



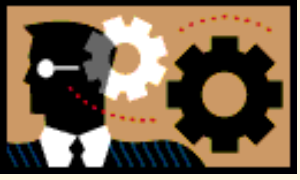
RURAL INFRASTRUCTURE

**-LAST MILE ROAD CONNECTIVITY
TO RURAL HABITATIONS**

**:- Dr. B. Rajender,
Joint Secretary to Govt. of India,**

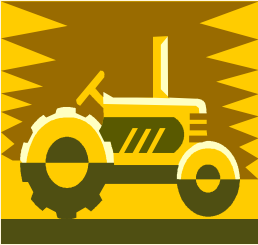
**“It is not wealth that builds our roads,
but roads that build our wealth”**

- John F Kennedy



Vision.....

RURAL ROADS- EMPOWERING MILLIONS SILENTLY



▪ **CONVERTING HOPELESSNESS TO HOPE**



▪ **TRANSFORMING AGONY TO ECSTASY**



▪ **CHANGING MISERY TO HAPPINESS**

AGONY, DESPAIR, MISERY, HOPELESSNESS...



CONNECTIVITY LOOK BEFORE START OF THE DEVELOPMENT PROGRAM...



Objective

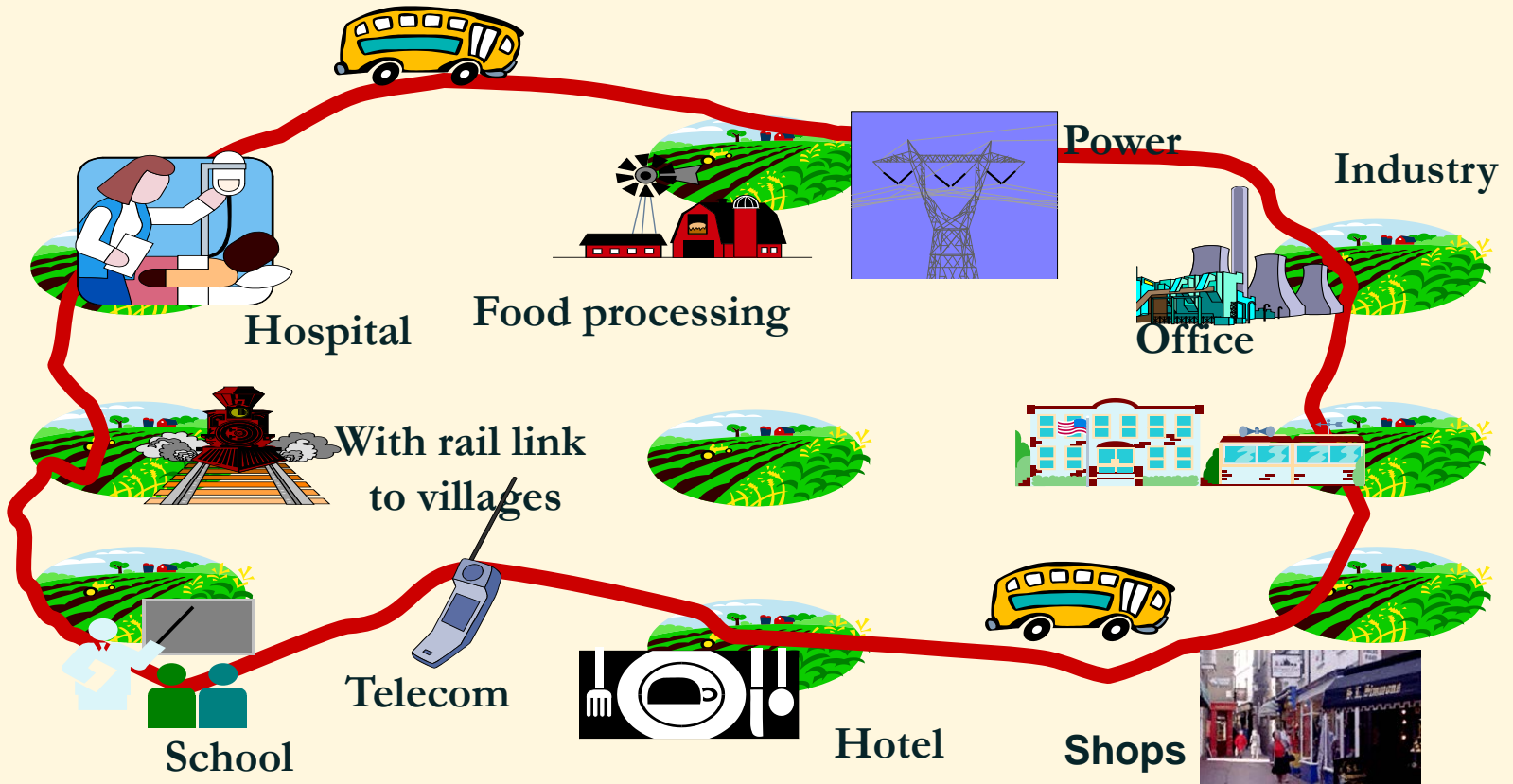
1. To connect all unconnected habitations by 2018.
2. To provide farm to market connectivity by constructing all weather roads through various schemes.
3. To get valuable emoluments for the agricultural & non agricultural products for the farmers.

