RURAL ROAD INFRASTRUCTURE DEVELOPMENT IN INDIA

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Abstract
As per the 2011, rural areas are occupied by 69% of India's total population. The process of rural development is the improving the quality of life and economic status of rural areas. BHARATH NIRMAN is one the business plan for creating and development of rural infrastructure which was implemented by the Government of India. National Bank for Agriculture and Rural Development (NABARD) has been developed in grounding rural, social enterprises and innovations in rural areas. NABARD has profile of Natural Resources Management Programs involving field in Watershed Development.

Therefore, accessibility and connectivity of rural areas will provide a vital impetus to the country's economic growth. Rural infrastructure development and transport of rural infrastructure are very crucial in India. Rural areas are with low levels of income per capita, so there is need to greater attention in improving rural infrastructure.

This sector has both forward and backward linkages with the industrial and agricultural sectors and the development of infrastructure sector is a prerequisite for the overall development of the economy. Rural infrastructure is to development of economic by increasing productivity and by providing quality of life.

Infrastructure takes a main role for not just the country's economic growth but also progress in human development. For the rural infrastructure development the government launched schemes like Bharat Nirman to boost irrigation, roads, electrification, housing, water supply and telecommunication and estimated that 20 - 30% agricultural and forest produce gets wasted because of inadequate rural road network, which creates an impedance for transporting such commodities for the user needs.

This paper mainly focuses on rural infrastructure under BHARAT NIRMAN and NABARD provides suggestions to improvement.

Keywords: Rural infrastructure, Bharat Nirman, NABARD,PMGSY.

Introduction
Rural infrastructure development is a complex phenomenon due to the many attributes of infrastructure that make it difficult for individuals to design, construct, operate and maintain these services effectively and efficiently. Infrastructure development has a key role to play in both economic growth and poverty reduction. Investments in rural infrastructure sometimes leads to failure because investments will make a more efforts to achieve the Development Goals in poor developing countries while at the same time several limit opportunities for these countries to benefit from trade liberalization, international capital markets and other potential benefits offered by globalization.

 The World Development Report of 1994 included the following definitions of infrastructure:
- Public utilities-power, telecommunications, piped water supply, sanitation and sewerage, solid waste collection and disposal and piped gas.
- Public works-roads, major dam and canal works for irrigation and drainage.
- Other transport sectors-urban and inter-urban railways, urban transport, ports and waterways, and airports.

During the last six decades of planning period, the country's economists and planners have identified the potential of a vibrant rural India to resolve issues of poverty and advocated for improvement and expansion of rural socioeconomic infrastructure. While the Eleventh Five Year Plan (2007-2012) noted direct and significant causal relationship between the infrastructure and incidence of poverty in States, the approach to Twelfth Five Year Plan (2012-2017) laid renewed emphasis on creation of physical infrastructure like roads, railways, airports, power and telecommunications.

Construction of rural roads leads to increase in agricultural production, productivity by bringing in new land into cultivation and reducing the transportation. In addition to facilitating agricultural commercialization, diversification and rural infrastructure particularly roads, consolidates the links between agricultural and non-agricultural activities within rural areas and between rural and urban areas.

Review of Literature

Several studies are there regarding rural infrastructure and established for the positive relationship between the rural connectivity and development. Rural roads are provides links that faster effective and utilization of social and physical infrastructure. Rural road development including increased agricultural production plays a major role along with fisheries and forestry in Indian economy, better farm prices, growth of dairying, rural industrialization, better educational standards and higher life expectancy resulting in balanced, faster and better development of rural areas.

Rural road development in markets can reduce the in transaction and trade cost. The greater availability of inputs increases their agricultural productivity. Rural roads also allow producers to achieve additional productive units which are useful to increase in production to show that road density which had a highly significant positive effect on consumption of growth in the farm-household levels in rural areas of Southern. By using household data we can find that the proximity of a road which is a major factor in reducing poverty.

Increase in export crop cultivation, the standard of roads and distance from main commercial centers are major factors in rural road development. There is enhanced entrepreneurial activity, sharp decline in freight and passenger charges and improved services as a result of investment in rural roads. While analysis the socio-economic impact of new roads on small and isolated village communities in Mexico, it was found that the roads created inflow and outflow generation of transportation, communication and modernization as well as migration.

