



Pradh

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The National Rural Roads Development Agency (NRRDA) was established on 14th January, 2002 as the dedicated agency of the Ministry of Rural Development for the operational management of the rural roads programme - PMGSY

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E-mail: nrrda@pmgsy.nic.in

Website: www.pmgsy.nic.in

Editing, Design & Printing by Kamal Printers, New Delhi-110005
Mob.: 9810622239, 9810576865

Email: kamal.printer@yahoo.com, rameshkamal56@gmail.com

For article contribution and free subscription contact: Dr. I K Pateriya, Director (Tech.), NRRDA,

(email: ik.pateriya@nic.in, pateriya1@gmail.com).

Note: Accepted articles may be condensed.

Editorial



The interplay between road and transportation networks and economic activity is a subject that has received much attention of late. Across the world, we are witnessing a revived emphasis on infrastructure in promoting development in poor countries. A critical component of such emphasis is large scale provision of all weather rural roads, which serve large populations. In India, our flagship programme Pradhan Mantri Gram Sadak Yojana (PMGSY) is undoubtedly the most successful and largest public sector rural road construction programme. It has been argued in various that PMGSY has contributed substantially towards ensuring sustainable poverty reduction in India.

Till now we have covered 63 precept of the eligible habitations by connecting them with all weather roads. We would be achieving the target of PMGSY by March, 2019 well before the march, 2022 deadline. of the 5,47,701 kms of rural road, which have been sanctioned under PMGSY, we have completed 4,56,118 kms, that is 83.27% coverage as on date under the PMGSY scheme.

The positive impact of PMGSY has been documented in recent studies. A Socio-Economic Impact Assessment of PMGSY in 10 States done by Lea Associates, South Asia Pvt. Ltd. in January, 2010 concluded that PMGSY roads have led to increase in percentage of farmers engaged in trading of agri-produce, reduction in percentage of unemployed in connected habitation as compared to unconnected habitations, more employment opportunities in non-farm sector, increase in use of private hospitals and pharmacies, increased vaccination coverage, reduction in travel time/ travel cost etc. Another study done by World Bank in June, 2014 has found that PMGSY roads have led to increased direct movement to labour markets, time savings primarily in relation to work, expansion of economic opportunities, higher incomes and some evidence of changes in cropping pattern. An Impact Assessment Study done by International Labour Organization (ILO) in October, 2015 has found that these roads provide access to critical facilities related to education and health and they attract complimentary investments. Recently, in September 2015, a study by University of Heidelberg, Germany, in Odisha has found how improved road transportation afforded by PMGSY roads affects morbidity. It has found that the probability that an individual will fall sick at all is lower by 0.036 per km of road and secondly, an individual's expected number of days of sickness is lower by 0.46 km in villages connected by PMGSY roads. Recent direct connections under PMGSY in Odisha have been about 3 km. long on average, which implies that the inhabitants of such village have enjoyed and 11 percentage point reduction in the probability of falling sick and each of them, an average, 1.4 fewer days of sickness.

PMGSY has undoubtedly given huge exposure of socio economic services to a large population of rural India and has played an important role in facilitating spirit of entrepreneurship and promoting financial inclusion.

(Rajesh Bhushan)
JS (RC) & DG, NRRDA

Evolution of Trail Bridge Building in Nepal

Joshi S.G., Jha A.K.

Nepal now has over 5,000 pedestrian trail bridges scattered over the country's landscape in the high Himalayas, in the lush mid-hills and the plains of the Terai. They are scattered from East Mechi to West Mahakali and includes the longest one of the world the 1.5 km long Dodhara Chandani in the far west and the one at the highest elevation on Earth is Kangla bridge in Manang at an altitude of 4700 meters above mean sea level. Where as a mere 20/25 bridges could be constructed with difficulty in the 1980s this year we have a milestone output 325 standing sturdy crossings in 365 days flat.....

What the over 5,000 bridges means is that on an average one whole million of us cross them daily safely, conveniently and on our own schedule, saving some 2 million hours for not having to make detours to the next nearest crossing facility. If we will have used only half of the time savings for manual labor, it still gives us a staggering output worth NRs. 50 million at base government rates for VAT purposes daily! Truly, Trail bridges link us all together in Nepal with all our diversities....

1. How was it started?

Nepal has a long tradition of constructing trail bridges. For centuries, communities have been building bridges across Himalayan Rivers using indigenous technologies. At the beginning of the 20th century, the government started to become involved in constructing bridges at key locations. Systematic and planned



Dept. of Local Infrastructure Development and Agricultural Roads (DOLIDAR), Govt. of Nepal

construction started since 1964 with Swiss support. Various agencies like USAID (then USOM), DFID, World Bank, Asian Development Bank, SNV, GIZ, Kadoorie, Agricultural Aid Association British Gurkha Welfare (KAAA-BGN), CARE Nepal and Remote Area Development Committee have supported Nepal in its endeavor to construct trail bridge.

Helvetas established the Suspension Bridge Project (SBP) in the early eighties to support trail bridges that were built on the main trail and Bridge Building at Local Level (BBLL) in 1989 to cater to the demands of trail bridges along the local trails. In 2001, a key milestone was achieved by merging the two projects i.e. SBP and BBLL under the name of Trail Bridge Sub Sector Project. This was followed by establishing Trail Bridge



Section (now local Bridge Section), a permanent section, by the Government under Department of Local Infrastructure Development and Agricultural Roads. Since a trail bridge was considered the most matured sector in the field of Rural Transport Infrastructure (RTI), it entered into Sector Wide Approach (SWAp) since mid2009. The main purpose of SWAp is to apply uniform planning processes, technical standards, implementation approaches and effective use of funds for the sub-sector thus enhancing efficiency. It is a completely Government led programme.

