Evaluation of Computerization of Land Records in Gujarat

Ashish Vachhani
Hari Charan Behera

CENTRE FOR RURAL STUDIES
LBS National Academy of Administration

EVALUATION OF COMPUTERISATION OF LAND RECORDS IN GUJARAT

Ashish Vachhani
Hari Charan Behera

Centre for Rural Studies
Lal Bahadur Shastri
National Academy of Administration
Mussoorie

CONTENTS

PREFACE

In the early 1980s, the Government of India made a significant policy decision i.e. Computerization of land records. It is among the first G2C (Government to Citizen) model under ICT application in India. The Conference of Revenue Ministers on Land Reforms etc. held on 18th May, 1985 in New Delhi highlighted the importance of strengthening of revenue administration, updating of land records and computerisation of land records. This was the first initiative towards major policy reforms in land record management by computerisation. Since 1988-89, the Union Government has been extending financial support to States willing to implement computerization of land records. However, implementation has been a challenge in India, with "Land" being a State subject, it is the responsibility of the State to monitor the progress in the computerisation of land records. The Centre has limited control over the States to execute the programme. However, it is observed that States which have implemented the programme have earned many benefits out of the programme. Increase in efficiency, transparency and accountability in the revenue management system has been a notable contribution of the computerization of land records project towards good governance. This has also facilitated the government in planning and decision making in land reforms and rural development programmes. Quick access to land records, reduced transaction cost, etc have benefitted the landholders to a great extent.

The Evaluation of Computerization of Land Records in Gujarat is sixth of its kind undertaken by the Centre for Rural Studies (CRS), Lal Bahadur Shastri National Academy of Administration, Mussoorie.

We hope this report will provide valuable insights into the implementation of the project in Gujarat as well as other States.

Ashish Vachhani
Hari Charan Behera

ACKNOWLEDGEMENT

The report is an outcome of the research project on "Evaluation of Computerization of Land Records in Gujarat" undertaken by the Centre for Rural Studies, Lal Bahadur Shastri National Academy of Administration, with the financial support from the Department of Land Resources, Ministry of Rural Development, Government of India. We are grateful to the Secretary, Department of Land Resources, Ministry of Rural Development, Government of India and the officials for their assistance in bringing out this report.

We gratefully acknowledge the contributions of Mr. Padamvir Singh, IAS, Director, Lal Bahadur Shastri National Academy of Administration, Mussoorie, Mr. Prem Kumar Gera, IAS, Joint Director, and Mr. Yatendra Kumar, formerly Coordinator, Centre for Rural Studies for their guidance and valuable inputs.

We express our thanks to officials from the Government of Gujarat who whole hearted extended cooperation for completion of the field survey successfully. The support of Prof. P.S. Choondawat, Department of Sociology, M. S. University, Baroda is greatly acknowledged. We also thank Dr. A.P. Singh, Associate Professor, National Institute of Administrative Research (NIAR), LBSNAA for his academic inputs in the study. The research scholars engaged for the survey in Gujarat merit immense appreciation for their committed efforts for timely completion.

The efforts by our team at the CRS, Dr. Saroj Arora, Ms. Melanie Hilton, Dr. V.V. Singh, Mr. Kennedy Singh, Mr. Ramesh Kothari, Mr. Samar Kashyap, Mr. Deepak Kumar, Mr. S.S. Kharola, Mr. Adesh Kumar, Mr. Dalip Singh Bisht and Mr. Suresh Kumar deserve commendable appreciation.

Ashish Vachhani
Hari Charan Behera

CHAPTER-1

INTRODUCTION

Among various dimensions of land administration, management of land records is of immense significance. Land records management in States depends on collaborative functioning of several departments such as Revenue, Survey and Settlement, Registration to name a few. These Departments have enabled synchronization of the process of management of land records through creation, protection and recreation of land records. The synchronized functioning of all these Departments dates back to the British administration in India. Subsequently, in the post-independence period, the Revenue, Survey and Settlement and Registration Departments played a pivotal role in management of land records.

1.1 Why land records management?

Land records management is a 'State subject'. The State, being sovereign owns land. It is the State's responsibility to ensure better management of land, its records and provide adequate security to the landholders. In the Constitution of India, under the 45th entry of the State list in Schedule Seventh, maintenance of land records has been clubbed with the Record of Rights and Cadastral Surveys.

Land records management is an important sovereign function in both rural and urban areas. In the rural areas, it has significant impact on livelihood of the people, who directly or indirectly depend on agriculture and other allied sectors. Further, to ensure proper development planning and decision making about agriculture or industry, the accurate database on land is crucial. An accurate database can only be ensured through proper land records management system.

1.2 Traditional land records management

Traditionally, land records had been maintained in two formats- text and graphic format. These two compliment each other and depict the same information in different formats. Not only does the nomenclature for the text based records vary from State to State, but the number of Registers too varies. Some common land records, as maintained by the Revenue Department are as follows:

1. Village Map: A pictorial map showing village and field boundaries.

2. Field book: It is an index to the map in which changes to the field boundaries, their area, details of tenure holders, methods of irrigation, cropped area, other uses of land etc. are recorded.

3. Records of Right: It records the names and classes of tenure of all occupants of land.

The role of the Revenue Department functionaries is very significant in record keeping, storage, retrieval, mutation and updation of land record data. The process of land record management involves patwaris/lekhpal/talatis at the village level and the Circle Officer, Deputy Tehsildar, and Tehsildar at the Tehsil level. Traditionally, land related activity at the village level is mainly vested with the Patwaris. In the mutation process, it is the Patwari who brings to the notice details on sale and purchase of land. He initiates the process in the mutation activity. Therefore, over the years, a Patwari has an important role in the process of land record management at the ground level.

The Patwaris are responsible for data entry and updation of land records. The data related to crop statistics, revenue collection, village census and other accounts, are maintained by the Patwaris. Furthermore, the Patwaris issue the Records of Rights (RoRs), Native/Residence certificate, etc to the residents within his jurisdiction and also to the public, if required.

1.2.1 Land records maintenance at the village level and issues

Traditionally, the Patwaris/ Lekhpals/ Talatis/ Village Accountants are the custodians of land records at the village level. The nature of job and responsibility of

Patwaris varies in different States and is based on the State's Revenue Manuals and Rules. Sinha (2005, p. 87) has highlighted the monopoly function of the State with regard to preparation, maintenance and updating of the Record of Rights. He describes that wherever there is exercise of such monopolistic powers it gives rise to a certain paradigm of behavior-asymmetric information, interface with the rights, rent seeking and effecting institutional distortions. As far as behavior of the Patwaris at the village level is concerned, he further traced that Patwaris are, to this date, the custodians of the rights of the people including tenants and the landless recorded in the RoRs. The Patwaris, other revenue officials and the rural elites have entered into a joint hegemony over tenants and the landless. The state representatives on which lies the legal duty to protect the rights, turn out to be doing just the reverse. Thus, there exists a contradiction between the institutional objectives and individual objectives of the revenue officials. A study in Gulbarga district of Karnataka by Ahuja and Singh (2003) reported that marginal and small landholders were easily targeted than large landholders by the Village Accountants to extract bribes. Manojkumar, et al (2008) study in Rajasthan also noticed a similar kind of situation that existed in the manual process.

In addition to rent seeking behaviour and other behavioural distortions of lower revenue funtioneries, the manual process also lacks uniformity, transparency and efficiency in the system of maintenance of land records.

A case study of Bhoomi (CLR project in Karnataka) by A. Rama Mohan Rao and P.V. Bhat (2005) identified that the manual system had the following drawbacks:

- The issue of land records depends on the availability, mood and interest of the Village Accountant /Patwari.
- Sometime, an individual is asked for extra money by the Village Accountant.
- Manually written land records may not be legible.
- Land records books are not maintained properly.
- It takes a long time to reproduce the land records for the succeeding year after incorporating the current year crop details and liabilities, changes in ownership or cultivators, etc., that happen through mutations.
- Though its low cost, but the delivery system is slow.
- No clear cut procedures exist to pinpoint tampering of ducments, etc.

There are also other issues directly linked to the poor maintenance of land records. Farmers' access to institutional finances and farm subsisdies depend on submission of proper documents. Record of Rights is an

important document submitted for verfication to the concerned financial institutions. Evaluation study in the States of Rajasthan, Tamil Nadu, Karnataka and West Bengal by the Centre for Rural Studies, LBSNAA also highlights the problems faced by the farmers in the manual land record management in obtaining institutional finances and other services provided by the government and cooperative agencies.

Lack of proper land records management leads to land related disputes. It may arise out of wrong entry or documentation in the RoR, tampering in record of rights, missing documents, etc. One notices large number of land disputes in India and many of them are due to improper land record management. The Directorate of Land Reforms, MoRD report[1] identifies that in States like, Andhra Pradesh, Bihar, Gujarat, Madhya Pradesh, Karnataka and Maharashtra the number of land related cases filed are 65875, 86291, 47926, 53806, 42582 and 45634. The numbers of cases pending in court in these very States are 7663, 9773, 7526, 24210, 4061 and 1010. Many of the disputes related to land are due to lack of proper survey and settlement, ferged land registration, benami landholdings, etc. The Expert Group on Prevention of Alienation of Tribal Land and its Restoration (in 2004 and 2006) has noted with dismay, "there existed a serious procedural and practice related anomalies. Cases of

[1] The data excerpted from the report of the expert group on prevention of alienation of tribal land and its restoration(2004), MoRD, Govt. of India

restoration of land were pending for more than 10 years. The order sheets in several cases reflected that the revenue officials over a period of time were too busy to hear these cases and hearings were adjourned". It is believed that a proper land record management mechanism will help in addressing these issues.

1.3 Modernization of land records in India

Considering the issues in the traditional land record management system, Government of India had launched two major central sponsored schemes for the modernization of land record management. These include Strengthening Revenue Administration and Updating Land Records (SRA& ULR) and Computerization of Land Records (CLR).

1.3 (a) SRA & ULR

SRA and ULR is meant to modernize survey techniques with the provision of modern equipments such as GIS, GPS, Theodolite, creation of record rooms, purchase of computers and its accessories for speedy survey and settlement activity, updation of land records data and resurvey activities in the regions where surveys were undertaken more than three decades back.

1.3 (b) Computerization of Land Records (CLR)

Computerization of land records includes computerization of both spatial and non-spatial data. This is mainly meant

for digitizing and storing existing data without making any changes in the old data. The objectives of computerization of land records are to ensure efficiency in service deliveries such as speedy delivery of Record of Rights, faster updation, easy retrieval of data, to ensure quality and better transparency of the revenue system, reduce corruption, lessen land related disputes, depiction of correct data and better accuracy, etc.

1.3 (c) National Land Record Modernization Programme (NLRMP)

In 2008, the Government of India introduced a new programme called National Land Record Modernization Programme (NLRMP). The objective of the programme is to provide guaranteed titles (conclusive titles)[2] to landholders. The new programme inherits the idea from the Torrens System[3] which has been adopted in many advanced countries like Australia, New Zealand, USA,

[2] Conclusive titling- a conclusive title may be defined as an unassailable and conclusive proof of ownership of property. In India, the Registration Act-1908 provides for registration of deeds and documents, but does not confer title on the property owner, whose titles remains merely 'presumptive'.
For details "Moving towards clear land titles in India: Potential benefits, a road map and remaining challenges" by Rita Sinha can be referred.

[3] Torrens System-"Land registration system in which the government is the keeper of all land and title records, and a land title serves as a certificate of full, indefeasible and valid ownership. It was invented by Sir Robert Torrens, the 19th century reformer of Australian land laws"

England and Canada. The vision to provide secure and guaranteed titles will replace presumptive titles which is an age-old practice in India. Computerization of Land Records (CLR); Strengthening Revenue Administration and Updating Land Records (SRA and ULR) have been merged under NLRMP. The NLRMP also includes the Computerisation of Registration Department. The new programme centers on the basic idea of bringing the commonality, unity and integrity in the system while keeping the objectives of each scheme intact.

1.3.1 Detailed about Computerization of Land Records

Computerization of Land Records is a hundred percent centrally sponsored scheme of the Ministry of Rural Development (MoRD), which in the year 1988-89 was launched on a pilot basis covering eight districts in eight different States, namely Rangareddy (AP), Sonitpur (Assam), Singhbhum (Bihar), Gandhinagar (Gujarat), Morena (Madhya Pradesh), Wardha (Maharashtra), Dungarpur (Rajasthan) and Mayurbhanj (Orissa). Decision was taken to computerize core data contained in land records in order to assist development planning and to make records accessible to people, planners and administrators. Under the scheme, financial assistance is provided for completion of basic data entry of land records, setting up computer centres at tehsil level, subdivision and district. Setting up a land records data centre and imparting computer training to revenue personnel for regular updation and

distribution of land records through computers (Meena, S.D. et al, 2005, p.22). The necessary arrangements such as efficient servers, clients, UPS, biometric devices, printers, etc were provided to each State for setting up computer centres. The facilities of online service delivery and online mutations were arranged for efficiency and transparency in the system. Data like landholding details, crop details, account details, irrigation source, etc were uploaded and stored in the computer based database. In order to provide better facility to farmers the computer centre was made online and attached to the lending banks for easy service delivery.

The achievements under computerization of land records progress as documented by Department of Land Resources, Government of India shows that out of 5261 tehsils in 3521 tehsils the data entry has been completed; the mutation backlog updated completed in 1918 tehsils; 3460 tehsil level computer centres are ready to provide e-service with regard to land records. In 2923 tehsils the computerized RoR is being distributed and still in 1361 tehsils the manual copies of RoR are being distributed (DoLR report as on 31st January, 2008). The state wise progress report on computerization of land records shows that Gujarat and Karnataka are leading States as far as achievement of CLR programme is concerned.

1.3.1. (i) Distribution of Record of Rights (RoRs)

In RoR distribution, Gujarat and Goa are leading the front. As per the DoLR report (2008) by the Department of Land Resources, Ministry of Rural Development all 225 tehsils in Gujarat and in all 11 tehsils of Goa the computerized RoR is distributed. The important feature is that the manual RoR distribution has been completely stopped in these States. Karnataka, Tamil Nadu, Rajasthan, Maharashtra, Haryana and Himachal Pradesh are also forerunners in fast achieving the target. Apart from north eastern States, other States such as Bihar, Jharkhand, Kerala, Punjab and Uttaranchal are lagging behind as far as computerisation of land records program is concerned (ibid.)

