

# JharKhand State

## Enabling Digital Transformation in Governance Through Cloud Infrastructure

Edited by **Dr. DIBAKAR RAY**

Since its inception in 2000, NIC Jharkhand State Centre has been taking tremendous strides in providing various ICT-based solutions for service delivery to citizens in the State enabling convenience and transparency. NIC State Centre provides ICT solutions for the Government to deliver schemes for the upliftment of the poor and underprivileged. Many eGovernance projects were implemented which in effect eliminated both the middle man and the pilferage of precious resources.

### ICT Initiatives in the State

#### Jharkhand Mini Data Centre

NIC Jharkhand houses a mini data centre comprising 10 racks with 34 physical servers running 145 virtual machines catering to 45 different user departments for their hosting services. Some of these services are Excise, Election, Land Records, Education, Planning,



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NIC Jharkhand State Centre has been providing various ICT support and services for various Government Departments District Administrations, Judiciary and Public Sector Undertakings at multiple levels. This includes Cloud services, Networking, Video Conferencing, Consultancy, Training, Software Development and Project implementation under the umbrella of the Digital India initiative of the Government of India.

Building Construction, Cooperative, Jharkhand Education Project Council, Shri Krishna Institute of Public Administration, and various Microservices for different districts of the state.

#### National Knowledge Network (NKN)

NKN Point of Presence (PoP) was set up at Yojna Bhawan, Nepal House Complex, Jharkhand. All 24 NIC district centres are connected to the PoP through 1 Gbps / 100 Mbps / 34 Mbps links through NKN / NICNET approved service providers. Additionally, 19 research and 9 educational institutes are connected to NKN and NMEICT through a 1 Gbps link or 100 Mbps link.

#### Web Hosting Services / Cloud Services

NIC provides web hosting and cloud services to various State and Central Government departments. The solution involves the design, planning, implementation, management and monitoring of the cloud infrastructure. Services offered are Infrastructure as a Service (IaaS) and Platform as a Service (PaaS) with various predefined Windows and Linux templates along with Application and Database Fine Tuning, Server Hardening, Backup and Restore services.

#### Video Conference Services

NIC Jharkhand provides VC services to Raj Bhawan, CM office, and other Government Departments to conduct meetings in a secured environment. VC services are also provided at all 24 NIC Districts, District Courts and Central Information Centres (CICs) for hearing cases. In the last year, around 1150 VCs were facilitated, comprising 1750 VC hours.

#### Chancellor Portal

<https://jharkhanduniversities.nic.in>

Chancellor Portal has been developed and



▲ Fig. 3.1: Hon'ble Governor-cum-Chancellor of State Universities, Shri Ramesh Bais, reviewing the progress of Chancellor Portal.

view / share / reuse data using a web interface, while an app can be used to collect / edit data. To collect data, one must be a registered member of the app. Through the web portal, a registered user can design a form as per the requirements. Users may give access to this form to any registered user of the app. It supports text, numbers, and lists as data types.

Unregistered users can only participate in the public survey. To access the private forms, a user must be registered with this app. A user can register through the app or web. Once a user is registered, the user gets the password in their registered email, which can be used to login into the app. The user can see three tabs viz. My Forms, Shared Forms and Third Party Forms. In My Forms, users can see the form that was designed by the users themselves. In Shared Forms, users can see the form designed by someone but have given access rights to this user. In the Third Party Forms, users can see the form that was designed by others but shared privately through Keys. Users may enter, edit or delete any record that is owned by them. A 'Form owner' user can add, update, and delete any user's data. But once he updates the data, the ownership of the data will automatically change to "Form User."

This system can be used by any department where data collection is required either daily or at a certain time interval. The system can be used to capture data in a prescribed format, survey data, or meet the requirements for unstructured data. The Department can also use / reuse the existing data available in the system.

**iRAD**

Integrated Road Accident Database (iRAD) aims to enrich 'accident database' from every part of the state. It generates various types of insights by analysing the collected road accident data using data analytics techniques.

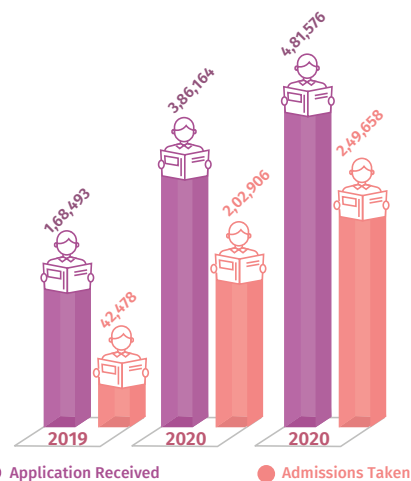
It represents the analysis output through monitoring, reporting and analytics dashboard for easy understanding and can accordingly forecast decision making for apex authorities towards the formulation of new policies and strategies.

