is a strong sense of awareness regarding public-rights. The state is situated in western part of the country, along the Konkan coast. The state is a very small geographical coverage 3, 702 sq. km. of area and one of loved tourist destination in the country as well in the world, due to that the state is facing tremendous pressure to manage and administers of land resource which is most valuable asset of state. This demographic pressure and main pillar of development largely impact on the management of land as the conversion rate is going high to higher and land value is going steep to steeper every day. The state was under Portuguese colony that's why they inherited a good land records and administration mechanism, the present structure is follows more or less the

same path and provide a good services related to land matter to the citizens.

In Editors Introduction of Land Reforms in India (vol-10), aptly mentioned that Goa has reached a milestone and the achievements add impetus to the mission of computerisation of land records at the national level<sup>1</sup>. Goa is the first state in the country to implement 100 percent computerization of land records since 2001, due to several success factors like; dedicated department with well trained staff and officers, integration between related departments etc. The state inherited records which were recorded under Portuguese era, however the department has taken fresh survey to all talukas to prepare new land records after they got liberation, though under Portuguese regime detail map has been prepared for better land records management and to provide accurate ownership details (Figure-1). The state follows the Goa Land Revenue Code 1968 (further amended in 2000), under this act the nodal department is taking care to maintain and update land records. The department continuously working in dedicated nature on various court cases related to partition, conversion, re-survey, re-fixation, demarcation, amalgamation of S.No./Subdivision and correction under the Land Revenue Code, apart from that the department is dealt with acquisition, preparation of plans and maps, mutation of properties etc. The state has successfully implemented several schemes which have been sponsored by the central government like CLR, SRA & ULR and NLRMP.

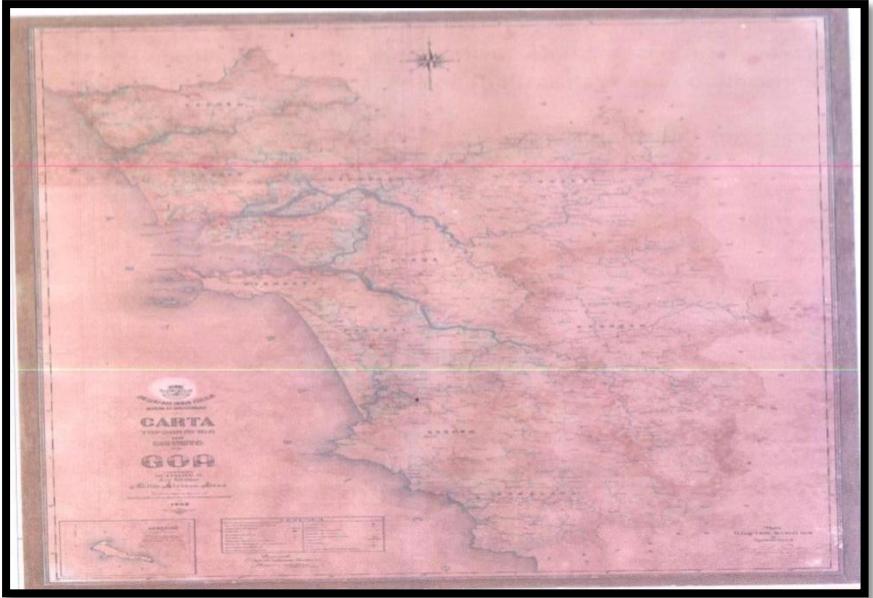
---

<sup>1</sup> Land Reforms in India: Computerization of Land Records: Volume-10, Edited by; Wajahat Habibullah, Manoj Ahuja, Published by Sage Publications 2005.

## **1.a Background**

Under the Portuguese regime the state land records were provide the description of land parcel by the means of ownership details, area information and boundary, but during the transition time of implementing State Land Revenue Code, these records were simply ignored and prepared new Record of Rights. After the liberation, Govt. was undertaking fresh land survey to prepare new Record of Rights (Form-I and Form XIV) in late 1960s. The state RoR contain details of village, survey number, sub-division number, tenure, occupant, tenant, other rights, crop details, area and cultivation details, though there is no such distinct column for owners. Cadastral maps which is called as PT Sheet (Plane Table) which reflects the ground reality and RoR which provides the details of land were reflects different stories sometime, as the state update RoRs frequently but the cadastral maps has not been updated. However the state is recognized the manifold importance of land parcel survey, they have started the process with modern techniques. It is correct to mention here that, after introducing of NLRMP, Govt. of India emphasizes to provide clear property titles to owner by effect of Land Titling Bill-2011, which guarantees the ownership of land, but in Goa, under the Portuguese Regime, they had provided clear titles to the owners. But after the liberation and enacted of LRC 1968, they only follows the rules of providing presumptive title to the owner, however the state is prepared Land Title Bill of 2012 which under scrutiny, as they found it is the urgent need as far as Goan land and its economy is concerned.

**Figure-1: Cadastral Maps of Goa under Portuguese regimes**



### **1.b Recent Developments**

Under the CLR (Computerisation of Land Records) scheme which was introduced by the Goa Government in early 1990s, the state has taken up the computerisation of land records of all talukas with the help of NIC (National Informatics Centre) in step by step manner, which is beginning of computerization process in land management of the state. Apart from the land records computerization, state was taken initiative to digitize all cadastral maps (PT sheets) with the collaboration of private vendor; aim was obvious to provide computerized land RoRs (Form I and XIV) along with computerized maps. In 1997, Tiswadi taluk of North District had complete the RoR computerisation and became a successful model for the state where citizens could get computerized copy of RoRs within

minutes after applying, the same project was completed in 2011 for rest of other talukas. It shows the state interests on adopting ICTs which largely helps citizen services as well as governance machinery.

There is no doubt that land records and registration are two main pillars of land administration and management. Innovation of science played a crucial role on land administration; the state is also incorporate ICTs to provide decent services on this issue. Two different departments has taking care of land records and registration of property in Goa, but due to the integration of both the departments state has establish a good model of land administration and management. Directorate of Settlement and Land Records mainly execute two types of works and provide *different services to the citizens regarding land records, these are as follows;*

**Part-A:**

- a. Inspection of all Cadastral Plans/Records.
- b. Inspection of Pre-liberation Land Records/Communidade Plans.
- c. Issuing of Computerised certified copy of new Cadastral Plans./Form XV / Form ‘J ‘
- d. Issuing of computerised certified copy of village maps.
- e. Issuing of Certified copy of Alvara/Title/Old Cadastral Plan/communidade Plan
- f. Issuing of certified copy of/Form ‘D’/ Form ‘B’

- g. Mutation in city survey, and
- h. Confirmation of possession of property in city survey

**Part-B:**

- a. Partition
- b. Resurvey
- c. Demarcation/ Re-fixation of Boundaries
- d. Conversion

In the same way the Department of Registration also executed several activities regarding property registration, this is called 5 step procedure of The Registration Act (1908) like; Document security and acceptance, Stamp duty collection, Receipt generation (payment of registration fees), Final registration and scanning and archiving of documents. The department is considered one of the top revenue earners for the state. Both the department dealt with land as well as they are inter-dependant with each other, thus the integrating of both the department is quite inevitable for the state government to provide better services and revenue earnings point of view. Land Records department developed “*Dharani*” application with the active help of state NIC and introduced in Tiswadi taluka in 1997, but the process completed in 2001 due to the delayed process of data-feeding, after that the state has roll-out the project to all talukas and offices. Department of Registration also developed software in early 2008, in the name of “GAURI” (Goa valuation and e-Registration) to

provide transparent, less time consuming e-governance to the citizens.

## **2. Innovative methodologies used in Computerisation Process**

To understand the impact analysis and need of computerisation process on land records it is inevitable to analyse the situation before computerisation. The main reason behind computerisation project in Goa is slightly different than other state, as most of the state adopted computerisation project due to easy-access, least time taking and tidy maintenance process of manual records, but in Goa apart from these reasons, both the department and citizens are well aware of technology and eager to adopt changes are the main imperatives behind the implementation and success of the computerisation project on land records management. The Government of Goa initiated several schemes namely; Computerisation of Land Records (Dharani) and Computerisation of Cadastral maps and Integration of maps and RORs (Dharnaksh) and Computerisation of Registration (GAURI) etc. to provide all land related services on-line.

### **2.a Dharani Project for Management of Goa Land Records**

Under the scheme of Computerization of Land Records (CLR) financed by Central Government of India, Goa has developed Dharani application with the active help of NIC to provide computerised and up-to-date Record of Rights to the citizens. The integrated textual records management system, which is named by Dharani, is developed for comprehensive solution on land records. The system has been developed and designed in a scientific manner where all Mamlatdar offices were linked

with the central server by which issuance of RoRs could be possible through regional offices. Any updating on record of rights from local mamalatdar office would update the database on central server by using Dharani portal. Apart from the mamlatdar offices, Govt. issuing licenses to the private agency to create Mahiti Ghars (Knowledge houses) for providing services on land related matters to the citizens were also to access data from central server for issue of RoR. 13 Nos. of Mahiti Ghars were functioning in Goa and issued RoRs since 2004. The system is designed with advance technology by providing digital signatures for issuing RoRs to the citizens, and the system is robustly connected through SWAN network, Goa Broadband Network (GBBN) with all the collectorates as well as talukas.

## 2.b Objectives

a. Goa is known for tourism destination and its land value. Demographic pressure and industry interest makes the land management a herculean task, to solve the issue Goa Govt. initiates computerisation process of land records management to ease the process by the means easy

**Figure-2: Mahiti Ghars offering different land-related services to the citizens of Goa**



up-dation of RoRs and several other activities.

b. Safe and secure records, less space required for maintaining age-old land records, up-to-date land records and easy to issuing RoRs to citizens.

c. Entire Mutation process (from receiving request to including changes in databases) would be easier through both Dharani rural and urban applications.

d. Accurate database which minimizes the scope of erroneous data.

e. Availability of various reports which are indeed useful for any future developmental projects.

f. Enables application portal is useful for instant issuance of RoRs through touch screen Kiosks, Mahiti-Ghars and all 12 taluka offices and 4 city offices through central server connectivity.

g. All talukas, City Survey offices, Collectorates and Survey, Settlement & Land Records offices are interconnected with 1 Gbps GBBN, which is helpful to monitor and access any land data from anywhere.

## **2.c Present status of Dharani**

During the midway of 2002 mutation process was integrated with the v1.0 Dharani application and database server are localized in each taluka since May 2009. After the successful implementation of all talukas and city survey offices, the web-portal got a vast appreciation from citizen as well as government departments for time-less report generation,

issuing of RoRs, corruption free services etc. Services provided by Dharani application are as follows:

**i.** Issuance of Computerized copy of RoRs, (Form I & XIV for rural and Form D for City) after the successful implementation of Dharani portal in all talukas, city survey offices and Mahiti Ghars the state completely stopped the manual issuance of RoRs to citizens which helps to update data in a systematic manner, error free services, stop corruption in Mamlatdar offices and instant services to the land holders.

**ii.** Certified copy of RoRs which has been provided through this application. In the earlier scenario, an electronic RoR was not admissible in the court of law. In order to give legal sanctity to the electronic RoR, digital signatures were introduced. The digital signature has been adopted to ensure authenticity, integrity, and non-repudiation. Since January 2013, the digitally signed RoRs are being issued by the Mamlatdat office and digitally signed extract of RoR is available through Dharani Rural v3 for public issuance.

**iii.** Through this application Mutation process of land parcels for updating owners name and other things made easier. It follows simple methodologies to register name on new records by following registration of mutation request, generate notices to the concerned party, verify mutation and then certify the mutation which automatically effects on the new Form I and XIV.

