

## Chapter 3

# Base Year Freight Traffic Flows: Railways, Highways, Airways & Coastal Shipping

### 3.1 INTRODUCTION

The Total Transport System Study inter alia envisages generation and analyses of commodity wise traffic flows by major mechanized modes of transport viz. Railways, Highways, Coastal Shipping and Airways. The objective is to provide a basis for determining modal shares in total traffic and a comparative study of commodity specific transport linkages by different modes of transport. In this context, this chapter presents:

- ◆ Total movement of inter-regional freight traffic in the country during the base year 2007-08 and share of different modes of transport in total traffic.
- ◆ A comparative analytical enunciation of commodity wise inter-regional flows by the four identified modes during 2007-08.
- ◆ Intra-regional freight traffic flows by different modes during the base year; and
- ◆ Analysis of movement of commodities in containers between specific O-Ds.

The basis for estimation of freight traffic presented in this chapter is the data generated by the study team in respect of commodity and origin-destination wise flows by different modes. The detailed process adopted for the purpose is given in methodology section of Chapter 1.

It is necessary to clarify that while IR (Indian Railways) has computerized data on commodity wise traffic flows between specific origin and destination (O-D) railway stations/sidings, traffic flows by road transport, generated through countrywide surveys, pertain to flows between regions, broadly coterminous with Civil Districts represented by centroids. Since the data for all the modes must match for comparative analysis of flows, O-D wise traffic flows by rail have been aggregated in terms of regions (Districts) for providing a comparable analytical platform. More specifically, the railway stations/sidings falling within a particular District boundary have been grouped together for estimating their combined traffic contribution which is assigned to the particular region. In this manner, a comprehensive concordance table has been prepared. A list of regions identified for assessing comparative inter-regional flows by different modes is placed at **Annexure I.1**. In the case of Coastal Shipping and Airways, the pattern varies to the extent that traffic flows are route-specific and lack the spread reflected in traffic flows by rail and road. Nevertheless, the flows are amenable to be assigned regional identities and have accordingly been covered in the ensuing analysis.

Commodity specific inter-regional traffic flows presented in this chapter, therefore, relate to movement of commodities between different regions as distinct from specific railway O-D stations. However, in the context of traffic load at specific railway terminals, traffic flows between specific origins and destinations (stations) gain importance. Therefore, commodity movement between specific pairs of points/stations, including containerized movement of goods, has also been analyzed.

The scope of the study envisages assessment of freight traffic flows in respect of four modes viz. Railways, Highways, Coastal Shipping and Airways. However, for the purpose of estimating total freight traffic, contribution of IWT and Pipelines has been taken into account and a broad presentation of traffic flows by these two modes has also been given in Chapter 2. Further detailed analysis of commodity wise traffic flows presented in this chapter relates to the identified four modes. In the context of broad parameters defined above, an analysis of base year (2007-08) freight traffic flows and related modal performances are presented below.

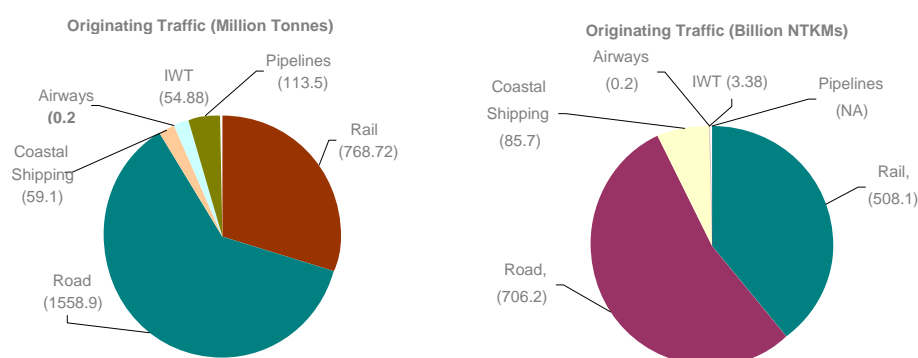
### 3.2 INTER-REGIONAL FREIGHT TRAFFIC

#### 3.2.1 Total Inter-Regional Traffic and Modal Shares

A detailed tabulation of inter-regional traffic encompassing movement of the 52 commodities by different modes is appended as **Annexure 3.1** in Annexure Volume-1. A summary table reflecting modal shares in total inter-regional freight traffic is given below.

