

Chapter 1: Status of Ongoing Projects - New Lines, Doublings and Gauge Conversion Projects

1.1 Introduction

Indian Railways (IR) runs 21598 trains (passenger and goods) daily throughout its network of 65808 track kilometer. To keep pace with the increase in growth of traffic, to ease capacity constraints of its tracks and also to bring the unconnected backward areas within the railways network, IR undertook projects of expansion by constructing New Lines (NL), Doublings (DL) and Gauge Conversions (GC). Railway projects are generally financed through Gross Budgetary Support (GBS) from the Ministry of Finance. In the Vision 2020 documents presented (2009) to the Parliament, Ministry of Railways had stated that there was a huge shelf of ongoing projects¹. Targets for the projects were fixed on yearly basis depending upon the availability of resources. However, continuous addition of new projects without ensuring availability of funds further burdened the IR with additional financial liability. Due to delay in preparation/ sanction of estimates, deficient planning and delay in acquisition of land, the list of ongoing projects kept on piling up leading to cost and time overrun.

Vision 2020 proposed to add 25,000 km. of NL by 2020 and of this, at least 10,000 km. would be socially desirable lines regardless of their economic viability in the short run. It aimed at according priority to connectivity projects to North-East and Jammu & Kashmir. It also envisaged that GC programme would be completed and more than 30000 Km. would be double/multiple lines.

During 2009-14, though IR added 10240 Km. to its network which included NL (2643 Km-socially desirable), DL (3380 Km) and GC (4217 Km), 442 projects (NL-165, DL-216, and GC-61) were ongoing as of March 2014 with throw-forward as indicated in the table below:

Table No. 1: Revised Cost and Throw-forward of Ongoing Projects

Description	NL	DL	GC	Total
Total No. of Ongoing Projects	165	216	61	442#
Anticipated Revised Cost (₹ in crore)	159665	50498	52316	262479
Throw-forward as on 01.04.2014 (₹ in crore)	121232	37062	27266	185560

#This includes 82 projects with 100 per cent physical progress but with throw-forward of ₹ 10832 crore.

Over the years, total planned expenditure of the IR has increased disproportionately to its internal resources. Internal resource generation² had

¹ Ongoing projects are those projects (not covered under pending projects) which are appearing in the Pink Book (Annual Works Programme) and are under various stages of progress.

² Reserve Funds such as Depreciation Reserve Fund, Capital Fund and Development Fund.

decreased from 30.77 per cent in 2009-10 to 17.98 per cent in 2013-14 resulting in increased dependence on GBS from 44.70 per cent in 2009-10 to 53.82 per cent during 2013-14. Internal Resource Generation vis-à-vis Plan Expenditure during 2009-10 to 2013-14 is indicated in the table below:

Table No. 2: Internal Resource Generation and Gross Budgetary Support during 2009-14

Year	Total Plan Expenditure (₹ in crore)	Internal Resource Generation (₹ in crore)	Gross Budgetary Support (₹ in crore)
2009-10	39632.56	12195.68 (30.77 per cent)	17716.09 (44.70 per cent)
2010-11	40792.74	11527.39 (28.26 per cent)	19485.06 (47.77 per cent)
2011-12	45061.12	8933.73 (19.83 per cent)	21336.80 (47.35 per cent)
2012-13	50383.45	9531.31 (18.92 per cent)	25710.21 (51.03 per cent)
2013-14	53989.26	9709 (17.98 per cent)	29055.38 (53.82 per cent)

1.2 Organisation Structure

Implementation of new line, doubling and gauge conversion projects is the collective responsibility of various Directorates of Railway Board such as Civil Engineering, Works, Finance, Signaling, Electrical etc. However, the prime responsibility is on Member Engineering who is the head of Civil Engineering and Works Directorate. He is assisted by Executive Directors for planning, works, procurement, monitoring etc. At the Zonal level, there is a Construction Organization headed by Chief Administrative Officer/GM, who is assisted by Chief Engineers, Chief Electrical Engineers, Controller of Store, Chief Signal and Telecom Engineer at Headquarters level and Deputy Chief Engineers positioned in the field offices for executing the construction works. Details of organisation structure are shown in *Appendix I*.

1.3 Audit Objectives

The status of ongoing projects in Indian Railways was reviewed to assess whether:

- *Projects were judiciously taken up and duly prioritized in terms of projected benefits.*
- *Financial management was efficient with reference to the availability of funds and their optimum utilization.*
- *There was adverse impact on physical progress and the cost of the project due to deficient planning and monitoring.*

1.4 Audit Scope and Methodology

The scope of Audit covered review of status of all the New Lines, Doubling and Gauge Conversions projects ongoing as of March 2014. A detailed examination of records was carried out for the period 2009-14 pertaining to (i) 105 selected ongoing projects (NL-56, GC-18 and DL-31) (*Appendix-II*) with special emphasis on National Projects in North Eastern Region as indicated in *Appendix III*, (ii) Management of works contracts in Indian Railways (iii) Dedicated Freight Corridor Project and (iv) Modernization of Signaling and Telecommunication projects under execution through Indian Railway Project Management Unit (IRPMU).

Audit methodology included the examination of related records at the Railway Board level, at the Zonal Levels (Open Line and Construction Organisation) and also at IRPMU/Allahabad.

The Performance Audit commenced with an Entry Conference (October 2014) with the concerned executives of the Railway Board and respective Heads of Department at the Zonal level wherein the audit objectives, scope of study and methodology were discussed. The Draft Review Report was issued to Railway Board in August 2015. The audit findings were discussed in an Exit Conference held by the Principal Directors of Audit in the Zonal Railways with the concerned Heads of Department. The response of the Railway Board on the audit findings was awaited (September 2015).

1.5 Audit Criteria

The criteria to assess the performance of Indian Railways were derived from the following sources:

- Indian Railways Financial Code Volume I;
- Indian Railways Code for the Engineering Department;
- Indian Railways Code for the Accounts Department;
- Indian Railways Permanent Way Manual;
- Indian Railways Works Manual.
- Feasibility Study Reports and Final Location Survey Reports;
- Administrative observations on project Justification proposals, Monthly/Periodical Confidential Demi-official (MCDO/PCDO) Reports.

1.6 Audit Findings

Audit Objective – 1: To assess whether projects were judiciously taken up and duly prioritized in terms of projected benefits

1.6.1 Procedure for Sanction of Projects

Indian Railways sanctions projects on operational, strategic or socio-economic considerations. All projects upto ₹300 crore are approved by Hon'ble Minister for Railways. However, 'In Principle' approval of the Planning Commission is required before sanction of Doubling Projects having value less than ₹300 crore. In respect of all New Lines and Gauge Conversion Projects having value more than ₹300 crore, a Memorandum for Expanded Board for Railway (EBR)³ is prepared in which financial scheduling of the project is also planned and vetted by the Railway Board Finance and the same after approval of Board (Member Engineering) is sent for obtaining "In Principle" approval of the Planning Commission for the project. After "In Principle" approval, the project report is sent to the Project Appraisal and Management Division (PAMD) of the Planning Commission for appraisal. On approval of the EBR, a note for approval of the Cabinet Committee on Economic Affairs (CCEA) is prepared and put up for approval of the Union Cabinet. After a project is approved by Hon'ble MR/CCEA, it is included in the Railways Works Programme and a certain fund is allotted for carrying out preliminary works during the year.

1.6.2 Overview of all Ongoing Projects

Railway Board in their Action Taken Note on Chapter-1 State of Finances (Report No. 33 of 2010-11 Union Government /Railways) stated that there were 362 (NL-154, GC- 42 and DL-166) projects ongoing as of March 2014. However, from the records of Zonal Railways, it was observed that a total of 442 projects were ongoing across all Zonal Railways. This indicates a difference of 80 projects between the records of Railway Board and the Zonal Railways. On comparison of two data sources, it was revealed that:

- I. There were 20 projects which were shown in the list of ongoing projects maintained by the Railway Board, but were not included in the list of ongoing projects of the Zonal Railways. On the other hand, 116 ongoing projects in the Zonal Railways were not included in the list of ongoing projects of Railway Board. This implied that the number of ongoing projects in the Zonal Railways and the list of ongoing projects maintained by Railway Board is 462 (442+20) and 478 (362+116) respectively leaving a difference of 16 (478-462) ongoing projects as against the

³ EBR comprising members from Railway Board, Planning Commission, Ministry of Statistics and Programme Implementation and Ministry of Finance

overall difference of 80 projects which were not reconciled by the Railway Board.

- II. On analysis of the information collected from the Zonal Railways, it was further observed that 82 projects (NL-17, GC-19, DL-46) which had achieved 100 *per cent* physical progress were still showing a throw-forward of ₹10832 crore as of March 2014 for completion of these projects. Of them, 20 projects⁴ had been included in the list of 362 ongoing projects maintained by the Railway Board as indicated in *Appendix IV*.