**iv.** Partition of land parcels is also possible through this application by simply enter the details and create new parcels number.

v. Mutation status of Rural and Urban land parcels is also available through Dharani applications for easy access to check application status of mutation.

vi. Authenticity verification option is useful for citizens to know about their RoRs issuance authenticity by furnishing the transaction ID and date of issuance.

**2.d M-Governance; a bench-mark towards Smart Governance on Land Administration** The Directorate of Settlement & land Records Department and State Government with the active participation of State NIC, willing to start in near future with the aim to utilize the strengths of Mobile in the State using the concept of uninterrupted connection for the delivery of government services to common people. And there by offers SMS through the Dharani Urban application to the purchasers/ applicants in respect of Form XIII with valid properties at each stage of mutation process, on a 24 X 7 basis, rather than the users having to visit government offices or log on to the internet portals to access services. It helps to know about their mutation status of their property, but due to technical issues of National Informatics Office, the process is on the pipeline. SMS to be send at each stage of mutation process like:

- When preliminary notice is generated based on Form-XIII valid properties
- When Mutation case in registered based on the fess and documents submitted by the applicant
- When Form G is generated; to be served to all the interested parties
- If any postal returned, and before public-notice is generated

- If any Objections received and intimate applicants for fixed date/time for hearing objections.
- When Mutation case is disposed or rejected.

The services will be provided to the applicants by simply sending SMS, which will be an exemplary for other states and helps to get instant services. Introducing the SMS services through Dharani Urban application will be start very near in future.

### **3. Computerisation of Cadastral Maps to provide on-line and real time maps to the citizens**

Goa state is considered cadastre-state in our nation, before liberation and after that; the state surveyed all land-parcels followed through modernized techniques. It is inevitable to understand the background of Goa survey-settlement system that has been taken place, because the state has experienced different regime and different record preparation and maintenance systems than that of the other states. During the Portuguese regime the First Cadastral Survey in Goa was carried out in the “province” of Satari taluka by team headed by Antonio Lopes using Theodolite and Prismatic compass. They prepared village maps at scale 1:5000 and the detailed survey reports. Topological features indicating structure, land marks were marked on the maps. On 4th August 1898 the Director of Land Survey Goa Daman & Diu was setup as an independent Department and the Survey Department started Cadastre of Goa in 1902 – 1903 on experimental basis to train the newly recruited staff. In 1903 to 1907 they completed the systematic survey of three talukas in Tiswadi, Bicholim & Ponda. After the liberalization, Directorate of Land Survey under LRC Goa Daman & Diu was setup during the year 1964,

then the Department took the ground survey operations in all regions of Goa and then categorized as 11 talukas in two districts of North Goa & South Goa. Goa, Daman & Diu Land Revenue Code 1968 came into existence. The promulgation of record was conducted after allowing inspection of records to the public. In a period of a decade the Record of Rights came into existence and was accessible to public.

Project of Cadastral Maps computerisation for the entire state, which is named as second innovative practices after Dharani in Land Governance by the DSLR. Under the CLR programme, the state has started cadastral maps digitization for all land parcels for the entire state. Before implementation of the project of Cadastral maps digitization, the state not issued maps of their land parcel maps to the owner instantaneously, because all these maps were stored in hard-copy, stores in record rooms where searching of particular sub-division was a tedious process, due to that reason owners applied for their parcel maps to the respective authority which took several months. Issuance of Record of Rights with updated maps to the owner was taken as prior initiatives by the Govt. of Goa. Digitisation of cadastral maps of Tiswadi taluka was taken up in August 1999 and completed in October 2001 under Centrally Sponsored Scheme of Computerisation of Land Records. On successful completion of a pilot project in Tiswadi taluka, scheme was taken up in balance ten talukas and completed in 2005. The state has completed 100% computerisation of cadastral maps for the entire state. To ease the service mechanism on maps and plans, computerized certified copies made available to the public between one to three days after application depending upon their complexity of the plan.

### **3.a Objectives**

- a.** The main objective of digitization of all maps is to integrate individual land holding and survey data with computerised cadastral maps.
- b.** Issuance of maps of the specified sub-division is less timings and less man-days.
- c.** Storage and Maintenance of maps is much easier.
- d.** After division/sub-division, up-dating of maps is become easier; before computerisation it took maximum five months based on the complexity.

To provide instant service of certified and computerised copies of land records along with cadastral maps on e-governance platform, since June, 2010, the Govt. of Goa has taken a project named “Dharnaksh” through which the department offers integrated services of providing land records (Form XV and J for village sand city respectively), combines of RoRs and survey plan. After successful implementation of all talukas and offices the Department commissioned to issue digitally signed integrated land records online having legal sanctity of all purposes. Through the “Dharnaksh-Land Records from Anywhere” portal citizens can obtain land records along with maps, search their land parcels, extracts of parcels etc. easily. The application proves a sustainable integration between inter-governmental departments like Department of Land Records and Survey for managing the system, Goa Electronics Limited for designing the portal, State NIC for RORs integration and the work of digitisation of cadastral maps was entrusted to M/s Vision Labs, Hyderabad (firm) and the software used was Vision Mapmaker (VMP) on Windows platform. Due to its

manifold applications like eases maximum government workloads, effective and instant services to the citizens etc. it was acclaimed by some inter-national organizations, it won awards of excellence from several national organizations also.

Increasing nature of users, needs of present uses and effectiveness of information technologies for its core functions, the portal has provide a single system to handle all kind of land related services:

**a.** Through Dhranaksh initiative begins to modernize land records, reduce disputes pertaining to land by adopting the integration of maps and records to handle the department's business process and workflows.

**b.** To make authentic and up to date land records available for the citizens from anywhere by the massive uses of web and GIS. Issue of records to any applicant - land owner, prospective buyer, planner, financial institutions, government agencies etc. is become very easy.

**c.** Certified survey record generated through software, department is taking care of authentication and applicability of information that has been given to the citizens for further uses. Monitoring and evaluation is also done by the department frequently to ensure authentic data issues to the citizens.

**d.** Total transparency of information is achieved by hosting entire map and Record of Rights data online and providing access to certified records from anywhere.

**Table-2: Service offered by Dharnaksh: Land Records from Anywhere**

- a) View any land parcel extract
- b) View land parcel extract for notified resurveyed villages
- c) View original village maps
- d) View integrated land record (Form XV for rural areas and Form J for cities)
- e) View Record of Rights
- f) Download reference copy of land parcel extract against online payment
- g) Make online payment and request for certified land parcel extract to be collected from office or sent to your home by courier
- h) Give any feedback or complaint

### **3. b Implementing a Computerized Land Management through Dharnaksh Application**

To provide instant, transparent and authentic land records through Dharnaksh application, it is inevitable to build not only physical infrastructure but also need robust e-Infrastructure like computer hardware, networking encompassing all the talukas of Goa, computerization of RoR for entire state, computerization of base maps for entire State etc. Through this application, the Department is able to provide services as well updating maps and RoRs online with the active service provided by the vendors. The system helps the

department on public services matter or in the part of land records updation, apart from these; the system is carefully taken the security measures to avoid misuse of records during up-dation:

**a.** The system-application is providing for security of data, archival and anywhere access of land records. Survey records are legal and need to be secured, on that way data encryption, identification and archive are also been handled.

**b.** Data is in encrypted form preventing anybody from tampering.

**c.** As maps are a legal record, on mutation, the old record also needs to be maintained for production in courts in case of future disputes, VISION GIS supports Data Archival whereby every record of mutation is preserved.

**d.** Data updation is allowed by software only after biometric verification (fingerprints) of Updating Authority and Approval Authority.

#### **4. Computerization of Registration Process**

Under the scheme of NLRMP and earlier (SRA & ULR), the Department of Land Resources, under the Ministry of Rural Development, GoI gives clear mandate to the State governments that along-with the computerization process of land records, computerisation of registration is also a mandatory task, as Registration is one of the main parts of land-governance. In this direction, Goa has implemented programme on e-Registration quite successfully. The Stamps and Registration Department of a State is typically one of the top revenue earners like most other states and responsible for

registration of documents pertaining to immovable assets and other transactions. Like other department of Goa government, Registration Department was also initiate e-governance programme to automating the functions of the Sub Registrar's office while adding more efficiency and transparency. On that direction, Department has taken a service oriented project, named as **Goa vAlUation and e-RegIstration (GAURI)** system, which was designed and developed by C-DAC, e-Gov. Solutions, Pune with joint collaboration of Department of Information Technology (DoIT) and Registration Department of Goa. Checks and balances have been introduced in the system to ensure timely return of the registered document and achieve a turnaround time of 30 minutes. It also provides better security with saving thumb impression of the client to append on his stamped document. With the implementation of GAURI, functions of the sub-registrar's office are automated while adding efficiency, transparency and increased revenue.

**Successful Implementation of GAURI**

- 2005: Pilot basis implementation at office of Civil Registrar-cum-Sub Registrar, Bardez.
- 2008: Successfully rolled out at office of Civil Registrar-cum-Sub Registrar, Bardez.
- 2009: Successfully rolled out at office of Civil Registrar-cum-Sub Registrar, Salcete.
- 2010: Successfully rolled out at office of Civil Registrar-cum-Sub Registrar, Tiswadi.
- 2013: Successfully rolled out at offices of Civil Registrar-cum-Sub Registrar, Mormugao, Quepem, Pernem & Sanguem.
- Offices of Civil Registrar-cum-Sub Registrar, Bicholim, Sattari, Canacona, Dharbandora & Ponda will be rolled out shortly.

#### **4.a Features at a glance of GAURI**

- Complete computerization of the existing 5-step registration process with automatic fees and stamp duty calculations
- Capture and storage of digital images along with thumb print of every applicant for secure transactions.
- Digitized encumbrance data (Index II Records) : From the date of Computerization onwards
- Digitized book volumes with authorized access control, with frequent back-up module.
- Biometric login enabled for Authentication & Authorization in service.
- MIS report generation at all levels in the hierarchy
- Computerized search for Encumbrance.
- Computerized Certified Copy of documents.

Registration process through GAURI system has immensely fasten the process of register than that of the manual process, not only that it has several other features which enables user to timely register their documents, it has good security features to authenticate records. The prime objective to implement the system is automating the functions of the sub registrar office while adding more efficiency and transparency. Steps which are involved during the computerisation of registration process are as follows:

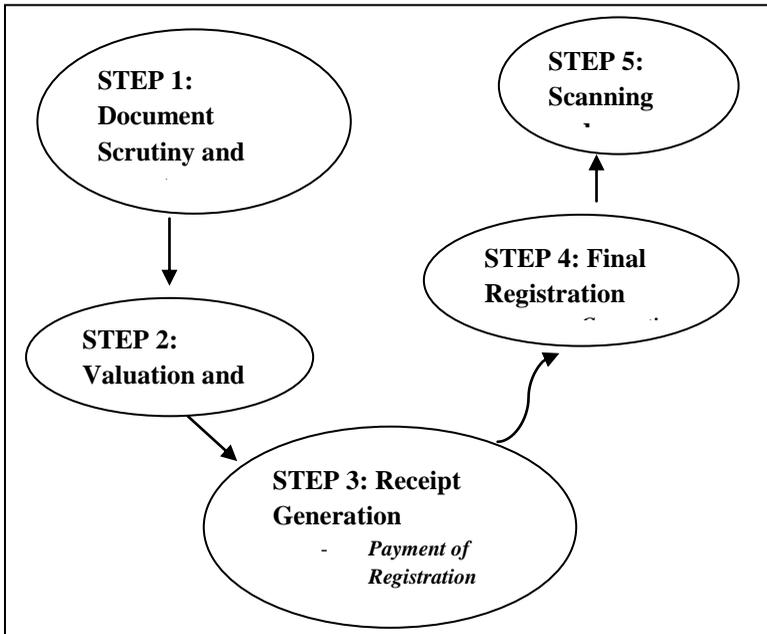
- The party / advocate send a draft copy of the document via email to the office of the sub registrar.
- The sub registrar in turn verifies the draft copy, finalizes the stamp duty applicable for the respective document, and approves it and an appointment for

presentation of the final document is intimated via email / SMS to the respective party.