1.3.1. (ii) The Main objectives of the schemes are:

1. To provide computerized copies of ownership, crop details and updation of RoRs to landowners on demand;
2. To provide legal sanctity to computer generated certificates of land records after authentication by authorized revenue officials;
3. To ensure accuracy, transparency and speedy dispute resolution;
4. To provide fast and efficient retrieval of information for decision making;

5. Implementation of a comprehensive land information system for better land-based planning and utilization of land resources; and
6. To focus on citizen-centric services related to land and revenue information.

1.4 Land records in Gujarat

The Gujarat Land Revenue Code 1972 defines the maintenance of land records. Land records provide details about land information which consists of original measurement sheets, city maps, gunakar books, inquiry register, challan register, mutation register, tenure abstracts, etc. Some very important information available in land records are: Village Form-7 and Village Form -12, which together form VF-7/12. VF-6 is called 'Hak Patrak',which is about mutation and 'Village Account Form-VF-8A' about account details. The combination of these records namely, landholding details, account details & mutations is known as Record of Rights (RoRs). Record of Rights is maintained under the provisions of the Land Revenue Code, 1879.

Village Form 7 (VF-7) describes details such as survey number, tenure, farm name, land types and its area, waste land portion, assessment, owners name borrowings and other rights details, tenants details, conditions imposed by government, etc. Form 12 (VF-12) consists of the name of cultivators, seasons, crop name, crop area, types of cultivation (self, labourer, tenant),

irrigation source, equipment used for irrigating land, number of trees and any other non-agriculture development on land.

Form 8A is about accounts of landholding. Village Form 8A consists of: Account number, names of landholders, survey number of land, survey number assessment, circulations of local fund tax, educational tax and other tax imposed by Panchayats and details of land use.

Village Form 6 or Hak patrak is about mutation. Mutation means any change in the RoR in the form of ownership title, liabilities, area and assessment change, tenant details, other rights like tresspassing, water right from well etc., land holding type and conditions.

1.5 About mutation

Traditionally, it was the 'talati' who used to accept application for mutation activity. S/he initiated the process of mutation with entry in the mutation register, issued notices to the landholders and other concerned parties. With a waiting period of thirty days after the notification if the talati received any objection by any of the parties, he could register it in the dispute register. The dispute hearing is made by the 'Mamlatdar'. If there was no objection within 30 days, the Circle Inspector/Dy. Mamlatdar (competent authority) was expected to visit the village and take up the decision to further process. The final decision on mutation and updation is taken up by the Mamlatdar. According to

the decision, the talati would make changes in the VF 7/12 and VF 8A. If required, the talati would create a new 7/12 as well as new khatas in VF 8A.

Revenue department has classified 35 types of mutations in the State. Some well known mutation types are sale, inheritance, distribution, government allotment, consolidation, amalgamation, liabilities, piece land, land acquisition, by order, etc. At present, the registration office is not computerized and both the offices are not directly connected.

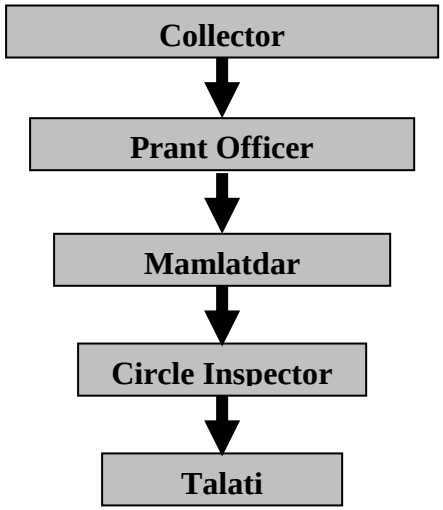
1.6 Crop details accounted in the register

There are three crop seasons in a year for which crop inspection is done by a talati after physically visiting each field/plot. The crop seasons are Rabi, Kharif and Unalu. This process is known as "Pani", but it is observed that a talati does "Pani" once in a year. Under cultivation, the following details are entered in "Pani Patrak";

1. Crop year
2. Crop name
3. Cultivators Name (Farmers Name)
4. Area (Crop taken)
5. Irrigation details
6. Tree details with government trees
7. Water sources
8. Non-agriculture development if any.

1.7 Organizational structure of Revenue Administration at the district level

The following is the organizational arrangement in the Revenue Administration in Gujarat.



A District Collector is Head of the Revenue Adminsitration at the district level. S/he is also the Executive Head of revenue matters. Review, monitoring of progress and decision making authorities are with the District Collector. S/he is also the Chief Executive Officer in the District to undertake review of the programme on Computerisation of Land Records. A District Collector is assisted by the Deputy Collectors at the district level. The Prant Officer cum Sub Divisional Magistrate looks after the land administration of a sub-division and is the

appellate authority at the taluka level. At the taluka level, a Mamlatdar is the Executive Magistrate and deals with revenue matters and land administration. Deputy Mamlatdars assist the Mamlatdars in land related activities. A taluka is subdivided into circles which are looked after by Circle Inspectors. At the village level, the talati functions as a Village Accountant as well as Village Administrator. Therefore, talatis are considered as talati-cum-mantri (TCM) in Gujarat. The Village Forms have traditionally been maintained by the talati until recently when some of the records like mutation and 7/12 became computerised. Traditionally, a talati's functions include, collecting land revenue at the village, maintaining and updating land records. This made her/him one of the important persons at the village level. In some districts of Gujarat, a talati is also tasked with the responsibility of more than one village. A talati has to maintain more than a dozen registers for which s/he has to be accountable to public and senior officials.

1.8 Computerization of Land Records in Gujarat

In Gujarat, **"e-Dhara"**, the computerization of land records has evolved as a successful e-governance project. The programme has been implemented in almost all the States with 100% finance support from the Centre. The e-Dhara project was effectively launched in the State between the year 2004 & 2005. The project was implemented with the objectives to eliminate manual records. As of today, the computerisation of land records is complete in all 225

talukas of 25 districts in the State. Almost all talukas are operational and already delivering computerized Record of Rights to landholders and other interest parties. The activities like data entry, verification or validation of data and mutation backlog updation are complete in all the districts. Manual issuance of RoRs has been banned in the State. Initially, the prescribed fee for each computerized land record was fifteen rupees, however, in 2005 the State Government decided to reduce the prescribed fee to five rupees per copy.

1.9 Evaluation study

In order to create a virtuous cycle of information flow, to reduce cost to access, transactions, land related disputes and reduce workload of the revenue officials, CLR has evolved as a significant tool under the National e-Governance Plan (NeGP) in India. The Ministry of Rural Development, Government of India entrusted the study on "Evaluation of Computerisation of Land Records" to the Centre for Rural Studis (CRS), LBSNAA. So far, the Centre for Rural Studies has completed the evaluation studies in the States of Rajasthan, Karnataka, West Bengal, Madhya Pradesh and Tamil Nadu. In all the previous States taken up for the study, the programme was comparatively at the beginning stage. In view of this, the Centre for Rural Studies proposed another study in the State of Gujarat, which was one of the States, where almost all the talukas in the State had been operationalised under the computerisation programme.

Owing the responsibility, the Centre carried out a field survey in May-June, 2008. The CRS Faculty along with the research scholars from Maharaja Siyaji Rao University of Baroda in Gujarat carried out the evaluation study in Gujarat.

1.9.1 The objectives of the study

1. To understand the human resource development, capacity building and awareness generation taken up for the implementation program and adequacy of the same.

2. To examine the extent of efficiency which the land records computerization program had been able to bring in the revenue system and delivery of services to the landholders.

3. To broadly study hardwares and softwares used in maintenaning computerization of land records.

4. To assess the impact of computerization of land records and implications for rural development.

5. To examine the effectiveness of delivery of services to the landholders.

1.9.2 Hypotheses

Computerization of land records is to increase efficiency in service delivery compared to the traditional land records management process. Alternatively speaking, the computerization of land records will reduce the time of land holders to access RoR. Further, the time taken for mutation and updation of land records will be reduced once the computerization is fully operational in each taluka. The correction and entry of data is faster which guarantees easy availability and retrieval of data. The primary assumption has been that once the information flow is enhanced, the extent of the problem is going to be reduced. This will bring down the transaction cost and will be helpful in reducing the rent seeking behaviour on the part of officials and others.

1.9.3 Development of indicators

Keeping the objectives of the study in consideration, different indicators were developed for evaluation of computerization of land records. These indicators give a broad picture about the effectiveness, efficiency and relevance of computerization of land records under taken.

a. Enhancement in information flow

The first principal objective of the study has been to find out to what extent information flow has been enhanced by CLR. This can be judged by comparing both before and after computerization programme with regard to time taken for

obtaining computerized records, mutation and updation of records, data entry, updation and management of data base, etc.

b. Decrease in rent seeking behaviour

Information flow and rent seeking behaviour are inversely related. The objective of computerization of land record is easy flow of information. Therefore, it is necessary to examine to what extent the information flow has enabled to reduce the rent seeking behaviour. Computerisation of Land Records (CLR) has resulted in a wider dissemination of information at a lesser cost. Hence, the cost of the information stands reduced and thereby the rent being charged by the revenue officials and others who had monopoly access to the information has also declined. 'The others' in this case include local elite and influential persons who have had pre-existing access to land information. This study attempts to find out whether this objective of CLR has been met and if so to what extent.

c. Transparency in decision making

The problem of transparency in decision making is related to enhancement in information flow and decrease in rent seeking behaviour. However, there was a necessity to place it as a separate indicator in the sense that transparency in decision making is an objective to CLR in itself. The flawed record management and the limited information flow imply that the quality of decisions will not conform to

ground realities. As a consequence, the quality of decision is likely to be poor even where not influenced otherwise. This study proposes to test the extent to which this objective has been achieved under field conditions.

d. Reduced workload for revenue officials

Over the years, the work of lower revenue official has gradually increased , in addition to deal with revenue matters they are also assigned many other responsibilities. Therefore, one of the objectives is to find out whether computerization has reduced the workload of revenue officials. The respondents include: talati and mamlatdar.

e. Better conveyance

A major objective for the CLR was that it would introduce greater certainty in the property market and also reduce search and transaction costs. This study examines whether or not the CLR program is efficient in achieving this goal.

f. Improved planning process

One of the primary usages of CLR has been perceived as an aid and adjunct to the planning process. Needless to say, the planning process is a complex exercise which involves different streams of human learning. It must however have a strong statistical platform to stand upon. There are numerous planning exercises connected with districts, sub-divisions and villages which would require the constant use of land and land related data. While the

normal process may not make this data accessible immediately, the CLR based Land Information System (LIS) can provide this data instantly.

g. Reduction in dispute burden

It has been well accepted that a majority of the disputes and conflicts in rural areas are related to land. These land disputes have been analysed and it has been found that many of them stem from lack of perfect knowledge. Therefore, it is necessary to examine how this study has been effective for the dissemination of information relating to land which will lead to a reduction in disputes. These disputes or conflicts in the rural society act as a burden on the its economy as it results in a financial outgo in the form of litigation. Therefore, although not specifically conceived as a programme objective, it has been retained as an indicator.

h. Increase in revenue collection

Under impact analysis, increase or decrease in revenue collection can also be taken into account. The revenue collection in the form of issuing RoR is inevident. But how it varies across districts over the years needs some basic understanding.

1.9.4 Methods of Data Collection

The study was carried out in four districts of Gujarat (one district from each administrative division). These districts

were: **Vadodra, Navsari, Amreli and Patan**. Two sub districts from each district and one taluka from each subdistrict were selected for the study through purposive sampling. **Amreli** from Amreli subdistrict, **Khamba** from Khamba subdistrict in Amreli district, **Padra** from Padra subdistrict, **Shinor** from Dabhoi of Vadodara district, **Chikhali** from Chikhali sub district and **Jalalpore** from Navsari subdistrict in Navsari district, **Radhanpur** from Radhanpur sub-district and **Patan** from Patan subdistrict of district Patan were undertaken for the study. All the selected talukas had operational computerisation of land records. A few talukas among the selected talukas had a sizable number of SC and ST population as well. This was done with respect to represent all major social groups of society. Villages were selected through stratified random sampling, as wellas some criteria was taken into consideration on the basis of the size of the social groups, distance from the talukas, number of households, total khatedars and population. Households were selected through simple random sampling. The number of samples was selected on the basis of size of the total khatedars. In order to have a better representation and better response individuals above 18 years of age were selected as respondents. Taluka was mainly selected as a sample unit for the study. From the selected talukas revenue functionaries, technical personnel and a few other associate personnel were interviewed to have a better grasp on the study.

The questionnaires for the cultivators, Talatis, and Mamlatdars were employed for the purpose of data collection. The data was collected both from the secondary as well as primary sources. Secondary sources for data collection included documents, books, reports, cards, etc collected from different talukas and revenue offices.

Types and number of schedules

Household Schedules: 1260
Villages Schedules: 24
Mamlatdar Schedules: 8
Talati Schedules: 8
Computer Operator Schedules: 04

While dealing with the indicators used and their analysis, the study used the questionnaire method. The questionnaires were framed in relation to the objectives of the study and were were structured but left open-ended partially. The questionnaires were pre-tested under field conditions and the responses analyzed. Five questionnaires were used in the study.

Village Schedule: The questionnaire involved the collection of basic data on village characteristics. The respondents were usually the talati and some other knowledgeable village folks.

Household Schedule: This questionnaire focused on (i) the household (ii) Land (iii) General awareness about the

computerisation of land records (iv) General benefits occurring from computerisation of land records (v) Rent Seeking Behaviour (vi) Behavior of Conflicts / Disputes after Computerisation of land records (vii) Facilitation in availing Institutional Finance, and (viii) Mutation.

Mamlatdar Schedule: The questionnaire focused on (i) General information on *tehsils* (ii) Background of computerisation (iii) Training of staff (iv) Benefits of computerisation (v) Maintenance of online computerised land records (vi) Other miscellaneous information regarding the computerisation of land records.

Talati Schedule: This questionnaire reflects the attitudes of the patwari. The questionnaire focused on (i) Impact and extent of computerisation of land records (ii) Whether the method of mutation was simplified (iii) Land reforms before computerisation (iv) Benefits accruing from computerised land records system (v) Enhancement in information (vi) Decline in litigation (vii) Training.

Schedule for Computer Operator

The schedule for Computer Operator was designed to examine the technical and administrative aspects of land records computerization. This focuses on mainly the types of hardware & software used in CLR, maintenance of e-Dhara, benefits and problems of CLR, duties and responsibilities he/she handles and the difficulties faced by them.

References:

Ahuja, M. & A. P. Singh (2003). *Evaluation of computerization of land records in Karnataka.* Mussoorie, India: LBSNAA.

Bhatnagar, S. & R. Chawla (2005). Bhoomi: Online Delivery of Record of Rights, tenancy and Cultivation to Farmers in Karnataka. In Habibullah and Ahuja (Eds.), *Land reforms in India: Computerization of land records* (pp. 47-77). New Delhi: Sage Publications.