**TABLE 3.1: MODAL SHARES IN FREIGHT TRAFFIC (2007-08)**

MODE	SHARE IN ORIGINATING TRAFFIC		PERCENTAGE SHARE IN TOTAL TRAFFIC	
	TONNES (MILLION)	NTKMS (BILLION)	TONNES	NTKMS
Rail	768.72	508.10	30.08	36.06
Road	1558.87	706.16	61.01	50.12
Coastal Shipping	59.10	85.70	2.31	6.08
Airways	0.28	0.29	0.01	0.02
IWT	54.88	3.38	2.15	0.24
Pipelines	113.50	105.45	4.44	7.48
<b>TOTAL</b>	<b>2555.35</b>	<b>1409.08</b>	<b>100</b>	<b>100</b>



During 2007-08, total inter-regional originating freight traffic in the country carried by all the six modes amounted to 2555.35 million tonnes. Corresponding NTKMs (net tonne-km) amounted to 1409.08 billion. However, as detailed in **Annexure 3.1**, the total volume of traffic by the four modes identified for detailed studies (Railways, Highways, Coastal Shipping and Airways) amounted to 2386.97 million tonnes with corresponding NTKMs of 1300.25 billion. It is clarified that:

- ◆ Above rail and road shares in assessed traffic exclude intra-regional traffic. This component of traffic, which amounts to 96.66 million tonnes by rail and 4640.68 million tonnes by road transport, is dealt with later in this chapter. Commodity flows by Coastal Shipping and Airways do not reflect any intra-regional flows. In the case of IWT & Pipelines, however, owing to data limitations, total traffic handled by these modes has been taken into account. Detailed traffic flows by these two modes have been presented in Chapter 2 (Appendices).
- ◆ Since the objective is to know the total inter-regional traffic flows by different modes, in the case of Railways, the volume of non-revenue inter-regional traffic (1.86 million tonnes) as

well as intra-regional coal flows (26.1 million tonnes) carried by MGR (Merry Go Round) systems of NTPC have also been taken into account.

- ◆ The volume of air cargo (0.28 million tonnes) given above includes 86855 tonnes of cargo carried by exclusive services for which O-D data are not available. As such, this quantity does not figure in the analytical tabulations in this chapter.

In the total originating freight traffic of 2555.35 million tonnes handled by all the six modes during 2007-08, the share of Railways and Road Transport was around 30 % and 61 %, respectively. Both the modes together accounted for 91 % of the total traffic. The balance 9 % was handled by the remaining four modes. In terms of NTKMs, the corresponding shares of rail and road were around 36 % and 50 %, respectively, together amounting to 86 %. The share of remaining four modes taken together was 14% of the total NTKMs. As is evident, major chunk of traffic is carried by Railways and Road Transport.

It is necessary to point out that conventional method of determining modal shares as adopted above pre-supposes equal claim of all modes in exploiting the total freight market. This approach, however, may not hold good for a number of reasons. To illustrate, Coastal Shipping and IWT have geographic limitations of operations being confined to limited pathways. Similarly, movement by pipelines is confined to liquid products and slurry. Airways too cater to low volume, non-bulk high value goods on specific select routes. The real competition therefore, lies between rail and road.

Choice of a particular mode for transport of goods is based mainly on nature of commodity, its volume and cost of movement. It is because of these considerations that high volume bulk commodities meant for movement over medium and long leads generally tend to gravitate to rail transport. Rail transport becomes viable even for short lead movements in cases where huge volumes of a commodity have to be transported within a limited period of time as is the case with transport of coal by MGR systems at thermal plants situated near pit-heads. Nevertheless, Railways cannot lay claim to whole of the traffic in the country because of the complementary role road transport has to play in transport of low volume consignments over comparatively short leads. Also, road transport is the only option in areas not served by rail. The picture gets disturbed when there is shortfall in supply of service by one mode and the alternative mode steps in to fill the gap.