- On the specified date and time the executing parties present the document in the sub register office and it official verifies the document and forwards the same to the sub registrar for re-verification.
- Sub registrar on re-verifying, marks the document for data entry & a e-challan is issued for payment of the registration fees for the respective document. The party inturn pays the prescribed fees in the respective bank.
- Data has been feeding in Gauri software, captures a photo and biometric details of the executing parties. A registration number for the respective document is generated in the process.
- The sub registrar re-verifies the data entry and completes the final registration process of the document, original copy is given to the party & office copy is maintained in the office records.
- The executing parties affix their signatures on the endorsement and thumb print copy and submit the same to sub registrar.
- The final copy of the document along with the endorsement, thumb print and other relevant documents are sent for stamping and scanning. A copy of the scanned document is maintained in the database & also in the form of digital media for future archival of records.
- After the completion of the scanning process the completed document is dispatched to the respective party on producing the original copy of the receipt at the outward counter.

The mechanism followed by the Department for registration is quite simple in nature and using cutting-edge technologies to meet the quality services provided to the citizens which are less time consuming and authentic as well. Implementing the system for registration purpose is not only helps citizens regarding their quality services, but also for the nodal department and government to create large database online, to provide e-governance services to the citizens etc.

**Figure-3: Official Schema of Computerisation of Registration Process**



## Benefits to the citizens

**Table-3: Year-wise revenue generation after implementing GAURI (Source: Land Records Dept.)**

<b>Year</b>	<b>Total Revenue Generated (in Rs.)</b>
2009 – 10	419053226
2010 – 11	597256546
2011 – 12	735194644
2012 – 13	1167137178
2013 – 14	1030615759
2014 – 15	1252795865

This application has so many positive impacts on citizen services point of view, after implementing the system-application had receive good acknowledgement from the citizens as well as departmental officials. The benefits that have been given to the citizens after introducing<sup>2</sup> the application are:

---

<sup>2</sup> The benefits that have been documented above are purely based on the primary data through interview schedule of the citizens (randomly) those who were came for registration in the last week of August, 2015 during my field visit in the Office of Panaji SRO.

- Same day Registration service, though due to network issue and other official duties-timings the same day registration mandate is not been achieved 100%.
- Return of the original documents on the same day.
- Immediate search of important documents.
- Quick issue of Certified copies of various documents
- Automated interface for calculations of various duties and also furnish additional information on the registration process, the pre-requisites, contact details, etc.

### **Benefits to the government**

e-governance schemes has manifold benefits, as it not only provides quality services to the citizens but also helps government to provide a transparent, authentic and accountable smart-governance to the citizens and obviously helps to increase revenues with less man-power. As an example, above 1 lakh documents registered through GAURI till date in several offices of Registration Department of Goa. The table depicts the success story of implementing GAURI, as the year wise revenue collection is more than 25% increased in every financial year, and since after implementing the department is successfully achieve an average of more than 20% increase on their revenue collection from 2009-10 to 2014-15. The application has majorly three positive impacts to the governments; the first is cost reduction as it reduces time and man-days, second is corruption reduction or no middleman involvement so that it increases total revenue and last but the prime is to improve services because due to this mechanism the turnaround time reduced to one day and Easy availability of archived registered documents & quick issue of certified copies to citizens.

## **5. Integration of Land Records and Registration**

Land records and Registration are the two main pillars of land administration and its management, but the execution is done through two or three different departments, which causes massive paper works, consume huge-times of the applicants/ citizens and thus middleman has played an important role of that, but after emerging the concept of computerization of registration and land records these issues were decreased day by day. The concept of integration land records and registration is the recent developments in the arena of providing smart, transparent and instant governance. This is main reason behind to introduce the concept of integration of Dharani (Rural & Urban Application) with GAURI by the Government of Goa, is being implemented on pilot basis in Bardez taluka. In India, as a part of National Land Records Modernization Programme (NLRMP), some states are successfully integrated with registration and land records application, whereas some other states are trying to integrate registration system with land records application to ensure seamless mutation after registration of properties, the very nearest neighbouring state, Karnataka is one of pioneer of introducing the integration of BHOOMI and KAVERI application. To understand the mechanism a team of officials visits the state of Karnataka, and then they have started to prepare the blue-print of the project of integration Dharani and GAURI application.

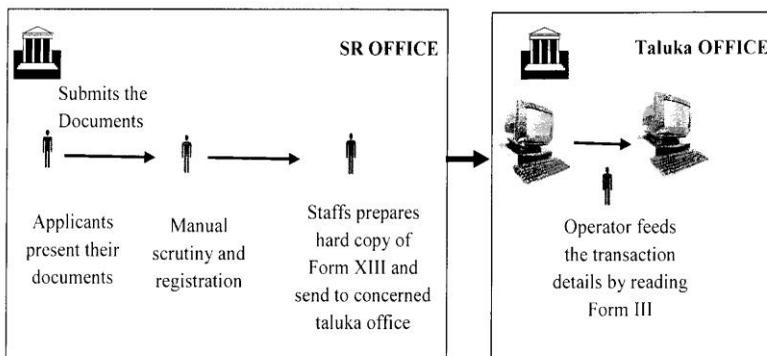
## **5.a Why Integration of Dharani and GAURI**

Dharani Rural & Urban applications has been integrated with property registration where in the mamlatdar's/ISLR's can initiate a mutation based on valid FORM XIII which are received from the respective Sub-Registrar offices through the Gauri web-service. The main purpose of this integration is to do away with impersonation, selling land to multiples and selling government land in fraud cases etc. As the state has experienced huge pressure of demography on land, along with this property related issues are increased day by day, so that this integration helps not only property buyers or industrial sectors but definitely helps farmers to reducing land related litigation. After registration of land through GAURI software in SROs, the XML file sends to Mamlatdar offices only for information to check whether the land records shows the buyers name or not, if there is no litigation on records, Mamlatdar Office issue notice for mutation request. This process will ensure the authenticity of owner-buyers and ensures that there are no fraudulent transactions in future. The process is on pilot basis for only one taluk, to understand the know-how of this programme before roll-out for the entire state. But the field-experience is not good as the internet connectivity in the Mamlatdar office of Bardez is quite slow; so that the uploading and downloading of XML file is not easier. So that the entire mechanism of faster and instant services to the citizens is not successful. The integration will helps to reducing middleman concepts and easily identifies the fraud cases of selling-buying properties.

## 5.b Existing Workflow

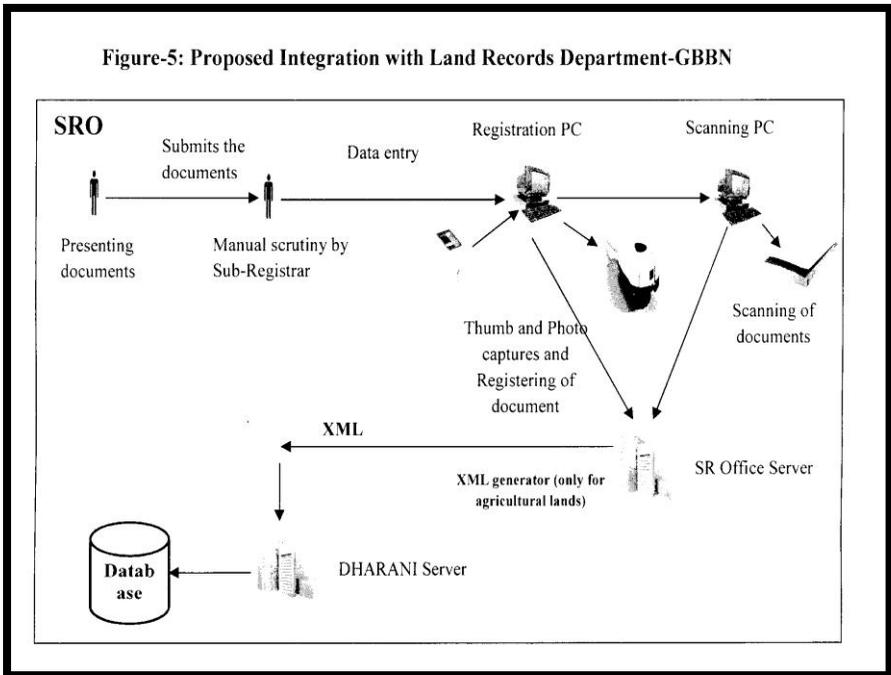
The existing system of integration between GAURI and Dharani application is based upon the sending of Form XIII to the taluka offices for mutation or up-dating of land records. Applicants presents their documents after the manual scrutiny by SRO officials, the document is been registered. Once the registration part is over staff prepares hardcopy of Form XIII and send it to the Taluka level offices. The existing workflow of Dharani and GAURI integration is quite partially in nature because XML file been send by SROs after registration to the Mamlatdar/ Tehsil office to initiate the mutation process, no such web connectivity or automatic mutation has not been through the existing model. This process is started only in Tiswadi taluka on pilot basis, whereas the official faced huge problems and mutation pendency is not been cut down expectedly.

Figure-4: Existing workflow for sending Form XIII to Land Records Department



**5.c Proposed System:** Development related to GAURIDHARANI integration was completed by C-DAC, the proposed will help to ease the data entry timings at DHARANI client, as there is no need for data entry at DHARANI client which reduces corruption and sending Form XIII is also not required after implementing the project. The integration is done through GBBN which provides more speedier process than the earlier one.

**Figure-5: Proposed Integration with Land Records**



**Table-4: Comparative Analysis of Measures**

<b>Measure</b>	<b>Initial Dharani</b>	<b>Dhrani with XML exchange with GAURI</b>	<b>Dhrani-GAURI Online Integration</b>
<i>Request for Mutation</i>	Citizen has to approach	Automatic	Automatic
<i>Data entry of Application</i>	Yes	Semi automatic	Fully Automated (No Data Entry)
<i>Generation of transaction &amp; notice</i>	Yes	Yes	Fully Automated
<i>FIFO</i>	Tehsils	Tehsils	Tehsils
<i>Validations</i>	Only at Data Entry level of Mutation	Only at Data Entry level of Mutation	At the time of Registration
<i>Disputes</i>	Less	Lesser	Least

## **Key Challenges in implementation**

- Tehsils level internet connectivity is not up-to mark, so that mutation and data entry delays, computer system are also age old which affect the faster process.
- Shortages of staff and quality training of operators is become a key challenge for the successful implementation of the programme.
- Due to replication of data entry the mutation cannot be done on same day.
- Providing services in the rural is still a key challenging factor.

## **Advantages & Key Features**

- The agriculture land transaction will be updated in DHARANI server at the end of the day.
- No need of data entry at DHARANI client.
- The corruption will be reduced at DHARANI kiosk.
- The FIFO concept can be adopted at DHARANI client.
- No need to send Form XIII.
- This will enormously cut down the time taken to register the mutation & it will benefit the end users.
- Sale-deed view also has been made available which is directly downloaded from the Sub- Registrar office servers for references before registering mutations.
- Preliminary Notice can be generated & served to the applicants.
- SMS will be sent to the applicants immediately after generating preliminary notices.

