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GOVERNMENT OF INDIA
MINISTRY OF RURAL DEVELOPMENT

ILO-PMGSY Rural Road Project

Mobilizing Funds for Maintenance of Rural Roads
A Concept Note

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FOREWORD

Pradhan Mantri Gram Sadak Yojana, PMGSY, was launched on 25th December, 2000 as a special intervention of the Government of India with the aim of providing good quality all-weather single connectivity to every eligible rural habitation. Rural roads are a state subject under the Constitution and as such are the basic responsibility of the states. However under the PMGSY, the construction of good quality and well-engineered roads are substantially funded by the central government. Maintenance of these roads is the responsibility of the states. May, 2013 saw the launch of PMGSY-II with the objectives of consolidating and strengthening the rural road network as well as upgrading existing rural roads that provide connectivity to rural growth centres.

Over the last 16 years, the PMGSY has carved out a place for itself as a programme characterised by well defined governance structure, effective management and technical proficiency by the National Rural Roads Development Agency, NRRDA, along with capable state rural road development agencies. For implementation and operations, the involved agencies have been supported with detailed documentation in the form of programme guidelines, an operations manual, standard bidding documents, book of specifications, a standard data book, a procurement and contracts management manual and the Quality Assurance Hand Book with support from the Indian Roads Congress. These documents have also contributed significantly towards effective implementation of PMGSY and for mainstreaming good practices of PMGSY, in other rural roads programmes being executed by the states from their own or other resources.

An area of concern has been lack of sustained maintenance management for rural roads. As per the "Programme Guidelines" of PMGSY, State Governments are required to undertake the maintenance of the core network on a sustainable basis. The State Governments are also required to develop enabling environment and sustainable sources of funding for undertaking the maintenance functions. It needs to be mentioned that almost 60% of 5,05,000 km of road length constructed under the PMGSY across the country has completed 5 years of post-construction maintenance. Therefore, these roads are now due for regular maintenance by the State Governments. Hence it is imperative to have an institutionalized and sustained maintenance system in place. This would require a State Rural Road Maintenance Policy for these roads together with a dedicated Maintenance Fund with appropriate rules. It is heartening to note that 18 States have already notified their Rural Roads Maintenance Policy and the remaining States are in the process of notifying the same very soon. In recent years, there has been an increased awareness and commitment to maintenance by the states.

Funds for new road construction are easier to mobilize, while funds for road maintenance have to compete with number of other priorities in the States. Lack of understanding, both at policy formulation and field implementation level regarding the economic consequences of poor maintenance further complicates the efforts to raise sufficient maintenance funds. This Concept Note highlights the lessons learned from national and international practices in mobilizing funds for road maintenance and outlines the forward path and possible solutions. It is expected that the strategies proposed in this Concept Note would generate debate among state administration, senior technical management and policy makers. States may consider the strategies brought out in this paper for mobilization of additional funds for maintenance of rural roads and establishing dedicated and non-lapsable road fund for such maintenance.

Under the technical assistance component of the World Bank supported Rural Roads Project-II of PMGSY, the International Labour Organization, ILO, in collaboration with NRRDA has prepared a manual – "Managing Maintenance of Rural Roads in India" which has been provided to all the states. This Manual has in turn initiated more effective execution of maintenance works and the development of training modules for engineers and contractors associated with rural road maintenance works. To strengthen such activities across the country, a series of training of trainers workshops were arranged at national and state level, based on the course material developed.

I would like to acknowledge the support of all those associated with the development of this Concept Note in the ILO Team especially Mr. Mukesh C Gupta, Chief Technical Adviser and Mr. D.P. Gupta ILO Consultant who prepared the document. I would also place on record the valuable guidance of my colleagues Mr. R. Basavaraja, Director NRRDA, Mr. S. S. Bhatia, Deputy Director, NRRDA in bringing the document to its present shape.

I sincerely believe, this document would be found useful for the states in their efforts to secure adequate maintenance of all rural roads, not merely the PMGSY roads and improve maintenance practices so that benefits of access to socio-economic centres continue to remain available to the rural masses, which in turn would lead to sustainable poverty reduction.

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Mobilizing Funds for Maintenance of Rural Roads

Context

Rural roads are recognized as an infrastructure critical to social, economic and agricultural growth. They are an entry point for poverty alleviation. They act as facilitators to create agricultural surplus, improve basic health and provide access to schools and employment opportunities. Therefore, rural roads need to remain as we build them. Well engineered roads are being built under the PMGSY for the last over 15 years and the targets laid down under this programme are likely to be achieved in the next two years. It is not merely the construction of a rural road which provides access but effective maintenance which ensures sustainability of that access. See Box 1 for benefits from sustained access.

Box 1: Benefits of Sustained Access

- Owners of vehicles incur lower operation costs and slower depreciation of their vehicles;
- Reduces the cost of operating public transport services;
- Users of public transport benefit from reduced travel times, lower fares, higher frequencies, more regularity of services and better comfort;
- Farmers, entrepreneurs and traders retain access and incur lower transport costs;
- Improves the business environment for farmers and local entrepreneurs;
- Rural dwellers get easier access to health services;
- Children and youth experience easier access to schools, resulting in lower drop-out rates;
- Communities as a whole can maintain social and economic ties to the outside world;
- Government agencies achieve better access to local communities in terms of providing outreach services such as health, education, agricultural extension services, etc.;
- Rural areas become more attractive to investors;
- Improved access to employment opportunities and other economic activities; and
- Government saves expenditure in reconstruction and rehabilitation works.

Regular and effective maintenance of rural roads, thus, needs to be an integral part of poverty reduction strategies. It is not merely a financial and economic issue but also a humanitarian priority. While it continues to be an area of concern, there is growing recognition among states regarding the need to mobilize additional financial resources towards maintenance and preserving the rural road assets being created at a huge cost to the economy. As per current assessment, replacement value of rural road assets, in the country, may be in the region of Rs. 500,000 crore.

Funds for new road construction are easier to mobilize while funds for road maintenance have to compete with number of other priorities. Lack of understanding regarding the economic consequences of poor maintenance further complicates the efforts to raise sufficient maintenance funds. As a "Thumb-Rule" 2-3 percent of cost of construction or up gradation is required for routine and periodic maintenance. Due to neglect or insufficient maintenance, there could be a minimum erosion of 5 percent in asset base of rural roads. Studies have shown that one million rupees spent in routine maintenance saves two million rupees in periodic maintenance. Two million rupees spent in periodic maintenance saves four million rupees in rehabilitation, besides causing avoidable carbon footprint by way of burden on extraction of aggregates from quarries and their transportation over long distances. It would, therefore, make good economic sense, for state governments to invest in maintenance of roads.

National and International Experiences in Road Maintenance Funding

National Experiences

Basically the states have been relying on budgetary allocations (Non Plan)for maintenance of rural roads including PMGSY. The 12th and 13th Finance Commissions had also recommended higher allocations for maintenance both in the state budget and central grants to supplement the state resources under the State Budget Non-Plan Head.

A quick online search on the current options for mobilizing financial resources for roads including maintenance of rural roads reveals that a few states have taken the initiative of creating state level road maintenance funds. The main source of funding has been levy of additional taxes on fuel, cess on agricultural produce, user charges & fees, tax revenues etc. Annexes 1, 2 and 3 provide some details (based on desk study).

A scan of these practices reveals that Uttar Pradesh set up a dedicated road fund for maintenance of roads in 1998. The source of fund is additional sales tax (trade tax) of 4 percent on High Speed Diesel (HSD) and 6 percent on petrol. This rate was notified in 1998 and it is understood that there is no increase in the rate. However, since both HSD and petrol have witnessed increase in prices from time to time, accruals to the UP maintenance fund would be exhibiting increase over time. It may be added that there is no well-defined system of distribution of this fund between different classes of roads (i.e. between higher order roads like state highways and major district roads on one hand and other district roads and village roads on the other hand. Without an in-depth study at the state level, it has not been possible to assess the share of fund allocated to maintenance of rural roads.

An interesting example of fund mobilization for rural roads is seen in Punjab. Resources are generated by Agricultural Marketing Board called "Punjab Mandi Board" by levy of Market Committee Fee[1] and Rural Development Fee. The rates are as under:

Market Committee Fee	2 percent on all crops (except cotton and maize on which it is 1 percent)
Rural Development Fee	2 percent on all crops (except cotton on which it is 1 percent)

1 Attachment 1 of Annex 3 Fee & Charges during sale/purchase of different market commodities in Punjab.

Annual accruals are in the range of Rs. 800 to 900 crore each for Market Committee Fee and Rural Development Fee. These funds enable the Punjab Mandi Board to reasonably take care of the funding needs for maintenance of rural roads under their jurisdiction. During the year 2015-16, an amount of Rs. 1200 crore was spent on maintenance and repairs of rural roads by Punjab Mandi Board. Allocation of 2016-17 is about Rs. 750 crore.

The states of Haryana and Madhya Pradesh have also created the system of market committee fee for providing financial support in maintenance of farm to market roads by levy of cess on agricultural produce. In Madhya Pradesh[2], 85 percent of the proceeds are earmarked for the improvement and maintenance of rural roads. In a recent decision by the State Government of Madhya Pradesh, out of 85 paise meant for "Kisan Road Nidhi", 60 paise is going to be allocated to MPRRDA for maintenance of rural roads and balance 25 paise for Mandi Board roads and development of marketing facilities.

Those states who have done away with the levy of fee on agriculture produce like Bihar, would need to mobilize funds through other means. These could be:

(i) Earmarking a portion of current user charges from road transport under the Motor Vehicles Act and other legal provisions. For example, the state of Maharashtra in their Budget Manual has a provision for earmarking specified taxes/road user charges for financing specific needs of the road sector. Further, the Budget Manual stipulates that such earmarked funds should be used for maintenance of roads (and not on original works which should be classified under the capital head). Under such a mechanism, a realistic assessment of maintenance requirements can be done by the SRRDA and submitted to the Finance Department, who can earmark an appropriate percentage of Road User Charges.

(ii) Another option would be to increase the current rates of taxes on road transport such as registration charges and other taxes on vehicles, sales tax on purchase of new vehicles, taxes on carriage of goods by road, sales tax on petrol and diesel. For example, in the year 1998, the Government of Uttar Pradesh decided to enhance the then sales tax on petrol from 14 to 20 percent and on diesel from 16 to 20 percent and the accruals from this additional sales tax constituted the Road Maintenance Fund to be utilized exclusively for maintenance of state roads.

The states of Kerala[3] and Rajasthan appear to have created state level funds primarily for providing grants and viability gap funding to private entrepreneurs who provide private financing of road projects including upgradation of state highways. Up gradation schemes include two laning and construction of bridges, bypasses, RoBs etc. Rajasthan levies an additional sales tax of Rs. 1.25 per liter on petrol and HSD. Kerala levies toll/user fee plus 10 percent of total road taxes, which are credited to Kerala road fund. Karnataka created a fund called Chief Minister Grameen Abhivrudhi Nidhi (CMGRAN)—rural roads rehabilitation fund. Part of the fund is allocated to Zilla Parishads (district level local bodies). Assam has set up a dedicated Road Maintenance Fund for maintenance of roads including rural roads. Main sources are grants from Central and State Government as also user charges, fees, cess levies, tax revenues as may be decided from time to time.

2 Attachment 2 of Annex 3 Madhya Pradesh Gazette Notification No. 427 dated 13th July 2001

3 Annex 1 Highlights Kerala Road Fund

Currently, there is no significant and reliable source of dedicated funding for maintenance of rural roads in the country except for market committee fee on agricultural produce in Punjab and Haryana.

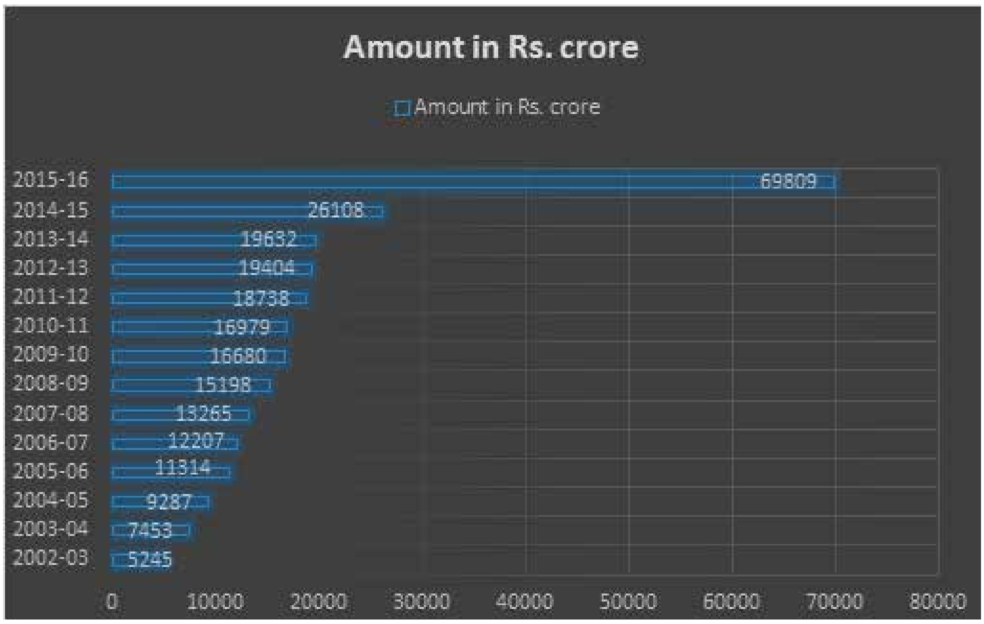
Central Road Fund

The Government of India revamped the Central Road Fund (CRF) in the year 2000 to provide a source of dedicated fund for the road sector as a sequel to the then Prime Minister Atal Bihari Vajpayee declaration of connecting Kashmir to Kanyakumari and Silchar to Saurashtra and launching of National Highway Development Project (NHDP) in the year 1998. Soon, it was followed by the Pradhan Mantri Gram Sadak Yojana in the year 2000 to provide all weather rural connectivity. A brief note on this fund is given in Annex 4.

For rural roads, the CRF Act provides for only development related works and not maintenance. Further, the Government decided to utilize this fund only for those rural roads which are eligible under the PMGSY. Against the cess of Re. 1.00 per liter on HSD and petrol, an amount at the rate of Re.0.50 per litre on HSD was being allocated, to PMGSY, up to March, 2003;whereafter it was increased to Re. 0.75 per litre on HSD when the overall cess under CRF was raised to Rs. 1.50 per litre on HSD and petrol. However, when in March 2005, the overall rate of cess was increased to Rs.2 per litre on HSD and petrol, there was no increase in funding allocation for rural roads. It remained at Rs.0.75 per litre on HSD.

Recently, there has been a significant increase in the allocation of fund for development of rural roads. As per the Finance Act 2016, and amendment in the CRF Act effective from 01.06.2016, the allocation for rural roads is 33.5 percent of total CRF. The current rate of cess is Rs. 6.00 per litre on HSD and petrol. This translates to an amount at the rate of Rs. 2.01 per litre on both HSD and petrol. Annual accruals for rural roads are assessed to be around Rs. 23,000 crore, for the year 2016-17.This is a broad assessment and is considered valid for a policy dialogue.

Graph-1: CRF - Annual Accruals



International Experiences

Experiences on road funds in some of the countries of Africa and Latin America are given in Annexes 5 and 6. Some of the challenges that different countries across the world face in maintenance of roads are summarized below:

(i) Funds available through general government budgetary allocation are often inadequate to meet the sector funding needs. For example, a United Nations Economic and Social Commission for the Asia and the Pacific (UNESCAP) report titled “Transport and Communications Bulletin for Asia and the Pacific- 2005” points out that in Latin America, the countries were losing anywhere between 1% to 3% of their annual GNP owing to inadequate funding support and attention to their road assets (refer Annex-10).

(ii) It is observed that owing to the fiscal constraints, funds allocated for maintenance of the road assets are lower compared to funds allocated for capital requirements. Political agenda across various countries suggests that road maintenance is usually less attractive than new road construction/development since development works are more “visible” compared to maintenance works.

(iii) Some countries do not factor the economic consequences of neglect in road maintenance, while allocating budget for maintenance. For example an ADB report indicates that Rs.100 spent on maintenance of road assets saves Rs.200 to Rs.300 of vehicle operating costs. Some developed countries including the USA, Japan and European countries are exceptions to this. These countries are consciously allocating adequate resources for maintenance of their road assets through institutionalizing formal funding mechanisms like a Road Fund, Federal Highway Trust Fund etc.

(iv) Federal Governments across the world are normally responsible for the management of road assets. The government machinery introduces certain inefficiencies in the form of lack of transparent and efficient road sector governance. Although various agencies like the World Bank advise certain degree of participation of the road users and non-government stakeholders for the development of the road sector. Such platforms are not prevalent across the world. Again, some countries like Japan, New Zealand and some African countries like Tanzania etc. have created formal platforms to encourage stakeholder participation to improve road sector governance.

(v) In Brazil, four states have created autonomous road funds (refer Annex 10) – Mato Grosso in June 1999, Mato Grosso do Sul in March 2000, Paraná in December 2000 and Goiás in January 2001. The road funds in the Mato Grosso and Mato Grosso do Sul have similar characteristics. Both states have boards with a majority of members coming from the public sector and finance the fund through a levy on motor vehicle fuels and agricultural goods. The boards are responsible for construction, rehabilitation and maintenance of roads. Since both states were predominantly agricultural and needed to expand their road networks, it was deemed necessary to include road construction and rehabilitation as well in the road funds. In order to meet the additional financial requirements for road construction and rehabilitation, the financial base of the road fund was broadened through levies on agricultural goods. The road fund in Paraná is a more traditional road maintenance fund. Funding is provided exclusively by a levy on motor vehicle fuels. The board consists of 2 representatives of the state government, 1 representative of the parliament, 1 representative of the municipalities, and 10 representatives of direct and indirect road users. In Goiás, the Road Fund is financed through vehicle licensing fees. The board concentrates on road maintenance, and the majority of its members are from the private sector. Box 2 highlights sustainable financing and management of roads in Latin America.

(vi) In Zambia, the National Roads Board (NRB) was established in 1994 by regulation under a Ministerial Order to administer and manage the Road Fund for maintenance and rehabilitation of roads. Past experience (Annex-9) with the Road Fund in Zambia suggests that, while maintenance funding has improved, however, the flow of funds continue to be impacted by budget allocations by the government. The existing procedure for crediting revenues from fuel levy proceeds into the Road Fund account creates delays and irregularities.

(vii) The Road Fund established in Ghana (Annex-9) was besieged with problems. Even though Minister of Finance, Minister of Roads and Transport and the Comptroller and Accountant General were involved in management of Road Fund, no one was really responsible. The day-to-day management of Road Fund was also inadequate.

(viii) In Nepal, Road Fund has been created without giving much attention to the future funding requirements of road maintenance. Currently board is facing resource constraints. Road Board Nepal funds only satisfy about 20 per cent of the total maintenance funding needs for Strategic Road Network and less than 10 per cent of Local Road Network.

Box 2: Sustainable Financing and Management of Roads in Latin America

For the last several years, roads have been the backbone of Latin America's freight and passenger transport system with road networks continuing to grow rapidly throughout most of this period. However, in recent years the rate of expansion has slowed and ageing of road networks has proceeded rapidly. Scarcity of resources, has contributed to an ever-decreasing amount of money allocated to road maintenance.

Road conditions in the region vary from country to country. However, generally only one third of the paved main road network is in good condition, one third in fair and one third in poor condition. The condition of unpaved roads is even worse. These conditions have not changed much over the last 10 years. Past efforts to increase financing levels for road maintenance either failed or were not sustained.

Some of the countries used to finance road construction, rehabilitation and maintenance through earmarked taxes, especially on fuels used by motor vehicles. However, none of these funds could be sustained in the long run. The main problem was that Governments began utilizing these funds for other purposes. This was especially true in times of crisis. As many of these crises were never resolved, dedicated road maintenance funds have effectively been permanently reallocated.

The main lesson learned is clear. An appropriate institutional arrangement for adequate financing and management of road maintenance can make a substantial improvement in road conditions. It is necessary to address the two main underlying causes related to financing mechanisms and institutional arrangements for road maintenance.

Source: UN ESCAP Report 2005

Key Learnings from National and International Experiences

Table 1 provides a summary of key learnings that emerge from a broad scan of road funds operating in India and some countries in Africa and Latin America.