Mission

- 1. An initiative for empowering the Rural habitation**
- 2. Bringing the under privileged into mainstream**
- 3. To create opportunities for marginalized groups to make them economically active**
- 4. To improve self esteem of the population residing in Rural area**
- 5. Efficient utilization of unutilized public resources**
- 6. To improve access to basic needs**
- 7. To make equitable and optimal use of all available resources**
- 8. To ensure rapid sustainable development & poverty reduction**
- 9. To integrate rural roads with higher category of roads**
- 10. To ensure greater social interaction**

Rural Road : Impacts & Benefits

- Break of Isolation
- Changes in Travel Plan
- Change in Living Pattern
- Improvement in Educational Level.
- Improvement in Health Care
- Increase in Agricultural Production
- Industrial Benefit
- Increase in Access to Administrative Machinery
- Increase in Employment Potential
- Creation of Cultural Changes
- Creation of Sense of Security
- Knowledge of New Technology
- Improvement of Social Contacts
- Better Outlook



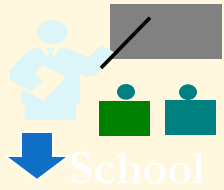
Rural Connectivity to support variety of services

Resultant demand gap will attract businesses

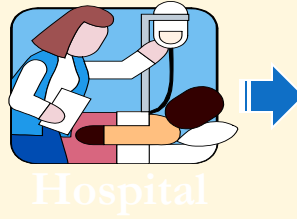
Come Lets Make our Villages prosperous

Change in Travel Plan

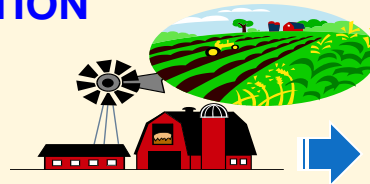




ACCESS TO EDUCATION



IMPROVEMENT IN HEALTH CARE



INCREASE IN AGRICULTURAL PRODUCTION

Economic Impact of Rural Road Construction

- Rural Road Development yields direct & indirect benefits thereby boosts growth
- generates additional demand for goods & services
- generation of employment
- Investments in roads has by far the largest impact on rural poverty
 - Rs.10,000 cr. investment in roads reduces incidence of rural poverty by 0.87 %
 - For each Rs.10 lakhs increase in investment in roads, 165 people are lifted above BPL
 - Additional Rs. 10,000 cr. invested in roads increase productivity growth by > 3 %
- Investment in roads not only reduces rural poverty but promotes
 - productivity
 - increases nonagricultural employment opportunities
 - Leads to higher wages

Need to Accelerate Rural Road Improvement

- Demand for rural road transport dependent on economic activity in region, rather than particular sector
- Despite existing agricultural and forest resources, the rural road network in the state is inadequate
- Thus, provision of well-developed road network to cater to the intra-state and inter-state traffic is critical
- Rural Road sector improvement is critical for overall linkages & efficiency of government programs like rural development, employment generation & local industrialization
- Large differences between Mandi & Farmgate prices indicate potential benefits of improving rural connectivity
- 20-30% agricultural, horticultural & forest produce wasted due to poor connectivity