Rural Roads Infrastructure in India

A conference of the chief engineers of all the states and provinces was convened in 1943 by the government of India at Nagapur, the Indian Roads Congress to finalise the first road development plan the country. This is the landmark in the history of road development, as it was the first attempt to prepare a coordinated first 20 year road plan, popularly known as the Nagapur Road Plan and period of this plan is 1943-63 and the target length of road aimed at was 16 km per 100 square area of the country.

The second twenty year road plan development plan for the period 1961-81 was initiated by the Indian Road Congress and finalized in 1959 at the meeting of the chief engineers and forwarded to central government. This road development plan is also known as Bombay Road Plan and target road length aimed at was 32 km per 100 square area of the country.

The third twenty year road development plan 1981-2001 was prepared by the road wing of the Ministry of Shipping and Transport with the active co-operation from a number of organizations and experts in the field of Highway Engineering. This road plan is known as Lucknow Road plan and targeted road length was 82 km per 100 square km by the year 2001.

Union Budget

Arun Jaitley who is finance minister of India said that the aim of Union Budget is improving rural infrastructure, increasing rural income as the biggest challenge to the economy and housing for all. He said the budget for 2016-17 aims at taking forward economic reforms, increasing spending time on infrastructure, animal husbandry and giving a boost to overall development of the country.

He observed that the funds allocated for Rural over Rs80 lakh per Gram Panchayat and over Rs21 crores per urban local body.The government is committed to achieve 100 percent village electrification by May 1, 2018," Jaitley said, allocating Rs8,500 crores towards rural electrification. Overall, Rs87,765 crores was allocated for rural development as a whole.

Now plan to launch a new Digital Literacy Mission Scheme for rural India to cover around six crores additional households within the next three years, he said, asserting on the need to spread digital literacy in rural India.The National Land Record Modernization Programme has been revamped under the Digital India Initiative and will be implemented as a central sector scheme with effect from April 1, 2016," Jaitley said.He announced a new scheme, Rashtriya Gram Swaraj Abhiyan with an initial allocation of R 655crores.

He decided to embark upon on a massive mission to provide liquefied petroleum gas (LPG) connection in the name of women members of poor households.Jaitley said the government had targeted agriculture credit of Rs8.5 lakh crores in the fiscal 2015-16, which was being enhanced to Rs9 lakh crores in the next fiscal.

He also said that Rs19,000 crores will be allocated for rural roads development programme.

On not increasing the tax slab rates, he said there is an attempt to increase the tax base and simplify tax structure. Reforms in the economy cannot be brought about by changing the slabs and if tax payers stop giving taxes, the country will stop. There should be benefits to tax payers also and the tax base should also increase, he said.

Jaitley said the steps taken by the government in the last 21 months collectively are themselves "very big" and this is the reason the country's economy is growing despite the global slowdown. On the passage of key reform bills like GST pending in Parliament, the government is making attempts and he expects the Congress party to help and cooperate in the goods and services tax.

Bharat Nirman
Considering the importance of infrastructure in the economic growth of our country, the goal had launched a programme on rural infrastructure called 'Bharat Nirman' as a time bound business plan for implementation in four years (2005-2009). The six components included under the programme were irrigation, drinking water, electrification, roads, housing, and rural telephony. This had also sought an active and transparent public and private partnership for immediate execution of various infrastructure related development projects with a mission . Although the Bharat Nirman registered considerable progress by 2009, non-achievement of goals set under the programme prompted the government to expand the timeline for completion of targeted activities to 2012.

Rural Road, one of the six components of the program with a goal to provide with an all-weather road connectivity to all eligible unconnected habitations with a population of 1,000 persons and above (as per 2001 census) in plain areas and 500 persons and above in the case of Hilly or Tribal (Schedule V) areas. The Bharat Nirman Programme is a massive scaling up in terms of habitation connectivity coverage, construction targets, and financial investment. Up to March, 2014 a total of 51,253 habitations have been connected out of 63,940 habitations to be connected and works for connecting 62,876 habitations have been sanctioned. The targets and achievements of rural road network under Bharat Nirman are given bellow.