Manoj Kumar, T. K., Singh, A.P. & H .C. Behera (2008). *Evaluation of computerisation of land records in Rajasthan*, Mussoorie, LBSNAA.

Meena, S.D., Sisodia, O.P., Thakur, V., Shukla, D.R. & S.K. Narula (2005). Computerisation of land records: National perspective. In Habibullah and Ahuja (Eds.), *Land reforms in India: Computerization of land records* (p. 22). New Delhi: Sage Publications.

Sinha, B.K. (1998). *Evaluation of computerisation of land records in Morena District*, report submitted in Land Reforms Unit, Mussoorie, LBSNAA.

----------(2000). Dynamics of Land Records Management in Sinha & Puspendra (Eds.), *Land reforms in India: An unfinished agenda* (pp. 85-105). New Delhi: Sage Publications

Thangaraj, M. (2007). *Evaluation of computerization of land records in Tamil Nadu*, Mussoorie, India: LBSNAA.

Rao, A.R.M and P.V. Bhat (2005). Bhoomi: A Case Study in Habibullah and Ahuja (eds.) *Land reforms in India: Computerisation of land records.* New Delhi: Sage publications

http://www.fig.net/pub/fig_wb_2009/papers/country/country_sinha.pdf

http://www.businessdictionary.com/definition/Torrens-system.html

CHAPTER-2

e-DHARA: THE COMPUTERIZATION OF LAND RECORDS PROJECT IN GUJARAT

"e-Dhara Gujarat's project of computerisation of land records was made online in a record time of six months, with the unstinted support of NIC. This partnership of NIC and Revenue Department has opened up vistas to make Revenue administration more citizen friendly and transparent."

(Smt. Vilasini Ramachandran, IAS)

2.1. What is e-Dhara?

"e-Dhara" is the Computerisation of Land Records project in Gujarat. With due effect, since August 2004, major land records such as survey record, account and mutation record are computerized To implement the project in a controlled fashion, Vanthali taluka in Junagarh district was first selected on a pilot basis. With success of the pilot project, the computerisation programme was further implemented in rest of the districts of Gujarat. The able leadership of Vilashini Ramachandran, former Principal Secretary to Government of Gujarat, Revenue and technical advisory by the NIC enabled the successful implementation of the project in the State.

2.2 Bhulekh Software

The software used in the e-Dhara is called Bhulekh. This software has been designed by the National Informatics Centre (NIC) in Gujarat.

As such, the software is simple and has significant facilities for online delivery of service. The software contains different modules and is being maintained and managed by the NIC, Gujarat at it's headquarter in Gandhinagar. Monthly report from each district is reviewed by the State Monitoring Committee (SMC), Gandhinagar. Progress at each taluka level report is monitored by the District Collector. Review meeting takes place every month in each district under the Chairmanship of the District Collector. Mamlatdar reviews and monitor progress of CLR work at the village level. The entire system seems to be transparent. But there are certain problems which continue in many areas of e-Dhara operation, such as funds allotment for the maintenance and repairing has been a serious challenge for most of the talukas in the State. All talukas encounter with the problems of insufficient infrastructure, lack of adequate technical staffs or Computer Operators at the taluka level increases the burden of existing staff engaged in maintenance and delivery of RoRs. Huge queue in front of the e-Dhara Centre is noticed in every taluka during working days. Further, lack of adequate printers and UPS in some talukas is a barrier to smooth delivery of the service. There is no specific fund allocated to talukas for the purpose of maintenance and it is noticed that in some talukas, Mamlatdars utilize a portion of the continegency grants

allocated to the talukas for the maintenance cost. Lack of adequate staffs and technical personnel is one of the primary concerns in e-Dhara management. While the demand from the *khatedars* continues to increase but the number of Computer Operators at the taluka level remain the same. There is no instance of fresh recruitment of new staff. If the number of staff will remain same, it is expected that the burden on the revenue officials will increase further.

2.2.1 Bhulekh modules

The following modules are operational under Bhulekh software:

2.2.1 (a) Bhulekh Soft: Front office Module

- RoR issue, daily work reports, data uploading
- e-Dhara Process
- Mutation Application Receipt
- Entry Number generation with finger print authentication
- 135 D Notice generation, Delivery by village talati
- Noting the last 135D Notice delivery Date

- Land Record Computerization parameter wise queries-Taluka/Village wise
- Form 12 (Crop) Updation (Schedule Data Preparation Data Edit)
- Form 13 Summary Report of Form 12 entries
- Form 16 irrigation details entry and reports
- Old entry details, freeze/Unfreeze Khata/Survey Number
- Miscellaneous Reports

2.2.1 (b) Bhulekh Soft: Admin Module

- Administrator Activities
- Update Database Definition
- Bio-Device (Finger Print) Setup
- User Management & Privileges
- All Master files setting up

2.2.1 (c) Bhulekh Soft: Mutation Module

- Mutations are the transaction entries, which update the Land Records
- Identified 35 types of Mutations
- S-Form depicting the pre and post effect position of the entry
- Mutation locking and effect through Finger Print (Bio-Metric Device)

2.2.1 (d) Mutation Extension Module

- Structure Entry for the By Order/Kami Jasthi Platrak entries

2.2.1 (e) Scan Module

- Scans the VF6, 135D Notice office copy S-Form a Mutation Entry

2.2.1 (f) Bhulekh Soft: Correction & Updation Module

- Controlled application expires after the authenticated period
- Used to rectify the data entry errors

- Finger Print authentication to create the correction work list

- Automatic freezing of the khata number and survey number

- The distribution of thus module is restricted with strict requirement Evaluation

2.2.1 (g) Bhulekh Soft on Gujarat State Wide Area Network (GSWAN)

Record of Right and MIS availability

- Village Form 7/12 (Survey Paniya)

- Village Form 8A (Khata details)

- Village Form 6 (Hak Patrak)

- Khatedars Index

- Village Summary

- Taluka Summary

- Miscellaneous Reports

2.2.1 (h) Statistical Queries

- Mutation Entry Status

- Search details by khatedar name, khata number, survey number, farm name, etc.

- Paiki Multi-Khata details

- Tenure Statistics i.e. Juni sharat, Navi sharat, Avibhajya etc.

- Land Use statistics i.e. Gauchar, Waste land etc.

- Land Type Statistcis i.e. Jarayat, Bagayat, etc.

- Waste Land Statistics

- Tenant details

- Other rights and boja details i.e. piece land, premium land, rights like trespassing details, etc.

- Crop details village wise and taluka wise

- Agriculture Census

- Tree details and statistics

- Irrigation sources and equipment details
- PADTAR land details
- Farmer Book

2.3 Land Records on Intranet/Internet

Within a few years of launching the e-Dhara project in the State, it was thought that e-Dhara may evolve as a centralized process of land record management, where there will be no power delegated to the talatis at the village level, this goal was achieved happened in the first few years of implementation itself. It was found that the officers at the taluka level have got exclusive power of land record management. Most of the talatis lost their age old responsibilities of direct involvement in the land record management. In the first few years of computerisation of land records, the activities of land record management was mainly restricted at the taluka level. However, the reforms in the land record computerized system in 2007 provided the opportunity at the village level where the talatis were empowered to deliver 7/12 and 8-A at the village level. The clients are now being set up at the village level with the support of public-private partnership. A landholder can view his land record online anywhere in the State.

2.3.1 Net working arrangement

The local severs at panchayat level is connected to the concerned taluka and the district headquarters. The local server at the taluka is connected to the district NIC, which is again connected to the main server at the state NIC in Gandhinagar. The entire system is online and is connected through Gujarat State Wide Area Network (GSWAN). Through GSWAN one can view online Record of Rights anywhere in government offices of the State.

2.4 Workflow under e-Dhara

e-Dhara Dy Mamlatdar, Mamlatdar and Computer Operator are the key functionaries of e-Dhara. There are many other officials attached with e-Dhara operation at various levels. Ramachandran and Raval (2008) have described the roles and responsibilities of these functionaries, which is as follows:

1. Computer Operator
   - Data entry related to RoR Issuance & Mutation application
   - Entry of mutation details in Bhulekh
   - Printing acknowledgement receipt and handing over the same to the applicant

- Printing computerized Vf6 & 135D notices
- Putting relevant documents & handing mutation file to e-Dhara Dy Mamlatdar
- Scanning mutation orders & Office Copy of notice in Bhulekh
- Carrying Structured entry details in Bhulekh
- Generating S form and getting it signed from relevant Certifying Authority
- Scanning signed S form
- Generating F Form
- Printing final copy of ROR after approval by e- Dhara Dy Mamlatdar
- Update season-wise crop details in computer
- Generating MIS reports as required by higher ups
- To take scheduled periodic & daily backups
- Manage the asset to prevent breakdown and if any, then lodge a complaint to the respective vendor through Mamlatdar, Prant Officer and DIO

2. e-Dhara Dy. Mamlatdar

- Signing computerized ROR
- Receiving request for RoR issuance & Mutation
- Verifying mutation application for content, number of mutation in one application, supporting documents & actual details present in computer
- Compare mutation application with basic data entry by operator. Approve application receipt data entry to generate mutation entry number
- Lock Kachi entry through bio metric authentication, preparing mutation file
- Hand over mutation file to Talatis for notice circulation and enter details in his register
- Receives mutation file from Talatis brought after village level process
- Get S form signed
- Lock Structure entry through biometric authentication
- Hand over updated 7/12, 8A and VF6 print to Talati

- Bio metric authentication after every stage of scanning relevant documents
- Managing accounts of user charges
- Countersigning backups as per back up plan
- To provide MIS and other reports as required
- To ensure consumables for e-dhara Kendra and procure if necessary
- To ensure relevant records are managed in the record room
- To maintain check on mutation pendency
- Maintaining relevant registers
- Preparing MIS reports as required by higher ups

3. Village Talati

- Display application format and list of supporting documents in Gram Chavdi notice board of the concerned village
- Issues Vardi Book Receipt against mutation application received at Village

- Verify - Application and supporting documents, Supporting documents are okay, Single mutation is applied etc. detail in application
- Submit the application at e-dhara Kendra and get receipt, Mutation print and Notice print
- Get additional notices printed from e-Dhara if required any
- Receive mutation file from e-Dhara Center, with acknowledgement in e-Dhara Register
- Maintain village level Inward/ Outward register specifically for mutations
- Serve notices to concerned and take Acknowledgement signature in notice O/c
- Mention postal details if notices sent through post
- Conduct Panchnama and maintain all reference documents in mutation file
- Submit the mutation file to e-Dhara Kendra after certification by Competent Authority
- Receive updated RoR from e-Dhara

- Replace old RoR with updated RoR received from e-Dhara Center

- Provide details of crop updation to e-Dhara Center, in prescribed format

- To distribute free copy of computerized RoR as a part of scheduled Promulgation

4. Certifying Authority

- Periodic visits to Village & overall monitoring of e-Dhara at Village level

- Ensure mutation entries get certified in computerized VF6

- Signing 'S' form as soon as it is generated

5. Mamlatdar

- Ensure that the citizens receive prompt service and regularly take feedback on quality of services

- Ensure availability of application forms, consumables as and when required

- Tap pendency in e-Dhara operations

- Ensuring that e-dhara Kendra is not subject to any downtime

6. Prant Officer (SDO)

- Periodic reviews of e-Dhara Kendra – Application Receipt, Pendency, RoR Issuance, Complaints and feedback from citizens

- Smooth functioning of the Talukas under his supervision

- Receiving MIS and ensuring low pendency

7. District Nodal Officer

- Monitoring activites of e-dhara Kendra and ensuirng the services are up without any downtime

- Check MIS reports and take corrective actions

- Introduce new initiatives based on feedback from users

- Reviews progress of e-Dhara Kendras with Prant officers and Mamlatdars during RO meeting

8. District Collector

- Custodian of e-Dhara Kendras

- Reviews Progress & monitoring during RO Meeting

- Issuing necessary orders for execution and streamlining of e-Dhara operations

9. District Informatics Officer (DIO)

- Ensuring latest software updates available to the talukas

- Gather errors/bugs from Operators & sending it to NIC/ SMC

- Coodinate to verify that hardware & software are working fine and operations are not hampered due to hardware / software problems

- Ciculate necessary recommendations on various MIS to developing team in the State

- To ensure latest virus updates are available and installed

- Liasoning with hardware vendors for faults/ breakdowns

There are two Computer Operators attached in each taluka for computerisation of land record activities. e-Dhara Deputy Mamlatdar supervises the activities of the

Computer Operators at the taluka level. Circle Officer verifies the mutation process at the taluka level. Mamlatdar is the executive head of the taluka.

2.5 Implementation of the project in the study area

Eight talukas, which were surveyed in four districts outline the technical features of the project. The computer centres are ready and operational in all the study talukas, while Data entry is complete in all the talukas of four districts. Computerized records are distributed to the landholders on request. In order to familiarize all the legal landholders with regard to the new system the manual or handwritten procedure has been completely stopped. While computerized RoR delivery is already in the process, the promulgation activity is taken up seriously in some takulas like Jalalpore, Chikhli and others. In each taluka there is only one server and more than one client provided by the NIC. At present, all taluka Computer Centres are not so well-equipped. There is no power backup in the cases of longer hour power cut and no separate power generator is supplied for backing. Even there is no sufficient number of trained personnel to undertake the activity in the absence of a Computer Operator.

2.6 Management of records at taluka level

At present, most of the village level registers, which used to be maintained by the talatis are stored at the taluka office. Activities such as updation, data entry or *Nondh* operation (mutation activity) are carried out at the taluka

level. The e-Dhara Dy. Mamlatdar receives and verifies the entry. Creation of new *Nondh* is processed after due permission from the Circle Officer or Mamlatdar. The Structure Form (S-Form) is created. Form 6, 7/12 and 8A are issued to the khatedars with order of the e-Dhara Dy Mamalatdar. The maintenance of land records is undertaken by the e-Dhara Deputy Mamlatdar. Draft copies for promulgation are issued by the Deputy Mamlatdar, e-Dhara.

2.6.1 Mutation

Mutation entry by Computer Operator is maintained at different levels. The data verification at different level is carried out with the help of senior officials at the taluka level. The Dy. Mamlatdar, in-charge of Revenue, Circle Officer and Mamlatdar are the certifying authorities for mutation approval. Even the e-Dhara Dy. Mamlatdar does not have the authority to approve a mutation activity. After approval by the Mamlatdar, the entry is made in the Structure Form (S-Form). After entry is over the operation is locked by the e-Dhara Dy. Mamlatdar. Once it is locked, the S Form is not subjected to change or modification. At present, there is no mechanism to unlock and modify the mistakes. In case, S-Form contains any error, the entire process of mutation entry is made again and new S-Form is generated.

