EXPLORATORY DATA ANALYSIS (EDA) FOR NATIONAL RURAL EMPLOYMENT GUARANTEE ACT

OBJECTIVE

The objective of this project is to gain valuable insights into the implementation and impact of NREGA across different states and districts in India.

GOALS

- HOW EFFECTIVE IS NREGA IN PROVIDING EMPLOYMENT OPPORTUNITIES TO RURAL HOUSEHOLDS?
- ARE THERE REGIONAL DISPARITIES IN THE IMPLEMENTATION AND OUTCOMES OF THE SCHEME?
- WHAT IS THE UTILIZATION OF THE ALLOCATED BUDGET, AND HOW DOES IT CORRELATE WITH EMPLOYMENT GENERATION?
- WHAT ARE THE KEY FACTORS CONTRIBUTING TO THE COMPLETION OF NREGA WORKS, AND ARE THERE ANY ROADBLOCKS TO ITS SUCCESS?
- CAN DATA-DRIVEN INSIGHTS GUIDE POLICYMAKERS AND ADMINISTRATORS IN OPTIMIZING THE SCHEME'S IMPACT?

ANALYSIS AND INSIGHTS FOR POLICYMAKERS AND ADMINISTRATORS

DASHBOARD OVERVIEW

NREGA ANALYSIS

Total Workers	Total Job Cards Issued	Total Expenditure	Total Employment Generated	Avg Employment Days per HouseHold	Total Budget Allocation
243M	142M	5.46M	1.7bn	31.58	2.2bn

Correlation Coefficient

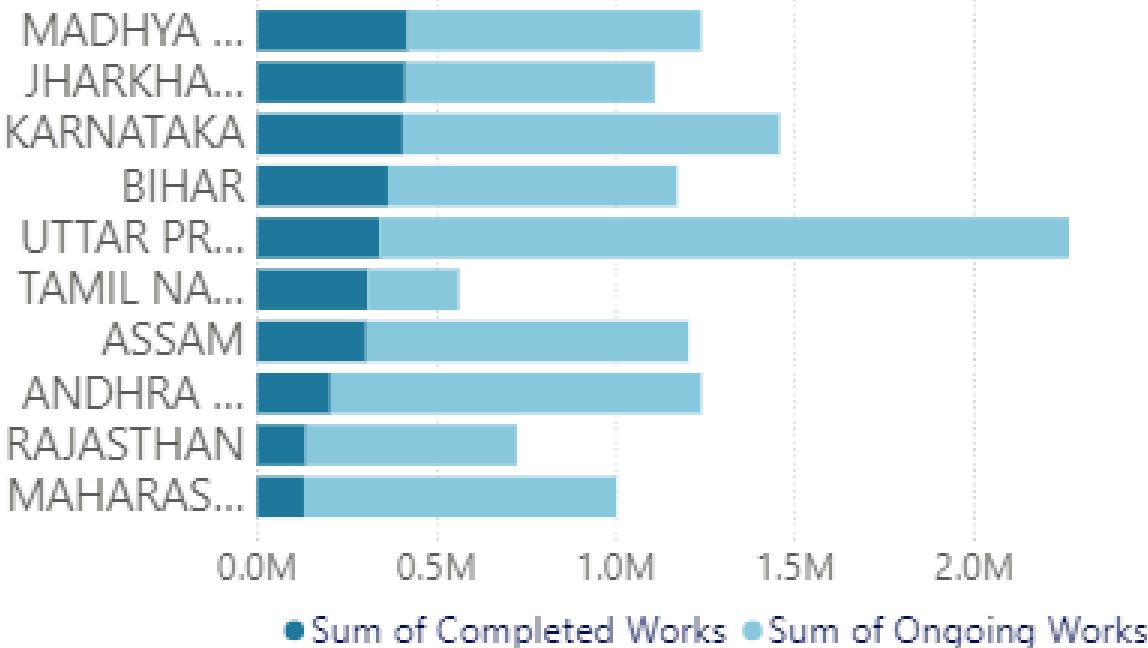| Variable1 ▲	Completed Works	Labour Budget	Persondays Central Liability	Total Expenditure (Rs. Lakhs)
Completed Works	1.0	0.518577167093663	0.423441501071379	0.475078910962903
Labour Budget	0.518577167093663	1.0	0.8933164529544934	0.8939173989688022
Persondays Central Liability	0.423441501071379	0.8933164529544934	1.0	0.9661810884497725
Total Expenditure (Rs. Lakhs)	0.475078910962903	0.8939173989688022	0.9661810884497725	1.0