Table 1: Mobilizing funds for rural roads maintenance: Key Learnings

S. No.	Key Challenge	Key Learning
1.	Lack of sustained and stable flow of funds for road maintenance	Setting up dedicated and non-lapsable road fund at state level for maintenance of the road network ensures that the sector receives funds that can help prevent premature deterioration of the road network through regular maintenance. Examples of sources of revenues for such a fund include additional cess on petrol and high speed diesel, market committee fee on agriculture produce and some share out of taxes on motorized vehicles and carriage of goods and passengers by road.
2.	Lack of focus of road authorities on maintenance compared to construction, up gradation and rehabilitation of roads.	Similar to the initiatives taken by the Government of India on providing rural connectivity under the PMGSY, the states may be incentivized to adopt an asset management approach which prescribes equal emphasis on preservation and maintenance of rural road assets as the programs for new connectivity and up gradation so that benefits of access remain available on a sustained basis, to the rural population.
3.	Risk of fund for road maintenance getting diverted for other purposes	State road fund may be set up on a legal basis, through an Act of State Legislature, followed with clear rules for allocation/ distribution of funds for various maintenance activities of various categories of roads. The road fund should be managed by a high level empowered group such as a Road Board or Road Management Board with oversight on the road authorities entrusted with planning and execution of road maintenance activities. The Board may include senior officers from the department of finance, planning, transport and roads as also a few representatives from user groups, farmers associations, and academia.
4.	Lack of governance and accountability in use of funds	Guidelines and standard operating procedures are established for rational allocation of funds for various activities- routine maintenance, periodic maintenance, special repairs, emergency works based on credible assessment of road network condition, traffic expected and importance of road. The maintenance plan prepared by the road authorities can be submitted for approval to the Road Board. Steadily, asset management principles for the entire rural road network are introduced and adopted.
5.	Lack of capacity in road departments	Side by side, with creation of road fund, attention is paid to capacity building and strengthening of road departments in efficient and cost effective delivery of the maintenance plans and strengthening of the local contractors in execution of road maintenance works.

6.	Lack of performance monitoring	Monitoring & Evaluation (M&E) system is put in place for better information on the performance and impact of the fund on the health of the rural road network at block/district level in each state. Results of M&E may be put in public domain to enhance transparency and strengthen accountability of road departments. Regular technical and financial audits of maintenance works be taken up on selective/sample basis. Such audits may also check whether the road fund is disbursed to finance approved road maintenance plans/works.
7.	Lack of timely availability of maintenance fund to road departments	Procedures for release of funds for maintenance should be clearly defined to ensure timely release of funds to the road departments and their project implementation units.

Requirement of Funds for Maintenance

For PMGSY Rural Roads

(a) Table 1 gives an overall picture of the funds required for maintenance of PMGSY roads as per contract, funds credited to the SRRDA account and the expenditure incurred. State wise details are given in Annex 7.

Table 2: Status of PMGSY Maintenance Expenditure v/s Requirements (Rs. crore)

S. No.	Year	Amount of Maintenance Funds Required (as per contracts)	Amount of Funds credited to SRRDA Account	Amount of Expenditure incurred on maintenance	Amount of Expenditure as percent of amount credited to SRRDA Account	Amount of Expenditure as percent of amount required
1.	2012-13	599.72	587.19	481.52	82%	80%
2.	2013-14	747.12	624.59	557.44	89%	75%
3.	2014-15	739.65	571.80	501.52	88%	68%
4.	2015-16	740.97	799.18	533.28	67%	72%
Total for 4 years		**2827.46**	**2582.76**	**2073.75**	**80%**	**73%**
5.	2016-17	588.92	352.83	194.57	33%	55%

Note 1: For the year 2016-17, amount credited to SRRDA account and the expenditure incurred are only up to September 2016.

Note 2: Amount of funds required shows the funds required for routine maintenance during the year as per contracts. It does not cover the maintenance requirements (routine, periodic, special repairs, emergency works) of those PMGSY roads which are beyond five years of post-construction.

(b) After five years of routine maintenance post construction, these roads continue to require routine maintenance as also periodic maintenance, special repairs and emergency maintenance works. A broad assessment of funds required for the year 2017-18 in respect of PMGSY roads has been attempted and given in Annex 8. It would be noted that annual requirements for these roads would be in the range of Rs. 10,000 crore to Rs. 12,000 crore.

Non-PMGSY Rural Roads

The requirements of maintenance for non-PMGSY roads have also been broadly estimated and given in Annex 6. Funds of the order of Rs. 16,000 crore per annum would be required.

Funds required for states which have constituted State Road Funds

The estimates of funds required for the states of Assam, Karnataka, Kerala, Madhya Pradesh and Uttar Pradesh, which have instituted State Road Funds is given in Annex 9.

Need for stable flow of funds

All states would need to undertake a state specific detailed assessment of current situation in respect of the health of the rural road network under the jurisdiction of various road agencies and the gap between the maintenance funds required and funds made available. The gap would vary from state to state depending upon the length of network, funds allocated for maintenance and institutional arrangements for execution of maintenance works. For a policy dialogue at national level, it could be safely presumed that the funding gap is significant. And, strategies for mobilizing additional funds would need to be identified and undertaken, at the level of each state, so as to ensure regular maintenance of the rural road network.

Strategies Proposed for Mobilizing Additional Funds

Raising funds for road rehabilitation is comparatively easier than for road maintenance. As seen above, there have been some initiatives by the states in setting up off-budget road funds. Such road funds, except for Uttar Pradesh, Punjab and Assam are utilized for up-gradation and construction of roads as well as for maintenance and rehabilitation works. UP Road Fund is for road maintenance only. However, no specific share for rural roads is stipulated, in the said fund. Based on a broad scan of current national and international practices and learnings from such practices, the following strategies are proposed to mobilize additional funds for maintenance of rural roads on a sustainable basis.

Central Government

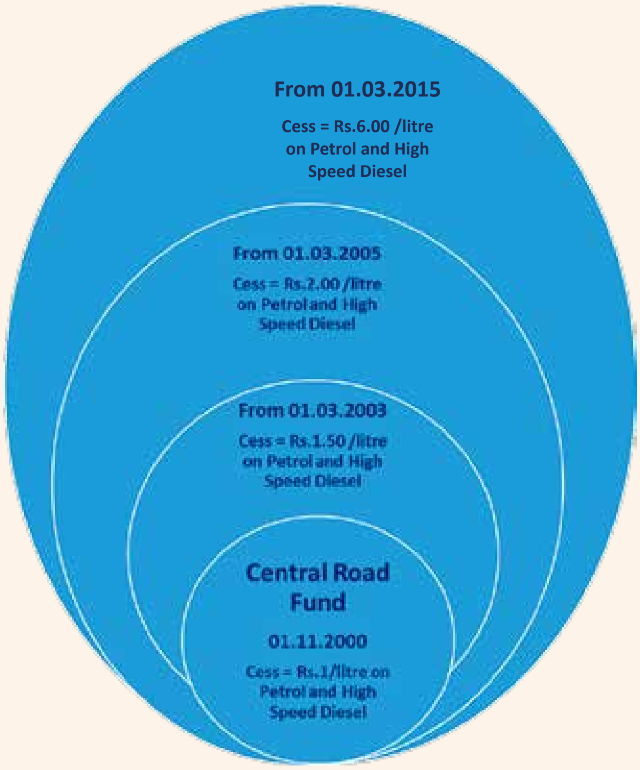
Central Road Fund (CRF)

Currently, an additional excise duty of Rs.6.00 per litre on petrol and High Speed Diesel (HSD) is levied to constitute the CRF. Out of the total accruals, 33.5 percent[4] is meant for development of rural roads w.e.f. 1st June 2016. As a broad assessment, an amount of around Rs. 23,000 crore per annum may be available. This entire amount is thus available only for implementation of the ongoing PMGSY. Understandably, the effort of the government is to achieve completion of the

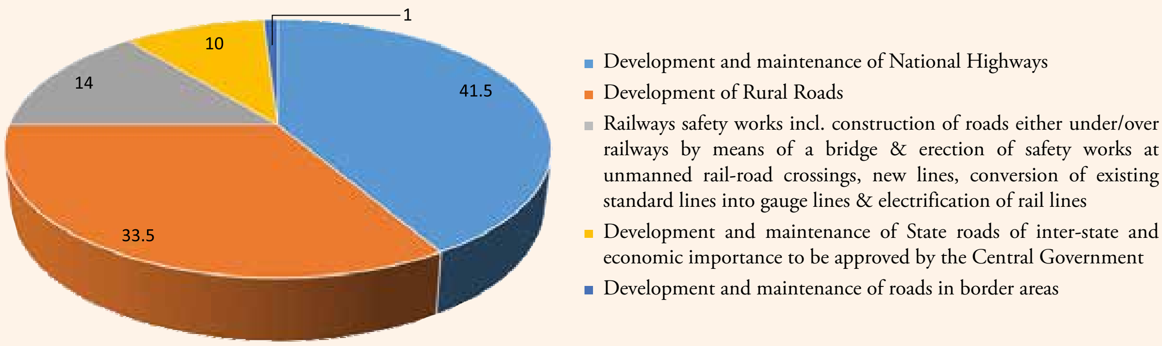
4 Attachment 3 of Annex _ The Gazette Notification Extraordinary No.32 dated 14 May 2016

PMGSY targets by March 2019. The Central Government may, thereafter, consider providing a window for maintenance of rural roads on a sharing basis with states. It may be appreciated that when the Central Government provides such grants for state roads, it can more effectively assert on technical and managerial oversight on implementation on the ground as is amply demonstrated and experienced from the 16 years of PMGSY implementation by the states. Financial, technical and managerial support provided by the Central Government has proved extremely useful. The argument of poverty reduction from construction of rural roads is equally valid for maintenance. An allocation of say Rs.10,000 crore per year could be made for maintenance of rural roads to be provided to states. Programme Guidelines for distribution of such a fund can be formulated based on a detailed study of the current health of the rural road network in each state. (Broad strategy could be that for core network roads at least, 60 percent of funds required for maintenance are provided out of the CRF allocation meant for rural roads). Such an approach would ensure greater financial resources for the states with greater historical deficit.

Graph-2: CRF - Progressive Increase in Fuel Cess



Share of CRF (%)
(Finance Act, 2016)



Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)

(a) The Mahatma Gandhi National Rural Employment Guarantee Act being implemented since February 2006 marks a paradigm shift in creating employment opportunities in rural areas for undertaking rural works involving unskilled manual work. Maintenance of rural roads, particularly routine maintenance, has high labour content and low material and machinery content. And, in a recent notification by MORD (dated 3rdJanuary 2014), maintenance of rural public assets created under the Act is permissible. Reference is invited to the ILO study on "Strengthening Capacity of Panchayati Raj Institutions for Managing Maintenance of Rural Roads". Section 7 from the Report is extracted as Annex 10 to this Concept Note for ready reference. The expenditure on maintenance of at least those rural roads as have been constructed under MGNREGS can be and should be met out of this scheme.

(b) As per the recent guidelines for road connectivity to non-PMGSY habitations in convergence with MGNREGS issued by MORD in November 2016, the principles enunciated are:

(i) Connectivity to be provided to those unconnected habitations which are less than 500 population (Census 2001) in plain areas and less than 250 population in special category states

(ii) Provide only new connectivity and no up gradation

(iii) Cover only Village Roads (VR) and Other District Roads (ODR)

(iv) The priority gradation of the roads would be fixed by the Gram Sabha but the desired surface standards of the proposed roads, based on traffic and local conditions would be fixed by the technical agency responsible for construction in consultation with the SRRDA.

(v) The farm net roads and intra-habitation roads would be executed by the concerned Gram Panchayat. Inter-habitation roads and link roads would be executed by the Mandal/Block Panchayat or District Panchayat or the line Department. The states may make specific implementation arrangements.

(vi) Routine maintenance of these roads assets would be the responsibility of the Gram Panchayats. Funds under the 14th Finance Commission and other state grants may be used for this purpose.

(vii) It may be noted that MGNREGA has in-built provision for planning, funding, supervising and monitoring of the works. The only limitation is materials component and some restrictions on use of labour displacing machinery. For providing technical assistance where required by the PRI or line department, the guidelines permit utilizing services of a retired Engineer at the block level – designated as Block Technical Agency (BTA) and paid a Retainer Fee.

(c) Further, the central government could review widening the scope of permissible works to include routine maintenance of internal village roads and small links comprising non-core network roads in the blocks.

(d) Another paradigm shift in policy is justified for ensuring sustainable maintenance of rural road assets already created under the PMGSY and those being created to provide connectivity to eligible habitations. At least, the routine maintenance component of these roads holds promise of successful implementation through community contracting. And these routine maintenance works can justifiably be included under the permissible works for MGNREGS. This would also help in consolidation of PMGSY assets being preserved.

State Government

Road Maintenance Fund

(a) A good way to secure an adequate and stable flow of funds is to charge road users a road maintenance fee in exchange for the services of maintaining roads. Just as for CRF, a road maintenance fee can be levied and collected together with the sale of petrol and HSD. The state government of Uttar Pradesh, way back in 1998, decided to levy an additional sales tax of 4 percent on HSD and 6 percent on petrol and the proceeds from consumption within the state contributed to the state road maintenance fund.

(b) The states may give a serious consideration to such a strategy of mobilizing additional funds for maintenance of roads. It needs to be borne in mind that all state roads viz. inter-urban, urban and rural roads would have a claim on this fund. It would be a good strategy on the part of the states to earmark share of such a fund for each of these classes of roads and ensure a fair deal for maintenance of rural roads. In this context, it may be added that HSD is also used for agriculture activities and as such a somewhat higher share of maintenance fund going to farmers would be justified under the road maintenance allocation system.

(c) Raising of resources alone is not enough. Equal attention is required for effective management of such a fund. There is need to establish a mechanism under a senior administrator to manage the fund and keep an oversight on planning and implementation of maintenance works. Where maintenance of rural roads receives attention, there is distinct advantage of reduced need for rehabilitation of roads. The tax payers and the government stand to benefit as they have to bear less burden for future and for premature rehabilitation and up gradation of rural roads. (It may be recalled that under PMGSY-II, some roads may be qualifying for up gradation solely on account of previous maintenance neglect).

(d) Side by side, there is need to explore new technologies and promote use of low cost mobile maintenance equipment to reduce maintenance costs.

Market Committee Fee

(a) The practice of levying a fee on agricultural produce for construction / maintenance of local rural roads is another promising option for the states to consider. Punjab levies 2 percent on crops / agricultural produce, at the point of purchase in the market and utilizes the proceeds for improvement and maintenance of rural roads within the jurisdiction of Agricultural Marketing Boards.

(b) A more in-depth study could be undertaken to assess the financial relief that is possible in the states where agricultural production is sizeable and this option will provide an adequate additional resource to at least cover maintenance of farm to market roads.

Apportionment from Road Taxes by Transport Department

States charge road taxes from cars, buses, trucks and other motorized vehicles. The state of Kerala, while setting up their road fund, stipulated, inter alia, that ten per cent of such collections would be deposited into the dedicated road fund. Actually, it is a legitimate requirement. The use of roads by the motorized vehicles does cause wear and tear of the roads. Of course, part of these taxes is allocated as budgetary resources for development and maintenance of state roads. A specific apportionment of these taxes for the purpose of maintenance ensures credible allocation and ring fencing of such a component for assured maintenance.

The Role of PRIs in Maintenance of Rural Roads

(a) Having been constitutionally conferred statutory status, the Panchayati Raj Institutions (PRIs) have to evolve strong governance structure over the coming years and fulfil the expectations of devolution of functional responsibilities from line departments to them. In respect of maintenance of rural roads, the "Rural Road Development Plan: Vision 2025", has articulated the following role at the various panchayat levels.

1. Gram panchayat (at the village level)	Maintenance of roads within villages and non-core roads
2. Intermediate panchayat (at the block level)	Maintenance of link roads under rural road category
3. District Panchayat (at the district level)	(i) Planning of Maintenance of Rural Roads (ii) Conducting traffic surveys and road condition surveys (iii) Maintenance of through roads under rural road category

(b) Initially, depending upon the available technical and managerial capacity in the PRIs, it would be necessary for the line departments to provide technical support. Support of retired Engineers, hired on contracts, could also be targeted.

(c) The ILO study on strengthening capacity of PRIs for undertaking maintenance of rural roads has recommended a phased approach. To start with, Gram Panchayats may be entrusted with maintenance of intra-village roads and only those non-core network roads which are being built under the MGNREGS.

Funds allocated to Gram Panchayats:

(a) The 14thFinance Commission has recommended a grant of Rs.200,292 crore to Gram Panchayats for the period 2015-20. The local bodies are required to spend the grant only on the basic services. Maintenance of rural roads is to be treated as a basic minimum service. A part of this grant may be utilized for routine maintenance of non-core network rural roads to start with.

(b) The community contracting for maintenance, is a promising option to utilize funds under this scheme.

Royalty on Mining

(a) The states can consider earmarking some portion of the royalty being collected in mining areas for maintenance of those roads which provide access to the mines. It is the general experience that heavy trucks ply on such roads causing accelerated damage requiring more intensive maintenance treatment besides adequate pavement structure and bridges.

(b) The road departments in those states where mining activities are predominant would need to undertake a realistic assessment of the needs and thereafter undertake a dialogue with the mining agencies.

Rural Infrastructure Development Fund (RIDF) Window of NABARD

NABARD provides financial assistance to states for construction of bridges and roads out of their RIDF window. It is suggested that the current guidelines and rules for use of the funds available under this window may be suitably amended to permit the activity of periodic maintenance of rural roads.

Forward Path

(a) The strategies proposed in this concept note would generate debate among state administration, senior technical management and policy makers. There is need to recognize economic consequences of poor maintenance of rural roads both in the short-term and long-term.

(b) Lessons from international experience and implementation of such concepts in a limited number of states in India point to the following actions to be taken by the Central and State Governments to address the challenges currently being faced in maintenance of rural roads:

(i) Set up a dedicated Road Fund for Maintenance & Operationalize Road Fund Rules

- The states may set up Road Funds either adopting the legal route as for CRF Act or through a government gazette notification after necessary approval of the competent authority. A recent World Bank Report (April 2017) on "Assessment of PMGSY" has also recommended that at the state level, the SRRDAs should evolve towards becoming the Asset Management Agency for all the rural roads. The Report further suggests that states create a "Road Development Board" to create, manage and operate Dedicated Funds such as Road Development Fund or Road Maintenance Fund.

Excerpts from World Bank Report "Assessment of PMGSY" April 2017

While at the state level, the SRRDA should evolve towards becoming the asset management agency for all rural roads, there is a need for a still larger institutional mechanism, which can combine the asset management with the asset utilization function. The latter function, including the legislative framework in the form of the Motor Vehicles Act, is currently performed independently, and to a large extent without adequate coordination. It is suggested that states create a "Road Development Board" to bring together the diverse stakeholders of the sector.

- The state governments may set up dedicated road funds for maintenance of roads with clear demarcation and fair share for rural roads keeping in view the requirements for routine, periodic and emergency maintenance. A High Powered Road Board may be set up for management of the fund and oversight on performance of road network and guard against diversion of funds to other purposes.
- The Central Government may review the current CRF Act to enable provision of funds for maintenance of rural roads as well.
- The sources of fund could be additional sales tax on petrol and diesel, market committee fee on agricultural produce, earmarked percentage of taxes on motorized vehicles and on carriage by road of goods and passengers.
- The state government may notify Road Fund Rules, to facilitate effective functioning and utilization of such fund.

(ii) Maintenance Management System

- The states have already initiated the process of regular inventory and condition surveys, at fixed time intervals, on the road network. This may be mainstreamed to cover the entire rural road network. The MORD guidelines on maintenance management of PMGSY roads may be applied to other rural roads as well.
- The NRRDA may support the states in formulating a template for Standard Operating Procedures for rational allocation of funds based on assessment of road network condition, traffic expected and importance of road.

(iii) Performance Monitoring

- The states may institute system of regular technical and financial audit of maintenance works on the ground and results of audit be put in public domain.

(c) PMGSY has shown the way in evolving uniform technical and financial standards at national level and sound implementation at local level. The technical assistance support received from the World Bank and the Asian Development Bank has enhanced implementation capacity of the PIUs and the SRRDAs. Several states are utilizing their support for rural roads outside the PMGSY to achieve the goal of universal accessibility. Maintenance of these roads and enhancing safety for farmers and other road users are areas requiring more focused attention of the state governments. Recently, the NRRDA partnered with the ILO in enhancing efficiency and effectiveness of delivery of maintenance on the ground. The tools so developed and pilots undertaken need to be up scaled. Building institutional capacity of road departments and capacity building of contractors through regular training programmes and seminars to share experiences among states need to continue as a regular activity.

(d) Maintenance of rural roads is expected to receive greater attention by the states as almost half of them have formulated their own Rural Roads Maintenance Policy. And, remaining states are in the process. With policy in place, the states will also try to mobilize funds for road maintenance activities and ensure their effective utilization.

(e) SRRDAs and PREDs could become a nodal agency for all rural roads in the states.

(f) The strategies proposed here are based on a quick scan of the current initiatives in a few states. A more in-depth study may help in identifying strengths and weaknesses of the options being practiced at present. This would provide guidance to firm up the possible options for mobilizing additional financial resources for maintenance of rural roads and identify strategies to be adopted for effective management of the funds so made available.

Annexure–1

Dedicated Funds for Roads at the State Level in India

Kerala

The state of Kerala created Kerala Road Fund in the year 2001 for development and maintenance of the state road network to mobilize non-budgetary resources. Box 3 gives a summary of salient features of the Road Fund in Kerala.

Box 1: The Road Fund in Kerala

Legal Position: The Kerala Road Fund was created to demonstrate greater commitment to the development and maintenance of the PWD road network and to mobilize greater non-budgetary resources (user charges, private sector involvement and external funding). It was constituted under the Kerala Road Fund Act 2001 which became law on 23rd November 2001.