2.6.1 (i) The process of mutation in e-Dhara

The process of mutation starts with request from the khatedars. The application is submitted to the e-Dhara Deputy Mamlatdar at the taluka level along with the related documents. Request is assigned a Unique Receipt Number. e-Dhara Dy. Mamlatdar verifies all documents and issues order for initial entry. Computer Operator makes the entry. And the copy of the initial entry is further checked by the Dy. Mamlatdar. If all found correct, 135-D Notice is sent to either parties under UCP service by post. All papers are submitted to the Circle Officer for field verification. Furthermore, within thirty days of the 135-D notice served, if any objection is received, a separate dispute register process is held. Mamlatdar fixes a date for dispute hearing and case disposal. Hearing begins on the date fixed and if any objection found true then the Mamlatdar orders for rejection of the application. If there is no objection to be found, the Circle Officer certifies a special data entry called structure entry. After the entry, the Circle Officer verifies and signs the form and passes it on to the e-Dhara Dy. Mamlatdar. Consequently, the Structure Form is prepared. The e-Dhara Dy Mamlatdar passes effect in RoR data. A computerized copy of the RoR is sent to the talatis for record.

2.7 Report on the status of computerization in the study districts

The following is reported from the field survey about computerization of land records:

1. Data entry and verification is complete in almost all the talukas.

2. Promulgation was under progress in some talukas namely, Chikhali and Jalalpore.

3. All the computer centres located in taluka headquarters are ready for operation of service delivery.

4. Mutation backlog is complete in all the districts.

5. About hardware: One server and more than one client had been supported to each taluka.

6. There was a UPS and a biometric device supplied to all the talukas.

7. Either 2.3.1 or 2.3.1 version of the Software had been installed in every taluka e-Dhara.

8. E-Dhara in each taluka was equipped with Microsoft platform and SQL server data base.

9. As far as mutation process is concerned, acknowledgement is sent to the applicant with immediate effect. Notices are served and mutation updation is carried out immediately.

2.8 Online Delivery at Panchayat Level

Gujarat has adopted the Public and Private Partnership model to deliver computerized records at the village level. Broad-band connection through Airtel Service Network is provided at each Gram Panchayat level. However, the process was just beginning during the time of field survey. Once the implementation of the project at the village level is over, the Computer Operator at the village level can deliver necessary information about land records to the landholders (khatedars). This is a process again towards decentralization from semi-centralized process of online service delivery at the taluka level. Amreli district is leading as far as village level e-Dhara operation is concerned. This devolution of power at the Panchayat level is a symbol to develop capacities of the grass root level functionaries. This project will lead an alternative opportunity for the landholders' access to computerized record both at the village/pachayat level and at the taluka level.

2.8.1 Issues at the Panchayat level service delivery

In those panchayats where e-Dhara was operational, the following issues were identified.

- The server is dead slow. Each operation takes longer time.
- The Computer Operators are not fully trained at the panchayat level.
- Poor infrastructure is a major challenge in some Gram Panmchayats. Some pachayat buildings are old. Water leaking during rainy season is high. No proper wearhousing and pluggings for electricity connection.
- Computer Operators are not readily available due to meager remuneration and contractual appointment.

2.8.2 Procedure of online delivery

User name and password are provided to every Computer Operator at the panchayat level. However, the Computer Operator seeks approval from the competent authority for RoR delivery to the landholders at the panchayat level. A Computer Operator can get print out only after the approval. The sample signature of the concerned competent authority would come on the printed copy

automatically. Blank 7/12 or 8A forms have been provided to the Computer Operator. The forms are on a systematic sequence and serial number is maintained correctly. This is done with a purpose to maintain and audit the accounts of the villages easily.

The government has the guidelines to each gram pachayats about the collection of the fee. The collection of the fee is to be Rs. 10/- per copy where Rs.5/- to be submitted to the government treasury, the balanced five rupees per copy will remain with the Panchayats.

References:

Ramachandran, V. and S. Raval (2008), e-Dhara Land Record Management Ystsem, Gujarat, Vachhnai& Raja (eds.) *Computerization of land records in India: Achievements and experiences*, LBSNAA.

CHAPTER-3

ANALYSIS

3.1 Awareness of landholders about Computerization of Land Records (CLR)

The success of any development scheme or project meant for the public depends on the level of awareness created about the benefits of the programme. It is obvious that many developmental projects in our State or Nation go unnotices due to lack of effort to create awareness among the population concerned, and as a result, the benefits of the project are unrealized in a designed time frame.

A competitive and well established theory of diffusion by Everett Rogers in the late 1960's highlighted the importance of awareness generation in technology dissemination in rural areas. Thus, ICT application in rural areas can only be a successful mechanism if sincere effort in creating awareness is made by awakening the rural masses to the benefits of the programme.

The evaluation studies in the States of Rajasthan, West Bengal, Tamil Nadu and Karnataka by the Centre for Rural Studies has reported that awareness is one of the major indicators of success of the project.

3.1.1 Awareness about CLR in Gujarat

The awareness about CLR in the sample talukas varies from 74.7% in Jalalpore to 93.3% in Radhanpur Taluka.

The figure representing distribution of awareness shows that there is unequal awareness distribution across the talukas and nowhere has it reached 100% (table 3.1). At the village level, the awareness distribution figure gives the impression that the percentage varies from as low as 71.7% to as high as 100.0%. From interaction with the respondents, it was found that there was low awareness in some villages while it was high in others. It was observed that factors like education, distance from the city, caste, publicity through media and news papers, and efforts of the talatis played a significant role in bringing about awareness. Initially the State government provided free computerized RoRs to all landholders in the State. Through talatis, the landholders were informed to receive computerisation of land records free of cost. However, it was not all the landholders who accessed free computerized land records at the time of distribution. Furtheron, in some villages the long absence of the talatis from their duty made no progress on awareness generation among the landholders even after more than half a decade of implementation of the programme. The overall awareness about CLR in the State is 83.6%. Alternatively speaking, 16.4% landholders are still not aware of computerisation of land records.

Table 3.1: Awareness among landholders about Computerisation of Land Records

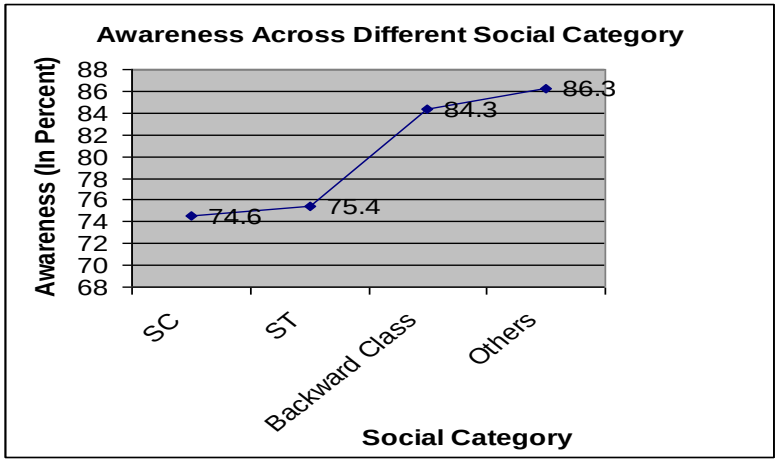
Taluka/ District	Awareness	
	Yes	No
Amreli	138 (85.7)	23 (14.3)
Khamba	143 (92.9)	11 (7.1)
Amreli District	**281 (89.2)**	**34 (10.8)**
Chikhali	134 (80.7	32 (19.3)
Jalalpore	124 (74.7)	42 (25.3)
Navsari District	**258 (77.7)**	**74 (22.3)**
Patan	129 (85.4)	22 (14.6)
Radhanpur	140 (93.3)	10 (6.7)
Patan District	**269 (89.4)**	**32 (10.6)**
Padra	143 (76.9)	43 (23.1)
Shinor	102 (81.0)	24 (19.0)
Vadodara District	**245 (78.5)**	**67 (21.5)**
Total	1053 **(83.6)**	207 **(16.4)**

(The figure in parentheses indicates percentage)

The distribution of awareness among each social category shows a skewed distribution. The figure–3.1 as given below shows that the awareness among SCs and STs is lower compared to other social categories namely

Backward Class and Others. The awareness figure given below represents a S-Curve.

Figure-3.1



3.1.2 Sources of awareness

The table 3.2 represents the distribution of sources of awareness. This shows that 'Talatis/Other Revenue Officials' are a major source of awareness among the public in the State. While, friends, relatives and neighbours are the natural source of information dissemination. 32.2% of people are aware about CLR through friends and relatives. However, only 8.8% respondents were aware through public advertisement and publications in the media and only 3.2% by other mechanisms. The figure shows that the influence of media and publication is still negligible in generating awareness among the public. Thus, the role of media should be made stronger to generate awareness about the new

programme as it can help in bridging the digital gap across different social groups and various sections of the communities.

Table 3.2: Sources of awareness

Taluka/ District	Sources of Awareness				Total
	Friends/ Neighbors / others	Talati/other revenue functionary	News paper/ magazine/ posters/TV	Visit to taluka office/ others	
Amreli	34 (24.6%)	87 (63.0%)	14 (10.1%)	3 (2.2%)	138 (100.0%)
Khamba	39 (27.5%)	85 (59.9%)	15 (10.6%)	3 (2.1%)	142 (100.0%)
Amreli District	**73 (26.1%)**	**172 (61.4%)**	**29 (10.4%)**	**6 (2.1%)**	**280 (100.0%)**
Chikhali	42 (31.3%)	66 (49.3%)	24 (17.9%)	2 (1.5%)	134 (100.0%)
Jalalpore	39 (31.5%)	72 (58.1%)	7 (5.6%)	6 (4.8%)	124 (100.0%)
Navsari District	**81 (31.4%)**	**138 (53.5%)**	**31 (12.0%)**	**8 (3.1%)**	**258 (100.0%)**
Patan	50 (39.1%)	69 (53.9%)	4 (3.1%)	5 (3.9%)	128 (100.0%)
Radhanpur	66 (47.5%)	62 (44.6%)	4 (2.9%)	7 (5.0%)	139 (100.0%)
Patan District	**116 (43.4%)**	**131 (49.1%)**	**8 (3.0%)**	**12 (4.5%)**	**267 (100.0%)**
Padra	47 (32.9%)	79 (55.2%)	12 (8.4%)	5 (3.5%)	143 (100.0%)
Shinor	21 (20.6%)	66 (64.7%)	12 (11.8%)	3 (2.9%)	102 100.0%
Vadodara District	**68 (27.8%)**	**145 (59.2%)**	**24 (9.8%)**	**8 (3.3%)**	**245 (100.0%)**
Total	**338 (32.2%)**	**586 (55.8%)**	**92 (8.8%)**	**34 (3.2%)**	**1050 (100.0%)**

3.2 Computerization of land records obtained by the respondents

Of the total respondents who were aware of computerization of land records, about 79.2% respondents had obtained computerized land records directly from the taluka office (table 3.3). Upon asking a few respondents about the reasons for not directly obtaining computerized records, the reasons were multifarious. Problems like distance of e-Dhara Centre from the village, busy with other work, high expenditure, and assuming complexity of the work procedures, etc were among the reasons for which many respondents had not obtained RoR.

Table 3.3: Distribution of respondents who had obatained computerized records

District	Taluka	Having access to computerized records		Total
		Yes	No	
Amreli	Amreli	107 (77.5%)	31 (22.5%)	138 (100.0%)
	Khamba	120 (83.9%)	23 (16.1%)	143 (100.0%)
Navsari	Chikhali	96 (71.6%)	38 (28.4%)	134 (100.0%)
	Jalalpore	85 (68.5%)	39 (31.5%)	124 (100.0%)
Patan	Patan	118 (91.5%)	11 (8.5%)	129 (100.0%)
	Radhanpur	122 (87.1%)	18 (12.9%)	140 (100.0%)

Contd…….

Vadodara	Padra	100 (69.9%)	43 (30.1%)	143 (100.0%)
	Shinor	86 (84.3%)	16 (15.7%)	102 (100.0%)
Total		**834 (79.2%)**	**219 (20.8%)**	**1053 (100.0%)**

3.3 Application procedure

One of the objectives of computerization of land records is to provide better services to the landholders with maximum convenience. In the traditional revenue management system, a citizen used to approach many officials, followed multiple official procedures and had to deal with more paper works among others. This so happened particularly in the case of mutation process. Therefore, an individual had to take help of the middlemen. Private lawyers often took advantage of ignorance of the common citizens about the application procedures. They extracted huge rents from the common people.

The computerization of land records has made the application procedure easy. From the field survey, it was found that among the respondents who had obtained computerized RoRs, 65.6% respondents felt that the nature of application procedure for obtaining RoR was simple. 23.2% respondents felt that the application procedure was difficult and 11.1% respondents felt that the application procedure was very difficult. Many respondents viewed that they had to approach relatively less number of

officials for mutation and any other revenue activities. There is nothing much difficulty in the application procedure. This has reduced the role of the middlemen.

Table 3.4: Opinion about nature of application procedure by the respondents who had already obtained computerised RoRs

Taluka/ District	Opinion of the respondents about nature of application procedure (in percent)		
	Simple	Difficult	Very difficult
Amreli	58.9	28.0	13.1
Khamba	73.3	15.0	11.7
Amreli District	**66.5**	**21.1**	**12.3**
Chikhali	72.9	24.0	3.1
Jalalpore	77.1	18.1	4.8
Navsari District	**74.9**	**21.2**	**3.9**
Patan	46.6	32.8	20.7
Radhanpur	62.7	18.6	18.6
Patan District	**54.7**	**25.6**	**19.7**
Padra	62.0	28.0	10.0
Shinor	77.9	20.9	1.2
Vadodara District	**69.4**	**24.7**	**5.9**
Total	65.6	23.2	11.1

3.4 Efficiency in delivery of RoR after computerization of land records

3.4.1 Landholders' opinion about access to computerized records

An attempt was made to get opinion of the respondents about access to computerized records. More than 90% of the respondents in a majority of talukas (except Patan and Padra talukas) had positive opinion about easy obtaining of the computerized records (table 3.5). A major issue, which we observed in Patan taluka was that there was only one Computer Operator engaged in the whole process of work as against two Computer Operators in other talukas. He was overburdened as he had to manage the entire process of computer operation alone. His engagement with other works such as visiting Citizen Service Centre, engagement with census operation, etc further diverted his attention from delivering computerized RoRs on time.

