

Chapter 1 ⇒ Introduction

Environment in general refers to the surroundings of an object which may be natural or the built environment. Environmental management is essentially the management of interaction by modern human societies with, and its impact upon the environment. The National Environment Policy 2006 which articulated our national commitment to a clean environment as mandated by the Constitution¹ was intended to mainstream environmental concerns in all current and developmental activities.

The principal objectives of the National Environment Policy include conservation of critical environmental resources and to integrate environmental concerns into policies and projects for economic and social development. Further, one of the principles of this policy clearly states that environmental protection shall form an integral part of the developmental process to achieve sustainable development and cannot be considered in isolation.

1.1 Need for Environment Management in Indian Railways

The Railways as a means of public transportation are perceived to be environmentally friendly. The recommendations of the Expert Committee set up by the Planning Commission under the chairmanship of Dr. Kirit S. Parikh to formulate an integrated energy policy for promotion of the system of urban mass transport, energy efficient vehicles and freight movement by railways underline the significance of railways to over all environmental management in the country as well as of environment related issues in the internal governance of the Indian Railways (IR).

IR covers 64460 route kilometers and traverses through high density urban areas as well as vast rural and forest areas. It handles 7651 million passengers and carries 922 million metric tonnes of goods traffic per annum. It is the second

¹ Articles 48 A: The state shall endeavor to protect and improve the environment and to safeguard the forests and wild life of the country.

Article 51 A (g): It shall be the duty of every citizen of India to protect and improve the natural environment including forests, rivers, lakes and wild life, and to have compassion for living creatures.

largest carrier of passengers in the world and carries about 35 per cent of the total freight in the country. Operation and maintenance of the entire railway system in the country has considerable impact on environment as the IR is the bulk consumer of energy besides generator of waste in stupendous proportion. Central Pollution Control Board (CPCB) sponsored a study through RITES² on plastic waste generated at three railway stations (New Delhi, Old Delhi and Hazrat Nizamuddin station). The report (December 2009) indicated that about 6758 Kg. of plastic waste was being generated by these stations per day and there was no system in place to segregate degradable and non-biodegradable wastes generated at these stations.

‘Environment’ is a key survival issue and its significance has never been felt more acutely. IR has initiated a number of measures for protection of the environment by adopting cleaner technologies, conserving energy, harnessing renewable sources of energy. The Minister for Railways, in her Budget Speech on 25 February 2011, declared 2011-12 as the “**Year of Green Energy**” and reiterated her commitment to energy conservation. However, IR is yet to frame any comprehensive policy for environment management in compliance to various statutory provisions and orders issued by the Government of India. The role of CPCB and SPCBs³ in monitoring and control of environmental pollution within the IR has been very insignificant. None except three⁴ SPCBs, have come out with any guidelines for controlling air pollution in handling and transportation of polluting commodities from sidings/sheds.

In this background we have undertaken a comprehensive audit exercise spread over three phases with a view to assess the performance of IR in managing environmental risks to itself and the country as whole, to highlight good practices as well as to flag areas of concern and to make appropriate recommendations wherever necessary. This draft report reflects the results of the first part of this exercise. In the next phase environment management in workshops, sheds and production units of Railways will be undertaken and in the final phase environment management in offices, colonies, hospitals will be taken up.

² RITES stand for Rail India Technical & Economic Services

³ SPCB stands for State Pollution Control Board

⁴ West Bengal, Jharkhand and Odisha

1.2 Study Report of Central Pollution Control Board

For independent assessment of pollution of air, water and noise at station premises/sidings/sheds, CPCB in March 2012, conducted a study at the instance of Audit at 14 major stations spread over 12 zones. The study revealed that the IR was not complying with statutory guidelines for prevention and control of pollution. CPCB observed that none of the stations had applied for consents under The Air (Prevention and control of Pollution) Act, 1981 and The Water (Prevention and control of Pollution) Cess Act, 1977 and also for hazardous waste authorization under The Hazardous Wastes (Management and Handling) Rules, 1989. Monitoring of ambient air quality and noise by CPCB also revealed that various gaseous pollutants and noise level were exceeding the limit prescribed by it. The report also commented on the discharge of effluents from the stations without proper treatment. Details of the findings of CPCB in regard to air, water and noise pollution have been factored in this audit exercise and highlighted at places in this report (see paragraphs 2.3.2 and 2.5.2).