In the above context, an alternate approach in working out rail and road shares would be to compare their performance in relation to that component of (medium and long lead) traffic for which they are competing. If the component of traffic moving over leads up to 300 kilometers is excluded from the total traffic carried by rail and road, the resultant figure would identify the component of traffic for which both modes compete. However, since huge volumes of a bulk commodity flow (coal, iron ore, etc.) within 300 kilometers also becomes valid for transport by rail, only low volume commodities up to 1 million tonnes need to be excluded in the case of rail. An exercise on this basis brings out the following results:

TOTAL TRAFFIC	MILLION TONNES
(a) Traffic Carried by Road Transport	1558.87
(b) Traffic Carried by Rail	768.72
(c) Traffic Rail & Road {(a) + (b)}	2327.59
(d) Traffic Road leads up to 300 km	837.89
(e) Traffic Rail leads up to 300 km	2.90
(f) Total Traffic leads up to 300 km (d)+(e)	840.79
(g) Total Potential Traffic Moving Beyond 300 km :	
Rail 768.72 -2.90	765.82
Road: 1558.87-837.89	720.98
TOTAL	1486.80
<b>RAIL SHARE IN POTENTIAL TRAFFIC*</b>	<b>51.5%*</b>

\* % of Rail traffic (765.82 MT) to total (1486.80 MT)

On the above analogy, rail and road shares in traffic carried by both modes work out to 51.5 % and 48.5 %, respectively. It may be clarified that the lead of 300 km adopted for defining short lead traffic is an average figure based on optimal modal area of operation.

### 3.3 COMMODITY STRUCTURE & VOLUMES

#### 3.3.1 Commodity Grouping

As explained in Chapter 1 (paragraph 1.7), Railways have a highly disaggregated classification of commodities and the results emerging from the data collected during road traffic surveys show still higher number of commodities. With a view to obtaining a compatible commodity framework amenable to comparative study of commodity flows by different modes and to keep the O-D matrices within manageable limits, various commodities have been grouped into 52 commodities which have been listed in Annexure 1.2 in Annexure Volume-1. This has necessarily involved regrouping of commodities appearing in the railways' commodity classification into identified 52 commodity groups. The result of this exercise is placed at Annexure 3.2 in Annexure Volume-1.

#### 3.3.2 Modal Shares in Commodity Traffic

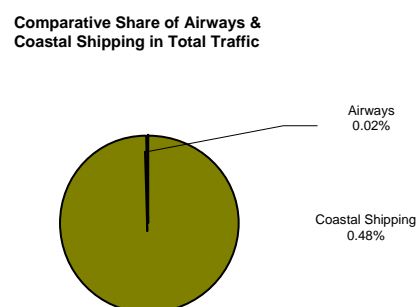
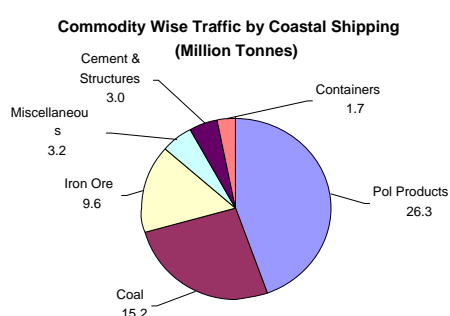
A tabulation showing commodity wise volumes of traffic transported by Railways, Highways, Coastal Shipping and Airways in terms of tonnes, NTKMs, and individual percentage share of different modes in respect of the identified 52 commodities is placed at Annexure 3.1. A presentation of commodity flows by Coastal Shipping and Airways, which have limited traffic, and comparative commodity flows by rail and road which account for major share of traffic, is given separately in the following paragraphs.

#### 3.3.3 Coastal Shipping and Airways

As brought out in Table 3.2, a limited number of commodities figure in movement by Coastal Shipping and Airways with very low share in total originating commodity traffic.

**TABLE 3.2: COMMODITY WISE TRAFFIC FLOWS BY COASTAL SHIPPING AND AIRWAYS (2007-08)**

COMMODITY NAME	COASTAL SHIPPING				AIRWAYS				TOTAL (All the 4 Modes)	
	TONNES	% OF TOTAL	NTKMS	% OF TOTAL	TONNES	% OF TOTAL	NTKMS	% OF TOTAL	TONNES	NTKMS
	(MILLION)		(MILLION)		(MILLION)		(MILLION)		(MILLION)	(MILLION)
POL Products and Liquid	26.30	13.87	30582	34.56	0	0	0	0	189.56	88490
Coal	15.25	3.67	19374	7.95	0	0	0	0	415.37	243626
Iron Ore	9.59	6.20	28430	32.03	0	0	0	0	154.68	88754
Miscellaneous/ Others	3.18	1.40	4480	3.04	0.28	0.12	290	0.2	227.26	147366
Cement and Structures	3.04	1.93	1680	2.31	0	0	0	0	157.86	72799
Containers (Loaded/Empty)	1.74	2.04	1157	2.21	0	0	0	0	85.44	52376
<b>TOTAL</b>	<b>59.10</b>	<b>4.80</b>	<b>85703</b>	<b>12.36</b>	<b>0.28</b>	<b>0.02</b>	<b>290.00</b>	<b>0.04</b>	<b>1230.17</b>	<b>693411</b>