Scrutiny of records relating to the status of 442 ongoing projects as furnished by the Zonal Railways revealed that:

- I. The cost of 442 ongoing projects was revised from ₹155570 crore to ₹262478 crore, an increase of 68.72 *per cent* as of March 2014. Railway Board in their Action Taken Note⁵ indicated throw-forward of ₹175717 crore for 362 ongoing projects. However, the Zonal Railways assessed that the anticipated throw-forward for completion of balance works relating to 442 ongoing projects was ₹185559 crore as of March 2014. The assessment of the Zonal Railways is reflected in the Pink Book which is approved by the Railway Board. The status of expenditure incurred and throw-forward of on-going projects as of March 2014 is indicated in the table below:

Table No.3: Expenditure on Ongoing Project (₹ in crore)

	No. of Projects	Original Cost	Revised Cost (March 2014)	Cost Overrun	Cumulative Expenditure (March 2014)	Anticipated throw-forward as of March 2014
Projects costing ₹150 crore and above*						
New Line	148	85825	156462	70637	43223	120262
Gauge Conversion	59	26846	48604	21758	28483	23445
Doubling	112	32080	40979	8899	13186	31324
Total	319	144751	246045	101294	84892	175031
Projects costing less than ₹150 crore*						
New Line	17	1497	3203	1706	2074	970
Gauge Conversion	2	230	3712	3482	4	3821
Doubling	104	9092	9518	426	5845	5737
Total	123	10819	16433	5614	7923	10528
Grand Total	442	155570	262478	106908	92815	185559

*As categorized by Railway Board

⁴ Indicated in italics in the Appendix

⁵ On Chapter-1 State of Finances (Report No. 33 of 2010-11 Union Government (Railways))

- II. Out of 442 projects, scheduled date of completion (Target date) of projects were fixed only in respect of only 156 projects (35.29 per cent). The original target date has already been exceeded in 105 out of 156 projects and the delay beyond the original date of completion was up to 16 years. In 47 out of these 105 projects, the progress was less than 10 per cent till March 2014.
- III. In respect of 286 projects, schedule date of completion was either not fixed or not available on the records of Zonal Railways. Out of 114 projects where target date was not fixed, the physical progress of 67 projects was less than 10 per cent. The details of Physical Progress of 442 projects as of March 2014 are indicated in the table below:

Table No. 4: Physical progress of ongoing projects

Target	No. of projects	Time overrun since the original date of completion and Physical Progress		
		Range of Physical Progress	No. of projects	Time overrun (in months)
Target Fixed	156	i. Less than 10 per cent ii. Between 10 and 50 per cent- iii. Above 50 per cent iv. Physical progress not available on Railway record-	47 28 79 2	Upto 192 Upto 168 Upto 159 Upto 67
Target date not fixed	114	i. Less than 10 per cent ii. Between 10 and 50 per cent- iii. Above 50 per cent iv. Physical progress not available on Railway record-	67 25 21 01	Not applicable*
Target date not available on Railway's record or not made available by Railway Administration	172	i. Less than 50 per cent ii. Above 50 per cent- iii. Physical progress not available on Railway record-	75 94 03	Not applicable*

*Due to non-fixation of target for completion of project, the time overrun could not be worked out.

Project –wise details of revision of project cost, cumulative expenditure along with the anticipated cost involved for the balance works etc. and physical progress of projects are shown in *Annexure 1 (Projects costing ₹150 crore and above) and 2 (Projects costing less than ₹ 150 crore).*

1.6.3 Year – wise Analysis of Projects

Year–wise analysis of 442 projects ongoing as on 31 March 2014 revealed the following:

Table No. 5: Age analysis of ongoing projects

Year of Sanction	NL	DL	GC	Number of projects sanctioned
Between 2008-09 and 2013-14	77	128	16	221
Between 2003-04 and 2007-08	28	59	15	102
Between 1998-99 and 2002-03	19	17	08	44
More than 15 years (1997-98 or	41	12	22	75

before)				
Total	165	216	61	442

Out of 442 ongoing projects, the works in respect of 22 projects had not commenced (March 2014) although some of these projects were sanctioned upto 16 years back⁶ and the details in this regard are shown in *Appendix V*.

Three projects which have been under execution for more than 30 years are detailed below:

A. Nangal Dam – Talwara BG Rail Link (NR)

The first phase of the project from Nangal Dam to Amb Andaura (43.914 km) was sanctioned in the year 1982-83 on grounds of socio-economic development at a cost of ₹37.68 crore. The work was started in 1982 on urgency certificate⁷ after an assurance from the Government of Himachal Pradesh to share the financial burden in respect of cost of land, cost of labour component of earthwork and wooden sleepers for the construction of the Railway line. The works relating to the section Nangal Dam to Amb Andaura were completed in October 1989 and opened to traffic in January 1991. The works relating to the section Amb Andaura –Talwara were not executed during 1991-96 due to Himachal Pradesh (HP) Government’s refusal to bear cost of land and was taken up only in September 1996 when HP Government agreed to give land to the Railway free of cost. The construction of 2nd phase (Una Himachal to Charuru Takrala) was started in 1998 and completed in June 2004 at a cost of ₹66.97 crores and the section was formally opened to traffic in March 2005. The progress of the project for the remaining sections was affected due to shortage of funds. Audit observed that the project remained under execution with physical progress of 55 *per cent* till March 2014 incurring an expenditure of ₹ 383.89 crore.

B. Howrah to Amta with a branch line from Bargachia to Champadanga (SER)

This New Line project was sanctioned in 1974-75. Based on an MOU executed (1973) with State Government of West Bengal, the land was to be provided by State Government free of cost. The first 24 km. stretch of the section from Howrah to Bargachia was completed in 1984. The work on further construction beyond Bargachia was frozen for more than a decade. The project was shown as ongoing in Pink Book with a token allotment of ₹1000 each year up to 1995-96⁸. The project was de-frozen in June 1995 after allotment of funds. Though

⁶ 9 projects sanctioned between 1997-98 and 2008-09 and 13 projects sanctioned between 2010-11 and 2012-13

⁷ The expenditure in respect of works undertaken on the basis of urgency certificate may be incurred prior to receipt of the sanction of the authority competent to sanction the estimate. (Para 1103 of Indian Railways Code for Engineering Department)

⁸ Except in 1993-94, when ₹1 crore was allotted

the section from Bargachhia to Amta was commissioned in two phases in July 2000 and December 2004, the progress of works for the branch line from Bargachhia to Champadanga suffered due to non-acquisition of land. The project (Bargachhia to Champadanga) was proposed for shelving in September 2014. However, the project was being considered as ongoing with anticipated throw-forward of ₹ 356.03 crore.

C. Eklakhi-Balurghat New BG line (NEFR)

This project for construction of New BG line (87.11 km.) was sanctioned in 1983-84 at an anticipated cost of ₹ 585.29 crore. Though, the section Eklakhi-Balurghat was completed and commissioned in December 2004, the scope of the project was subsequently enlarged by inclusion of three material modifications⁹ (MM) for construction of New BG line for the sections – (i) Gazole-Itahar (27.20 km.) sanctioned in March 2008 (ii) Raiganj-Itahar (22.16 km.) sanctioned in April 2011 and (iii) Itahar-Buniadpur (27.095 km.) sanctioned in April 2012. These sections were not part of the original sanctioned project and therefore, it was irregular to execute the projects as material modification to the sanctioned project (Eklakhi-Balurghat) as it violated the codal provisions relating to works to be carried out through MM. As a result of inclusion of these projects as MMs, the original project was considered as ongoing (March 2014).

1.6.4 Accretion of Ongoing Projects

In order to improve the precarious financial health of Railways, Ministry of Finance (Department of Expenditure) inter-alia suggested (2003) a freeze on new projects except those which were necessary from the safety point of view and which were commercially viable projects. It was, however, observed that during the review period 2009-14, 202 new projects at a cost of ₹ 81841 crore had been added even though there were 307 ongoing projects as on April 1, 2009. During 2009-14, only 67 out of total 509 projects were completed leaving a balance 442 projects as of March 2014.

The delay in completion of projects due to meagre fund allotments as discussed in Paragraph 1.6.9 led to accumulation of throw-forward of ₹70859 crore in respect of 307 ongoing projects as on April 1, 2009 and the same had increased to ₹185559 crore for completion of 442 ongoing projects as on April 1, 2014. Given the trend of average fund allotment of ₹10817 crore per annum¹⁰ and assuming that neither new projects would be added nor there would be cost

⁹ As per Para 1110 of Indian Railway Code for the Engineering Department, Material Modification refers to substantial changes in the scope of work or scheme which was not thought of at the original stage but which is subsequently considered necessary. The desired change/modifications should strictly pertain to the sanctioned work otherwise they would require sanction of the competent authority.

¹⁰ Average figure worked out on the basis of fund allotted during the year 2010-11 to 2013-14

escalation, more than 17 years would be required for completion of all ongoing projects incurring this huge throw-forward expenditure.

1.6.5 Projects taken up as per Budget Announcement

During 2004-09, 110 projects (NL-46, GC-15 and DL-49) were taken up on the basis of Budget Announcement and six projects were material modifications of the existing ongoing projects. Of them, four projects of SWR and one project of SR which were announced during 2005-06 to 2008-09 were not sanctioned by Railway Board till March 2014. The details of status of the remaining 105 projects are shown in *Annexure 3*.

Scrutiny of records relating to the status of these projects revealed that only 11 projects were completed. The remaining 94 projects were in progress and an expenditure of ₹13088 crore was incurred till March 2014 leaving ₹44215 crore for completion of these projects. The physical Progress of 105 projects is tabulated below:

Table No. 6: Status of Physical Progress

Range of Physical Progress	No. of Projects	Range of Period elapsed since the year of sanction (in months)
Nil Progress	24	36 to 168
Physical Progress not available	4	12 to 72
Between 1 and 25 per cent	22	36 to 96
Between 26 and 50 per cent	9	72 to 108
Between 51 and 99 per cent	22	60 to 288
100 per cent but involve throw-forward	24*	60 to 132
TOTAL	105	

*The figure includes 11 completed projects

1.6.6 Economic Viability of Project

As per extant codal provisions¹¹, no fresh investment proposal would be considered financially justifiable unless the net gain (Rate of Return) expected to be realised as a result of the proposed outlay, after meeting the working expenses or the average annual cost of service, is 14 per cent or more. Rate of Return (ROR) is worked out on the basis of anticipated traffic earnings likely to be derived on completion of the project. In respect of 126 projects¹² (29 per cent) ROR was negative. Project-wise ROR for different ongoing projects are shown in *Annexure 1 and 2*.

Range of ROR for different categories of projects is indicated in the table below:

¹¹ Para 204 of Indian Railway Finance Code Volume I.