Table 3.5: Opinion of the respondents about access to computerized records

Taluka/ **District**	Respondents who viewed their opinion about getting computerized record easily			Total
	Yes	No	Don't know	
Amreli	128 (92.8%)	7 (5.1%)	3 (2.2%)	138 (100.0%)
Khamba	136 (95.1%)	4 (2.8%)	3 (2.1%)	143 (100.0%)
Amreli District	218 (96.0%)	7 3.1%	2 (0.9%)	227 (100.0%)
Chikhali	125 (94.7%)	5 (3.8%)	2 (1.5%)	132 (100.0%)
Jalalpore	107 (92.2%)	4 (3.4%)	5 (4.3%)	116 (100.0%)
Navsari District	177 (98.9%)	2 (1.1%)	0 (0%)	179 (100.0%)
Patan	112 (88.9%)	10 (7.9%)	4 (3.2%)	126 (100.0%)
Radhanpur	126 (90.6%)	9 (6.5%)	4 (2.9%)	139 (100.0%)
Patan District	216 (90.8%)	17 (7.1%)	5 (2.1%)	238 (100.0%)
Padra	119 (83.8%)	6 (4.2%)	17 (12.0%)	142 (100.0%)
Shinor	95 (93.1%)	1 (1.0%)	6 (5.9%)	102 (100.0%)
Vadodara District	179 (96.2%)	4 (2.2%)	3 (1.6%)	186 (100.0%)
Total	948 (91.3%)	46 (4.4%)	44 (4.2%)	1038 (100.0%)

3.5 Efficiency in land record management

One of the important objectives of CLR is to ensure efficiency in land record management. Thus efficiency can be judged if there is reduction in the time of delivery of RoRs and other land related information. Further, for Revnue Administration quick access to information also helps in land related management activities.

3.5.1 Efficiency in the revenue administration

Mamlatdars from all eight talukas responded that they had been able to access the information easily. The CLR has helped them monitor land revenue collection, assessment of taxes, identification of benami landholdings, prevent encroachment of public land, etc. They pointed out that within a few minutes they can check information about the landholdings. This has helped in coordinating with the other government departments such Rural Development, Panchayati Raj, Agriculture and other departments in the State. The Mamlatdars expressed that any information related to land reforms and land administration is promptly accessed due to readily available database in the computerized system. For both planning and decision making, the use of computerized database is very useful. Computerisation has reduced cost and time to transfer of the data and passage of information across various departments and government functioneries.

3.5.2 Quick access to RoR by the landholders

In addition to the efficiency in the revenue administration, the CLR has also made notable contribution in quick delivery of services to the landholders. To examine this, a comparison was made between the manual programme and the computerized programme regarding time required to deliver RoRs to the landholders.

Generally, it is expected that land records should be delivered immediately or within a few hours of a legal landholder's request i.e. it should not take more than one day. The new mechanism is expected to reduce the time of RoR delivery. Therefore, it is essential to judge if there was more number of people obtaining RoR on the same day after implementation of CLR.

Table 3.6 and table 3.7 shows a comparison between landholders' response about the time required to obtain land records before computerization and after computerization.

Table 3.6: Respondents' opinion about access of the land records prior to computerization

Taluka	Number of respondents obtained land records						Total
	Same day	1-2 days	2-7 days	1-2 weeks	3-4 weeks	More than one month	
Amreli	89 (89.0)	3 (3.0)	7 (7.0)	1 (1.0)	0 (.0)	0 (.0)	100 (100.0)
Khamba	93 (82.3)	8 (7.1)	9 (8.0)	2 (1.8)	0 (.0)	1 (.9)	113 (100.0)
Chikhali	56 (63.6)	3 (3.4)	25 (28.4)	2 (2.3)	1 (1.1)	1 (1.1)	88 (100.0)
Jalalpore	49 (61.3)	7 (8.8)	23 (28.8)	1 (1.3)	0 (.0)	0 (.0)	80 (100.0)
Patan	64 (56.6)	4 (3.5)	44 (38.9)	0 (.0)	1 (.9)	0 (.0)	113 (100.0)
Radhanpur	56 (51.4)	4 (3.7)	47 (43.1)	2 (1.8)	0 (.0)	0 (.0)	109 (100.0)
Padra	46 (47.4)	17 (17.5)	26 (26.8)	5 (5.2)	1 (1.0)	2 (2.1)	97 (100.0)
Shinor	24 (27.9)	11 (12.8)	45 (52.3)	3 (3.5)	1 (1.2)	2 (2.3)	86 (100.0)
Total	477 (60.7)	57 (7.3)	226 (28.8)	16 (2.0)	4 (.5)	6 (.8)	786 (100.0)

Figures in parenthesis indicates percentage

Table 3.7: Access to land records after computerization

Taluka	Number of respondents obtained land records					Total
	Same Day	1-2 Days	2-7 Days	1-2 weeks	3-4 weeks	
Amreli	96 (96.0)	2 (2.0)	2 (2.0)	0 (.0)	0 (.0)	100 (100.0)
Khamba	102 (90.3)	5 (4.4)	6 (5.3)	0 (.0)	0 (.0)	113 (100.0)
Chikhali	81 (92.0)	5 (5.7)	2 (2.3)	0 (.0)	0 (.0)	88 (100.0)
Jalalpore	71 (88.8)	6 (7.5)	3 (3.8)	0 (.0)	0 (.0)	80 (100.0)
Patan	101 (89.4)	4 (3.5)	7 (6.2)	1 (.9)	0 (.0)	113 (100.0)
Radhanpur	90 (82.6)	8 (7.3)	11 (10.1)	0 (.0)	0 (.0)	109 (100.0)
Padra	86 (88.7)	7 (7.2)	3 (3.1)	0 (.0)	1 (1.0)	97 (100.0)
Shinor	78 (90.7)	3 (3.5)	5 (5.8)	0 (.0)	0 (.0)	86 (100.0)
Total	705 (89.7)	40 (5.1)	39 (5.0)	1 (.1)	1 (.1)	786 (100.0)

Figures in parenthesis indicates percentage

(In both tables 3.6 and 3.7 analysis was drawn from the respondents who had already obtained computerization of land records. The total number of respondents was 786.)

From the tables above, it is evident that after computerization of land records, there is a reduction in time to obtain land records. In almost all the talukas, the number of respondents agreed that the computerization of land records had reduced their time to access RoR. From the table 3.6 and table 3.7, it is found that nearly 90% respondents could obtain RoR on the same day after CLR, which was 60.7% before CLR.

3.5.3 Efficiency in obtaining other land related information

Efficiency about other land related information was judged from the respondents who had access to other land related information both before and after the computerization of land records. Above 10% (N=134) of the total respondents who had access to information both before and after the computerisation programme were asked to view their opinion. Information was collected about the time they required to obtain other land related information, before and after computerization of land records. From comparision of figures as shown in the tables 3.8 and 3.9, it is found that there is a substantial growth registered from 44.0% to 70.1% in obtaining other land related information on the same day after computerization of land records.

Table 3.8: Opinion of the respondents about number of days spent in obtaining land related information before computerization

Taluka	No. of days spent in obtaining land related information before CLR				
	same day	2-7 days	1-2 weeks	3-4 weeks	more than one month
Amreli	66.7	4.8	23.8	4.8	.0
Khamba	16.1	38.7	9.7	6.5	29.0
Chikhali	81.8	.0	9.1	9.1	.0
Jalalpore	73.3	20.0	6.7	.0	.0
Patan	63.6	36.4	.0	.0	.0
Radhanpur	77.8	11.1	11.1	.0	.0
Padra	8.7	13.0	52.2	13.0	13.0
Shinor	30.8	7.7	46.2	.0	15.4
Total	44.0	18.7	21.6	5.2	10.4

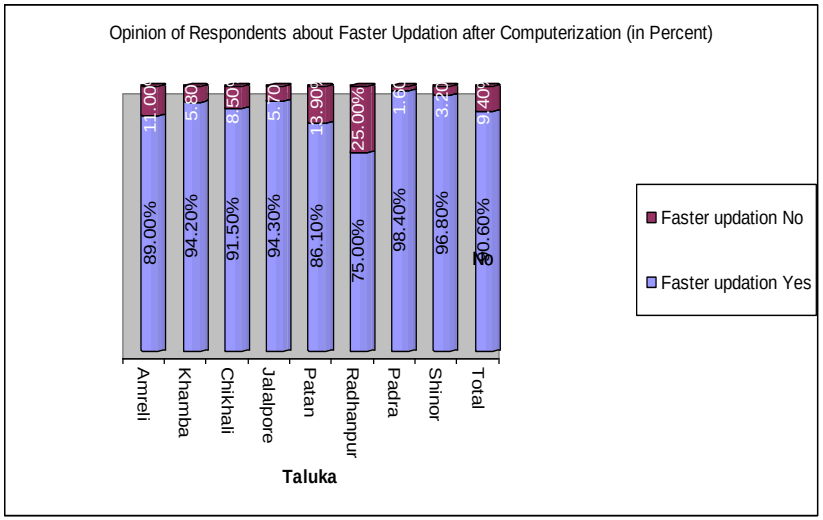
Table 3.9: Opinion of the respondents about number of days spent in obtaining land related information after computerization

Taluka	No. of days spent in obtaining land related information now				
	same day	2-7 days	1-2 weeks	3-4 weeks	more than one month
Amreli	95.2	4.8	.0	.0	.0
Khamba	64.5	6.5	6.5	22.6	.0
Chikhali	54.5	27.3	18.2	.0	.0
Jalalpore	73.3	13.3	13.3	.0	.0
Patan	81.8	9.1	9.1	.0	.0
Radhanpur	44.4	33.3	11.1	11.1	.0
Padra	73.9	21.7	.0	.0	4.3
Shinor	53.8	23.1	23.1	.0	.0
Total	70.1	14.9	8.2	6.0	.7

3.5.4 Faster mutation and updation of the land records

Furthermore, one of the objectives of computerization of land records is to ensure faster mutation and updation of land records. Therefore, it was necessary to take opinion of the respondents as to whether computerization achieved faster updation of Record of Rights as compared to the manual process.

Figure:-3.4



The figure 3.4 provides necessary information about opinion of the respondents about faster updation after computerization across eight talukas in four districts of Gujarat. In all the talukas, majority of the respondents gave positive opinion about the efficiency

and faster updation of land records. Out of the eight talukas surveyed, in five talukas, more than 90% respondents had positive opinion about faster updation. The figure represents the beneficiaries' opinion with regard to the updation process after the computerization of land records.

Table 3.10: Mutation of land records before and after computerization

Taluka	Time taken for mutation before computerization		Time taken for mutation after computerization		Total
	<=30 days	>30 days	<=30 days	>30 days	
Amreli	7 (17.1%)	34 (82.9%)	17 (41.5%)	24 (58.5%)	41 (15.1%)
Khamba	4 (7.8%)	47 (92.2%)	25 (49.0%)	26 (51.0%)	51 (18.8%)
Chikhali	11 (52.4%)	10 (47.6%)	15 (71.4%)	6 (28.6%)	21 (7.7%)
Jalalpore	8 (34.8%)	15 (65.2%)	15 (65.2%)	8 (34.8%)	23 (8.5%)
Patan	3 (8.6%)	32 (91.4%)	16 (45.7%)	19 (54.3%)	35 (12.9%)
Radhanpur	5 (10.9%)	41 (89.1%)	27 (58.7%)	19 (41.3%)	46 (17.0%)
Padra	12 (50.0%)	12 (50.0%)	19 (79.2%)	5 (20.8%)	24 (8.9%)
Shinor	11 (36.7%)	19 (63.3%)	20 (66.7%)	10 (33.3%)	30 (11.1%)
Total	61 (22.5%)	210 (77.5%)	154 (56.8%)	117 (43.2%)	271 (100.0%)

In comparison to many States, Gujarat is well advanced in effectively implementing the process of online mutation. The State government and the State NIC have taken right measures to ensure faster updation of land records. The table 3.10 shows that there is a quantum jump in number of respondents from 61 to 154 to get their record updated in less than or equal to thirty days.

The overall citizen's response to efficiency in the new system of land record computerization is very positive. There is simplicity, hassle free and efficiency in the new system.

3.6 Quality in the service delivery

Though there has been significant reduction in time to delivery land records after computerization and in updation of RORs, it is also essential to look at the quality of service delivery. Therefore, the quality in the form of correctness, tamper proof, etc of land records after computerization needs to be carefully examined.

Input control is a mechanism to ensure genuineness, authenticity, accuracy of input data as well as output data. Duplication of data is a sort of offense. Data validation is a process to aviod any errors or omissions in the transactions data and to ensure the completeness and correctness of input. The Audit report (Civil) for the year ended 31 March 2007 on computerization of land records noticed that in some talukas the lack of adequate data

validation checks in the Software coupled with inadequate and ineffective input controls like supervisions, etc. resulted in irrelevant and incorrect data being fed in the system; thus putting a question mark on the reliability of the data. Some findings arrived at by analyzing the data are illustrated below:

- In 1740 cases, name and address of the applicants for RoR were recorded as '*talati sah mantri*', '*talati cum* mantri' or '*tcm*' '*talatishree*' etc.

- In 16 cases, addresses of the applicants were left blank and in two cases, applications were found without applicants' name and address. Thus, there was no foolproof mechanism to upload the correct data in the system; as a result, the RoR issued would also be incorrect/ incomplete.

- Out of total records of 3,37,222 (*Bhuj taluka*), farmers' name were not found recorded in 83 cases.

- In the case of caste, there were five codes, *viz*. '0 to '5'. No description was given in table for the code '0'; still, in 5,135 records, caste codes were shown as '0'. Similarly, code '6', which did not exist, was found recorded in the table.

- All the mutations were required to be supported with the attachments provided on this behalf; the applications were also to be verified by the

supervisory level officers. However, review of the database revealed that in 69 cases, the applications were found without attachments and in 82 cases, applications were found not verified; in one case, the application was found verified by operator who had no privilege for verifying the applications. Thus, accuracy of the mutation and consequently correctness of the RoR could not be ensured.

- RoR could be issued after the applicant registering either of survey number, *khata* number or the mutation number. However in 70 cases, no such details were found captured by the system.

The detailed about the findings on input controls reported by the Audit Report (Civil) for the year ended 31 March 2007 can be seen at the Appendix-I. The survey by the Centre for Rural Studies, LBSNAA in 2008, however, observed that there was improvement in the quality. But there were a few cases where the landholders had found errors in the land records. Some findings from the field survey are discussed below.