2. Who Finances?

The Government of Nepal has been continuously

financing the Trail Bridges in an increasing trend. Similarly, it has been able to attract funds from other Development Partners, namely DFID, SDC, World Bank, Asian Development Bank. KAAA-BGN is also financing for building trail bridges in Nepal. In order to realize SWAp outputs, a Joint Financing Arrangement was concluded on June 29, 2009 and ratified by World Bank, Department for International Development, Swiss Development Cooperation and Government of Nepal. There is a general understanding of the support till FY 2013/14 with the financial commitments of the JFA Development Partners.

Development Bank has funded for trail bridges through RRRSDP and DRILP. The total requirement for the phase is US \$ 72 million.

3. How is it implemented?

The Government of Nepal, with the support of TBSSP has promulgated the Trail Bridge Strategy (TBS), 2006 that seeks to bring uniformity not only in technologies, standards, norms and specifications of bridges but also to ensure that all bridge builders follow a similar implementation approach. The strategy envisions trail bridges to be constructed at locations that would avoid the need for people to detour more than an hour to cross a river, stream or ravine. The strategy stipulates construction of mainly two types of trail bridges i.e. Long Span Trail Bridge (LSTB) and Short Span Trail Bridge (SSTB). LSTB. The Government of Nepal, through its Department- DoLIDAR is leading the whole Trail Bridge Sub-Sector.



two years was built. Before 1964, imported trail bridges were built in a sporadic manner. After 1964 trail bridges on the main trails were built. The need to build trail



bridges on local trails was felt and from 1989 built under community approach. Even during heightened conflict the communities were successful in building trail bridges. Approximately 200 trail bridges per year were built between the period of 2000-2008. With advent of SWAp in 2009 more than 200 trail bridges were built. The milestone of constructing more than 300 trail bridges was achieved in 2012/013 fiscal year. The graph above shows the decade-wide output of trail bridges. The picture on the left side is the longest bridge of 1.4 km in span namely “Dodhara Chandani”.

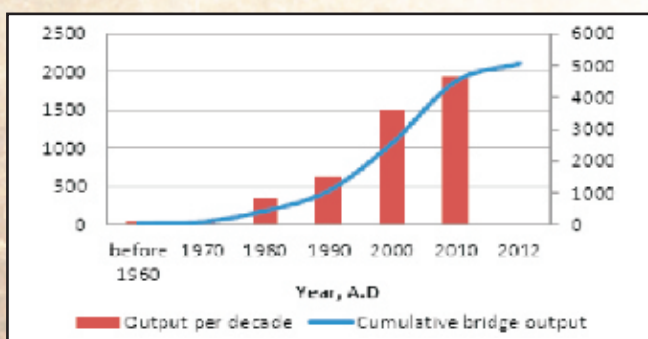
In other terms:

After construction of trail bridges, the lives of the rural people have changed. Various studies have revealed that the community people have been able to send their children to educational institutes on a regular basis; they can go to the health centers whenever they need treatment, sell and buy products from the markets, conduct household chores easily and meet friends and relatives from the other bank at their convenience. Trail bridges have definitely improved the living standard, reduced physical hardships and poverty and thus, bringing about improvement of social ties among the isolated communities. The rural people state that the main benefits of trail bridges are saving time, safety and continuous mobility throughout the year. Thus, the statement: “trail bridges are a lifeline to rural people” is fully justified.

4. What has been achieved?

In terms of Numbers:

Trail bridge construction was initiated by the Rana-Rulers in early 1900 when approximately one bridge per



5. The Technology Bridge Types, Technical Norms, Standards and Manuals

The volume of demand for bridges, not in the tens or hundreds, but in the thousands dictated the need to fix

Suspension Bridge

The walkway of a suspension bridge hangs on vertical cables hung from the main cables stretched between lattice



towers built on opposite banks of a river. On each bank the cable is anchored to a rocky wall if one is available or to a masonry block. The walkway is generally cambered upwards. To design and construct a suspension bridge requires higher degree of expertise and it costs more than a suspended bridge.



Khenjya Ghat bridge Baglung

Suspended Bridge

This type of trail bridge is built without towers. The walkway of the bridge hangs on suspenders attached to the main cables. To achieve sufficient freeboard, the bridge foundations need to be placed at a sufficiently high position at both banks of the river. The suspended type bridge is more simple to construct and cheaper than the suspension type and therefore are to be found in large numbers throughout the country.



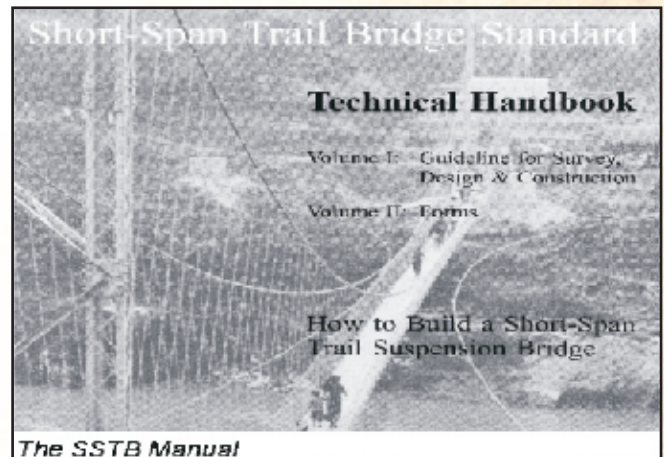
The longest suspended bridge (span 350 m) is in Khotang District at Burwajar Ghat li over Sunkosin River

to mass produce the end product and reap benefits from cost effective design and economies of scale.

