

# Transport and Communications

Transport and Communications are vital elements of infrastructure and key elements not only for global competitiveness, but also for creating an integrated national market. High transactions costs arising from an inefficient transport sector and poor communications can prevent the economy from realizing its full growth potential regardless of progress on other fronts. Telecommunications and Information & Communication Technology are also vital for connectivity. The Tenth Plan had emphasized the importance of all these sectors. The strategy for developing each of these sectors will necessarily have to be differentiated on the basis of sector specific circumstances. In general in view of fiscal constraints the strategy for each sector was expected to leverage private participation as much as possible.

## TRANSPORT

9.1.1 Improvement in the quality of transport infrastructure is an essential pre-requisite for high economic growth. The Tenth Five-Year Plan, therefore, seeks to ensure the growth of the transport sector in a manner that all regions of the country can participate in the process of economic development, paying special attention to integrating remote regions into the economic mainstream. Other focus areas are: augmenting the capacity, quality and productivity of the transport infrastructure and services through technology upgradation and modernisation; overcoming the problem of resource constraints through higher generation of internal resources and increased participation by the private sector; improving overall economic efficiency by bringing in competition into the sector; higher emphasis on safety, energy efficiency, environmental conservation and social impact; and developing an optimal inter-modal mix,

where each mode of transport not only leverages its comparative advantage and operates efficiently but also complements the services provided by the other modes.

9.1.2 The transport sector presents a mixed bag of achievements in the first three years of the Tenth Plan. The growth of rail and port traffic in the first three years, for example, indicate that the Plan targets are likely to be achieved or even exceeded in some cases. The Railways has recorded some improvement in financial performance, but the generation of internal and extra budgetary resources (IEBR) is not in line with the Plan targets. In the case of the roads sector, the four-laning and six-laning of the Golden Quadrilateral (GQ) has been behind schedule, but work relating to strengthening of weak pavements and improving the riding quality of roads has been ahead of target.

9.1.3 Annexure 9.1.1 provides details of the Tenth Plan outlay and expenditure on various sub-sectors in the first three years of the Plan period and the budget estimates in the Union Budget for 2005-06.

## RAILWAYS

9.1.4 The Tenth Plan identified certain thrust areas in the railways sector. These are: capacity expansion through modernisation and technological upgradation, improvement in the quality of service, rationalisation of tariff in order to improve the share of rail freight in the total traffic and to improve the safety and reliability of rail services. While the Railways have been able to achieve the targets for freight movement in the first three years, there are questions about the pace at which the

modernisation programme is proceeding and the progress regarding tariff rationalisation has also been very limited. A comparison with Chinese Railways indicate some interesting differences ( Box 9.1.1)

## PROGRESS IN THE TENTH PLAN

### PHYSICAL TARGETS

9.1.5 The Tenth Plan had targeted a relative low growth rate of 5 per cent in freight. The average annual growth rate of freight (originating tonnage) in the first three years of the Tenth Plan is likely to be 6.8 per cent. This is commendable and it is necessary to continue to maintain this growth rate in future and ideally also step it up in view of the need for increasing the share of Railways in freight traffic and ensuring a cost-efficient mode of transport, which will benefit the economy in the long run. This will require augmenting capacity, particularly on the main routes which are currently over-stretched. The rate of growth of passenger traffic (in terms of number of passengers) is only around 2.02 per cent, against 4.93 per cent in case of passenger kms,

indicating an increase in the average lead of passenger traffic, is a welcome development on the whole. It is expected that the Railways will be able to achieve its targets for passenger traffic of Tenth Plan.

9.1.6 The physical targets for various capacity indicators during the Tenth Plan and achievements in the first two years and projections for the third year are detailed in Annexure 9.1.2. The Railways is behind schedule in achieving targets, set for the first three years of the Plan, in respect of new lines, doubling and acquisition of Electrical Multiple Unit (EMU) coaches. Problems relating to land acquisition, environmental/ forest clearances, among several others, are the major reasons for the slow progress in case of new lines and doubling. The shortfalls in wagon procurement are mainly the result of lower production by the wagon Industry.

### FINANCIAL PERFORMANCE

9.1.7 The approved outlay for the Railways in the Tenth Plan is Rs.60,600 crore. Of this,

#### Box 9.1.1

#### Comparative assessment of Indian Railways and Chinese Railways

- In the early 1990s, the Indian Railways was bigger in terms of total route km, as well as route km/sq.km.
- In the period 1992 - 2002, the Chinese Railways extended its route km by 13,797 km (24 per cent), double track by 9,400 km and electrified track by 8,975 km.
- During the same period, the Indian Railways network grew by only 682 route km. (1 per cent), double track by 1519 km and electrified track by 5,192 km.
- Investment outlays for the Indian Railways over the 1992-2002 decade totalled \$17.3 billion, in contrast to \$85 billion in the case of the Chinese Railways.
- While the two networks are roughly comparable in size, the Chinese Railways' output in traffic units (TU = pkm+tkm) is 2.5 times that of Indian Railways.
- Between 1992 and 2002, the two railways carried almost exactly the same volume of passenger-km, but the Chinese Railways carried four and half times the freight tkm carried by Indian Railways.
- Average employee output on Chinese Railways is 2.1 times that of Indian Railways. Staff costs (excluding pensions) for Indian Railways is about 40 per cent while it is just 25 per cent of ordinary working expenses in the case of Chinese Railways.
- The average passenger tariff in India is 55 per cent lower than in China.
- The average freight tariff in India is almost 66 per cent higher than in China.

gross budgetary support (GBS) accounts for Rs.27,600 crore (46 per cent) and IEBR for Rs.33,000 crore (54 per cent). There has been a trend of increasing reliance on GBS and a declining contribution of IEBR since the Ninth Plan and this appears to have continued in the Tenth Plan. The Railways was provided with about 70 per cent of total Tenth Plan GBS in the first three years of the Plan period, the contribution of IEBR was only 55 per cent of total Tenth Plan IEBR.

9.1.8 The requirement of funds during the remaining two years of the Tenth Plan has been estimated at Rs.39,765 crore. Since the current level of GBS of about Rs.7,231 crore can be raised only marginally because of fiscal constraints, mobilisation of additional resources through various other measures is unavoidable.

#### NATIONAL RAIL VIKAS YOJANA

9.1.9 The Government announced the National Rail Vikas Yojana (NRVY) in August, 2002 in order to remove capacity bottlenecks in the critical sections of the Indian Railway Network. It comprises of three components:

- Strengthening of the Golden Quadrilateral (GQ) and its diagonals.
- Strengthening of rail connectivity to ports and development of multi - modal corridors to the hinterland.
- Construction of four mega bridges – Bogibeel Rail-cum-Road bridge across river Brahmaputra , Munger Rail cum Road bridge across river Ganga, Patna Ganga bridge and a bridge over river Kosi.