To reduce data entry effort and collection time, iRAD is integrated with Vahan and Sarathi services. A web service interface is created between iRAD application and Vahan & Sarathi to pull data of vehicles and driving licences respectively so that the task at on-site data entry can be minimised.

**Integrated Finance Management System**

IFMS is a budgeting and accounting system which manages spending, payment processing, budgeting and reporting of all financial transactions for Government. It provides data for Public Finance accounting, and enables payments to / from the public with enhanced transparency. It provides solutions in following areas:

- Budget Estimation
- Fund Management (Distribution to field level DDOs)



▲ Fig. 3.2: Yearwise Number of Applications received and Admissions taken in UG and PG Courses

implemented for the Department of Higher & Technical Education, Jharkhand to facilitate all the eight state universities, their 205 constituent /affiliated colleges and post-graduation departments. Inviting online applications, fee payment, merit list generation, and online registration are the important services offered through this portal for both UG and PG courses. The college-wise subject mapping, subject combination mapping, and eligibility criteria are readily available for all and are updated regularly by each university. Based on this, a student can apply for admission with multiple preferences for a number of courses as per their choice through a single login.

**CM Support Mobile App (Petrol Subsidy)**

Hon'ble Chief Minister, Shri Hemant Soren, recently launched the Android-based CM Support mobile app, designed and developed by NIC, in the presence of the Cabinet Ministers, Chief Secretary and other officials of the state. Under

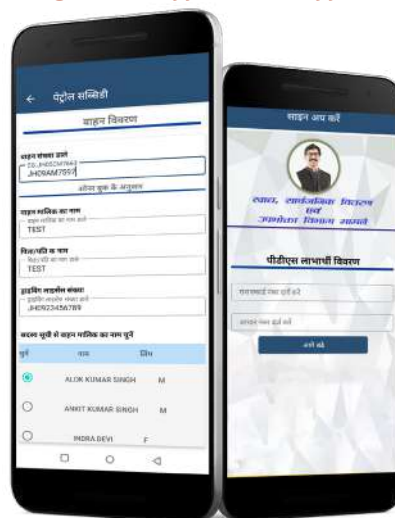
the scheme, a subsidy of Rs. 25 per litre, Rs 250 per month for a maximum of 10 litres of petrol per month for two-wheelers to the beneficiaries covered by the ration card are transferred into their bank account using Aadhaar based DBT through PFMS.

To receive the benefit, the verified Aadhaar numbers of all the family members should be mentioned on the ration card. The bank account number and mobile number linked to the applicant's Aadhaar should be updated. The vehicle should be registered in the name of the applicant in the state of Jharkhand. The applicant should have a valid driving licence. The vehicle number is sent to the DTOs for verification. The subsidy is provided only to the DTO approved records through PFMS. Each month, the beneficiary has to confirm the use of the vehicle.

**Open Data Collection Toolkit App**

Open Data Collection Toolkit (ODCT) App is designed to collect citizen data from different sources or surveys. It can be used to create form,