Year-wise Targets and Achievements of Rural Roads Network under Bharat Nirman

Year	Target		Achievement	
	No. of Habitations to be connected	Length of road works to be completed (in km)	No. of Habitations to be connected	Length of road works completed (in km)
2005-06	7,895	17,454	8,202	22,891
2006-07	9,435	27,250	10,801	30,710
2007-08	12,100	39,500	11,336	41,231
2008-09	18,100	64,440	14,475	52,405
2009-10	13,000	55,000	7,877	60,117
2010-11	4,000	34,090	7,584	45,109
2011-12	4,000	30,566	6,537	30,995
2012-13	4,000	30,000	6,864	24,161
2013-14	3,500	27,000	6,560	25,316

The Pradhan Mantri Gram Sadak Yojana (PMGSY)
The central government was established a scheme in 2000 is known as PMSGY and it provide all weather connectivity to all eligible unconnected rural habitations. Bharat Nirman envisages connectivity by 2009 to all habitations with a population of 1000 or more in the plains and of 500 or more in the hilly, desert and tribal areas. Upto December 2005, with an expenditure of Rs12,049 crores a total road length of 82,718 km of road works have been completed. Till December 2009, 97,583 km. rural road was constructed in that 33.812km habitations have been connected; in addition, 1,84,353 km. existing rural roads have been upgraded. The PMGSY was launched to provide single all-weather road connectivity to eligible unconnected habitations having population of 500 persons and above in plain areas and 250 persons and above in hill states, tribal areas, desert (as identified in the Desert Development Program) areas, and LWE-affected districts as identified by the Ministry of Home Affairs. The PMGSY aimed at providing connectivity by way of an All-weather road [with necessary culverts and cross drainage structures, which is operable throughout the year] to the eligible unconnected Habitations in the rural areas in such a way with a population of 1000 persons and above can be covered in three years [2000-03] and all unconnected Habitations with a population between 500 and 1000 persons by the end of the 10th Plan period [2007]. In respect of the Hill States [North-East, Sikkim, Himachal Pradesh, J&K, [Uttarakhand] and the Desert areas [as identified in the Desert Development program] as well as the Tribal areas, the objective has been to connect Habitations with a population of 250 persons and above. Under Kurukshetra October 2013 3939 the PMGSY approximately 1,60,000 habitations are expected to be covered with an anticipated investment of R s.600 billion.

NABARD

NABARD plays a major role in rural development in India is National Bank For Agriculture & Rural Development (NABARD) is set up as an apex Development Bank by the Government of India with a mandate for facilitating credit flow for promotion and development of agriculture, and village industries. The credit flow to agriculture activities sanctioned by NABARD reached Rs.57,480 crores are sanctioned by NABARD to agriculture sector in 2005-2006. The overall GDP is estimated to grow at 8.4 per cent. The Indian economy as a whole is poised for higher growth in the coming years.

NABARD set up the Rural Innovation Fund. Rural Infrastructure Development Fund (RIDF) is the scheme which is provided in the bank for rural development. Under the RIDF scheme funds the projects which covering the activities of irrigation, roads, bridges, health and education Rs.51,283crores have been sanctioned. The assistance is extended who have the expertise and willingness to implement innovative ideas for development of rural areas. Through member base of 25 crores, 600000 cooperatives are working in India at grass root level in almost every sector of economy.

Effectiveness of the program depends upon many factors, but the type of organization to which the assistance is extended is crucial one in generating, executing ideas in optimum commercial way., NABARD is also started a new direct programme which is 'Umbrella Programme for Natural Resource Management' (UPNRM) in 2007-08. Under this facility financial support for natural resource management activities can be provided as a loan at reasonable rate of interest. Already 35 projects have been sanctioned involving loan amount of about Rs1000 crores.