9.1.10 The NRVY projects, except for the mega bridges, are targeted to be completed in five years (2002-07). The Rail Vikas Nigam Limited (RVNL) was set up as a special purpose vehicle (SPV) to execute the first two components of NRVY. The RVNL is to undertake project development and mobilisation of resources along with execution of projects on a commercial format, using largely non-budgetary funds. The Ministry of Railways has assigned 53 capacity enhancement projects to RVNL. Of these, 32 projects lie on

the GQ and 21 projects relate to connecting ports and strengthening hinterland connectivity. The RVNL projects involve doubling of 1911 km, gauge conversion of 1640 km, new lines of 522 km, railway electrification of 1916 km. and strengthening of about 10,000 km. of GQ and its diagonals for running of freight trains at 100 km. per hour (kmph) . The total route kms. under various types of developmental works is about 16,019 kms.

9.1.11 The Union government has envisaged a budgetary support of Rs.3,000 crore for RVNL, including Rs.1,500 crore as external aid from the Asian Development Bank (ADB), which shall be available to RVNL as Government of India's equity. The rest of the funding requirements will have to be arranged by RVNL by devising various financing models.

9.1.12 The initiative of implementing financially viable projects through RVNL needs to be reinforced. Three such SPVs have already been formed and more are being developed specially in the port connectivity projects. RVNL also intends to execute identified projects through BOT and market borrowings. Project-specific SPVs may raise resources from the market or from external resources against identified incremental revenues from the project. Some of the SPVs could be in the form of joint ventures with stake holders. Others could be based on BOT/Build-Operate-Lease-Transfer (BOLT) mode.

#### PUBLIC-PRIVATE PARTNERSHIP IN RUNNING OF TRAINS

9.1.13 Indian Railways have already set up Indian Railways Catering and Tourism Corporation for taking all steps to boost up rail based tourism, including running of tourist trains. In fact 'Village on wheels' and 'Hill trains are being run. In addition, Railways are tying up with different state governments for running tourist trains on the pattern of 'Palace on wheels' and 'Deccan Odyssey'. Railway may explore the possibility of Public Private Partnerships in running tourist trains. The operational part relating to traffic management and use of railway tracks may continue to vest in the Railways.

9.1.14 Railways have taken steps recently for private participation in goods traffic, such as allowing competition in movement of container traffic and wagon investment schemes. However, Railways may explore the possibility of public-private partnership in running goods trains between specified destinations as suggested for tourist trains. This would help in adding modern rolling stock that would add to the traffic and revenues of the Railways.

## MAJOR POLICY ISSUES

**9.1.15 Increased share in freight traffic:** Railways have taken a number of steps during Tenth Plan period to improve Railway's share in freight Traffic. These include rationalisation of freight tariff structure, user benefit measures such as trainload benefit for all block rakes and commodities, flexible rating policy for specific pairs of stations, incentive to premier customers generating high freight earnings for traffic originating from sidings, computerisation of freight movements, provision of in-house facilities etc. Other measures taken by the Railways include provision of linkages to ports, introduction of more high speed wagons and refrigerated parcel vans. The Railway Budget for 2005-06 has also announced a number of initiatives aimed at increasing the freight traffic.

9.1.16 While the above measures have resulted in higher freight loadings, there is still considerable scope for regaining the traffic lost by the Railways. Therefore, the Railways need to continue their efforts to win back more bulk traffic from the road sector. Apart from this Railways would need to attract non-bulk high rated traffic also. There is a need for dedicated freight corridors on selected high-density corridors. This would help in meeting long term requirements of movement of freight traffic more efficiently. An accelerated programme of containerization could also contribute towards increasing the share of Railways in non - bulk traffic.

**9.1.17 Investment Strategy:** Despite the Railways having a large portfolio of ongoing projects most of which have been sanctioned on socio-economic considerations, the aspirations of the people for rail connectivity

do not recede. The Investment strategy of Indian Railways needs a reorientation in the wake of surging growth of the economy. In the current year Railways have embarked upon a corridor-wise approach for augmentation of the capacity in their investment planning for 2005-06. This needs to be carried forward with vigour and timely completion of the works monitored. Railways have put in position a prioritisation exercise of the ongoing projects with Cabinet approval, as per the following priority :

- (i) Ongoing new lines and gauge conversion projects where progress is more than 60 per cent and throw forwards is less than Rs. 100 crore.
- (ii) Viable/ operationally required projects
- (iii) National projects, projects in the Northeast, defence funded projects, and those with public-private partnership; and
- (iv) Other ongoing projects of new lines and gauge conversion not covered in above categories (i, ii & iii)

The Railways, however, need to observe caution, while sanctioning new projects, keeping in view financial viability and operational essentiality in order to avoid further stress on scarce resources.

**9.1.18 Rebalancing of tariffs:** There is an urgent need to rebalance tariffs. Passenger traffic contributes 58 per cent of total traffic, but accounts for only 33 per cent of total revenue. On the other hand, freight traffic accounts for 42 per cent of total traffic but contributes as much as 67 per cent to the total revenue. The present fare-freight ratio needs to be reworked through rebalancing tariffs. The system of automatically indexing railways tariffs to increases in fuel cost and the wage cost adjusted for an actual productivity increases on both counts needs to be adopted in order to do this.

**9.1.19 Technological upgradation and modernisation:** Technological upgradation and modernisation is one of the thrust areas in the Tenth Plan. Upgrading technology becomes more important given the magnitude of the



task and also to improve reliability, reduce maintenance cost and increased customer satisfaction. Although modernisation is required in all areas of railway operations, technological improvement of tracks and acquisition of rolling stock for heavy haul and high speed operations supported by modern signalling and improved maintenance system may command higher priority. Railways have already introduced State of Art diesel and electric locomotives, coaches as well as high speed wagons in recent past. The modernisation programme for 2005-10 formulated by the Railways provides investment towards technological upgradation as well as investment plans for capacity enhancement as well increase in speed of trains on corridor based approach. Such an approach needs to be adopted in modernisation process with a clear indication of individual component and how they are expected to improve average speed and throughput.

**9.1.20 Safety:** Recognising the significance of improving railway safety, a Special Railway Safety Fund (SRSF) was set up in 2001 which envisages an investment of Rs.17,000 crore. The objective of the Fund is to help in clearing the arrears of track renewal and replacement of over-aged railway assets between 2001 to 2007. The work to be covered includes renewal and replacement of over-aged tracks, bridges, rolling stock and signalling gear, including communication and safety enhancement works. Out of a total target of 16,538 km. of track renewal work up to 31<sup>st</sup> March, 2007, 12,138 km. of tracks are likely to be renewed up to 31<sup>st</sup> March 2005. The work of replacing over-aged signalling systems is in progress at 881 stations. Track circuiting works have been completed in about 2585 locations and the work of rehabilitation/rebuilding has been completed in respect of 1,717 bridges out of a total of 2,700 bridges to be rehabilitated. The achievements of Railways with respect to various works under SRSF have been satisfactory so far and it is expected that the financial and physical targets will be achieved.