After several experiments and tests of different possible designs SBD developed the basic technical norms, design parameters and standard designs for the suspension and suspended type of bridges suitable for mountainous terrain and the need of the users taking into consideration the capacity of the local workshops and



The LSTB Manual



The SSTB Manual

fabricators, local craft persons and portaging requirements along difficult trails and terrain. In 1984 the first pedestrian Trail Bridge Manuals known as "SBD Standards" were published in five volumes one each for Survey, Design, Construction, Standard Bridge Drawings and Costing and Contracting. Bridges built using these standard designs were called 'hitech' bridges. With the advent of community involvement in bridges building, the demand for simpler 'community executable bridges' on local trails rose tremendously. Experience established that the robust SBD standard bridges designed to span wider rivers were neither necessary, nor cost effective, nor within the capacity of local communities to build.

uniform technical norms and standards for engineering, fabrication and civil construction work that would help

In the 1990s Helvetas Nepal developed a 'community executable' bridge design inspired by the traditional 'Baglung bridges'. This new design, known as "BBL Standard" focused on optimizing the use of local skills and local materials while fulfilling all the engineering requirements in terms of durability and serviceability.

6. Technical Demarcation: SSTB LSTB

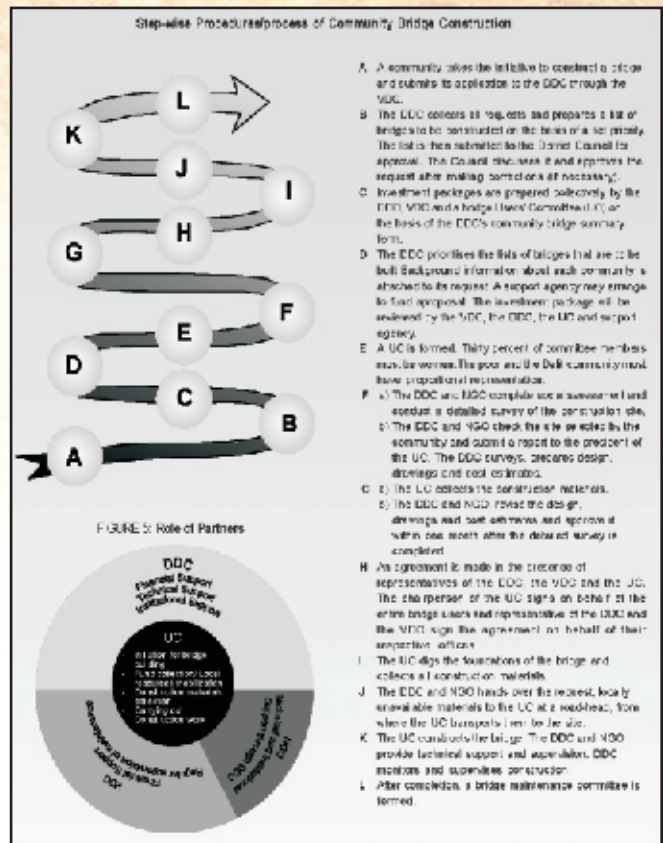
Based on the BBL technology, an even more cost effective, technologically simpler SSTB standard was developed for bridges up to a span of 120 meters to cater to the voluminous demand for short span bridges on local trails that mostly, but not always, spanned seasonal streams and rivulets.

The rationale for the cut off mark of 120 meters is based on span requirements of community bridges, safety considerations, local capacities and optimum use of local materials and skills. Both SSTB and LSTB follow the same engineering norms and standards but the SSTB designs are more simplified to suit local needs, capacities and limitations. SSTBs are more easily fabricated, transported, constructed and fitted at site, thus saving costs and time. Costing about US \$ 175 per meter span, SSTBs are more than 50% cheaper than LSTBs. SSTB Manuals are published in three volumes. What were known as 'BBL standard' bridges are now called SSTBs. SSTBs are designed for construction through the "Community approach".

Experience gained during the development of the SSTB standard was also put to use for revising the SBD technology for LSTBs above 120 meter span and published in four volumes as LSTB Manuals. What were known as 'SBD standard' bridges are now called LSTBs. LSTBs are designed for construction through the private sector. Both SSTB and LSTB manuals are tailored towards three kinds of professionals notably engineers, overseers, and sub-overseers. In addition, handbooks and manuals are also developed for Demonstration Model Bridge Training (DMBT) to train local bridge craft-persons. All these manuals facilitated the technology transfer of trail bridge building.

Simplification and standardisation of bridge technology saved much time for designing, drawing, fabricating, constructing and maintaining bridges. It led to bulk import of wire ropes, mass production of pre-fabricated steel components and bulk procurement of small construction items and tools, which due to economies of scale, reduced per unit costs. Standardization very much helped to involve with ease local institutions and the private sector in the process of decentralising the technological aspects of trail bridge building.

