

Case Study

Dynamic Integration of Property Registration, Land Records and Cadastral Maps in Haryana



Department of Revenue and Disaster Management Haryana

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1. EXECUTIVE SUMMARY

The integrated land records, right of records, mutations and cadastral maps is one of the ambitious projects for state revenue department to bring about transparency and efficiency in land records domain. The project was rolled out by Department of Revenue and Disaster Management Haryana to ensure efficiency, effectiveness and transparency. The project management for such state-wide transformational project is a herculean task. This kind of integration is also a significant and very important step for migrating from existing presumptive land titling system to conclusive titling system, as envisioned under National Land Records Management Programme (NLRMP).

In the Land Domain, citizens are more concerned about land; it being a primary source of income and asset. The impact of the land transformation is a necessity to bring in transparent, valuable and effective measures for farmers, citizens, institutions, government departments, corporate bodies and industries. Making tamperproof records and removing all kinds of malfunctioning in the land domain is the primary objective of NLRMP project. The system has helped in significant reduction of fraudulent practices and corruption at the hands of private deed writers, local advocates, Patwaries and other middlemen.

The Department of Revenue and Disaster Management, Government of Haryana deals with maintaining and updating of revenue records, transaction by way of sale, mortgage, collection of revenue, consolidation of holdings, etc. The functionaries of Revenue department come into close contact with general public in connection with various activities/ transactions dealing with immovable property. To improve accessibility, stop manipulation and enhance efficiency of the land record system, Government of India has launched NLRMP (National Land Record Modernization Programme) with a primary objective of end-to-end computerization of land records.

2. INTRODUCTION

The deed registration work was automated in Haryana in the year 2003, using the Haryana Registration Information System (HARIS) software developed by NIC team and land records management was being done using the Haryana Land Records Information System (HALRIS).

The major objectives to be fulfilled by the Integrated HALRIS project were:

- Facilitating integration between registration software and Land records Software to avoid manual mutation triggers and prompt updating of land records for every action in registration software
- Allowing system based integration with Land Acquiring bodies for better planning and dispute resolution.

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- Making banks (Loan Lenders) as a part of Land Management System to bring in better control and oversight for land parcels under purview
- Remove malpractices arising due to non-exchange of data between deeds registration, Land Documents and Bank transactions.
- Maintain single version of truth for all documents and ensuring limited process hassles to the end beneficiary i.e. Citizen.

In practice, there exists a Single line of hierarchy in the department for revenue and property registration related work. The Director Land Records (DLR) is also the Inspector General of registration (IGR) of the State. A single revenue officer designated as 'Tehsildar' heads the Tehsil office, who functions as circle revenue officer (CRO) while dealing with revenue matters and function as ex-officio Sub Registrar (SR) for registration of deeds. With a view to streamline the working of revenue establishment the process of **computerization of Land Records (CoLR)** was started under 100% centrally sponsored scheme on one hand and **Property Registration Computerization** was started at all Tehsils / sub-Tehsils (Taluka) of Haryana, in technical consultation with NIC-HRSC by raising the funds through District Red Cross Societies.

For integrating the digitized maps with the Record of Right and Mutation, Bhu-Naksha software is being used. All the three i.e. HARIS, HALRIS and Bhu-Naksha work in tight integration to provide the platform to dynamically integrate the property registration, land records and cadastral maps.

In most of the States of Indian Union, the Finance department handles property Registration work and the Revenue Department looks after Land Records Administration work. Haryana is one of the very few states, where property Registration and the Land Records Administration work have been merged with a single department. The department also operates a large number of Acts and Rules, which have a direct bearing with the public.

3. OVERVIEW OF THE PROJECT OWNER

Details of the protagonist/owner:

Shri Krishna Mohan, who has led the state as Additional Chief Secretary & Financial Commissioner to Government of Haryana is a 1977 batch senior IAS officer of Haryana cadre, and has been at the helm of various visionary projects in the state. Mr. Krishna Mohan has served as an administrative head for various Haryana Government Departments before he retired from service on 31 December, 2013. He is having more than thirty six years of experience in all aspects and crucial sectors of administration as an IAS officer with core competencies in a complete range of sectors/departments such as Rural and Urban Development, Housing, Tourism, Revenue & Disaster Management, Home, State Excise & Sales Tax, Health, Social welfare, Education, Public distribution, Agriculture, Forest,

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Cooperation, Information & Public Relations and Grievance Redressal through several key appointments in the state of Haryana and Union Territory of Chandigarh in the capacity of the Head of the Department or Administrative Secretary (1977-2013)

He retired as Additional Chief Secretary & Financial Commissioner, Department of Revenue and Disaster Management, Government of Haryana. Throughout his tenure, Shri Mohan has worked on various transformational and citizen centric projects.