▼ Fig. 3.3: CM Support Mobile App



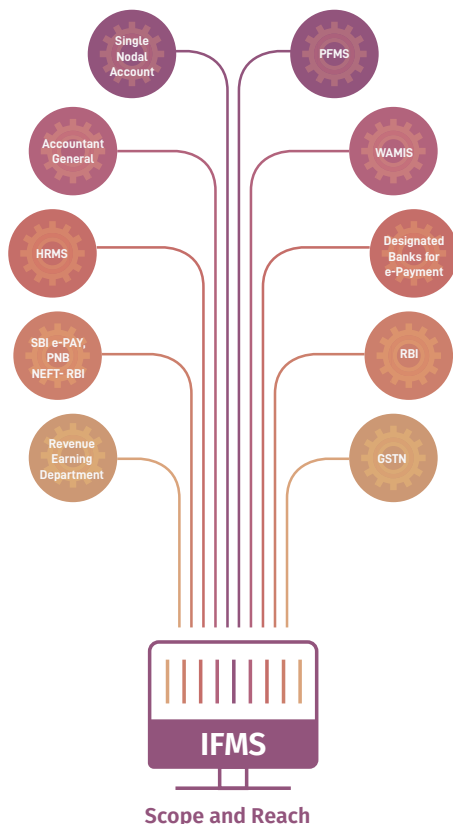
## From the States

- Bill generation, Payment and Processing
- Treasury Core Module: e-Payments
- Treasury Accounts
- Jharkhand Online Government Receipts Accounting System (JeGRAS): Integration with all Dept Portals
- Online GPF Accounting
- Cyber Treasury Core Module
- ePension Application & Processing
- Integration with AG VLC, Pension Application of AG, HRMS, PFMS, RBI, GSTN, Agency Banks
- Employee Portal and Mobile App
- MIS Reporting Portal (eDashboard)
- Payslip Portal

### Highlights

- Online portal and mobile app for accepting pre-budget suggestions from citizens
- Budget eBook through mobile app
- ePayments from Treasury Desk: eKUBER platform of RBI and Cash Management Product (CMP) of State Bank of India
- JeGRAS: Common receipt portal of State of Jharkhand which facilitates single point receipt (Tax / Non-Tax) from Citizens in real-time. It acts as a gateway to 34 State or Central departmental

▼ Fig. 3.4: Scope and Reach of Integrated Finance Management System



Portals for real-time collection of state revenues

- Three-way reconciliation of Receipts (JeGRAS Portal – Aggregator Bank – RBI)

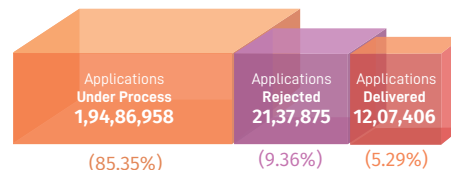
### JharSewa

JharSewa, a mission mode project, has been a tremendous success in the state. Over 36 services are configured on this platform using the 'Serviceplus Framework'. Some of the major services provided by JharSewa are issuance / renewal of caste, income, residence, social security pensions, and marriage registration certificates. These services are available through Jan Suvidha Kendras by simple online registration. A person can download Digitally Signed Certificates (DSCs), which can be fetched and stored in Digilocker app.

### Jharbhoomi

(<https://jharbhoomi.jharkhand.gov.in>)

Jharbhoomi is a digital platform designed to implement the Digital India Land Record Modernisation Program (DILRMP) in order to usher in a system of updated land records, automated mutation, integration between textual and spatial records, inter-connectivity between revenue and registration, and to replace the existing deeds registration and presumptive title system with that of conclusive titling with title guarantee. The



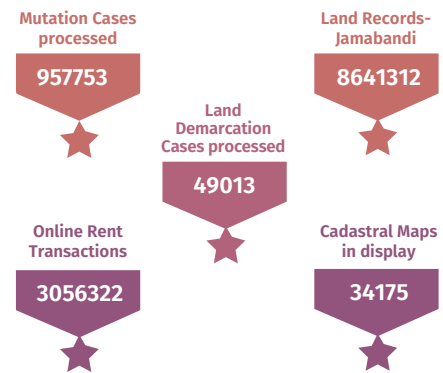
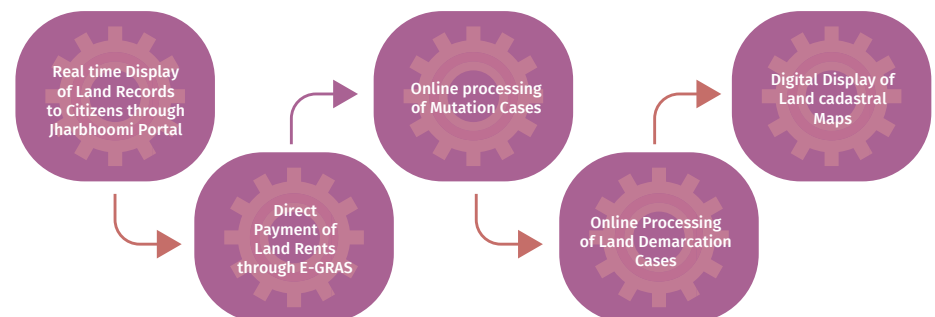
▲ Fig. 3.5: An overview of applications received on JharBhuNaksha

official land records of mapped and unmapped villages have allowed the government to provide landowners with access to basic facilities.

Following services are available to citizens:

- **Jharbhoomi MIS:** It enables citizens to view their updated land records, file online mutation cases, track mutation application status and so on.
- **JharMutation:** It is an online role-based, end-to-end solution for filling, processing and

▼ Fig. 3.6: Flow diagram of Jharbhoomi



▲ Fig. 3.7: Jharbhoomi in Numbers

tracking of online mutation cases.