**9.1.21** A Corporate Safety Plan for ten years i.e. from 2003 to 2013 has been drawn up and

is being implemented by Ministry of Railways. The main objectives of the Corporate Safety Plan are to achieve reduction in rate of accidents per million train kilometers, implement measures to reduce chances of passenger fatality substantially in consequential train accidents, focus on development of manpower through major improvements in working environment, training to reduce the accidents attributable to human failure, achieve safety culture on all fronts including maintenance depots, worksites, stations, controls etc.

**9.1.22 Container Movement :** Container traffic in India has grown at over 15 per cent per year in the 1990s and is likely to grow at a much higher rate in the coming years in view of the projected growth rate of the economy and trends in foreign trade. Despite the higher growth in container traffic, the share of total container traffic in traffic that can be containerised continues to be low in India as compared to international trends. One of the reasons for this is the problem of evacuation of containers from Indian ports, currently an activity that is the monopoly of the Container Corporation of India (CONCOR). Therefore, along with increasing the capacity of CONCOR, it is also necessary to allow competition in the movement of container traffic. The Railway Minister has indicated in the Rail Budget for 2005-06 that this will be considered. This is a welcome move and steps should be taken to implement the new approach. Allowing a competing alternative will both augment total capacity and increase efficiency. There is also a case for dedicated freight corridors for container movement, particularly for the movement of bulk commodities. Minister of Railways have recently announced the Railways intention of connecting the four metro cities viz. Delhi, Mumbai, Chennai and Kolkata with dedicated freight corridors which will include running of both freight and double stack container trains with 25 to 30 tonnes axle loads.

**9.1.23 Organisational restructuring:** The present structure of Indian Railways has evolved on the basis of the Acworth Committee's recommendations, calling for consolidation and

nationalisation in 1924. The Indian Railways formulates policy and provides services and also acts as a regulator. These three functions need to be separated. The objective of putting a regulatory mechanism in place is to rationalise the fares and freight rates structure. Heavy cross subsidisation introduces distortions in the inter-modal mix of transport as a whole as well as in the operation of Railways. Railways would, prepare a paper in consultation with Planning Commission on tariff setting mechanism including the need for a Rail Tariff Authority.

9.1.24 The Tenth Plan emphasised that the non-core sector and peripheral activities such as manufacturing may be spun off to individual corporations, which should operate like other public sector units using commercial accounting principles with internationally accepted accounting practices. The Railways have already initiated preliminary steps towards accounting reforms, outsourcing of non-core activities, concessioning of branch lines, making production units into cost and profit centres etc. This process needs to be accelerated.

9.1.25 **Resource generation through non-conventional sources:** The Railways have set up PSUs like Railtel, IRCTC which undertake marketing of non-core activities to generate additional revenues. These efforts need to be supplemented by the commercial exploitation of large tracts of land and other assets owned by Railways especially in the cities. With the setting up of the proposed Rail Land Development Authority (RLDA), it is expected that the Railways will be able to develop surplus land adjoining railway stations, develop metro stations into world class model stations and extend passenger amenities through construction of food plazas, shopping malls etc. on vacant land. This Authority may also develop goods sheds for constructing warehouses and other logistic parks.

## ROADS

9.1.26 The Tenth Plan envisages balanced development of the total road network in the

country. This includes phased removal of deficiencies in the existing network, widening, improvement, strengthening, rehabilitation and reconstruction of weak/dilapidated bridges, adequate maintenance of roads, road safety measures and providing wayside amenities to cater to the growing demands for road services. Apart from this, the Plan also lays emphasis on improving the riding quality of existing National Highways. Yet another priority objective is improvement in rural connectivity with all-weather roads and development of roads in the North-Eastern region. Inter-modal issues like road connectivity with airports, railways, ports etc. is another issue that it has highlighted.

9.1.27 The Tenth Plan has stressed the need for improving mobility and accessibility. While the National Highway Development Programme (NHDP) is expected to improve mobility, the Pradhan Mantri Gram Sadak Yojana (PMGSY) is aimed at providing accessibility, especially to villages.

## PROGRESS IN THE TENTH PLAN

### PHYSICAL PERFORMANCE (OTHER THAN NHDP)

9.1.28 Annexure 9.1.3 is a statement showing the physical targets/achievements for the Tenth Plan and Annual Plans. The statement shows that achievement in the case of widening to four-lane/two-lane and construction of bypasses during the first two years of the Plan has been below target. Achievements relating to strengthening of weak pavements and improvement of riding quality have surpassed targets.

### FINANCIAL PERFORMANCE

9.1.29 **Central sector:** An outlay of Rs.59,490 crore (GBS Rs.34790 crore) has been provided for the development of roads in the Tenth Plan. The bulk of this outlay is meant for the development of National Highways and related programmes. An expenditure of Rs.20505 crore is likely to be incurred in the first three years of the Plan period. At constant prices, the expenditure works out to 34.5 per cent. Details of the outlay/ expenditure (GBS at current

**Box 9.1.2****Prime Minister's Committee on Infrastructure: National Highways**

For a country of India's size and magnitude, an efficient road network is necessary both for national integration as well as socio-economic development. The National Highways (NH), with a total length of 65,569 km, serves as the arterial network connecting metropolitan centres and major cities. The development of NH has, therefore, been accorded high priority in the planning process and an ambitious road building plan has been drawn up. Resources, however, remain the main constraint and this necessitates prioritisation of projects and participation of the private sector through public-private partnership (PPP).

The National Highway Development Programme (NHDP) has been taken up with the objective of improving the NH network in a phased manner. The 5846 km Golden Quadrilateral (GQ) connecting Delhi, Mumbai, Chennai and Kolkata was the first project to be taken up and is expected to be completed by December 2006. The 7300 km North-South East-West (NSEW) Corridor is next on the schedule and is to be completed by December 2007.

Keeping in view the need for nationwide connectivity and mobility, the Committee on Infrastructure chaired by the Prime Minister proposed an expanded programme for highway development on the 13 January 2005. The proposed programme for the next seven years (2005-12) includes completion of:

- GQ and NSEW corridors
- Four-laning of 10,000 km under NHDP Phase III
- Two-laning of 20,000 km of national highways under NHDP IV
- Augmenting highways in the North East
- Six-laning of selected stretches, and
- Development of 1,000 km of expressways.