His experience on the project:

Shri Krishna Mohan led the projects which involved the transformation in citizen services and increase in the efficiency of Government functions. e-Governance was one of the key tools Mr. Mohan emphasized to bring in this change. He provided the support for Administrative Reengineering of processes involved in the management of revenue records. During his tenure as ACS & FCR he provided a new direction to the project with his quick decision making and leadership qualities.

Under him, the Department floated an Appointment Management System (AMS) for Deed Registration to enhance the transparency. HARSAC, which is a nodal agency for GIS work in the state, has been entrusted to accomplish the job of digitization of cadastral maps and scanning of old records under this programme.

4. PROJECT OVERVIEW / HISTORY OF THE PROJECT

In the year 2000, Revenue department, Haryana in technical consultation with NIC-Haryana, decided to computerize the registration of documents at all sub registrar offices (SRO) of Haryana in a phased manner. The National Informatics Center (NIC) team studied the entire deed registration work at SRO and a solution named as Haryana Registration Information System (HARIS) was developed.

Initially HARIS system was implemented in six SROs on self-sustainable basis by using the District Red Cross society as the venture capitalist. By the year 2002-03, HARIS was rolled out in the entire state. HARIS improved the delivery of services at SROs and also increased the stamp duty collection by standardizing the method of collector rate fixation and stopping the registration of undervalued deeds.

On the other side, computerization of land records (CLR) was also going on as a 100% sponsored scheme of Department of Land Resources (DoLR), Government of India. Though significant progress was made and almost 92% Jamabandi data was digitized using the FoxBase/Unix platform, this data was not fully used for citizen services due to various reasons like lack of interest and heavy workload on Patwaries. This resulted into delay in data verification and finalization. Jamabandies were taken for data entry without standardizing the way of writing. It was found that each Patwari uses multiple ways of

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writing the shares of owners/cultivators in the same Jamabandi. Contractual staff was used for data creation. Also, there has been no nodal officer to assign exclusive responsibility of the project at the district level.

With the success of HARIS system Revenue department Haryana decided to redesign and integrate the Land Records computerization solution with the HARIS System. In 2003 a new land records computerization solution named as Haryana Land Records Information System (HALRIS) was designed and implemented in all the tehsil/sub-tehsils in a phased manner. Data created by the erstwhile CLR scheme was converted and ported to the HALRIS system and jamabandies were made online by applying the pending mutations. Process of data updation was a very big challenge for the department. The various types of Jamabandis and incorporating the mutations have been studied and standardized across the state. Once the workflow based property Registration System and Land Records Administration system were standardized and stabilized, a need was felt to *integrate the* Property Registration System and Land Records system in a workflow environment. Accordingly, the NIC-HRSC developed an integrated HALRIS software product, which dynamically integrates the property registration and Land Records workflow under a single unified database.

Finally in year 2007, citizens' services were initiated from the HALRIS system. The **integrated** HALRIS software product provides a complete solution for the management of Land Records in the State and improved delivery of Government to Citizen (G2C) services related to Land Administration. **Web interface for Jamabandi Nakal** has also been developed and hosted at <http://jamabandi.nic.in>.

As far as coverage is concerned, geographically HARIS and HALRIS have been implemented in all the 122 Tehsils and Sub-Tehsils of Haryana. Bhu-Naksha has been implemented for 150 villages of Ambala tehsil.

Out of 7081 villages, RoR data of around 6918 villages has been entered, validated and made on-line. Remaining villages being under consolidation are to be taken up progressively for computerization, in line with completion of consolidation work. RoRs of more than 6000 villages of most of Tehsils/sub-Tehsils have been made available on web site <http://jambandi.nic.in>

5. SITUATION IN PROJECT OWNER'S STATE/ DISTRICT

In the manual system a lot of mutations were pending due to which there was delay of 1-2 years in the preparation of the new jambandi. Also, people used to visit the Patwari for getting the Nakal which he wrote by hand and then certified. So if a Patwari wasn't available for 1-2 days, people could not get the service from any other source and had to wait for the

Patwari. Lack of integration led to fraudulent land practices leading to citizen harassment and delays in administrative processes.