- **JharBasudha:** It is an online role-based solution for updation of Record of Rights (RoRs).
- **JharBhuLagan:** It is an online service for the collection of land rent from citizens with facilities to download receipts.
- **JharBhuNaksha with ULPIN:** BhuNaksha is an end-to-end solution for cadastral mapping. It offers map services to the citizens combined with the RoRs. ULPIN (Unique Land Parcel Identification Number) is a unique 14-digit alphanumeric identity assigned to each land parcel as the next step toward DILRMP. The identification is based on the longitudinal and latitudinal coordinates of a land parcel and is dependent on the detailed surveys and geo-referenced cadastral maps. As of now, ULPIN has been enabled for 85% villages in the state.
- **Land Demarcation System (LDS):** It is a service to citizens for hassle-free booking of an appointment for demarcation of land by government officials.
- **Parisodhan:** It is an online platform for registering and tracking land record-related grievances by citizens.
- **SVAMITVA:** It is a flagship scheme of the Ministry of Panchayati Raj towards the establishment of clear ownership of property in rural areas, by mapping land parcels using drone technology and providing RoRs to village household owners with the issuance of legal ownership cards. The scheme has been piloted recently in the Khunti district of Jharkhand.

The excellent technical support and expertise of NIC, Jharkhand State Centre, Ranchi has undoubtedly been one of the key ingredients in the successful development and implementation of major IT projects like Integrated Finance Management System (IFMS), Transport (Vahan, Sarathi), Land record Computerisation (Jharbhoomi), NG-DRS, Website development, PDS system, Excise, JharSewa, e-Hospital, Revenue court management system, Integration of NICNET and SWAN, Video Conferencing Support etc. Thanks to NIC, apart from the basic implementation of the project, NIC Jharkhand has been instrumental in providing IT support to various departments of the state government falling in different delivery models like G2G, G2B and G2C which have been launched in the state. Needless to say, the role of NIC in facilitating the state government in its efforts to deliver efficient and effective services on e-governance platform is commendable.



### Kripa Nand Jha, IAS

Secretary, Department of IT & eGovernance  
Jharkhand

- **Suo Motu Mutation:** Land mutation process has been integrated with land registration to eliminate the need to file mutation cases separately, resulting in a hassle-free transfer of land.

#### Budget eBook

<https://finance.jharkhand.gov.in>

Jharkhand Budget eBook mobile app was developed to provide State Budget related information on topics like Budget Books, Grants, and Supplementary Budget. It can be downloaded from both Jharkhand finance website and Google play store. With the launch of this app, the Jharkhand Budget can be accessed digitally anytime and anywhere in Hindi and English.

#### eChallan

eChallan is a comprehensive solution for Transport Enforcement Officers (TEOs). It is integrated with Vahan & Sarathi applications and provides a number of user-friendly features while covering all the major functionalities of the Traffic Enforcement System.

It is an end-to-end automated system with a digital interface for all stakeholders in the challan ecosystem. It covers two types of



▲ Fig. 3.8: Workshop on e-Challan at Shri Krishna Institute of Public Administration

offences: 1. Compoundable - where challan is defined and Non-Compoundable - where challan is not defined. Challans of Non-compoundable offences are directly sent to the designated court. The offender of compoundable offences can pay challan on the spot using PoS or online through the web.

It offers customised interfaces for the following stakeholders:

- Enforcement Officers / Traffic Police
- Citizens (Private or Commercial Car Owners/ Drivers)
- State Transport Office
- Regional Transport Office
- Ministry of Road and Transport

#### e-Hospital

e-Hospital is aimed towards the Hospital Management Information System (HMIS) for proper internal workflow of a hospital. The patient interface is facilitated through Online Registration System (ORS) where services related to patients are delivered electronically. ORS

services include taking an online appointment, viewing lab reports and checking the status of blood availability in blood banks. The system is integrated with 'Ayushman Bharat Digital Mission' and PMJAY for facilitating patients and hospitals.