Targets are to be achieved through restructuring and strengthening of National Highway Authority of India (NHAI), the main implementing agency for the expanded programme; developing Modal Concession Agreements for BOT projects and for operation, maintenance and tolling of completed NHDP stretches; addressing bottlenecks in ongoing projects arising from State level constraints, delays in environmental clearance, problems in land acquisition; focus on traffic management and safety related issues etc.

The four-laning of 10,000 km of National Highways by March 2010 under NHDP III would be done entirely through the BOT route. A Special Accelerated Road Development Programme for the North Eastern Region (also called NHDP-NE) is envisaged for improving connectivity in the north-eastern states. This would include a road length of 7639 km comprising 3251 km of NH and 4388 km of other roads. The network is expected to act as catalyst for the development of the region.

prices) for the Tenth Plan and Annual Plans 2002-03, 2003-04 and 2004-05 are given in Annexure 9.1.4

**9.1.30 State sector:** Against the Tenth Plan outlay of Rs.50,320.82 crore under the State sector, an expenditure of Rs.27,316.11 crore is likely to be incurred up to the end of 2004-05. This works out to 54.28 per cent of the Tenth

Plan outlay. During the first three years of the Tenth Plan, expenditure has been lower than the outlay provided.

#### NATIONAL HIGHWAY DEVELOPMENT PROJECT

**9.1.31 Golden Quadrilateral - (NHDP Phase I):** The target for completing the GQ

was originally set for December 2003 but was later revised to December 2004. All works on the GQ have now been awarded but the project is behind schedule. Out of the total length of 5,846 km of GQ, only 4,611 km (78.9 per cent of the total length) had been completed by February, 2005. While 92 per cent of the GQ will be completed by December 2005, full completion is likely only by December 2006 because of some problem projects.

9.1.32 The shortfall in the achievement of original targets are due to:

- Delay in land acquisition.
- Delay in obtaining environment and forest clearances.
- Delay in obtaining clearances from Railways regarding design of road over bridges/road under bridges.
- Law and order problems in certain States.
- Poor performance of some contractors.

9.1.33 **North South and East West Corridors- (NHDP Phase II):** Till 28<sup>th</sup> February, 2005, only 9.5 per cent of the NS-EW corridor project had been completed. Implementation of the project has been taken up under two phases. The status of the project as on 28<sup>th</sup> February, 2005 is as follows:

- 692 km. has been completed (NS 544 km. + EW 148 km.)
- 886 km. is under implementation (NS 240 km. + EW 646 km.)
- By September, 2005, most of the contracts are expected to be awarded.

9.1.34 The project is targeted to be completed by December 2007.

## ROAD TRANSPORT

9.1.35 Road transport programmes are implemented both under Central and State sectors. In the Central sector, major schemes relate to road safety programmes, training of drivers and instructors, introduction of new technology and pollution control. Against the Tenth Plan outlay of Rs.210 crore for the Central sector, an expenditure of Rs.100.65

crore is likely to be incurred during the first three years of the Plan, which amounts to 47.9 per cent of outlay at constant prices. In the State sector, the expenditure during the corresponding period is 49.9 per cent at constant prices.

## PORT CONNECTIVITY

9.1.36 The port connectivity project envisages four laning of 356 km of National Highways connecting ten major ports. The works on connecting Kandla Port and Mormugao Port have already been completed. Works are in progress for connecting five major ports while contracts have been finalised for the remaining three ports and these are targeted to be completed by December 2007. All the port connectivity projects are being funded through the SPV route and are on BOT basis.

## NEW INITIATIVES

9.1.37 **NHDP Phase-III:** This programme, being implemented by the National Highways Authority of India (NHAI) envisages four-laning of about 10,000 km of existing National Highways (other than NHDP) Phase-I&II i.e. GQ and the NS-EW Corridor sections) and is proposed to be undertaken on BOT basis. NHDP phase-III will provide connectivity to important places not covered under NHDP Phase-I&II. This includes connectivity of number of State Capitals with NHDP Phase-I&II, high-density corridors, places of tourist and economic importance, etc. The Government has approved implementation of 4/6 laning of 4000 km of National Highways on BOT basis as a first phase and preparation of the Detailed Project Report (DPRs) of the balance 6000 km as a second phase. The first phase of NHDP-III is proposed to be completed by December 2009. BOT bids for 6 projects covering 507 km have been awarded. BOT bids for another 10 projects covering 554 kms length have been invited.

9.1.38 **(NHDP Phase - IV)** Upgradation of 41,000 km of existing National Highways: Against the 65,569 km length of National Highways, 24,000 km. have been scheduled for four-laning under NHDP (Phases I and II) and the proposed NHDP (Phase III). The balance



**Box 9.1.3****Financing the national highway network**

Funds have been the main constraint in implementing the Extended Highway Development Programme that envisages four/six-laning of the National Highway network. To overcome this hurdle, work on National Highways is being prioritised and private investment encouraged through public-private partnerships.

Cess on petrol and diesel has been the most important means of generating public resources for highway development. The cess could be leveraged several times to increase the availability of resources in the near future. For example, cess receipts can be used to service debt liabilities incurred when borrowing from the market.

Tolls are another method of raising finances, with road maintenance work making the first claim on toll money. The surplus money however could be used for upgrading network. The funds could also be leveraged through borrowing against future receivables.

The main instruments of PPP are BOT based on toll earnings plus a competitively bid capital subsidy if needed and BOT based on a competitively bid annuity payment. In case of annuity based projects, the concessionaire builds the road and maintains it during the concession period. The government pays for the project through an annuity stream. Tolling is not an integral part of BOT (annuity) projects and it is, therefore, essentially a road construction and maintenance arrangement that involves deferred payment by the government.

The stake of private sector is greater in pure BOT schemes. The concessionaire builds the road and maintains it during the concession period and also charges toll to recover the costs of construction and maintenance. Therefore, such projects involve private sector taking a market risk, unlike BOT (annuity) projects. Since there is uncertainty about future traffic flows and, consequently toll receipts, and in every case toll earnings may not cover capital costs fully, the government allows viability gap funding up to 40 per cent of the project cost based on a competitive bid for the lowest subsidy.

There are other ways to ensure minimum traffic receipts and encourage private initiative. This involves Government reimbursing the concessionaire to the extent of the traffic falling below a stipulated minimum. Similarly, if the traffic is above a maximum level, the concessionaire would pay the Government. This financial engineering arrangement, called “collar”, could have various alternatives. One advantage of the instrument is that the concessionaire is assured a minimum traffic flow, which enables it to plan investment. Borrowing from banks is also easier against a predictable revenue stream.