In the manual land management process, delays on account of availability of officers, time lapse in document search, communication delays, non-availability of online records, multiple human touch points, etc were major challenges in the efficient delivery of services.

Integration was required between sale deed registration offices, land records management system of Revenue Department and availability of cadastral maps under a single shelter to deliver hassle free and efficient citizen services. This was required to bring in process standardization and simplification of the records management.

▪ ***Stakeholders / beneficiaries involved:***

Beneficiaries of the project span from citizen and farmers till the highest administrative levels. These include -

- Farmers, land owners, buyers/sellers of property
- Business community and other general public
- Revenue and Judicial Courts, Officials of revenue department
- Revenue Department and other Government departments for planning activities
- Financial Institutions and Banks

The project spans involvement from all district Revenue stakeholders including Division Commissioner Level, collectorate, Tehsildars, Patwari Level, Panchayats, Private deeds writers, etc.

Financial Commissioner Revenue constitutes the state level standardization & Monitoring Committee. NIC-HRSC constitutes a dedicated team of professionals for the project. The workshops were organized at Division Commissioner level, where all stakeholders were called and various re-engineered processes were discussed.

➤ ***Steps / action taken at the state / district level to address the problem***

Following were the major steps taken to bring in the resolve the integration hurdles and establish integrated software system:

Involvement of Stakeholders: State level standardization & monitoring committee was constituted. A dedicated team of professionals for the project was identified by NIC. Each type of cases of writing the Jamabandi and incorporating the mutations were studied and standardized across the state.

Process Standardization and Simplification: (a) All applicable deed types were studied and standardized to form 22 types of deed registration Templates. (b) All type of

reported cases related to writing of Jamabandi (ROR) and mutations were studied and standardized and simplified so as to manage them through HALRIS, uniformly across the state. The cases, which could not be simplified, were incorporated in HALRIS through suitable customization and enhancement of HALRIS. (c) HARIS & HALRIS were dynamically integrated in a workflow environment to facilitate online availability of Record-Of-Right (ROR) on anytime, anywhere basis with security & transparency.

Delegation of Authority: The Collectors have been authorized to declare any Tehsil on-line. Since the project is being implemented through District Red Cross Societies / District IT Societies, the Collectors have been empowered at local level to appoint operators, out-source data entry & verification and procure requisite hardware.

6. MODALITIES OF THE NEW SYSTEM (SOLUTION)

▪ *Details of the solution(s) that is implemented:*

Following are the major components have been included/ incorporated in the HALRIS project:

- Dynamic integration of HARIS and HALRIS
- Appointment Management System in HARIS
- Digitization of Cadastral Maps/ Mussavis and integration with Bhu-Naksha software for handling maps
- Integration of textual HALRIS RoR data with spatial data through Bhu-Naksha
- System based auto-calculation of Stamp Duty based on property location

The strategy adopted to undertake this initiative was simple. The project included multiple features of implementation over its initial version.

Special focus on Cadastral maps:

The digitization of Cadastral maps of Sirsa and Ambala district were taken-up through HARSAC (Haryana Space Application Centre), Hissar. The HARSAC (Haryana Space Application Centre) digitized all the available cadastral maps of Sirsa and Ambala. It emerged that unless the textual data of Records-of-Rights and spatial cadastral maps are integrated, the real benefits from ICT interventions will be limited to the citizens. Village maps of the districts were collected from the Patwaries and cleaned/ corrected maps were used to make these scan ready. Scanning of village maps was done at minimum 200 dpi gray scale mode in *.tiff format.

The system imports the digitized and verified cadastral vector data in industry standard spatial data format to the spatial database. The system has the provision of importing geo-referenced spatial data.

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➤ ***Innovativeness of the project***

Haryana is the first state in establishing dynamic linkage between Land Records (HALRIS), Mutations & Property Registration (HARIS). The project has been an exemplary example of continuous innovation to improve service delivery further.

Original project takes care of textual data only; there was no linkage with the maps. Modified version supports the integration of textual data with the spatial data. Thus as a result of any transaction or mutation both textual and spatial data sets are updated.

