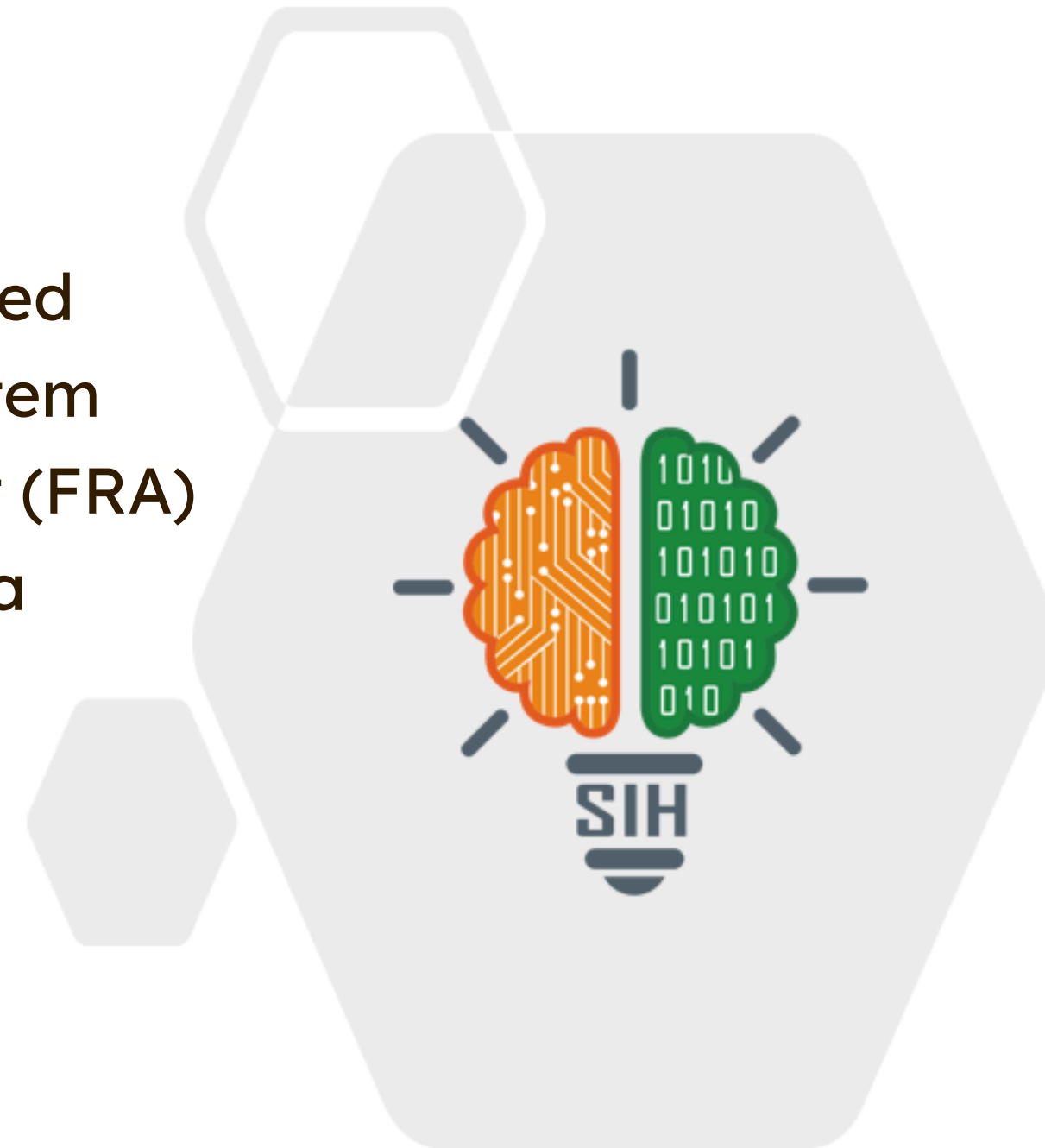


SMART INDIA HACKATHON 2025



- Problem Statement ID – SIH12508
- Problem Statement Title - Development of AI-powered FRA Atlas and WebGIS-based Decision Support System (DSS) for Integrated Monitoring of Forest Rights Act (FRA) Implementation. (States to be concentrated: Madhya Pradesh, Tripura , Odisha, Telangana)
- Theme - Miscellaneous
- PS Category- Software
- Team ID - 170
- Team Name - VanAdhikar