1.3 Scope of Audit

In this Performance Audit, we have examined the commitment of IR towards ensuring environmental protection as an integral part of its development/operational process. We examined the entire gamut of interaction – IR's with the public through its stations, trains and tracks and its impact on the environment during the period 2006-07 to 2010-11. The scope of the Performance Audit thus covered-

- Evaluation of the policy framework governing environmental management in IR that includes stations, trains and tracks with regard to –
 - Pollution of air, water and noise,
 - Conservation of Natural Resources and;
 - Waste Management
- Evaluating the compliance of IR with the laws/rules/regulations governing environmental management in India.
- The compliance of IR with respect to the policies/regulations issued by it.

In IR, there is no separate environment management cell for framing policies/guidelines, co-ordinating and monitoring implementation of different issues related to environment. In absence of any comprehensive guidelines relative to prevention and control of air, water and noise pollution specifically for

Railways, provisions laid down in various acts⁵, rules, regulations issued by government and notifications issued by the CPCB and SPCBs, which are binding on IR, were considered for assessing the performance of IR in controlling pollution.

In the absence of a monitoring mechanism in IR in regard to air, noise and water pollution, it was not possible to obtain reasonable assurance regarding compliance with the provisions of various statutory regulations concerning environmental issues. The extent of pollution caused due to handling of pollution intensive commodities was excluded from the purview of audit due to lack of evidence. The scope of audit suffered further limitation due to non maintenance of records at Railways installations relating to generation of waste particularly plastic wastes and savings due to adoption of energy conservation measures.

1.4 Audit Objectives

The Performance Audit covering the period 2006-07 to 2010-11 was taken up with the broad objective of forming an opinion on the existence and adequacy of commitment, initiative apparatus put in place by IR for:

- I. Prevention and control of air, water and noise pollution;
- II. Management and conservation of natural resources for sustainable development with specific reference to conservation of water, energy and wild life;
- III. Management of waste generated on IR.

The observations of Audit on each of the above three objectives of the Performance Audit have been presented in the succeeding chapters.

1.5 Audit Criteria

The Ministry of Environment & Forests is the nodal agency in the Government of India for the planning, promotion, co-ordination and overseeing the implementation of environmental and forestry programmes. The Performance Review was conducted on the basis of parameters prescribed under various acts,

⁵ The Air (Prevention and control of Pollution) Act 1981, The water (Prevention and control of Pollution) Act 1974, The Noise (Prevention and Controls) Rules, 2000 and The Hazardous Wastes (Management and Handling) Rules, 1989

rules, regulations and notifications⁶ issued by the Central/State Pollution Control Boards and Ministry of Environment and Forests for control of pollution in air and water, protection of environment and conservation of wildlife.

In addition, policies of IR, guidelines as well as instructions issued by it from time to time besides the guidelines issued by the CPCB and SPCBs, were taken into consideration to assess the performance of IR in its environmental management.

1.6 Audit Methodology

The performance audit of the environment management on IR began with an entry conference with the Railway Board (RB) and identical conferences with the respective Head of Departments at the zonal level. During those meetings the audit methodology, scope, objectives and criteria were explained.

Apart from its instructions for project planning, rules and regulations issued by the RB and their correlation with various isolated policy pronouncements, if any, were examined. Records relating to guidelines/instructions issued by different Directorates of Ministry of Railways involved in policy formulation and issue of directives to zones for implementation were also examined between August 2011 and March 2012 to ascertain the initiatives and performance of IR towards environmental management. At the Zonal level, audit checked the compliance of each zone with the various directives issued by the RB.

Joint inspection at Stations and trains was also conducted with Railway officials for real time assessment of the initiatives taken by IR and its performance. Besides, feedback was also obtained from passengers through survey conducted at some important stations and in Mail/Express trains.