Original project did not support the Token Management to manage the queue at tehsil level. Token issuance service is added to the HARIS for queue management at Tehsil/Sub-Tehsil level. Token is issued to parties for deed registration. HARIS processes the tokens in first in first out order.

In the original project, no mechanism existed to transfer the data of registered deeds to the state data center. Now, web services based solution is developed to transfer the data of registered deeds to state data center at day end. Centralized database is used by the Revenue department to generate various reports related to collection of duty.

No touch screen interface existed in the original project. So for any small information people were required to stand in queue to get the information. In the existing project touch screen interface is provided to give access of services to the public. Touch screen based kiosks are also installed at tehsil level so that general public can access the services on their own.

Concept of two-dimensional bar code is now being used in the project to make the copies of ROR tamper proof whereas no such security mechanism was there in the original project. Two-dimensional bar code is printed on the Jamabandi Nakals so that nakals can be verified later on.

Application is made to check the stay/attachment on the basis of khasra numbers whereas original project was not having any such feature. And this application is capable of synchronizing the central database located at state data center within 15 minutes of occurrence of any transaction at tehsil and sub-tehsil level.

Provision is made to check the requirement of No Objection Certificate (NOC) from the Town and Country Planning department on the basis of khasra numbers.

▪ ***Technology Platform used:***

- Dot Net platform at front end and SQL Server at backend

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- Client Server architecture at HARIS/ HALRIS centres. Automatic data porting to State Data Centre through web services.
- Connectivity between tehsil centres and SDC through SWAN
- Bhu-Naksha is on Java and PostgreSQL database
- Integrated heterogeneous environment
- 2-D bar coded and digitally signed RoRs
- Appointment Management System and Jamabandi Portal are web based

▪ ***Security concerns:***

For security purposes, it has been ensured that the citizen and government data for land remains confidential and tamperproof. The system based workflows defined are run with no human interventions with aid of digital signature and also hosting is taken care of by State Data Centre. There are two types of access that are provided. User ID and password based access & Role based access.

Some of the other security features include Biometric authentication, digitally signed RoRs, two dimensional bar code is used to make the copies of ROR tamper proof, digitally signed database interface for critical transactions (in Pilot at 2 districts).

Porting of data from HARIS/HALRIS centres to Haryana SDC through secured SWAN connectivity. Standard Data Centre privacy and security policies have been implemented at Haryana SDC.

▪ ***Any issue(s) with the technology used:***

The multi-tier technology architecture has been adopted for HALRIS project implementation. No major/ important issues have emerged from the new service delivery practices; however the Department is planning to implement some additional services / facilities shortly for further improving the system.

➤ ***Service Levels for services:***

The project being a citizen centric service delivery initiative, special focus has been kept on maintaining service levels. Under Right to Service Act Govt. of Haryana has fixed the max time limits for delivery of citizen service.

- For Deed Registration – Same day
 - For Nakal of ROR – Same day
 - Sanctioning of Mutation – within 15 days
- ***Measure to ensure adaptability and scalability:***

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The solution designed for Land records management is easily adaptable and scalable since it has immense advantages for all the stakeholders including service beneficiary and service providers. The adaptability of the solution has been ensured through an ease of user design of the solution which includes a simple user interface and reporting module supports the Hindi language.

For Administration, the time saved is being utilized on other office works since there was an ease of availability of RoR over internet.

➤ ***Measures to ensure replicability***

This solution can be very easily used by other states to provide the similar service to the public without making major changes to their existing land records software.

The HARIS has already been replicated to states of Orissa, Himachal Pradesh, and Delhi. Some of the states like Karnataka, Kerala, Punjab, Maharashtra, and Delhi visited Haryana to see the dynamically integrated system of Haryana.

The solution designed is easily replicable across the state and across the country as -

- State wide Area Network (SWAN) is being used to transfer the data to State Data Center.
- Web services are hosted in the State data Center.
- Process to issue the digital signatures to all the key functionaries like Tehsildar, Registry Clerk and Patwaries is on.
- Land Records data is being digitally signed to provide the digitally signed copies of Record of Rights. HARIS and HALRIS will be migrated to web based environment.