Only six commodities moved by Coastal Shipping and their share in total flow of these commodities by the four modes (Rail, Road, Coastal Shipping & Airways) amounted to around 4.8 % during 2007-08. The share of Airways which primarily carry parcels and miscellaneous goods was minimal at 0.02%. In terms of NTKMs, share of Coastal Shipping was 12.36% and that of Airways 0.04%.

### 3.3.4 Railways and Highways

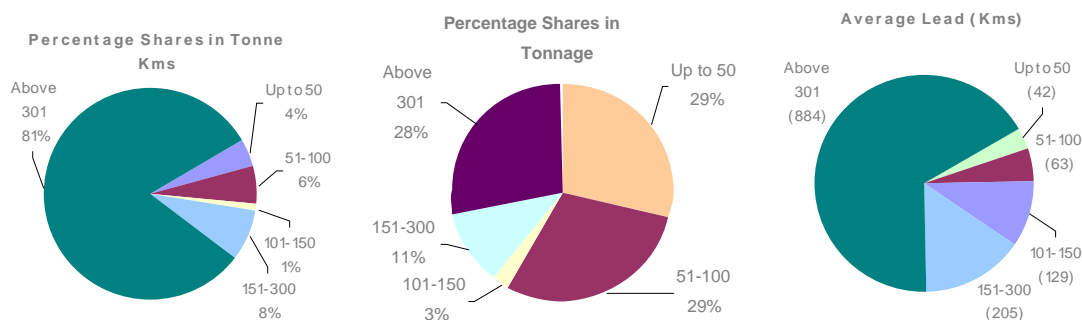
As indicated earlier, major share of freight traffic is transported by Railways and Highways (road transport). Shares of these two modes in total movement of the identified 52 commodities by the four modes (Railways, Highways, Coastal Shipping and Airways) are presented in Table 3.3 enclosed as Appendix-1 at the end of the chapter. From the table it would be observed that:

- ◆ Except for four commodities viz. coal, iron ore, limestone & dolomite and fertilizers which are predominantly carried by rail, road transport has consistently higher share in movement of the remaining 48 commodities.
- ◆ Road transport reflects a comparatively high share in movement of commodities like POL, iron and steel and containers, which have traditionally been carried by rail over long leads. In the case of cement, both the modes show nearly equal shares. However, in the case of first two commodities and cement, the average lead of movement by road is 272 km, 525 km and 358 km, respectively. Corresponding leads by rail are much higher at 658 km, 936 km and 557 km.
- ◆ In the case of loaded and empty containers, the share of road transport amounts to around 66 % of the total movement by all modes which would appear to be contrary to the generally perceived level. The reason lies in heavy short lead movement of containers detected during road traffic surveys as brought out in Table 3.4.

**TABLE 3.4: MOVEMENT OF CONTAINERS BY ROAD (LOADED & EMPTY)**

DISTANCE SLAB (KM)	TONNES (MILLION)	TONNE KMS (MILLION)	AVG. LEAD (KM)
Up to 50	16.50 (29.15)	700	42
51-100	16.23 (28.67)	1,022	63
101-150	1.50 (2.65)	194	129
151-300	6.41 (11.33)	1,314	205
Above 301	15.96 (28.20)	14,116	884
TOTAL	56.60 (100)	17,346	306

Figures in parentheses show percentage shares in Total Tonnage.



Over 60 % of movement of containers by road is confined to leads up to 150 km. Another 11 % move over leads between 151 and 300 km. The share of container movement beyond 300 km is around 28 %.

### 3.4 TOP 21 COMMODITIES TRANSPORTED BY RAIL

Amongst the 52 commodities, the total volume of top 21 commodities transported by rail amounted to 764.49 million tonnes constituting 39.48 % of the total traffic of these commodities carried by all the four modes. Comparative share of road in the total traffic in these 21 commodities works out to 57.45 % (1112.37 million tonnes). Commodity wise details are presented in Table 3.5.