In absence of any system of monitoring and documentation regarding air, water and noise pollution in station premises/sidings, study of the pollution level at stations/sidings was conducted through CPCB.

⁶ The Environment (Protection) Act, 1986, The Air (Prevention and control of Pollution) Act, 1981, The Water (Prevention and control of Pollution) Act, 1974, The Water (Prevention and control of Pollution) Cess Act, 1977, The Noise Pollution (Regulation and Controls) Rules, 2000, The Forest (Conservation) Act, 1980, The Wild Life (Protection) Act, 1972, The Hazardous Wastes (Management and Handling) Rules, 1989, The Municipal Solid Wastes (Management and Handling) Rules, 2000 and The Plastic Manufacture, Sale and Usage Rules, 1999

1.7 Sample Selection

For our macro level examination, data was collected from various departments of Zonal and Divisional offices all over IR. For examination of certain issues at micro level, a sample of 212 stations from various categories⁷ as indicated in the table below was selected for undertaking the review to ascertain the level of compliance with the statutory regulations on environmental issues in 34 sidings and 31 Goods Sheds. Following sampling technique was adopted:

Sl. No.	Description	Category	Sample Size
1.	Number of stations under different categories selected for audit that included stations, Joint Inspection by audit and Railway authorities.	A1	25% subject to minimum of 2 stations
		A & B	10% subject to a maximum of 5 stations, covering at least one station from each divisions, to the extent possible
		C, D & E	2 stations from each category
2.	Sidings		2 sidings - dealing with loose commodities such as iron ore, coal, coke, fly ash, chemicals/petroleum etc.
3.	Goods sheds		2 sheds dealing with cement, fertilizers, iron ore, coal, coke, fly ash, etc.,
4.	Trains including Joint Inspection	Five Express/ Mail/ Passenger Trains	<ul style="list-style-type: none"> • Tains having OBHS⁸/ CDTS⁹/Pantry Car • Rajdhani /Shatabdi/JanShatabdi/ Ordinary passenger trains • Platform return trains
5.	Section	SSE & P.Way Section ¹⁰	Sections covering reserve forest/sanctuaries, elephant corridors, tunnels, RUBs ¹¹ .

⁷ IR categorize stations on the basis of earnings. This categorization has been followed in the selection of audit sample size as it also broadly reflects the number of passengers using a station.

⁸ OBHS refers to On Board House Keeping Service

⁹ CDTS refers to Controlled Discharge Toilet System

¹⁰ Senior Section Engineer /Permanent Way Sections

¹¹ RUB refers to Road Under Bridges

In addition, 35 Permanent Way sections were selected for examining the issues pertaining to ecology of forest areas, tunnels, road under bridges etc.

Further, a joint inspection by audit along with railway officials of 212 stations and 88 trains was also conducted for on the spot verification of the sensitivity of IR towards clean and safe environment.

Feedback from passengers was obtained through a passenger survey conducted in all zones, as per the following sample size:

Passenger feedback	No. of passengers to be surveyed
At 2 Major stations dealing with maximum number of passengers per day.	75 passengers in each station.
5 Trains - Rajdhani, Mail/Express trains (including long distance trains), Shatabdi/ Jan Shatabdi, Day train.	AC Passengers – 100 Non-AC Passengers – 250

1.8 Acknowledgement

The audit objectives, scope of study and methodology were discussed with Advisor (Finance) at Railway Board as well as the General Managers/concerned departmental heads in the zones by the Principal Directors of Audit during entry conferences. The inputs provided on various aspects and the cooperation extended by railways is acknowledged with thanks. The audit findings and recommendations were discussed with Advisor (Finance) in an exit conference held in October 2012 in Railway Board. Similar exit conferences were also held by the Principal Directors of Audit in the zones, with concerned zonal authorities. The draft report was issued to the Ministry of Railways in June 2012. A partial reply of the Ministry was received in October 2012. Their views have been incorporated in the report.