The main objectives of e-Hospital Application are:

- Hospital-wide management and seamless integration of information across various hospital departments
- Comprehensive information about patients
- Data derived from medical records helps the system in medical research
- Automation of mundane tasks helps the hospital focus on patient needs
- Efficient monitoring of day-to-day activities in the hospital
- Continuous process improvement through the integration of information available at various departments for better patient care
- Remote access to relevant information in order to ensure better service to patients
- Possibility of inter-hospital transfer of patient's records etc.

e-Hospital is migrated / hosted at Jharkhand SDC and separate instances are created for/onboarding of district hospitals of Chatra, Giridih, Khunti, Ramgarh and Ranchi. Rajendra Institute of Medical Science (RIMS) and Central Institute of Psychiatry are running at a national instance. Modules like OPD, IPD and Billing among others are operational at aforementioned hospitals.

#### Transport Computerisation

● **Vahan and Sarathi:** The combination of Vahan and Sarathi apps are implemented across all 24 districts of Jharkhand. Approximately, 61 lakh registrations and 53.5 lakh driving licence transactions respectively, have been done till the date through the apps.

● **State Carriage Permit:** It is an online application implemented for permit applications and issuance of vehicle's movement certificate.

▼ Fig. 3.9: Jharkhand Budget eBook App



## From the States

- **Pollution under Control Certificate (PUC):** Integration of PUC in Vahan application has been completed for all the districts. More than 1200 PUC centres are functional and approximately 18 lakh PUCs are generated. A prepaid wallet system is also integrated to collect revenue in advance.

- **Checkpoint for Online Border Tax Collection:** This application provides services to citizens as online checkpoint tax payment of vehicles. (<https://vahan.parivahan.gov.in/checkpost>)

- **Permit for Goods Carriage Vehicles:** It is a portal for permit grants under the Motor Vehicles Act, 1988, for goods carriage vehicles operating within the state. These permits are granted to a particular vehicle for carrying a particular load for plying in a particular area only. The number of bases and temporary permits generated are 5758 and 7606 respectively.

### eHRMS (Manav Sampada)

It has modules for Employee Profile Management, Service Book, Property Details, Leave, Performance Appraisal, and Online Transactions like transfer, joining, and increment.

It is implemented across the state covering 33 departments, 67 offices and 1.95 lakh employees from State to Panchayat Level.

### eOffice

To enhance efficiency, transparency and accountability, a workflow-based office automation suite - eoffice - has been introduced in state government offices.

eOffice is a digital workplace solution made available in government offices with a vision to achieve a simplified, responsive, and transparent working environment in all government offices based on the Central Secretariat Manual of eOffice Procedure (CSMeOP).

As of now, the suite has been implemented at Raj Bhawan and IIT Dhanbad.

### Jharkhand High Court

Issuance of certified copy by Jharkhand High Court has been made online and hassle-free for advocates and litigants along with online payments of fees.

The highlights of Jharkhand High Court Issuance module are:

- Role Based: Administrator, Copy Section, Copy Counter
- For a web copy, cases can be searched online
- For a hard copy, documents details are to be entered
- Applicant details like name, mobile number and email are required
- Online payment is integrated with JeGRAS
- Applicant gets digitally signed PDF copy through email or at the Counter with SMS alert
- Applicants can track their requested copy status



▲ Fig. 3.10: Online Certificate issued by Jharkhand High Court

### Food and Public Distribution

PDS is one of the biggest welfare programs of the government, helping farmers to sell their produce at remunerative prices as well as the poorer sections of society to buy food grains at affordable rates.

It covers 60% of the population of Jharkhand. It is linked with Ayushman Bharat Yojna. It has been enabled for National Portability to facilitate cardholders lifting ration from any state in India after giving biometric authentication.

It uses more than 50 Virtual Machines (VMs) with MySQL 5.6 as the database and CakePHP 3.6 for the front-end. All of these VMs are hosted at State Data Centre and has RabbitMQ technology for logging activities with connection pooling

and ELK (Elasticsearch, Logstash, and Kibana) stack for analytics purposes.

The various modules of Jharkhand Food and Public Distribution System are:

- **Ration Card Digitisation:** eRCMS developed by NIC covers NFSA beneficiaries under the central scheme while JSFSS covers those left out from central allotment. An option is given in the software to transfer a card from JSFSS to NFSA as and when a vacancy is created in NFSA due to death, surrender, duplicate etc. Beneficiaries are both APL & BPL families and can apply online through the system which is verified by the block level officer and finally approved by District Supply Officer.

▼ Fig. 3.11: Hon'ble Chief Minister of Jharkhand Shri Hemant Soren distributing dhoti / lungi to NFSA and JSFSS beneficiaries under Sona Sobhran Scheme



● **Online Grain Allocation System:** The system generates the allocation of grains and oil, based on the distribution policy decided by the government.

The system decides the quantity and price of items based on number of members and ration card holders.