Purpose: The purpose of the Road Fund is to finance:

- routine recurrent and periodic maintenance of PWD roads;
- development of existing road network system including upgrading of roads maintained by the PWD;
- construction of new roads wherever necessary;
- such road safety projects as are found essential for safe and smooth traffic;
- research related to maintenance and development of roads, and
- Any cost-sharing, donor-funded projects intended for all or any of the purposes mentioned above.

Source: The Road Fund shall consist of:

- all moneys received from the Central Road Fund established under the Central Road Fund Act, 2000;
- the contribution made by the Government;
- all fees, fines and other amounts collected by the Government according to the provisions of the Kerala Highway Protection Act, 1999;
- all payments made by the concessionaire as per the concession agreement;
- all amounts standing to the credit of the Bridges Fund established under section 12 of the Kerala Tolls Act, 1976;
- the user fees collected by the Government agency or the statutory body under the Kerala Road Fund Act;
- grants or loans or advances made by GOI, Government of Kerala or other institutions;
- all returns on investments made by the Road Fund Board directly or through a Government agency or statutory body;
- any amount borrowed by the Road Fund Board, and
- Any other amount authorized for credit to the Fund under the provisions of the Road Fund Act or rules made thereunder or any other law for the time being in force.
- The Government shall contribute to the Fund every year an amount equal to 10 percent of the tax collected by them in the previous year under the provisions of the Kerala Motor Vehicles Taxation Act, 1976, and the said amount shall be charged on the Consolidated Fund of the State.

Projects: Projects under the Road Fund can be taken up in association with private entrepreneurs or financing institutions on a cost and benefit sharing basis. If proposed projects are not considered rewarding enough to attract private participation, incentives in the form of a share of the costs involved could be given.

Management: The Board shall consist of the following members:

- Chief Minister-ex-officio, who shall be the Chairman of the Board
- Minister in charge of Public Works - ex-officio, who shall be the Vice-Chairman of the Board
- Minister in charge of Finance - ex-officio
- Minister in charge of Transport - ex-officio
- Principal Secretary to Government in charge of Public Works Department - ex-officio, who shall be the Member Secretary of the Board
- Law Secretary - ex-officio
- Chief Engineer, Roads and Bridges - ex-officio
- Three persons nominated by the Government from among the heads of financial institutions engaged in the business of infrastructure, scheduled banks or technical or engineering personnel working in National level institutions.

There shall be an executive committee consisting of (a) Minister in charge of Public Works (Chairman of the Executive Committee), (b) Principal Secretary to Government in charge of Public Works Department (Vice Chairman of the executive committee), (c) Finance Secretary to Government, (d) Law Secretary, (e) Chief Engineer, Roads & Bridges, and (f) Two members nominated by the Board from among the nominated members of the Board.

Madhya Pradesh

The state of Madhya Pradesh has recently created a Kisan Sadak Nidhi (Farmer's Road Fund) by levy of a cess on agricultural produce and earmarking 85 percent of these proceeds for improvement and maintenance of major district roads and rural roads. An amount of Rs.120 crore (US$ 28 million) per year is available out of this fund.

Karnataka

The state of Karnataka has recently created a dedicated fund for rehabilitation and maintenance of rural roads. The fund is called Chief Minister's Grameen Raste Abhivrudhi Nidhi (CMGRAN) – rural roads rehabilitation fund. An amount of Rs.300,000 per km for periodic renewal and Rs.40,000 per km per annum for routine maintenance for black-top rural roads is allocated to Zilla Parishads (District Panchayats – district level local bodies). For Water Bound Macadam and gravel roads, the norms for routine maintenance are Rs. 25000 and Rs.20000 per km per year. This is a good scheme for protecting the investments being made in development of rural roads in the state.

Uttar Pradesh

The state government of Uttar Pradesh created a dedicated fund for maintenance of state roads in 1998. The source of funds is increase in sales tax on motor spirit and high speed diesel. Oil companies after collection, transfer the proceeds to the consolidated fund of the state. Then the funds are allocated to the state road fund. These funds are managed by an Advisory Committee headed by the Minister of Public Works. Rules and regulations for use of funds for different categories of roads have been formulated and got approved from the Accountant General of the state. Current accruals are estimated to be around Rs. 500 crore and marks a significant increase in allocations for maintenance. Planning and implementation arrangements are being strengthened for efficient use of funds and effective delivery of maintenance operations.

Assam

The state of Assam has adopted Assam Road Maintenance (ARM) Policy along with Assam Road Maintenance Fund Rules in Sept.'2014 to make the task of road maintenance sustainable through a Policy Framework and Systematized Procedures. The government has established a dedicated **Assam Road Maintenance Fund (ARMF)** with funds received/collected from various sources as may be considered appropriate by GoA to provide funds on a sustainable and dependable basis for maintenance of roads, such as

- Central and State Government grants,
- User charges and Fees, Cess levies, tax revenues etc.

Apart from the above sources of fund options for various other modalities including performance based-PPP and Concession Agreement for BOT, BOOT etc. As envisaged by ARM policy, a dedicated road maintenance fund viz. 'ARMF' has been set up to provide funds on a sustainable basis to enable regular maintenance and timely repair of the roads and the ARMF Rules adopted by GoA.

Objectives of the Fund:

- Dedicated for maintenance of the roads in the state.
- Provide funds to the Assam State Road Board (ASRB) on a sustainable and dependable basis for maintenance of State Roads as per ARMOP.
- Achieve regular routine maintenance and timely repair works, thereby reduction of expenditure due to maintenance in the initial state of damage.
- Ensure priority for maintenance of the Core Road Network

Management of the Fund:

- Administered and managed by ASRB in accordance the objectives of the Fund and the ARMF Rules.
- ASRB have powers to adopt detailed Operational Policies Procedures to ensure proper maintenance of State Roads within the jurisdiction of PWRD

ARMF (non-lapsable) may consist of all or any of the following:

- Allocation for maintenance of the road from the Consolidated Fund of the State under the Non-Plan Head 3054 or any other Head as prescribed by GoA;
- Allocation for maintenance of road from the funds received for the SH and MDR from the CRF as prescribed by GoA;
- All money received for maintenance of road for state roads as per the central grants recommended/ awarded by the Finance Commission from time to time;
    - o Any other sum or grant as may be decided from time to time for the purpose of road maintenance by the GoA;
    - o Any grant, aid, bequest, donation , gift, subscription , loan or other sum lawfully received by the Board; and
    - o Any other income accruing to the Fund including by way of investments or interest accruing from Fund balances.

Annexure–2

Marketing Committee Fees on Agriculture Produce

Some states in India levy cess on food grains through their market committees and proceeds utilized, among other items, for construction of link roads and their maintenance in rural areas. There is wide spread appreciation among farmers that with a good road network in their areas, they would fetch a better price for their produce besides their having incentive to increase the production as size of market gets bigger with a well maintained road system. It also then helps them to obtain their items of consumption at cheaper cost. They also have increased access to education, health and market facilities.

Punjab and Haryana started these practices in early 1970's. Rajasthan followed immediately thereafter. They went a step forward. The Government of Rajasthan decided to pool all the resources meant for rural development programmes of the Centre and the State and for the portion allocated to roads, a strategy was adopted to convert earth roads undertaken through employment programmes into durable assets by putting their own money for extra road metal and cross drainage works.

Similarly, in sugarcane belts of some States, a cess is levied on sugar and roads repaired out of such proceeds. In Uttar Pradesh, for example, the routine maintenance of rural roads in the sugarcane belt is met entirely from the cess on sugar. When such roads require up gradation or strengthening overlays, 20 percent amount is met out of such proceeds and balance 80 percent from state funds.

The State of Punjab had a programme of repairing 10500 km of rural roads from 1987 by providing profile correction course and 20 mm premix carpet. Funds for this purpose were provided by the Punjab Mandi Board and 143 Market Committees spread throughout the State, who collect funds at 2 percent of the sale price of various agriculture produce resulting in a total income of about Rs.80-90 crore out of which about 40-50 per cent funds are earmarked exclusively for maintenance and renewal of the road surface. The Mandi Board prepares the annual programme of renewal of roads in each market. It has been a good experience and is worthy of consideration by other States for adopting some similar approach.

Annexure–3

Attachment 1 of Annex 3

PUNJAB MANDI BOARD

PUNJAB MANDI BHAWAN, SECTOR 65-A, S.A.S.NAGAR .

In the service of farmers

Punjab Mandi Board established under "The Punjab Agricultural Produce Markets Act, 1961". Establishment of markets and better regulation of various agriculture produces during the sale/purchase/storage/processing in the notified areas of Market Committees within the State is the objective of the Act.

Total 153 Market Committees are established in the State constitute villages and including principal yards and sub market yards. During wheat and Paddy season, more than 1835 Mandis are opened so that farmers may not travel more than 5 to 7 Kms to sell their produce.

Wheat, Paddy & Cotton (Arrival)

Year	Wheat (Lac tonne)	Paddy including Basmati (Lac tonne)	Cotton (Qtls.)	Maize (Lac Qtls.)
2011-12	112.36	140.97	72.23	24.78
2012-13	130.54	155.44	83.37	27.73
2013-14	116.42	153.26	52.59	23.16
2014-15	120.70	158.50	49.48	25.25
2015-16	106.34	169.55	20.83	25.04

Fee & Charges fixed during Sale/Purchase of different market commodities

Name of the Commodities	Market Fee	Rural Development fee	Commission to be Charged by Commission Agents
Wheat & Food grains	2%	2%	2.5%
Cotton	1%	1%	2.5%
Maize	1%	2%	2.5%
Fruits & Vegetables	2%	2%	5%
Chilly (Dry & Green)	2%	2%	1.5%
Fodder (Dry & Green)	-	-	3%
Others	2%	2%	2.5%

Under rule 29 & 30 of "The Punjab Agricultural Produce Markets (General) Rules 1962", few commodities are exempted.

Schemes in Punjab

Apni Mandi Scheme

Apni Mandi Scheme started in year 1987 to boost farmer's income by direct sale of their agricultural commodities to consumer. Generally, Fruits and Vegetables are sold in these mandis. 50 Apni mandis have been established within the state.

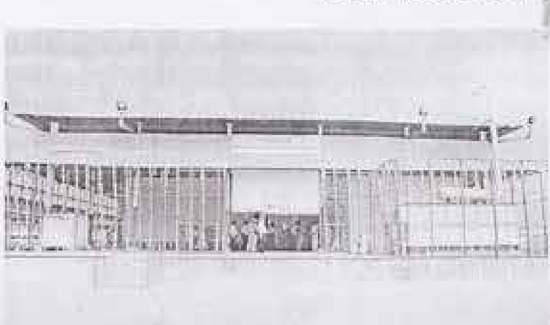
Procedure & Utility

1. Identity cards are issued to participants in the markets by their respective Market Committees. Maximum rates are fixed by Market Committee Staff.
2. Farmers get remunerative price due to no role of middle men so that the profit is shared by both farmers and consumers.
3. Market Committee staff is directed to organise and look after the operations of Apni Mandi.

Technology Mission on Cotton (TMC)

This scheme provides better infrastructure for cotton marketing. Various specialized dust free zones have been established in the state. It provides raised platforms, weigh-bridges, internal roads, public health and electricity facilities. Cotton grading facilities such as grading of fiber, fineness, strength, maturity, fresh cotton etc are numerically tested in the laboratories, are available to get better price. For this facility, no fee is being charged from farmers. For the cleaning of cotton, Punjab Mandi Board has established Seed Cotton Drying and Pre-cleaner at Malout Mandi with the outlay of Rs. 1.15 Crore.

Pack House for Fruit and Vegetables



Pack houses with ripening chambers for fruits & vegetables are available. These have been established in the various markets of Punjab i.e. Ludhiana, Patiala, Moga, Abohar, Ferozepur, Hoshiarpur, Batala, Bathinda,

Wood Markets

To cater the damands of wood, Naushera (Hoshiarpur) & Khasi Kalan (Ludhiana) wood markets are operational for providing maximum returns to farmers within the State. Wood Markets with modern facilities are established in the State of Punjab. Establishment of more wood markets at *Ballaggan (Dasuya)* and *Garhi Kanugon (Ballachaur)*, is also in pipeline.

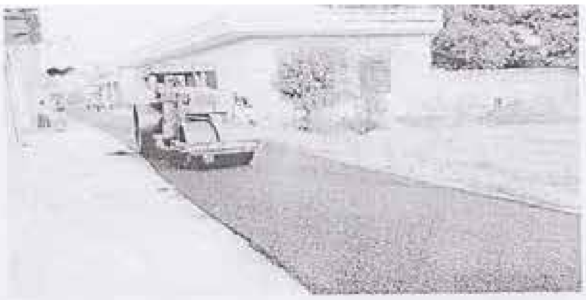
Setting up of Fish Markets & Meat Market

National Fishing Development Board & Punjab Mandi Board jointly has established one modern fish market with infrastructural facilities at Ludhiana in the state. To facilitate the trade of Fish in the State of Punjab, two more Fish Markets are being set up at Bhatinda and Amritsar. Fish and Meat Mandis at Jalandhar and Patiala are planned and will be operational shortly.

Maize Driers

To promote better price and diversification from Wheat & Rice rotation, maize driers are being set up to encourage the production & growth of Maize Crop. Two each Maize Dryer Centres were set up at District Hoshairpur & Jalandhar markets and one each at District Kapurthala, Ludhiana and Shaheed Bhagat Singh Nagar. No charges from farmers and nominal rates from others, are being taken for drying the maize crop.

Rural Link Roads



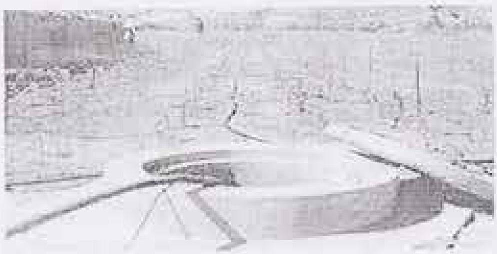
Construction & Repair of Link Roads

Total length of 61,436 kms of link roads in the state is constructed by Two Agencies PWD (B&R) and Punjab Mandi Board. New construction & repairing of roads is a continous process. At least two links are available for link to villages. By doing so almost all the existing link roads, which required repairs/re-carpeting were executed during the last 10 years.

Setting up of New Mandis and Upgradation of Existing Mandis:

Total 149 principal yards, 276 Sub Yards and 1411 purchase centers in the State, are pucca yards. During the last 10 years, 19 new mandis were constructed with a total cost of Rs. 192 Crore. Out of these, one Air conditioned Fruit & Vegetable Market was set up at S.A.S.Nagar at a cost of Rs.50 Crore. Apart from this, existing Lighting System with conventional technology in some of the Mandis has been replaced with LED based lighting system, results in better efficiency and lower power bills.

Rain Water Harvesting - a Noble Scheme



Water harvesting/recharging wells are required to recharge sub soil water due to over exploitation by farmers, are identified by Central Ground Water Board who declared 45 dark zones in Punjab. Punjab Mandi Board has already constructed 214 rain water harvesting wells in 27 Mandis of Punjab, where polluted water after treatment and rain water from 47 office buildings in Punjab are directly pumped into these harvesting wells. A new proposal for required cover is through Agriculture Department (Nodal Agency), is also in pipeline.

Production of Solar Energy

Punjab Mandi Board has installed roof -top solar power plants at Punjab Mandi Bhawan Mohali, Fruit & Vegetable Market Mohali, Fruits & Vegetable market Ludhiana & Grain Market Mansa, with 100, 2049, 762 and 634 K.W. capacity respectively. The project will ensure rental income and annual energy saving to the Board.

Welfare Scheme for Farmers

Financial assistance for farmers

Financial assistance is given to farmers and farm & mandi labours, who gets injured or died during agriculture or agricultural marketing operations. An amount of Rs. two lacs in case of death, Rs. 60,000/- for chopping of two limbs, Rs. 40,000/- for chopping of one limb and Rs. 10,000/- for chopping of one finger, is being given to the affected persons.

Farmers health Insurance Scheme

To ensure medical facilities to the farmers & their dependent family members, insurance cover has been provided to all farmers under *'Bhagat Puran Singh Sehat Bima Yojna'*. This scheme provides free Medical Treatment up to Rs. 50,000/- for the entire dependent family members of the farmer and Life Insurance (except natural death) of Rs. 5 lakh for the head of the family is also covered.The disbursement of funds for insurance are being done through Punjab Market Committees & Punjab Mandi Board.

Kisan Bhawan(Chandigarh)

Kisan Bhawan (Farmer's House) is located in the heart of the city beautiful, Sector 35- A, Chandigarh. Farmers who visit Chandigarh, a very neat and clean accommodation is provided to them for 24 x 7 on subsidised rates i.e. Rs 40/- per bed. VIP/IP rooms are also available. Good quality food at reasonable price is being provided in the canteen.

Kisan Haveli

Attachment 2 of Annex 3

रजिस्ट्री सं॰ डी॰ एल॰—(एन)04/0007/2003—16 REGISTERED NO. DL—(N)04/0007/2003—16

भारत का राजपत्र
The Gazette of India

असाधारण
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No. 32] NEW DELHI, SATURDAY, MAY 14, 2016/VAISAKHA 24, 1938 (SAKA)

इस भाग में भिन्न पृष्ठ संख्या दी जाती है जिससे कि यह अलग संकलन के रूप में रखा जा सके।
Separate paging is given to this Part in order that it may be filed as a separate compilation.

MINISTRY OF LAW AND JUSTICE
(Legislative Department)

New Delhi, the 14th *May*, 2016/*Vaisakha* 24, 1938 (*Saka*)

The following Act of Parliament received the assent of the President on the 14th May, 2016, and is hereby published for general information:—

THE FINANCE ACT, 2016

NO. 28 OF 2016

[14th *May*, 2016.]

An Act to give effect to the financial proposals of the Central Government for the financial year 2016-2017.

BE it enacted by Parliament in the Sixty-seventh Year of the Republic of India as follows:—

CHAPTER I

PRELIMINARY

Short title and commencement.

1. (*1*) This Act may be called the Finance Act, 2016.

(*2*) Save as otherwise provided in this Act, sections 2 to 115 shall be deemed to have come into force on the 1st day of April, 2016.

CHAPTER II

RATES OF INCOME-TAX

Income-tax.

2. (*1*) Subject to the provisions of sub-sections (*2*) and (*3*), for the assessment year commencing on the 1st day of April, 2016, income-tax shall be charged at the rates specified in Part I of the First Schedule and such tax shall be increased by a surcharge, for purposes of the Union, calculated in each case in the manner provided therein.

(*c*) in section 76, in sub-section (*2*), clause (*db*) shall be omitted.

PART VI

AMENDMENTS TO THE FOREIGN EXCHANGE MANAGEMENT ACT, 1999

228. The provisions of this Part shall come into force on such date as the Central Government may, by notification in the Official Gazette, appoint. Commencement of this Part.

229. In the Foreign Exchange Management Act, 1999, after section 14, the following section shall be inserted, namely:— Amendment of Act 42 of 1999.

"14A. (*1*) Save as otherwise provided in this Act, the Adjudicating Authority may, by order in writing, authorise an officer of Enforcement not below the rank of Assistant Director to recover any arrears of penalty from any person who fails to make full payment of penalty imposed on him under section 13 within the period of ninety days from the date on which the notice for payment of such penalty is served on him. Power to recover arrears of penalty.

(*2*) The officer referred to in sub-section (*1*) shall exercise all the like powers which are conferred on the income-tax authority in relation to recovery of tax under 43 of 1961. the Income-tax Act, 1961 and the procedure laid down under the Second Schedule to the said Act shall *mutatis mutandis* apply in relation to recovery of arrears of penalty under this Act.".

PART VII

AMENDMENT TO THE CENTRAL ROAD FUND ACT, 2000

230. In section 10 of the Central Road Fund Act, 2000, with effect from the 1st day of June, 2016,— Amendment of Act 54 of 2000.

(*A*) in sub-section (*1*), for clause (*viii*), the following clause shall be substituted, namely:—

"(*viii*) allocation of—

(*a*) thirty-three and one-half per cent. of the cess on high speed diesel and petrol for the development of rural roads;

(*b*) forty-one and one-half per cent. of the cess on high speed diesel and petrol for the development and maintenance of national highways;

(*c*) fourteen per cent. of the cess on high speed diesel and petrol for railways safety works, including the construction of road either under or over the railways by means of a bridge and erection of safety works at unmanned rail-road crossings, new lines, conversion of existing standard lines into gauge lines and electrification of rail lines:

Provided that no repair, maintenance or renovation work shall be carried out from the allocation of cess under this sub-clause;

(*d*) ten per cent. of the cess on high speed diesel and petrol on development and maintenance of State roads of inter-State and economic importance to be so approved by the Central Government; and

(*f*) one per cent. of the cess on high speed diesel and petrol on development and maintenance of road in border areas.";

(*B*) sub-section (2) shall be omitted.

PART VIII

AMENDMENT TO THE FINANCE ACT, 2001

231. In the Finance Act, 2001, the Seventh Schedule shall be amended,— Amendment of Act 14 of 2001.

(*i*) in the manner specified in the Twelfth Schedule;

Attachment 3 of Annex 3

डाक व्यय की पूर्व-अदायगी के बिना डाक द्वारा भेजे जाने के लिए अनुमत. अनुमति-पत्र क्र. भोपाल-एम.पी. वि.पू.भु./04 भोपाल-2001.