Major Connectivity Programme

- **Pradhan Mantri Gram Sadak Yojana (PMGSY) under Bharat Nirman**
- **Mukhya Mantri Gram Sampark Yojana (MMGSY)**

Yearwise Sanction, Allotment & Expenditure under PMGSY in Bihar

Year	Projects Cleared (in Rs. Lacs)	Allocation received (in Rs. lacs)	Expenditure (in Rs. lacs)
2000-01	14990.00	14990.00	0.00
2001-02	30298.00	0.00	47.21
2002-03		0.00	6228.08
2003-04	0.00	15000.00	11792.05
2004-05	0.00	0.00	9893.75
2005-06	0.00	6000.00	5749.29
2006-07	0.00	6692.00	2364.31
2007-08	52429.84	0.00	1181.25
2008-09	767150.10	25881.00	20302.48
2009-10	0.00	77293.50	75953.21
2010-11	0.00	192451.00	149692.96
2011-12	94812.39	259959.72	208313.71
2012-13	243910.69	89686.48	135031.14
2013-14	816294.00	64268.00	187364.00
2014-15	0.00	146000.00	213209.56
2015-16 (upto June'15)		91200.00	573.85
Grand Total	2019885.02	898221.70	1027696.85
		44.47%	114.41%

Physical Achievement

Yearwise Roads Constructed in Last Five Years (Length in km)			
Financial year	PMGSY	MMGSY + other state Plan	Total roads constructed
2010-11	3094.98	2096.43	5191.41
2011-12	7035.63	1269.29	8304.92
2012-13	6624.59	1481.24	8105.83
2013-14	3252.29	2955.26	6207.55
2014-15	3624.16	1891.17	5515.33
2015-16 upto june'15	638.09	302.07	940.16
TOTAL	32386.01	7692.35	49119.70

Financial Achievement

Amount in Crore

Financial year	Allocation			Expenditure		
	PMGSY	MMGSY (State Plan)	Total	PMGSY	MMGSY (State Plan)	Total
2010-11	1924.51	778.82	2703.33	1496.92	867.16	2364.08
2011-12	2599.59	1116.78	3716.37	2083.13	697.21	2780.34
2012-13	896.86	1382.54	2279.40	1350.31	1212.08	2562.39
2013-14	642.68	1545.97	2188.65	1873.64	1360.96	3234.60
2014-15	1460.00	2697.57	4157.57	2132.09	1615.19	3747.28
2015-16 upto June'15	2235.00	2894.57	5129.57	573.85	422.88	996.73
TOTAL	9758.64	10416.25	20174.89	9509.94	6175.48	15685.42

Initiatives and Good practices

•Before 2005

- Earlier the department was known as Rural Engineering Organisation (REO) and functioning under Rural Development Department. The scope of work was very limited such as MNP/NABARD & PMGSY Schemes of Phase-I&II only, with Annual Budget expenditure of a few crores.

• New Initiative After 2005

• Schemes

- **Mukhya Mantri Gram Sadak Yojana (started in 2006-07).**

- Observing the slow progress of PMGSY Scheme and condition to select 1000+ habitations first for providing connectivity, State Government has decided to provide connectivity to unconnected habitation having population 500-999 through its own resources under **Mukhya Mantri Gram Sadak Yojana.**

- **Mukhya Mantri Gram Sampark Yojana was started in 2013-14.**

- In 11 IAP districts habitation having 250+ population were taken up under PMGSY for providing connectivity. To facilitate the remaining 27 Non-IAP districts, at par with IAP districts, State Government has taken initiative to connect all unconnected habitations having population 250-499 as well as habitations which could not be taken up under PMGSY due to technical reasons, **Mukhya Mantri Gram Sampark Yojana** was launched in 2013-14.

- **Missing Link**

Construction of roads under various schemes were taken up to provide connectivity. However, in some cases target habitation or wayside habitation could not get connectivity in totality. These lengths are called missing link having maximum length upto 1.00 km.

- **Maintenance Policy for rural roads**

Asset management is as important as creation of asset. On the basis of various National and International seminars State Government has formulated its own Maintenance Policy known as **Bihar Rural Roads Maintenance Policy 2013**, duly approved by the Cabinet. Maintenance of rural roads is output and performance based.