State

State
- [ ] ANDAMAN AND NIC...
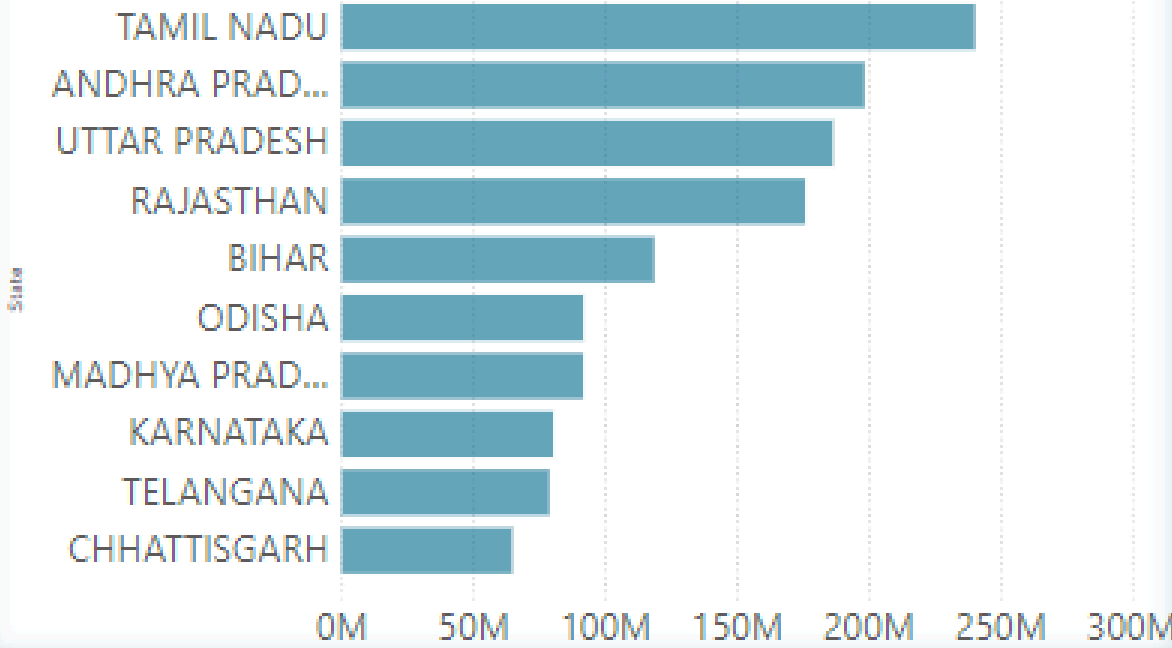- [ ] ANDHRA PRADESH
- [ ] ARUNACHAL PRADESH
- [ ] ASSAM
- [ ] BIHAR

District

- [ ] Adilabad
- [ ] AGAR-MALWA
- [ ] AGRA
- [ ] AHMADABAD
- [ ] AHMEDNAGAR

Completed vs Ongoing Works

(States listed top to bottom: MADHYA ..., JHARKHA..., KARNATAKA, BIHAR, UTTAR PR..., TAMIL NA..., ASSAM, ANDHRA ..., RAJASTHAN, MAHARAS...)