पंजी क्रमांक भोपाल डिवीजन एम. पी. 108/भोपाल/2001.

मध्यप्रदेश राजपत्र

(असाधारण)

प्राधिकार से प्रकाशित

क्रमांक 427] भोपाल, शुक्रवार, दिनांक 13 जुलाई 2001—आषाढ़ 22, शक 1923

कृषि विभाग

मंत्रालय, वल्लभ भवन, भोपाल

भोपाल, दिनांक 13 जुलाई 2001

क्र. डी-15-3-99-चौदह-3.—मध्यप्रदेश कृषि उपज मण्डी अधिनियम, 1972 (क्र. 24 सन् 1973) की धारा 79 की उपधारा (2) के खण्ड (इक्कीस) द्वारा प्रदत्त शक्तियों को प्रयोग में लाते हुए, राज्य सरकार, एतद्द्वारा, निम्नलिखित नियम, जिन्हें उक्त अधिनियम की धारा 79 की उपधारा (1) द्वारा अपेक्षित किये गये अनुसार पूर्व में ही प्रकाशित किया जा चुका है, बनाती है, अर्थात् :—

नियम

अध्याय—एक

1. संक्षिप्त नाम तथा प्रारंभ.—(1) इन नियमों का संक्षिप्त नाम मध्यप्रदेश कृषि उपज मंडी (राज्य विपणन विकास निधि) नियम, 2000 है.

(2) ये मध्यप्रदेश राजपत्र में प्रकाशन की तारीख से प्रवृत्त होंगे.

2. परिभाषाएं.—इन नियमों में, जब तक संदर्भ से अन्यथा अपेक्षित न हो:—

(क) "अधिनियम" से अभिप्रेत है मध्यप्रदेश कृषि उपज मण्डी अधिनियम, 1972 (क्र. 24 सन् 1973);

(ख) "सहायक यंत्री बोर्ड" से अभिप्रेत है मध्यप्रदेश राज्य कृषि विपणन बोर्ड का सहायक यंत्री;

(ग) "किसान सड़क निधि" से अभिप्रेत है मण्डी क्षेत्र की सड़कों के लिए संग्रहित रकम;

(घ) "कृषि अनुसंधान तथा अधोसंरचना विकास निधि" से अभिप्रेत है कृषि अनुसंधान तथा अधोसंरचना विकास के लिए जुटाई गई रकम;

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(ङ) "लेखा अधिकारी" से अभिप्रेत है मध्यप्रदेश राज्य कृषि विपणन बोर्ड में पदस्थ लेखाधिकारी;

(च) "बोर्ड" से अभिप्रेत है मध्यप्रदेश राज्य कृषि विपणन बोर्ड;

(छ) "मुख्य लेखा अधिकारी" से अभिप्रेत है मध्यप्रदेश राज्य कृषि विपणन बोर्ड में पदस्थ मुख्य लेखाधिकारी;

(ज) "कलेक्टर" से अभिप्रेत है जिले का कलेक्टर;

(झ) "मुख्य यंत्री" से अभिप्रेत है मध्यप्रदेश राज्य कृषि विपणन बोर्ड में पदस्थ मुख्य यंत्री;

(ञ) "महाविद्यालय" से अभिप्रेत है सरकारी महाविद्यालय;

(ट) "जिला योजना समिति" से अभिप्रेत है मध्यप्रदेश जिला योजना समिति अधिनियम, 1995 (क्रमांक 19 सन् 1995) की धारा 3 के अधीन गठित समिति;

(ठ) "संभागीय कार्यालय" से अभिप्रेत है बोर्ड द्वारा राजस्व संभाग में स्थापित कार्यालय;

(ड) "उप संचालक" से अभिप्रेत है मण्डी बोर्ड द्वारा नियुक्त किया गया संभागीय कार्यालय में पदस्थ उपसंचालक;

(ढ) "प्रारूप से अभिप्रेत है इन नियमों में उल्लिखित प्रारूप;

(ण) "कार्यपालन यंत्री" से अभिप्रेत है मध्यप्रदेश राज्य लोक निर्माण विभाग का कार्यपालन यंत्री;

(त) "कार्यपालन यंत्री बोर्ड" से अभिप्रेत है मध्यप्रदेश राज्य कृषि विपणन बोर्ड का कार्यपालन यंत्री;

(थ) "वित्तीय वर्ष" से अभिप्रेत है 1 अप्रैल से 31 मार्च तक की कालावधि;

(द) "प्ररुप" से अभिप्रेत है इन नियमों से संलग्न प्ररुप;

(ध) "मंडी समिति" से अभिप्रेत है, अधिनियम की धारा 11 के अधीन स्थापित मंडी समिति;

(न) "मंडी क्षेत्र" से अभिप्रेत है अधिनियम की धारा 4 के अधीन राज्य सरकार द्वारा अधिसूचित मंडी समिति का कोई क्षेत्र;

(प) "मण्डी प्रांगण" से अभिप्रेत है अधिनियम की धारा 5 के अधीन राज्य सरकार द्वारा अधिसूचित किसी कृषि मंडी समिति का अधिसूचित मंडी प्रांगण/उपमंडी प्रांगण/हाट बाजार.

(फ) "प्रबंध संचालक" से अभिप्रेत है मध्यप्रदेश राज्य कृषि विपणन बोर्ड का प्रबंध संचालक;

(ब) "मध्यप्रदेश राज्य विपणन विकास निधि" से अभिप्रेत है अधिनियम की धारा 43 के अधीन जुटाई गई रकम;

(भ) "उपयंत्री बोर्ड" से अभिप्रेत है मध्यप्रदेश राज्य कृषि विपणन बोर्ड का उप-यंत्री;

(म) "अधीक्षण यंत्री बोर्ड" से अभिप्रेत है मध्यप्रदेश राज्य कृषि विपणन बोर्ड का अधीक्षण यंत्री;

(य) "धारा" से अभिप्रेत है अधिनियम की धारा;

(र) "स्कूल" से अभिप्रेत है सरकारी स्कूल;

(ल) "राज्य सरकार" से अभिप्रेत है मध्यप्रदेश सरकार.

अध्याय—दो

मध्यप्रदेश राज्य विपणन विकास निधि

3. **मध्यप्रदेश राज्य विपणन विकास निधि.**—(1) प्रत्येक मंडी समिति प्रत्येक माह की 10 तारीख तक बोर्ड को, अनुज्ञप्ति फीस तथा मंडी फीस को समाविष्ट करते हुए सकल प्राप्तियों के ऐसे प्रतिशत का भुगतान करेगी, जैसा कि राज्य सरकार, अधिनियम की धारा 43 की उपधारा (1) के अधीन समय-समय पर अधिसूचना द्वारा घोषित करे. अधिसूचना में घोषित दर पर पाने वाले के खाते में देय "बैंक ड्राफ्ट" द्वारा बोर्ड को मध्यप्रदेश राज्य विपणन विकास निधि के लिये भुगतान किया जाएगा. मध्यप्रदेश राज्य विपणन विकास निधि को तीन उपशीर्षों में निम्नानुसार विभाजित किया जाएगा:—

(क) किसान सड़क निधि;

(ख) कृषि अनुसंधान तथा अधोसंरचना विकास निधि;

(ग) बोर्ड निधि.

4. प्रत्येक मंडी समिति उपरोक्त शीर्षों में, नीचे उपदर्शित किए गए अनुसार रकम पृथक् रूप से भेजेगी:—

(क) किसान सड़क निधि के लिए, मध्यप्रदेश राजपत्र दिनांक 10 नवम्बर, 2000 में अधिसूचित अधिसूचना क्रमांक डी-15-5-2000-चौदह-3, दिनांक 30 अक्टूबर, 2000 की अनुसूची-एक में विनिर्दिष्ट रकम का पचासी प्रतिशत;

(ख) कृषि अनुसंधान तथा अधोसंरचना विकास निधि के लिए, मध्यप्रदेश राजपत्र दिनांक 10 नवम्बर, 2000 में अधिसूचित अधिसूचना क्रमांक डी-15-5-2000-चौदह-3, दिनांक 30 अक्टूबर, 2000 की अनुसूची-एक में विनिर्दिष्ट रकम का पन्द्रह प्रतिशत;

(ग) मध्यप्रदेश राजपत्र दिनांक 10 नवम्बर, 2000 में अधिसूचित अधिसूचना क्रमांक डी-15-5-2000-चौदह-3, दिनांक 30 अक्टूबर, 2000 की अनुसूची-दो में विनिर्दिष्ट रकम बोर्ड को भेजी जावेगी.

5. रकम प्राप्त होने की तारीख को बोर्ड द्वारा रसीद जारी की जाएगी. इस प्रकार जुटाई गई रकम, अधिनियम की धारा 43 की उपधारा (7) के अनुसार जमा और अधिनियम की धारा 43 तथा इन नियमों के उपबंधों के अधीन वापस निकाली जाएगी.

6. **किसान सड़क निधि**—(1) खाते का संधारण.—इस निधि का बैंक में पृथक् खाता रखा जाएगा. इस निधि में प्राप्त रकम की जानकारी बोर्ड द्वारा मंडी समितिवार रखी जाएगी.

(2) **आवंटन की प्रक्रिया.**—इस निधि में प्राप्त रकम बोर्ड द्वारा मध्यप्रदेश ग्रामीण सड़क विकास प्राधिकरण की निधि में जमा कराई जाएगी.

7. **कृषि अनुसंधान तथा अधोसंरचना विकास निधि—(1) खाते का संधारण.**—इस निधि के लिये बैंक में पृथक् खाते का संधारण किया जाएगा.

(2) **निधि का उपयोग.**—निधि का उपयोग निम्नलिखित विषयों के लिये किया जाएगा:—

(क) सरकारी, स्थानीय [illegible] कृषि विश्वविद्यालयों, कृषि महाविश्वविद्यालयों में बीज, मृदा रासायनिक [illegible] और कीटनाशकों के परीक्षण की सुविधा हेतु प्रयोगशालाओं की स्थापना और ऐसी स्थापित सुविधा के संचालन हेतु प्रशिक्षण.

(ख) उपर्युक्त पैरा (क) के अनुसार [illegible] सेक्टर और सहकारी सेक्टर की रासायनिक [illegible] कंपनियों/शक्कर कारखानों

Attachment 4 of Annex 3

Rs 70,000 crore fell into Central Road Fund kitty in FY'16: Government

NEW DELHI: Collection under Central Road Fund (CRF) more than doubled to about Rs 70,000 crore during the last fiscal, Parliament was informed today.

"The funds accrued under the CRF during 2013-14, 2014-15 and 2015-16 were Rs 19,263 crore, Rs 26,108 crore and Rs 69,809 crore (provisional) respectively," Minister of State for Road Transport and Highways Mansukh Lal Mandaviya told Rajya Sabha in a written reply.

The Ministry of Finance levies cess on petrol and high speed diesel oil, which is initially credited to the consolidated fund of India and thereafter the amount is transferred by appropriation, after adjusting cost of collection to the CRF.

"The Ministry allocates funds to the states/union territories for development of state roads under the CRF scheme. The funds for development of state road under CRF scheme are allocated to the states/UTs on the basis of 30 per cent weightage to fund consumption and 70 per cent weightage to geographical area," the Minister said.

The Ministry allocates funds to the states/union territories for development of state roads under the CRF scheme.

Source: The Economic Times, August 09, 2016

Annex–4

Central Road Fund

Historical background

(i) The CRF exists since 1929. At that time, cess was 2 annas (Rs.1=16 annas) per gallon and only on petrol (motor spirit). Price of petrol was 8 annas per gallon at that time.

(ii) In 1931, the cess raised to 2.5 annas per gallon and only on petrol. Price of petrol was 10 annas per gallon. No change thereafter.

(iii) The CRF at that time was not to be used for national highways.

(iv) There was a move sometime in mid- 1970's to abolish the fund as accruals were very small in comparison to what government was investing in roads at that time. However, it was not abolished but scope of utilization was restructured, primarily for training and schemes of research and intelligence plus road works in backward areas.

(v) In May 1988, both the Houses of Parliament passed a Resolution to widen its ambit to include High Speed Diesel (HSD) and an ad valorem cess of 5 per cent on price of petrol and HSD. However, this Resolution was not implemented- primarily because of the government strategy to contain the budget deficit and improve balance of payment position.

Then came the famous statement of Saurashtra to Silchar and Kashmir to Kanyakumari for road sector by the then Prime Minister, Shri Atal Bihari Vajpayee in the year 1998. This revived interest of government to mobilize additional financial resources. And, declaration of Pradhan Mantri Gram Sadak Yojana in the year 2000 gave a push to rural connectivity.

The CRF Act came into force on 1.11.2000 through an Act of Parliament. This gave statutory status to the then existing Central Road Fund. The fund is non-lapsable in character. Actually, additional excise duty of Re.1.00 per litre was levied on petrol w.e.f. 2.6.1998 and on HSD w.e.f. 1.3.1999 and this constituted the cess towards CRF. The cess was later raised to Rs.1.50 per litre on petrol and HSD w.e.f. 1.3.2003 and to Rs.2.00 per litre w.e.f. 1.3.2005. The rate of cess was raised from Rs.2.00 per litre to Rs.4.00 per litre w.e.f 02.01.2015 and from Rs.4.00 per litre to Rs.6.00 per litre w.e.f 01.03.2015. The current rate is Rs.6.00 per litre on petrol and HSD

Allocation prior to 01.01.2015

(i) 50 paise per litre on petrol and HSD for development and maintenance of national highways

(ii) 75 paise per litre on HSD for development of rural roads

(iii) The balance i.e. 75 paise per litre on HSD and 150 paise per litre on petrol is divided as under

  (a) 57.5 per cent for NHs

  (b) 30.0 per cent for SHs and MDRs, (10 per cent of 30 per cent i.e. 3 per cent is for projects of inter-state and economic importance)

  (c) 12.5 per cent for Railway Safety Works (ROBs, RUBs and manning of unmanned railway crossings)

The above allocation is effective since 01.03.2005 when the additional levy of 50 paise per litre on petrol and HSD was imposed and the entire accrual out of this additional levy was decided to be utilized for development and maintenance of national highways.

The Government of India is responsible for management of the fund. Currently, the administrative jurisdiction is as under:

(a) Ministry of Road Transport and Highways for the component 4(i) and 4(iii) (a) and (b) above

(b) Ministry of Rural Development for the component 4(ii) above

(c) Ministry of Railways for the component 4(iii) (c) above

As per the Finance Act, 2016 (No.28 of 2016) notified on 14.05.2016, the Central Road Fund Act, 2000 has been amended and the allocations w.e.f 01.06.2016[5] are as under:

S. No.	Head	Share of CRF (%)
1.	Development and maintenance of National Highways	41.5
2.	Development of Rural Roads	33.5
3.	Railways safety works including construction of roads either under or over railways by means of a bridge and erection of safety works at unmanned rail-road crossings, new lines, conversion of existing standard lines into gauge lines and electrification of rail lines	14.0
4.	State road of inter-state and economic importance to be approved by the Central Government	10.0
5.	Roads in border areas	1.0
	Total	**100**

Accruals of CRF as well as allocation from CRF to PMGSY have been as under:

(Amount in Rs. Crore)

Year	Total CRF	PMGSY Allocation
2002-03	5245.00	2340
2003-04	7453.00	2220
2004-05	9287.00	2220
2005-06	11313.71	3480
2006-07	12206.54	3480
2007-08	13264.61	3625
2008-09	15198.23	3089
2009-10	16680.00	4843
2010-11	16978.93	4434
2011-12	18738.30	3936
2012-13	19404.38	5064
2013-14	19632.00	5827
2014-15	26108.00	–
2015-16	69809.00	–

5 The allocations of CRF between the period 02.01.2015 and 31.05.2016 for different categories are to be confirmed.

The distribution of CRF for 2009-10 could be accessed online and is as under:

1.	National Highways	Rs.8,578.45 crore
2.	Rural Roads	Rs.4,843.13 crore
3.	Railways	Rs.958.36 crore
4.	State Roads	Rs.2,300.06 crore*
	Total	Rs.16,680.00 crore

(* includes Rs.230.00 crore for roads of interstate and economic importance)

For the year 2016-17, the accruals are estimated to be around Rs. 70,000 crore (Assessment by D. P. Gupta former Director General Road Development and Additional Secretary, Ministry of Road Transport and Highways).

As per the current approved allocation, the likely funds available this financial year would be as under:

1.	National Highways – Development and Maintenance	Rs.29,050 crore
2.	Rural Roads (read PMGSY) – Development (read construction and up gradation)	Rs.23,450 crore
3.	Railway Safety Works	Rs.9,800 crore
4.	State Roads of Interstate and Economic Importance	Rs.7,000 crore
5.	Roads in border areas: development and maintenance	Rs. 700 crore
	Total	Rs.70,000 crore

(These assessments are subject to confirmation but they are reasonable enough for a policy dialogue.)

Annexure–5

Road Funds in Africa*

Management of "The Road Fund" In Ghana

Background

The total road network in Ghana is about 48,900 km. It is managed by three road agencies:

- Ghana Highway Authority (GHA): responsible for 14100 km of trunk roads;
- Department of Feeder Roads (DFR): responsible for 32600 km of rural roads;
- Around 60 percent of the network is in maintainable condition;
- Department of Urban Roads (DUR): responsible for 4200 km of city roads in the urban area.

There are about 1428 km of Asphalt roads, 7100 km of bitumen surface roads, 24,500 km gravel roads and rest of the network – 15,872 km, is earth roads. About 40 percent of the network is in poor condition and requires rehabilitation. Roads carry 98 percent of freight and 97 percent of passenger traffic.

At the time of independence in 1957, Ghana road network was in good condition. In the 1960's the road budget declined and maintenance suffered. By the 70's, roads were breaking faster than they could be maintained. The road network was in very poor condition. During this period the roads were under Ministry of Works and Housing. In 1982 Ministry of Roads and Highways was created to (i) formulate road sector strategy and policy, (ii) co-ordinate and monitor performance of GHA, DFR and DUR, and (iii) improve the condition of roads. However, the creation of new organization did not solve the resource problem. In 1996, Ministry of Roads and Transport (MRT) was created. The Government objective is to clear the large backlog of maintenance on the road network while concurrently maintaining roads that have been rehabilitated and to put financing of maintenance on a sustainable basis. MRT does not have offices in the regions but operates through GHA and DFR, which has regional offices. There are ten regions and 130 districts.

Road Fund

Road fund was established in 1985 under an Executive (military) Decree. The objective was to secure adequate and stable funding for routine and periodic maintenance of roads. Revenue sources were: (i) fuel levy; (ii) bridge, road and ferry tolls; and (iii) vehicle examination fees. The Road Fund was managed by the Minister of Finance, Minister of Roads and Transport and Comptroller and Accountant General. Ghana Highway Authority, Department of Feeder Roads and Department of Urban Roads. Road Safety Commission and Drivers Vehicle Licensing Authority are the five agencies entitled to receive funds from the Road Fund. Funds were nominally divided between the three road agencies in the ratio of 40:30:30 respectively.

The road fund was besieged with problems. Even though Minister of Finance, Minister of Roads and Transport and the Comptroller and Accountant General were involved in management of Road Fund, no one was really responsible. The day-to-day management of Road Fund was

* Papers by Kavita Mathur, World Bank, February 1999.

inadequate. The Road Fund was simply a bank account. There was no Oversight Board. Although the levy was periodically revised, by 1995 the revenue from Road Fund was covering less than 50 percent of maintenance requirements. Funds were collected in the regions and paid into local treasuries and transferred to the road fund account. There were delays in transfers and leakage of funds. There was no accounting system in place. There was no way of knowing whether the Road Fund was receiving all the revenue attributable to it. Audit reports regularly complained about the accuracy and reliability of Road Fund balances. There was no consistent procedure for dividing funds between Ghana Highway Authority (GHA), Department of Feeder Roads (DFR) and Department of Urban Roads (DUR). Allocations ranged from 50 to 70 percent for GHA; 30 to 10 percent for DFR and 15 to 30 percent for DUR. The withdrawal procedures were cumbersome. This mismanagement of Road Fund continued for ten years.

Restructuring of Ghana Road Fund

By 1995 it was realized that the Road Fund was not working i.e. it was not providing adequate and sustainable funds for road maintenance. In 1995 the government proposed wide-ranging changes for the roads sector:

- Establishment of public-private Board to oversee management of Road Fund;
- Establishment of secretariat to manage the day to day operations of Road Fund according to sound commercial principles;
- Comprehensive legal framework for 'Establishment of Road Fund' and 'Management of Road Fund'.

Management Board

It is interesting to note that the members of the Board, as proposed by draft law, were approved and had their first sitting on January 31, 1997, six months before the Road Fund Law became effective. The Road Fund was restructured to become a commercially managed road fund by the Road Fund Law in August 1997.

The Board consists of thirteen members and is private sector driven as eight members are from the private sector and five are from public sector. The private sector members who are in the majority are nominees of road users:

1. Association of Road Contractors
2. Ghana Private Road Transport Union
3. Ghana Private Enterprise Foundation
4. Ghana Road Haulage Association
5. Ghana Institute of Engineers
6. Ghana Association of Farmers and Fishermen

Two other private sector persons nominated by the Minister.

