Rural Roads and Bharat Nirman

Rural infrastructure development is high on Government’s priority, as evidenced from the President’s Address to Parliament on 25th February 2005, when he spoke of ‘Bharat Nirman’ as a business plan for rebuilding rural India. This theme was further elaborated by the Finance Minister in his Budget Speech to Parliament on 28th February 2005, when he identified the six components of Bharat Nirman: drinking water, minor irrigation, rural housing, rural roads, communications and rural electrification. In so far as rural roads is concerned, Bharat Nirman goals envisage providing connectivity to all habitations of 1000 and above and 500 and above in the case of Hill States. This is a restatement of the original PMGSY goals announced in 5th August 2000, which could not be met by the original target year of 2003 due to funding constraints. The ‘business plan’ mentioned in the context of Bharat Nirman is expected to concentrate on finding ways and means of meeting the funding gap.

It is estimated that about Rs. 48,000 crore would be required to meet Bharat Nirman goals, as given below:-

<table>
<thead>
<tr>
<th>Upto</th>
<th>Bharat Nirman (Phase II) 2004-10</th>
<th>Phase I-B up to 11 Plan</th>
<th>Phase II beyond 11 Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC 1000+</td>
<td>21551</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>NC to balance habitations of 500+</td>
<td>10672*</td>
<td>NA</td>
<td>11678</td>
</tr>
<tr>
<td>NC 250+ habitations</td>
<td>NA</td>
<td>NA</td>
<td>10942*</td>
</tr>
<tr>
<td>CN Modernisation</td>
<td>13000</td>
<td>13006</td>
<td>30392</td>
</tr>
<tr>
<td>i) Capacity Development &amp; Q M</td>
<td>2013</td>
<td>1543</td>
<td>2750</td>
</tr>
<tr>
<td>Total</td>
<td>12611</td>
<td>14534</td>
<td>57762</td>
</tr>
</tbody>
</table>

(i) NC, New Connectivity, CN, Core network (NC  New Connectivity, CN Core Network) * Hill & NE States, Desert & Tribal areas only

Taking into account the funds in sight on account of the accruals of cess on HS Diesel (@ Rs. 1.50/litre) and through ADB / World Bank loans already in the pipeline, a net funding gap of Rs. 17,835 crore needs to be met if Bharat Nirman goals are to be met, as given below:-

<table>
<thead>
<tr>
<th>9th Plan 1997-2002</th>
<th>10th Plan 2002-07</th>
<th>11th Plan up to 2009-10</th>
<th>Remaining years (2010-12)</th>
<th>Total (Rs. in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>cess</td>
<td>14562</td>
<td>12183</td>
<td>8280</td>
<td>31762</td>
</tr>
<tr>
<td>WB/ADB</td>
<td>2058</td>
<td>820</td>
<td>7024</td>
<td>10250</td>
</tr>
<tr>
<td>Funding gap</td>
<td>5000</td>
<td>16632</td>
<td>20380</td>
<td>8280</td>
</tr>
</tbody>
</table>

(Peoples Rs. 12111 crore for projects upto 2003-04 and Rs. 47236 crore for 2004-05)

Government had set up a National Committee on Rural Infrastructure on 21.10.2003 under the chairmanship of the Prime Minister, with Ministers of Agriculture, Rural Development, Water Resources, Panchayati Raj, Communications & IT, Non-Conventional Energy Sources and Deputy Chairman of the Planning Commission as members, with the objective of improving rural Infrastructure in a time-bound manner through initiating policies, effecting internal prioritisation and developing innovative financing arrangements. This Committee is likely to drive the Bharat Nirman process, in the context of rural roads. It has, over the last 4 years, as a result of the PMGSY, policies in place, management systems have been built up and the programme is rapidly off the ground. The programme is primarily one of finding additional financial resources.

It is likely that the strategy for meeting the funding gap will include substantial external funding through ADB and World Bank, both of whom already have ongoing projects under PMGSY covering 9 major States. Minpan and Chargai in ADB (15-20 cm), Rajasthan, Haryana, HP and U & WB (1339.5 m), and Assam, Orissa and West Bengal in ADB II under negotiation, tentatively 5-00 cm. It is expected that additional funding under Bharat Nirman would be required for some of these States, primarily for Haryana, HP, MP, Madhya Pradesh, Orissa and west Bengal, as well as for Bihar, Uttaranchal and J & K.