➤ ***Risk Analysis***

A project of such a magnitude and scale was envisaged along with certain risks. The biggest one was Infrastructure management and up-gradation which was required for the project at various districts and state levels. Stakeholder participation was also important to ensure that roles and responsibilities post re-engineering of processes and technological up-gradations are clearly defined. It was imperative that technological changes be adopted from time to time to ensure service effectiveness and the project feeds on continuous capacity building and innovations to maintain high quality of service delivery.

➤ ***Capacity Building model used:***

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For the communication and dissemination strategy, the workshops were organized at Division Commissioner level, where all the stakeholders were called and various re-engineered processes were discovered and discussed. A full paper on this e-Governance initiative has been included for the newly recruited Patwaries in the State. Two capacity building centers one at Panchkula and other at Patwar Training School Hissar have been established.

The DIOs of NIC-HRSC were trained on the technical and operational aspects of the project. The Patwaries were trained at Revenue Training Institute and Patwar Training School. The DIOs further trained the Job Work contractual operators/supervisors on day-to-day operations of the system. The training is an on-going process.

7. IMPACT ON THE STAKEHOLDERS/BENEFICIARIES

➤ *Efficiency Enhancement*

The system has improved the quality of service in Tehsils by reducing the total time taken by the Tehsil staff for registration. Now documents are returned same day to the public, earlier it even took weeks/months to get a registered deed. The photographs of witnesses are also taken along with the sellers and buyers on-line. This has reduced the incidents of wrong witnesses, which was very prevalent before the implementation of this system.

On-line availability of Updated Nakal of ROR (Record of Right) to the public helps in reduction of litigations and frauds, as now it is not possible to sell a same piece of land to multiple parties/peoples. After this initiative there is significant increase in the stamp duty collection in spite of the reduction in the stamp duty rates by the state government. This increase has been possible because the system has forced the collectors to make their collector rates uniform and structured. Earlier there was big difference in the collector rate and the open market rates of the property. Further, now it is not possible to register a property below the collector rate. Revenue leakage caused by the registration of undervalued deeds has been stopped. System has also reduced the mutation pendency to great extent as in online environment one cannot sell the land without doing the mutation. So this has stopped the practice of doing the deed registration on the basis of registered deeds. Provision to get the appointment for deed registration has also been introduced to save the time of the general public and to manage the rush at sub-registrar offices.

➤ *Accessibility & User Convenience*

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Citizen is at the centre of this Automation exercise of HALRIS project. Deed templates are available on the Revenue department's web site, which can be used by the general public to write the deed. Collector rates, Stamp duty and Registration fee rates are also available on web site for the convenience of the public. The system has improved the quality of service in Tehsils by reducing the total time taken by the Tehsils staff for registration. Now documents are returned same day to the public earlier sometimes it took weeks/months to get a registered deed.

This initiative has solved the problem of mutation pendency to a great extent; earlier due to mutation pendency delay was there in the preparation of the new jamabandi. With this initiative all mutations are entered at tehsil level and in case of registered deeds it is generated by the system itself. Mutation process is completed within 15 days in case of uncontested mutations. Entire user interface is in Hindi language.

➤ ***Cost benefit analysis:***

HALRIS system has reduced the direct and indirect cost incurred by the citizens to get the services. In the integrated system deed registration process takes only 20-25 minutes where as in manual system people have to wait for full day for deed registration. 22 standard deed templates are available on website as well as HARIS/HALRIS centers and e-DISHA centers. This saves thousands of rupees for citizens to be paid to licensed deed writers.

Significant cost saving due to elimination of need of middle man for appointment and other services is achieved. This has been made possible due to introduction of Appointment Management System (AMS). The system has enforced low manual intervention & data capturing at source. This has led to fewer errors in the records. Web enabling of the Land Records has helped in bringing transparency in making available access to the ROR on anytime, anywhere basis.

➤ ***Benefits to Administration:***

Post HALRIS there have been drastic improvements at the departmental level. The increase has even been recorded during the period when the state government has reduced the stamp duty. In this system, it is possible to fix a separate rate for different parts of the same locality by dividing it into the number of segments. So this has reduced the practice of concealing the exact location of property for saving the stamp duty. Further, now it is not possible to register a property below the collector rate. This has stopped the revenue leakage caused by the registration of under-valued deeds.