¹² NL-78, DL-33, GC-15

Table No. 7: Rate of Return

Plan Head	No. of projects as on April 1, 2014	Percentage of viable projects (ROR)			
		14 per cent and above	Less than 14 per cent	ROR not worked out/ not available on records	ROR not made available to Audit
New Lines	165	23	119	23	NIL
Doubling	216	103	72	40	1
Gauge Conversion	61	10	45	5	1
TOTAL	442	136	236	68	2

Test check of 105 ongoing projects revealed instances of revision of ROR at the subsequent stage. The following table depicts instances where ROR was revised downward:

Table No. 8: Revision of Rate of Return

Sl. No.	Name of project	Name of the Zonal Railways	Original ROR	Revised ROR
	New Line			
1.	Karur-Salem	SR	19.47	3.73
2.	Nandyal-Yerraguntla	SCR	15.85	2.98
3.	Cuddapah-Bangalore	SCR	18.78	10.68
4.	Bagalkot – Kudachi	SWR	16.74	12.83
5.	Kakinada-Pithapuram	SCR	15.90	-11.27
	Doubling			
6.	Chengalpattu-Villupuram	SR	14.31	13.20
7.	Chandrapura-Rajabara-Chandrapura-Bhandaridah	ECR	36.00	1.49

Drastic reduction/revision of initial ROR for the projects was indicative of the fact that the initial calculation of ROR was not realistic. The details of Rate of Return in respect of all projects are shown in *Annexure 1 and 2*.

1.6.7 Detailed Review of Selected Projects

For detailed examination of various important activities such as preparation of detailed estimates, feasibility study, allotment and utilization of funds and execution, 105 projects (out of 442) of different categories (High Priority, Project with Cost Sharing, Projects with maximum time and cost overrun etc.) were test checked. The results of detailed examination of these 105 selected projects are discussed in the succeeding paragraphs:

1.6.7.1 Preparation of Detailed Estimate

After approval of the abstract estimate, the Railway Administration should undertake the final location survey, proceed with such preliminary arrangements such as land acquisition and ordering of stores etc. and undertake

the preparation of Detailed Estimates. The work should commence only after the detailed estimate is sanctioned.

Scrutiny of records revealed that:

- I. The total cost of 105 selected projects as per detailed estimates was ₹ 65320 crore. The cost was revised in 45 projects (NL-30, GC-10, DL-5). The variation between the original and revised estimate ranged between 2.92 and 535.79 per cent (NL-20.76 to 535.79 per cent, GC-2.92 to 321.36 per cent (NL) and DL-52.72 to 317.33 per cent). Variation in excess of 100 per cent was observed in respect of 32 projects (NL-25, GC-5, DL-2) (**Appendix-VI**). These variations were due to cost escalation as a result of prolonged period of execution, incomplete detailed estimate, inclusion of material modification, increase in scope of work etc. Details are shown in **Annexure- 4**.
- II. Zonal Railways took 5 to 18 years in preparation of the detailed estimates in respect of 14 projects (NL-12, GC- 2) of 9 ZRs¹³ as shown in **Appendix -VII**. Railway Board also took considerable time ranging between 1 month and 156 months for sanctioning the detailed estimates. In respect of three new line projects, Railway Board took 5 to 13 years for sanctioning the detailed estimates as mentioned below:

Table No. 9: Status of sanction of detailed estimate

Name of project	Submission of Detailed Estimate to Railway Board	Sanction of Detailed Estimate by Railway Board	Time taken	Reasons for abnormal time taken
Ahmednagar-Beed-Parli Vaijnath – (CR)	April 2004	March 2012	7 year 11 months	Not available on Zonal Railway’s record.
USBRL – (NR)	1999-2000	2012	13 year	Not available on Zonal Railway’s record.
Howrah-Amta including Bargachia-Champadanga (SER)	1979	February 1984	5 year	Not available on Zonal Railway’s record.

- III. In respect of National Project of NEFR, the detailed estimate of ₹1762.06 crore for construction of the Bogibeel Bridge (4315.2 m) with the Guide Bunds, Sub-structure and Super-structure etc. was sanctioned by Railway Board between December 2001 and September 2010. The estimate was inflated by ₹128.81 crore due to adoption of incorrect cost of components such as earthworks, blanketing and sandwich layers for the main bridge portion (Super structure) as indicated in the table below:

¹³ (CR, ECR, ECoR, SCR, SER, SECR, SR, SWR and WCR)

Table No. 10: Details of incorrect adoption of components in Detailed Estimates

	Particulars of Work	Cost (₹ in crores)	Difference (₹ in crores)
A	Cost of earthwork for doubling from chainage 15.123 km to 32.898 km were assessed for 17.77 km Less: Actual cost of earthwork for the section excluding main bridge length 4.940 km i.e. 12.83 km (63.13X12.83/17.77) as assessed by audit.	63.13 45.58	
	Difference:		17.55
B	Quantum of Blanketing was assessed 445000 cum @ Rs 855/- per cum for 17.77 km i.e. chainage from 15.123 km to 32.898 km Less: Actual requirement of blanketing on top of formation for that sec excluding main bridge length i.e. for 12.83 km was 87885.50 cum (6.85m x 1m x 12830m), as assessed by audit.	38.43 7.51 (₹855 x 87885.5 cum)	
	Difference:		30.92
C	Cost of sandwich layer for doubling work for the chainage 5.123 km to 32.898 k was assessed for 17.77 km Less: Cost of earthwork for that section excluding the main bridge length for 12.83 km (17.77 km – 4.940 km) as assessed by audit.	9.17 6.62 (9.17 x 12.83/17.77)	
	Difference:		2.55
D	Raising, widening & strengthening of south bank and north bank dyke		77.79
		Total	128.81

Thus, it was evident that the detailed estimates were not prepared with reasonable accuracy which resulted in revision of estimates in respect of 45 out of 105 projects test checked. Delay in processing of detailed estimate and their sanction indicated that the importance of detailed estimates for efficient financial control over the execution of projects was ignored.

1.6.7.2 Feasibility Study and Engineering cum Traffic Survey

Indian Railway Code for the Engineering Department provides that the administrative sanction for a New Line Project should be accorded after conducting investigations that include Reconnaissance and Preliminary Engineering Survey of few alternative alignments and selecting the best from financial and operating point of view. The due process of consideration of the options leading up to the administrative sanction is required to be recorded and preserved in the Detailed Project Report. However, the technical sanction for commencing the execution of work should be accorded only on completion of extensive investigations and final location survey of the selected alignment.

In 12 Projects (NL-4, GC-1, DL-7) of four ZRs (CR, ER, SER and NR), no feasibility study and Engineering cum traffic survey was conducted. In respect of other projects, though feasibility study and engineering cum traffic survey was taken up prior to sanction of the project, it was observed that there were variations between detailed estimate and revised estimate. In respect of 32

projects (NL- 25, GC-5, DL-2), variation ranged between 104.95 *per cent* and 535.79 *per cent* as indicated in **Appendix-VI**.

1.6.7.3 Prioritisation of Projects

In response to observations of PAC in their 67th Report (15th Lok Sabha/2013) regarding prioritization of projects, Ministry of Railways (MoR) stated that they do prioritization every year and allot more money to only those projects which are likely to be completed in that year.

Audit observed that there was lack of consistency in prioritization of projects. It was observed that the priority accorded to the projects categorized as “High Priority” was *ad hoc* and changed in the subsequent years as mentioned below:

- (i) In ECoR, three projects were identified as ‘High Priority’ by Railway Board for the year 2012-13. Of these, two doubling projects (Simhachalam- Gopalpattnam and Vizianagaram- Kottavalsa 3rd line) were not included in the list of high priority Projects in subsequent years 2013-14 and 2014-15.
- (ii) The Bardhaman-Katwa GC project of ER had been categorized as High Priority during 2013-14 but in 2014-15, the project had been excluded from the category of High Priority Project due to failure in framing a specific schedule like fixing up the Target Date of Completion of the remaining portion of the project¹⁴ (Balgona-Katwa).
- (iii) In SWR, no consistency was noticed in prioritizing projects in case of Tornagallu-Ranjithapura, DL project which was accorded the status of ‘High Priority’ during 2012-13 and the same was deleted from the list of high priority projects in 2013-14.

The Minister for Railways in his Budget Speech (2013-14) declared 30 projects as ‘High Priority’ projects. The objectives of high priority projects were as under:

- I. Economic development of backward & downtrodden areas
- II. To cater to augmentation of traffic
- III. To ease out traffic constraints of the single line
- IV. To remove traffic bottleneck and capacity enhancement of the section.

The brief status of high priority projects is indicated in **Appendix-VIII**. A detailed review of 28 (NL- 1, GC-1, DL- 26) high priority projects revealed that:

¹⁴ *Bardhaman-Balgona commissioned in March 2011*

- I. 44The physical progress in 17 projects (NL-1, DL-16) of 10 ZRs was upto 50 per cent and of them, the progress of works in respect of 11 projects (NL-1, DL-10) of seven ZRs¹⁵ was 10 per cent or less.
- II. Though seven projects of five ZRs¹⁶ which were sanctioned on “High Priority” during 2008-12, the physical progress of these projects ranged between zero and 10 per cent only as tabulated below:

Table No.11: Physical Progress of High Priority Projects

Sl. No.	Name of project	Name of Railway	Year of sanction	Original target completion	Physical progress (per cent)
1.	Pirpainti-Bhagalpur (DL)	ER	2011-12	Not Available	0
2.	Sainthia-Tarapith - 3rd line (DL)	ER	2011-12	09/2016	10
3.	TJ-GOC Doubling with Bye pass line before Golden rock (DL)	SR	2011-12	Not fixed	3
4.	Champa-Jharsuguda-3rd line (DL)	SECR	2008-09	03/2019	10
5.	Birur-Shivani (DL)	SWR	2011-12	09/2013	10
6.	Hosadurga Road-Chickajajur (DL)	SWR	2010-11	06/2014	0
7.	Viramgam-Surendranagar (DL)	WR	2010-11	03/2014	0

From the table above, it was observed that works in respect of three high priority projects of three ZRs were not taken up (March 2014).