To meet the developmental aspirations of other States who will be primarily dependent on the diesel cess for funding upgradation/renovation, an appraisal is on the way and to amend the Central Road Fund Act in order to enable these States to leverage their share of this, state borrow funds in the domestic capital market. This is likely to subserve the National Common Minimum Programme objective which speaks of ‘modernising’ as well as ‘augmenting’ rural infrastructure including roads.

Editor

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A Geographical Information System for PMGSY

A geographical system has been established on-line Monitoring and Management System (OMMAS) to effectively monitor and manage various activities under PMGSY. The OMMAS was developed with the assistance of the Centre for Advanced Computing, Pune (C- DAC). The system can be accessed through internet (www.pmgsyonline.nic.in). The database for the system is established at various District Project Implementation Units in each state and is being updated regularly. The database includes information on connectivity status of habitations, District Rural Road Network, Core Network, proposals made for each batch of works, contractors’ details, financial and physical progress, quality monitoring, bends, Condition Index etc.

The NRRDA has decided to take lead further to consolidate and expand these efforts by establishing a comprehensive spatial database for the rural roads. This will be done by establishing a computerized database at state level for management of various construction and maintenance programs, adequately modifying the database of OMMAS, and linking these to a Geographical Information System. The system will provide a higher level of monitoring, rational decision-making, for PMGSY as well as for various rural roads programmes for construction and maintenance of rural roads to be implemented by various rural roads organizations. A project has been taken up with the states of Rajasthan and HImachal Pradesh on a pilot scale covering three districts. Subsequently, NRRDA plans to scale-up the system to other districts/states based on the experiences gained from the pilot.

The system has to meet the requirements of PMGSY as well as other rural roads programs being implemented in the states. The GIS interface is to be developed as

- Stand alone for the use of PIUs at their office to perform various analyses and produce management reports for their day-to-day use
- Web-based for use in public domain as a seamless extension of OMMAS

The main goal of the pilot project is to develop and make operational a computerized spatial database for rural roads in GIS format, for effective management of PMGSY and various state level programmes from construction, improvement, and maintenance of rural roads in the states of Rajasthan and Himachal Pradesh. In future it is envisaged that the GIS would enable better planning of other infrastructure projects which can be taken up in a road-centric manner, as connectivity would provide greater synergy. It is envisaged that with time, better location planning of socio-economic rural services would be enabled with the use of a rural road GIS.

The main source of the spatial data would be Survey of India maps at 1:50,000 or larger scale, and block maps already prepared by various states showing the DRPM’s core rural roads network and other roads/paths, and maps available with the OMMAS agencies showing roads of different categories and location of the quarries for road building materials. The spatial data-base will include not be limited to administrative boundaries at the state, district, and block level, (ii) forest boundaries and major land use, (iii) all habitations, towns and cities, (iv) all roads including national highways, state highways, major district roads, rural roads (PMGSY and non-PMGSY), tracks and paths as available from the Survey of India or other maps, (v) rivers and major streams, (vi) bridges, culverts, and other drainage structures on the rural roads, and (vii) location of the quarries for road building materials.

The spatial and attribute data shall be linked with the OMMAS in order that the spectrum of information available on-line could be mapped spatially for a seamless graphic output which could be easily assimilated. The integrated system would enable inter-alia:

- Linking OMMAS data with maps
- Addressing basic and advanced spatial queries
- Generating overlays and text reports based on the queries
- Answer queries on Master data
- Monitoring physical and financial progress
- Generating reports on quality aspects
- Generating road status reports
- Querying on habitation connectivity
- Updating spatial and non-spatial database
- Generating road condition reports
- Reviewing maintenance aspects and maintenance plans
- Generating management reports as required by NRRDA and the states

A conscious decision was made to close-couple OMMAS GIS and GIS as this would ensure sustainability of the spatial database. Oten GIS systems fall into disuse due to obsolete associated databases. OMMAS is to be updated mandatorily and thus the spatial data would also automatically display the latest information. The web-based GIS system would carry forward the transparency of the Programme by dissemination of information relating to programme status in spatial format, which would be user-friendly and usable by persons without detailed knowledge of GIS.

The project has been taken up under Technical Assistance Programme of the World Bank and is expected to be completed by December 2005.

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