Axis: 0.0M, 0.5M, 1.0M, 1.5M, 2.0M

● Sum of Completed Works ● Sum of Ongoing Works

Top 10 Employment Generated by State

State (top to bottom): TAMIL NADU, ANDHRA PRAD..., UTTAR PRADESH, RAJASTHAN, BIHAR, ODISHA, MADHYA PRAD..., KARNATAKA, TELANGANA, CHHATTISGARH

Axis: 0M, 50M, 100M, 150M, 200M, 250M, 300M

Expenditure vs Emploment Generated

Y-axis: 0M, 50M, 100M, 150M, 200M, 250M, 300M
X-axis: $0.0M, $0.2M, $0.4M, $0.6M, $0...
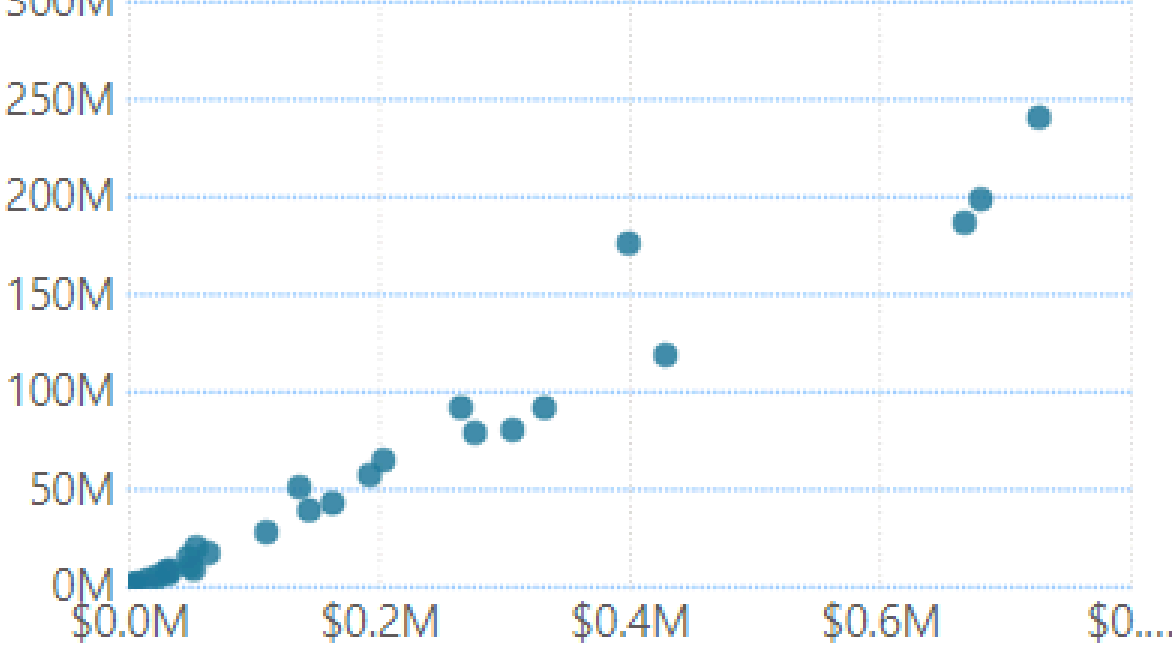
Budget Utilization by State