8. FUTURE ROADMAP / SUSTAINABILITY

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The current system will be further improved. It will be moved from decentralized to centralized architecture. The introduction of QR code in future for mobile based scanning verification of documents would help the citizens in verifying the authenticity of documents using their mobiles. Mobile applications for senior officers of the Department will help to check status of registration at each tehsil. This system has already been developed and is under trial run through SMS and Mobile based notifications for mutations.

The system has been implemented on self-sustainable service charge model by outsourcing through District Red Cross (DRC) society and District IT Society. The project has been a successful example of PPP model for e-Governance. Government is not spending any money to run HARIS and HALRIS centers. In every district DRC/IT societies are taking the service charge from the users there by making the project self sustainable. The system has been generating around Rs. 6 Crores as service charges, which are sufficient for the long term sustainability of the project. Till date more than Rs. 1800 lacs have been collected as service charges, which is enough for executing the other e-Governance projects related with the Revenue Department. The District Red Cross Societies and IT Societies are using a part of this fund for the welfare of rural masses in their district. Now 40% of service charges go to Red Cross, 50% goes to IT Society and 10% goes to FCR office at State Headquarters. The technical expertise of NIC-Haryana is available at state headquarter and all other districts to assure sustainability of the system on a long term basis.

The system has also helped in generation of around 500 jobs for the local Haryana boys and girls, as all the operators have been appointed from the local areas. District Red Cross Societies are using a part of the service charges for running social welfare programs for the weaker sections of the society.

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9. ANNEXURE(S):

EXHIBIT – 1 A – Abbreviations

Sr.	Abbreviation	Explanation
1.	RoR	Record of Rights
2.	DRC	District Redcross Society
3.	NIC	National Informatics Centre
4.	DITS	District IT Societies
5.	FCR	Financial Commissioner Revenue
6.	SDC	State Data Centre
7.	SLA	Service Level Agreement
8.	NOC	No Objection Certificate
9.	PPP	Public Private Partnership
10.	AMS	Appointment Management System
11.	QR Code	Quick Response Code
12.	SWAN	State Wide Area Network
13.	HRSC	Haryana Right to Service Commission
14.	SQL	Structured Query Language
15.	CLR	Computerization of Land Records
16.	Patwari	A Village Accountant or Registrar
17.	Naib-Tehsildar	The Deputy or Assistant of Tehsildar
18.	Nakal	A copy of

EXHIBIT – 1 B – Definitions

Jamabandi (Record of Rights)

It is a document prepared as part of record-of-right in every revenue estate. It contains entries regarding Ownership, cultivation and up-to-date of various rights in land. It is revised every five years when a Jamabandi is prepared by Patwari and attested by Revenue Officer. Two copies of revised Jamabandi are prepared. One copy is consigned to the District Record Room and other copy remains with Patwari. All changes of rights in land coming to the notice of the Revenue Agency are reflected in the Jamabandi according to a set procedure after these have been verified by Revenue Officer.

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Mutation Register

Mutation indicates the changes that have to be brought about in ownership and title of the land. It contains the information about the khewat of last Jamabandi, which are proposed to be corrected (Column No 1 to 7) and information contained in Column no 8 to 12 is proposed to be established. These columns are self explanatory. Column no 13 indicates the types of mutation and its details. Mutation fee is entered in column no 14 and brief report is given in column no 15. Referencing of mutations are made in current Jamabandi in Remarks Column.

Khasra Girdawari

It is a register of harvest inspections. The patwari conducts field to field harvest inspections every six months in the month of October and March. He records facts regarding crop grown, soil classification, cultivation and capacity of the cultivators.

Shajra Nasab

Prepared in every estate at the time of settlement and forming a part of record-of-right. Sharja Nasab is pedigree table showing succession to ownership rights occurring from time to time in the estate. It is revised and brought up-to-date every five years and in the interval changes occurring from time to time are reflected in patwari's copy through suitable references.

Latha (Field Book)

Popularly named as Shajra, Patwari keeps a copy of the Shajra on Cloth called '**Latha**'. It gives survey numbers and dimension of a field, now-a-days usually prepared on the scale 40 Karam to one Inch. It is prepared at the time of settlement or consolidation. Original copy is retained in Tehsil record room and is updated every five years. Patwari's copy is kept up-to-date through field inspection and incorporation of all transfers attested from time to time.