The public sector members represent relevant Government Ministries:

1. Roads and Transport
2. Finance
3. Mines and Energy
4. Local Government and Rural Development
5. Accountant General

The Chairman is the Minister of Roads and Transport. Ghana would have preferred to have a private sector member chair the Board but agreed for the Minister of Roads and Transport to be the chair as a strategic move. To get the Roads Board moving they had to compromise. Minister being the chair provides comfort to the Government. Also, this has an advantage -- Minister has access to the top persons in the government and can get work done quickly. This may change in future and the Chairman may come from the private sector.

The main functions of the Board are:

- arrange for collection of funds and improve arrangements for collection of revenues to reduce evasion and avoidance;
- recommend level of fuel levy and other road user charges;
- review annual budgets of road agencies;
- establish certification procedures to ensure that work is completed according to specifications; and
- prepare and publish procedures for disbursement

With the setting up of Roads Board, all arrears to contractor for maintenance work which were carried from 1997 were paid within two months.

Secretariat

Consists of a Director, Engineer, Accountant, Secretary and two drivers. The staff is paid competitive market rate. Currently, the staff of the secretariat is paid from the road fund. Secretariat manages the day to day affairs of the Road Fund.

Financing

The Road Fund Law defines the spending priorities clearly:

- first, routine and periodic maintenance;
- second, upgrading and rehabilitation of roads;
- third, road safety activities.

Of the Road Fund revenues, 93 percent comes from fuel levy, 4 percent from tolls and 3 percent comes from road user fees. In Ghana, there exists a clear arrangement for separating the fuel levy from general taxes. The fuel levy is collected by Ghana National Petroleum Company and deposited directly into road fund account. Licensing and examination fees are collected by Ministry of Roads and Transport. Road, bridge and ferry tolls are collected by GHA. The road fund does not pay these agencies any collection fees.

Revenues in 1997 were US $ 47 million, expected to be US $ 75 million in 1998 and planned to increase to US $ 105 million in 2000 and US $ 148 million in 2003. There is no contribution from the consolidated budget for maintenance. Railways and Power are exempted from fuel levy. The allocation from the road fund to three agencies GHA, DFR and DUR was 60%, 25% and 15% respectively in 1999 has changed to 40%, 30%, and 30% respectively in 2004. This allocation is not based on any criteria or formula. It reflects the government priority which right now is rural development.

The priority of government can change and so would the allocation between DFR and DUR.

The staff form GHA, DFR and DUR are very happy with the Road Fund and Roads Board even though the Board has imposed stringent guidelines on the road agencies for disbursement of funds. For the road agencies, the major constraint for maintenance was lack of resource. With the establishment of Roads Board to oversee allocation and disbursement of funds, the agencies are getting money for maintenance on time. The backlog is so huge that it will take time for all maintenance needs to be met. People are seeing results and have stopped complaining.

On their side, the road agencies are required to submit roads programs which is reviewed by the secretariat and approved by the Board. Maintenance Performance Budgeting System (MPBS) is used to pick all roads which are in maintainable condition. The road agencies prepare the budget and prioritize the roads according to their maintenance needs. Money from the Road Fund is disbursed only for goods and services that form the Annual Expenditure Program. The secretariat performs financial and technical audits of the work done.

Overloading is a serious problem in Ghana and the Ministry is proposing to set up a separate division to tackle the problem of overloading.

Capacity

About 90 percent of road works are executed by private contractors (Ministry policy). Government owns limited equipment for emergency road maintenance operations. Equipment for road construction is primarily owned by private contractors. Apart from the staff for the road agencies, consultants are also used for planning, design and supervision of road works. In feeder roads, labor based methods are frequently used. In 1981, there were 5000 workers in the DFR and most of the work was done by force account. Currently, there are 700 workers and 90 percent of the work is contracted out.

The main weakness is that districts do not have capacity for planning and supervision.

Contracts are awarded as per the New Procurement Act passed by the government. This Act has established entirely procurement committees and fixed the ranges of values of contract that can be awarded by each tender committee/entity.

Managing the Road Fund in Zambia

Background

Zambia is a landlocked country surrounded by eight neighboring countries. Zambia has road network of 37,000 km of various classes of gazetted roads. Of this 21,000 km of roads are the responsibility of the Roads Department, whilst the remainder 16,000 km are under the jurisdiction of the District Councils. In addition there are about 30,000 km of un gazetted roads administered by local authority.

In 1987 about 40% of the primary road network in Zambia was in good condition. By 1990 the percentage of the good roads had declined to 20%. The value of the Zambian road network was initially assessed at US $2.3 billion. It has during recent years declined by more than US$400 million due to neglect of maintenance. Road maintenance and other expenditures were financed from general tax revenues and the competition from other sector resulted in a decline in maintenance funds. Maintenance allocations declined to only about 15% of requirements.

Inadequate funding was further complicated by the poor institutional framework within which roads were managed. Poor conditions of service, lack of clearly defined responsibilities, ineffective and weak management structures and lack of managerial accountability have all contributed to poor use of the meagre funds available. Consequently, the Roads Agencies suffer from lack of suitable qualified and experienced staff to plan, programme, organize, monitor and regulate work undertaken by own forces as well as by private Consultants and Contractors. It is very clear that the problem of road maintenance is not one of engineering but of policies and management.

At the recommendation of Road Maintenance Policy Seminar, February 1993, a road user charge in the form of a fuel levy was introduced from May 1, 1993. Initially it was about US$ 0.01 per litre but has now been increased to 15 percent of the wholesale price of fuel which is around US$ 0.07 per litre.

Management Board

After the fuel levy was instituted, there was no Board for one and a half years. There was a National Task Force under the Ministry of Public Works to administer the funds. Chair of the Task Force was the Deputy Minister and 60 percent of the funds were misused. They were used for the purchase of vehicles, office equipment, payment of hotel and telephone bills, etc. The Audit queries have still not been cleared. The setting up of National Roads Board (NRB) as the Board to manage the Road Fund took longer to be instituted than fuel levy, but was eventually done through a Statutory Instrument in October 1994. One of the notable features of the Board is that it is private sector driven as seven members are from the private sector and four are from public sector. The private sector members have the right to vote, whereas the public sector members have the right to participate without the right to vote. The private sector members who are in the majority are nominees of road users:

1. Chamber of Commerce
2. Automobile Association
3. Chartered Institute of Transport

4. Transporter's Association
5. Farmers
6. Engineering Institute of Zambia
7. Copper belt University

The four public sector members represent relevant Government Ministries:

1. Communications and Transport
2. Works and Supply
3. Local Government and Housing
4. Finance

Chairman and Vice Chairman are elected by the Board from among private sector representatives and not handpicked. The present chairman is the representative of the Chartered Institute of Transport. The road user dominated Board represent a major change of policy in the institutional structure of the roads sector. It is also a deliberate attempt by the Government to hand over ownership of the roads to the private sector as well as to create a partnership between the private and public sector for the management of roads. Roads in Zambia were always perceived as the responsibility of the Government. With the institution of Roads Board, this perception is changing slowly.

For the Board to be effective, Board members

- should be people of integrity and honesty
- should have close relation with their constituents i.e. they should give and get feedback from their constituents
- from private sector should be united
- Chairman should have access to the top person - i.e. the President.
- The board conducts effective public relation programs such as Radio Programs and Monthly Press Releases
- Enhance the sense of the ownership among road users.

How does the Board operate?

The first task of the board was to institute policy guidelines to manage and administer the Road Fund. The next step for the Board was to establish systems and procedures to ensure total transparency and accountability in the management of the Road Fund. This included:

- System for receipt of money
- Banking System
- Internal Control System
- Auditing Systems

Another innovative institutional structure was to set up Committees which provide opportunities for participation by various stakeholders and key players and thus involve interested groups in the management of roads:

- Technical Committee
- Finance Committee
- Road Sector Investment Program (ROADSIP) Co-ordinating Committee
- Transport Engineering and Technical Assistance (TETAP) Steering Committee

The most important are the Technical and Finance Committee.

Finance Committee: meets at least once a month and comprises of three members of the Board, a representative from Auditor General's office and a financial expert from the Secretariat. The Committee is chaired by the representative from the Ministry of Finance. Other Board members are selected on the basis of their expertise. The finance committee makes recommendations of where the road fund money should be held. This is very important decision as a number of banks have gone under in the last few years. The finance committee monitors the liquidity of the banks where the money is held, and at the first sign of problem withdraw the money and move to another bank. The decision of which bank to use is reviewed annually through a tendering process to ensure that services are competitive. Facilities offered by the Banks include attractive interest rates, honoring of checks throughout the country, minimal or no charges on services offered etc.

Technical Committee: is the "think tank" of the Board. It meets at least twice a month and comprises of three members of the Board, a representative from Engineering Institute of Zambia, representative of the Roads Department, representative of the Ministry of Local Government and Housing and a technical expert from the Secretariat. The committee is chaired by the Vice Chairman of the Board. The committee's main responsibility is to get "No Objection" from the Board for the Annual Road Maintenance Program. It also undertakes site visits to road works to ensure that road users get 'best value for money' from Road Fund. Not all members of Technical Committee are technical experts. The National Roads Board by law is an advisory Board but overtime has evolved into an Executive Board.

Secretariat

The secretariat of the Road Fund is the strength of the Board as it manages the day to day operations of the Road Fund. Staffing of the secretariat is critical. The ability to deliver goods lies in the capacity, capability and creativity of the staff. The Secretariat started with just three staff members. It has taken on additional responsibilities and has grown considerable with highly skilled staff. It consists of an Executive Secretary, Engineer for Quality Assurance, Highway Engineer for Management Support Team, Co-ordinator For Procurement, and Accountant. There are three experts who work part time – Financial Analyst, Transport Economist and Human Resource person. The functions of the secretariat are to prepare: (i) policy guidelines to manage the fund; (ii) procedures to administer the fund, and (iii) financial regulations and systems to account for the fund. It makes payments only after technical and financial audits are done. The secretariat has set up a small engineering unit because the Board perceived that it needed sound technical basis for deploying its resources.

National Program of Road Maintenance

Another step taken by the Board was to establish a National Program of Road Maintenance. All 72 District Councils and 9 Provincial Road Engineers were required to submit a program of road maintenance, which included the selection criteria for roads and the type of maintenance intervention recommended, and the costs for the consideration of the Board. There was no capacity at the council level and provincial road engineers. Private Sector Consultants were appointed to assist the Councils and Provincial Road Engineers in drawing up, implementing, auditing, as well as certifying the payments to the Board. The Board paid Contractors and the Consultants directly for work done. The Road Fund is assisting in building the capacity. As a result, the number of Private Sector Consultants has come down from nine to just three. Provincial Road Engineers and Directors of works in the councils are also being trained to plan, program, supervise road works and certify payments to promote total quality management of contracts.

Capacity Building

The government has adopted a deliberate policy to move from force account to using private sector contractors. Earlier 94 percent of work was done by force account. Now 90 percent is done by contract. The main reason for this is that by using contract account, there is more transparency and accountability. Also, under force account, only 15 percent of equipment was under good condition. Funds were required for maintenance of the equipment.

The number of Contractors increased from 4 in 1994 to about 45 by the end of 1996 and to 120 by end of 1998. Consequently, the pricing for some road works also declined by about 40%. The Board is assisting in development of contractors. For this purpose, the Road Training school is being revamped and reorganized to train and develop contractor capacity with greater thrust on labor based road works. Payments to contractors are certified by consultant and implementing agency i.e. Council or Provincial Road Engineer. Similarly payments to consultants are certified by implementing agency and the relevant ministry. By this internal control system the Board is able to ensure accountability of Road Fund and value for the money spent. Contractors are pre-qualified only in case of large contracts.

Financing

Road Fund is dedicated to road maintenance. So far, the only source of revenue for the road fund is fuel levy contributed by road users. The fuel levy has increased from K10 per liter in 1994 to K30 per liter in 1995 to K40 per liter in 1996, and to 15% of wholesale price of fuel in 1997, with the support of road users. The revenues of the road fund has risen from about K3

Billion in 1994 to K30 Billion in 1998. In order to broaden the revenue base, the Board has proposed that revenues from transit tolls, weighbridge charges, traffic fines, and motor vehicle licensing fees, should go to the road fund. A Cabinet Memo has been circulated and should be effective in the near future.

Funds are only disbursed for approved road maintenance programs and the division between road type is clearly determined - 40% for Main Roads, 20% for Council Roads (Urban) and 40% for District Council/ Feeder Roads. The revenues from fuel levy are not enough (around 60%) to cover the entire maintenance needs. The gap is still funded by the government.

The fuel levy is routed through the oil companies to the Zambian revenue Authority which deposits it into MOF account. MOF then issues a check to NRB. NRB is expected to remit the levy every ten days. Initially, when the Board was set up, there were problems. The fuel levy was in arrears as civil servants sat on the money. For the last year the fuel levy has been paid on time. This can become a problem again. For the fuel levy to be deposited into Road Fund Account, the Revenue Act has to be amended. This will take a long time.

The contractors are generally paid on time, within 30 days of receiving the certification. The payment is on 'first in first out' basis. There are no exemptions for fuel levy. To compensate the farmers, NRB allocates more funds for the feeder roads. Railways are asking for exemption as they feel that by paying the fuel levy for maintenance of roads, they are funding competition.

Policy Guidelines on Road Fund Disbursements

1. Road Fund shall be disbursed on the recommendation of the National Roads Board, and approved by the Committee of Ministers on Road Maintenance Initiative.
2. Road Fund shall be disbursed for road maintenance only and not for road rehabilitation, road reconstruction or new road construction.
3. Road Fund shall be disbursed for a programme of road maintenance undertaken with the approval of the National Roads Board/the Committee of Ministers on Road Maintenance Initiative.
4. Road Fund shall not be disbursed for procurement of Capital Expenditure items, as these should be done through the Budget allocation.
5. Road Fund shall not be disbursed to meet traveling and subsistence allowances or pay for Hotel bills and meet any administrative/overhead expenditure.
6. Road Fund shall not be paid to meet outstanding debts as these were budgeted for and were not undertaken on the initiative and approval the National Roads Board/the Committee of Ministers.
7. Road Fund shall not be disbursed to pay for counterpart funding as it should be budgeted and hence paid from budget allocation.
8. Road Fund shall be disbursed for road maintenance in the following proportions: Main/ Trunk Roads = 40%; Council Roads = 20%; District Council/Feeder Roads = 40%
9. Road Fund loaned to Ministries to meet budgeted road works should be reimbursed before further loans could be considered.
10. No person shall direct payment to be made from Road Fund without the approval of the National Roads Board and Committee of Ministers on Road Maintenance Initiative.

Auditing

Road Fund accounts are audited on a quarterly basis by external auditors – Deloitte & Touche. Auditor General also audits the books once a year. The Financial statements are submitted to Parliament and also published in major newspapers. They are also available on NRB web page. NRB accountant performs thorough Financial Audit. Technical Audits is done for only a small sample of projects which are flagged during Financial Audit. Only 27 out of 119 projects got direct supervision from Road Fund. This is the main weakness of NRB.

Annexure–6

Road Funds: Sustainable Financing and Management of Latin America's Roads

Gunter Zietlow*

Abstract

The extensive road networks of Latin America and the Caribbean, valued at over US$ 350 billion, show alarming signs of neglect and decay. It is estimated that more than US$ 30 billion are wasted annually in the absence of adequate road maintenance. Individual countries in the region are losing 1 to 3 per cent of their annual GNP from increase in vehicle operating costs and loss of road asset values alone.

Consequently, several countries in the region have started to place road maintenance on a fee-for-service basis and are transferring road maintenance management from a government environment to a company environment. A new generation of road maintenance funds has been created in Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and in the four Brazilian states of Mato Grosso, Mato Grosso do Sul, Paraná, and Goiás. This article provides an overview for creating sustainable road maintenance funds as well as a discussion of the approaches taken by the aforementioned governments, the difficulties they encountered and finally the lessons that have been learned.

Keywords: Road funds in Latin America, Road maintenance financing.

Introduction

For the last 50 years, roads have been the backbone of Latin America's freight and passenger transport system with road networks continuing to grow rapidly throughout most of this period. However, in recent years the rate of expansion has slowed and ageing of road networks has proceeded rapidly (see figure 1). Scarcity of resources, especially in the 1980s, has contributed to an ever-decreasing amount of money allocated to road maintenance. Towards the end of the decade many countries in the region spent less than 20 per cent of the amount necessary to maintain their road networks in serviceable condition. In the early 1990s, funding levels for the road sector improved slightly. However, the available funds were mostly being used for road rehabilitation.6 Only a small portion was being spent on the more cost-effective routine and periodic maintenance7 activities. This situation remains unchanged in most of the countries of the region.

Raising funds for road rehabilitation is much easier than for road maintenance. Loans to finance rehabilitation are more readily available from international donors, while road maintenance must compete with a myriad of domestic spending priorities. Generally, 2-3 per cent of the new investment value of a road network is required for its routine and periodic maintenance. Countries in the region spend only 20 to 50 per cent of this amount. In addition, the available funds are often used inefficiently.

Road conditions in the region vary from country to country. However, generally only one third of the paved main road network is in good condition, one third in regular and one third in poor

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6 Rehabilitation of paved roads is defined as selective repair and strengthening of the pavement or shoulder after partial demolition of the existing structure.

7 Periodic maintenance is defined as surface treatment or surface renewal including regravelling.

condition. The condition of unpaved roads is even worse. These conditions have not changed much over the last 10 years despite recent large-scale investment in road rehabilitation.

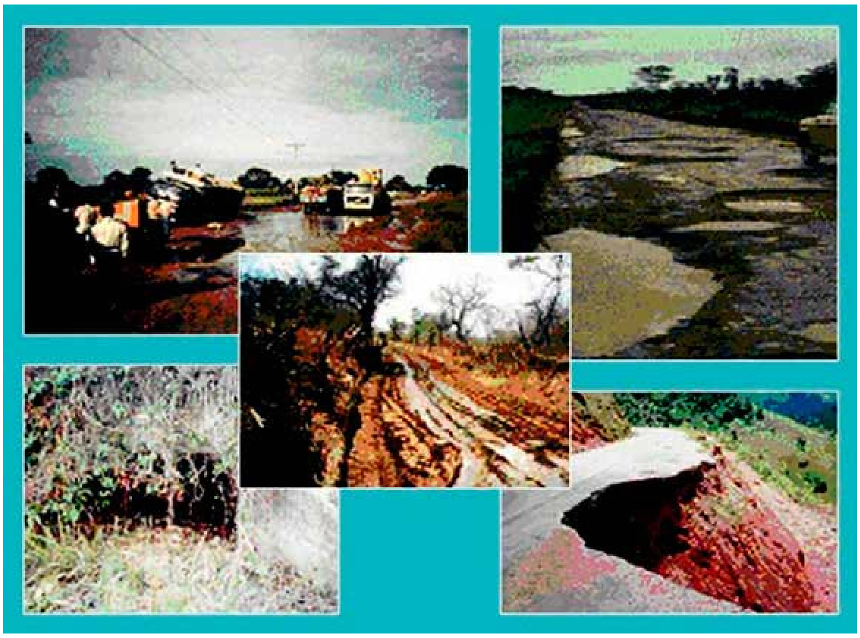


Figure 1. Examples of poor construction and maintenance of roads

Past efforts to increase financing levels for road maintenance either failed or were not sustained. Equally unsuccessful were most of the efforts to improve the performance of the public road administrations in the region, which were mainly financed by multilateral or bilateral donors.

The main lessons learned are clear. An appropriate institutional arrangement for adequate financing and management of road maintenance can make a substantial improvement in road conditions. It is necessary to address the two main underlying causes related to financing mechanisms and institutional arrangements for road maintenance.

Cause Number-1

Experiences from nearly all developing and most developed countries reveal that it is impossible to secure an adequate and stable flow of funds for road maintenance through the general government budgetary allocation procedure, especially if the allocation depends on annual political budget debates.

Road maintenance is less politically attractive than new road construction, road rehabilitation, and social programmes which are more "visible" and therefore carry more political mileage. In addition, the lack of understanding regarding the economic consequences of poor maintenance, even by those administering the road network, further complicates efforts to raise sufficient maintenance funds. Globally very few countries, with Japan and some European countries as notable exceptions, have been able to assign sufficient resources to road maintenance on a sustainable basis.

Some countries in Latin America used to finance road construction, rehabilitation and maintenance through earmarked taxes, especially on fuels used by motor vehicles. However, none of these funds could be sustained in the long run. The main problem was that Governments began utilizing these funds for other purposes. This was especially true in times of crisis. As many of these crises were never resolved, dedicated road maintenance funds have effectively been permanently reallocated.

Cause Number-2

Rules and regulations of the public administration system do not allow for efficient management of road maintenance in spite of the good intentions of public employees responsible for road maintenance.

In Latin America and the Caribbean, government departments carry out the management of road infrastructure. While most of the construction, rehabilitation and some maintenance projects are contracted out, the government departments are responsible for planning, contracting, and supervising these projects in addition to performing most of the road maintenance works. Overstaffing, lack of discipline and control, lack of incentives and corruption are common problems in many of these departments. Internal inefficiencies of government departments also act as a major hindrance to sustainable road maintenance at a reasonable cost.

