



Government of India
Department of Rural Development

सत्यमेव जयते

Rural Data Stack for Digital Infrastructure

Enabling Data-Driven, Inclusive and Resilient Rural Development

25th September 2026

India's Rural Landscape: Scale, Diversity & Digital Reach

Six indicators that define the rural governance landscape

connected ecosystem of people, places & programmes

Rural Population

68.84%

887 Mn (88.7 Cr) [Census 2011]
~64–65% per World Bank estimate (2025)

Source: Census 2011 / World Bank Open Data

Rural Households

~17.9 Crore

≈(179.7) Mn rural households

Source: Census of India 2011

Administrative Units

~2,63,989

Gram Panchayats
7,87,246 villages

Source: Ministry of Panchayati Raj

GDP Contribution

~20% of National Income

Agriculture & allied activities contribute nearly one-fifth of national income

Source: Economic Survey 2025–26

Workforce

46.1%

Employed in agriculture

Source: Economic Survey 2025–26

Literacy/ Digital Literacy

77.4%

Rural literacy
~64.5 Mn (6.45Cr) trained under Pradhan Mantri Gramin Digital Saksharta Abhiyan(PMGDISHA), 552.4 Mn(55.24Cr) wireless subscriber in Rural India

Source: Periodic Labour Force Survey (PLFS) 2025/PMGDISHA 2024/Telecom Subscription 2026

IMPLICATION **Scale and diversity make integrated registries, interoperable data and a unified digital governance layer critical.**

Department of Rural Development (DoRD) at a Glance

Vision & Mission

- Sustainable & inclusive growth through a multi-pronged strategy: poverty eradication via livelihoods, social safety nets, and infrastructure
- Mandate: Integrated rural development, institution building, scheme convergence, outcome-based monitoring

Budget (illustrative, FY26-27)

Total Department Allocation: ₹1,943.69 Bn (₹1,94,368.81 crore)

Viksit Bharat-Guarantee for Rozgar & Ajeevika Mission (Gramin) [VBGRAMG] : ₹956.92 Bn	Pradhan Mantri Awaas Yojana(Gramin) [PMAY-G]: ₹549.16 Bn	Pradhan Mantri Gramin Sadak Yojana [PMGSY]: ₹190 Bn	National Rural Livelihoods Mission[NRLM]: ₹192 Bn

Flagship Schemes

Scheme	Brief	Key Impact as on 24th September 2026	SDG Alignment
Viksit Bharat-Guarantee for Rozgar & Ajeevika Mission (Gramin) *[VB-G RAM G]*	125 days guaranteed wage employment	4,979 cr workdays; 10.88 cr active workers; 99.9% e-payments	SDG 1, 8, 5, 13
Pradhan Mantri Awaas Yojana(Gramin)*[PMAY-G]*	Pucca houses for rural houseless/kutcha house households	3.91 cr houses sanctioned; 3.17 cr constructed	SDG 1, 10, 11
Pradhan Mantri Gramin Sadak Yojana *[PMGSY]*	All-weather rural road connectivity	7.98 lakh km completed; 10,709 bridges; 1.62 lakh habitations connected	SDG 9, 3, 4
National Social Assistance Programme *[NSAP]*	Social assistance/pension to destitute	3.18 cr beneficiaries	SDG 1, 10
National Rural Livelihoods Mission *[NRLM]*	Self Help Groups-based livelihoods & financial inclusion	92 lakh SHGs; 10.29 cr households mobilized; 3.83 lakh micro-enterprises	SDG 1, 5, 8
Deen Dayal Upadhyaya Grameen Kaushalya Yojana *[DDU-GKY]*/Rural Self Employment Training Institutes *[RSETI]*	Rural youth skilling & self-employment	17.7 lakh youth skilled; 41+ lakh RSETI settled candidates	SDG 4, 8

Department of Rural Development contributing to Social Security, Dignity & Prosperity in Rural India

Background of Rural Data Stack for Digital Infrastructure

Initiated in April 2025 for the appropriate allocation of resources

Focus on:

- **Citizen-centric services**
- **Ecosystem-oriented planning**
- **Whole-of-Government approach**

CURRENT CHALLENGES	EXPECTED OUTCOMES
Data gaps & inefficiencies	Improved access and better citizen-centric service delivery
Complex citizen experience	Greater transparency and accountability
Privacy & trust concerns	Better targeting of schemes
Limited interoperability	Efficient utilization of resources
Fragmented systems	Unlock rural innovation – access to industries, academia, startups, etc.