3.6.1 About accuracy of land records

The table 3.11 shows that 97% respondents have positive opinion about the accuracy of computerized land records. The data from Amreli district shows respondents opinion about accuracy of computerized records is 99% and places itself at the top position, followed by Patan with 97.6%,

Navsari with 95.5% and at the bottom lies the district of Vadodara with 94.8%. The figure shown in the table signifies that the accuracy is not 100% in the district. There are minor mistakes in the form of spelling errors in the name of the landholders. However, the Mamlatdars in the respective talukas acknowledged the mistakes existing in the computerized records. Data entry work is mainly in the hands of the Computer Operator. While the number of Computer Operators in each taluka is two but the workload is high, therefore, the chances of error cannot be avoided. Furthermore, according to the Mamlatdar of Navsari taluka, "the Computer Operators are private employees on a contract basis. The private agencies lease out contract employees. At the time of appointment, most of them are fresh. Their knowledge about revenue matters is negligible. Unless they are experienced, there will be chances of error. Further, the Computer Operators are private employees, their responsibilities to the revenue system may not be equal like a government employee. Frequent supervision by the higher authority is not possible". Further, he pointed out that "the Computer Operators do not commit mistakes knowingly. We should understand his work pressure. One or two Computer Operators to manage entire e-Dhara operation is a challenging work for them".

Human error is inevitable. Therefore, this issue is being addressed in every taluka of the State with special supervision of the District Magistrate. A definite time bound program has been fixed by the District Magistrate.

Mamlatdars have been directed to complete promulgation in time. During field survey it was observed that in most of the talukas the Mamlatdars were engaged in promulgation work. Sometimes, they were working beyond office hours as well as on holidays.

Table 3.11: Opinion about accuracy of computerized RoRs from the respondents who had obtained computerized land records directly

Taluka/ District	Accuracy of computerized records	
	Yes	No
Amreli	98.9	1.1
Khamba	99.1	.9
Amreli District	**99.0**	**1.0**
Chikhali	94.0	6.0
Jalalpore	97.0	3.0
Navsari District	**95.5**	**4.5**
Patan	98.0	2.0
Radhanpur	97.3	2.7
Patan District	**97.6**	**2.4**
Padra	94.1	5.9
Shinor	95.6	4.4
Vadodara District	**94.8**	**5.2**
Total	**97.0**	**3.0**

N=698

3.7 Respondents' opinion about manipulation of land records

On analysis about accuracy of computerization of land records the following observations were made:

1. 3% respondents found that there are mistakes in the computerization of land records.

2. Mistakes were primarily observed in spelling errors and also with figures depicting landholding size, account details, etc.

3. 13% of the total respondents felt that computerized records were manipulated by the Computer Operators.

4. In Khamba, Patan, Radhanpur, and Shinor talukas, the percentage opinion about manipulation by Computer Operator was above the total average in the State.

5. However, from among the respondents who had obtained land records directly, 14.5% respondents thought that the few mistakes found in their records was not due to manipulation by the Computer Operators, as such the error was non-intentional.

6. Many responded that high workload of Computer Operator is a major cause of error.

7. The respondents also belived that the officers incharge of verification are equally responsible.

8. Noncommitment and lack of seriousness among a few revenue officials led to error in land records.

9. System of verification and promulgation was slow in their talukas.

10. Many landholders believe that their request to modify the errors is unnoticed by the officials.

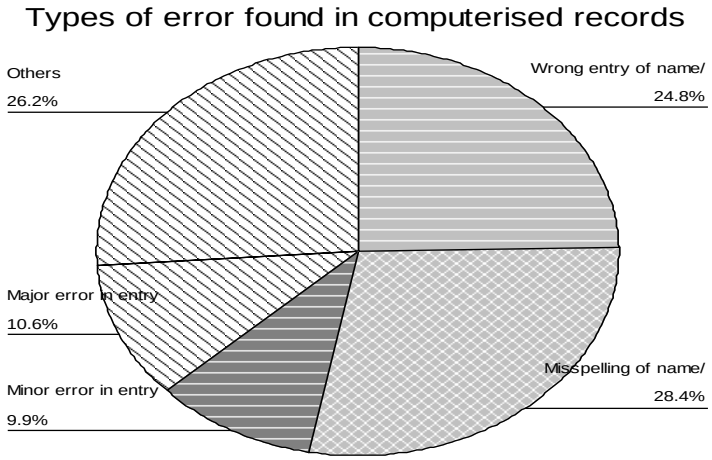
11. Poor and illiterate landholders are the major victims of errors existing in their landrecords.

12. In all talukas, the e-Dhara Deputy Mamlatdars had support of their respective Computer Operators. They viewed that the Computer Operators work under the purview of Revenue Administration. In the administrative structure there are senior officers to judge their sincerity and honesty. Scrutiny and supervision are continuous part of the process.

Our own assessment is that in the updated version of technology, apart from password security system, there is also biometric device to check hacking. Even the Computer Operator does not have the right to open the

system without permission from the authority. E-Dhara Deputy Mamlatdar has to open the system by giving his/ her thumb impression and use of password. All Computer Operators have only access to passwords. Any new entry, correction or updation by Computer Operators is made after permission from the authority. These new updations or corrections are checked thoroughly by the Deputy Mamlatdar in-charge (e-Dhara). Therefore, there is less scope for manipulation by any individual in the e-Dhara operation.

Figure:-3.5



3.8 Impact on land related disputes

Land related disputes in rural areas is high. Internal disputes within the family and outside related to landholdings is a concern in the land administration. Therefore, it is important to examine the impact of CLR on land related disputes. Upon enquiring about the respondents view on reduction in land related disputes we found that only 38% had positive opinion about reduction in land related disputes after CLR while around 62% said 'no' or 'can't say' about the reduction in land related conflicts.

Table 3.12: Reduction in land related conflicts after CLR

Opinion of the Respondents About reduction in land related conflicts	No. of respondents	Percent	Cumulative Percent
Yes	395	38.0	38.0
No	282	27.1	65.2
Can't say	362	34.8	100.0
Total	1039	100.0	

The opinion about the reduction in conflicts related to Govt. land has further yielded almost similar responses. Only 32.1% respondents had positive opinion about the reduction in conflicts related to government land while 68% respondents still had the opinion either 'no' or 'can't say' about the reduction in conflicts related to government land.

Table 3.13: Reduction in conflicts related to Govt. land

Opinion Of the Respondents	No. of Respondents	Percent
Yes	333	31.6
No	314	29.8
Can't say	391	37.1
Total	1038	98.6

The system does not have the provision to identify the land encroachers. Since the programme is meant to computerize existing data, it has become less effective in reducing land disputes. A solution to land related problems can be possible through proper survey and settlement. Exact depiction of sptial data can be possible through application of modern technology. The National Land Record Modernization Programme (NLRMP) is thought to be a solution to the problem in land record management.

3.9 Impact on expenditure

One of the important economic indicators is to judge expenditure related to access of land records by landholders after computerization. In 2004 the government had fixed a user fee of 15 rupees per computerized RoR copy from the landholders. In 2005 it was decided to collect 5 rupees per copy. Therefore two categories are framed to understand how many people had paid between the prescribed fee and how many had paid above the prescribed fee. Table 3.14 shows that 83%

respondents had paid up to 5 rupees and 17% respondents had paid above Rs. 5 for obtaining a RoR. However, there was no mechanism to judge if these 17% respondents who had paid above 5 rupees were during the year 2004 or between 2005 - 2008. No enough data could be collected in this regard.

Table 3.14: Money paid for obtaining RoR after CoLR

Taluka	Distribution of Respondents as per money paid for obtaining RoRs after CoLR		Total
	1-5	>5	
Amreli	99 (72.8%)	37 (27.2%)	136 (100.0%)
Khamba	129 (91.5%)	12 (8.5%)	141 (100.0%)
Chikhali	84 (68.3%)	39 (31.7%)	123 (100.0%)
Jalalpore	86 (76.8%)	26 (23.2%)	112 (100.0%)
Patan	117 (92.9%)	9 (7.1%)	126 (100.0%)
Radhanpur	121 (88.9%)	15 (11.0%)	136 (100.0%)
Padra	106 (82.2%)	23 (17.8%)	129 (100.0%)
Shinor	90 (90.0%)	10 (10.0%)	100 (100.0%)
Total	832 (83.0%)	171 (17.0%)	1003 (100.0%)

Table 3.15 shows that 77% had paid nothing to obtain a RoR copy before computerization. It was found that amount spent for obtaining a RoR was not restricted to

the prescribed fee. Most of the time the landholders spent more than the prescribed fee to obtain RoR.

Table 3.15: Money paid to obatain RoRs before CLR

Taluka	Distribution of Respondents as per money paid for obtaining RoRs before CLR			Total
	0	1-5	>5	
Amreli	116 (90.6%)	0 (0%)	12 (9.4%)	128 (100.0%)
Khamba	124 (87.9%)	1 (.7%)	16 (11.3%)	141 (100.0%)
Chikhali	69 (58.0%)	16 (13.4%)	34 (28.6%)	119 (100.0%)
Jalalpore	85 (78.0%)	0 (0%)	24 (22.0%)	109 (100.0%)
Patan	108 (85.7%)	1 (.8%)	17 (13.5%)	126 (100.0%)
Radhanpur	101 (82.1%)	0 (0%)	22 (17.9%)	123 (100.0%)
Padra	66 (53.2%)	4 (3.2%)	54 (43.5%)	124 (100.0%)
Shinor	76 (77.6%)	2 (2.0%)	20 (20.4%)	98 (100.0%)
Total	745 (77.0%)	24 (2.5%)	199 (20.6%)	968 (100.0%)

The table 3.16 shows that only 14% respondents had spent either Rs 25.00 or below for obtaining a RoR. 34.5 % respondents had spent between Rs 25.00 and Rs. 50.00 for a RoR copy, 40.4% respondents had spent between Rs 50.00- Rs. 100.00 and around 11% respondents had spent above Rs. 100.00.

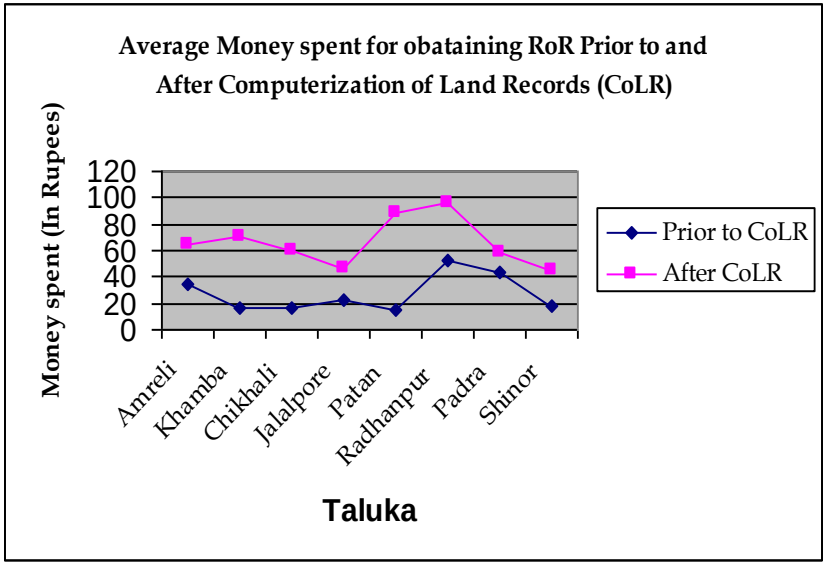
Table 3.16: Amount spent in obtaining RoR after CLR

Taluka	Distribution of Respondents as per money spent in obtaining RoRs						Total No. of Respondents
	Below Rs. 25.00	Between Rs. 25.00-50.00	Between Rs. 50.00-100.00	Between Rs. 100.00-150.00	Between Rs. 150.00-200.00	Above Rs. 200.00	
Amreli	9 (6.7%)	56 (41.8%)	62 (46.3%)	4 (3.0%)	3 (2.2%)	0 (0%)	134 (100.0%)
Khamba	7 (5.0%)	58 (41.4%)	53 (37.9%)	15 (10.7%)	6 (4.3%)	1 (.7%)	140 (100.0%)
Chikhali	28 (23.1%)	53 (43.8%)	36 (29.8%)	2 (1.7%)	2 (1.7%)	0 (0%)	121 (100.0%)
Jalalpore	34 (31.2%)	43 (39.4%)	32 (29.4%)	0 (0%)	0 (0%)	0 (0%)	109 (100.0%)
Patan	5 (4.0%)	17 (13.6%)	67 (53.6%)	25 (20.0%)	10 (8.0%)	1 (.8%)	125 (100.0%)
Radhanpur	7 (5.3%)	18 (13.5%)	81 (60.9%)	13 (9.8%)	13 (9.8%)	1 (.8%)	133 (100.0%)
Padra	15 (20.8%)	28 (38.9%)	25 (34.7%)	2 (2.8%)	1 (1.4%)	1 (1.4%)	72 (100.0%)
Shinor	25 (26.6%)	47 (50.0%)	19 (20.2%)	1 (1.1%)	1 (1.1%)	1 (1.1%)	94 (100.0%)
Total	130 (14.0%)	320 (34.5%)	375 (40.4%)	62 (6.7%)	36 (3.9%)	5 (.5%)	928 (100.0%)

The figure 3.6 shows that the amount spent for obtaining land records after computerisation has increased in every taluka and in most of the talukas the expenditure after computerisation is two times more than the expenditure prior to computerization of land records. Therefore, it can be stated that the computerization of land records has not been able to reduce the expenditure of the landholders to obtain land records. There are multiple reasons for spending above the prescribed fee.

Reason one being not able to bear travel cost, loss wages, bear food expenditure and spend entire day without any productive output. The only solution by which the extra expenditure can be checked is to ensure speedy implementation of computerization of land records at the village level.

Figure:-3.6



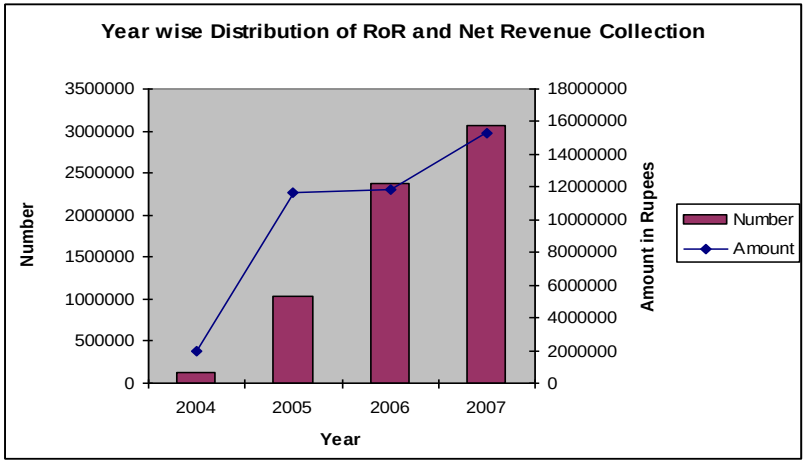
3.10 Increase in revenue collection after computerization of land records

The computerization of land records has increased the revenue collection of the State in a significant manner. A quantum jump of revenue collection from Rs. 11435190/- (One crore fourteen lakhs thirty-five thousand one

hundred ninety) in 2004 to Rs. 103969410/- (Ten crore thirty-nine lakhs sixty-nine thousand four hundred ten) in the year 2008 was noticed by the State. Within four years (2004-08) of active operationalization of e-Dhara and delivery of RoRs to the farmers the net revenue collection through RoR distribution has reached nearly Rs. 345409705/- (Thirty-four Crore fifty four lakhs nine thousand seven hundred five).