7. Implementation Process



Step-wise Procedures /process of Community Bridge Construction

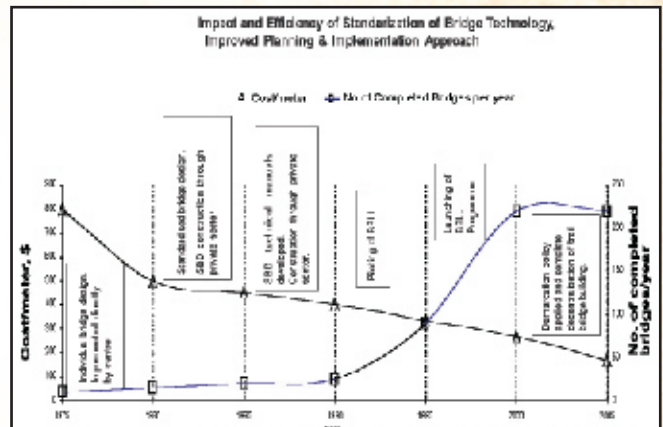
- A A community takes the initiative to construct a bridge and submits its application to the DDC through the VDC.
- B The DDC collects all requests and prepares a list of bridges to be constructed on the basis of a set priority. The list is then submitted to the District Council for approval. The Council discusses it and approves the request after making corrections (if necessary).
- C Investment packages are prepared collectively by the DDC, VDC and a bridge Users' Committee (US) on the basis of the DDC's community bridge summary form.
- D The DDC prioritises the lists of bridges that are to be built. Background information about each community is attached to its request. A support agency may arrange to fund a proposal. The investment package will be reviewed by the VDC, the DDC, the UC and support agency.

- E A UC is formed. Thirty percent of committee members must be women. The poor and Dalit community must have proportional representation.
- F
 - a) The DDC and NGO complete social assessment and conduct a detailed survey of the construction site.
 - b) The DDC and NGO check the site selected by the community and submit a report to the president of the UC. The DDC surveys, prepares design, drawings and cost estimates.
- G
 - a) The UC collects the construction materials.
 - b) The DDC and NGO revise the design, drawings and cost estimates and approve it within one month after the detailed survey is completed.
- H An agreement is made in the presence of representatives of the DDC, the VDC the UC. The chairperson of the UC signs on behalf of the entire bridge users and representative of the DDC and the VDC sign the agreement on behalf of their respective offices.
- I The UC digs the foundations of the bridge and collects all construction materials.
- J The DDC and NGO hands over the request, locally unavailable materials to the UC at a road-head, from where the UC transports them to the site.
- K The UC constructs the bridge. The DDC and NGO provide technical support and supervision. DDC monitors and supervises construction.
- L After completion, a bridge maintenance committee is formed.

8. Efficiency and Beneficiaries

Standardization of technology leading to uniformity facilitated bulk fabrication and procurement of steel parts and reduced civil construction costs. With the advent of SSTB technology and community involvement in civil construction, irrespective of inflation effects, the cost line continued to dip. Proper facilitation of the social contract nexus among the DDC, VDC, NGO and UC combined with the free development grant by the central government to the DDCs and VDCs dramatically increased bridge output to over 300 completed bridges a year.

Design optimization and standardization leading to economies of scale, global tender procurement, competitive bidding processes based on turnkey



packages etc. reduced bridge costs per meter span to the present standings of US \$ 350 for LSTBs and US \$ 175 for STBs. The average number of beneficiaries per bridge is 2,500 and the per capita cost is less than US \$ 10.

New Roads in Rural Jharkhand bring a ray of hope to its people

Published in the Magazine "The World Bank" IN INDIA
(Vol-12/No.4, January 2014)

Two young friends, Raju Yadav and Ankit Kumar, race their bikes down a brand new road in rural Jharkhand. They are no longer scared of snakes or of falling down on



the stony path, can get to school on time, and can even borrow their sisters' bikes (given free to village schoolgirl by the government) for a joyride.

Deep in the heart of rural Jharkhand, new roads are bringing development to remote tribal regions where the Maoists hold sway. Connecting villages to main roads in this far-flung and insecure region has not been easy. The extremists hide in the dense jungles of this sparsely populated terrain, moving in and out of villages to find shelter and food, sometimes at gunpoint. Visitors are told not to stay for more than few minutes in each hamlet, and to be well clear of the area before dark.

Many mud-brick homes sport the triangular orange flags of the Monkey-God Hanuman, believed to imbue courage and protect the innocent from peril. And, local road-building contractors usually need to be armed, to protect themselves and their crews from the Maoist threat.

(Although the law and order problem has seriously impacted the pace of road building in Jharkhand, the state's rural roads program has progressed).

Array of hope

The tribal people have little, and sometimes no access, to basic amenities like drinking water, roads, or irrigation. They drink directly from ponds or rivulets, frequently contracting water-borne diseases like diarrhea and typhoid. With medical services being hard to reach, these and other infections exact a heavy toll.



Not surprisingly, the new road brings a ray of hope to this benighted land. It brings tractors to irrigate impoverished farms and fields, trucks and tempos to



transport people and goods to market, and auto-rickshaws to take the children to school.



In one duty hamlet, in Lapung block, Ranchi district in Jharkhand, 25 year old Phekayen Urra appreciates the changes the new road has brought. Earlier, Urra says, it was difficult to negotiate the rough stony path to the village. Now, her husband is able to cycle to the local market to sell the produce they raise on their little farm. And tempos ad auto rickshaws come right up to the village, enabling her children to attend the English-language school in the nearby town. Still, Urra is scared to traverse the road at night, and the family remains firmly indoors after the late evening hush settles around the cluster of homes at sundown.

Armed protection for road building crews

Although the law and order problem has seriously impacted the pace of road building in Jharkhand, the state's rural roads program has progressed. The program, part of the Pradhan Mantri Gram Sadak Yojana's (PMGSY) and supported by the World Bank, has begun to connect the larger villages to the highway, making life easier for the people. Smaller villages too, particularly those that lie along the 'through' roads that link the larger villages to the main roads, have begun to benefit.