From fragmented systems to an integrated Rural Data Stack

Core Components

Rural Data Stack

Central Data Repository + State Family Registries

Unified beneficiary and household data

Asset Registry & National Rural Infrastructure Stack (NRIS)

Infrastructure and asset visibility

Citizen Platform – RuralOne

Single-window citizen access

Data Exchange Platform

Secure, consent-based data sharing

IMPLICATION

- **Convergence**
- **Proactive Governance**
- **Saturation**
- **Reduced Duplication**

Proposed Integration with 16 Central Departments [Agriculture & Farmer Welfare, Panchayati Raj, Jal Shakti, Land Resources, Animal Husbandry & Dairies, Fisheries, Food Processing Industries, Women & Child Development, Tribal Affairs, Social Justice & Empowerment, Food & Public Distribution, Development of North-East Region, Health & Family Welfare, Education, Skill Development and MSME] & State Governments

COMPONENT 1 · Central Data Repository + State Family Registry

AUTHORITATIVE & SCHEME SOURCES

State Family Registry
Household & member linkage

Scheme MIS
Benefits, status & transactions

Public Distribution System / Ration Card
Baseline household roster

Aadhaar / eKYC
Identity verification

Other authorized sources
Education, health, banking, etc.

secure, consent-based linkage & refresh →

HOUSEHOLD INTELLIGENCE LAYER

GOLDEN HOUSEHOLD RECORD

One Household as the basis for all services

- Household & member linkage
- Eligibility profile
- Benefits availed
- Source / verification status

Continuously enriched from State Family Registries and source systems

eligibility + coverage signals →

SERVICE DELIVERY

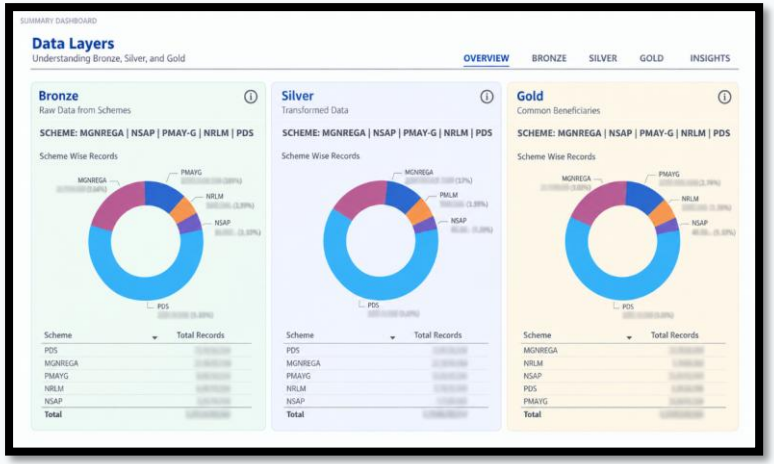
U — Universal services
Auto-trigger when basic eligibility is met

T — Target-driven schemes
Find eligible but uncovered households

D — Demand-driven schemes
Citizen applies; household context pre-filled

RuralOne + assisted / departmental channels

Integration done
Total Beneficiaries: 31.8 Cr
Gold Layer(eKYC done): 15.9Cr



1. **Identify House Hold** → 2. **Match & verify** → 3. **Detect gaps** → 4. **Trigger / enable** → 5. **Monitor saturation**

Benefit Foreseen

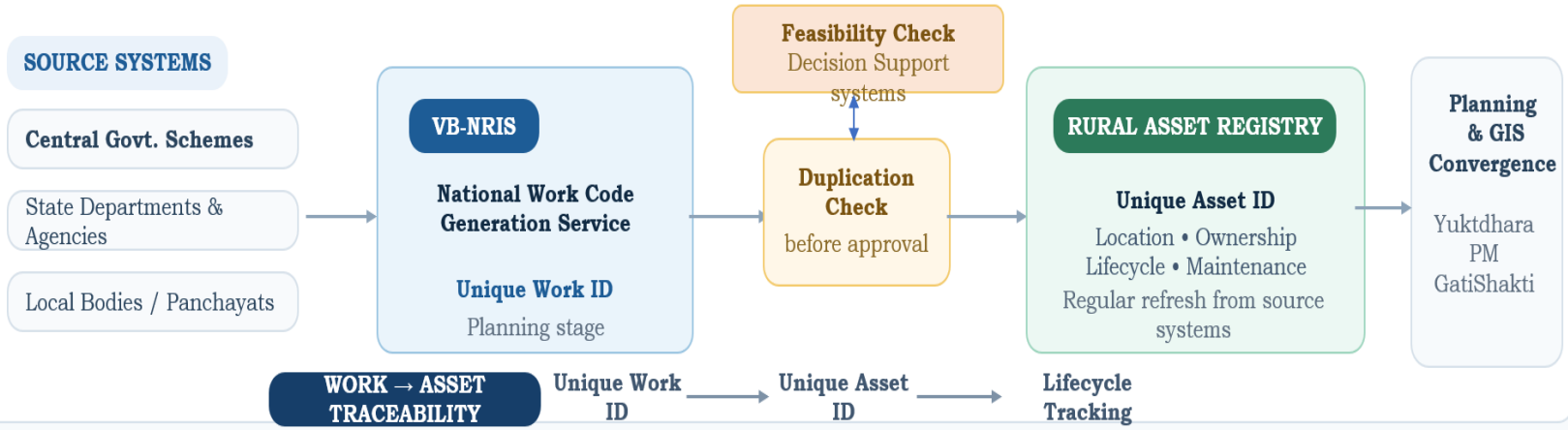
- Improved Beneficiary Coverage
- Reduced Leakages
- Single Household View for Better Governance
- Automated Service Delivery