(States top to bottom: TAMIL NADU, ANDHRA PRADESH, UTTAR PRADESH, RAJASTHAN, BIHAR, KARNATAKA, ODISHA, MADHYA PRADESH)
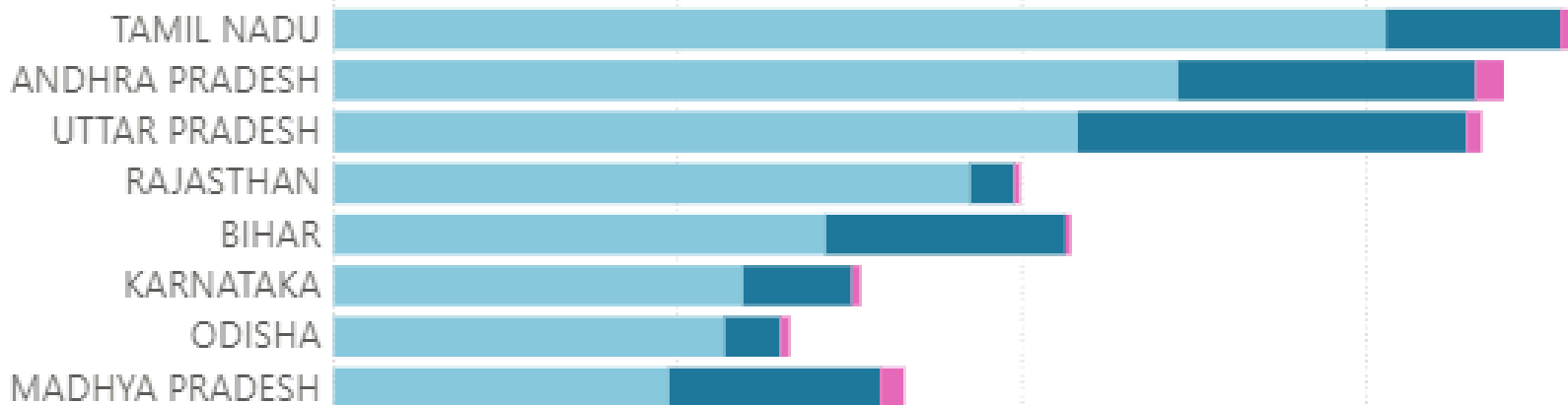
Total Employment Generated by State
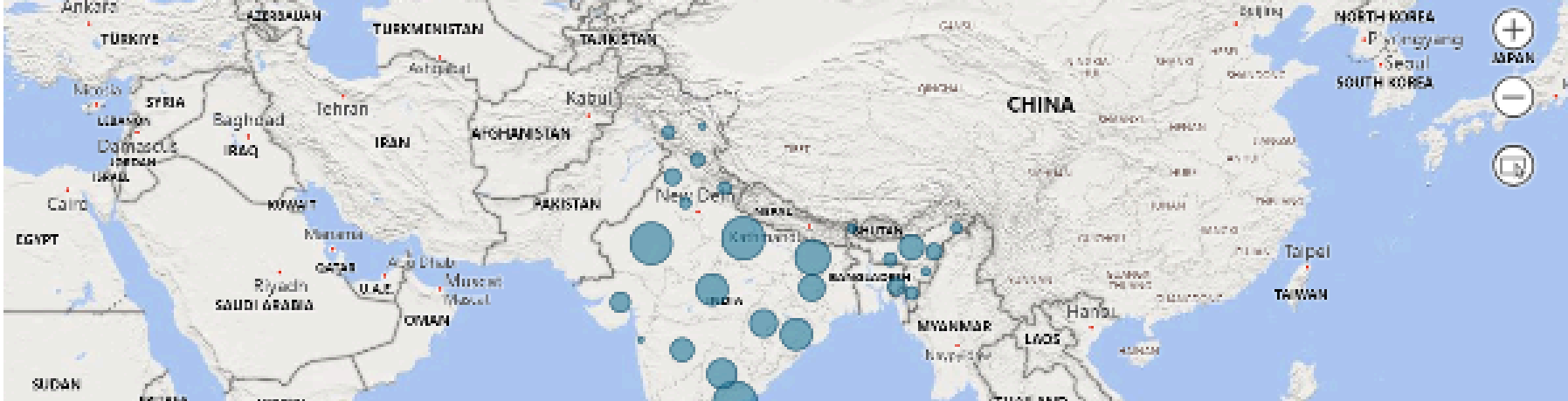
# EFFECTIVENESS IN PROVIDING EMPLOYMENT OPPORTUNITIES

FROM THE ANALYSIS:

- **HIGH EMPLOYMENT GENERATION:** THE NREGA PROGRAM HAS GENERATED A SIGNIFICANT NUMBER OF EMPLOYMENT OPPORTUNITIES, WITH 1.7 BILLION PERSONDAYS.
- **WORKER PARTICIPATION:** WITH 243 MILLION TOTAL WORKERS, THE PROGRAM HAS A SUBSTANTIAL REACH.
- **AVERAGE EMPLOYMENT:** HOUSEHOLDS ON AVERAGE HAVE RECEIVED APPROXIMATELY 31.58 DAYS OF EMPLOYMENT, INDICATING ACTIVE ENGAGEMENT BUT STILL BELOW THE POTENTIAL MAXIMUM OF 100 DAYS.