41,000 km is proposed to be developed in two phases.

**9.1.39 Special Accelerated Road Development Programme for the North Eastern Region:** A total of 7639 km of road length, including National Highways, has been proposed for development under the ‘Special Accelerated Development Road Programme for North Eastern Region’. The programme involves: widening of 3251 km of National Highways connecting state capitals of the

North-East and improvement of 4388 km of state roads.

**PRADHAN MANTRI GRAM SADAK YOJANA**

**9.1.40 PMGSY** aims at providing all-weather connectivity to all 500+ unconnected habitations. For Hill and North Eastern States, Desert and Tribal Areas, the population criteria is 250+. Annexure 9.1.5 shows that 41,765 habitations with population of 1,000 and above are yet to be connected. The main problem is

**Box 9.1.4**  
**Improving Mobility of National Highways**

The four/six-laning of National Highways would considerably improve mobility and, consequently, boost trade and development by connecting remote areas to major commercial centres. However, a major constraint to this is the absence of appropriate access facilities to the highways, which often nullifies the gains of having a high mobility network.

To overcome the bottlenecks, the Expanded Road Development Programme envisages providing ring roads, bypasses, grade separators and service roads to facilitate congestion-free travel. The proposals include providing access-controlled ring roads to all state capitals and major cities; constructing service roads along the National Highways to cater to slow-moving traffic and enhance road safety; constructing bypasses on National Highways to avoid congestion of cities/towns and building grade separators to allow uninterrupted traffic flows.

in the states of West Bengal, Uttar Pradesh, Orissa, Bihar, Madhya Pradesh, Jharkhand, Assam and Chhattisgarh. The connectivity of habitations with population of 500 and above is also not satisfactory.

9.1.41 The projected requirement of the PMGSY has been now estimated at Rs.1,33,000 crore. Annual inflows from the diesel cess are likely to be of the order of Rs.3,800 crore.

9.1.42 Unlike the NHDP, the PMGSY, despite being in its fourth year of operation, has not taken off as per expectations. The mismatch between the target date of completion and the availability of funds remains unsolved, which is undermining the viability of the scheme.

9.1.43 For successful implementation of PMGSY, it is necessary to address the issues relating to capacity development at the state level, maintenance funding, management and integration of rural roads with higher category, particularly major district roads. There is also need to develop an appropriate role for district panchayats in the management of rural roads.

9.1.44 In order to generate additional resources for the programme, negotiations with multilateral agencies like the World Bank and ADB would be held. Despite the availability of proposed external assistance from these agencies, there would still be a gap between available resources and the requirement. A viable alternative that could address these problems

would be to create a SPV specifically for the PMGSY.

#### **POLICY ISSUES**

9.1.45 There is need for improved highway connectivity to industrial and economic growth centres, ports, airports and places of tourist importance and heritage sites. While the NHDP is the over-riding priority, non-NHDP National Highway projects need to be prioritised so that resources are not spread thinly among competing projects, which leads to delay in project completion.

9.1.46 The substantial addition made to the National Highways network during the Ninth Plan and in the Tenth Plan increased the gap between availability of resources and requirements and thus contributed to the poor maintenance and riding quality of the non-NHDP National Highway network.

9.1.47 Working out PPP arrangements to the maximum extent possible is inevitable for augmenting resources and for improving efficiency in implementation of projects. In the past, uncertainty about revenue from tolls has discouraged investors from coming forward with BOT proposals. Undue emphasis was also placed on BOT (annuity), which is distinct from BOT projects. In BOT (annuity), the expenditure incurred by the concessionaire during construction and maintenance phase are repaid through annuity instalments. The modal, therefore, is not BOT in real sense of

the term. Other constraints were: inadequate/unreliable availability of information; high price elasticity of demand; and absence of a satisfactory dispute resolution mechanism. A number of steps need to be taken to make the environment conducive to PPP. These include proper project planning, formulation, prioritisation by the government/road development agencies, identifying and removing deficiencies in fiscal incentives, improvement in the availability of information, establishment of a highway regulatory authority, designing a satisfactory dispute resolution mechanism, and affordable toll rates. The sharing of downside risk by the government would also encourage private sector participation. The Model Concession Agreement approved earlier has to be revised in light of experience so far.

9.1.48 A number of National Highway stretches are now being tolled. Past experience suggests that the development and maintenance of toll roads through BOT are carried out more efficiently and effectively. The involvement of the private sector in the operation, maintenance and tolling of the completed high density stretches may lead to substantial efficiency gains. So far, about 1730 km. out of 4611 kms. of completed NHDP stretches are being tolled and by September 2006, most of the completed stretches of GQ is expected to be tolled.

9.1.49 Four-laning of National Highways may not be the ultimate answer on high traffic density stretches in the long run. There is, therefore, need to take up six lanes and expressways projects, where necessary. These projects would have to be implemented on the basis of PPP.

9.1.50 The NHDP has experienced problems relating to land acquisition and environmental clearance. Formats prescribed for land acquisition need to be standardised and procedures streamlined. A suitable mechanism needs to be evolved for speedy environment clearance.

9.1.51 Indian highways are highly accident-prone and the accident rate may well go up, with the augmentation of capacity and

consequent increase in speed of vehicles. Overloading is another serious problem, which is not only hazardous but also damages roads. It may, therefore, be desirable to set up a dedicated organisation for road safety and traffic management.

9.1.52 Another obstacle to the free flow of traffic is inadequate provision of under-passes and over-passes and, in some cases, service-lanes. The provision of these facilities needs to be given priority in future development of high-density corridors.

9.1.53 Adequate provision for wayside amenities would have to be made in all future development of National Highways.

## **PORTS**

9.1.54 In the ports sector, the main thrust in the Tenth Plan is on the creation of general and bulk cargo handling facilities with focus on container traffic. Efficiency and productivity are to be improved through corporatisation, private sector participation and rationalisation of manning scales.

## **PROGRESS IN THE TENTH PLAN**

### **FINANCIAL PERFORMANCE**

9.1.55 In the first three years of the Tenth Plan, a total Rs.1,936 crore is likely to be spent, which is 35.7 per cent of the approved Tenth Plan outlays. There are various reasons for this: the review and consequent pruning of outlays in view of the decision to hand over some projects to the private sector; reduction in outlays for on-going schemes as well as new schemes based on more realistic estimates; delay in sanctioning of projects and award of contracts and deferment of schemes. Details of port-wise outlay and expenditure are given in Annexure 9.1.6.

### **PHYSICAL PERFORMANCE**

9.1.56 The Tenth Plan has projected a traffic of 415 million tonnes in the 12 major ports by the terminal year of the Plan. The first two years of the Plan witnessed impressive traffic

growth of 7 per cent at the major ports. There will be no problem in achieving the Tenth Plan targets if the existing rate of growth continues. Details of traffic handled at major ports, commodity-wise and port-wise, are given in Annexure 9.1.7 and 9.1.8.