I. Financial Reform of Road Maintenance

Probably the best way to secure an adequate and stable flow of funds without relying on taxes is to charge road users a road maintenance fee, also called a user charge, in exchange for the services of maintaining roads. In most countries, the financing of road maintenance through taxes has never worked satisfactorily and it would be at best misleading to assume that this will change for the better in future. Road maintenance can be treated as a public service similar to water supply, telephone and electricity services, where the user pays for the services received. To be able to do so, the following conditions must be met: the road user pays in relation to road usage and should receive adequate road maintenance services while those not using the road system are not required to pay. In addition to these criteria, the collection system should be easy and inexpensive to administer, yet difficult to evade.

The system that best suits these criteria is an electronic tolling system covering the whole road network. Each vehicle can thus be charged individually according to its usage of any particular road. Unfortunately, this kind of system is still in its infancy and is not expected to be in existence on a comprehensive scale in most of the developing countries in the near future. For the time being, a shadow toll system8 may be considered, which mainly uses the consumption of motor fuels on roads as a "service meter" and reflects the usage of roads fairly well.9 This implies that a service charge or road maintenance fee can be levied and collected together with the sale of motor fuels. The only disadvantage of collecting the fee in this manner is psychological, as most people consider fees added to motor fuels to be another tax10 to finance general expenses of the government and not necessarily to provide road maintenance services. Therefore, it is extremely important to identify and clearly mark this charge as road maintenance fee and to collect the receipts in a

8 This should not be confused with the shadow toll system used in the United Kingdom of Great Britain and Northern Ireland where the Government pays a fee to a concessionaire for the construction, operation and maintenance of a road.

9 Only heavy vehicles are an exception and require an additional charge to compensate for the greater usage of roads due to relatively higher axle loads. In New Zealand and in some of the States of the United States of America weight-distance charges are applied to heavy vehicles. These charges are not recommended for use in developing countries, since they are difficult to administer and fairly easy to evade in the absence of a strict control system.

10 Officials from the Ministry of Finance often argue that this is an earmarking of taxes. There is a very clear cut distinction between taxes and service charges. Taxes are defined by law, do not bear a direct relationship between source and destination of funds, and are collected by governments. Service charges are directly related to the services provided, cover their cost, and are collected by the entity that provides the services. Principally, taxes serve to finance public services that do not generate sufficient income to finance themselves, like basic education and health services, public administration or defense. In contrast, road maintenance services can easily be financed through user charges.

separate fund, independent of any government, departmental or municipal funds, and make sure that the proceeds are used only for road maintenance.

The pump price of motor fuel may also contain a tax element to finance general government budget expenses, one of which can include construction and rehabilitation of roads. The pump price may also include a road maintenance fee which is to be deposited in a separate fund earmarked for road maintenance expenses (see figure 2).

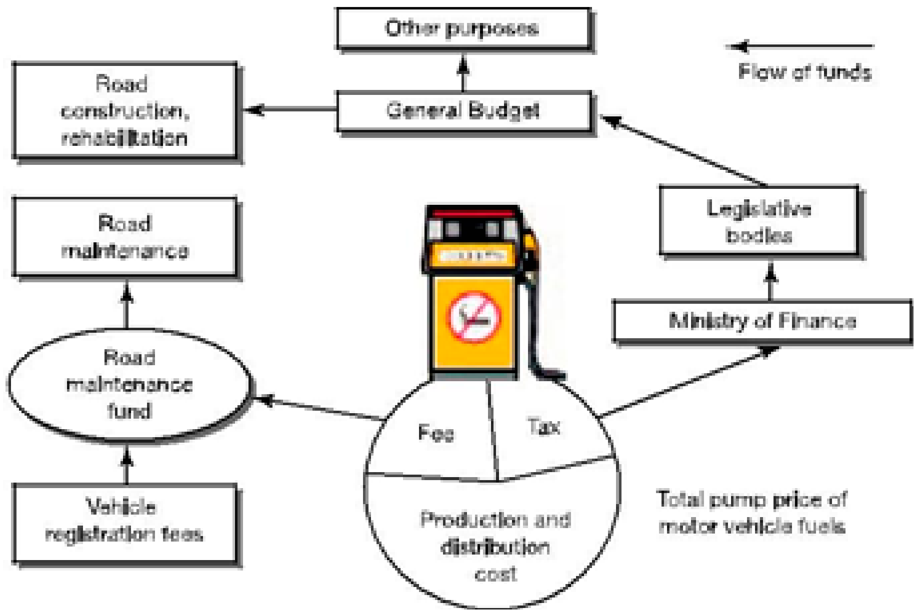


Figure 2. Use of funds collected from road users

Because motor fuels are consumed on all roads, all roads should receive funds from the road maintenance funds including interurban, urban and rural roads. To what extent maintenance costs should be reimbursed by the fund remains a central question. This issue is especially relevant for roads with very low traffic, as the road maintenance fee "collected" for these roads would be far below the funds required for maintaining them. Most likely, the road maintenance fund will have to contribute more than collected from the motor fuels consumed on these roads. The actual amounts could be tied to a number of criteria or simply to a flat rate per kilometre. Fixing these amounts could be part of the decision-making process of the fund management, in which the road users should also have a stake.

Since one of the conditions of a road maintenance fee is that only road users should pay for road maintenance services, the issue of diesel not used on roads remains to be resolved. There are several options for dealing with this problem. One possibility is to chemically differentiate between the two diesels by colouring the one not used in road vehicles. This method is being used in many developed countries and requires either a good control system or very disciplined road users. Another possibility is to rebate the amount of the road maintenance fee to those not using the diesel in road vehicles. This is fairly easy to handle in the case of power stations and others using large quantities of diesel. However, it is almost impossible to administer such a scheme for small-scale users, such as farmers. In this case, other methods of compensation could be applied, such as assigning more maintenance funds to farm roads than would be justified under normal road maintenance cost allocation systems for these roads.

Analysis of road maintenance costs in several Latin American countries suggests that US$ 0.07 to US$ 0.09 per litre of motor fuel would be required to cover the cost of maintaining a country's entire road network, assuming motor fuels were the only source of road maintenance funding and the existing roads were in a maintainable condition. For most countries this means that large sections of their road networks would require rehabilitation before they would be eligible to receive funds from the road maintenance fund. If additional road maintenance fees for heavy vehicles were applied, the fees raised from motor fuels could be reduced accordingly.

Road tolls are an alternate system for collecting fees for road maintenance. Unfortunately, the cost of operating a toll system is high. Only for roads with more than 1,500 vehicles per day do the collection costs stay within a reasonable range of 10 to 30 per cent of the tolls collected, depending on the amount of the toll and the volume of traffic. As such, this type of system is economically viable for only a small percentage of roads, probably less than 5 per cent of all roads in Latin America. This is a clear indication that tolling systems would be a poor method for financing a country's whole road network. Tolls could augment other user fees designed to cover road maintenance costs but would result in double charging (tolls plus road maintenance fees) and therefore are not recommended for this purpose. Tolls on toll roads should preferably be used to recover construction or rehabilitation costs while maintenance costs should be reimbursed by the road maintenance fund.

It is difficult to convince road users to pay an additional road maintenance fee. They would argue that the government receives enough funds from taxes on motor fuels, motor vehicle, licensing fees and other fees to cover the cost of road construction, rehabilitation and maintenance. It is potentially just as difficult to persuade governments to hand over a part of "their" taxes for regular maintenance purposes.

Resistance to paying maintenance fees stems from the lack of recognition that road users face the consequences of poor road conditions in the form of higher vehicle operating costs. It is estimated that investing one third of the additional vehicle operating costs now spent due to bad roads on road maintenance would save the road user the other two thirds (see table 1). If they knew what could be saved by paying road maintenance fees, most road users would be willing to pay, even if this would mean an increase in fuel and other vehicle related taxes. However, willingness to pay would likely be subject to credible assurances that the funds raised through fees would only be used for road maintenance. When users fees are applied to fuel, governments are frequently willing to reduce fuel taxes by a corresponding amount. In these cases, the price of fuel at the pump may not change significantly.

Table-1 Savings effected by paying road user fees in El Salvador

Cost element*	Passenger car (US dollars per 100 km)	Heavy truck (US dollars per 100 km)
Vehicle operating costs driving on bad roads	14	64
Vehicle operating costs driving on good roads	10.5	52
Savings in vehicle operating costs	3.5	12
Equivalent road user charges	-1.0	-3.5
Resulting savings	2.5	8.5

* Vehicle operating cost on asphalt concrete roads in hilly terrain (2000)

II. Institutional Reform of Road Maintenance

A relevant question is how we can safeguard public interest by maintaining good road conditions. In most developing countries, public sector road organizations and their respective ministries are responsible for keeping road networks in good condition. They are not directly accountable to road users and do not face any real consequences for failing to ensure proper maintenance of road networks. Often, they do not even know the condition of roads under their jurisdiction, much less the asset value of the roads or whether road asset value is increasing or decreasing. Any commercial enterprise that neglects its assets, as governments often do, would go out of business.

Road users are the ones who actually have to bear the consequences of poor road maintenance. Therefore, they have a direct interest in maintaining good road conditions and should have more direct control over road maintenance spending. One way of achieving such control is to create road maintenance boards, with complete financial, administrative and technical autonomy and with active participation of road users and other stakeholders. Depending on the size of the country, there might be either subsidiary or independent local road maintenance boards for the different categories of roads and/or road administration districts. The principal functions of such road boards should include:

(a) Proposing the levels of road maintenance fees;

(b) Administering and managing the Road Maintenance Fund;

(c) Contracting the planning, execution and supervision of road maintenance;

(d) Safeguarding investments made in roads;

(e) Informing the public periodically on the effectiveness and efficiency of road maintenance spending.

Road boards exist in various countries around the world, with either executive functions, such as in New Zealand (Dunlop 1996), Zambia (Jhala 1995) and Honduras, or advisory functions, as in Japan, the United Republic of Tanzania (Heggie and Vickers 1998) and Guatemala. Based upon the positive and negative experience gained from road boards/funds worldwide, certain design criteria can be established which might help to create sustainable road maintenance boards/funds. These criteria include the following:

(b) The directors of the board should represent the relevant interest groups, especially road users;

(c) The board should be autonomous with a firm legal basis;

(d) The fees should reflect the usage of roads, should be adjustable according to needs, should be collected by the board and deposited into a road maintenance fund account, and should be used primarily for road maintenance (routine and periodic maintenance, including strengthening of pavements and regravelling).

In order to be effective, the road maintenance board/fund has to channel and control funds to other agencies, corporations or companies for planning, executing and supervising road maintenance works. Depending on the structure of road administration in a specific country, a road maintenance board can operate in a number of ways. The principal decision to be taken by an executive board is whether or not it is going to contract out work directly or whether it wants to make use of an existing road administration or agency. The more effective and efficient the existing organizations are, the more likely they are to be given a major role. If an efficient road agency or corporation exists, a performance contract between the agency and the board might be the best choice (see figure 3). In the case of an existing road administration, the board might also decide to contract out maintenance works directly, while making use of the planning and contract preparation skills of the road administration.

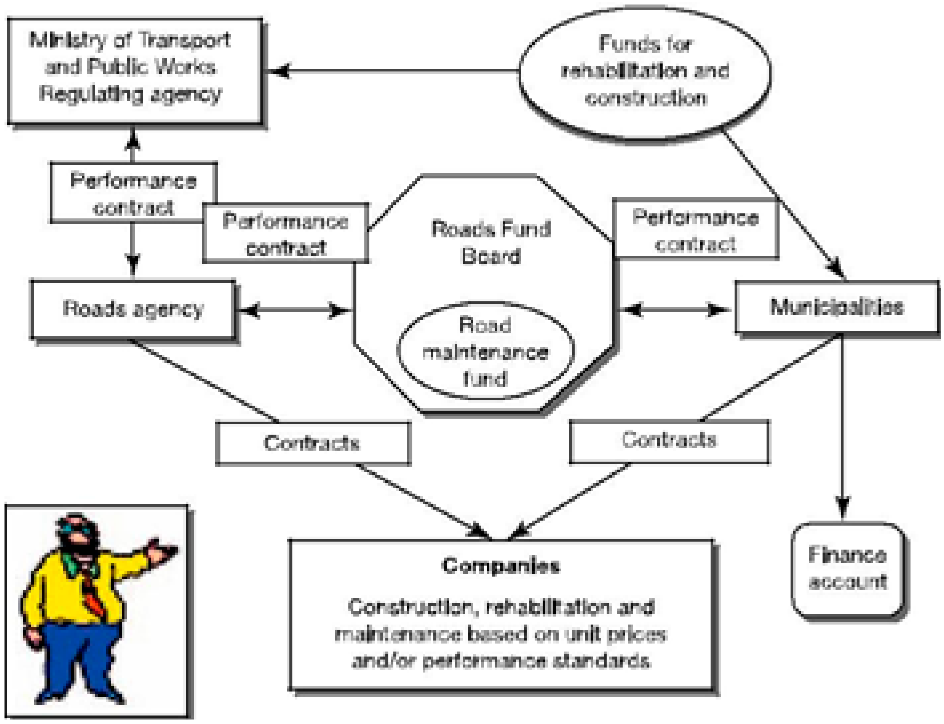


Figure 3. Road maintenance works through existing agencies

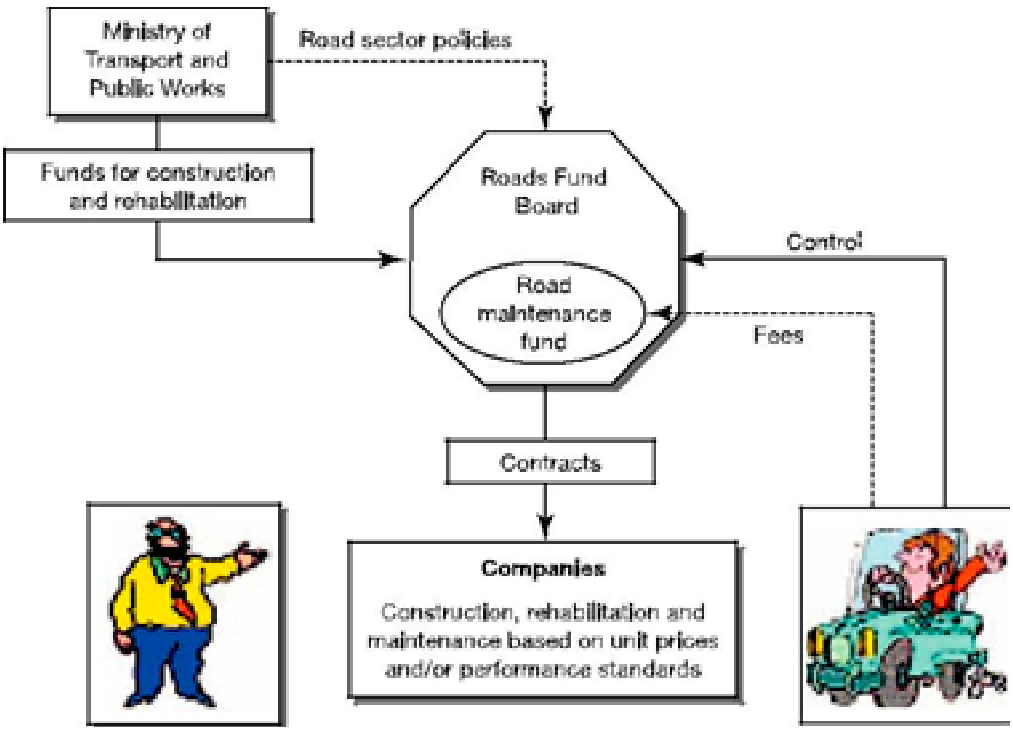


Figure 4. Outsourcing road maintenance works

One administrative arrangement could be for the road maintenance board to contract all road maintenance to companies tasked with maintaining roads to a certain standard in a specific area on a long-term basis (see figure 4). For smaller countries, having one national road maintenance board may be sufficient; for larger countries however, creating provincial and municipal boards may be a better solution.

One question remains: who is going to contract and pay for road construction, rehabilitation and major improvements? As long as government bodies are receiving motor fuel taxes, it seems fair that they should continue to finance these works and either contract them directly or let the road maintenance board(s) contract the work on their behalf. The second solution might have the advantage of better ensuring that the quality of road design and construction suits road maintenance needs.

III. The Reform Process

To change the present tax-based financing of road maintenance system to a fee-for-service approach will require the broad support of road users as well as the approval of the government and politicians in control of the legislative bodies. The easiest way to convince people to accept these changes is to clearly demonstrate the advantages that they would receive from doing so.

This does not seem to be too difficult in this case as the road users will save more on vehicle operating costs than they will have to spend on additional road maintenance fee. The government and taxpayers will also benefit as they have to bear a lesser burden for future road rehabilitation.

Another important aspect in wining public support is to give road users control over where and how to spend the road user levies collected for the road maintenance fund. A few influential people might have something to lose from introducing the new charging system. These are the people who abuse the current system to favour political allies and personal friends, which would certainly be more difficult to do in a more transparent system controlled by road users. Therefore, awareness-building, orientation and organization of direct and indirect road users are essential for implementing such a reform in the road sector. Typical groups to involve in this process includes passenger and freight transport organizations; automobile associations; farmers' associations; chambers of commerce and industry and road associations.

Often the question arises as to whether or not to include the financing of road rehabilitation in such a financial scheme. This depends on whether users are willing to pay for rehabilitation in addition to maintenance. Users might argue that road rehabilitation is necessary only because the Government did not maintain the roads in the first place, and thus will be reluctant to pay in the form of user fees. As long as governments find enough funds, or are pressed by road users to do so, road users might succeed with this line of argument. However, if governments are not able to mobilize enough resources of their own, the necessary funding for rehabilitation will have to be arranged from external bilateral and multilateral donor agencies, or road users will have to allow for such costs to be covered by road maintenance fees. Since many countries are faced with a high percentage of poorly maintained roads, rehabilitation must be completed before regular maintenance can take place. Therefore, it might be necessary for some Governments to temporarily fund road rehabilitation through this financing mechanism as well. This, of course, will be reflected in the fee levels, which for inflationary reasons should rise gradually.

The concept developed by the Economic Commission for Latin America and the Caribbean (ECLAC) was instrumental for road maintenance reform to take shape in Latin America and the Caribbean. The dissemination of this concept throughout the region, as well as a favourable reform climate in the 1990s, encouraged many countries to consider and adopt such reforms. In 1993, the International Road Federation, ECLAC, the World Bank and the Pan American Institute of Highways joined forces in organizing a series of regional and national seminars on improving the highway system in Latin America and the Caribbean under the name PROVIAL. The financial and institutional reform of road maintenance was the main theme of these seminars. After several countries expressed interest in such reforms, the International Road Federation and the German Agency for Technical Cooperation (GTZ) initiated a project in 1994 to assist the countries in creating their road maintenance funds and contracting out road maintenance by performance standards.

Box 1: Membership and characteristics of some road fund boards in Latin America

Road Maintenance Fund of Honduras

- The Board has executive functions and consists of seven members: three ministers or vice ministers (Transport and Public Works, Finance, and Economy), the Director of Roads of the Ministry of Transport and Public Works, one representative of the Association of Municipalities, and three from the private sector (Chamber of Commerce, Association of Transport Enterprises, and College of Engineers).
- The Minister of Transport and Public Works is the chairman of the Board and appoints the representatives of the private sector upon nomination by organizations.
- The Board contracts out all execution and supervision of road maintenance to the private sector and uses the Ministry of Transport and Works for planning purposes.

Road Maintenance Fund of Guatemala

- The Board has some executive functions and consists of six members: two ministers or vice ministers (Transport/Public Works and Finance), the Director of Roads of the Ministry of Transport and Public Works, one representative from the Road Transport Association, one representative of the Chamber of the Construction Industry, and one representative of the Chamber of Agriculture.
- The Minister of Transport and Public Works is the chairman of the Board and appoints the representatives of the private sector upon nomination by the organizations they represent.
- The Board contracts out all execution and supervision of road maintenance to the private sector.

Road Maintenance Fund of the state of Paraná (Brazil)

- The Board has executive functions and consists of 16 members: three Secretaries of State (Transport/Infrastructure, Industry/Commerce, and Agriculture), the Director-General of Public Works, one representative from Parliament, one representative from the municipalities, and 10 representatives from the private sector (Agricultural Federation, Federation of Industries, Federation of Freight Transport Enterprises, Federation of Passenger Transport Enterprises, Chamber of Commerce, Transport Syndicate, Syndicate of Transport Related Services, Federation of Agricultural Workers, Syndicate of Freight Transport Enterprises, and a representative for road users selected by the Consumer Protection Agency).
- The Chairman of the Board is the Secretary of Transport.
- The Board contracts out all execution and supervision of road maintenance to the private sector.

IV. Case Studies on Road Funds in Latin America and The Caribbean

So far, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and four states in Brazil have created road maintenance boards to oversee road maintenance funds. Each country is faced with a unique set of challenges and therefore must shape its policy accordingly. All of the countries are able to do this while more or less adhering to the principles of the refom measures. Table 2 summarizes the characteristics of road funds in Latin America.