Thus, due to lack of consistency in prioritization of projects and lack of focused attention to prioritized projects, the physical progress of projects was minimal and thereby defeating the objectives of prioritization.

1.6.8 Achievement of Target as fixed by Vision 2020

1.6.8.1 Construction of New Lines

Construction of New lines are sanctioned for providing connectivity to the regions not adequately connected to the Railway network in order to bring them to the national main stream of development. As per Vision 2020¹⁷, Indian Railways planned to construct on an average 2500 Kms. of New Line per year. It was, however, observed that the progress in this regard was not

¹⁵ CR-1, ER-4, ECR-2, SR-1, SCR-1, SWR-1, WCR-1

¹⁶ ER, SECR, SR, SWR and WR

¹⁷ Framed by the Ministry of Railways in 2009

proportionate to its target as shown below:

Year	2009-10	2010-11	2011-12	2012-13	2013-14	Total
New Line (in Kms.)	258	709	725	501	450	2643

Source: Demand for Grants (2015-16) of the Ministry of Railways

There was continuous addition of projects as discussed in Paragraph 1.6.4 *ibid* despite being aware of the trend of GBS which was not proportionate to the requirements of the Railways. As a result, the progress of projects was adversely affected causing time and cost overrun as brought out in Paragraph 1.6.2 *ibid*. Audit observed that the reasons for slow progress were inadequate allotment of fund in addition to delay in preparation of estimate, delay in sanctioning of detailed estimate, delay in acquisition of land as discussed in Paragraphs 1.6.7.1 and 1.6.11.

1.6.8.2 Status of Gauge Conversion

In consonance with the uni-gauge policy¹⁸ (1991), Indian Railways had undertaken a number of Gauge Conversion projects for conversion of MG line to BG line since 1992 to ensure seamless movement of freight traffic and passengers in addition to avoiding trans-shipment. It was observed except during 2009-10 that Indian Railways failed to achieve the target of Gauge Conversion of 1200 kms. per year as envisaged in Vision 2020 during 2010-14 as evident from the table below:

Year	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Gauge Conversion (in Kms.)	1516	837	855	605	404	4217
GBS (₹ in crore)	3580	3232	2821	2700	3103	15436

Source: Demand for Grants (2015-16) of the Ministry of Railways

Ministry of Railways in their reply to Public Standing Committee stated (April 2015) that reduced allocation of funds since 2011-12 due to near stagnant GBS was a major cause for the continuous declining trend in respect of gauge conversion.

The contention of the Ministry of Railways was not acceptable as it was observed that Gross Budgetary Support (GBS) for GC works was uniform during the period 2009-10 to 2013-14 except during 2011-12 and 2012-13 when the GBS was decreased by 13 *per cent* and 16 *per cent* respectively when compared with the GBS for the year 2010-11. The slow progress of GC works resulted in throw-forward of ₹ 27266 crore in respect of 61 projects.

¹⁸ Standardisation of tracks into BG

1.6.8.3 Status of Doubling

The work of doubling involves provision of additional lines by way of doubling the existing routes to enable the Railways to ease out traffic constraints of single line and increase the chartered capacity.

Year	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Doubling Projects (in Kms.)	448	769	750	705	708	3380

Source: Demand for Grants (2015-16) of the Ministry of Railways

From the table above, it was observed that IR could not achieve the target of 1200 kms. of doubling works as envisaged in the Vision 2020. The number of ongoing doubling projects at the time of framing Vision Document (2009) increased to 216 projects in March 2014 with anticipated throw-forward of ₹ 37058 crore.

Audit Objective – 2: To see whether financial management was efficient with reference to the availability of funds and their optimum utilization

1.6.9 Allotment and Utilisation of Fund

Indian Railways has a huge throw-forward of ongoing projects. Availability of funds to projects and their optimum utilisation is essential for sustained progress of the projects so as to complete the projects within the stipulated period of completion thereby minimizing cost overrun. Para 615 of the Indian Railway Code for the Engineering Department provides that the Railway Administration should make a realistic assessment of the amount required for each work in progress and necessary provision should be made in the Works Programme.

Analysis of trend of fund allotment to the project vis-à-vis the actual expenditure for the 105 selected ongoing projects revealed the following:

- I. In 29 projects (NL-17, GC-2, DL-10) of 11 ZRs, the actual expenditure incurred was less than 50 per cent against the budget allotment. It was observed that the actual expenditure vis-a-vis Budget Grant ranged from 0.025 per cent to 49.54 per cent during 2009-14 as shown in **Appendix – IX**. In five projects pertaining to four ZRs (NR-1, SCR-1, SECR-1 and ER-2), no expenditure was incurred though there were allotment of fund ranging from ₹ 13 crore to ₹ 115 crore during 2009-14. The physical progress in these 29 projects ranged between zero and 46.98 per cent except in case of Agra-Etawah project where physical progress was 84 per cent.

- II. 11 Zonal Railways incurred abnormally excess expenditure ranging between 40.18 *per cent* and 1014.93 *per cent* in respect of 24 projects (NL-19, GC-2, DL-3) as indicated in *Appendix – X*.

1.6.9.1 Inadequate Allotment of Funds

An analysis of the funds demanded by Zonal Railways vis-à-vis fund allotment by Railway Board during 2009-14 revealed that in 20 (NL-13, GC-5, DL-2) projects, the funds were allotted in excess of more than 10 *per cent* as against funds demanded. Similarly, in respect of 64 projects (NL-35, GC-12, DL-17), less funds were allotted as against demanded by ZRs. The details of excess/shortage in excess of 90 *per cent* in respect of fund allotment are tabulated below:

Table 12: Abnormal variation in allotment of fund

Sl. No.	Name of the Project	Name of Zonal Railways	Funds demanded (₹ in crore)	Funds allotted (₹ in crore)	Excess / (-) Less Allotment (+) in <i>per cent</i>
	New Line				
1.	Chandigarh-Baddi	NR	43	3.06	-92.88
2.	Ratlam-Dungarpur via Banswara	NWR	10	40	300.00
3.	AIP-Puttur	SR	151	2.65	-98.25
4.	Erode-Palani	SR	235	1.49	-99.37
5.	Bowaichandi – Arambagh	SER	80	159	98.75
6.	Dhallirajahara – Jagdalpur	SECR	22	396.43	1701.95
7.	Whitefield-Kolar	SWR	72	0.32	-99.56
8.	Tumkur-Chitradurga-Davanagere	SWR	30	0.63	-97.90
9.	Shimoga-Harihar	SWR	40.5	0.58	-98.57
10.	Bangalore-Sathyamangalam	SWR	35.1	0.39	-98.89
	Gauge Conversion				
11.	Dholpur-Sirmutra	NCR	28	2.34	-91.64
12.	CUPJ-SA (via)VRI	SR	69	0	-100
	Doubling				
13.	Tarapith- Rampurhat	ER	16.05	1.31	-91.84
14.	Vijayawada – Kazipet 3rd Line with electrification.	SCR	61	1	-98.36
15.	Salka Road-Khongsar-Patch doubling	SECR	25	166.28	565.12

It was observed that in respect of Chandigarh-Baddi line of NR which was sanctioned during 2007-08 and work started in 2008-09, an expenditure of only ₹ 0.17 crore (0.05 *per cent*) was incurred upto March 2014 as against total

anticipated cost of ₹ 328.14 crore. As against funds of ₹ 43 crore demanded during the period 2009-14, only ₹ 3.05 crore were allotted during the same period.

Similarly, only ₹30.39 crore (1.02 per cent) was incurred as against total anticipated cost of ₹ 2966.99 crore in respect of Bhanupalli-Bilaspur new line project (sanctioned in 2008-09) during the period 2009-14. As against funds to the tune of ₹ 150 crore demanded during the period 2009-14, only ₹ 126.60 crore were only allotted during the same period.

The following instances bring out inefficiency in financial management in planning of funds deployment.

Table No. 13: Allotment and utilization of funds

Sl. No.	Name of the ZR	Name of the Project	Year	Fund Demanded	Fund Allotted	Utilisation	(-) Under utilization	Per centge of under utilization
1.	CR	Ahmednagar- Parli Vajjnath project	2010-11	50	67.70	11.88	(-)55.82	82.45
			2012-13	20	103.98	78.83	(-)25.15	24.19
2.		Belapur-Seawood-Uran project	2011-12	55	16.70	11.07	(-)5.63	33.71
3.	NCR	Agra-Etawah	2009-10	25	45.4	28.65	(-)16.75	36.89
			2011-12	50	94.4	50.00	(-)44.40	47.03
			2012-13	90	58.80	40.17	(-)18.63	31.68
4.	SECR	Dallirajhara-Jagdapur	2009-14	22	396.43	43.15	(-)349.83	89.02

From the above table, the following were observed:

- I. In Ahmednagar- Parli Vajjnath project (NL) of CR, allotted funds were not completely utilised during the years 2010-11 & 2012-13 respectively. There was under- utilisation of ₹ 55.82 crore (82.45 per cent) and ₹ 25.15 crore (24.19 per cent) during the respective years.
- II. Similarly, in Belapur - Seawood-Uran project (NL) of CR, as against the demand of ₹ 55 crore, funds to the tune of ₹ 16.70 crore were allotted during the year 2011-12. However, the actual expenditure was ₹ 11.70 crore only.
- III. In case of Agra-Etawah (NL project) of NCR, funds provided were ₹45.40 crore, ₹94.40 crore and ₹58.80 crore against the funds demanded of ₹25 crore, ₹50 crore and ₹ 90 crore during the period 2009-10, 2011-12 and 2012-13 respectively. The actual expenditure was, however, ₹ 28.65 crore, ₹ 50 crore and ₹ 40.17 crore respectively.
- IV. In SECR, it was seen that allotment of funds during 2009-14 was of ₹ 392.98 crore for the new line projects of Dallirajhara-Jagdapur (235 Km) but ₹ 43.15 crore (11 per cent) was only spent against the project.
- V. Under - utilization of funds ranged between 24.19 per cent and 89.02 per cent in these four projects.