**TABLE 3.5: TOP 21 COMMODITIES BY VOLUME MOVED BY RAIL AND COMPARATIVE ROAD SHARE**

SN	COMMODITY NAME	TOTAL (All Modes)	MODAL SHARE			
			RAIL		ROAD	
			MILLION TONNES	% OF TOTAL	MILLION TONNES	% OF TOTAL
1	Coal	415.37	331.77	79.87	68.35	16.46
2	Iron ore	154.69	121.80	78.74	23.30	15.06
3	Cement & cement structures	157.86	78.83	49.94	75.98	48.13
4	Chemical manures & fertilizers	54.57	36.38	66.67	18.19	33.33
5	POL products (liquid)	189.56	35.13	18.53	128.14	67.60
6	Iron & steel (all types)	134.49	27.31	20.31	107.18	79.69
7	Containers (loaded & empty)	85.44	27.10	31.71	56.60	66.25
8	Rice (all types)	69.54	22.43	32.25	47.12	67.75
9	Parcels, miscellaneous & others	227.17	22.29	9.81	201.50	88.70
10	Limestone & dolomite	19.85	13.69	69.00	6.15	31.00
11	Wheat and wheat flour	41.67	12.31	29.54	29.36	70.46
12	Granite, marbles & other stones	31.97	6.79	21.24	25.18	78.76
13	Sugar and khandsari	24.84	5.98	24.08	18.86	75.92
14	Ores other than iron	14.68	5.49	37.40	9.19	62.60
15	Building materials	121.13	5.05	4.17	116.08	95.83
16	Salt	11.06	4.62	41.77	6.44	58.23
17	Other food grains	15.29	2.29	14.98	13.00	85.02
18	Fruits and vegetables	71.81	1.89	2.63	69.93	97.38
19	Wood, timber, plywood, etc.	33.91	1.14	3.36	32.77	96.64
20	Chemicals (Powder & liquid all types)	34.90	1.11	3.18	33.79	96.82
21	Edible oils	26.36	1.09	4.14	25.26	95.83
<b>Sub-Total</b>		<b>1936.16</b>	<b>764.49</b>	<b>39.48</b>	<b>1112.37</b>	<b>57.45</b>
<b>TOTAL ALL COMMODITIES</b>		<b>2386.97</b>		<b>32.03</b>		<b>46.60</b>

By far the highest share in commodity movement by rail was that of coal which constituted 79.87 % of the total movement by all modes. The balance 20.13% was accounted for by road transport (16.46 %) and Coastal Shipping (3.67 %). Other commodities which reflected predominant share in their total movement include iron ore (78.74 %), limestone & dolomite (69.00 %), and fertilizers (66.67 %). Corresponding share of road transport in respect of these commodities was 15.06 %, 31.00 % and 33.33 %. In the case of iron ore, Coastal Shipping accounts for 6.2% (9.59 million tonnes). In cement and cement structures Railways reflected a share of around 50 %. In respect of the remaining 16 commodities, road transport had comparatively high share.

### 3.5 TOP 21 COMMODITIES TRANSPORTED BY ROAD

Volume of top 21 commodities transported by road amounted to 1257.59 million tonnes constituting 62.43 % of the total traffic in these commodities carried by all the four modes. Comparative share of rail works out to 34.62 %. Table 3.6 gives details in this regard.