Honduras

In Honduras, legislation to create the road maintenance fund was passed in 1993. A Board consisting of four representatives from the central Government, one representative from the municipalities and three representatives of direct and indirect road users are supervising the fund. The principal financial source of the fund is a levy on motor vehicle fuels in the form of a dedicated tax. The road maintenance fund is used for the routine and periodic maintenance of the official road network, excluding urban and municipal roads. Up to 10 per cent of the fund can be disbursed for road rehabilitation works. All works as well as services have to be contracted out to the private sector. In addition, to avoid creating another bureaucracy, the administrative cost of the fund has been restricted to 2.5 per cent of its annual budget. Currently, the Road Maintenance Fund has 38 staff members including the supporting staff.

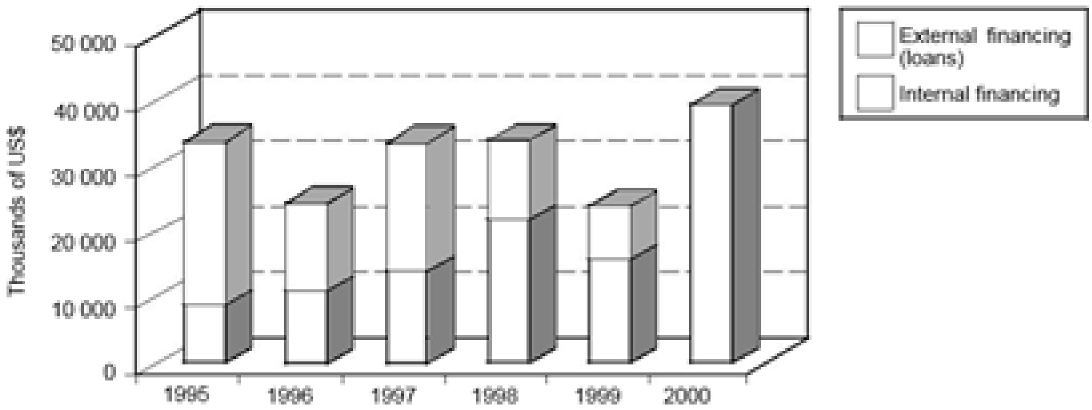
Table-2 Characteristics of road funds in Latin America (2001)

Country and date of creation		Main sources of income	Fuel levy in US cents per litre of gasoline-diesel	Percentage of fuel levy of total income	Composition of Board (public-parliamentary-private)
Costa Rica April 1998		Fuel levy	7.5-4.3 25 per cent for local road fund	95	4-0-3
Guatemala February 1997		Fuel levy	3.1-3.1	100	3-0-3
Honduras January 1999		Fuel levy	8.2-2.6	100	4-0-3
Nicaragua June 2000		Federal budget	–	–	3-0-3
El Salvador November 2000		Fuel levy	5.3-5.3	100	2-0-5
Brazil	State of Mato Grosso do Sul August 1999	Fuel levy and taxes on agricultural goods	0.4-0.8	50	5-1-2
Brazil	State of Mato Grosso March 2000	Fuel levy and taxes on agricultural goods	1.5-1.5	17	7-0-0
Brazil	State of Paraná December 2000	Fuel levy	0.4-0.8	100	6-1-9
Brazil	State of Goiás January 2001	Vehicle licensing fee	–	–	3-1-6

Unfortunately, a law that was originally created by an outgoing government stipulated that all proceeds from taxes related to road transport, such as fuel taxes, import duties on motor vehicles and licensing fees, would form the income of the Road Maintenance Fund.

However, this was not acceptable to the new government. In addition, the proceeds from all these sources would have provided twice the funds needed for road maintenance. This issue was solved in 1999 through an amendment to the law stipulating that only a specific portion of the fuel tax would be dedicated to the Road Maintenance Fund.

The actual operation of the Road Maintenance Fund started in January 2000. Since then, the level of financing has remained stable and road maintenance is done almost exclusively through resources from the Road Maintenance Fund (see figure 5). The projected income of the fund for 2009 is US$ 84 million (using the exchange rate for 2000). The coverage of the road network maintained by the Road Maintenance Fund will increase from 34 per cent in 2001 to 100 per cent of the whole road network of 14,602 km in 2009. These projections are based on the assumption that the Government will assign 100 per cent of the dedicated taxes to the Road Maintenance Fund. Until now, the Government was withholding between 22 and 45 per cent of the dedicated fuel tax, citing urgent needs for other services. This again clearly underlines the need to make the financing of the Road Maintenance Funds completely independent from government interference.



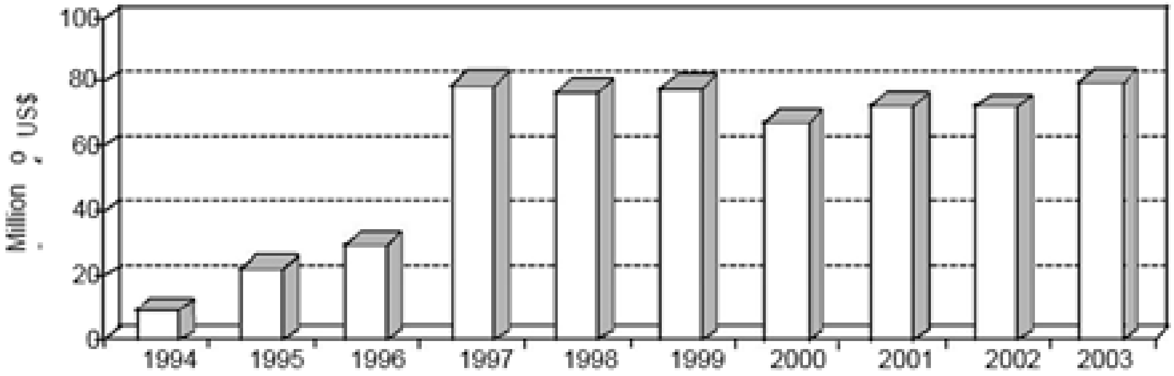
Source: Road Maintenance Fund, Honduras.

Figure 5. Flow of funds for road maintenance in Honduras

Guatemala

Guatemala passed a law in 1996 increasing the taxes on motor fuel and dedicating this increase and part of the existing fuel taxes to a special fund to be disbursed exclusively for road maintenance and improvement. The body governing this fund was created by a government decree in early 1997. Three members of its Board are government officials and three members are from the private sector. As in the case of Honduras, all works and services have to be contracted out to the private sector. The administrative cost of the Fund has been limited to 2 per cent of its annual turnover. The original intent by the Minister of Transport to create an autonomous Road Maintenance Fund had to be abandoned, as its approval required a two-thirds majority in the parliament, which the Government was unable to secure.

With the introduction of the Road Maintenance Fund (COVIAL), funds spent on road maintenance jumped from US$ 29.5 million in 1996 to US$ 72.6 million in 2002 (see figure 6).



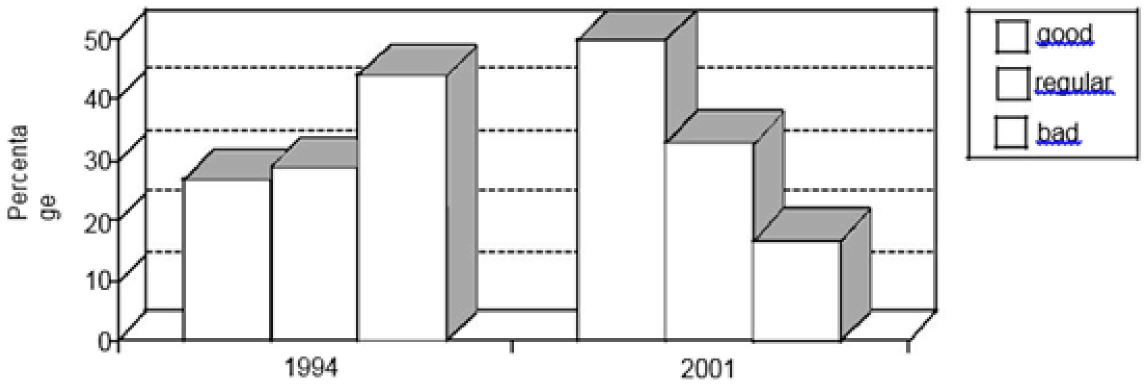
Source: COVIAL.

Figure 6. Financial resources spent on road maintenance in Guatemala

While in 1994 only 11 per cent of the 11,100 km road network received maintenance services, that figure had increased to 49 per cent of 14,340 km by 1999. Priority was given to paved roads, which received almost 100 per cent coverage. The condition of the paved roads has improved substantially since 1997 (see figure 7). However, this was partly due to road rehabilitation projects funded by government and external lending agencies, and not from the Road Maintenance Fund.

Until the end of 1999, the Road Maintenance Fund worked very effectively, creating a very favourable perception among the general public. The most notable improvement was the disappearance of potholes, which had annoyed road users. In 2000, a new Government assumed power and the performance of the Fund dropped considerably. Political influence and frequent changes of the director of COVIAL made effective and efficient operation of the Road Maintenance Fund difficult.

Illegal procurement procedures initiated by politically appointed members were rejected by the board members from the private sector. Consequently, there was an attempt to reassign the funds dedicated to COVIAL to another fund, which the Government had more control over. This attempt was abandoned due to intervention by the World Bank, the Inter-American Bank and GTZ.



Source: COVIAL.

Figure 7. Road conditions of the paved roads in Guatemala in 1994 and 2001

Costa Rica

Costa Rica created its National Road Fund in 1998. The Fund's main source of income is a fuel levy. The fund takes care of the maintenance, rehabilitation and improvement of the national road network. Priority in funding is given to routine and periodic maintenance. The Board has three members from the central Government (all from the Ministry of Public Works and Transport), one member representing the municipalities and three members from the private sector. The private sector representatives are nominated by their respective organizations. As in the cases of Honduras and Guatemala, the Fund is obliged to contract out all works and services to the private sector. Unfortunately, the fund has to abide by government rules concerning wages and letting of contracts, which may have negative effects on its efficiency.

In its first two years of operation, the National Road Fund did not receive the full amount of funding it was supposed to under the road fund law, with more than 30 per cent of its funding being withheld until the year 2000. This underlines once more the necessity of depositing funds directly into a road fund account instead of channelling them through the government.

In order to improve the financial base of the National Road Fund, the Government dedicated funds to a municipal road fund and passed a new law in July 2001 assigning 30 per cent of fuel taxes to the road sector, out of which 75 per cent goes to national roads and 25 per cent to municipal roads. For 2003, the total amount to be collected for the two road funds was estimated to be equivalent to US$ 130 million. The municipalities were receiving funds on the basis of a formula that included the length of their road network among other factors and were required to have matching funds from their own sources.

Nicaragua

In June 2000, Nicaragua passed a law creating its Road Maintenance Fund, an autonomous body governed by a board. The board has two members representing the national Government, one representing local governments, and three representing direct and indirect road users. The Road Maintenance Fund is responsible for the periodic and routine maintenance of the national road network, which includes a major part of the rural roads in Nicaragua. In addition, up to 10 per cent of the Fund's annual budget can be spent on minor rehabilitation works.

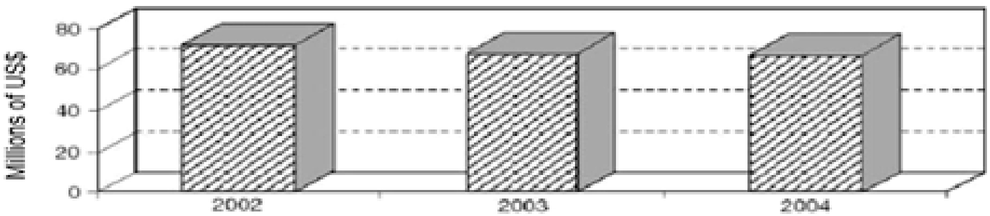
As in the three countries mentioned above, all works and services must be contracted out to the private sector. Besides having internal audits, the Fund is audited annually by an independent auditor. In addition, it is planned to regularly inform road users about the Fund's performance.

In order to win public support, the Government initiated an extensive public awareness campaign prior to creating the Road Maintenance Fund and decided not to increase fuel prices in the initial stage of creating the Fund. To provide the initial funding, it was proposed that a part of the existing fuel taxes would be converted to a dedicated fuel tax. Ultimately this measure was not approved due to objections raised by the Ministry of Finance. This left the financing of the Road Maintenance Fund to the Government's normal budgetary process. The Road Maintenance Fund continues to be financed through the general budget. This has left it under-financed and unable to maintain the national road network to high standards

El Salvador

El Salvador created its Road Maintenance Fund in November 2000. It is an autonomous body supervised by a board having two members from the Central Government, three members representing indirect road users and two members representing direct road users.

The Road Maintenance Fund (FOVIAL) is responsible for maintaining the national road network. A fuel levy of US$ 0.20 per litre was written into law in November 2001. FOVIAL has enjoyed a stable budget since then (see figure 8).



Source: FOVIAL.

Figure 8. Income of FOVIAL

FOVIAL has received 100 per cent of the dedicated fuel taxes, making it an exception among Central America's road maintenance funds. FOVIAL seems to be the most effective and afficient Road Maintenance Fund in Central America, covering 100 per cent of the paved national road network and 95 per cent of unpaved national roads, totalling 5,390 km in 2003.

FOVIAL is managed by a small staff of 29 persons (see figure 9) tasked with contracting all works and services to the private sector.

An excellent public relations programme is another impressive achievement of FOVIAL. Besides using the internet to inform road users on the condition of the roads and the works being undertaken, there are daily news releases as well as daily advertisements in the major newspapers informing the public on the road works undertaken by FOVIAL and the benefit of such works.

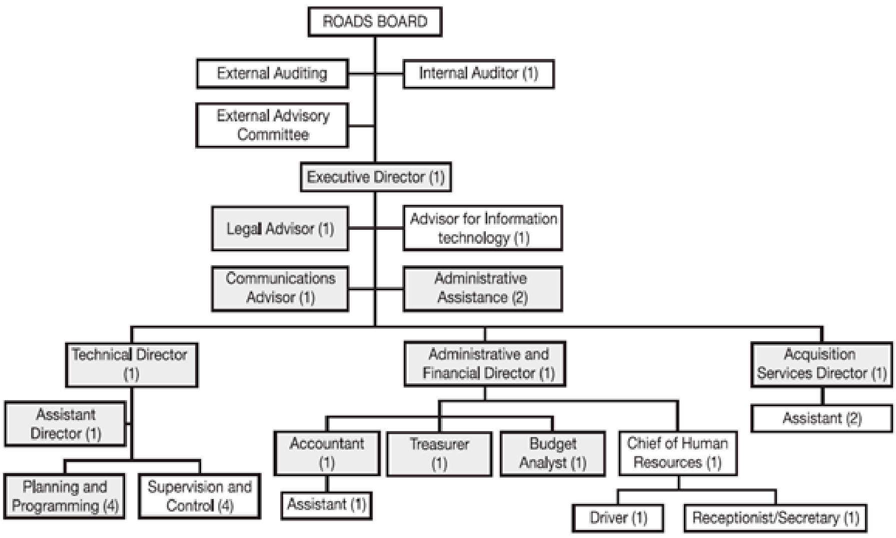


Figure 9. Organization chart of FOVIAL

Brazil

Four Brazilian states have created autonomous road funds—Mato Grosso in June 1999, Mato Grosso do Sul in March 2000, Paraná in December 2000 and Goiás in January 2001.

The road funds in the Mato Grosso and Mato Grosso do Sul have similar characteristics. Both states have boards with a majority of members coming from the public sector and finance the fund through a levy on motor vehicle fuels and agricultural goods. The boards are responsible for construction, rehabilitation and maintenance of roads. Since both states were predominantly agricultural and needed to expand their road networks, it was deemed necessary to include road construction and rehabilitation as well. In order to meet the additional financial requirements for road construction and rehabilitation, the financial base of the road fund was broadened through levies on agricultural goods.

The road fund in Paraná is a more traditional road maintenance fund. Funding is provided exclusively by a levy on motor vehicle fuels. The board consists of 2 representatives of the state government, 1 representative of the parliament, 1 representative of the municipalities, and 10 representatives of direct and indirect road users. In Goiás, the Road Fund is financed through vehicle licensing fees. The board concentrates on road maintenance, and the majority of its members are from the private sector.

Several other states in Brazil are in the process of creating similar Road Funds. At the federal level, the parliament amended the constitution in December 2001 to permit the dedication of some of the fuel taxes for transport purposes. The corresponding law was passed at the same time but has not yet taken effect. The major portion of the approximately US$ 3 billion in dedicated fuel taxes would most likely go to the road sector. As a preliminary measure, US$ 120 million was assigned to the federal states for road maintenance in January 2004. Since then, the amount assigned by the Government to the federal states has increased substantially.

Other countries, such as Ecuador and Mexico, are discussing the creation of road maintenance funds but are still far from reaching a consensus. In Peru and Colombia, the initial progress towards establishing road maintenance funds has suffered major setbacks as Governments and their priorities have changed. Nevertheless, the urgency of reforming the inefficient financing mechanism and management of the road maintenance system in these countries is increasing.

In June 2003, the Committee of Transport Ministers of Central America formed a Subcommittee on Road Funds. This should enhance the exchange of information between the road funds in Central America and is expected to contribute to the stability and long-term survival of these funds. A similar initiative is being planned for the road funds in Brazil.

V. Lessons Learned

Since Latin America's road maintenance funds have started operating fairly recently, it is too early to judge their performance or long-term sustainability. Nevertheless, some lessons can be drawn from the process of creating these funds.

A broad consensus among all stakeholders is an essential prerequisite for creating a road maintenance fund. In order to arrive at such a consensus, it is necessary:

(a) To create a forum for discussion by holding a series of seminars with officials at different levels of government; political parties and organizations representing direct and indirect road users, such as trucking associations, bus operators' associations, automobile associations, farmers' associations, and chambers of commerce and industry;

(b) To clearly demonstrate the economic consequences of poor road maintenance to all concerned parties. Generally, neither government nor road users are aware of the enormous economic consequences they face due to lack of proper road maintenance;

(c) To present government and road users with an attractive concept for reforming the finance and management of road maintenance. In order to obtain the agreement of road users, who will have to foot the bill, it is essential to give them some control over the funds to make sure that the money will be spent effectively and efficiently;

(d) To keep the public informed by means of a media campaign, including television and radio spots as well as newspaper articles. The public relations campaign needs to be maintained not only prior to creating a road maintenance fund but also during its operation.

It seems to be easier and faster to create road maintenance funds in smaller countries with poor road conditions than in larger countries with better roads. While the smaller countries in Central America were fairly quick to create such funds, larger countries such as Brazil, Colombia or Peru faced much greater difficulties in coming to a consensus.

Reliance on dedicated fuel taxes to finance road maintenance can put the sustainability of the dedicated fund at risk, especially if funds are to be channelled through the Government. In 1998, the Government of Guatemala had to fight off an initiative of the parliamentary opposition to divert the dedicated fuel tax to education. Since taxes form part of the general budget, governments and legislators often consider them to be resources that can be easily reassigned for other purposes. This situation changes if road user charges are legally defined as user fees. In addition, if proceeds are channelled through the Government, there is always a danger that funds will be diverted, even if this is against the law, as happened in Costa Rica and Honduras.

(e) The creation of an autonomous road fund and the establishment of a fuel levy may require passing new laws. However, governments and parliaments are often reluctant to do so, especially close to upcoming elections. The best strategy seems to be to enact the new law(s) during the early days of a new administration, provided a broad consensus among all major stakeholders was reached during the preceding period, as was the case in Guatemala, Costa Rica and El Salvador.

As raising fuel prices are always a politically sensitive issue, increases in fuel levies should be gradual and in line with savings in vehicle operating costs gained from improved road conditions. This would also help to limit inflationary effects on economy. To ease the burden on road users at the beginning, consideration can be made to transform a portion of any existing fuel taxes into a fuel levy for road maintenance, as was the case in Guatemala. Road users often argue that they already pay enough fuel taxes and that the government should dedicate at least a portion of those taxes to road maintenance on a permanent basis.

Whether the road maintenance funds that had been established or are in the process of being established in Latin America will survive in the long run remains to be seen. The more a road maintenance fund follows the principles that help to make it sustainable, the greater the chances of its survival. But the funds are also very much dependent on the environment in which they operate. The political, economic and social stability of a country, as well as a well-established culture of citizen participation in public policy are essential for their long-term survival. It is the operating environment in many countries in Latin America that seems to pose the greatest challenge to existing and future road maintenance funds.