Roznamcha Waqati

It is a diary of daily incidents maintained by the patwari under executive instructions issued from time to time. Patwari makes an entry for each day mentioning briefly the facts relating to rainfall, hailstorms and other natural calamities, transactions in land or other rights, visits by Superior Officers and orders given by them, orders of Civil and Criminal Courts received by him and executed by him, condition of the crop and cattle, various surveys and inspections conducted by him and any other facts of importance coming to his notice or reported to him.

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EXHIBIT – 2 – Process Flowchart

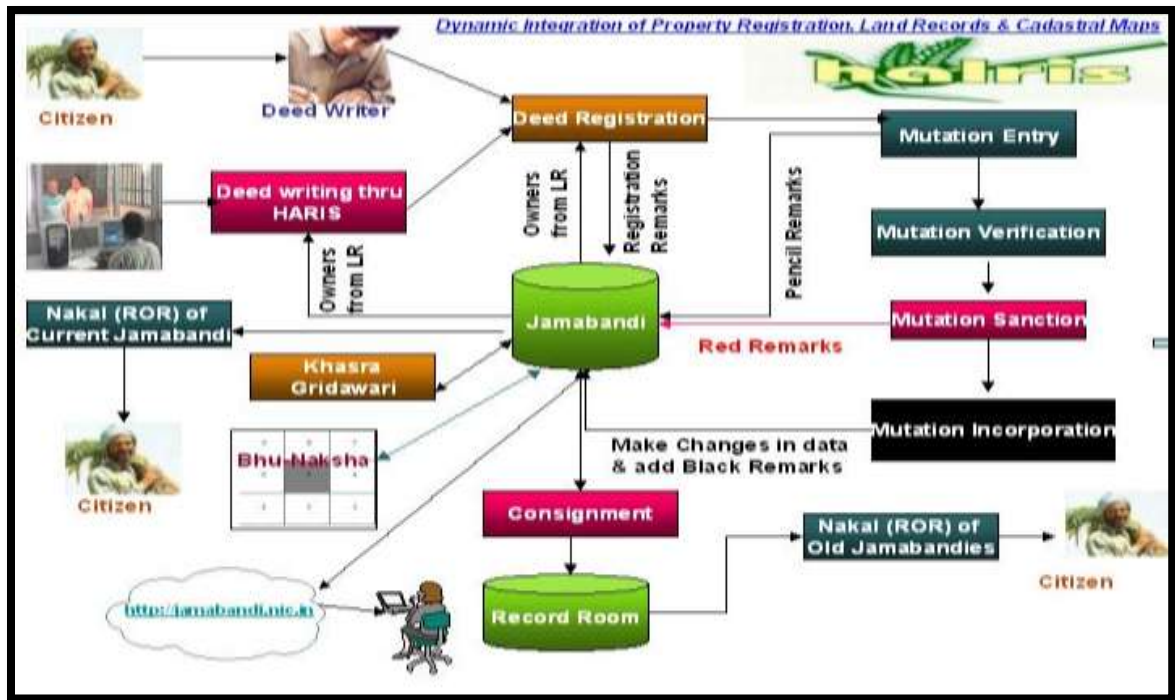


EXHIBIT -3 – Comparative Analysis of earlier Vs new system with respect to :

a. Copy of ROR before HALRIS

जमाबन्दी गांव	तहसील	जिला	जमाबंदी गांव
20/1	331		

The table contains handwritten entries in Hindi, including names of villages (जमाबन्दी गांव), talukas (तहसील), and districts (जिला). It lists various details related to land records, such as owner names, areas, and other administrative information.

Copy of ROR (Before Computerization)