(Since 2000, the Government of India has been implementing the Pradhan Mantri Gram Sadak Yojana Sadak Yojana (PMGSY), the Prime Minister's Rural Roads Program, to link all India's villages with populations of 500 and above with all-weather roads).

Reaping the benefits

In a relatively safer part of the state, in Hazaribagh district in Jharkhand, 26 year old Dhaneshwar Kumar Rana remembers how difficult it was to take his pregnant wife to the doctor in the nearest town. "The local drivers refused to come to our village because the road was bad. But if someone really needed them, they would charge

extra,' he recalls. Now, with the new black-topped road, Rana can easily take his little girl to town for her doctors' visits and polio shots, "It's nice to be able to come and go easily," he says.

Rana's sentiments are echoed by 70 year old Baijnath Pandey, who is visiting the village to conduct his priestly duties. Not so long ago, it would take the old priest over an hour to walk the overgrown path to reach here. "The new road has benefitted us immensely," Pandey says. "Earlier when someone was sick they had to be taken to the nearest hospital on a makeshift wooden plank that was carried on the shoulders of two people. Some survived this arduous journey, and some didn't. There were so many rocks and boulders, what could we do?" he adds with a shrug.

85 year old Lokni Mussamat, too remembers the time when bullock carts or travel by foot was the only means of getting from place to place. Walking upright with the



stick despite her advanced years, Mussamat recalls that marriage processions used to get off the bus on the highway and walk through the rough country path to reach the bride's house, often spoiling their wedding

finery on the way. “It was no surprise that people were unwilling to marry their daughters into our village,” she says. “But, things are much easier now.”

PMGSY a game changer

Since 2000, the Government of India has been implementing the Pradhan Mantri Gram Sadak Yojana



(PMGSY), the Prime Ministers Rural Roads Program, to link all India's villages with populations of 500 and above with all-weather roads.

Since late 2004, when the World Bank began supporting the PMGSY, Bank support has helped build and improve some 16,000 km of rural roads. Now, the World Bank's \$ 1.5 billion Second Rural Roads Project is ongoing in select districts of eight states. These states- Jharkhand, Bihar, Rajasthan, Uttar Pradesh, Meghalaya, Uttarakhand, Himachal Pradesh and Punjab-have varying terrain, populations, and implementation capacity, making for a unique set of challenges in each.

The project is bringing about a paradigm shift in the way rural roads are mapped, designed, monitored, and built across the country. A number of innovations have been introduced. For instance, before a road is built, representatives of local communities walk the entire stretch of the proposed road so that their concerns can be

taken into account at the design stage itself. In addition, an environmental protection code has been established, uniform quality standards adopted, and upkeep of roads ensured through 5 year maintenance contracts that are inbuilt into the road-building contract itself. Community monitoring initiatives, where citizens and stakeholders monitor road construction and maintenance, are being piloted to inform future policy.

In Jharkhand, where rural roads often support heavier vehicles, primarily from the mining areas, the state's engineers have converted the roads' conventional back top surfaces to sturdier concrete ones to deal with the additional load.

“The PMGSY program is a game changer in reducing rural poverty and boosting shared prosperity,” says Arnab Bandyopadhyay, Senior Transport Engineer with the World Bank in New Delhi, and team leader for the project.

“Twenty five percent of India's rural habitations are still not connected by all-weather roads. The program is progressively connecting these villages to the nearest



markets, schools, hospitals and administrative centers, enabling the rural poor to avail of new economic opportunities and access better health and education services.”

Establishment and Functioning of District Laboratories of PMGSY in Maharashtra

V.N. Ashtaputre

Pradhan Mantri Gram Sadak Yojana is a Flagship Scheme of Government of India, implemented through Ministry of Rural Development for ensuring connectivity of Rural Habitations. The Scheme was launched in Dec 2000. The Scheme has special features of quality by way of three tier quality monitoring system. Further to ensure quality of all weather roads, the guidelines mandated establishment of field laboratory for every packages with certain minimum equipments for testing purposes. This was done around 2002-2003 i.e. Phase-II onwards. Since then all National Quality Monitors and State Quality Monitors ensure existence of field laboratories and use the same for testing purpose.

In the early days, however, while using field laboratory at site, only field tests and measurements for gradation of metal, density of soil, camber, super elevation, elongation, flakiness index for metal & bitumen content in mix could be checked. No physical properties of construction material such as plasticity index of soil / murum, impact & crushing strength of metal, concrete cube testing CBR of soil sample etc could be tested and District laboratories of State PWD or accredited private laboratories & Engineering college's laboratories were used for testing purpose. This was time consuming and not delivering results in time.

To overcome this, in one of the packages in District Nagpur comprising of 7 to 8 roads, the contractor was encouraged to set up a Lab with all testing facilities. This testing facility resulted in building confidence in the Departmental Staff about the quality of material being used by the contractors. This also resulted in compliance of one of the contract conditions that 20% of the material must be tested in the authorized laboratory. Only 80% of the material can be tested in the field laboratories.

This arrangement was appreciated by the then Director (Quality) Shri P.K. Katare of NRRDA. It was decided to

emulate this model for all the Districts. As a result the State was asked to submit a proposal for setting up District Laboratories with list of necessary equipments. The aggregate cost of all the 33 Districts was worked out around Rs. 1 crore.

Incidentally, NRRDA being associated with World Bank Assistance Projects, there was enough financial provision for purchasing these equipments. As a result with the help of these finances the State was asked to establish District Laboratories in all 33 districts of the States.