Coming down further, the collection of net revenue from four districts of Gujarat shows that in 2004 the net revenue collection from the issue of 133060 number of RoRs was Rs. 1945485. In 2005, 1030903 number of RoRs were issued and net revenue collection increased to Rs. 11647965. In 2006 Rs. 11883930 was collected from issuing of 2376769 number of RoRs. In 2007 the issue of RoR increased further and reached 3057777 number with net revenue collection of Rs. 15286995. The figure-3.7 gives a picture about increase in issuance of RoR (7/12, 8A and Vf-6) and net revenue collection across different years (2004 to 2007). In all forms of RoR there is an increase in number of issuance and revenue collection.

Figure:-3.7



Source: Government of Gujarat

3.11 Workload of revenue officials

The talukas with large number of landholders and the talukas with less number of landholders have equal strength in the number of Computer Operators to run e-Dhara operation. The bigger talukas possess same infrastructure facilities as in the smaller size talukas, there is no separate e-Dhara counters opened to address the issues of landholders demand. Both the Computer Operators and e-Dhara Dy. Mamlatdars work overtime without incentives.

The workload of revenue officials and e-Dhara staff has increased manifold due to increase in demand of computerized copies by the landholders. The demand from various government departments has also increased proportionately after implementation of computerization of land records. In almost all the talukas the Mamlatdars were of the view that there is a substantial increase in work pressure.

With the liberalization of economic policies in the State, the pressure from the Government on land deals is comparatively high. The pressure from private parties is also high in the State of Gujarat. Though computerization of land records has certainly helped in land deals and transaction activities, the pressure on the revenue staff remain an all time high.

CHAPTER-4

CONCLUSIONS AND RECOMMENDATIONS

e-Dhara is a significant programme in promoting good governance in Gujarat. It has improved transparency, accountability and efficiency in the land records management system in the State. e-Dhara is operational in all the talukas in the State. Activities like data entry, verification or validation of data, mutation backlog updation are complete in all the districts. The software used in the e-Dhara project is called Bhulekh Software. Issues of manual records has been banned in Gujarat as the State has legalized the authenticity of computerized RoRs.

The software modules are well designed and user friendly. The local Server at the taluka level is connected to the district NIC, which is connected to the main server at the State NIC. Gandhinagar. The entire system is connected online through Gujarat State Wide Area Network (GSWAN). Through GSWAN one can view Record of Rights online anywhere in the government offices in the State. The Software is being maintained and managed by the NIC, at it's headquarter in Gandhinagar.

Monthly report from each district is reviewed by the State Monitoring Committee (SMC), Gandhinagar. Each taluka level e-Dhara activities are reviewed by the 'District Collector'. Review meeting takes place every month in

each district. Some Gram Panchayats are connected to the Broadband Service by Airtel Network for e-Dhara operation. The services at the gram panchayat level is reviewed by the Mamalatdar. District Collector also reviews the progress at the village level during monthly review meeting. At present, the talatis have limited role in land records management, making the entire system transparent.

Our observation was that in many talukas the e-Dhara operation was continued in the same building of the Mamlatdar office. There was only one counter in many e-Dhara centres. Therefore, a huge queue was formed during working hours. The number of Computer Operators engaged in each taluka was not sufficient to handle the entire work pressure. Each taluka had two Computer Operators irrespective of the size of the landholders in the talukas. Therefore, revenue officials and Computer Operators were workburdened.

The Gujarat Government's initiative to extend e-Dhara operation to Panchayat level is a step towards decentralisation. With the setting up of the e-Dhara centres at the village level, the landholders will have options to access land records from the talukas as well as the panchayats. It was observed that in some villages the e-Dhara was already operational but the server was dead slow. Government decision to provide Airtel broadband connection in the village level can promote good governance, create better awareness among the

landholders and khatedars. The scenario at the village level was that there was only one technical person who was appointed in the panchayat level to operate both e-Gram and e-Dhara and paid a meager salary of only Rs. 1000.

The e-Dhara operation has solved the delay in service delivery to the landholders in the State. The delivery of Record of Rights is faster which has increased efficiency in the revenue administration.

In the mutation process, the Gujarat Government has amended the revenue guidelines that there can be use of ordinary post to send notices to the parties to raise their objections with regard to the ownership change or transfer case. As per the guidelines, within thirty days of sending notice, party from either side can raise objection for hearing. However, the issue is that there is no reliability of ordinary post and there is no guarantee that a person will receive the notice. This subjected risk in the management activities.

Maintenance cost is a serious challenge faced by most of the talukas. Necessary equipments like printers, UPS, cartridges, etc need frequent purchasing or maintenance. But there is no provision of separate grant to the talukas for maintenance and repairings. The Mamlatdar has no authority to divert user fee collected from the landholders for maintenance cost.

As observed in the study, the Computer Operators engaged in the talukas were paid less wages, engaged over time, covered other taluka level activities with no salary increments or promotion facility. As a result, it is observed that some of the Computer Operators after gaining a few years of experience resign from the job and join other sectors with better salary. Frequest transfer of Computer Operators and engagement of new Computer Operators for e-Dhara operation leads to error and defects in the land records.

Online mutation is carried in the State of Gujarat. But the two important departments, Registration Department and Revenue Department are not interlinked with the e-Dhara. Therefore, these two departments work separately.

The demand for computerized records has increased the collection of user fee. This has significantly contributed to State revenues.

Conclusion from the household analysis

The awareness level among the respondents about computerization of land records yet to be 100% in Gujarat. The main sources of awareness about CLR are either friends or talatis. There is little public investment in creating awareness. The role of media and newspaper is limited. Awareness varies across social category and educational status of the respondents. The awareness is low among SCs and STs.

Majority of the respondents who had obtained computerized RoRs felt that the application procedure to obtain RoR was simple. But access at these facilties at the village level will become much easier. There is quick delivery and updation of RoRs as well as other land related information.

There is improvement in quality of delivery of services in all the talukas. A few spelling or typing errors are noticed in the computerized records. But to avoid this, promulgation activities are undertaken in most of the talukas. There is less chance of manipulation and corruption in the new system of land records management.

Recommendations

- The number of Computer Operators should be appointed on the basis of the size of landholders in the talukas. There should be appointment of at least 3 Computer Operators in each taluka, where there are large landholders.

- Opportunity for salary increase should be extended to committed and experienced Computer Operators. Private agencies in the recruitment process should be controlled so as to check irregularities in the work carried out in the e-Dhara centres. The Mamlatdars should have authority to appoint new Computer Operators based on their requirements in the talukas to

avoid any sort of delay and irregularities in service delivery.

- Each taluka should have separate building for e-Dhara operation with more than 2 counters. At least two Computer Operators should be engaged in each taluka to issue RoRs. Separate power house or generator rooms should be created to avoid discontinuity of any kind due to power cut.

- In order to improve awareness, the government should engage media and civil society organizations. Specific mechanism to create awareness among the SCs and STs should be developed in the State.

- The talatis should be properly trained to operate system for issue of RoRs in the Panchayat level.

- Government should take initiatives to install Touch Screen Computer Kiosk (TSCK) at the village level. This can facilitate the farmers for easy access to RoRs and other land related information

- For the delivery of Record of Rights to the landholders/*khatedars*, an user fee of Rs. 5/- is charged in the State of Gujarat. However, in the Panchayat level the user fee is Rs. 10/-., five rupees towards issue of RoR and five rupees for maintenance cost. Many of the landholders are not satisfied with this. The user fee should be equal both at the taluka and panchayat level.

- Use of registered post/speed post is recommended to serve notices in the mutation process. The method of displaying notification in the concerned villages or in the public places by the talatis should be resumed.

- The State government should provide separate grant for maintenance cost or each taluka should be allowed to use 10% of their user fee collection for the maintenance cost and purchasing of necessary stationary items.

- There should be separate grants towards construction of record rooms and supply of power back ups and generators under e-Dhara operation.

- There is a need for integration of both the Registration department and the talukas to increase efficiency in land records management. This can also reduce transaction cost.

- There should be scanned signature up-loaded in the Software which can reflect on the RoR directly upon delivery.

- There should be two Deputy mamlatdars to deal with e-Dhara operation. One should be engaged for verification and other for entry operation

Appendix-I

Audit Report (Civil) for the year ended 31 March 2007
Chapter III Performance Audits

REVENUE DEPARTMENT
Government of Gujarat

Input controls

The objective of Input control is to ensure that the procedures and controls guarantee that (i) the data received for processing are genuine, complete, not previously processed, accurate and properly authorised and (ii) data are entered accurately and without duplication. Data validation is a process for checking transaction data for any errors or omissions and to ensure the completeness and correctness of input. Lack of such data validation checks in the Software coupled with inadequate and ineffective input controls like supervisions, etc. resulted in irrelevant and incorrect data being fed in the system; thus putting a question mark on the reliability of the data. Some findings arrived at by analyzing the data are illustrated below:

- In 1740 cases, name and address of the applicants for RoR were recorded as '*talati sah mantri*', '*talati cum* mantri' or '*tcm*' '*talatishree*' etc.

- In 16 cases, addresses of the applicants were left blank and in two cases, applications were found without applicants' name and address. Thus, there was no foolproof mechanism to upload the correct data in the system; as a result, the RoR issued would also be incorrect/ incomplete.

- All the mutations were required to be supported with the attachments provided on this behalf; the applications were also to be verified by the supervisory level officers. However, review of the database revealed that in 69 cases, the applications were found without attachments and in 82 cases, applications were found not verified; in one case, the application was found verified by operator who had no privilege for verifying the applications. Thus, accuracy of the mutation and consequently correctness of the RoR could not be ensured.

- RoR could be issued after the applicant registering either of survey number, *khata* number or the mutation number. However in 70 cases, no such details were found captured by the system.

- Besides other things, the RoR was to contain crop area and details of the crop. In 647 cases, the crop area was found 'nil' while the details of crops were given.

- Out of total records of 3,37,222 (*Bhuj taluka*), farmers' name were not found recorded in 83 cases.

- In the case of caste, there were five codes, *viz*. '0 to '5'. No description was given in table for the code '0'; still, in 5,135 records, caste codes were shown as '0'. Similarly, code '6', which did not exist, was found recorded in the table.

- In two *talukas*, updation of data of crop plantation was made only up to 2004-05 (*Kamrej*) and 2005-06

(*Ahmedabad*). It was also revealed that data fed in '*REVYR'* (Revenue Year) are not reliable as these were consisting of data (Revenue Year) like '-01', '-1', '001-0002' etc. As a result the farmers would not get the correct information with seasonal crop updation.

Thus incompleteness in database exposed the risk of generation of incorrect RoRs.

Information System securities

Segregation of duties

The *Talatis*, Circle Officer and *Mamlatdar* were provided with the different levels of authorisations viz. entry and maintenance, supervision and approval of entry respectively. However, it was noticed in the test-checked e-*dhara Kendra* that the functions of these authorities was being performed by the Data Entry Operator. No *talati* was posted in any of the e-*Dhara Kendra* for consulting revenue matters. This affected the distribution of duties and powers according to the hierarchy in an organization, which made the system vulnerable to risks and manipulation. (***Duties of Talatis, Circle Officers and Mamlatdars were performed by Data Entry Operators at e-Dhara Kendras***).

Generation of log files

The log file was found not capturing all details of operations carried out. In 29 cases, users who performed operations on the system were not found in the main table for users and similarly in 995 cases, users were also given privilege of authentication. Moreover, in seven cases, the years of operation were shown

"2040" and in 12,834 cases (out of 1,65,627 data), the 'user code' was left blank.

This implies that the log-files were never reviewed for remedial action.

Further, as per revised guidelines only one client without any laser printer was to be procured for each SDM office. However, against the specified items two additional clients with one laser printer were provided to each SDM office and thus excess expenditure of Rs 76.04 lakh was incurred.

Each District Data Centre (DDC) was to be equipped with one server, three clients and one laser printer as per the revised guidelines. However, two additional clients and one additional printer were purchased for each DDC and thereby excess expenditure of Rs 24.09 lakh was incurred.

Hardware for e-Dhara kendras

Scanners were purchased and supplied to all the 225 e-*Dhara kendras* at the cost of Rs 17.01 lakh. These scanners were to be used for scanning old VF-6 maintained by the *talatis* and for scanning documents created during the online mutation work flow. The scanners were not used in any of the 225 e-*Dhara kendras* as the Software 'Scan Module' could not be developed by the NIC which resulted in unfruitful expenditure Rs 17.01 lakh.

As per revised guidelines, two Clients, one Scanner, one eight port hub/switch and one Laser Printer were purchased on the recommendation of the Steering Committee for each taluka. However, in addition to the above, 26 Servers (Rs 34.91 lakh)

were purchased to replace the server of 26 talukas which were provided in the first phase of CLR. Thus 26 servers were procured without approval of GOI.

Site preparation etc.

Government of India released (December 2003) Rs 20.00 lakh as one time grant for set-up of State Level Monitoring Cell at State H.Q. Out of this Rs 10.00 lakh was granted for set-up of Video Conferencing Room at H.Q. for effective monitoring of CLR scheme at various level.

Out of Rs 20.00 lakh, Rs 0.80 lakh and Rs 0.50 lakh were sanctioned for site preparation and for purchase of furniture respectively for SMC at Revenue Department. However, it was observed that above items were not purchased and site was not constructed. Thus SMC was deprived of the basic infrastructure as per GOI guidelines for monitoring and evaluation of the operationalisation of the scheme at State level.