**Integration of Payment Gateway in DSLR website:** To provide quality services to the applicants; not only that instant services by providing online payment option to pay mutation fee is been introduced. It reduces the corruption and time-consumption in the offices to mutate their records. Key features of this application are mainly; applicants from both Rural and Urban can pay their mutation fee online, failed Transaction can be re-initiated using the eChallan number generated and applicants can download/Print their eChallan anytime.

**Figure-6: Integration of Payment gateway with DSLR Web-site (snap-shot only)**

The screenshot displays the 'Pay Mutation Fee Online' interface. The header includes the Government of Goa logo and the Directorate of Settlement & Land Records. The navigation bar contains links for Dharmaksh, Form I & XIV, Form D, Mutation Status(Rural), Mutation Status(Urban), and Pay Mutation Fee Online. The main content area features a sidebar with navigation options like Home, Introduction, Right to Information, Citizen's Charter, Services, Service Centres, DIRECTOR, SSLR & ISLRs, Download Forms, Tenders, Official Tours Info, Goa Govt. Portal, Goa Gazettes, and Download Acts/Rules. The central form is titled 'Pay Mutation Fee Online' and includes radio buttons for 'Form 1 & 14' (selected) and 'Form D'. It contains several input fields: Taluka (dropdown), Village (dropdown), Survey Number (dropdown), Subdivision Number (dropdown), Registration Number (text field with format P/NJ-BK1-00000-2015), Transacted Area (text field with unit in Sq Metre), Purchasers (text field), Mobile No. (text field), Email (text field), Pincode (text field), and Mutation Fee (text field). Action buttons for 'Re-Initiate Failed Payment', 'Download/Print eChallan', 'Confirm & Proceed to Pay', and 'Clear' are present. The footer includes links to National Portal of India, Goa Government Portal, Dept. of Land Resources, GOI, and GOI Directory, along with site design and visitor information.

## **6. Results of the Practice – Outputs and Outcomes**

Land resource management should not be a one-time government programme which is mostly depends on the financial conditions and allotment; rather it should be a continuous effort towards betterment of its sustainable management. Most of the states and UTs are working hard to re-develop its land administration, Goa is one of the state where land administration was developed before its liberation, where land records, maps etc. all were kept in a good manner. After implantation of various land records management schemes from the Central Government, the state has done exceptionally well, though there are ample areas where they must put more effort. Every programme has manifold outcomes, likewise it is important to understand whether the state is done remarkable job on land records management by doing integration of land records and registration or not; for that purpose it need to understand from three point of view; public-service delivery or capable to provide good-governance, techno-managerial solutions or sustainable ICTs involved and financial sustainability of the programme:

- After implementing National e-Governance Plan (NeGP), all government institutions and department are putting sincere effort to provide efficiency and transparency to the citizens, on that way land records computerization was the first step towards e-governance of land administration. Being a cadastre state, Goa started its e-governance programme on land administration quite earlier. Citizens have been provided online records along-with maps for all the talukas of the state, though there has issues of network connectivity in some tehsils. Partition, Mutation,

Online registration with automated calculation of stamp papers and online payment of registration fees, issuing certified copy of RoRs for both villages and city areas etc. helped largely to the people; but integration of registration and land records not done adequately, so after the successful completion of the integration it may be said that the department has done a good job to provide instant and accurate services on land records to the citizens, in respect to online or automatic mutation the integration of Dharani and GAURI will help the entire process though it's not completed, it's on the priority task of the department.

- The practices adopted by the department to provide instant services on land related issues to the citizens, Goa has involved several government departments and they have done the entire programme through common points of understanding. This programme is adopted ICTs in a wide range to provide transparency, accuracy and in a larger perception the involvement of ICTs in land management decrease the involvement of political power on land transactions or land disputed cases. In India any e-governance scheme basically based upon the techno-managerial concepts, in Goa they also involved this mechanism as the project is complex in nature which needs; computerisation of land records, issuance of certified RoRs, integration with banks and financial institutions for secure transactions during land registration, data entry, integration of land records and registration for faster mutation process and to several statistic reports etc. Involvement of ICTs in a extensive way helps the project management, services to the citizens less timely etc. and one good thing is that the

departmental staff is well aware of the techno-managerial reforms in this field and they don't need regular helps from the outside service provider for their computer trouble-shooting, which proves the training of staff regarding this topic was quite good.

- Goa is an economically sound region than most of the other states, continuous funds and support from the state government helped the department to complete the programme in time. After issuance of computerized RoRs the department earned at an average of 20% increase of revenue, the same story on online registration. The state has earned more revenue after implementing the online programmes, not only that it helps to reduce department times, decrease cases of corruption and land records litigation etc.

In Goa, especially on land administration they have successfully implement e-governance to provide hassle free services to the citizens, but like all programme it is viable to understand the strengths, weaknesses, opportunities and threats; which are listed below:

<b>Strengths:</b>	<b>Weaknesses:</b>
<ul style="list-style-type: none"> <li>• Inter-departmental integration</li> <li>• Technology adoption/ reforms</li> <li>• E-governance schemes has implemented to provide faster delivery as well good</li> </ul>	<ul style="list-style-type: none"> <li>• Shortages of technical experts</li> <li>• Internet connectivity in villages/ tehsils; without that e-governance schemes will be successful only in city areas.</li> </ul>

<p>governance</p> <ul style="list-style-type: none"> <li>• Regular monitoring and meetings for sharing updates and thoughts</li> <li>• Citizens are happy with the technological evolution</li> </ul>	<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>• Provide land title to the citizens</li> <li>• Land bank generation become more easy and may use for any development projects, fasten land acquisition</li> <li>• Helps for industrialisation and urbanisation, as land records becomes easy to maintain</li> </ul>
<p><b>Threats:</b></p> <p>Neglects revenue administration, more dependent upon techno-managers-scientists</p>	

The exercise was focused on and aimed to understand the status of the programmes in terms of their strengths, weakness, opportunities and threats. The discussion highlighted some important components that are crucial for planning process for the mentioned subject. The exercise helps to understand the grey areas of the programme and also helps to prioritize issues which are essential for the future developments.

## 7. Lessons learnt and Future Benefits

Goa has reached a milestone as far as land records modernization and public service delivery are concerned, but there is a constant need for betterment in the field of integration of registration and land record. The state is faced growing demographic pressure, public demands and new challenges of technologies on land records modernization. Best practices topic are meant for replicability of the model to the other states where the programme is just introduced; so from

the Goa model there is ample of resources which are easy to implement. This system not only helps to provide citizens by faster services on land related issues, but also helps government institutions or the dealing department, such as the system easily decipher the areas whereas govt. land or common property resources has been encroached, or helps to identify govt. land to distribute in big projects. Through the XML integration with land records (Dharani) with registration (GAURI) helps to decrease the time consumption of citizens for mutation of their property, after the full integration there is no need to send XML to the Mamlatdar or Tehsil offices for mutation, it will automatically shows on the system.

- Integration between the departments of registration and land records helps for smooth functioning of the project.
- Proper training of staff and officials helps to understand and execute the programme successfully.
- Awareness of citizens regarding their land rights and computerization process helps to transit the age-old manual system towards a modern computerizes system.
- Goa Land Title Bill is ready for approval from Legislative Assembly; through this the entire scenario of land record management has been changed. Owners will be highly benefited as their properties records will be secured from any sort of misplace, wrong or misspelt records.

## **8. Major Points and Way forward**

Goa had a golden past and bright future in the field of land administration and management, which acts as a big impetus for the states GDP and developmental functionaries. It is hoped that the practices taken forward by the department will be a well accepted model for the state where no land records or land management has been done so far, or not been updated or computerised. Some areas where they need intense effort for better services and management;

- Before Land Titling Bill is introduced, it is mandatory to fulfil all the components has been executed and completed successfully.
- Integration of land records with registration would be more prioritize by both the departments and the nodal technical agency.
- Internet connectivity of each tehsil offices and SROs at village level must be established, by which data entry and mutation initiation would not be hampered and land records is been updated.
- Digital signatures of all the officials must be issued so that getting certified copies of RORs became easier.

## **REFERENCES AND ADDRESS OF WEB-SITES**

- Land Reforms in India: Computerization of Land Records: Volume-10, Edited by; Wajahat Habibullah, Manoj Ahuja, Published by Sage Publications 2005.
- Land Records Management in India: A Plea for Reforms; Edited by; AAA Faizi, H.C. Behera, Concept Publications
- Land Reforms in India; P S Appu; Vikash Publishing House
- The State and Land Records Modernization: Pradeep Nayak; Published by Foundation
- Conclusive Land Titling: A need for reforms in land administration: Edited by; AAA Faizi and Snehasis Mishra, Manak Publication
- The Goa, Daman and Diu Land Revenue Code, 1968 and Rules
- <http://goalawcommission.gov.in/reports/report22.pdf>
- [http://www.goanews.com/blogs\\_disp.php?bpid=7](http://www.goanews.com/blogs_disp.php?bpid=7); Land Titles - A messy affair in Goa; Ramakant Khalap
- <https://egov.goa.nic.in/dslr>

**Survey by ETS & GPS in Gujarat and  
reconciliation  
of the newly generated data with the legacy  
data**

## **Contents**

1. Land resource management in India and Gujarat
2. Background of Survey and Settlement Operations in Gujarat
  - A. Brief history of land records management in Gujarat
  - B. Survey and Settlement Operation in Gujarat
  - C. Flaws in present land records system
  - D. Need for computerisation of land records
3. Re-Survey in Gujarat
  - A. Objectives of Re-Survey
  - B. Criteria to carry out Re-Survey
  - C. Legal Provision for Re-Survey
  - D. Reasons behind for opting pure ground method for survey of land parcel
4. Technicality of the project implementation
5. Re-Survey activities
  - A. Pre-Survey activities
  - B. Survey activities
  - C. Post-Survey activities
  - D. Status and developments of Re-Survey

6. Process of reconciliation of the newly generated data with the legacy data
  - A. Handling objections
  - B. Promulgation of survey records
7. Results of the Practice: Outputs and Outcomes
8. SWOT Analysis of the project
9. Implications of the Project to the larger context of Land Titling
10. Major findings and Key Challenges

### **List of Figures**

Figure 1: Original Tippan–Field Measurement Record–Unscaled

Figure 2: Survey/ re-survey of cadastral maps using modern technology

Figure 3: Details of Pre-Survey activities

Figure 4: Re-Survey Progress as on 31-05-2015

Figure 5: Increasing rate of Resurvey Record Promulgation

## **List of tables**

Table 1: History of land parcel survey in Gujarat

Table 2: Methodology and instruments employed for Re-Survey

Table 3: Particulars and respective details of the project

Table 4: Details of Re-Survey activities

Table 5: Progress of Re-Survey

Table 6: Budget estimate, physical target under the NLRMP

Table 7: Details of promulgation of land parcels

Appendice-1: Resurvey Progress as on 06-06-2015

## **Abbreviation**

DGPS	Differential Global Positioning Services
DLRO	Directorate of Land Resources Office
DTDB	Digital Topographic Database
ETS	Electronic Total Station
ETSM	Electronic Total Station Machine
FMB	Field Measurement Book
GCP	Ground Control Point
GIS	Geographic Information System
GoG	Government of Gujarat
GoI	Government of India
GPS	Global Positioning System
LPM	Land Parcel Map
NLRMP	National Land Record Modernization Programme
SoI	Survey of India
RoR	Records of Rights
SRO	Sub-Registrar Officer
UT	Union Territory
VF	Village Form

## **Glossary**

Tippan	Land measurements for each field written (not drawn on the map) on a paper. Also known as ‘field measurement book’
Akar bandh	A booklet that contains details of extent of land hold by a land holder, based on which rate of land revenue can be calculated
Gunakar book	A book that contains calculations of the area of land parcels as part of land records
Khatedaar	Land holder

## **1. Land resource management in India and Gujarat**

Land records management is one of the critical aspects of land resource management, as the classification of land reflects its use and ownership; and it has a crucial role in the growth and development imperatives of the country. Land Records Management is an essential part of any land related reforms, as land records not only meant for ownership or cadastral maps but also has direct impact on different issues like tenancy, consolidation of land, etc. Several studies on land reforms have pointed out that land reforms remains unfinished agenda in absence proper land records. Sound land records have direct impact on nation's developmental growth and economic strength. Also that, without proper land records, any government would be unable to understand the revenue collection capabilities, find difficult to identify surplus (government land) land for acquisition for development projects, encroachments of government land, etc. Every state faces public demands for constant improvement of land records management; having proper land record system is considered as duty of the state government.

