Roads and Road Transport

9.45 In the last 30 years, roads have grown in prominence as a mechanism for moving goods and people in the country. This has partly reflected the greater innate flexibility of road transportation. However, it has also reflected the difficulties of the Indian railways. India has an extensive road network of more than 3.3 million km. making it one of the largest in the world. The road network comprises of national highways, state highways, district roads, rural roads, and special purpose roads (for military, ports etc). National Highways are the prime arterial routes span about 58,112 km. throughout the country and cater to about 45 percent of the total road transport demand.

9.46 Road construction is capital intensive. Current estimates suggest that the cost of a four-lane highway works out to roughly Rs.4.5 crore per kilometre, and the cost of a protected access, six-lane expressway works out to roughly Rs.8.5 crore per kilometre. As of today, the experiences with tolling suggest that there is limited scope for obtaining user charges through tolls. This raised difficult questions about how road construction would be financed. A key innovation in recent years was the creation of a major new source of funding for national, state and rural roads: the Central Road Fund (CRF), created under the Central Road Fund Act, 2000 (Box 9.8). This was a major milestone in obtaining user charges to fund road construction.

9.47 This was the financial foundation of an important project, the National Highway Development Project (NHDP), which entails expansion of the existing two-lane highways to four/six-lanes and strengthening of existing lanes on nearly 13,000 km. The overall project is one of the largest single highway projects in the world.

9.48 The project comprises of about 5,846 km Golden Quadrilateral (GQ), connecting the four metros of Delhi, Mumbai, Chennai and Kolkata, and about 7,300 km. long North-South, and East-West corridors connecting Srinagar-Kanyakumari and Silichar-Porbander. The National Highways Authority of India (NHAI), is the implementing agency for the project. Phase I of the NHDP, consisting of the GQ, commenced in December 2000, and is scheduled for substantial completion by end 2003.

9.49 The financing of NHDP is based on funds from the Central Road Fund (CRF), multilateral financing agencies like World Bank, Asian Development Bank (ADB) and Japan Bank for International Cooperation (JBIC), market borrowing and private sector contribution. The NHDP is to cost Rs. 54,000 crore, at 1999 prices of which Rs. 30,300 crore will be spent on GQ project (NHDP Phase-1). This phase of the project will be funded through cess/market borrowing (55.6 percent), external assistance (26 percent), NHAI SPVs (6.3 percent), and Annuity and Toll charges (12 percent) (Figure 9.1).

Box 9.8 : Central Road Fund

- Additional excise duty of Rs. 1 per litre on petrol levied since September 2, 1998 and Rs. 1 per litre on High Speed Diesel (HSD) levied since March, 1999 accrue to the Central Road Fund (CRF) created under the Central Road Fund Act, 2000. An amount of Rs.6,030 crore is expected to be collected during 2002-03 under the CRF.
- The allocation of cess among various categories is:
  - 50 percent of cess on HSD for development of rural roads,
  - out of the remaining 50 percent of HSD cess plus 100 percent of petrol cess,
    - (a) 57.5 percent will be utilized for development and maintenance of national highways.
    - (b) 12.5 percent for road bridges, under/over railway lines /safety work for unmanned railway crossings.
    - (c) 30 percent for development and maintenance of state roads other than rural roads.

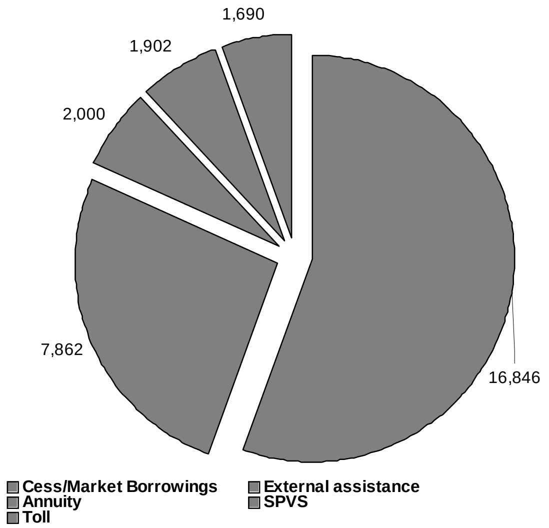
9.50 In terms of implementation, innovative contractual agreements are being explored, involving methods such as annuities. Under the annuity method of financing the developer is paid the annuity over the concession period after an independent engineer certifies that quality of service available to the road users is in accordance with the concession agreement. This is an attractive mechanism for contracting, for two reasons. First, the annuity contract aligns the incentives of the developer to build and maintain the road well, so as to be able to earn revenues from tolls. Further, when there are many candidate routes on which new roads can be built, the annuity model allows a market-driven allocative mechanism. An open auction could be conducted where developers submit bids to the government, specifing the annuity that they would require to build a certain stretch. Using this auction, scarce public resources could be directed to the roads which require the least annuities.