9.1.57 The aggregate capacity of the ports sector, as on 31<sup>st</sup> March, 2004 was 390.00 million tonne per annum (MTPA), an impressive addition of 46.05 MTPA in the first two years of the Plan. Going by present indications, the capacity at the end of the Tenth Plan is expected to exceed the projected target of 470.60 MTPA.

#### PRODUCTIVITY AT MAJOR PORTS

9.1.58 Average pre-berthing waiting time decreased from 11.5 hours in 2001-02 to 5.1 hours in 2003-04 and average turnaround time decreased from 4.2 days to 3.6 days during the same period. The improvement has been across the spectrum of port operations in handling various commodities. Privately operated container terminals have substantially contributed to this improvement. This can be seen from the example of the Jawaharlal Nehru Port. While the turnaround time achieved by the port authorities at the Jawaharlal Nehru Port Trust (JNPT) terminal is 1.16 days, it is 0.79 days in case of a container terminal operated by a private operator.

#### PRIVATE SECTOR PARTICIPATION

9.1.59 The Tenth Plan envisages the private sector/captive users playing a crucial role in augmenting capacity at various ports. Against

the projected private sector investment of Rs.11,257 crore during the Tenth Plan, projects involving investment of Rs.3,118 crore have been approved. Project-wise details are given in Annexure 9.1.9.

9.1.60 The progress in private sector participation in ports projects has been rather slow and a number of steps need to be taken to promote such involvement. As a first step, it is necessary to review the existing guidelines and instructions with a view to removing any restrictive clauses. Certain port projects involve heavy capital investment and long gestation period. In such cases, it may be necessary to make the concession period flexible. The government should not see the concessions as an opportunity for maximising revenue. They should be formulated in such a way that they result in lower port charges. The main objective should be to promote both inter-port and intra-port competition. Intra-port competition should be encouraged by multiple concessions at single port and inter-port competition can be promoted by improving surface transport linkages. The modalities for private sector participation should be laid down in a clear and comprehensive manner.

#### PERSPECTIVE PLAN FOR DEVELOPMENT OF MAJOR PORTS

9.1.61 Keeping in view the need for meeting the requirement of traffic efficiently and at minimum cost to the users, there is a need to formulate a Perspective Plan for long-term development of each major port. The augmentation of berth capacity may be

#### Box 9.1.5

##### Private sector participation in ports

A container terminal, the International Container Transshipment Terminal (ICTT), is being set up at Vellarpadam near Kochi Port, which is to be developed on BOT basis. The government would only provide common-user facilities like rail-road connectivity, adequate depth for navigation etc. The terminal would facilitate shipment of container cargo directly to the destination and is expected to give further boost to international trade.

The Nhava Sheva International Container Terminal (NSICT), a privately owned berth at the Jawaharlal Nehru Port Trust (JNPT), has been doing exceedingly well in terms of turn over and productivity.



preferably through private investment or public-private partnership.

#### IMPORTANT PROJECTS

9.1.62 To augment physical infrastructure, some port projects like the Sethusamudram Ship Canal Project and International Container Transshipment Terminal, Vellarpadam, Kochi will be taken up on priority basis.

#### POLICY ISSUES

9.1.63 **Hub ports:** A hub port needs to be close to the main shipping lines and adequately serviced by feeder ports. These ports need to have deep drafted berths to attract large sized main line vessels, container handling facilities and storage space etc. JNPT on the west coast and Chennai Port on the east coast are being developed as hub ports. While these two are expected to cater mainly to cargo originating from or bound for India, the ICTT being developed at Kochi Port is expected to facilitate shipment of container cargo.

9.1.64 **Corporatisation of major ports:** In order to expedite the process of corporatisation of existing ports, the Major Port Trusts (MPT) (Amendment), Bill, 2005 will be introduced in Parliament after Cabinet approval. The Department of Shipping is in the process of finalising the Cabinet note.

9.1.65 **Rationalisation of manning scales:** In order to rationalise productivity norms, the manpower in the major ports will be reorganised in line with the recommendations of the Labour Tribunal.

9.1.66 **Introduction of Electronic Data Interchange:** In order to improve efficiency/productivity of port operations, in the first phase, the electronic data interchange (EDI) has been operationalised between container handling ports, customs, banks and port users. It is presently functioning at the Chennai, JNPT, Mumbai and Kochi Ports. In the second phase, EDI will be implemented in all the remaining ports and for all the remaining cargos i.e. liquid and dry bulk.

9.1.67 **Role of Tariff Authority for Major Ports:** The functioning/role of the Tariff Authority for Major Ports (TAMP) needs to be revised so that uniform and transparent norms prevail in matters relating to fixing tariffs as well as prescribing the quality of service for port authorities/terminal operators. This is necessary to ensure that the needs of the users of the facility are met and the facility providers are able to earn profits.

9.1.68 **Central government funding of capital dredging:** Indian ports lack adequate depth in their entrance/approach channels and berths and are, therefore, not in a position to receive and berth mainline/large size vessels. Indian industry is, therefore, denied the benefits of economies of scale and reduction in transportation cost. Capital dredging in the various ports is, therefore, an inherent part of their development. Since such projects require large investment, and may serve more than one operator, they should be funded through budgetary support from the Central Government.

9.1.69 **Rail/road connectivity/improvement at ports:** Adequate rail/road connectivity with ports with the hinterlands is of crucial importance and needs to be improved on a priority basis.

#### SHIPPING

9.1.70 Against the Tenth Plan outlay of Rs.6273.84 crore for shipping, an expenditure of Rs.1692 crore has been incurred during the first two years of the Plan. The Tenth Plan target for tonnage acquisition programme is 3.26 million gross tonnage (GT) with the acquisition of 156 vessels. However, there has been slow progress on this front during the last two years, mainly due to lack of fiscal incentives, difficulty in raising external commercial borrowings and prevailing depressed market conditions. During 2002-03 and 2003-04, the Shipping Corporation of India (SCI) could not achieve the acquisition targets due to the Union Government's decision to disinvest its equity in the Corporation.

9.1.71 The Government has introduced Tonnage Tax for the Indian Shipping Industry with an option for the shipping companies to opt for either Tonnage Tax or Corporate Tax from the year 2004-05. The introduction of Tonnage Tax will provide a level playing field to the Indian Shipping Industry with its international counterparts. This will help to add more tonnage to the Indian Shipping Industry. The Indian Shipping Industry has already shown a path of recovery with increase in tonnage from 7.05 million GT on 1<sup>st</sup> June, 2004 to 8.01 million GT on 1<sup>st</sup> April, 2005.