After several deliberations and financial allocations under Five Year Plans for land resource management over almost five decades, it is now corresponding to Land record modernisation in India, which is now covered under the National Land Record Modernisation Programme (NLRMP). The NLRMP is launched in 2008 by the Government of India (GoI). This programme aims to modernize management of land records, and consequently minimizing scope of land disputes, enhancing transparency, and moving towards guaranteed

conclusive land titling<sup>1</sup> in the country. Land Record Modernisation envisages deployment of modern equipments and methodologies along with the space technology to bring efficacy in survey, creation and updation of Land Records within shorter time span, and good accuracy compared to old methods of survey and record preparation. The increasing availability of the High Resolution Satellite Images and Aerial images are preferred for modernisation of land records ([www.sac.gov.in](http://www.sac.gov.in)).<sup>2</sup>

Updating of land records would not be possible without survey of land parcels. Some of the States in India are never been surveyed or they have started the process little time ago. This is one of the main reasons for inequitable, slow and partially achieved land reform in the entire country.

The NLRMP keeping in view of existing land records situation, incorporates mainly five components:

- (a) computerization of land records including RoRs computerization, digitization of maps, integration of

---

<sup>1</sup> Based on four basic principles: (i) a single window to handle revenue records (including the maintenance and updating of textual records, maps, survey and settlement operations and registration of immovable property), (ii) the mirror principle, which refers to the fact that cadastral records mirror the ground reality, (iii) the curtain principle which indicates that the record of title is a true depiction of the ownership status, mutation is automated and automatic following registration and the reference to past records is not necessary, and (iv) title insurance, which guarantees the title for its correctness and indemnifies the title holder against loss arising on account of any defect therein.

<sup>2</sup> <http://sac.gov.in/SACSITE/SAC-Flyers/menu-links/society/5.5%20MODERNISATION%20OF%20LAND%20RECORDS.pdf> accessed on 12 August, 2015.

textual and spatial records and set up of land records storage and retrieval system etc.

- (b) survey/resurvey using modern technology,
- (c) computerization of registration and integration with land records,
- (d) training and capacity building of the concerned officials and functionaries, (e) implementation of Web-GIS (web source: rural.nic.in).<sup>3</sup>

Among 23 states and Union Territories (UT), Gujarat is one the States that has partially completed all the components of the NLRMP.

Historically, the objective of conducting survey was to collect land revenue from the owners of the land, in proportion to the area they held. The land records are being maintained for various purposes including levy and collection of various taxes and land revenue, which was the principal source of revenue for the States. With development of technology and its wider reaching ability, it is imperative to introduce update changes in tax structures and to land records through computerisation and digitisation. The manual system of record keeping has become cumbersome, opaque, susceptible to manipulations, and hard to administer. The process of updation of land records has posed some critical challenges on one hand while facilitated overall citizen and state centric governance on the other hand. The citizen centric sources include access, utilisation, and information regarding land use status.

---

<sup>3</sup>

<http://rural.nic.in/sites/downloads/our-schemes-glance/SalientFeaturesNLRMP.pdf>

During digitisation of land records, some issues and challenges have emerged. They are: data entry and verification of legacy data; regular updation of the records because of mutations; updation of boundaries and errors getting propagated to the village maps, legal sanctity of computer generated RoR and accuracy of maps and different scales of available maps (Habibullah and Ahuja, 2005: 25–26).

The study focuses on Gujarat, which has partially completed all components of the NLRMP and has used a method for updation of land records, which is considered to be one of the best practices. Use of ETS (Electronic Total Station) & GPS (Ground Positioning System) in Gujarat has addressed the challenge of modernisation of land records, i.e. conciliation of the newly generated data with the legacy data.

## **2. Background of Survey and Settlement Operations in Gujarat**

### **A. Brief history of land records management in Gujarat**

In Gujarat, original land survey was carried out during 1880–1915 while using chain and cross staff, without geo-reference. Hence, some problems of overlap and gap were reported. The available village maps were not up to scale (adjusted to remove overlap and gap). The measurements for each field were written (not drawn on the map) on a paper which is known as the ‘tippan’ for that particular parcel of land. This parcel of land was assigned a unique number and was known as the survey number of this land parcel. The area based on the measurements taken for the land parcel was calculated manually by using a ready reckoner. The calculations of the area of land parcels have been preserved in a land record

known as ‘Gunakar book’. The survey number, its area, the occupant of this parcel and various other characteristics of this land parcel were tabulated in a land record known as the ‘Aakar Bandh’ (Akar—to collect land revenue from the land holder in proportion to the area of land held by the land holder). The *Akar Bandh* refers to a booklet that contains details of extent of land hold by a land holder, based on which rate of land revenue can be calculated. Each *Akar Bandh* contained details of land, such as survey number, its areas, status of occupancy, and other necessary information for classification of the land. The sum total of the areas of all survey numbers in a village gave the total area of the village; it also incorporated the land area under various categories, such as the cultivated land, the cultivable land, the uncultivable waste land, land under roads and other public purposes.

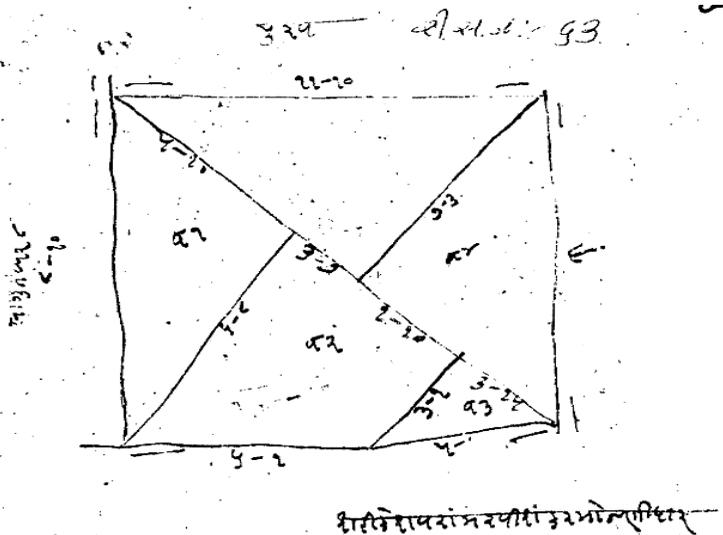
The spatial record was prepared by drawing the map of the land parcel based on the measurements recorded in the *tippan* of the survey number. All these sketches/ maps of all the survey numbers of the village were mosaicked to generate a village map. The survey number, its area and the occupant recorded at the time of survey was used to generate a village form no 7/12. The mutations (i.e. The change in ownership due to sale, the death of the occupant, etc.) and any encumbrances on this land like bank loan, mortgages, etc. are also recorded in village form no 7/12 and mutation register of the village i.e. Village form no. 6 of that village (revenue department.gujarat.gov.in, 2011: 11).<sup>4</sup>

---

4

[http://dolr.nic.in/dolr/downloads/pdfs/NLRMP\\_Tenders/gujarat\\_anand\\_seven\\_dist\\_survey.pdf](http://dolr.nic.in/dolr/downloads/pdfs/NLRMP_Tenders/gujarat_anand_seven_dist_survey.pdf) accessed on 8 August 2015.

**Figure 1: Original Tippan–Field Measurement Record–Unscaled**



Source: Re-survey Manual, Government of Gujarat

Each *tippan* (village maps and field measurement book) contained measurement of land. While modernising land records, a problem of inaccuracy was addressed. The Land survey was to be conducted every 30 years for recalculation and assessment of agriculture land, as per the provision of Gujarat Land Revenue Code, 1879 (Section 95, 106 and 135 G) but for various reasons no re-survey has been carried out until 1960 in Gujarat. The Cadastral survey was completed in the year 1960 for the entire state, which became a basis for land records and mutation related issues.

## B. Survey and Settlement Operation in Gujarat

The survey or re-survey has been undertaken in different parts of Gujarat at different point of time. The entire Gujarat had never been surveyed for a long time after the Independence (Table-1).

**Table 1: History of Land Parcel Survey in Gujarat**

<b>Sr.</b>	<b>Survey years</b>	<b>Areas</b>
1.	1880 to 1900	Original Survey in five Districts of erstwhile Bombay Presidency (i) Ahmedabad (ii) Kheda (and Anand) (iii) Surat (and Navsari) (iv) Bharuch (and Narmada) (v) Panchmahal (and Dahod)
2.	1947 to 1950	Ex – Inam villages of above five districts
3.	1880 to 1950	Villages of former Princely States where Survey was completed during Ex- State regime and were treated as scientifically surveyed
4.	1954 to 1969	Ex- Merged state i.e. un-surveyed villages of these areas
5.	1948 to 1969	Villages of Dang District (Tribal District)
6.	1948 to 1956	Resurvey / Revision Survey of the Ex-Saurashtra area villages un-surveyed and /or partly surveyed
7.	1950 to 1974	Survey of Villages of Kachchh District

Source: Re-survey Manual, Revenue Department, Government of Gujarat, p.1–2

### C. Flaws in present land records system

As the title of land is presumptive in nature, it is not a document of ownership. The survey records of the past were old, mutilated, inconsistent and undated. There exists a wide disparity between Survey Records – RoR (Record of Rights) and actual ground position: (a) 15 lakh sub-division in survey number are pending; (b) the documents were registered without true title of ownership; (c) there is a need for correction in Forest Land in the State; and (d) the number of roads, canals were not reflected in the survey records and RoR.

Tardy and flawed mutation process and lack of inter-departmental coordination are identified as flaws of the land records system. Three different agencies- RoR (Mamlatdar Office/Revenue), Registration (Sub Registrar Office) and Survey (DLRO–Directorate of Land Resources Office) formats are not interacting with each other. For instance, at sub-divisional level, any land that is recorded in the village form no. 7 (VF-7), but the same land record is not available at DLRO and SRO. The Sub-Registrar records and registers the deed for division in survey number but there is no mutation entry of it carried out either in VF-7 or the Survey record.

The corresponding laws and rules are independent of each other. Hence, information regarding property related cases admitted in the Courts is not available to all the three agencies. This provides a ground to unscrupulous elements to manipulate the records and its misuse. The registration of land holding or selling is mainly for the purpose of collecting Stamp Duty; therefore, the RoRs /title holding and consequent mutations related information is not available to the three agencies simultaneously. Moreover, the registration of all

documents creating any right or interest over the land is not mandatory in the existing property laws. In case of urban properties, the documents can be registered even when seller's name is not recorded in the RoR.

The law relating to registration of documents (deeds), i.e. Indian Registration Act and Transfer of Property Act, 1908, which allows registration of a document without checking validity of the document. This situation arises because it is not in framed with the objective of providing a state guarantee of title to land.