9.51 So far, the focus of financing in NHAI has been the road cess. However, user charges through levying of tolls on roads could be an effective means of supplementing funds, particularly in the future. The Working Group on Roads for Tenth-Five Year Plan has estimated that the toll potential for GQ from 2004 is Rs 3,700 crore per annum, and that of the North-South, East-West corridors is Rs 4,500 crore per annum. In this context, the resistance from users can be minimised if there is a saving in terms of time and fuel and toll tax collection machinery is efficient, so that long queues can be avoided.

9.52 As on November 30, 2002 over 20 projects costing around Rs.6,822 crore have already been taken under BOT Scheme (Toll Based, Annuity and SPVs). This includes an agreement between NHAI and Construction Industry Development Board (CIDB) Inventure, Malaysia signed in May, 2001 for four-laning of NHs 5 and NH 9 (147 km) for Rs.740 crore. In addition 8 projects of 4-laning costing Rs.2,354 crore have also been awarded by NHAI on annuity concept.

9.53 Control of National Highways (Land and Traffic) Bill, 2002 has been passed in Parliament recently and notified. The Bill aims in preventing unauthorized occupation of highway land, it seeks to control access points to National Highways and regulate traffic on them, and establishment of Highway Administrations to enforce the law and setting up tribunals to hear appeals against their orders.

Fig. 9.1 **Funding arrangements for NHDP-1 (Total cost : Rs. 30,300 crores)**



Box 9.9 : Progress of the National Highways Development Project

- The implementation of NHDP is progressing as per schedule. The GQ Project connecting the metropolitan cities, is making a steady progress. Approximately 1,218 Km of highway have already been four laned and 4,492 km are under implementation to be substantially completed by December 2003. Similarly, on the North-South and East-West corridors, 817 km length have already been 4-laned and 671 kms length is under implementation.
- At present, NHAI is operating 130 civil works related contracts for both GQ and North-South & East-West Projects. Out of these, 84 are with domestic contractors, 11 with foreign contractors and 35 are with joint ventures between India and foreign companies. The total value of these contracts is approximately Rs.25,000 crore. NHAI has grown dramatically from near-zero expenditures in 1999-2000 to roughly Rs.10,000 crore per year today.
- Extra-budgetary infusion of funds in the form of market borrowings is expected to be around Rs.13,800 crore for NHDP Phase-I, out of which, NHAI has already borrowed/tied up around Rs.8,447.31 crore up to November 2002. The balance amount is expected to be borrowed in the next two financial years. Works on BOT projects worth Rs.2,670 crore are in progress. Some of the big BOT projects are Tada-Nellore (Rs.740 crore), Second Vivekananda Bridge (Rs.600 crore), and Delhi-Gurgaon (Rs.555 crore). In addition, NHAI has set up its own Special Purpose Vehicles (SPVs) to commercialise and leverage the financial structure to the extent possible. In these projects like port connectivity projects, Ahmedabad – Vadodra Expressway and Moradabad bypass, NHAI is putting in equity, which is 30-40 percent of the project cost. The balance is raised from the market to be repaid through tolls. The total borrowing being achieved by NHAI on account of these SPVs is going to be around Rs.2000 crore approximately. As part of the market borrowing programme, NHAI has also used the annuity method in eight projects (Rajahmundry-Dharamvaram,Dharamvaram-Tuni,Tuni-Ankapalli, Tambaram-Tindivanam, Panagarh-Palsit, Palsit-Dhankuni, Nellore Bypass and Maharashtra Border-Belgaum). Here, construction and maintenance are combined under single contract and bids are invited on the basis of annuity or periodic payments by NHAI to the concessionaire. Funds for construction are to be arranged by the concessionaire and all NHAI payouts (due only after construction) will be made upon road quality certification by an independent consultant. NHAI has also tied up loans amounting to approximately Rs.8000 crore (US$1.6 billion) from the multilateral agencies like, the World Bank, the ADB, the Japan Bank for International Corporation for NHDP Phase I.