Thus, the instances of under/excess utilisation of fund were indicative of lack of efficient financial control over optimal utilization of fund.

1.6.9.2 Allotment of Funds vis-à-vis Physical Progress

As per Para 1518 of IR code for Engineering department, a system of monitoring of relationship between the physical progress and the expenditure is essential. This implies that physical progress should be commensurate with the financial progress.

Scrutiny of records pertaining to 105 selected ongoing projects as shown in *Annexure – 5* revealed cases where physical progress was not commensurate with the financial progress. Some instances are given below:

Table No. 14: Physical Vs Financial Progress

Sl. No.	Name of project	Expenditure per annum during 2009-14 (₹ in crore)	Physical Progress (in per cent)	
			As on April 1, 2010	As on April 1, 2014
1.	Belapur-Seawood-Uran Electrified Double line (NL)/CR	5.13 to 52.99	12	15
2.	Rampurhat-Mandarhill via Dumka (130 km) with new MM for Rampurhat-Murara 3rd line (NL)/ER	63.05 to 107.05	40	40
3.	Bardhaman-Katwa (GC)/ER	0.01 to 59.80	50 (2010-11)	50
4.	Hathua-Bhatani (NL)/NER	2.80 to 20.39	28	29
5.	Chhitauni-Tamkuhi Road (NL)/NER	1.62 to 9.29	5	5
6.	Nangaldam-Talwara (83.74 Km) (NL)/NR	14.04 to 87.75	50	55
7.	Ratlam-Dungarpur via Banswara (NL)/NWR	0.7 to 13.15 (2011-14)	0.03	0.63
8.	Angamali-Sabarimala (NL)/SR	6.61 to 28.70	3	6
9.	Tindivanam-Tiruvannamalai (NL)	4.60 to 20.03	5	6
10.	Ramanagram-Mysore (DL)/SWR	108.86 to 150.44 (2011-14)	75 (2011-12)	75
11.	Ahmednagar-Parli Vaijnath (NL)/CR	11.88 to 78.83	3 (2010-11)	5

1.6.9.3 Cost Sharing Projects

In view of declining trend of internal resource generation and limited amount of funds under GBS, adoption of Cost Sharing projects with the State Governments was conceived (1995-96) and it was decided to accord priority to these projects by enhancing the budgetary allocation to match yearly

contribution of the State Governments. In 10 ZRs¹⁹, 38 projects covering a length of 3551.67 Km were taken up on Cost Sharing basis with the State Governments. Till March 2014, expenditure to the tune of ₹13134.82 crore (NL- ₹11676.03 crore, GC- ₹867.47 crore, DL- ₹591.32 crore) was incurred with an anticipated balance cost of ₹32303.09 crore (NL- ₹30202.77 crore, GC- ₹1817.07 crore, DL- ₹283.25 crore). The details of each Cost Sharing project are given in *Annexure – 5*

An analysis of the data/information furnished by the Zonal Railways revealed that the original target date of completion was not fixed for 23 projects (NL-22, GC-1). Out of the remaining 15 projects, the target date of completion was subsequently revised for 11 projects.

The physical progress of Cost Sharing projects was as follows:

Table No. 15: Physical progress of Cost sharing projects

	No. of Cost Sharing Projects	No. of Projects pending for more than five years	Expenditure incurred by Railways till March 2014 (₹ in crore)	Liabilities to be discharged by Railways (₹ in crore)
No Progress	9 (Sl.No. NL-5,15,18,20, 25,27,32,33 and 34)	1	4.80	2866.06
Less than 10 per cent	5 (Sl.No. NL-1,19,21,23, and 26)	3	226.86	3575.55
Between 10 per cent and 50 per cent	9 (Sl.No. NL-2,3,11,16,17,24, 29,30 and 31)	9	1039.89	8794.52
50 per cent and above	15 (Sl.No. NL-4,6,7,8,9,10,12,13,14, 22 and 28, GC-1,2,3, DL-1)	15	5906.24	3747.24
	38	28	6977.79	18983.37

From the table above, it was observed that progress of 23 projects out of 38 was less than 50 per cent. It was also observed that 28 projects out of 38 were pending for more than five years. Due to delay in completion of projects, the original project cost (at the time of sanction) of ₹ 20597 crore had increased to ₹40674 crore resulting in increase in financial burden of Railways from ₹10659 crore to ₹19936 crore as shown in *Annexure-6*. The brief results of examination in respect of Cost Sharing projects are given in *Appendix-XI*.

In respect of three cost sharing projects as tabulated below, the State Government refused to bear additional financial liability due to increase in land cost.

¹⁹ (CR, ER, ECR, NR, NWR, SR, SCR, SER, SECR and SWR)

Table 16: Time and Cost Overrun

Sl. No.	Name of the project	Remarks	Cost Overrun (₹ in crore)	Time Over run
1	Nangal Dam – Talwara BG rail link/NR	The reason for delay in completion of this project was that HP Government backed out of its commitments of providing land free of cost. The physical and financial progress as on 31 March 2014 was 55 per cent and ₹ 37.03 crore respectively.	1013.45	The works relating to the project commenced in 1982-83@.
2	Deoband-Roorkee/NR	Uttarakhand Government backed out of its commitment of 50 per cent share. The physical and financial progress as on 31 March 2014 was 10 per cent and ₹42.39 crore respectively.	176.91	12 months
3	Ranchi–Lohardaga (NG to BG conversion/SE R)	The anticipated cost of the project was increased from ₹ 147 crore to ₹ 699 crore. Revised estimate was sent to Railway Board in 2013, which is still pending for sanction due to its non-acceptance by the State Government. The physical and financial progress as on 31 March 2014 was 80 per cent and ₹ 602.38 crore respectively.	552.01	85 months

@ Original Date of completion not fixed. Time over run could not be worked out in absence of target date of completion.

Thus, due to slow progress, project cost was revised significantly and as a result State Governments in the above projects declined to share the enhanced cost.

Audit Objective – 3: To see whether there was adverse impact on physical progress and the cost of the project due to deficient planning

Efficiency in execution of projects plays a vital role in completion of projects in a time bound manner so as to minimize time and cost overrun. Deficiency at the planning phase has adverse impact on timely completion of project. In

addition, delay in acquisition of land often contributes to the time and cost overrun of the projects.

A detailed study of the execution of two National Projects²⁰ in North Eastern Region was conducted to assess the efficiency in planning and execution of projects.

1.6.10 Extra Expenditure due to Deficient Planning

I. Execution of Spurs and Guide Bund without technical approval of design

Spur is a structure which is constructed transverse to the river flow to divert streams from the Guide Bunds and to protect them from severe erosion by reducing velocity of river flows.

In connection with the construction of Bogibeel Bridge over the river Brahmaputra, the work of construction of two spurs in the South bank was undertaken by Northeast Frontier Railway (NEFR) during 2007-08 to divert the river flow so as to facilitate construction of South Guide Bund. Construction of spurs, however, could not restrict the velocity of the river flow which resulted in damage to the spurs. In order to protect the spurs, another contract was executed in March 2008 at a cost of ₹1.07 crore. Despite such protective measures, the location of the guide bund finally had to be shifted by 250m from its planned location resulting in wasteful expenditure of ₹15.63 crore as shown in *Appendix – XII*. It was observed that the technical approval of the competent authority (Chief Engineer/Con-III) for the drawing/design of the spur was not obtained before undertaking the work.

Similar problems were also encountered in the North bank where despite adoption of protective measures for diversion of river flow, the North Guide Bund had to be shifted by 375m from its original location resulting in wasteful expenditure of ₹16.50 crore as shown in *Appendix – XII*. It was observed that due cognizance was not taken of the suggestion of Hydraulic Experts regarding assessment of river configuration before undertaking the works in view of changes in the river flow conditions after every flood season, though the fact was well known to the Railway Administration from the Report on Model studies, River studies/training/protection works, etc conducted by RITES in April, 2006. In both the cases, detailed study of the behavior of the course of the river was not carried out before undertaking construction of guide bund and spurs which resulted in wasteful expenditure of ₹32.13 crore.

Further, it was observed that shifting of guide bunds by 625m (250m in South end and 375m North end) resulted in increase in the length of the

²⁰ Lumding –Silchar GC Project and Bogibeel Bridge over the river Brahmaputra (NEFR)

bridge by 625m which also necessitated increase in the scope of work due to addition of 5 more spans involving avoidable extra expenditure of ₹195.70 crore as shown in *Appendix – XIV*.

- II. In January 2009, Railway Board issued directives to all Zonal Railways to adopt 25 tonne loading standards for rebuilding the bridges in all ongoing and future projects. Accordingly, N.F. Railway construction organization floated three tenders in March 2009 for rebuilding of three major bridges (25tonne loading standards) in connection with the gauge conversion of Rangiya – Murkongselek section (510.33Km) of NEFR.

Subsequently, Railway Board in April 2009, delegated powers to CAOs/PCEs²¹ for adoption of MBG-1987²² loading standard as the new loading standards (January 2009) might delay the execution of projects as a whole. The dispensation granted by Railway Board for adoption of MBG-1987 loading standard was, however, not given due cognizance while finalizing the above tenders. The Tenders were finalized between April 2009 and July 2009 at a total value of ₹ 48.21crore.

While the works relating to earthwork on permanent diversion was in progress, Chief Engineer (Construction) / N.F.Railway observed (May 2009) that adoption of MBG loading standard would considerably reduce the number of bridges which would require strengthening of sub-structure for bearing 25 tonne axle load and also reduce the time for completion of the whole project.