At that time PMGSY was implemented through Zilla Parishads by carving out dedicated staff for some years. This resulted in good coordination and space could be arranged for PMGSY Labs and so also the staff. All laboratories were established in this manner.

As a result the labs have functioned in following manner:-

- A special drive was taken up by then Chief Engineer & Empowered Officer to establish all District laboratories in minimum time.
- A memorandum in the form of resolute on is issued for functioning of the laboratories.
- One Deputy Engineer working exclusively for PMGSY was made In-charge of this laboratory.
- One Junior Engineer was assigned independently for working in laboratory.
- Two Civil Engineer Assistants are placed under Junior Engineer one for monitoring & conducting testing samples and other for receiving samples and issuing test results.

- State has permitted to deploy tow contract labours for handling material & physical help for testing.
- There is sufficient activity at field level and district level and hence this laboratory is proving useful to many agencies. In the State every Zilla Parishad has works, irrigation and water supply wings for local needs. Besides this with 73rd amendment of the Constitution each Village Panchayat is permitted to have construction activity upto Rs. 15 lacs. All this has enhanced the utility value of the PMGSY District Laboratory. Secretary RDD also issued directions to use this laboratory for testing on Zilla Parishad works instead of the State PWD labs.
- All material on PMGSY works is tested to the extent of 80% from this laboratory & 20% from any authenticated / accredited laboratory.
- Rates for testing of various materials are decided on the basis of State PWD laboratory rates, 5-10% less to attract other organizations.
- Thus this revenue generation model of district laboratory stated working full-fledged since 2007-08.
- It was decided at State level to provide 20% of revenue generated for functioning of laboratory to purchase consumables & salary or contract labour, providing additional facilities and procurement of more testing equipments.
- In view of the continuous receipts which are treated as miscellaneous receipts of Administrative nature, a separate only Deposit account in the name of lab receipts is opened in the bank. This account is a part of the account of Administrative Expense Fund. At every month end the credits are transferred to Administrative Expense Fund bank account.
- A special one week hands on training to laboratory staff in batches was organized in the month of August 2008 with the help of Geotech Services Laboratory, Nagpur.

Yearly Revenue Generated from Laboratory

Year	Total Revenue generated	Fund given to district lab for its running & maintenance
F.Y. 2012-13	Rs. 5,22,07,037/-	Rs. 97,96,782/-
F.Y. 2013-14	Rs. 6,97,28,707/-	Rs. 43,50,000/-
F.Y. 2014-15 (Dec.14)	Rs. 5,64,90,908/-	Rs. 24,50,000/-

Day to Day functioning of Lab

1. Samples are received by one of the staff assigned.
2. Receipt of sample is given and tentative time limit is mentioned for issue of test result. Proper tagging is done for identification.
3. Samples are sorted out & arranged chronologically for various tests.
4. Testing is carried out by one CEA with the help of contract labour.
5. Test results are prepared and issued by another staff.
6. Balance samples are preserved for sometime for cross verification and subsequently disposed off.

Credibility of Lab

Presently the onus of correctness of the test results is with the staff working in the lab. Being non accredited lab it is utmost important for the lab to issue correct results. Testing and result formats are on the lines of that of State PWD labs. These PMGSY district labs have become very popular throughout the State.

Calibration Manual

Initially at the level of Regional Head quarter lab which is termed as 'Regional Laboratory' the J.E. Engineer was trained for calibration of equipments. This laboratory was provided with calibration of the equipments. This trained engineer used to visit all other district labs and checked the correctness of the equipments. Also some

equipments are calibrated from accredited labs. The State has issued special resolution for calibration of laboratory equipments.

A Calibration Manual was prepared for use of regional laboratory staff trained for calibration of equipments by Chief Engineer (PMGSY) & State Quality Co-ordinator with the help of GEOTECH SERVICE.

Training to departmental & Contractors Engineering Staff for testing of material.

Training was also arranged not only in initial years but repeatedly in later years for Departmental as well as contractor's staff.

GEOTECH SERVICES LAB at Nagpur is a well equipped laboratory with qualified technical staff

having accreditation of CSIR New Delhi and ISO certification. Its consulting Engineer Shri Amol Shingare is M-Tech (Geotech) from IIT, Mumbai. A job of training to engineering staff is assigned to this laboratory / institution at state level. Geotech Services have organized one mobile van well equipped with all equipments and trained staff and conducted two days training for two district engineers at one place with class room training for one day and field testing to be conducted by staff on next day. This is organized at 16 places to cover 33 districts. This has resulted a good awareness amongst staff and enlightened them for refreshing knowledge and its result was seen in next years. Lowest engineering staff at field could talk & interact with NQMs & SQMs in terms of technical parameters.

Special Dispensation in awarding PMGSY works with Non Responsive Tenders in selected IAP Districts