- Infrastructure

- **Set up of BRRDA Office**

An agency of RWD has been created as Bihar Rural Roads Development Agency (BRRDA) under Society Registration Act, in 2003, for execution and monitoring of various schemes. A separate office of BRRDA has been established in 2011. BRRDA is functioning on the basis of no profit and no loss.

- **Creation of RWD**

Earlier the construction of rural roads was responsibility of Rural Engineering Organisation (REO) functioning under Rural Development Department. In the year 2007 a separate Department was created in the name Rural Works Department with responsibility of construction and maintenance of all rural roads.

- **Re-organisation of department**

Earlier only 3 CEs, 8 works circles and 45 works divisions were functioning for the construction and monitoring of rural roads. Looking into huge rural roads network connectivity task, number of works divisions has been increased to 108, number of works circle has been increase to 20 and 4 CEs zone has been created including headquarter.

- **Renovation of Head Quarter Building & PIU'S Offices**

Renovation of headquarter office building has already being done and renovation of field offices are under progress. Field office building at Bhagalpur has been constructed. At some places piece of land has been identified and construction process will start very soon.

- Quality

- **SQM/MQMU**

For maintaining the quality of works, as per prescribed standards and specifications, State Quality Monitors / Mobile Quality Monitoring Units regularly inspect various schemes.

- **Fully equipped lab**

10 Regional laboratories and 1 Central laboratory have been established. They are fully equipped with testing equipments for testing of construction materials like soil, stone metals, bitumen, concrete, cements, steel etc.

- Monitoring

- MIS

Management Information System was developed by the department for online monitoring of various State Schemes. A data centre at BRRDA has been established for monitoring and reporting purpose.

- Tablet PC distributed to all technical & Administrative officers

For inspections and monitoring of works Tablet PC has been distributed to all technical and administrative officers. It facilitates geo-tagged and real time stamped photograph for better reporting and monitoring purpose.

- E-tendering

E-tendering in all schemes was implemented for maintaining transparency in tender.

- Online contractor Registration

Earlier registration of contractor was done manually. In 2014-15 online contractor registration was started by department.

- Capacity Building

- **Closed User Group (CUG)**

- For better communication, services of Closed User Group mobile network has been provided to all field engineers as well as headquarter officers.

- **GPS fitted vehicles**

- Vehicles, fitted with Global Positioning System, have been provided to all PIUs to monitor day to day movements of field engineers.

- **Logistic support**

- Computer, Generator, Internet, Fax, Telephone etc. has been provided to all works divisions, works circles and headquarter offices.

Steps taken by State

- These DPRs have been scrutinized by State Technical Agencies (STAs). These STAs have nominated 3 Govt. Engineering colleges viz. N.I.T. Patna, M.I.T. Muzaffarpur & B.C.E. Bhagalpur.
- All tenders are invited through e-tendering to keep transparency and better participation.
- Fixed time line for evaluation and finalization of tenders has been defined
- State is fully committed for Asset Management through a comprehensive Output based Management Policy.
- The proper maintenance category of roads has improved from 7% to 75% during last 3 years.

Initiative for Quality Improvement

- 1) 56 Nos of SQMs have been empanelled with BRRDA for Monthly Inspection of Road Quality.
- 2) One Executive Engineer and Two Assistant Engineers has been exclusively designated as Dy. SQC and Asst. SQCs respectively for monitoring.
- 3) 11 regional laboratoires
- 4) Procurement of additional 15 Lab equipment has been finalised.