9.1.72 In order to meet the internationally prevalent norms in Europe and elsewhere i.e. inspection of 25 per cent under Port State Control flag ships and at least 50 per cent state flag ships, the Director-General (Shipping) Office needs to be strengthened so that it performs its functions properly.

#### INLAND WATER TRANSPORT

9.1.73 The Tenth Plan has laid emphasis on the development of infrastructure facilities with a focus on the North-East region and private sector participation so that the movement of domestic cargo is gradually shifted from the rail and road modes to inland water transport (IWT). In addition, priority has to be given to the development of existing national waterways and new national waterways will be declared on a selective basis.

9.1.74 An outlay of Rs.864.73 crore (Rs.636.73 crore as GBS and Rs.228 crore as IEBR) has been approved for the Inland Waterway Authority of India (IWAI). The expenditure during the first three years of the Plan is estimated at Rs.239.76 crore.

9.1.75 During the first two years of the Plan, Least Assured Depth (LAD) of 2 meters has been provided between Haldia and Patna, Dhubri and Neamati in Assam and Kochi and Alapuzha. Night navigational facilities have been provided between Kolkata and Farakka and between Dhubri and Jogighopa in Assam. In order to generate traffic, a fortnightly fixed schedule service has been started between Haldia and Patna and between Dhubri and Pandu

(Guwahati). Terminals have been set up on three national waterways and hardware for maintenance of navigational channels as well as transport of cargo has been acquired.

#### CENTRALLY SPONSORED SCHEME FOR IWT

9.1.76 Under this scheme, states get Central assistance for providing infrastructure facilities for the development of waterways. The projects taken up under this scheme include construction of terminal facilities, capital dredging, hydrographic survey etc. The funding pattern of this scheme has been changed from 5<sup>th</sup> November, 2002 and now 100 per cent grant is given to the north-eastern states, including Sikkim, and 90 per cent grant is provided to other states. In the two years (2003-04 and 2004-05) 22 projects of 9 States at the cost of Rs.73 crore has been sanctioned and Rs.25.83 crore has been released to various States (Assam, Bihar, Himachal Pradesh, Kerala, Karnataka, Maharashtra, Madhya Pradesh, Orissa and West Bengal). The idea behind changing the funding pattern was to engage States in a big way for development of inland waterways other than National Waterways.

#### CIVIL AVIATION

9.1.77 The Tenth Plan has laid stress on the provision of world-class infrastructure facilities for efficient, safe and reliable air services. Making provisions for air services to remote and inaccessible areas has also been identified as a priority. Recognising that air transport is a field for competitive development, the Tenth Plan lays emphasis on private sector participation in the development of air transport.

#### PROGRESS IN THE TENTH PLAN

9.1.78 The bulk of expenditure in both Air India and Indian Airlines is due to repayment of loans taken for acquiring aircraft. However, both airlines have not acquired aircrafts for some time and both are planning to do so. Indian Airlines now plans to acquire capacity equivalent to 43 Airbus aircrafts. The Government has decided to provide Rs.325 crores as additional equity infusion in Indian Airlines during 2005-06 as a margin money for purchase of aircraft.

9.1.79 There are considerable time and cost overruns in several projects taken up by the Airports Authority of India (AAI). This is partly due to the unsatisfactory formulation of projects and partly due to projects being taken up without completing pre-construction activities such as land acquisition. Certain major projects and associated works at Delhi and Mumbai airports were deferred because of plans to restructure airports by involving the private sector and this also resulted in shortfall in expenditure. There is a need for strengthening of the monitoring system in order to reduce time and cost overruns.

#### OUTLAY AND EXPENDITURE

9.1.80 An outlay of Rs.12,928 crore – Rs.400 crore as GBS and Rs.12,528 crore as IEBR – was provided in the Tenth Plan. However, only 31.6 per cent of this (Rs.3955 crore) is estimated to have been spent so far. Annexure 9.1.10 indicates the organisation-wise details of outlay and expenditure (at current prices) for the first three years of the Tenth Plan.

#### GREENFIELD AIRPORTS

9.1.81 Two greenfield international airports, one each at Bangalore and Hyderabad, are proposed to be developed at a cost of Rs.1,328 crore and Rs.1,394 crore respectively. While the concerned state governments and the AAI would contribute 13 per cent each towards the equity capital, the private sector will contribute 74 per cent.

9.1.82 It is proposed to explore the possibility of development of other airports, particularly those with tourist potential, through the public-private partnership route.

#### POLICY ISSUES

9.1.83 **Restructuring of metro airports:** Restructuring of the metro airports is one of the major initiatives to be taken in the Tenth Plan. A Bill for comprehensive amendments of the Airports Authority of India Act, 1994, has already been passed. With this, it would be possible to involve the private sector in the development of metro airports. The

#### Box 9.1.6

##### Committee on Infrastructure: Reinvigorating Civil Aviation Sector

The Committee on Infrastructure chaired by the Prime Minister is taking measures to address the various infrastructure constraints that the country faces. The Committee had a detailed discussion on various aspects of civil aviation sector on 10 December 2004 and it was agreed that the Government should initiate policies that ensure time-bound creation of world-class airports and evolve a policy and regulatory framework for PPPs in order to maximise capital inflows and efficiencies.

Keeping these requirements in view, the following major decisions were taken at the meeting:

- Draw up a civil aviation policy, keeping in mind the inter-modal role of the sector and the long-term requirements of trade and tourism.
- Speed up modernisation of Delhi and Mumbai airports to enable them to handle growing passenger and cargo traffic.
- Restructure Chennai and Kolkata airports on the lines of proposed restructuring of Delhi and Mumbai airports. Other airports need to be developed using the PPP approach.
- Prepare Model Concession Agreements to promote PPP in the development of airports.
- Revamp the Airport Authority of India with multi-disciplinary staff to meet the long-term goals of the civil aviation sector.
- Set up a statutory regulatory body for economic regulation and dispute resolution.

The Committee on Infrastructure has set targets for meeting various objectives, which are being closely monitored.

modernisation of Delhi and Mumbai airports is proposed to be taken up first.

**9.1.84 Performance of regulatory agencies:** The performance of India's international airports compares poorly with world standards. With the restructuring of Delhi and Mumbai airports, which handle the bulk of international traffic, the infrastructure at these airports would improve, leading to better performance. The procedures and unsatisfactory performance of various regulatory agencies such as immigration and customs is another reason for the poor performance of Indian airports. Steps need to be taken to streamline the procedures and improve the efficiency of these regulatory agencies through mechanisation/computerisation, particularly at the immigration counters, and training of staff in order to improve the overall performance of airport users.