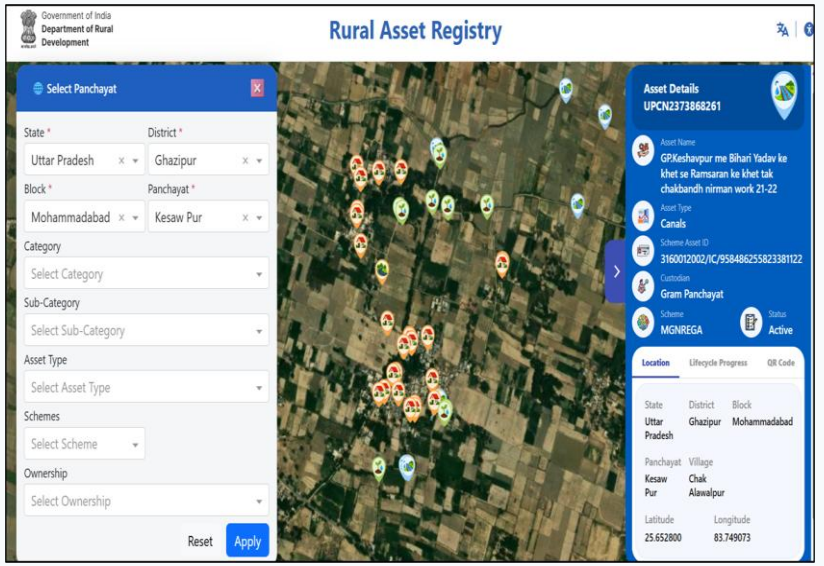
COMPONENT 2 · National Rural Infrastructure Stack (NRIS) & Rural Asset Registry

From planning of rural works to a unique, traceable and lifecycle-managed asset inventory

How NRIS and the Rural Asset Registry work together

NRIS creates a unique Work ID at the planning stage; the Rural Asset Registry assigns a unique Asset ID after creation and tracks the asset through its lifecycle.





Objectives

1. **Unique ID for all rural infrastructure assets**
   Create a single identity for every rural public asset.
2. **Lifecycle management of assets**
   Track ownership, condition, maintenance and utilisation over time.
3. **Prevent duplication at planning stage**
   Check proposed works against existing/planned infrastructure before sanction.
4. **Guide allocation of resources**
   Use integrated asset visibility and gaps to prioritise investments.

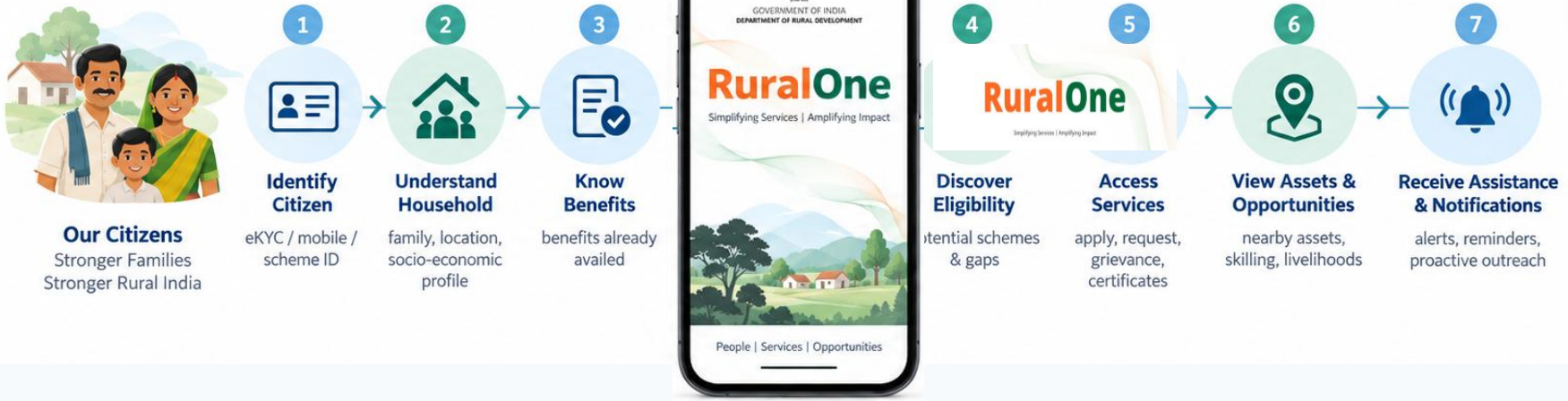
Design principle: One Work → One Asset → No duplication → Better planning and resource utilization