REGIONAL DISPARITIES IN THE IMPLEMENTATION AND OUTCOMES OF THE SCHEME

FROM THE ANALYSIS:

- **REGIONAL VARIATIONS: THERE ARE SIGNIFICANT DISPARITIES IN EMPLOYMENT GENERATION ACROSS DIFFERENT STATES. TAMIL NADU AND ANDHRA PRADESH ARE LEADING IN EMPLOYMENT GENERATION, WHILE OTHER STATES LIKE BIHAR AND MADHYA PRADESH ARE ALSO CONTRIBUTING SIGNIFICANTLY.**
- **FOCUS ON LAGGING REGIONS: STATES WITH LOWER EMPLOYMENT FIGURES NEED TARGETED INTERVENTIONS TO ENSURE MORE EQUITABLE DISTRIBUTION OF EMPLOYMENT OPPORTUNITIES.**
-

| State | TAMIL NADU |
| Total Employment Generated | 240453337 |
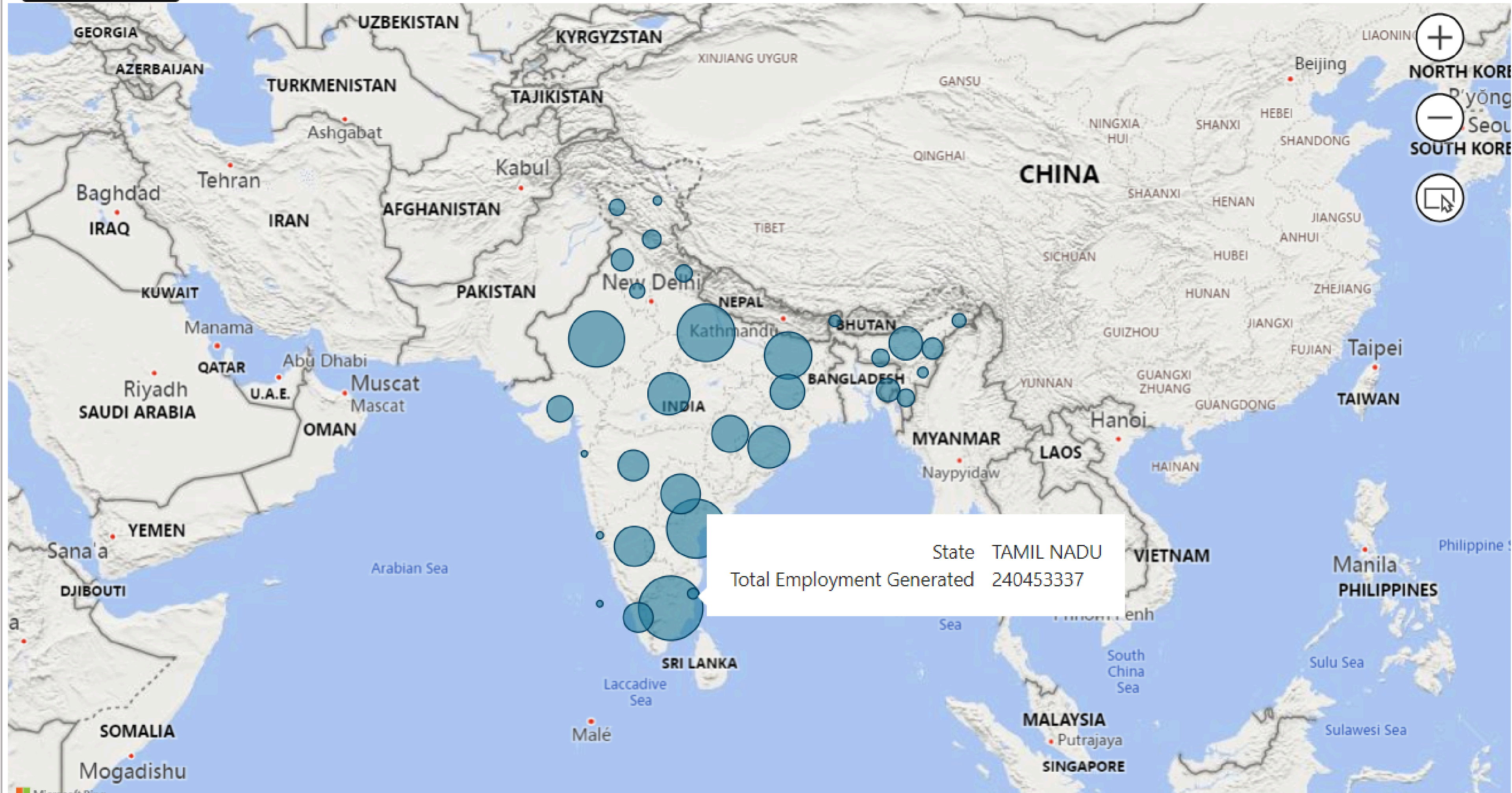
State (y-axis): TAMIL NADU, ANDHRA PRADESH, UTTAR PRADESH, RAJASTHAN, BIHAR, ODISHA, MADHYA PRADESH, KARNATAKA, TELANGANA, CHHATTISGARH