**9.1.85 Civil Aviation Policy:** The past policy has stifled the growth of the civil aviation sector. The new policy needs to be formulated keeping in mind the role of the sector in promoting tourism and trade as well as inter-modal considerations. Past policy of landing rights leaned heavily on Air India. However, since the airline lacked resources, this constricted the growth in capacity of traffic. The policy relating to provision of air services in the North-Eastern region, Jammu and Kashmir, Andaman and Nicobar Islands and Lakshadweep Islands through route dispersal guidelines also needs to be reviewed. A more appropriate way to ensure reliable air services in these areas would be to provide direct subsidy through minimum subsidy bidding process.

**9.1.86** The Ministry of Civil Aviation had constituted a Committee under the

Chairmanship of Shri Naresh Chandra, former Cabinet Secretary, to prepare a roadmap for Civil Aviation Sector that will provide the basis for a new National Civil Aviation Policy. The Committee had submitted its report in two parts. The recommendations made in these reports are being examined so as to formulate a comprehensive "National Civil Aviation Policy" which is likely to be finalised shortly.

**9.1.87 Foreign direct investment:** Foreign direct investment (FDI) in airlines has been raised to 49 per cent. However, foreign airlines are still debarred from equity participation in domestic air transport operations. There is a case for reviewing this policy as operation of airlines requires expertise as much as it does capital.

**9.1.88 Regulatory framework:** The restructuring of the Delhi and Mumbai airports and establishment of two greenfield airports in the private sector necessitates the setting up of a regulatory authority, as airports are a natural monopoly. There is a need to establish a statutory regulator for economic regulation and dispute resolution.

**9.1.89 Privatisation/disinvestments in Air India and Indian Airlines:** In order to improve the operational efficiency and financial performance of Indian Airlines and Air India, a decision was taken to disinvest government equity in both these organisations. However, the process of disinvestment could not be completed since the qualified bidders withdrew at the final stage due to a number of factors. The process of disinvestments could not be resumed in view of the unfavourable circumstances prevailing in the global aviation industry. A fresh exercise for restructuring Indian Airlines and Air India to make them competitive could be considered.

## THE WAY FORWARD

### RAILWAYS

- Implement an integrated modernisation plan by following a corridor approach. The Railways is saddled with old

technology and this is a major reason for freight traffic throughput being four times lower than the Chinese railway system. There is a need to modernise the rolling stock, tracks, signalling system apart from introduction of



information technology for increasing customer satisfaction. The modernisation, particularly of the Golden Quadrilateral and its diagonals, would lead to 100 per cent increase in the average speed of freight trains which, at present, is as low as 28 km. per hour.

- Rationalise the investment strategy. Future investment must be linked up with augmentation of capacity and improvement in the quality of services. An exercise for prioritisation of railway projects, particularly ongoing new railway lines, should be taken up on yearly basis. The Railways, however, need to observe caution, while sanctioning new projects, keeping in view financial viability and operational essentiality in order to avoid further stress on scarce resources.
- Ministry of Railways may prepare a paper in consultation with the Planning Commission on tariff setting mechanism including the need for a Rail Tariff Authority. Meanwhile, Railways would move towards evolving a fare structure, even if gradually, linked to a rational indexing of the line-haul cost to the tariff.
- Carry out organisational reforms. The elements could be:
  - setting up a fully computerised accounting system to ensure conformity with internationally accepted accounting practices;
  - making production units as profit centres;
  - giving uneconomic lines to the private sector on concession basis; and
  - outsourcing non-core activities
- Encourage public-private partnership in the development of high density corridors, introduction of tourist trains, additional goods trains between major commercial and industrial centres and between collieries and power stations.

- Allow competition in container movement. Allowing more players other than CONCOR is necessary for smooth movement of container traffic. As the Ministry of Railways has already announced that organisations other than CONCOR will be considered for the movement of container traffic, it is important that the Ministry evolves the policy framework expeditiously.
- Formulate a plan indicating a specific time frame for augmenting capacity in specific saturated routes to meet the growing requirements keeping in view the expected traffic growth. Some of these projects may be implemented by RVNL independently or through joint ventures/PPP.

#### ROADS

- The Ministry of Shipping, Road Transport & Highways (MoSRT&H) should prepare a detailed programme for the next two years keeping in view the level of budgetary support available and the need for leveraging this to the maximum extent by adopting a proper mix of engineering, procurement and construction (EPC) and BOT projects.
- MoSRT&H should prepare monitorable milestones and targets for the proposed programme that includes Special Accelerated Road Development Programme for North-East (NHDP-NE), NHDP- III (10,000 km on BOT basis), NHDP-IV (for 20,000 km), NHDP-V (6-laning of 5,000 km), NHDP-VI (1,000 km expressways) and NHDP-VII (for ROBs, bypasses etc.).
- Evolve a Model Concession Agreement for BOT project.
- Enhance the institutional capacity of the NHAI by making it a multi-disciplinary professional body with high quality financial management and contract management expertise.
- A Committee of Secretaries (CoS) must address inter-ministerial issues including bottlenecks in ongoing projects.

- Develop a system to collect and analyse information on traffic and inventory assets condition etc.
- Draw up a Model Concession Agreement on the operation, maintenance and tolling of the completed stretches of the NHDP.
- Set up a dedicated organisation for road safety and traffic management.
- Enact a law for economic regulation and dispute resolution for public-private partnerships.
- Leverage the cess amount from Central Road Fund available for the PMGSY for raising resources.

#### PORTS

- Increase the scope of private sector participation in the development of ports. This would require revision of guidelines and delegation of more powers to the ports to increase operational efficiency. The government/public sector would need to step in to provide common user facilities like capital dredging, where necessary.
- Implement organisational changes like corporatisation in order to achieve efficient management, get institutional funding and attract private investment.
- Review the role of TAMP. This is necessary since more private operators are coming up in ports.

- Improve productivity of major ports through upgrading technology.
- Rationalise manning scales to improve the productivity.
- Preparing Perspective Plan for long term development of each major port.

#### CIVIL AVIATION

- Formulate a civil aviation policy keeping in view the role of the sector in the inter-modal context and the promotion of trade and tourism.
- Speed up the modernisation of Delhi and Mumbai airports, as they handle the bulk of air traffic.
- Draw up plans for the development of all airports. Chennai and Kolkata must be restructured on the lines of the proposed restructuring of Delhi and Mumbai airports.
- Prepare Model Concession Agreements for developments of airports in order to promote PPP.
- Revamp the Airports Authority of India with multi-disciplinary staff to meet the long-term goals of the civil aviation sector.
- Set up a statutory regulatory body for economic regulation and dispute resolution.
- Consider permitting equity participation by foreign airlines in the domestic air transport operations in order to get the necessary expertise.