#### D. Need for computerisation of land records

The current system of land information management suffers from a number of shortcomings, such as,

- The survey records are outdated
- About 20 - 25% of the records have also been lost / destroyed / mutilated
- Available records are not commensurated with the ground realities
- Old survey was carried out using conventional instruments available at that time, i.e. 5% Tolerance limit was allowed. The records thus were inaccurate.
- Documents in poor shape and not available at all to the citizens/ public domain.

The original survey which was done manually with the survey techniques available at that time had inherent limitations. The error margins were large compared to what are acceptable as on today, the area calculations done manually also introduced human errors to some extent. The mosaicking done to generate the village maps was not perfect due to the margins of measurement errors. The updation did not kept pace with the activities at the ground level. This has given rise to mismatch between the textual and the spatial record and between the record and ground situation itself. The government of Gujarat (GoG) started ETS survey since 1990-1991. Approximately 250 villages have been surveyed. Since 1999-2000 the GoG started using GPS, through which approximately 30,000 hectare land has been surveyed.

### **3. Re-survey in Gujarat**

#### **A. Objectives of Re-survey**

The major objectives for carrying out resurvey with modern and sophisticated technology for the entire Gujarat are as follows:

1. Creation of an updated Cadastral and Title database through a re-survey and measurement, and based on Title verification process
2. Creating an integrated view of textual and graphical information on land records
3. Replace manual records with digital records, update the records and ensure consistency of land related information across the departments.

It was envisaged that this will enable establishment of a system which will help in the continued maintenance of updated land records, and will provide ready and smooth access to required information to all stakeholders, including citizens and the Government.

#### B. Criteria to carry out Re-survey

Under the existing law, the Government can declare resurvey without re-calculation of assessment in below mentioned conditions.

> 25% Difference found between original land record and the ground realities, or

> 25% of land record become torn or destroyed, or

> 30 years completed of original survey or even before of it, if required.

#### C. Legal Provision for Re-survey

After 30 years of original survey or even prior to it, under Section 95, 106 and 135G of the Gujarat Land Revenue Code, the Government can declare to carry out resurvey of agriculture land without recalculation of revenue assessment. The State Government has taken the decision to alter the century old iconic format of Record of Right i.e. Village Form No. 7/12, in two separate formats. After the resurvey, the new Village Form No. 7 will be provided to holder with Land Parcel Map (LPM) showing details of measurement and dimensions with allied details.

D. Reasons behind for opting pure ground method for survey of land parcel

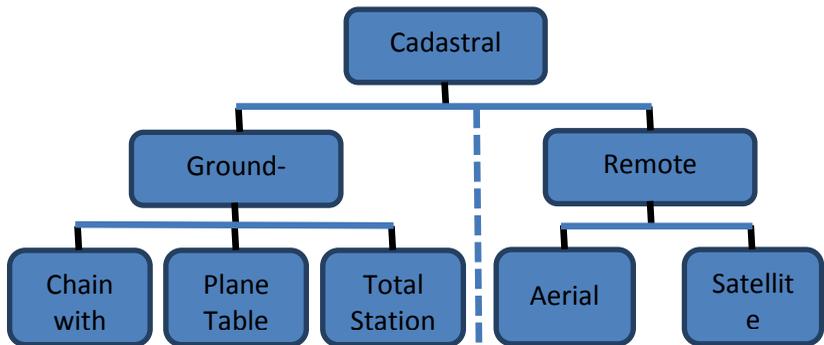
As per the NLRMP manual the state is free to opting any suitable model for the purpose, due to their topographical conditions and implementation capabilities. State has opted pure ground method by using ETS and GPS for survey all land parcels, as they were found to be the best on the count of accuracy among all other land survey methods. As depicted in the table 2, pure ground method provides much accuracy than other two methods, i.e. hybrid method by using HRSI and Aerial photo with Ground truthing. Thus, Gujarat opted for pure ground methodology to obtain best class accuracy on land parcel surveying.

**Table 2: Methodology and instruments employed for Re-survey**

<b>Sr. No.</b>	<b>Methodology</b>	<b>Instrument/ Media</b>	<b>Planning Accuracy at Parcel</b>
1	100% Pure Ground Truthing	DGPS + ETS	+/- 15 C.M. and better
2	HRSI + Ground Truthing – Resolution achievable +/- 2.5 Meters	IKONOS image	6.5 Meters
	1.0 Meter	CARTOSAT	3.0 Meters
	0.6 Meter	QUICKBIRD	1.5 Meters
3	Aerial Photography + Ground Truthing	Scale 1:10,000	+/- 30 C.M.

Source: A presentation on ‘NLRMP in Gujarat State’ by Principal Secretary, Survey & Settlement Commissioner, Gujarat State

**Figure 2: Survey/ re-survey of cadastral maps using modern technology**



Source: NLRMP Guidelines: DoLR, GoI

#### **4. Technicality of Project Implementation**

The project implementation includes the following steps:

1. Establish Ground Control Points across the Project Site
2. Prepare the land parcels for the proposed exercise
3. Map the identified boundary vertices
4. Reconcile the re-survey data with the available records and finalize the dimensions of each land parcel
5. Deliver the finalized land parcel dimensions and the land records in prescribed formats

**Table 3: Particulars and respective details of the project**

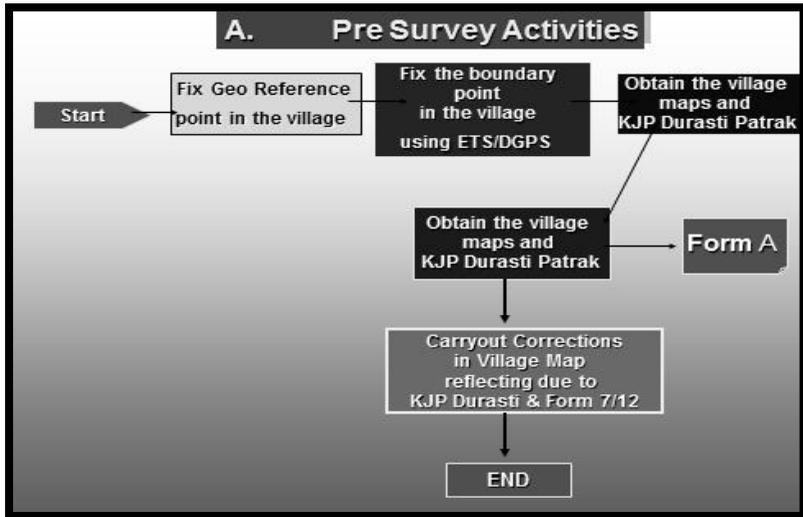
<b>Particulars of the Project</b>	<b>Details</b>
Districts	33
Taluka	248
Villages	18,623
Land Parcels +	1.18 Crore
Area ( Sq. km )	1,96,000 Sq. km
Area under resurvey	1,60,000 Sq. km
Years	5–6
Budget	Rs. 400–450 Crore
Plan to Complete	Year 2016

Source: A presentation on ‘NLRMP in Gujarat State’ by Principal Secretary, Survey & Settlement Commissioner, Gujarat State

## **5. Re-survey Activities**

The entire activity is segmented into three different categories due to the various steps involved in conducting re-survey of a village and preparation of updated land records based on the re-survey.

**Figure 3: Details of Pre-Survey activities**



Source: LR Branch, Gujarat State

#### A. Pre-Survey Activities

This is the first phase of re-survey which has been conducted in off-field/ laboratory, and the entire success of the project is largely depends on this set of activities. The activities that have been carried out during the phase are as follows:

1. Preparing control point network based on Survey of India (SoI) control points to validate and with the help of these points' village boundary points has been fixed by using Differential Global Positioning Services (DGPS) and ETS.
2. Validate with the age-old Village maps, mark the changes in the map.
3. Generation of 'Form A': Get e-dhara data in XLS format villages wise from live land records with 'chalto' number

at the time of starting re-survey activities in village. DLRO enables each village to start this work.

4. Based on live records, agency can easily prepare 'Form A' and maintain linkages with e-dhara data and surveyed data.

## B. Survey Activities

1. Carry out the field re-survey in the village using DGPS/ ETS to collect the information for the concerned land parcel including all structure and features on the ground in a pre-determined format.
2. Generate the land parcel sketch in pre-determined scale. Serve a notice to the occupant along with this sketch, which shows necessary details that mentions any objections raised by the occupant. Government officials help in this process but the activity primarily needs to be done by the survey agency. The signature seal of the government officials is affixed to the notice.
3. If any objections are received, a register is maintained by the survey agency to record and track the objections raised by the owners(s) /enjoyer(s). The objections should also be flagged in the DTDB (Digital Topographic Database). The official along with the concerned person and other related persons visit the concern land parcel. The decision on the objection is taken by the representative of the government. The representative can modify/ change the map and other record as per the decision taken by her/him.

**Table 4: Details of Survey activities**

<b>DGPS Control</b>	<b>Interval – Distance (km)</b>	<b>GPS Observation Time</b>	<b>Accuracy</b>
Base Station	Centre of AOI	> 72 Hrs.	1: 1,00,000
Regional Station (if required)	Between 40 - 50 K.M.	> 12 < 24 Hrs	1: 50,000
Primary Control	16 KM average	>4 Hrs	1: 50,000
Secondary Control	4 K.M. average	>1-2 Hrs	1: 20,000
Tertiary Control	1 K.M. average	> 15 Minutes	1: 10,000
Auxiliary Control Point	200 Mtr. or more	> 15 Minutes	1: 10,000

Source: Gujarat State Resurvey Project [Technical & Commercial Volume]

**C. Post-Survey activities**

1. Generate records based on the re-survey and information gathered from the field.
2. In particular, generate a discrepancy register which gives the details of land parcels showing the area difference between re-survey and old survey records in VF 7.
3. In case, where the area of resurveyed land parcel is more than 5% and such land parcel has non-private land (government or semi-government land) on any of its side, the resurvey has to be taken up.
4. Digitize the old *tippan* (FMB) of the survey number and super-impose on the resurveyed parcel land showing the variation on the map as well as on the area. The encroached area (of adjoining Government or Panchayat land) is to be

shown by dotted lines and to be presented with different shading. The encroachment land is to be registered in the prescribed format and to be submitted to the Authority. The Survey agency needs to create the 'Encroachment Register'.

5. Handing over the record for promulgation. This activity is to be done by the specified government official.

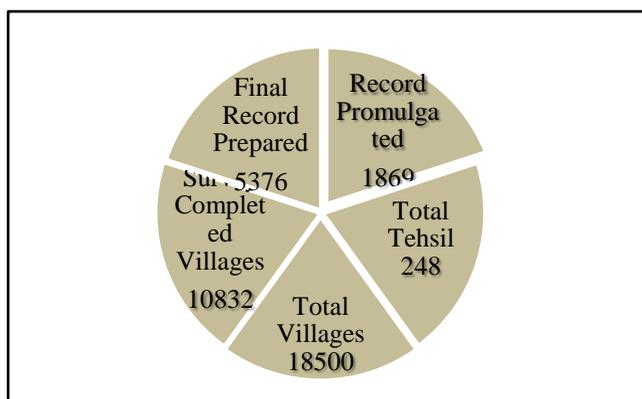
A gram sabha plays crucial role for finalizing maps and area of all the owners of that particular village. Organizing gram sabha is considered essential in the NLRMP Guidelines. It is an important part of resurvey activities. The state follows this guideline to complete the matching process of legacy data with the newly surveyed data. In this gram sabha, village residents, Prant Officer, District Collector, Directorate of Land Resources, employees of Revenue Department /Mamlatdar and Superintendent of Land Records need to be present. It is the responsibility of the employees of Revenue Department to explain the following points in details: aim of resurvey, its benefits, type of activity during resurvey, activity by agency, duties of *khatedar* (land holder) and 'paiki dharak' during measurement. The surveyor and the concerned Survey agency provide information in gram sabha through distribution of pamphlets.