Tooltip:
State — ANDHRA PRADESH
Total Employment Generated — 198467910

X-axis: 0M, 50M, 100M, 150M, 200M, 250M, 300M

Correlation Coefficient

Variable1	Completed Works	Labour Budget	Persondays Central Liability	Total Expenditure (Rs. Lakhs)
Completed Works	1.0	0.518577167093663	0.423441501071379	0.47507891096903
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UTILIZATION OF THE ALLOCATED BUDGET AND ITS CORRELATION WITH EMPLOYMENT GENERATION

TOTAL EXPENDITURE: RS. 5.46 BILLION.
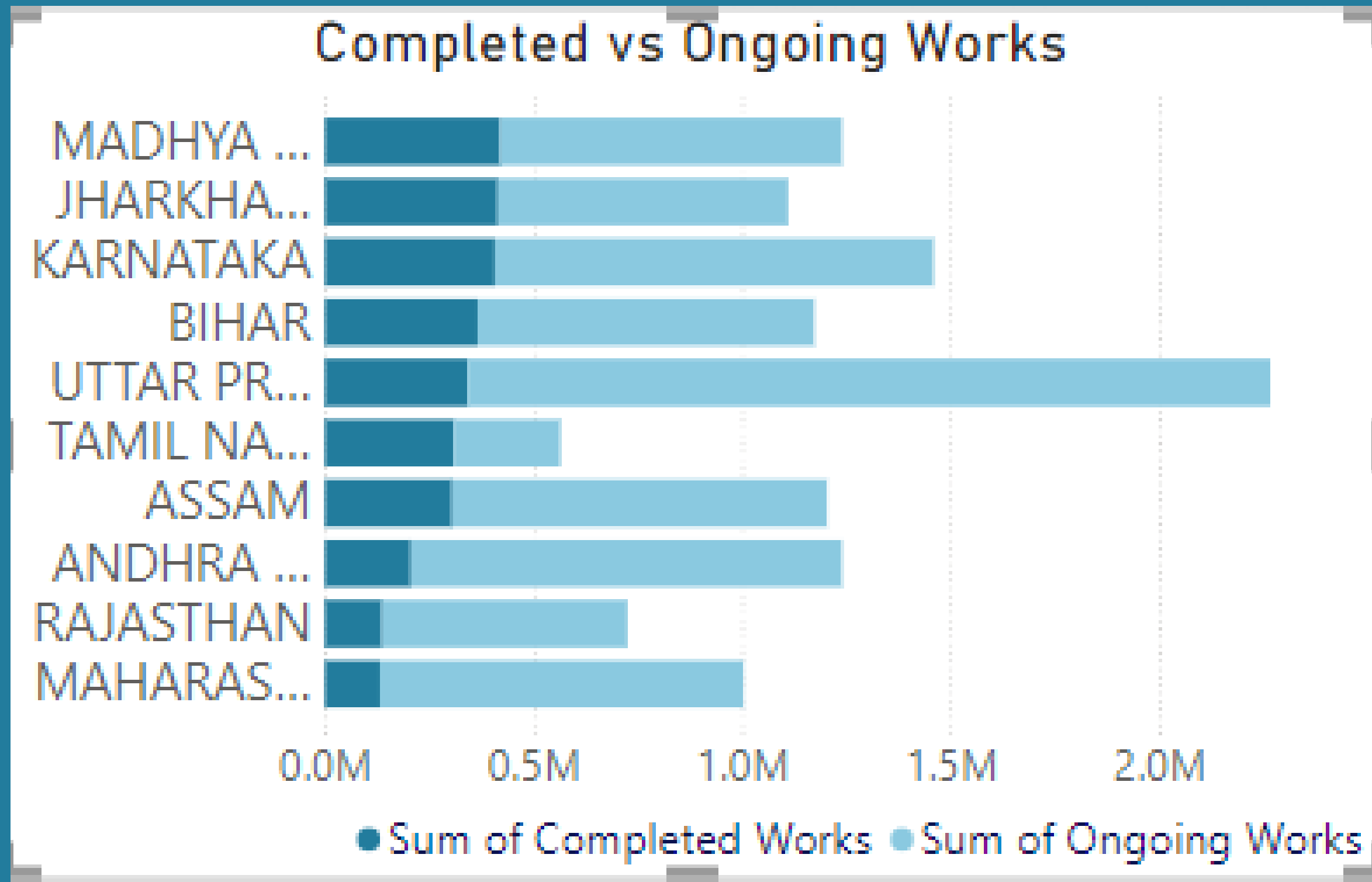
1. **BUDGET UTILIZATION:**
   - THE LABOUR BUDGET IS HIGHLY UTILIZED AS IT SHOWS STRONG CORRELATIONS WITH BOTH PERSONDAYS CENTRAL LIABILITY (EMPLOYMENT GENERATION) AND TOTAL EXPENDITURE. THIS IMPLIES THAT THE ALLOCATED LABOUR BUDGET IS EFFECTIVELY TRANSLATED INTO EMPLOYMENT AAND OVERALL SPENDING.
2. **CORRELATION WITH EMPLOYMENT GENERATION:**
   - PERSONDAYS CENTRAL LIABILITY (EMPLOYMENT GENERATION) IS VERY STRONGLY CORRELATED WITH TOTAL EXPENDITURE, INDICATING THAT AS MORE FUNDS ARE SPENT, MORE EMPLOYMENT IS GENERATED.
   - THE LABOUR BUDGET ALSO SHOWS A STRONG CORRELATION WITH EMPLOYMENT GENERATION, FURTHER INDICATING EFFECTIVE BUDGET UTILIZATION.