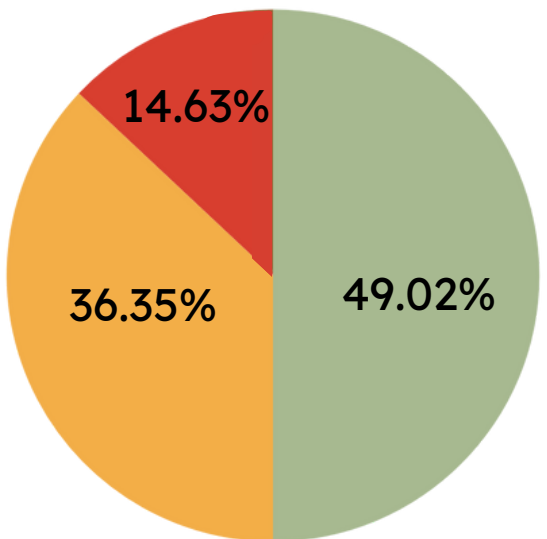
An Integrated Geospatial DSS for Forest Rights Management



The Problem

Forest-dwelling communities in face significant challenges. Out of 51,23,104 claims filed, 18,62,056 (36.35%) have been rejected, and 7,49,673 (14.63%) remain pending due to fragmented paper-based records, lack of verification mechanisms which causes :

- Boundary disputes, and poor integration with welfare schemes.
- Ecological threats and exclusion from government schemes.
- Misdirected funds undermining conservation efforts.



Our Solution

- Turn Legacy forest land records into digital record linked by **OCR** for IFR, CFR, CR.
- An interactive **FRA Atlas** on a WebGIS platform for villages.
- Linking Tribals to government **CSS** schemes (e.g., Jal Shakti, PM-Kisan).
- A **DSS engine** for scheme layering and policy formulation.
- Special access to NGOs and supporting organizations.



Uniqueness and Innovation

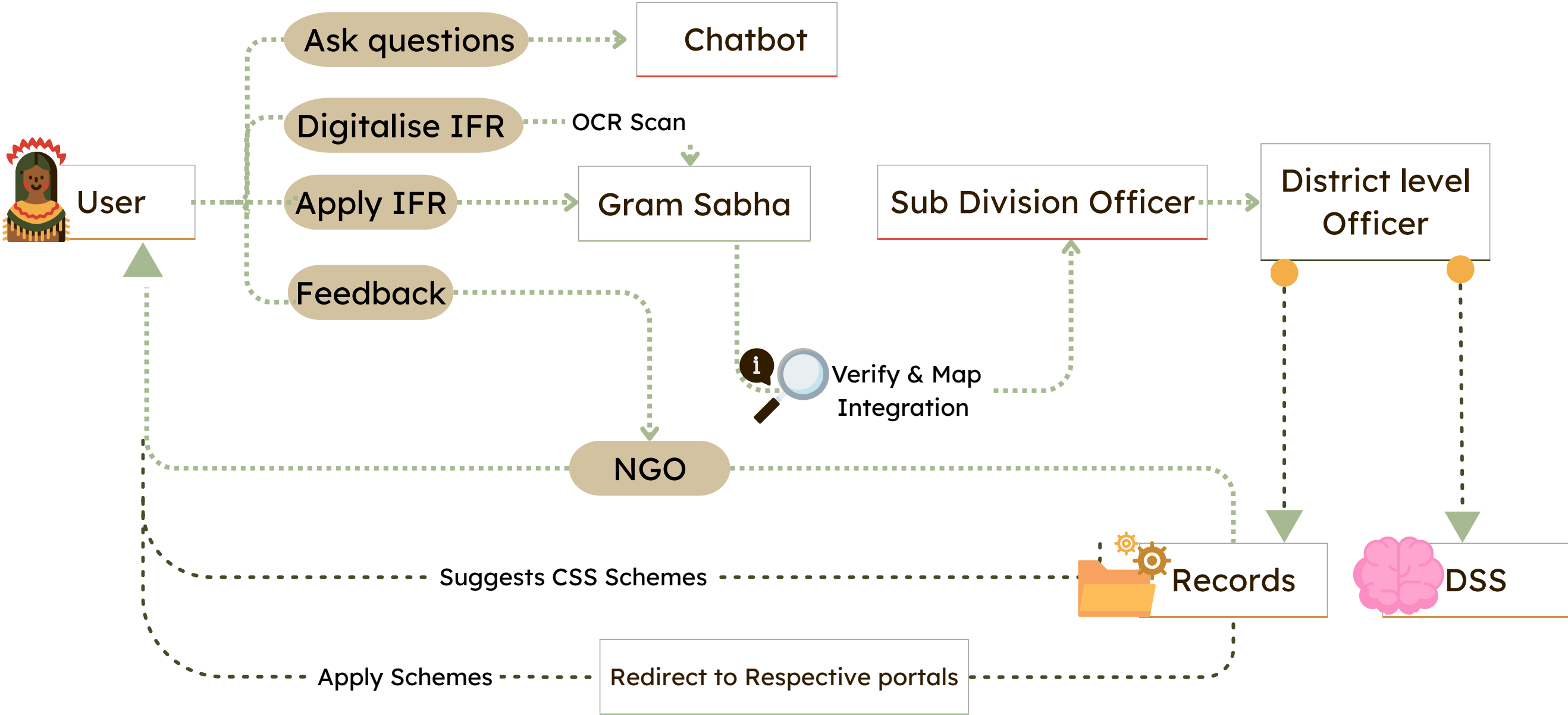
Geo-Atlas & GIS Monitoring for verifying land records and boundary resolution.