Steps / issues in construction of Rural Roads

- ❑ 1. Selection of project
- ❑ 2. DPR / Technical Approval / Admn approval / Tech sanction
- ❑ 3. Tendering
- ❑ 4. Management
- ❑ 5. Construction
- ❑ 6. Completion in time

Steps / issues in construction of Rural Roads

1. Selection of project

- i) To provide connectivity to maximum villages
- ii) Preliminary survey
- iii) Availability of land
- iv) Selection of alignment

Steps / issues in construction of Rural Roads

2. DPR /Technical Approval/ Admn approval / Tech sanction

- (i) Survey of roads / alignment
- (ii) provision of CD works
- (iii) Availability of raw materials
- (iv) SBC of soil and HFL

Steps / issues in construction of Rural Roads

3. Tendering [SBD]

- ❑ Special Conditions to be provided in NIT
- ❑ (i) Competent agencies (registered)
- ❑ (ii) Security amount / performance guarantee
- ❑ (iii) Completion in time
- ❑ (iv) Debar of unwanted agencies
- ❑ (v) Previous performance
- ❑ (vi) Previous work loads
- ❑ (vii) Penalisation (liquid damage) if not completed in time
- ❑ (viii) Awards depending upon completion in time / quality / etc

Steps / issues in construction of Rural Roads

4. Management

- ❑ (i) Impartiality in selection of work agencies
- ❑ (ii) Centralised system in NIT
- ❑ (iii) Before NIT, A/A & T/S for DPR (all centralised)
- ❑ (iv) Work orders / agreements
- ❑ (v) Engineers to be particular to their works
- ❑ (vi) Local problems regarding law and order to be solved
- ❑ (viii) Political hindrances
- ❑ (ix) Naxalites / anti social elements
- ❑ (x) Co-operation by local officers (BDO/Tah Asildar)

Steps / issues in construction of Rural Roads

5. Construction

- ❑ (i) To be started on time / fixation of Benchmarks / Information boards
- ❑ (ii) Frequent visit of engineers
- ❑ (iii) Earth work in layers
- ❑ (iv) Collection of earth atleast 100 m away from site
- ❑ (v) Lay out of C/D works
- ❑ (vi) Compaction of earth in layers including flank(OMC)
- ❑ (vii) GSB works 150 mm thick (GSB Gr.I or Gr.II depends on CB value of soil)

❑contd.

Steps / issues in construction of Rural Roads

5. Construction.....**contd.**

- ❑ (viii) Stone metal Grade II - 100 mm to 125 mm
- ❑ (ix) Stone Metal Grade III - 100 mm
- ❑ (x) Premix carpet - 20 mm
- ❑ (xi) Seal Coat - 6 mm
- ❑ (xii) 100% compaction of each layers
- ❑ (xiii) Turfing of flanks for its protection
- ❑ (xiv) PCC roads in water-logged portion
- ❑ (xvi) Road furnitures
- ❑ (xvii) Maintenance at intervals
- ❑ **Note: During construction in all such processes quality control is a must**

6. Completion in time

- ❑ (i) Construction schedule programme to be taken from agency
- ❑ (ii) Action to be taken for not completing item of works on time
- ❑ (iii) Letters / warnings
- ❑ (iv) Punishment for time extension (liquid damage)

Steps / issues in construction of Rural Roads

Attention to be paid on

- ❑ 1. Impartiality
 - ❑ 2. Meetings with engineers & contractors
 - ❑ 3. Progress report every fortnight
 - ❑ 4. Quality control
 - ❑ 5. Inspection by SQM / NQM
 - ❑ 6. Allotment / funds for project
 - ❑ 7. Payments in time as per work done
 - ❑ 8. No unnecessary harassment to contractors
 - ❑ 9. Sort out of any local problems
 - ❑ 10. Debar / punishment
 - ❑ 11. Excess estimation
 - ❑ 12. Provisions of repair & maintenance in estimate
1. **Note: 1. Surprise check / visit of site**
 2. **2. Holding up of pay / increment**
 3. **3. For release of LD / time extension, approval of HQ is a must.**

Steps / issues in construction of Rural Roads

Repair & Maintenance

- ❑ 1. Annual repair
- ❑ 2. Special repair
- ❑ 3. Flood damage repair

❑ Annual repairs

- ❑ → Already provided in DPR – only inspection report from engineers required periodically
- ❑ → Expenditure of allotment on repairs to be taken into consideration

❑ Special Repairs

- ❑ → DPR of old roads more than 5 years
- ❑ → Estimates to be verified by CDOs
- ❑ → Time of completion before rainy season

❑ Flood Damage Repairs

- ❑ → Provisions of sufficient CD works
- ❑ → Construction of retaining walls to control floods
- ❑ → Provisions of PCC in road



Thank You