KEY FACTORS CONTRIBUTING TO THE COMPLETION OF NREGA WORKS AND ROADBLOCKS

- COMPLETION RATES: STATES LIKE TAMIL NADU SHOW HIGH NUMBERS OF COMPLETED WORKS COMPARED TO ONGOING WORKS, INDICATING GOOD PROJECT MANAGEMENT AND EXECUTION.
- IDENTIFIED ROADBLOCKS: STATES WITH MORE ONGOING THAN COMPLETED WORKS (E.G., BIHAR, KARNATAKA) MAY FACE ISSUES SUCH AS ADMINISTRATIVE DELAYS, FUNDING BOTTLENECKS, OR LOGISTICAL CHALLENGES.

Completed vs Ongoing Works

MADHYA ...
JHARKHA...
KARNATAKA
BIHAR
UTTAR PR...
TAMIL NA...
ASSAM
ANDHRA ...
RAJASTHAN
MAHARAS...

0.0M   0.5M   1.0M   1.5M   2.0M

● Sum of Completed Works   ● Sum of Ongoing Works

POLICY OPTIMIZATION

DATA-DRIVEN INSIGHTS SUGGEST FOCUSING ON BEST PRACTICES FROM HIGH-PERFORMING STATES, ADDRESSING ROADBLOCKS IN LOW-PERFORMING STATES, REALLOCATING RESOURCES, AND ENHANCING SKILL DEVELOPMENT PROGRAMS FOR BETTER UTILIZATION OF FUNDS AND MORE EFFECTIVE EMPLOYMENT GENERATION.

SUMMARY

By addressing these insights, policymakers and administrators can optimize the impact of the NREGA program and ensure more balanced and effective implementation across all regions.