Release of Funds under PMGSY to the states

S. No	Years	Release for programme	Release for admn. Found	Release under adb assistance	Release under world bank assistance	Total release
1	2000-01	2,435	0	-	-	2,435
2	2001-02	2,493	7	-	-	2,500
3	2002-03	2,497	3	-	-	2,500
4	2003-04	2,299	26	-	-	2,325
5	2004-05	2,111	37	93	220	2,461
6	2005-06	3,770	40	193	218	4,221
7	2006-07	4,145	100	1,000	750	4,265
8	2007-08	3,834	66	1,950	650	11,000
9	2008-09	5,380	151	2,000	250	15,281
10	2009-10	10,390	140	800	10	17,840
11	2010-11	21,325	185	800	90	22,400
12	2011-12	10,598	83	1,075	627	12,383
13	2012-13	3,272	125	425	575	4,397
14	2013-14	4,553	164	-	643	5,360
TOTAL		**97,872**	**1,127**	**8,336**	**4033**	**1,11,368**

*FROM NABARD as loan

Conclusion

Rural roads are the wealth of a nation, a tool for social, economic development and environmental sustainability. Rural roads are link communities and their agricultural fields to the main transport system and markets. Improving rural roads reduces transport cost and marketing. This results in increased production and productivity, crop diversification and increase in profitability. A main bottleneck for local economic development is often a limited and poor quality rural road network. It is quite evident from the Plan documents that, private sector participation in road sector has been confined to development, maintenance and operation of specified highways (national and state), expressways, bridges and bypasses. Rural roads are profitable to the private sectors mainly in hilly and remote. Hence, without doing any major policy on the development of rural road infrastructure, it is very difficult to expect private sector participation in this area and till that time Public investment must have to come in a big way and without any further delay. This crucial component of rural infrastructure, neglected during the reforms decade, need to be state financed in a time bound manner to prevent the rise in rural disparities in growth and development.

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Data Analysis Using SPSS Software
Null Hypothesis:-There is no significant difference between targeted and achieved road lengths.

Data View in SPSS

	S.NO	YEAR	TYPE	LENGTHS
1	1	2005-06	1	7895
2	2	2006-07	1	9435
3	3	2007-08	1	12100
4	4	2008-09	1	18100
5	5	2009-10	1	13000
6	6	2010-11	1	4000
7	7	2011-12	1	4000
8	8	2012-13	1	4000
9	9	2013-14	1	3500
10	10	2005-06	2	22891
11	11	2006-07	2	30710
12	12	2007-08	2	41231
13	13	2008-09	2	52405
14	14	2009-10	2	60117
15	15	2010-11	2	45109
16	16	2011-12	2	30995
17	17	2012-13	2	24161
18	18	2013-14	2	25316

1 –Targeted road lengths, 2- achieved road lengths

Variable View in SPSS

Level of significance – 95% - 0.05

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	S.NO	Numeric	12	0		None	None	12	Right	Nominal	Input
2	YEAR	String	7	0		None	None	7	Left	Nominal	Input
3	TYPE	Numeric	12	0		{1, targeted...	None	12	Right	Nominal	Input
4	LENGTHS	Numeric	12	0		None	None	12	Right	Scale	Input

Output in SPSS
T-Test

[DataSet3]

Group Statistics

	TYPE	N	Mean	Std. Deviation	Std. Error Mean
LENGTHS	targeted road lengths	9	8447.78	5161.399	1720.208
	achieved road lengths	9	35992.70	13473.011	4491.770

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
LENGTHS	Equal variances assumed	10.915	.004	-5.934	16	.000	-28544.000	4779.156	-38674.123	-18415.877
	Equal variances not assumed			-5.934	10.322	.000	-28544.000	4779.156	-39145.277	-17942.723

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- To know whether equal variances to be assumed or equal variances to be not assumed

We make use of Levene's Test for equality of variances.

As a rule of thumb if sig.> .05, we use the first line of t-test results.

Reversely, if its P value sig. < .05   we reject the null hypothesis of equal variances and thus we use the second line of t- test results.

Here sig. value is 0.04 which is less than 0.05 so here we consider second line of t-test results.

- If the sig. (2-tailed) value is greater than 0.05 in the results.
  We can conclude that there is no significant difference between two conditions targeted and achieved road lengths.
- If the sig. (2- tailed) value is less than or equal to 0.05 in the test results.

We can conclude that there is a significant difference between two conditions targeted and achieved road lengths.

Here sig. (2- tailed) value is 0.00 which is less than 0.05 so there is a significant difference between two conditions targeted and achieved road lengths.

Result

Here there by we can conclude that T-Test that there is the difference of 28,545 km between the targeted road lengths and achieved road lengths, there is a statistically difference between two conditions.