K.K. Katare*, Alok Katiyar**

Introduction

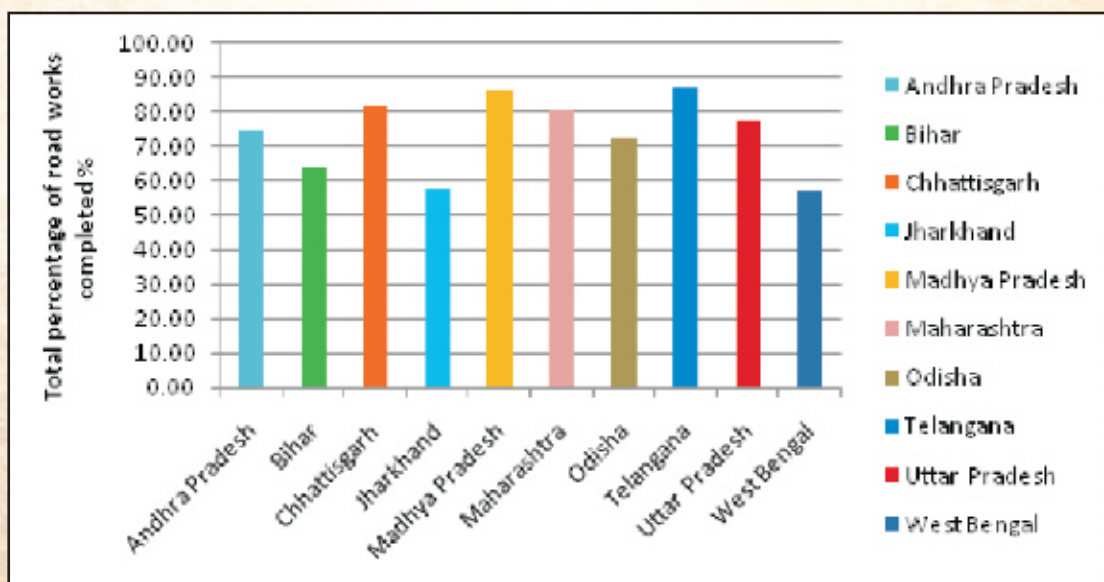
The network of roads continues to perform a critical role in the lives of citizens. In India, rural road connectivity and its easy accessibility is a key component for rural Development as it not only assures access to economic and social services but also leads to increased agricultural incomes and productive employment opportunities. Rural road infrastructure is a vital ingredient in facilitating sustainable poverty reduction. With this known fact, Government of India launched the Pradhan Mantri Gram Sadak Yojna (PMGSY) on 25 December, 2000 which is a nationwide fully centrally sponsored scheme. The main objective of this scheme was to provide all weather single connectivity to rural habitations so that overall development can be ensured at local, regional and national levels in an effective manner.

The Integrated Action Plan (IAP) for Selected Tribal and Backward Districts in Left Wing Extremism (LWE)

affected districts is an initiative introduced by the Government of India to escalate economic, physical and human development of these regions. Currently, IAP covers 88 districts in ten states of the country. Under this Programme untied funds are extended at the district level providing a flexibility to take up public infrastructure works such as school buildings, Anganwadi centres, Primary Health Centres, drinking water supply, village roads, electric lights in public places etc. Out of the eleven ambitious flagship schemes of the GoI, PMGSY is the one for providing road connectivity to habitation in rural areas.

Progress of PMGSY in IAP Districts

PMGSY is one of the eleven flagship schemes of the government in IAP districts for the development deficit in tribal and backward districts. The overall progress in states achieved under PMGSY in IAP districts upto August 2015 is presented in figure 1.



*Chief Engineer **CEO, CGRRDA Chattisgarh

Need of dispensation

As reported by the states, there are good number of PMGSY roads in the Leftwing Extremism affected states /districts that could not be awarded even after repeated call of the tenders. Along with the enhancement of socio-economic dimensions, there is an urgency to open access in these areas for government presence, improving the programme delivery and maintaining peace for the welfare of the habitants. Hence, timely completion of these road works is of utmost critical importance. Keeping in view, the following special Dispensation has been accorded to LWE Affected Areas/IAP Districts by Ministry of Rural Development.

1. All habitations in LWE Affected Areas/IAP Districts, whether in Schedule V areas or not, with a population of 100 and above (in 2001 Census) will be eligible for coverage under PMGSY.
2. Cost of bridges up to 75 meters under PMGSY will be borne by Government of India as against 50 meters for other areas.
3. The minimum tender package amount had reduced to Rs. 50 lakh to attract more response to bids.
4. General approval under Section 2 of Forest (Conservation) Act, 1980 for diversion of forest land up to 5 ha for selected public infrastructure projects in IAP districts has been given and orders have been issued.
5. Manual tendering is allowed in some highly-affected blocks for a limited period of one year.

6. Cluster approach is permitted in sending proposal under PMGSY for sanction of eligible un-connected habitations with relaxation in priority as given in the Comprehensive New Connectivity Priority List (CNCPL)
7. Relaxation is given for the Assessment criteria of bid capacity of contractors and hence, increase the 'M' value in "bid capacity assessment formula" as above from '2' to '3' in the tender document in case of all 60 IAP Districts in view to participate smaller contractors in PMGSY works.
8. The time period of execution of road works in these districts is enhanced from the existing 18 months to 24 months.
9. Two stage construction for New Connectivity

After giving above dispensations to IAP districts, the contractors had not come forward to execute the PMGSY works even after repeated calls of the tender. To enhance the Government presence and improve the programme delivery in these area and to provide access to social, economic, educational and health facilities to the population of these areas, Government of India has identified 27 selected Integrated Action Plan (IAP) districts in the States of Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Uttar Pradesh and West Bengal and a special dispensation is allowed in public interest to award the PMGSY works with non responsive tenders on a nomination basis. The 27 districts are listed below.

Sl. No	State	Districts
1	Andhara Pradesh	Visakhapatnam
2	Bihar	Gaya, Jamui
3	Chhattisgarh	Balrampur, Bijapur, Bastar, Dantewada, Kanker, Kondagaon, Narayanpur, Sukuma
4	Jharkhand	Chatra, Garhwa, Gumla, Latehar, Palamau, West Singhbhum
5	Madhya Pradesh	Balaghat
6	Maharashtra	Gadchiroli
7	Odisha	Gajapati, Kandhamal, Koraput, Malkangiri, Nuapada, Rayagada
8	Uttar Pradesh	Sonebhadra
9	West Bengal	Midnapore West

Guidelines

In light of the above facts, the following dispensation is allowed in public interest to the states to enable early completion of sanctioned PMGSY works where repeated tenders (at least two) have not elicited any response.