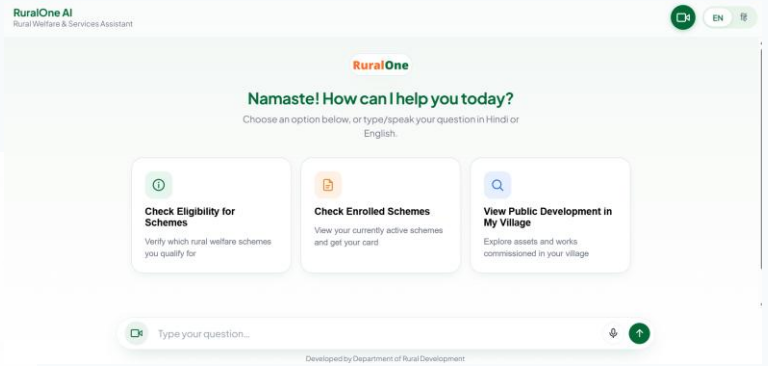
Total Assets Integrated in Asset Registry:4.32 Cr

Being Jointly Developed with Bhaskaracharya National Institute for Space Applications and Geo-informatics (BISAG-N) and National Remote Sensing Centre(NRSC)

COMPONENT 3 · Citizen Platform- Rural One

A single-window citizen journey for proactive and inclusive rural service delivery







A citizen-centric platform for inclusive, transparent and outcome-driven rural development

Personalized Citizen Experience
Context-aware services tailored to household needs

Unified View of Opportunities
Schemes, assets, skilling and livelihoods in one place

Reduced Citizen Effort
Pre-filled applications and minimal documentation

Enhanced Transparency & Trust
Real-time visibility of benefits, status and eligibility

Component 4: Data Exchange Platform

DATA EXCHANGE PLATFORM
Open standards + API-led interoperability

Secure & Standardized Exchange
Open standards, common protocols and security controls for trusted data sharing.

Real-time Integration
API gateway, middleware, connectors and integration services.

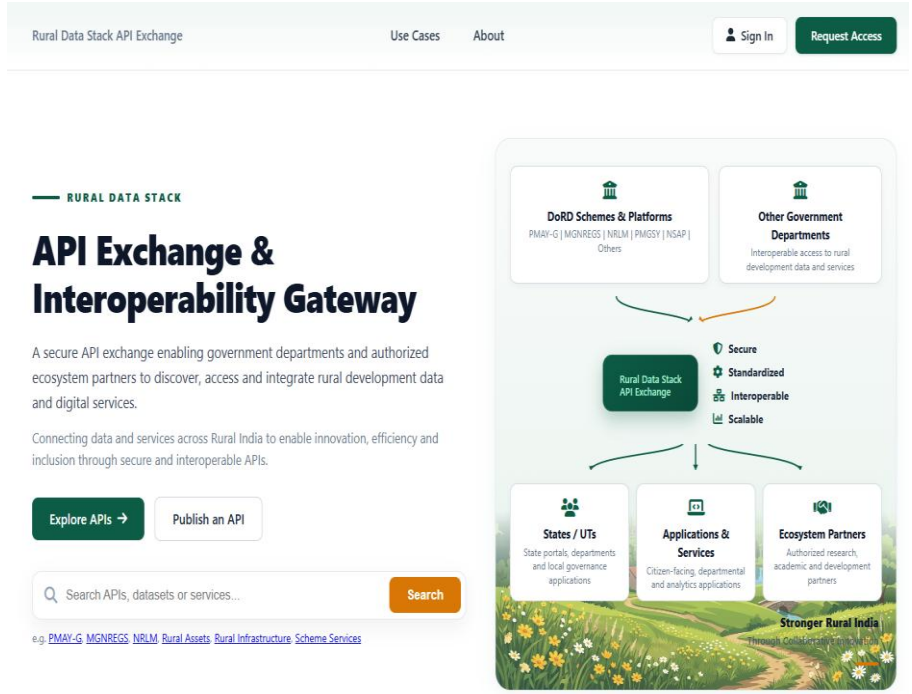
API GATEWAY
Authentication
Authorization
Audit & Monitoring
Reusable Connectors