In view of the above, the contracts were short closed and the work relating to super structure was executed through the three other existing contracts which were executed between January 2010 and April 2010 at a total value of ₹ 43.62 crore for completion of the work as per MBG 1987 standard. Despite such decision, the work of approach earthwork continued till June 2011 and an expenditure of ₹3.79 crore was incurred in this regard against the contracts which were short closed. Aggrieved by the decision of the Railway Administration for premature termination of the contracts, the contractors claimed ₹9.95 crore as compensation which was not settled by the Railway Administration till March 2015.

Thus, failure of the railway administration in considering the guidelines (April 2009) of Railway Board for adoption of MBG-1987 loading standard and continuance of the work of earthwork even when the decision was taken for adoption of MBG-1987 loading standard resulted in loss of ₹ 3.79 crore.

III. **Diversion of Alignment**

In Angamali-Sabarimala new line project of Southern Railway, it was noticed that the project was delayed due to delay in land acquisition and

²¹ CAO/PCE refers to Chief Administrative Officer/Principal Chief Engineer

²² MBG-1987 refers to mixed Broad Gauge 1987 which standardizes the load-bearing capacity of bridge

change in alignment. The physical progress was only six *per cent* since the sanction of the project in 1997-98. As a result, entire expenditure of ₹ 137.41 crore incurred on this project remained idle.

IV. Change in the Design

An agreement was executed for “Construction of well foundation and RCC sub-structure on Bridge No.7 (Bonam River) in connection with Jharsuguda- Rengali doubling Project (East Coast Railway). The contract value of ₹ 7.16 crore was increased to ₹ 9.08 crore due to change in design of the bridge to build two piers (Pier No.5A and Pier No.5B) in place of Pier No.5 with 3 spans (3 x 100 ft) in place of 2 spans (2x 150ft). Change in design was necessitated due to defective soil investigation that failed to detect the presence of sheet piles of existing abandoned bridge.

1.6.11 Delay in execution of project due to non availability of land

Section 4.4 of the Forest (Conservation) Act, 1980 stipulates that if a construction project requires utilization of forest as well as non-forest land, work should not be started even on the non-forest land till the receipt of approval of Central Government for the release of the forest land.

A review of status of land acquisition in respect of 105 selected projects as shown in the *Annexure 7* and the impact of delay in acquisition of land on the project revealed that:

- I. As against total land of 45555 hectares, 20988 hectares land was actually acquired till March 2014 leaving a total shortfall of 24567 hectares (54 *per cent*). The significant shortfall of more than 75 *per cent* was noticed in 38 projects (NL-22, GC-8 and DL-8) across all ZRs.
- II. The process for land acquisition remained incomplete despite lapse of period ranging from 11 months to 265 months. The abnormal delay of more than 16 years in acquisition of land was noticed in eight projects (NL-7 and GC-1) of five ZRs as mentioned below:

Table No. 17: Delay in acquisition of land

Sl. No.	Name of the project	Year of Sanction	Delay in acquisition of land (in month)	Physical progress as on March 2014 (in <i>per cent</i>)	Time over run from the original DOC in months
1	Belapur-Seawood-Uran Electrified Double line (NL)/CR	1996-97	204	15	168

2	Khurda Road-Bolangir (NL)/ECoR	1994-95	228	12	Not Assessed*
3	Bhind-Etwah (part of Guna-Etwah project) (NL)/NCR	2002-03	265	99	180
4	Dallirajhara-Jagdapur (NL)/SECR	1995-96	228	18.06	Not Assessed*
5	Bangalore-Hassan via Shrvanbelagola (NL)/SWR	1996-97	202	70	Not Assessed*
6	Hubli-Ankola (NL)/SWR	1997-98	200	10	Not Assessed*
7	Kadur-Chickmagalur-Sakeleshpur (NL)/SWR	1996-97	210	49	Not Assessed*
8	Jabalpur-Gondia including Balaghat-Katangi/SECR	1996-97	216	69	13

*Original DOC was not available on Railway record and hence the time overrun could not be worked out.

- III. Even after 21 years of sanction of Khurda-Bolangir New Line Project (ECoR) in 1994-95, part detailed estimate of only two stretches totalling 112 Km. was prepared and sanctioned. Detailed estimate for the rest 177 Km. was not prepared by the Railway Administration (ECoR).
- IV. Due to delay in acquisition of land, following two New Line projects were abandoned / frozen during the review period (2009-14) in SWR.

Table No. 18: Aboandonement of projects due to delay in acquisition of land

Sl. No.	Name of project	Year of sanction	Objective of project	Physical progress (per cent)	Infructuous Expenditure (₹ in crore)	Reasons for abandoned/frozen
1.	Bangalore-Sathyamangalam (SWR)	1997-98	Socio-economic consideration	Nil	0.00	Non-clearance by Forest department and Central Empowered Committee.
2.	Hubli-Ankola (SWR)	1997-98	Socio-economic consideration	10	60.78	Non-clearance by Forest department and Central Empowered Committee.
				Total	60.78	

In case of Hubli-Ankola, New Line project of SWR, Zonal Railways failed to adhere to the provision contained in rule 4.4 of the Forest (Conservation) Act 1980, which clearly stipulates that if a project involves forest as well as non-forest land, work should not be commenced unless clearance of Forest Department is obtained. Had the Railway Administration got forest clearance prior to commencement of the project, the expenditure of ₹ 60.78 crore could have been avoided.

- V. In WR, four contracts were awarded without availability of clear site and as a result, contracts were terminated prematurely resulting in loss of ₹ 12.02 crore as shown in *Appendix-XV*.
- VI. In nine projects pertaining to four ZRs (ER, SCR, SWR and WR), delay in acquisition of land resulted in payment of enhanced cost for the land amounting to ₹ 409.18 crore as tabulated below:

Table No. 19: Extra expenditure due to price variation

Sl. No.	Project	Zonal Railway	No. of projects involved	Extra expenditure due to price variation (₹ in crore)
1.	Bangalore-Hassan NL	SWR	5	242.92
2.	Munirabad-Raichur NL			
3.	Rayadurga-Tumkur NL			
4.	Birur-Shivani DL			
5.	Ramanagaram-Mysore DL			
6.	Deoghar-Dumka (NL)	ER	2	51.55
7.	Deoghar-Sultanganj (NL)			
8.	Peddapalli- Nizamabad (NL)	SCR	1	113.73
9.	Ratlam-Khandwa (GC)	WR	1	0.98
	Total	4	9	409.18

The details of status of acquisition of land in respect of selected projects are shown in *Annexure 7*.

1.6.12 Ongoing Projects in North-east Region

Northeast Region comprising of eight states namely Assam, Arunachal Pradesh, Meghalaya, Manipur, Nagaland, Mizoram, Tripura and Sikkim including a part of West Bengal and Bihar are being served by Northeast Frontier Railway. Development of rail infrastructure in North Eastern Region is one of the priority areas of the Ministry of Railways. The N.F.Railway, Construction Organization is presently executing 34 projects under three major Plan Heads - New lines (21 Nos.), gauge conversion (7 Nos.) and doubling (6 Nos.). Of them, 11 projects were declared as 'National Projects'.

Projects important from strategic viewpoints in Jammu and Kashmir and North-East region or developmental projects which result in greater integration of these regions with the rest of India were categorized as “National Projects” in 2005. For the implementation of the National Projects, funds to the tune of 25

per cent of yearly requirement are being provided by the Railways through Gross Budgetary Support (GBS) and *75 per cent* funds are being provided by the Ministry of Finance as additionality to GBS.

Audit reviewed the overall status of all Projects in North-eastern Region and detailed study of one National Project-“Lumding–Silchar Gauge Conversion Project”.

1.6. 12.1 Flow of Fund and Progress of National Projects

Out of 11 National Projects, four projects (Sl. No. 1,2,10 and 11 of the table below) were sanctioned during 1996- 2003 and they were declared as National Projects’ in 2005. The demand, final allotment and overall physical progress of 11 National Projects during 2009-14 revealed that though the projects were declared as ‘National Projects’, allotment of fund was not commensurate with the requirement for the projects as indicated in the table below:

Table No. 20: Allotment of funds for National Projects

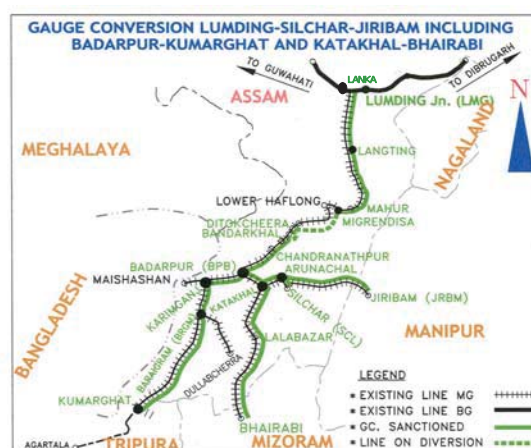
(₹ in crore)

Sl. No.	Name of project	Original Date of completion	Demand	Final Allotment	Remarks
1.	Kumarghat-Agartala	03/2007	141.5	32.5	Project delayed by 8 years. Construction of MG line completed. GC is yet to be started.
2.	Bogibeel Bridge	03/2007	2400	1691.09	Overall Physical progress is <i>75 per cent</i> .
3.	Jiribam-Imphal	03/2009	2850	1972.35	Overall Physical progress is <i>34.04 per cent</i> .
4.	Tetelia-Byrnihat	03/2009	315	170.7	Overall Physical progress is <i>15.1 per cent</i> .
5.	Dimapur-Kohima	03/2012	183	8.05	Overall Physical progress is nil.
6.	Agartala-Sabroom	03/2012	951	540	Overall Physical progress is <i>29.31 per cent</i> .
7.	Bhairabi-Sairang	03/2014	651	170.96	Overall Physical progress is <i>10.45 per cent</i> .
8.	Sivok-Rongpo	03/2014	750	83.92	Overall Physical progress is <i>2 per cent</i> .
9.	Byrnihat-Shillong	03/2016	170	3.55	Overall Physical progress is Nil.
10.	Lumding-Silchar	03/2005	2650	2038.69	Project delayed by 10 years. Overall Physical progress is

					87.97 per cent.
11.	Rangiya-Murkongselek	03/2009	2050	2543.05	Overall Physical progress is 91.83 per cent.