1. The dispensation will be available in the 27 identified IAP districts only.
2. The States are allowed to award the tenders on a nomination basis.
3. Such nominations shall be decided by the Committee headed by District Magistrate/ Collector of the district and comprising of SSP / Superintendent of Police, Divisional Forest Officer (DFO) and Head of concerned PIU of PMGSY projects representing the SRRDA.
4. The committee will look into every such work and decide on merit to award the same on a nomination basis with full justification to be recorded in the file.
5. All the other specifications, parameters and the conditions of the PMGSY scheme will continue to apply in respect of such road works.

The procedure for award on nomination

Basis for Selection of contractor for nomination:

- Priority shall be given to the local contractors. In case of non availability of local contractor, similar difficult condition working contractor can be chosen.
- Aiming the execution of work, necessary information was provided to the regional contractors to encourage them. They were also assured for the cooperation of the department within applicable norms in the execution of work. Contractor doubts were cleared and for adverse condition departmental help and security was promised.
- In few Districts due to non availability of local contractors, collector did special effort to get outside contractor.
- The concerned contractors were requested to submit their proposals in writing on the negotiated rates. The proposals thereafter were submitted to the committee for selection of an agency on nomination basis.

Case study of Chhattisgarh State

Out of 27 districts in Chhattisgarh state, 14 District of the State are affected with Leftwing Extremism problem. 1185 No. of the sanctioned road works measuring length of 5831 Km could not be awarded even after repeated call of the tenders in these areas. No bidders participated in repeated calls, the packages were split-up, tender for a part of road invited, even the agency for the stage construction could not be fixed.

Govt. of India has provided Special Dispensation in awarding PMGSY works with Non Responsive Tenders in identified 27 IAP Districts in the country. In the State of Chhattisgarh, the above special dispensation is allowed only for the districts namely Balarampur, Bastar, Bijapur Dantewada, Kondagaon, Kanker, Narayanpur & Sukma. In above IAP Districts the work could not be awarded even after repeated calls, efforts were made to award the work by using special relaxation given by Govt. of India vide letter no. P-17037/3/2013-RC (FTS-33109), dated 31.12.2013. The following procedure was adopted for successful implementation process of the award of works.

First priority was given to local contractors since they are aware of the local conditions. Secondly, if the local contractors are not available, contractors with working experience in similar difficult conditions were chosen. As a last resort, other than above category contractors were identified.

Before issuing notice, Contractors were called for discussion and also to give them all information about nomination. Proposed concessions/ relaxation information were provided to the contractors and doubts were cleared and for adverse condition departmental help and security was promised. For consented work, 15 days time has been given to the interested contractor for submission of their rates. Notice for the same was published on notice boards of SRRDA, PIU office, Collectorate and District Panchayat Office and also sent to the contractors. Besides all this, the competent contractors were informed over telephone about the award of work on nomination basis. Sealed bids were received on the due date and opened in the presence of tenderers. The justification of the rates offered by the agency was properly examined on the basis of the rate analysis and the rate received in the offer was discussed deliberately and was found reasonable by the committee and recommended for sanction. While doing works, it is essential to ensure that the contractors carry out the works of culverts simultaneously with the earth work &

GSB, otherwise there is a possibility of leaving contractors after completing road work.

Based on the relaxation given by the GoI, the pending works are awarded on nomination basis. The list of

selected IAP districts where the PMGSY work successfully implemented as benefited from the special dispensation in awarding of PMGSY works with non responsive tenders is given below.

SI No	District	Number of roads/ Bridges	Length in Km	MoRD sanction amount Rs. in Lakhs	Awarded amount Rs. in lakh	Awarded range in Percentage (above)	Stage of works
1	Kondagon	14	45.30	2200.68	3283.00	36-54	3 – Completed 11 – Below Base course
2	Dantewada	1	7.00	178.14	231.58	28	Below Base course
3	Bijapur	7	30.68	964.24	1848.16	40-55	Below Base course
4	Kanker	10	44.06	2009.68	2695.51	20-33	Below Base course
5	Narayanpur	3	11.65	291.30	390.15	30-35	Below Base course
6	Bastar	2		158.34	233.01	45-50	Below Base course
	Total	37	138.69	5802.38	8681.41		

***Paper is based on the data provided by the PIUs of Districts involved in the process.**

Conclusion

It can be observed from above table works worth more than 138 Km have been awarded and are progressing at different levels. A few works have already been completed giving immediate benefit to community.

For award of the works on nomination basis generally the offered rates are on higher side which required extra cost. The justification of the rates offered by the agency was properly examined by the State through SRRDA on

the basis of the rate analysis at current prices by the Committee. The present trend of the offered rates is between 20% to 55% above the current SOR. It is worth mentioning that the required extra cost is being borne by SRRDA for the works to be carried out on nomination basis.

The purpose of presenting this case study is to create awareness among officers of similar areas in other States for taking this type of decisions for early completion of projects





National Rural Roads Development Agency

Ministry of Rural Development Government of India
5th Floor, 15 NBCC Tower, Bhikaji Cama Place, New Delhi - 110066
Phone: 91-11-26716930/33 Fax: 91-11-26179555 email: nrda@nic.in
Website: www.pmgsonline.nic.in, www.pmgsty.nic.in