After the completion of allocation, an SMS is sent to all the dealers.

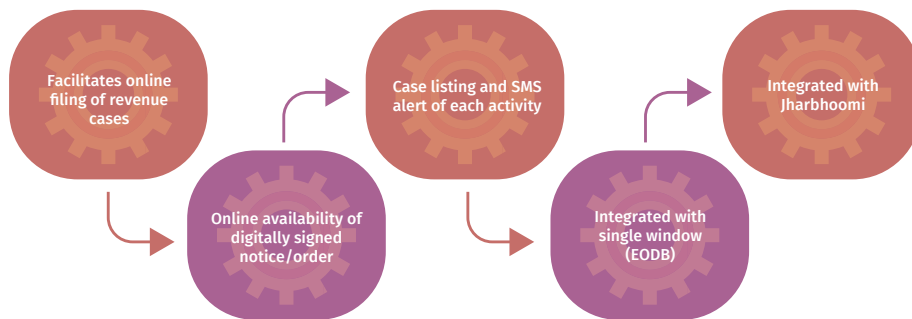
● **Supply Chain Management System (SCM):** The SCM covers the supply of grains from Food Corporation of India (FCI) and vendors to dealers via JSFC (Jharkhand State Food Corporation) based on grain allocated to each dealer decided in advance. The grain requirement is sent to FCI through JSFC.

All activities are role-based and captured in the system so that department can check the supply chain of grains.

● **FPS Automation:** Aadhaar enabled biometric authentication for ration distribution is implemented through Electronic Point of Sale (ePoS) system provided to all dealers for ration distribution, mobile seeding, UID seeding, Aahar distribution, dhoti distribution, stocking of sugar, salt, rice, wheat and other essential items alongside generating daily transaction report, and printing invoice.

● **Sona Sobhnan Scheme:** The scheme provides a dhoti or lungi to NFSA and JSFSS beneficiaries twice a year. A provision is added in ePoS through which a dealer distributes the items to cardholders after taking their biometric authentication against Aadhar.

● **Aahar Dashboard:** Aahar dashboard has been designed and developed for citizens through whom they can check ration distribution, card details and information related to public distribution status.



▲ Fig. 3.12: An overview of Revenue Court Management System

● **Kerosene Oil Management system:** The system has been developed to computerise kerosene oil distribution. The kerosene oil distributed by the wholesaler is captured in the system and also confirmed by BSO / MO. After confirmation, it reflects in ePoS thereafter the dealer distributes kerosene oil to the cardholders.

● **Mukhyamantri Sukanya Yojna:** Mukhyamantri Sukanya Yojna initiated by the state government gives financial support to girls of different age groups for motivating them for education. Application has been developed for capturing the data at the block level, to be verified and approved by the Child Development Project Officer (CDPO) and the Jharkhand State Department of Social Welfare (DSW) respectively. Payment is generated by DSW at district level and is transferred to the beneficiaries account if they are ration cardholders.

**Revenue Court Management System**  
(<https://erevenuecourt.jharkhand.gov.in>)

Towards compliance with Ease of Doing Business, a web application named Revenue Court Management System (RCMS) has been developed to file, process, and monitor revenue

cases online for various revenue courts functioning under Circle Officer, Deputy Collector (Land Reforms), Additional Collector and District Commissioner in all the 24 districts of the state. It provides updates on notices, orders and hearing dates and sends an SMS alerts to the petitioners, respondents and their lawyers.

The dashboard facilitates viewing Court wise statistics, online / pending cases, cause lists, notices and orders. The application is also integrated with 'Land Record Management System' through web for searching land records. Moreover, it has facility to upload Lower Court reports into the system and vice versa for speedy disposal of cases at the revenue courts.

**Excise and Prohibition**

(<https://jharkhandutpad.nic.in/jsbcl>)

This application was developed for Jharkhand State Beverage Corporation, the nodal agency behind procurement, sale, monitoring and control of liquor in the state. It helps the Corporation to prevent spurious liquor and generate revenue collection. It has following features:

- Online sale and Procurement
- Stock Management
- Ledger Management
- Bank Integration
- JSBCL Accounting

**JELONS**

(<https://jharkhandutpad.nic.in/excise>)

It is a generic portal for issuance of all types of excise licences related to permissions regarding doing business. It facilitates both new as well as renewal of licences. These applications are fully Integrated with JeGRAS for payment of fees. As of now, 36 services have been defined.

Contact for more details

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▼ Fig. 3.13: Ration card digitization status across Jharkhand