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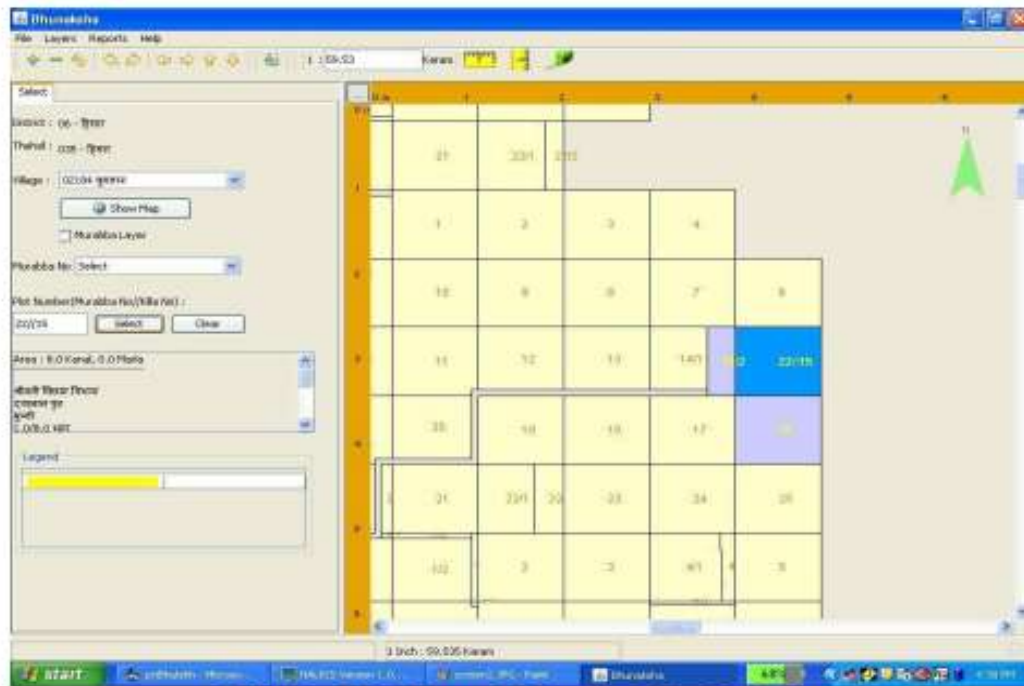
b. Copy of ROR before HALRIS

नकल गामाबंदी (पट्टा पत्रदार)

क्र.सं.	प्लॉट नं.	प्लॉट का.सं.	प्लॉट का.सं.	प्लॉट का.सं.	प्लॉट का.सं.	प्लॉट का.सं.	प्लॉट का.सं.	प्लॉट का.सं.	प्लॉट का.सं.	प्लॉट का.सं.	प्लॉट का.सं.	प्लॉट का.सं.
1	22	150	20	4.7	पुष्पिका	12	12	12	12	12	12	12
2	21	210	21	7.12	पुष्पिका	25	25	25	25	25	25	25
3	20	200	20	7.12	पुष्पिका	26	26	26	26	26	26	26
4	19	190	19	7.12	पुष्पिका	27	27	27	27	27	27	27
5	18	180	18	7.12	पुष्पिका	28	28	28	28	28	28	28
6	17	170	17	7.12	पुष्पिका	29	29	29	29	29	29	29
7	16	160	16	7.12	पुष्पिका	30	30	30	30	30	30	30
8	15	150	15	7.12	पुष्पिका	31	31	31	31	31	31	31
9	14	140	14	7.12	पुष्पिका	32	32	32	32	32	32	32
10	13	130	13	7.12	पुष्पिका	33	33	33	33	33	33	33
11	12	120	12	7.12	पुष्पिका	34	34	34	34	34	34	34
12	11	110	11	7.12	पुष्पिका	35	35	35	35	35	35	35
13	10	100	10	7.12	पुष्पिका	36	36	36	36	36	36	36
14	9	90	9	7.12	पुष्पिका	37	37	37	37	37	37	37
15	8	80	8	7.12	पुष्पिका	38	38	38	38	38	38	38
16	7	70	7	7.12	पुष्पिका	39	39	39	39	39	39	39
17	6	60	6	7.12	पुष्पिका	40	40	40	40	40	40	40
18	5	50	5	7.12	पुष्पिका	41	41	41	41	41	41	41
19	4	40	4	7.12	पुष्पिका	42	42	42	42	42	42	42
20	3	30	3	7.12	पुष्पिका	43	43	43	43	43	43	43
21	2	20	2	7.12	पुष्पिका	44	44	44	44	44	44	44
22	1	10	1	7.12	पुष्पिका	45	45	45	45	45	45	45

Copy of a ROR (After Computerization)

c. Copy of cadastral map in Bhu-Naksha



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EXHIBIT – 4 – Calculation and the details of the allocated budget under the new system

To meet the operational expenditure project is being implemented on self sustainable service charge based model. Now 40% of service charges go to Red Cross, 50% goes to IT Society and 10% goes to FCR office at State Headquarters. NLRMP funds are being used to create the ICT infrastructure, Digitization of cadastral maps and scanning of old records.

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