AI Chatbots for accessible, real-time grievance redressal and awareness.

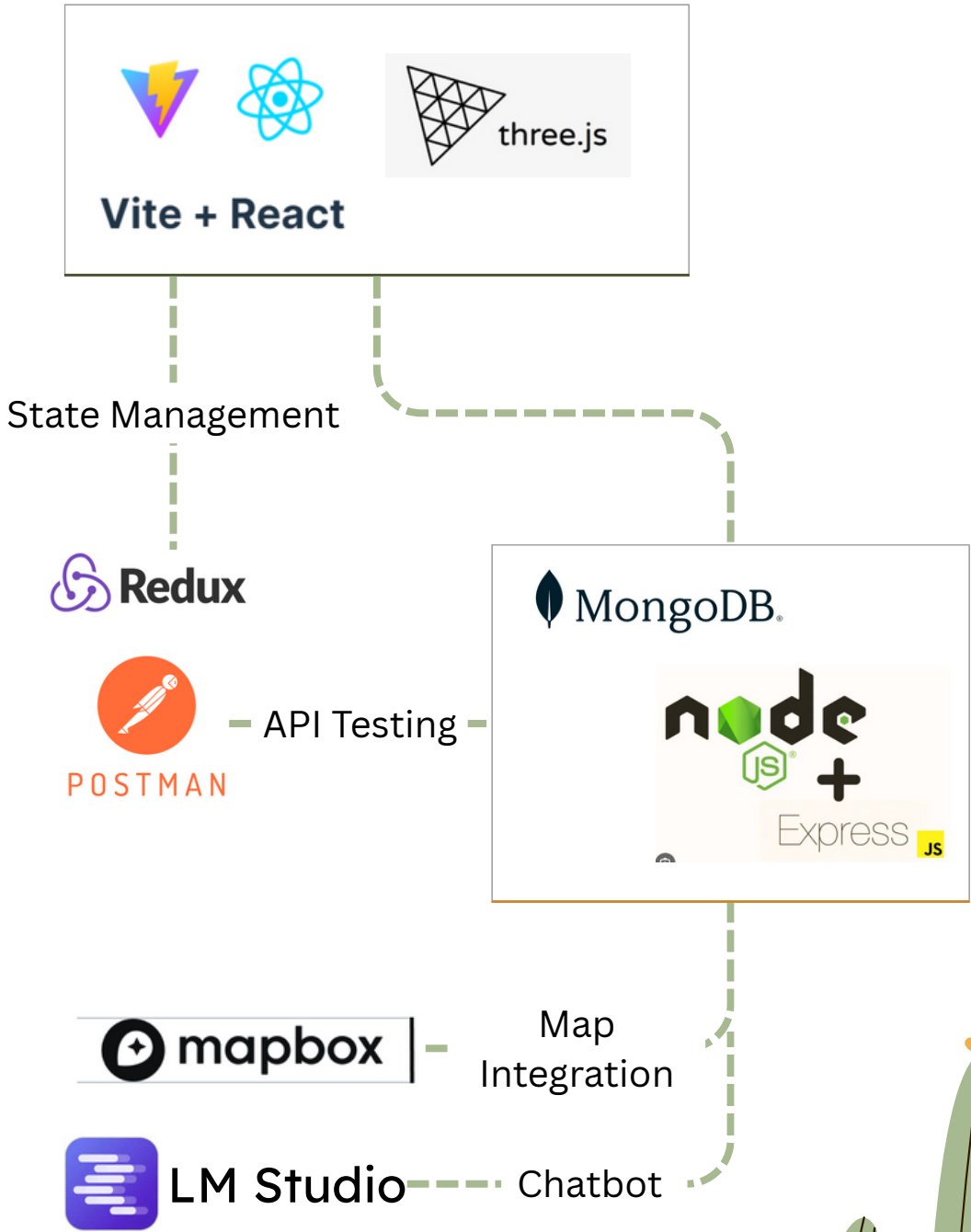
Enabling direct benefits to Tribal communities by Integrating them with government initiatives.