Governed Data Access
RBAC, authentication, authorization, audit, monitoring and usage controls.

Plug-and-Play Ecosystem
Reusable connectors and onboarding standards for sectoral stacks.

Cross-Sector Interoperability
Health, education, agriculture, social protection and approved ecosystems.

Scalable & Future-Ready
API management, integration governance and architecture for scale.



IMPLEMENTATION

1. **Architecture & Standards**
   Open standards, exchange protocols, certification, testing and compliance.
2. **Integration Services**
   API gateway, middleware, reusable connectors and real-time system integration.
3. **Governance & Operations**
   Access controls, security, monitoring, governance procedures and knowledge transfer.

Interoperability | **Trusted Exchange** | **Reusable Integration** | **Ecosystem Ready**

Logical Architecture of Rural Data Stack (RDS)

Federated | Consent-Based | API-First | State-Owned Data | Centre-Enabled Platform

FEDERATED GOVERNANCE LAYER (Policies & Compliance)

STATE OWN & GOVERN DATA

- Data Creation
- Data Maintenance
- Data Quality
- Data Stewardship
- Access Approval

FEDERATED DATA GOVERNANCE PRINCIPLES

- Data remains with State (state-owned logical repositories)
- Centre accesses data through consent and governed APIs and open APIs
- Centre provides standards, reference architectures & shared digital services
- States retain ownership and control of their datasets
- Data sharing follows DPDP compliant consent & access policies
- Centre has read-only access to State data

CENTRE PROVIDES SHARED DIGITAL INFRASTRUCTURE

- Common Standards
- Interoperability
- Security Framework
- Shared Services
- National Analytics

USERS

- Citizens / Beneficiaries
- Gram Panchayats
- State Departments
- Central Ministries
- Banks / CSCs / NGOs
- Industry / Researchers

INTERFACE LAYER (User Interface)

- Reference Application (RuralOne)
- Web Portal
- Map View
- Dashboard
- Conversational Assistant (Gram Sahayak)

SERVICE LAYER (Digital Services)

- Eligibility
- Entitlements
- My Village
- Opportunities Near me
- Talk to Experts
- Credit Access
- Grievance and Feedback
- Analytics & Reporting

INTEROPERABILITY LAYER LAYER (Unified Rural Service Interface)

- RDS API Gateway
- Data Exchange Platform
- Consent Manager
- Auth / eKYC Service
- Open APIs for Interoperability
- Data Standards & Metadata
- Scheme Integration Services
- Sandbox Environment

DATA LAYER (Repositories & Data Sources)

- Household / Family Registry (Linkage)
- Panchayat / Village Directory
- Beneficiary Repository
- Rural Asset Registry
- Enterprise Directory
- SHG Directory
- Training/Skilling Institute Directory
- Other Shared Registries

DOMAIN INTEGRATION LAYER (Sectoral Systems)

- AgriStack (Farmer ID)
- Skill Stack (Candidate ID)
- Health Stack (ABHA ID)
- Education Stack (APAAR ID)
- Labour Stack (UAN)
- Land Stack (Bhu-Aadhaar)

INFRASTRUCTURE LAYER (Technology Foundation)

- State Data Center / Cloud
- State Data Lake / Warehouse
- ETL Pipelines
- State Connectivity / APIs
- Security & Access Control
- Cloud & Open Source Technology Stack
- Data Lake / Warehouse
- Service Connectivity / APIs
- Identity, Auth & Trust Control

KEY OUTCOMES

Ease of Living
Improved access to services, information and public infrastructure

Quality of Life
Better health, education, skills, housing and basic amenities

Higher Income
Enhanced livelihoods, entrepreneurship, employment and financial inclusion

Reduced Inequality
Improved targeting, inclusion and equitable access to opportunities

Transparency & Accountability
Data-driven governance, monitoring and citizen oversight

USER AUTHENTICATION

- Aadhaar
- UDIN Face RD
- Authority
- OTP

Thank You