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Annexure–7

Statement Showing Maintenance Funds Required/Received and Expenditure incurred under PMGSY (Upto March.16)

(Rs. in Crore)

State (S)	Financial Year	Amount of Maintenance Funds Required (As Per Contracts)	Amount Actually Credited in SRRDA Account	Amount Spent by SRRDA	Amount Spent as a % of Amount Credited	Amount Spent as a % of Amount Required
ANDHRA PRADESH	2012-13	27.91	48.68	12.96	27%	46%
	2013-14	31.41	0.00	17.19	#DIV/0!	55%
	2014-15	16.34	16.34	10.18	62%	62%
	2015-16	**8.32**	**20.29**	**5.96**	**29%**	**72%**
	Total	**83.98**	**85.31**	**46.29**	**54%**	**55%**
ARUNACHAL PRADESH	2012-13	3.61	2.50	6.92	277%	192%
	2013-14	5.38	5.00	18.84	377%	350%
	2014-15	15.00	15.00	15.00	100%	100%
	2015-16	**10.00**	**10.00**	**11.01**	**110%**	**110%**
	Total	**33.99**	**32.50**	**51.77**	**159%**	**152%**
ASSAM	2012-13	18.00	18.00	9.66	54%	54%
	2013-14	22.00	18.72	11.07	59%	50%
	2014-15	25.00	25.00	14.09	56%	56%
	2015-16	**30.00**	**0.00**	**21.65**	**#DIV/0!**	**72%**
	Total	**95.00**	**61.72**	**56.47**	**91%**	**59%**
BIHAR	2012-13	83.61	56.25	91.60	163%	110%
	2013-14	121.23	136.00	102.92	76%	85%
	2014-15	160.24	0.00	68.47	#DIV/0!	43%
	2015-16	**164.88**	**298.11**	**91.42**	**31%**	**55%**
	Total	**529.96**	**490.36**	**354.41**	**72%**	**67%**
CHHATTISGARH	2012-13	30.01	30.01	20.30	68%	68%
	2013-14	25.36	25.36	24.56	97%	97%
	2014-15	20.29	20.29	15.74	78%	78%
	2015-16	**19.56**	**19.56**	**19.56**	**100%**	**100%**
	Total	**95.22**	**95.22**	**80.16**	**84%**	**84%**
GUJARAT	2012-13	8.61	22.62	18.45	82%	214%
	2013-14	11.82	24.00	11.41	48%	97%
	2014-15	16.52	26.40	8.33	32%	50%
	2015-16	**16.52**	**26.40**	**10.40**	**39%**	**63%**
	Total	**53.47**	**99.42**	**48.59**	**49%**	**91%**

State (S)	Financial Year	Amount of Maintenance Funds Required (As Per Contracts)	Amount Actually Credited in SRRDA Account	Amount Spent by SRRDA	Amount Spent as a % of Amount Credited	Amount Spent as a % of Amount Required
HARYANA	2012-13	3.94	0.00	1.86	#DIV/0!	47%
	2013-14	4.50	0.00	7.45	#DIV/0!	166%
	2014-15	4.00	5.00	3.53	71%	88%
	2015-16	**4.00**	**5.31**	**2.06**	**39%**	**52%**
	Total	**16.44**	**10.31**	**14.90**	**145%**	**91%**
HIMACHAL PRADESH	2012-13	41.92	41.92	19.60	47%	47%
	2013-14	47.09	23.54	26.49	113%	56%
	2014-15	2.05	2.05	2.05	100%	100%
	2015-16	**3.50**	**3.50**	**3.50**	**100%**	**100%**
	Total	**94.56**	**71.01**	**51.64**	**73%**	**55%**
JAMMU & KASHMIR	2012-13	9.49	4.00	0.09	2%	1%
	2013-14	8.38	5.00	1.43	29%	17%
	2014-15	5.47	0.00	1.50	#DIV/0!	27%
	2015-16	**7.09**	**1.18**	**1.42**	**121%**	**20%**
	Total	**30.43**	**10.18**	**4.44**	**44%**	**15%**
JHARKHAND	2012-13	20.58	52.00	0.96	2%	5%
	2013-14	25.13	0.00	3.97	#DIV/0!	16%
	2014-15	31.48	60.00	7.67	13%	24%
	2015-16	**29.63**	**0.00**	**8.74**	**#DIV/0!**	**29%**
	Total	**106.82**	**112.00**	**21.34**	**19%**	**20%**
KARNATAKA	2012-13	28.23	0.00	26.30	#DIV/0!	93%
	2013-14	35.74	35.74	24.00	67%	67%
	2014-15	28.26	39.00	28.44	73%	101%
	2015-16	**24.48**	**25.00**	**22.06**	**88%**	**90%**
	Total	**116.71**	**99.74**	**100.80**	**101%**	**86%**
KERALA	2012-13	8.50	13.18	4.04	31%	48%
	2013-14	10.89	10.88	10.95	101%	101%
	2014-15	8.15	8.15	10.04	123%	123%
	2015-16	**43.44**	**43.09**	**37.44**	**87%**	**86%**
	Total	**70.98**	**75.30**	**62.47**	**83%**	**88%**
MADHYA PRADESH	2012-13	58.32	60.00	52.10	87%	89%
	2013-14	60.37	60.00	51.46	86%	85%
	2014-15	66.08	60.00	55.90	93%	85%
	2015-16	**52.03**	**60.00**	**44.14**	**74%**	**85%**
	Total	**236.8**	**240.00**	**203.6**	**85%**	**86%**

State (S)	Financial Year	Amount of Maintenance Funds Required (As Per Contracts)	Amount Actually Credited in SRRDA Account	Amount Spent by SRRDA	Amount Spent as a % of Amount Credited	Amount Spent as a % of Amount Required
MAHARASHTRA	2012-13	33.40	33.40	33.40	100%	100%
	2013-14	31.02	30.95	30.95	100%	100%
	2014-15	29.35	29.35	29.35	100%	100%
	2015-16	**32.42**	**32.42**	**32.42**	**100%**	**100%**
	Total	**126.19**	**126.12**	**126.12**	**100%**	**100%**
MANIPUR	2012-13	2.07	5.00	1.16	23%	56%
	2013-14	3.78	4.00	6.21	155%	164%
	2014-15	5.43	6.64	6.95	105%	128%
	2015-16	**6.60**	**9.60**	**9.60**	**100%**	**145%**
	Total	**17.88**	**25.24**	**23.92**	**95%**	**134%**
MEGHALAYA	2012-13	0.60	0.60	0.60	100%	100%
	2013-14	0.58	0.58	0.58	100%	100%
	2014-15	0.33	0.33	0.20	61%	61%
	2015-16	**0.35**	**0.35**	**0.18**	**51%**	**51%**
	Total	**1.86**	**1.86**	**1.56**	**84%**	**84%**
MIZORAM	2012-13	0.28	0.41	0.35	85%	125%
	2013-14	0.32	0.32	0.06	19%	19%
	2014-15	0.42	0.42	0.55	131%	131%
	2015-16	**0.52**	**0.52**	**0.16**	**31%**	**31%**
	Total	**1.54**	**1.67**	**1.12**	**67%**	**73%**
NAGALAND	2012-13	2.50	2.50	2.50	100%	100%
	2013-14	3.00	2.40	2.40	100%	80%
	2014-15	3.00	2.59	2.40	93%	80%
	2015-16	**3.00**	**3.39**	**1.70**	**50%**	**57%**
	Total	**11.50**	**10.88**	**9.00**	**83%**	**78%**
ODISHA	2012-13	40.00	40.00	35.48	89%	89%
	2013-14	59.61	41.40	37.15	90%	62%
	2014-15	67.77	48.00	23.68	49%	35%
	2015-16	**56.79**	**53.00**	**50.47**	**95%**	**89%**
	Total	**224.17**	**182.40**	**146.78**	**80%**	**65%**
PUNJAB	2012-13	9.02	9.02	7.73	86%	86%
	2013-14	7.41	3.85	5.99	156%	81%
	2014-15	7.64	8.26	7.81	95%	102%
	2015-16	**8.00**	**1.30**	**5.21**	**401%**	**65%**
	Total	**32.07**	**22.43**	**26.74**	**119%**	**83%**

State (S)	Financial Year	Amount of Maintenance Funds Required (As Per Contracts)	Amount Actually Credited in SRRDA Account	Amount Spent by SRRDA	Amount Spent as a % of Amount Credited	Amount Spent as a % of Amount Required
RAJASHTHAN	2012-13	35.85	35.85	40.61	113%	113%
	2013-14	25.62	25.62	21.28	83%	83%
	2014-15	25.88	25.88	19.21	74%	74%
	2015-16	**46.70**	**23.35**	**20.13**	**86%**	**43%**
	Total	**134.05**	**110.70**	**101.23**	**91%**	**76%**
SIKKIM	2012-13	5.89	5.89	5.05	86%	86%
	2013-14	7.07	7.07	6.96	98%	98%
	2014-15	8.25	8.21	7.79	95%	94%
	2015-16	**9.01**	**3.00**	**6.80**	**227%**	**75%**
	Total	**30.22**	**24.17**	**26.60**	**110%**	**88%**
TAMIL NADU	2012-13	8.75	8.44	8.00	95%	91%
	2013-14	9.79	9.79	7.23	74%	74%
	2014-15	10.77	10.77	7.24	67%	67%
	2015-16	**15.48**	**11.39**	**9.41**	**83%**	**61%**
	Total	**44.79**	**40.39**	**31.88**	**79%**	**71%**
TELANGANA	2014-15	12.38	6.42	5.46	85%	44%
	2015-16	**5.71**	**0.00**	**0.96**	**#DIV/0!**	**17%**
	Total	**18.09**	**6.42**	**6.42**	**100%**	**35%**
TRIPURA	2012-13	12.63	10.78	4.35	40%	34%
	2013-14	18.80	20.00	8.28	41%	44%
	2014-15	18.58	20.00	14.17	71%	76%
	2015-16	**17.17**	**17.17**	**10.31**	**60%**	**60%**
	Total	**67.18**	**67.95**	**37.11**	**55%**	**55%**
UTTAR PRADESH	2012-13	64.45	40.00	46.23	116%	72%
	2013-14	91.12	76.67	80.24	105%	88%
	2014-15	94.66	76.67	96.71	126%	102%
	2015-16	**71.19**	**76.67**	**72.87**	**95%**	**102%**
	Total	**321.42**	**270.01**	**296.05**	**110%**	**92%**
UTTARAKHAND	2012-13	9.86	7.42	7.42	100%	75%
	2013-14	12.18	16.00	16.00	100%	131%
	2014-15	18.06	16.40	14.47	88%	80%
	2015-16	**12.90**	**12.90**	**12.90**	**100%**	**100%**
	Total	**53**	**52.72**	**50.79**	**96%**	**96%**
WEST BENGAL	2012-13	31.69	38.72	23.80	61%	75%
	2013-14	67.52	41.70	22.37	54%	33%
	2014-15	38.25	34.63	24.59	71%	64%
	2015-16	41.68	41.68	20.80	50%	50%
	Total	**179.14**	**156.73**	**91.56**	**58%**	**51%**

Statement showing Maintenance Funds Required/Received and Expenditure incurred under PMGSY 2016-17 (Upto Sept,16)

(Rs. in Crore)

Sl. No	State (S)	Maintenance Funds Required (As Per Contracts)	Actual Release to SRRDA	Expenditure by SRRDA During The Financial Year	% Exp. w.r.t Required	% Exp. w.r.t Releases
1	ANDHRA PRADESH	8.85	8.85	1.79	20%	20%
2	ARUNACHAL PRADESH	15.00	0.00	0.00	0%	#DIV/0!
3	ASSAM	25.00	12.50	27.43	110%	219%
4	BIHAR	180.81	180.00	42.74	24%	24%
5	CHHATTISGARH					
6	GUJARAT	21.38	0.00	9.66	45%	#DIV/0!
7	HARYANA	2.00	0.00	0.92	46%	#DIV/0!
8	HIMACHAL PRADESH					
9	JAMMU & KASHMIR	5.82	1.09	0.38	6%	35%
10	JHARKHAND	38.26	5.23	15.56	41%	298%
11	KARNATAKA	18.91	8.75	11.51	61%	132%
12	KERALA	8.44	0.00	1.16	14%	#DIV/0!
13	MADHYA PRADESH					
14	MAHARASHTRA					
15	MANIPUR	7.40	0.53	2.89	39%	545%
16	MEGHALAYA	0.94	0.94	0.14	15%	15%
17	MIZORAM	1.06	1.06	0.13	12%	12%
18	NAGALAND	3.00	0.00	0.00	0%	#DIV/0!
19	ODISHA	60.53	45.00	21.42	35%	48%
20	PUNJAB	10.00	0.00	1.68	17%	#DIV/0!
21	RAJASHTHAN	55.40	23.35	16.14	29%	69%
22	SIKKIM	9.73	3.40	2.71	28%	80%
23	TAMIL NADU					
24	TELANGANA	5.28	0.00	0.01	0%	#DIV/0!
25	TRIPURA	16.03	15.00	6.46	40%	43%
26	UTTAR PRADESH	19.32	43.13	16.45	85%	38%
27	UTTARAKHAND	15.50	4.00	4.00	26%	100%
28	WEST BENGAL	60.26	0.00	11.40	19%	#DIV/0!
	TOTAL:	**588.92**	**352.83**	**194.57**	**33%**	**55%**

Annexure–8

Assessment of Maintenance Requirements for Rural Roads

A.	**PMGSY**	**Year 2017-18**
	Total length by March 2017	520,000 km
	Maintenance requirements	
	- Routine maintenance @ Rs.40,000/km	Rs.2080 x 10^7
	- Periodic maintenance @ Rs.1.6 lakh/km	Rs.8320 x 10^7
	- Special repairs and emergency maintenance (Lump sum)	Rs.1000 x 10^7
	Total PMGSY	Rs.11,400 x 10^7
B.	**Non-PMGSY**	
(i)	Core Roads : Length	900,000 km
	Maintenance requirements	
	- Routine maintenance @ Rs.20,000/km	Rs.1800 x 10^7
	- Periodic maintenance @ Rs.1.2 lakh/km	Rs.10800 x 10^7
	- Special repairs and emergency maintenance (Lump sum)	Rs.1000 x 10^7
	Total Core Roads (Non-PMGSY)	Rs.13,600 x 10^7
(ii)	Non-core Road	
	Length	20,00,000 km
	Maintenance requirements (Lump sum) Non-core Roads	Rs.3,000 x 10^7
C.	**Broad Assessment of Funds Required: Core Roads and Non-Core Roads**	**Rs.28,000 crore**

Note: *Majority of non-core roads may require initial up gradation or rectification. Only a token provision is assumed in this assessment which is subject to check by various rural roads departments and PRIs in the states.*

Annexure–9

Estimates of Maintenance Requirements for Rural Roads

(States which have instituted State Road Fund)

The length of Core Road Network

The length of the core road network has been based on data given in Vision 2025 of MORD. These are given in Table 1 for the five states where State Road Funds have been constituted.

Table 1: Length of Core Road Network*

State	New Connectivity	Up gradation	Total
Assam	19000	13000	32000
Karnataka	2000	17000	19000
Kerala	500	3000	3500
Madhya Pradesh	60000	37000	97000
Uttar Pradesh	39000	57000	96000

* These figures are subject to verification from NRRDA.

Unit rates for Routine and Periodic Maintenance

(i) Routine Maintenance : Rs.40,000/- per km for new connectivity roads
: Rs.40,000/- per km for half the length of up gradation roads and Rs.20,000/- per km for the remaining half (average rate Rs.30,000/- per km)

(ii) Periodic maintenance : Rs. 160,000/- per km for new connectivity roads
: Rs. 160,000/- per km for half the length of up gradation roads and Rs. 120,000/- per km for the remaining half (average rate of Rs. 140,000/- per km)

Estimate of Annual Funds required for Maintenance of Core Road Network Table 2 gives an assessment of funds required.

Table 2: Funds required for Maintenance

(Rs. crore)

S. No.	State	Routine Maintenance (RM)	Periodic Maintenance (PM)	Total of RM + PM	Lump sum for special repairs and emergency works	Total
1.	Assam	115.00	486.00	601.00	60.00	661.00
2.	Karnataka	59.00	270.00	329.00	32.00	351.00
3.	Kerala	11.00	50.00	61.00	6.00	67.00
4.	Madhya Pradesh	351.00	1478.00	1829.00	182.00	2011.00
5.	Uttar Pradesh	327.00	1422.00	1749.00	175.00	1924.00

Note: *In absence of idea about total accruals to state road fund and allocation to maintenance of rural roads out of such funds, it is not possible to assess the funding gap.*

Annexure–10

Extracts from Document on Strengthening Capacity of Panchayati Raj Institutions for Managing Maintenance of Rural Roads

Rural Road Connectivity Works under the MGNREGS

The Mahatma Gandhi National Rural Employment Guarantee Act being implemented since February 2006 as a right-based, demand-driven and self-selecting scheme marks a paradigm shift in India's efforts to create employment opportunities in rural areas. Its basic aim is to enhance livelihood security by guaranteeing rural households not less than 100 days of paid employment per financial year provided the adult members volunteer to do unskilled manual work. Its other goals also have potentially far reaching social and economic ramifications besides serving as an instrument for strengthening of the Panchayati Raj Institutions. The core objectives of the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) are:

(a) Providing not less than one hundred days of unskilled manual work as a guaranteed employment to every household in rural areas as per demand, resulting in creation of productive assets of prescribed quality and durability.

(b) Strengthening the livelihood resource base of the poor

(c) Proactively ensuring social inclusion

(d) Strengthening Panchayati Raj Institutions

During the period 2006-2015, the works taken up under the MGNREGS have generated over 18 billion person-days of work at a total expenditure of Rs.2812 billion. The share of SC/ST families has been 50-55 percent. About 40-45 percent of workers have been women. Major expenditure under the MGNREGS has been on water conservation and water related works (about 50 percent) and rural road connectivity (about 30 percent). This reflects the felt need for roads by the Gram Panchayats and Panchayat Samities. Under this scheme, the PRIs have been undertaking works on internal village roads and some non-core rural roads such as footpaths, footbridges, earth work and gravelling or metalling thereafter.

In some cases, drains and pipe culverts have also been provided. The roads are passable by light vehicles. However, instances are not lacking where compromises during execution were made on quality of assets, especially as regards to compaction and provision of camber and adequate drainage works. If the earthworks are not compacted properly to the specified standards, it leads to avoidable extra cost when such roads are taken up for further development through stage construction by line departments. There is perhaps a need to make a detailed assessment of the extent to which such inadequacies exist on the roads constructed under this programme as these would constitute a sizeable network of local access roads. It may also be pointed out that on some of these roads, further improvement works have been executed out of funds made available from other centrally sponsored and state government schemes such as the Backward Region Grant Fund, MP/MLA Local Area Development Funds, State Finance Commission funds and Decentralised Planning allocations. Correct and quality construction of local roads under such programmes is equally important.

The list of permissible works has recently been reviewed and expanded (Refer MORD Notification dated 3rd January 2014) in response to demands of the states for greater location-specific flexibility. Schedule I of MGNREGA has accordingly been modified. For road connectivity, the following works are relevant:

I. Category A: Public Works relating to National Resources Management

   (v) Tree plantation and horticulture in road margins with right to usufruct to the households

IV Category D: Rural Infrastructure

   (ii) Providing all-weather rural road connectivity to unconnected villages and to connect identified rural production centres to the existing pucca road network; and construction of pucca internal roads or streets including side drains and culverts within a village

   (iv) Works for improving disaster preparedness or restoration of roads

   (viii) Maintenance of rural public assets created under the Act

   (ix) Any other work which may be notified by the Central Government in consultation with the state government in this regard.

The scheme also expects the state government to take concrete steps to achieve effective inter-departmental convergence with other programmes so as to improve the quality and productivity of assets and also to ensure that before starting new works, the ongoing or incomplete works are completed first.

This scheme also stipulates that the state government shall ensure deployment of adequate technical personnel to complete the work within the stipulated period. Suitable persons from the families of workers may be trained or skilled and deployed as barefoot technicians with appropriate delegation of technical powers and paid wages as skilled workers. The MORD in its circular dated 2.1.2015 issued guidelines to the states for identification, training, equipping and payment to the barefoot technicians. The Ministry proposes to train them with support of the ILO (Annex 14).

Other conditions of work include:

(i) Link the wages, without any gender bias, with the quantity of work done and to be paid according to the rural schedule of rates fixed after time and motion studies for different types of work and different seasons and revised periodically.

(ii) A separate Schedule of Rates (SOR) to be finalised for women, the elderly, people with disabilities and people with debilitating ailments so as to improve their participation through productive work.

(iii) The SOR of wages for various unskilled labourer's to be fixed in a manner so that an adult person having worked for eight hours, which include an hour of rest, will earn a wage which is equal to the stipulated wage rate.

(iv) The working hours of an adult worker shall be flexible but shall not spread over more than twelve hours on any day.

(v) Payment shall be made based on the measurements taken at the work site by the authorized personnel within three days of closure of the muster roll (system of e-Muster introduced).

The scheme also expects the State Government to take steps to organize, either through its own machinery or working with Civil Society Organisations (CSO), the workers into formal groups/ labour cooperatives to improve their participation in implementation and to ensure provision of entitlements under the Act.

There is to be a Capacity Building Plan, Informal Education Communication Plan and a plan for strengthening Panchayats as part of the Scheme.

It will be seen from the list of permissible road connectivity works given in para 7.3 earlier that maintenance of those rural roads which have been or are being constructed under the MGNREGS can be taken up out of funds available under the programme. Routine maintenance of rural roads has a high labour content and low material content. It is, therefore, proposed that as an immediate step, routine maintenance of all such roads as have been constructed or are being constructed under the MGNREGS may be got ensured from the Gram Panchayats as part of the MGNREGS. It is possible that some of the rural roads constructed earlier under the Scheme may require some rectification works before making them maintainable. Such works may be taken up by the states after proper assessment and identification of suitable rectification measures.

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