Scrutiny of records further revealed that:

- I. Out of 11 National Projects, three projects were sanctioned between 1996 and 1999 and were continuing for more than 15 years. The remaining eight projects were ongoing for periods ranging from 2 to 11 years and of them, in respect of seven national projects²³, the physical progress as of March 2014 ranged between 0 and 34 per cent. The original cost of these seven projects increased substantially from ₹ 7651.23 crore to ₹ 20313.75 crore (265 per cent).
- II. Out of 11 National Projects, the target dates of nine projects were revised ranging from five years to 10 years. The details of status of National Projects are shown in *Appendix- III*.
- III. The construction of new Metre Gauge (MG) line between Kumarghat and Agartala (109 km.) was sanctioned in July 1996. The project was completed and commissioned in October 2008. Meanwhile, following commencement (1999) of gauge conversion of Lumding-Silchar (LMG-SCL) section, MG section between Kumarghat and Agartala was also taken up for gauge conversion as this is the branch line of LMG-SCL section which would otherwise be gauge-locked. This section is the only rail link for passengers and movement of essential commodities including industrial inputs to Tripura. As a result, the original project cost of ₹ 575 crore increased to ₹ 1242.25 crore. In view of uni-gauge policy²⁴ (1991) of Government of India and sanction of gauge conversion of LMG-SCL section, construction of New MG line between Kumarghat and Agartala lacked justification and is also indicative of deficient planning of Indian Railways.



Thus, slow physical progress leading to revision of target for completion of projects, indicated that due priority was not given to completion of National Projects in the North-East resulting in time and cost overrun. The details of

²³ Sl. No. 3 to 9 of Table No.20

²⁴ For conversion of all tracks with uniform Broad Gauge standard

year of sanction, estimated cost, schedule date of completion, physical progress etc. in respect of National projects is shown in *Annexure 1 and 2*.

1.6.12.2 Lumding- Silchar Gauge Conversion - A National Project

The states of Assam, Manipur, Mizoram and Tripura are linked to one of the oldest MG Railway lines between Lumding and Silchar passing through a hilly terrain. This line is the only rail link for movement of essential commodities including industrial inputs to these states. In order to augment the line capacity of the section, it was decided (1988) in consultation with Geological survey of India to construct an additional MG line between Lumding and Silchar. The construction of the line along the proposed alignment was not constructed even after Planning Commission's clearance (1992-93).

Meanwhile, the main line from Guwahati to Lumding was converted into Broad Gauge (BG) in January 1994, isolating the Lumding- Silchar MG line and related finger lines of Barak valley from Brahmaputra valley. In consonance with uni-gauge policy of Government of India of 1991, Indian Railways planned (1996-97) a straight conversion of Lumding - Silchar MG line (215Km) to BG with a diverted 'New Line' from Migrendisa and Ditokcherra (31.7 Km). After Final Location Survey (FLS) by M/s RITES (2001), the detailed estimate for ₹ 677.75 crore was sanctioned between 2000 and 2002 for completion by 2005. The aggregate cost with the inclusion of 2 branch lines, namely, Silchar-Jiribam (50.385 km) and Badarpur-Baraigram-Kumarghat (117.82 km) had gone up to ₹1676.76 crore as shown in *Appendix-XVI*. A number of revisions took place thereafter and the latest revised estimated cost worked out to ₹5185.44 crore (2014). The increase in project cost *inter alia* included the revision in the scope of works, extra expenditure due to deficient planning, escalation and inclusion of five branch lines as a Material Modification. However, Lumding - Silchar section was flagged off (opened to traffic) by the Minister for Railways from New Delhi on 27 March 2015 despite the fact that the requisite clearance was not granted by the Commissioner of Railway Safety (CRS) for 100 Km out of 215 Km. section.

Scrutiny of records relating to execution of works relating to GC of LMG-SCL section revealed that though the works commenced in 1999, till 2004-05 the recorded financial progress was just 22 *per cent* mainly due to meagre funding. While poor funding contributed towards tardy progress of the project, impact of improper planning in selection of un-surveyed alignment in the New Line resulted in substantial time and cost overrun of the whole GC project. The 'New Line' (31.7 km) section (Migrendisa to Ditokcherra) falling in the LMG-SCL gauge conversion section was the most critical section and the success of the whole project was largely dependent on the successful completion of this new line section. Further scrutiny, however, revealed the following:

- I. The new alignment from Migrendisa to Ditokcherra was excluded from the ambit of the FLS of the project on the ground that its FLS was already done for MG standard in 1988 by N.F. Railway with the assistance of Geological Survey of India and on the recommendation of the Dy.CE/Con/LMG-SCL, Railway Administration decided that there would not be much change in the alignment in BG than what was adopted for MG standard, as decided by the PHOD²⁵ Committee. Soil/Geo-tech investigation done by M/s. RITES (2001) was limited to selected boreholes in bridges, tunnels of the whole of section including diverted alignment which proved to be inadequate to unearth the complexities of the terrain and gave rise to many serious complications at the time of construction of tunnels and bridges as detailed below:

A. Construction of Embankment:

The N.F. Railway Administration executed six contracts for earthwork in formation etc. during 2001 to 2003 for the diverted new line alignment (Migrendisa to Ditokcherra). During the progress of work, the cutting slopes caved in and failed to resist the over burden pressure due to poor soil strata. Railway Administration, therefore, awarded two consultancy contracts²⁶ in 2004 and 2005 for conducting geo tech investigation²⁷. In the report, the consultant observed that frequent soil slips and landslides was due to natural as well as induced slope instability. They further stated that the lack of drainage, unplanned excavation etc. at the toe of the slopes to accommodate the BG alignment were some of the major reasons for the landslides.

Audit observed that in order to protect the slope failures and improvement of soil stability, another 19 contracts at an aggregate contract value of ₹ 19.22 crore were executed between 2007 and 2011 for construction of additional side drains with modified design and other protection works. Had the Railway Administration conducted geo-tech survey prior to execution of formation works and adopted necessary protective measures, the instances of slope failures and consequential extra expenditure due to execution of protection works at a cost of ₹19.22 crore could have been avoided as shown in *Appendix-XVII*. On being pointed out (May 2013), Railway Administration admitted (March 2014) the audit findings.

B. Construction of tunnels

From the FLS conducted by Railway and Geological Survey of India in 1988, the Railway Administration was well aware of the criticality of the section

²⁵ Principal Head of Department

²⁶ M/s. PK.De in 2004 and in 2005 to M/s. SK.Mitra and Associates

²⁷ The objective of detailed geo-technical investigation is to interpret the engineering properties of sub-surface stratum for the purpose of design of foundations and sub-structure. The investigation includes collection of geological information of the region, the climate of the project site, seismic condition of the project site, assessment of liquefaction (sudden loss of shear strength of the loose fine grained sands due to earthquake induced vibration) potential of the foundation strata.

Daotuhaja to Ditokcherra²⁸ (Chainage Km 74.500 to km 129.450). M/s. RITES was not awarded the geo-tech survey of the stretch selected for diverted new line alignment from Migrendisa (km 98.5) to Ditokcherra (km 129.450). As per Minutes of meeting (August 1999), investigation by M/s. RITES included boring holes limited to two portal locations irrespective of the length of tunnel. On the basis of data thus collected, the design was finalized, which had led to numerous problems such as excessive lateral thrust due to squeezing and lateral shifting, unexpected land slide, chimney formation, etc. and consequent deformation and collapse of tunnel necessitating further reconstruction and frequent change of design of tunnels.

Scrutiny of records revealed that out of 4368.4 meter tunnels constructed during 2009-14 between Daotuhaja to Ditokcherra, 543.2 meter collapsed resulting in avoidable extra expenditure of ₹ 88.09 crore for their rehabilitation or reconstruction as indicated in the table below:

Table 21: Statement showing the extra expenditure due to failure of tunnels

Sl. No.	Tunnel No.	Length of tunnel (in meter)	Length of tunnel collapsed in meter	Contract Value/SCA & Month of award of contract (₹ in crore)	Extra expenditure incurred for rectification (₹ in crore)
1	Tunnel No.6	240	25	18.39/19.39 (February 2007)	2.01
2	Tunnel No. 7	1687	23	59.35/88.61 (October 2005)	8.93
3	Tunnel No. 8 (Statement-I)	446	28	38.21 (January 2006)	5.90
4	Tunnel No. 10	3010	79.8	110.46 (October 2005)	23.92
5	Tunnel No. 11	890	174.4	39.44/46.67 (January /2006)	19.85
6	Tunnel No. 12 (Statement-II)	586	28	27.56 (January 2006)	13.22
7	Tunnel No. 13	204	160	21.66 (January 2006)	14.26
8	Tunnel No. 16	405	25	21.75 (October 2006)	-
				Total	88.09

*Details are shown in Appendix- XVIII and XIX

The Railway Administration attributed the reasons for collapsing of tunnels as follows:

- i. Low over burden and inadequate rock cover, frequent occurrence of cavities and chimney formations, encounter with rock mass consisting of mainly shales (Tunnel No. 6).
- ii. Poor rock mass classification, squeezing ground conditions owing to high in-situ stresses present in the surrounding rock mass (Tunnel No. 7 and 8).

²⁸ Falling in the section Migrendisa (km 98.5) to Ditokcherra (km 129.450)

- iii. Frequent and prolonged stoppage of semi-finished work of the tunnel during progress mainly due to militancy or contractual reasons (Tunnel No. 10).
- iv. Excessive lateral thrust due to squeezing and lateral shifting (Tunnel No. 11).
- v. Unexpected land slide as well as chimney formation (Tunnel No. 12 and 13).
- vi. Water seepage, failure in heading due to high pressure, slope failure, chimney and cavity formation (Tunnel No. 16).