#### D. Status and developments of Re-survey

The state has never been surveyed as whole until 2000. During resurvey, there are three steps followed: (a) GCPs network creation, (b) matching with old and new data, and (c) creation of form A, checking accuracy and organizing gram sabha before finalization.

The resurvey is expected to mirror the ground reality, especially when land is used for different purposes, such as land is acquired for canals or construction of roads and public utility works by the Government, distribution of land amongst the *khatedar* (joint land holders / holders of joint family), mutual distribution and sub division of land amongst brothers, unauthorized usage of non-agriculture land and so on. As the revenue was not calculated in Gujarat after last survey, i.e. in 1920, the Government of Gujarat has suspended collection of land revenue since 1997.

**Figure 4: Re-Survey Progress as on 31-05-2015**



Source: A presentation on ‘NLRMP in Gujarat State’ by Principal Secretary, Survey & Settlement Commissioner, Gujarat State

The GoG decided to use DGPS, Electronic Total Station Machine (ETSM), Digital Levelling Machine, Network based RoR software (NIC software), and GIS (Geographic Information System) based spatial data processing software. The resurvey was started in 2009–2010 in Gujarat. Initially, 1,196 villages were covered out of 1,219 in Jamnagar (western

Gujarat) and Patan (central Gujarat) were covered under the resurvey and in the second stage, five districts were covered by using Ground Control Network (GCN) during 2010–2011. In the following year, three more districts were covered, totalling to 2,742 villages. As per the record of Settlement Commissioner & Director of Land Records (June 2015), 11,218 villages of total 18,500 villages in 248 taluka (block) are covered. Total 5,544 records are prepared and 1966 villages are promulgated.

**Table 5: Progress of Re-survey**

Sr. no.	Year	No. of District	Name of District	Status
1	2009-10	3	Jamnagar, Devbhumi Dwarka, Patan	Measurements Completed
2	2010-11	4	Gandhinagar, Ahmedabad, Sabarkantha & Aravalli	
3	2010-11	3	Rajkot, Morbi ,Kachchh ,	Measurement Under Progress
4	2011-12	5	Vadodara, Chhotaudaipur Mahisagar, Tapi, Surendranagar	Measurement Under Progress
5	2012-13	10	Amreli, Bhavanagar , Botad, Kheda, Mehsana, Dahod, Banakantha, Panchmahal, Surat & Narmada	Survey / Gram Sabhas in progress
6	2013-14	8	Bharuch, Junagadh, Girsomnath Porbandar, Anand , Valsad, Navsari, Dang	GCN Work completed and measurement in progress
		<b>33</b>	<b>Total</b>	

Source: LR Branch, Gujarat State

**Table 6: Budget estimate, physical target under NLRMP**

Budget Estimates (in crore)	50% GOI Share (in crore)	Physical Target	Action Plan to utilize grant under NLRMP for the year 2015-16			
			April-June	July - August	Sept-Dec	January-March
6,072.00	3,036.00	Resurvey of 9532 Villages	2645 villages	2006 villages	2715 villages	2166 villages
		Record Promulgation of 8115 Villages in 33 Districts of the State	1598 villages.	2292 villages.	2112 villages.	2113 villages.
		Estimate of Expenditure	Rs. 11.96 Crore	Rs. 17.15 Crore	Rs. 15.80 Crore	Rs. 15.81 Crore

Source: A presentation on 'NLRMP in Gujarat State' by Principal Secretary, Survey & Settlement Commissioner, Gujarat State

## **6. Process of reconciliation of the newly generated data with the legacy data**

This is the vital process of administration because the entire project is largely depends on the mismatch of Draft LPM of the newly surveyed data with the old maps. In order to promulgate the resurveyed land records, the following steps are taken:

## A. Handling objections

- (i) Within 10 days, the occupants shall register complaint to the competent authority if they find any kind of mismatch regarding the LPM and measurement details of the newly surveyed data vis-à-vis old data.
- (ii) The necessary actions will be taken from the agency; if required, revised survey can take place.
- (iii) Survey team needs to maintain the objections tracking register. The objections also need to be tracked in DTDB in GIS form.

## B. Promulgation of survey records

- (i) After getting complaint registers in the prescribed format, the adjudication team visit the village with the instruments.
- (ii) The adjudication team take up objections village-wise and day-wise. The team is expected to inform the concerned farmers/ land owners well in advance and dispose all objections as per rules laid down under relevant Act.
- (iii) As soon as disposal of objections is completed, a final notification under relevant rules and regulations are published. This step completes the process of survey.

- (iv) The village land parcel register is updated by the Agency/s as per objection disposal information received from the adjudication team.
- (v) The final information is taken to data centre, established at the state level, to generate all deliverables.

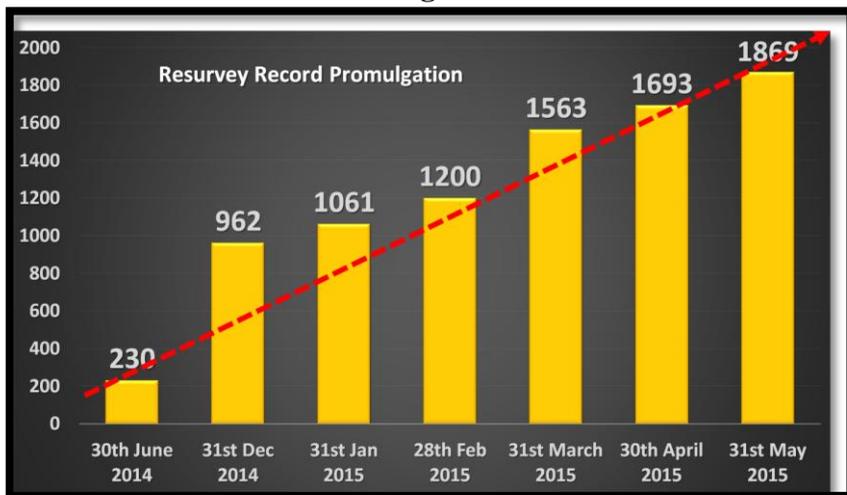
The following table shows the success story of adjudications and reconciliation of legacy data with newly surveyed data of 6 sample taluka of Gujarat.

**Table 7: Details of promulgation of parcels**

Sl.	Taluka Name	Total Villages	Total Parcels	Objections Raised	Objections Percentage	Adjudication Done
1.	Dhrol	42	29,865	3,410	11.42%	100%
2.	Jodiya	53	4,3007	3,537	8.22%	100%
3.	Kalavad	98	56,362	6,563	11.64%	100%
4.	Dwarka	44	21,717	600	2.76%	100%
5.	Bhanvad	63	31,986	1,290	4.03%	100%
6.	Lalpur	72	42,874	1,902	4.44%	100%

Source: Cadastral Survey with special reference to Gujarat Re-Survey Projects: presented in India Geospatial Forum Epicentre – Gurgaon 08 Feb 2012 by IIC Tech.

**Figure 5: Increasing rate of Resurvey Record Promulgation**



Source: LR Branch Gujarat State

## **7. Results of the Practice: Outputs and Outcomes**

Gujarat is one of the pioneer states for implementing re-survey of all land parcels with the help of ground survey techniques. The outcome of the project is helpful to all the stake holders – land owners, the government and industrial units. The outcomes of the project are listed below:

- Land Records and maps depict the ground reality.
- Citizens now get the accurate map of their parcel against their land ownership.
- Criminal offences related to land are reduced
- Encroachment of land whether in public land, government land or CPRs are now easily identified.

- The process of land acquisition becomes easier by the government.
- Land bank generation becomes easier. The government is able to identify areas for implementation of housing schemes for poor or some such government projects.

Apart from these, there are many long-term outcomes may come from the project such as; poverty reduction, *patta* distribution, creation of more jobs, etc.

### 8. SWOT Analysis of the project

Many states of India have studied the model of Gujarat regarding resurvey of land parcels which reveals the success story of the project. The strengths and weakness are described here;

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• Modern instruments used for resurveying of land.</li> <li>• Technological innovations are used widely</li> <li>• Litigation is lessened</li> <li>• Entire village map is developed with geo-reference and datum; which</li> </ul>	<ul style="list-style-type: none"> <li>• Entire project is largely depending on the vendors</li> <li>• Shortage of in-house technocrats</li> <li>• Different vendors involve in different areas; uniformity of deliverables differ</li> </ul>

<p>is useful for future needs</p> <ul style="list-style-type: none"> <li>• Citizens are happy with the technological evolution</li> <li>• Financial credit or banking loans approval would be easier, farmers can use for agricultural usages, which may increase productivity</li> </ul>	<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Land bank generation become more easy and may use for any development projects, facilitate land acquisition</li> <li>• Helps industrialisation and urbanisation, as land records are clear and easy to maintain</li> <li>• Judicial cases on land disputes could be lessened</li> <li>• Encroachment of lands could decrease</li> <li>• Increase manifold opportunities; food security, access to credit, smooth selling of properties, poverty reduction, etc.</li> </ul>
<p style="text-align: center;"><b>Threats</b></p> <p>Neglects revenue administration, more dependent upon techno-managers-scientists and vendors (outsourced work)</p>	

## 9. Implications of the Project in the larger context of Land Titling

After the Independence, every state has done the land management and land records updating in a different way. As every State has adopted different mechanism the degree of success was also different in magnitude. By implementing centrally sponsored scheme of the NLRMP, all the states and UTs that are equipped with better land records management system and are able to provide necessary services to the

citizens. The ultimate aim is to move towards the conclusive title. To implement the Torrens system, every state need to complete implementation of all the components of the NLRMP successfully. Gujarat is doing considerably well on the count of NLRMP of Resurvey components, especially when some States are still facing the issue of resurvey of land parcels and creating new land records, and reconciling with the older records.

## **10. Major findings and Key Challenges**

The model developed by the Gujarat could be useful to the States which are yet to start revisional survey, for instance, Uttarakhand, Jammu and Kashmir, Himachal Pradesh and Bihar. These States can plan to consider the following components and processes:

- The accuracy level of revisional survey for all the parcels
- The integration of modern technologies is an exemplary
- Reconciliation ratio of age-old data with the newly surveyed data is successful
- Scope of errors in every stage of the survey is minimal.

Some of the challenges and recommendations for the nodal department as well the Government of Gujarat are as follows for the betterment of the project:

- As the projects involve not only the technical robustness but also owner's emotions and sentiments so it is mandatory to address their issues in more generous way.
- The project is spread over 16-20 years: The government must think how to reduce the stages involves without compromising the processes and the desired outcomes.

- This is majorly vendor driven project: The quality technical training to the internal staff and officials is mandatory, also the administrative training and instrumental training is critical. In vendor driven project, the citizen service delivery also need to be examined.
- Heavy expenditure involves in this project: The government needs to rethink what are the cost-cutting measures that could be adopted/ developed.
- Gram Sabha involvement not meant for dictatorship of the local administration: The gram sabhas need to be more interactive and people-centric. A gram sabha should not be used as an instrument to provide faster promulgation by compromising democratic processes and people's participation.