Recommendations

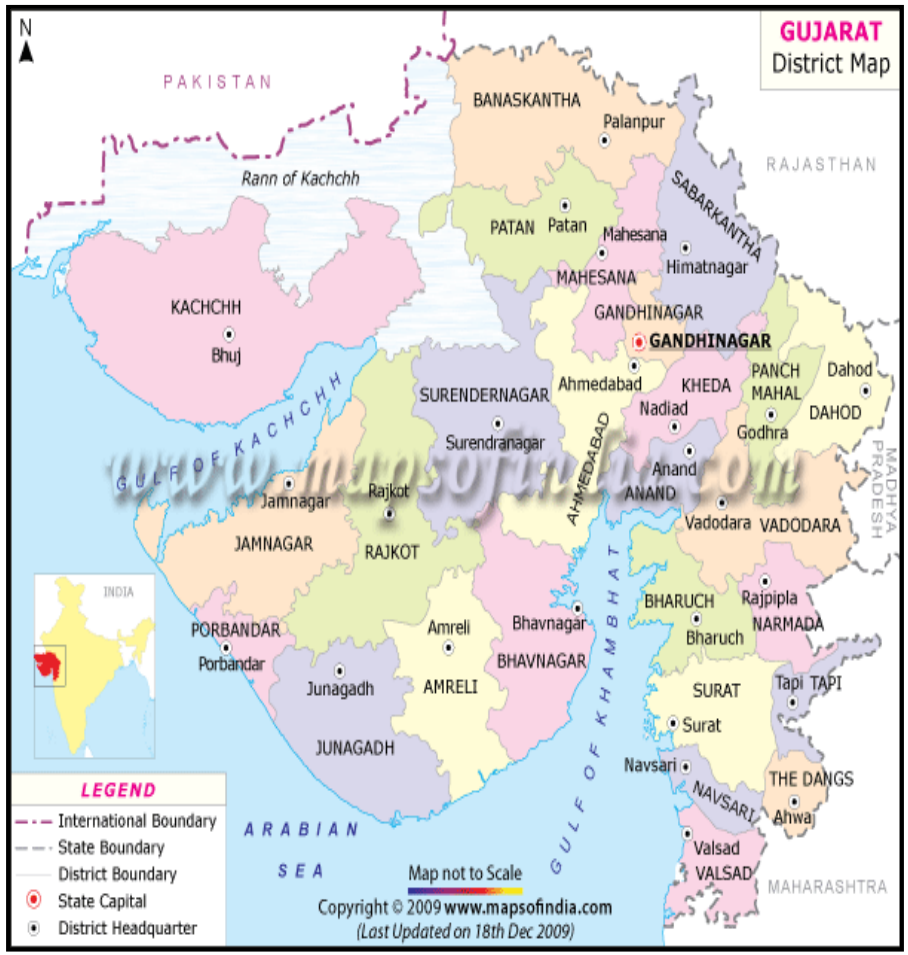
- Correctness of the captured data should be ensured;
- Foolproof control system should be ensured;
- Updation of data may be carried out as per schedule;
- Provisions for continuity in business, following any disaster, should be made.

The matter was reported to Government (August 2007); reply was not received (October 2007).

Appendix-II

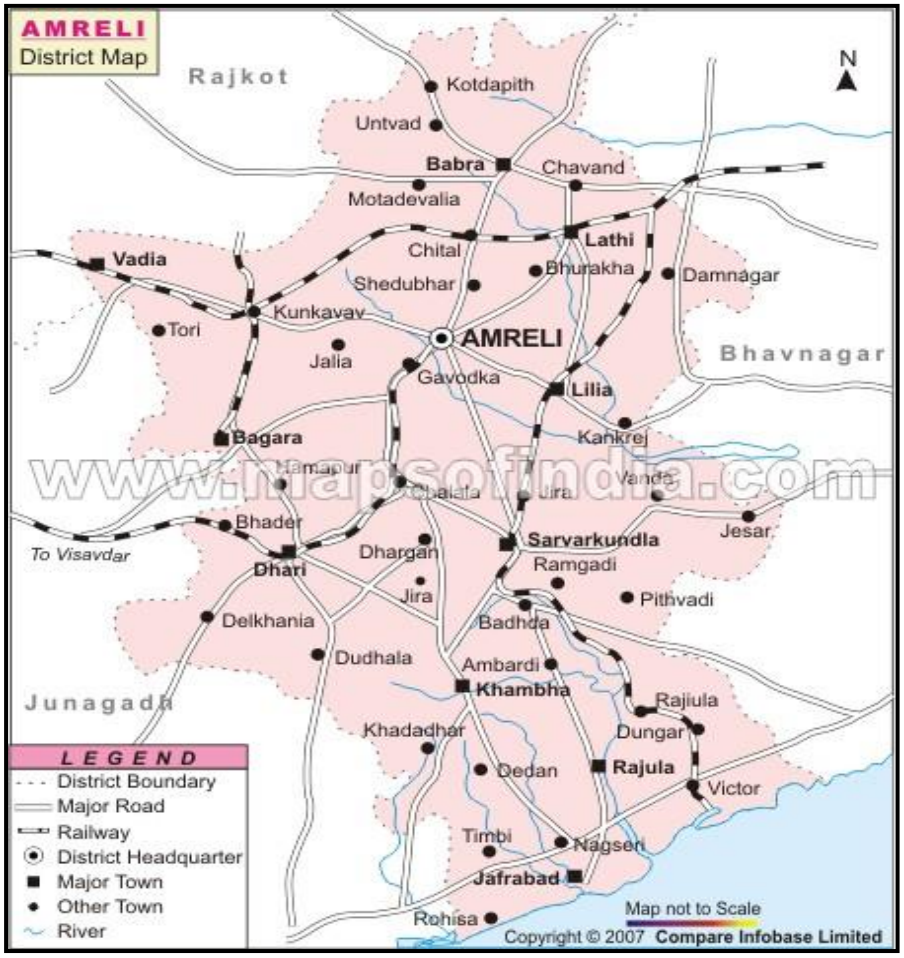
MAPS

GUJARAT



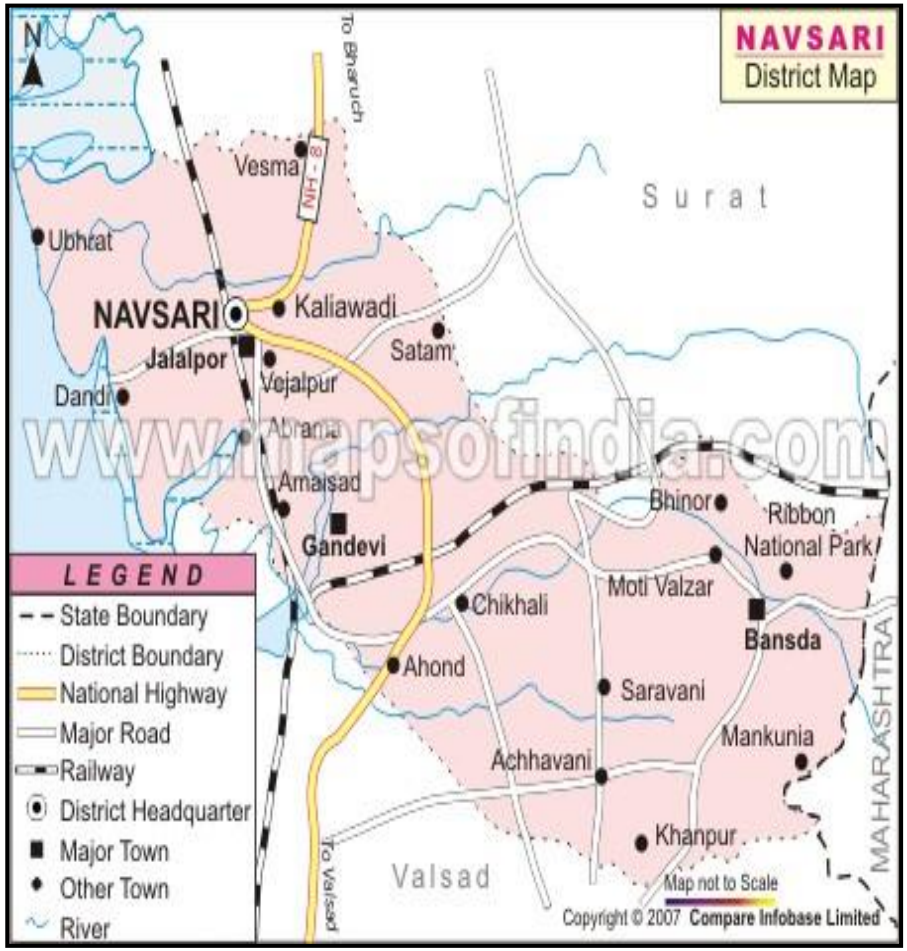
Reference: www.mapsofindia.com

AMRELI



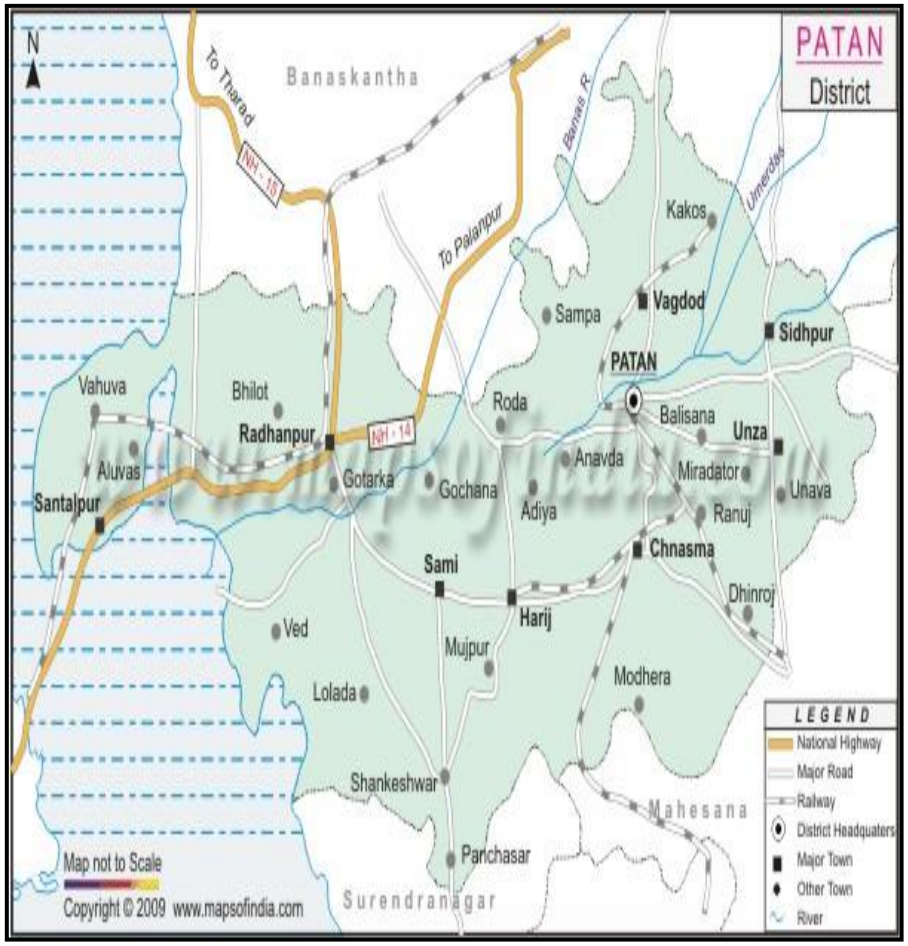
Reference: www.mapsofindia.com

NAVSARI



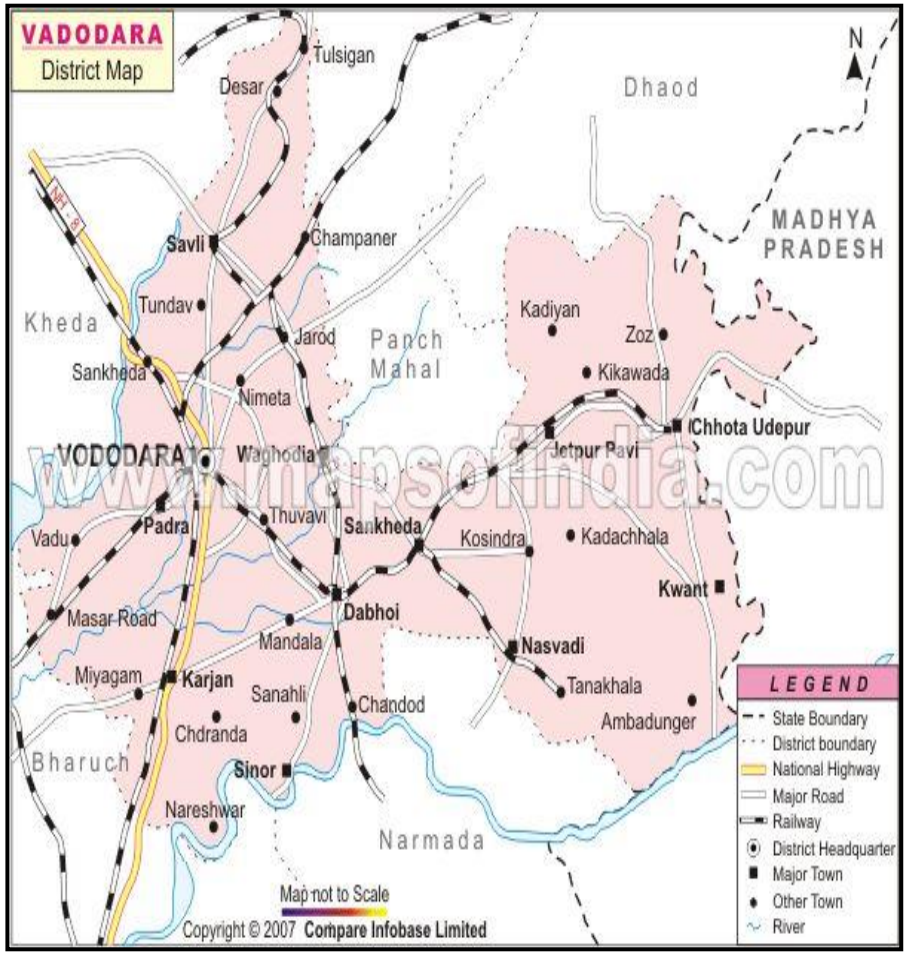
Reference: www.mapsofindia.com

PATAN



Reference: www.mapsofindia.com

VADODARA



Reference: www.mapsofindia.com

About the Authors

Ashish Vachhani is an IAS Officer of 1997 Batch, Tamil Nadu Cadre. He joined the Academy as Deputy Director in March, 2008. He is also Coordinator, Centre for Rural Studies, LBSNAA.

Hari Charan Behera, Ph.D., is Asistant Professor in the Centre for Rural Studies, LBSNAA, Mussoorie.