The matter was brought to the notice of the N.F. Railway Administration in April 2013. Railway Administration stated (March 2014) that appropriate caution and discretion were exercised for selection of the tunnel and bridge sites. They further asserted that adequate geo-technical investigation for the tunnels was done by RITES. Contention of the Railway Administration was not acceptable as the soil /Geo-tech investigation was done by RITES only for selected boreholes in bridges and tunnels.

C. Construction of Bridges:

I. A contract was executed in May 2002 for rebuilding of sub-structure of Major bridge No. 572 on well foundation along the diverted alignment (Migrendisa and Ditokcherra) over the river Barak between Badarpur and Sukritipur at a cost of ₹13.56 crore with the stipulated date of completion by September 2004. In January 2005, the well of pier no. 4 collapsed and submerged in the river bed as no requisite precautionary measure was taken by the contractor to stabilize the well. The Railway Administration, therefore, decided (May 2005) to suspend the entire work covered under this contract after incurring expenditure of ₹11.16 crore. Subsequently, on the basis of a risk and cost tender, the balance work was awarded (September 2008) to the same defaulting contractor at a cost of ₹ 19.03 crore. The work was completed at a cost of ₹ 16.99 crore. This resulted in extra expenditure of ₹ 14.60 crore as the construction of bridge was completed at a cost of ₹ 28.16 crore as against the original cost of ₹ 13.56 crore.

The N.F. Railway Administration failed in recovering the assessed risk cost of ₹ 11.77 crore from the firm as the arbitrator awarded (July 2010) verdict for refunding an amount of ₹ 1.61 crore by the defaulting firm to the Railway. The amount, however, could not be recovered as the firm appealed in the High court and the case was sub-judice (March 2015).

On being pointed out (May 2013), N.F. Railway Administration stated that as the work was of special nature, a consultant was engaged to study the problem of severe tilt and give a suggestion so that the bridge work could be completed. The contention of the Railway Administration was not tenable as they should have taken necessary precaution during execution of works of well foundation

keeping in view the special nature of work as admitted by the Railway Administration itself. Collapse of the well foundation was indicative of the lack of adequate monitoring on the part of the Railways for successful completion of the works by the contractor which finally translated into additional expenditure of ₹14.60 crore as indicated in *Appendix XX*.

- II. In the diverted alignment Daotuhaja to Ditokcherra, a contract (₹15.13 Crore) was executed in February 2006 for construction of Bridge No.158. After incurring expenditure of ₹2.21 crore, the contract was terminated in November 2008 due to slow progress of work. On scrutiny of site details and other parameters, Chief Engineer/Con-I revised (October 2009) the earlier decision of construction of a major bridge on pile foundation and decided to go for RCC arch box culvert as the construction of box culvert would be economical as well as technically easier. The work was completed at a cost of ₹10.51 crore. The change in the scope of work resulted in wasteful expenditure of ₹ 2.21 crore.

In yet another instance, the design for construction of Girder Bridge²⁹ was changed to box culvert after detailed site verification. The revised decision of the Railway Administration led to avoidable extra expenditure of ₹ 6.93 crore on account of construction of bridge on pile foundation which was subsequently discontinued.

Railway Administration stated (May 2010) that after detailed site inspection, it was decided that though bridge with smaller opening would be sufficient to cater to the discharge, embankment might be constructed by executing earthwork and that justified the change in the scope of work. The contention of the Railway Administration was not tenable as they took three years in verification of actual site conditions and deciding the revised scope of work. Railway Administration's failure to take appropriate decision prior to execution of works resulted in wasteful expenditure of ₹ 9.14 crore³⁰.

Thus, defective planning and failure to conduct Geo-Tech survey of diverted new alignment before execution of works had resulted in extra expenditure of ₹ 131.05 crore.

1.6.12.3 Status of Projects other than National Projects in NEFR

A review of data/information relating to projects revealed the following:

- I. Out of 23 projects other than National Projects, in five projects³¹ (NL-2, GC-2, DL-1), the physical progress at the end of March 2014 was 100

²⁹ Bridge No. 157 at Km 81.106 between Daotuhaja and Phiding stations

³⁰ ₹2.21 crore in respect of Bridge No.158 and ₹6.93 crore in respect of Bridge No.157

³¹ Sl. No. 2,4,22,27 and 29 of Annexure 3 (NEFR)

- per cent.* However, these projects were shown as ongoing with anticipated throw-forward of ₹ 268.29 crore to complete the balance works.
- II. In respect of seven projects, (NL-4, DL-3) the physical progress was 0 *per cent.* Of them, in respect of two projects (Sl.No. 12 and 19) the original target date of completion was March 2012 and March 2014.
- III. Physical progress of the remaining 11 projects ranged between 2.38 *per cent* and 85 *per cent.*
- IV. Four projects³² are continuing for more than 15 years since their commencement. The project cost was revised from ₹ 1475.32 crore to ₹ 4126.55 crore.

Thus, it is observed that due priority was not given to complete these projects in a time-bound manner. Delay in completion of these projects led to cost overrun of ₹ 3768.34 crore (249 *per cent*) as against the original sanctioned cost of ₹1079.75 crore.

1.6.13 Monitoring of Project Implementation

Tardy progress of ongoing projects was primarily due to failure of the Indian Railways in observance of extant provisions for efficient project management. An efficient system of prioritizing projects with its limited resources should be in place for effective utilization of resources. This, in turn, requires proper monitoring system right from the apex level i.e. Ministry of Railways (Railway Board) to the spending units as slippage of target leads to cost overrun besides delay in achieving the intended objective of the projects.

The existing system of apprising the status of projects to Railway Board through PCDO and also to Chief Engineers and Financial Adviser and Chief Accounts Officer (FA&CAO) was merely of a periodic return and no effective measures were taken on the basis of such reporting.

Indian Railways rolled out an all India application “Indian Railways Project Sanction and Management (IRPSM)” in April 2011 which *inter-alia* aimed at monitoring physical and financial progress of works. Project was also meant for catering to the needs of Railway Board, Zonal HQs and Divisions etc. related with Works Programme sanctions and management, online creation and forwarding of ‘New Works’ proposals along with Modifications to ‘Works in Progress’ from field units to Railway Board, monthly updation of status of work for monitoring of Physical and Financial progress of works etc.

³² Sl. No.1, 2,4,24,25 and 28 of Annexure 3 (NEFR)

While examining the system in place for monitoring the implementation of projects and its effectiveness, it was observed that the complete information about a project including financial progress was not available in the IRPSMS. The application in its present form was only statistical and hardly served the purpose of monitoring project implementation. There was no effective monitoring system to ensure correctness of data fed into the system. The system lacked information in respect of allotment and utilization of funds. Sanction of Railway Board for developing other modules relating to estimation, contract execution and management, drawing of completion reports, maintenance of works register, etc., were awaited (March 2015).

1.6.14 Conclusion

Target dates for completion of projects were either not fixed or not available on records of the Railway Administration. The physical progress was also slow where target for completion of project was fixed. Projects were delayed due to delay in preparation/sanction of estimate and delay in acquisition of land. Delay in completion of projects resulted in cost overrun of ₹ 1.07 lakh crore and huge throw-forward of ₹ 1.86 lakh crore in respect of 442 ongoing projects.

During 2009-14, 202 projects were added to the existing shelf of ongoing projects ignoring existing fund constraint and as a result only 67 projects were completed during the same period. Audit observed that 75 projects are ongoing for more than 15 years and of them, three projects are 30 years old. Despite budgetary support from the Ministry of Finance, progress of National Projects was far from satisfactory resulting in substantial time and cost overrun.

The rate of return was less than the prescribed benchmark of 14 *per cent* in 236 (53 *per cent*) ongoing projects. There was lack of consistency in prioritisation of projects. While the allotment of funds was not proportionate to the requirement, there were several instances of under-utilisation of funds which had adverse impact on the physical progress of projects.

The progress in respect of cost sharing projects was badly affected as the State Government declined to bear the enhanced cost of the project and as a result, expenditure to the tune of ₹13135 crore incurred on Cost Sharing Projects remained unproductive.

Due to deficient planning, there were several instances of collapse of tunnels, bridges, diversion of alignment etc. resulting in extra/wasteful expenditure in addition to idle investment of ₹ 137.41 crore. Delay in land acquisition caused slow progress of the project and two projects had to be frozen due to failure in acquisition of land resulting in wasteful expenditure of ₹ 60.78 crore.

1.6.15 Recommendations

- I. *Indian Railways needs to revisit all projects which are ongoing for more than 15 years and do not fulfill the prescribed Rate of Return (ROR) for assessing the viability of the projects.*
- II. *Indian Railways needs to reassess the ROR of all ongoing projects for focused approach on economically viable projects and judicious allocation of funds.*
- III. *Indian Railways needs to ensure timely preparation of estimates with reasonable accuracy for efficient financial control over the project cost.*
- IV. *Indian Railways needs to prioritise projects on short term basis and ensure adequate funding so that the projects are completed in a time bound manner.*
- V. *Indian Railways needs to ensure optimal utilization of funds so as to avoid mismatch between allotment and utilization of fund.*
- VI. *Indian Railways needs to strengthen the coordination with the participants (State Government and other entities) of the cost sharing projects for ensuring availability of land and committed funds so that the project can be completed in a time-bound manner.*
- VII. *Monitoring of execution of projects both at the Railway Board and at the Zonal Level needs to be strengthened to avoid wasteful expenditure and blocking up of fund. Indian Railways Project Sanction and Management System needs to be redesigned for exercising effective financial control over the project implementation.*
- VIII. *Timely completion of strategically important 'National Projects' needs to be ensured in a uniform and coordinated manner.*