Data-Driven Decision Support Systems to ensure efficient delivery of welfare schemes.

USER FLOW DIAGRAM



TechStack used





Feasibility analysis

Technical: Established, mature technologies ensure robustness.

Data Availability: High-resolution satellite data and FRA documents accessible.

Operational: Cloud deployment guarantees scalability and accessibility

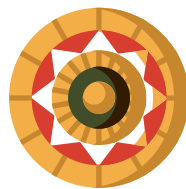


Viability analysis

Policy Alignment: Integrates with CSS (PM-KISAN, Jal Jeevan, etc.).

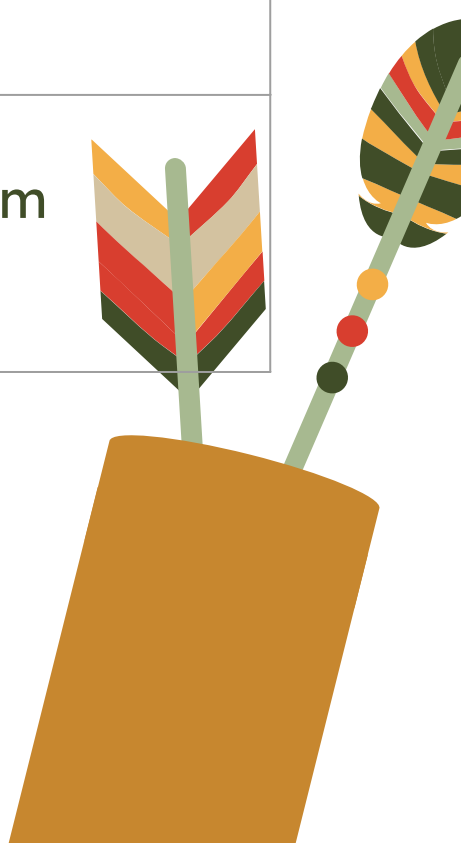
High Impact: Direct benefits to millions of tribal households.

Sustainability: Potential for continuous updates via satellite feeds, IoT, and community feedback loops.



Potential challenges and strategies to overcome them:

Challenge	Mitigation Strategy
Inter Village cfr Disputes	Joint Management Zone + Oversight Committee
Poor Quality legacy documents	Human-in-the-Loop Verification Interface + Confidence-based AI
Inter family Disputes	Verification and resolution by Gram Panchayat



Social



- VanAdhikar AI enables faster validation of forest rights
- reducing conflicts by establishing precise digital boundaries
- increases trust and transparency in governance.

Economic



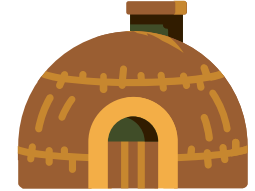
- Facilitate direct access to government schemes such as PM-KISAN and MGNREGA
- supporting asset-linked planning that boosts rural economy and secures economic stability.

Environmental



- promoting sustainability and biodiversity protection.
- Early warnings on encroachment and degradation via AI and satellite data

Governance



- Centralized FRA Atlas enhances inter-departmental coordination
- AI/ML-enabled Decision Support System facilitates evidence-based planning
- Empowers NGOs and communities with accessible, transparent data

For MP specific tribal data

<https://www.tribal.mp.gov.in/CMS>

For Other State Tribal Infor

<https://vasundharaodisha.org/Welcome/page/Vision&Mission>

For Tribals Information and Villages in Bhopal district with their Gram panchayat -



Village & Panchayats | District Bhopal, Government of Madhya Pradesh | India

Village & Panchayats Name Information Panchyats
202 Villages 614 Panchayat Villages S.No. Block...

 bhopal.nic.in

For Forest Right Act Details and Data Sources -



Ministry of Tribal Affairs, Government of India

The Ministry was set up in 1999 after the bifurcation of Ministry of Social Justice and Empowerment wit...

 [tribal.nic.in /](http://tribal.nic.in/)