**Appendice-1: Resurvey Progress as on 06-06-2015**

Sr. No.	Name of the District	No. of Taluka	No. of Villages	Survey Completed	Final Record Prepared	Record Promulgated
1	Jamnagar	6	422	422	422	174
2	Devbhumi Dwarka	4	257	257	257	166
3	Patan	9	522	522	441	58
4	Gandhinagar	4	287	287	257	113
5	Ahmedabad	10	494	494	493	107
6	Sabarkantha	8	710	710	710	436
7	Aravalli	6	682	682	682	682
8	Kachchh	10	930	668	486	50
9	Rajkot	11	600	162	47	18
10	Morbi	5	352	160	38	4
11	Surendranagar	10	592	452	275	3
12	Vadodara	8	693	432	53	2
13	Chhotaudepur	6	897	292	0	0
14	Tapi	5	521	320	101	1
15	Botad	2	59	59	59	18
16	Mehsana	10	616	316	170	18
17	Banaskantha	14	1239	625	254	19
18	Amreli	11	616	235	53	0
19	Bharuch	9	673	328	52	0
20	Narmada	5	574	420	183	0
21	Bhavnagar	10	698	199	0	0
22	Kheda	10	529	148	7	0
23	Surat	10	795	218	53	0
24	Panchmahal	7	609	272	53	0
25	Dahod	8	702	239	10	0
26	Mahisagar	6	737	267	28	0
27	Valsad	6	468	347	39	0
28	Navsari	6	389	284	27	0
29	Dang	3	311	310	106	0
30	Junagadh	10	520	316	3	0
31	Gir Somnatah	6	348	99	1	0
32	Porbandar	3	159	129	11	0
33	Anand	8	365	70	0	0
	Total	42	2560	1555	187	0
	<b>Grand Total</b>	<b>248</b>	<b>18500</b>	<b>10832</b>	<b>5376</b>	<b>1869</b>

Source: LR Branch Gujarat State

## REFERENCES

- Aggarwal, Manoj. (2015). 'NLRMP in Gujarat State', Settlement Commissioner Office, Gandhinagar: Government of Gujarat
- Dalwadi, Himanshu. (2015). 'A concept paper on conclusive land titling', draft paper to be presented at Chintan Shibir (June 2015), Gandhinagar: Government of Gujarat
- Habibullah, Wajahat and Manoj Ahuja (eds.). (2005). *Land reforms in India: Computerisation of land records*, Vol 10, New Delhi: Sage publications.
- Modi, Prakash. (2015). 'e-Jamin: Integrated Land Records Management System of Gujarat', Revenue Department, Gandhinagar: Government of Gujarat
- . (2009, December 15). Experiences from states–Gujarat: Survey Using Electronic Total Station (ETS) and Global Positioning System (GPS) presented at Technology Fair, New Delhi,  
[www.dolr.nic.in/.../Gujarat%20\[Experinces%20from%20states\].ppt](http://www.dolr.nic.in/.../Gujarat%20[Experinces%20from%20states].ppt)
- . (2015). Jamin Daftar Shaka hastakni Kamgiri (Tasks under Land Record Office), presented to Settlement Commissioner & Land Record Director, Gandhinagar: Government of Gujarat
- Revenue Department, Gujarat State. 2013. e-Jamin Integrated Land Records Management System of Gujarat, Retrieved from <http://www.cips.org.in/documents/2013/12th->

13th\_Dec/e-dhara-gujarat.pdf Accessed on 28 August 2015

IT Audit of Computerisation of land records  
<http://www.icisa.cag.gov.in/Printed%20reports/State%20Reports/Gujarat/IT%20Audit%20of%20Land%20records%20Computerisation%20in%20Gujarat.pdf>

Aggarwal Manoj, 2015. Best practices in land records-Gujarat state  
<http://dolr.nic.in/dolr/downloads/PDFs/Workshop%20on%20Best%20Practices%20in%20Land%20Records%2016-17-Feb-2015%20-%20Presentation%20-%20Gujarat's%20Best%20Practices.pdf>

Das Ishan, 2012. Implementing Effective Land Information System in India under NLRMP - Infotech Experiences  
<http://dolr.nic.in/Presentations%20Symposium%20on%20Towards%20Effective%20Land%20Administration%20in%20India/Land%20Administration%20Symposium.pdf>

Prasad Hari, (2012). Cadastral Survey with special reference to Gujarat Re-Survey Projects, presentation by IIC Geo-Survey and IIC Technologies Ltd at India Geospatial Forum Epicentre, Gurgaon on 8 February 2012 Retrieved from  
<http://dolr.nic.in/Presentations%20Symposium%20on%20Towards%20Effective%20Land%20Administration%20in%20India/IGF%20-%202008%20Feb%202012%20-%20Ver%203.0.pdf> Accessed on 28 August 2015

Ramachandran Vilasini, nd. Revenue Department E-Governance initiatives in Gujarat

<http://siteresources.worldbank.org/INTINDIA/Resources/Gujarat.pdf>

Geo-referencing of Village Maps Project (GVMP) for Maharashtra State

<http://www.mrsac.gov.in/en/projects/geo-spatial-datasets-projects/geo-referencing-village-maps-project-gvmp-maharashtra-state>

National Land Records Modernization Programme (NLRMP) in UT of Dadra & Nagar Haveli

[http://egovreach.in/uploads/presentation/dadraNagarHaveliSilvassa/NLRMP\\_DNH.pdf](http://egovreach.in/uploads/presentation/dadraNagarHaveliSilvassa/NLRMP_DNH.pdf)

Singh T P, nd. Applications of Multipurpose Common Geospatial Database in Gujarat

[http://www.incois.gov.in/documents/isprs\\_presentations2009/Day3/Session%20I/TP%20Singh.pdf](http://www.incois.gov.in/documents/isprs_presentations2009/Day3/Session%20I/TP%20Singh.pdf)

Request for Proposal (RFP) (ONLINE e-TENDER) For Selection of Implementation Agency (IA) For Implementation of NLRMP – National Land Records Modernization Programme UT ADMINISTRATION OF DAMAN & DIU

<http://www.daman.nic.in/tenders/2015/NLRMP/RFP.pdf>

Government of Gujarat, A Presentation On Land Use Planning in Gujarat State, n.d.

<http://www.urbansanitation.org/live/hrdpmp/hrdpmaster/hrdp->

asem/content/e48335/e48799/e48940/e48800/eventReport48931/Gujaratlandusel.pdf

Land records computerization, e.Gov@Gujarat, Gujarat, vol. 1, no.4, March 2003 (special issue on land record computerization)

<http://www.gujaratinformatics.com/pdf/vol1/NewsletterMarch03.pdf>

---. Government of Gujarat, (n.d). Computerisation of Land Records and E-Dhara  
<http://revenuedepartment.gujarat.gov.in/computerisation-of-land-records>

---. 2011. Request for proposal (RPF) for re-survey of Anand & other seven districts of Gujarat State, Retrieved from [http://dolr.nic.in/dolr/downloads/pdfs/NLRMP\\_Tenders/gujarat\\_anand\\_seven\\_dist\\_survey.pdf](http://dolr.nic.in/dolr/downloads/pdfs/NLRMP_Tenders/gujarat_anand_seven_dist_survey.pdf) Accessed on 27 August 2015

---. 2012. *Resurvey Manual*. Gandhinagar: Revenue Department, Government of Gujarat.

---. 2012. Cadastral Survey with special reference to Gujarat Re-Survey Projects, presentation by India Geospatial Forum Epicentre – Gurgaon, 08 Feb 2012. Retrieved from <http://dolr.nic.in/Presentations%20Symposium%20on%20Towards%20Effective%20Land%20Administration%20in%20India/IGF%20-%202008%20Feb%2012%20-%20Ver%203.0.pdf> Accessed on 14 August 2015

## **Conclusion and Way Forward**

The implementation of practices for land resource management adopted by different State and UTs in India are to the different degree of success, as each State has their own distinct land administration system. Each state's requirement is different in the context of geographic, historical, social, economic and political situation.

One point is common for all the States is the land administration has changed dynamically in last two decades; the changed scenario has asked for different requirements for land resource management. Land resource management in the contemporary times requires strong bureaucracy, involvement of ICTs, skilled (technical) and incapacitated staff that can handle citizens' services and multi-tasking, and mechanism that facilitates citizen service delivery. In order to evolve an efficient land administrative system, reform in existing legislations, computerization process, integration of all land departments for efficient and instant inter-departmental works, the introduction of e-governance services that fulfil the needs of citizens, etc. are considered crucial.

Though land management is under the state jurisdiction, the policy implementation and design of a programme, largely depends on both, the Centre and State. Each state has put efforts to manage immovable property related issues. The introduction of the NLRMP in 2008 by the Government of India has facilitated states and UTs for using suitable modern technologies, ICTs, and in creating a digital environment for the land administration. Since then, the entire land resource management revolves around the NLRMP. The NLRMP aims

at Conclusive Titling, i.e. conclusive proof of ownership by replacing the presumptive nature of existing system. Therefore the guidelines of the NLRMP stress on various components of land administration, such as, adopting suitable modern technology for updation of land records, computerization of land records, capacity building of the staff, outsource some tasks, and citizen centric services.

The present five reports of different states—Andhra Pradesh, Bihar, Delhi, Goa and Gujarat show that each state has achieved excellence in performing one or two tasks, following NLRMP guidelines. Each state has developed new models on these counts, which are robust in nature and meets the requirement of the state in particular. Therefore, generalisation on the state’s performance seems difficult. Yet, we have tried to present an overview of state’s performance in a comparative manner in tabular form.

<b>States/ UTs who have Implemented the Activity</b>	<b>Andhra Pradesh</b>	<b>Bihar</b>	<b>Delhi</b>	<b>Goa</b>	<b>Gujarat</b>
<b>Computerization of property Registration</b>	Yes	Yes	Yes	Yes	Yes
<b>Integration of Land Records and Property Registration</b>	Yes				Yes
<b>Computerization of Land Records</b>	Yes	Yes	Yes	Yes	Yes
<b>Stoppage of manual issue of Record of Rights (RORs)</b>	Yes			Yes	Yes
<b>RORs on the Web</b>	Yes	Yes		Yes	Yes
<b>Capacity building</b>					Yes
<b>Survey/Re-Survey of land parcels</b>	Started	Started		Started	Completion Stage

In order to present a roadmap for future, we have shared positive nature of the projects and have identified grey areas. As the computerisation related processes play a key role for better and efficient management of land administration, all the five state/UT has completed the computerisation phase. This process largely differentiates the states from other states of India on the counts of transparency and putting check on corrupt or middlemen driven practices, compare to the earlier manual process. Moreover, citizens in particular, of the respective states are largely benefited by the practices evolved by the administration; they can easily calculate stamp duty, registration fees, having access to digital land records, and instant delivery of necessary printouts. However, other important components, such as integration between Registration and Land records are still not achieved by every state. The Integration between different departments is meant for enabling the entire workflow of land administration such as Mutation of land records can be easily done, management and decision taken power would increase. On this count, the state administration needs to amplify their efforts. However, other state has launched the initiative.

The ultimate aim of current land administration is to introduce title system which is conclusive in nature, as per the NLRMP guidelines. After studying the current scenario of these states, there is a long way to go. All the five states have performed some of the components for the betterment of its revenue administration; each state can still explore potentials sustenance of the project in a long-run. For instance,

- Organising Gram-Sabhas at regular intervals to resolve land-related issues locally, trying to find out alternate sources or processes that address cross-cutting concerns of

the project, imparting quality training of the revenue officials have a huge scope of improvement, bringing in efficiency and sustainability.

- The Government of India and respective State Governments provide financial and technical support to the concerned department to rejuvenate the entire system of revenue mechanism.
- The present study has identified some gaps, which need to be taken care of on urgent basis. The capacity building of the internal staff has required special attention.
- All the five States have executed some or all the components of the NLRMP in vendor-centric mode. The vendor's performance and capabilities need to be monitored and evaluated at regular intervals. Such studies are recommended, which incorporate issues of cost-effectiveness, efficiency, performance appraisal, and exploring alternatives for implementation of the project, especially the computerisation related processes and using open source software.