**TABLE 3.6: TOP 21 COMMODITIES BY VOLUME MOVED BY ROAD AND COMPARATIVE RAIL SHARE**

SN	COMMODITY NAME	TOTAL (All Modes)	MODAL SHARE			
			ROAD		RAIL	
		MILLION TONNES	MILLION TONNES	% OF TOTAL	MILLION TONNES	% OF TOTAL
1	Parcels, Misc, Others	227.17	201.50	88.70	22.29	9.81
2	POL Products (Liquid)	189.56	128.14	67.60	35.13	18.53
3	Building Materials	121.13	116.08	95.83	5.05	4.17
4	Iron & steel (all types)	134.49	107.18	79.69	27.31	20.31
5	Provisions & household goods	80.93	80.75	99.77	0.19	0.23
6	Cement and cement structures	157.86	75.98	48.13	78.83	49.94
7	Fruits and vegetables	71.81	69.93	97.37	1.89	2.63
8	Coal	415.37	68.35	16.46	331.77	79.87
9	Containers (loaded & empty)	85.44	56.60	66.25	27.09	31.71
10	Rice (all types)	69.54	47.12	67.76	22.43	32.25
11	Chemicals (powder and liquid)	34.91	33.80	96.82	1.11	3.18
12	Grams & pulses	33.84	33.21	98.14	0.63	1.86
13	Wood, timber, plywood	33.91	32.77	96.64	1.14	3.36
14	Heavy machinery & Agr. Equip	31.17	31.09	99.74	0.08	0.26
15	Wheat and wheat flour	41.67	29.36	70.46	12.31	29.54
16	Milk & products	27.72	27.64	99.75	0.07	0.25
17	Edible oils	26.36	25.26	95.86	1.09	4.14
18	Granite, marbles & other stones	31.97	25.18	78.76	6.79	21.24
19	Electricals (incl. wires)	23.35	23.33	99.96	0.01	0.04
20	Iron ore	154.68	23.30	15.06	121.80	78.74
21	Paper & paper products	21.39	21.02	98.27	0.37	1.73
	<b>Sub-Total</b>	<b>2014.27</b>	<b>1257.59</b>	<b>62.43</b>	<b>697.38</b>	<b>34.62</b>
	<b>TOTAL ALL COMMODITIES</b>	<b>2386.97</b>		<b>52.69</b>		<b>29.22</b>

The above structure of commodities carried by road is more or less similar to the one figuring in the preceding table relating to transport by rail except that seven commodities viz. fertilizers, sugar, ores other than iron, other food grains, salt and limestone & dolomite get excluded and other six commodities get added. These include provisions and household goods, grams & pulses, electrical goods, milk products, heavy machinery, tractors, etc, and paper & paper products.

Except for iron ore, coal and cement & cement structures, share of road transport in the movement of above listed commodities is much higher. Share of eleven commodities is over 95 % of the total individual commodity flow. These commodities include building materials, provisions and household goods, fruits & vegetables, chemicals, grams & pulses, wood/timber, heavy machinery, milk & products, edible oils, electrical goods and paper & paper products. Miscellaneous goods including an assortment of goods, generally termed as ‘parchun’ indicates highest level in terms of volume, though lower than above commodities in terms of percentage share in total commodity traffic by all modes.

### 3.6 GEOGRAPHIC CONCENTRATION OF FREIGHT TRAFFIC

Geographic concentration of freight traffic has been studied in terms of *statal* levels of commodities originating and terminating in different states along with modal shares. The objective is to present an overview of the current pattern and spread of demand and supply of different commodities. In this context, detailed state wise commodity specific tabulations may be seen at **Annexure 3.3** in Annexure Volume-1.

#### 3.6.1 Total Volume of Traffic Originating in Different States

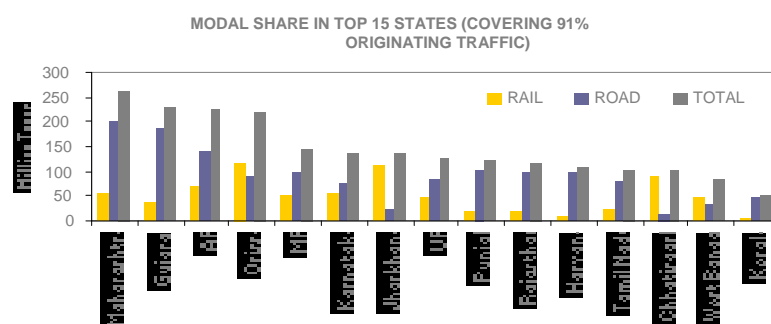
Drawn from the detailed state wise commodity specific originating and terminating traffic in different states, summary Table 3.7 presents total volume of traffic originating in each of the states/UTs, in descending order, and the associated modal shares.

**TABLE 3.7: STATE-WISE ORIGINATING TRAFFIC AND MODAL SHARES - 2007-08**

SN	STATE / UT	MODAL SHARE (Tonnes)				TOTAL
		RAIL	ROAD	COASTAL SHIPPING	AIRWAYS	
1	Maharashtra	54,125,994	199,941,478	9,164,615	52,227	263,284,314 (11.03)
2	Gujarat	35,462,461	185,376,698	10,289,483	7,419	231,136,061 (9.68)
3	Andhra Pradesh	68,681,890	138,332,311	18,289,050	11,094	225,314,345 (9.44)
4	Orissa	119,012,496	88,910,772	10,815,774	1,008	218,740,050 (9.16)
5	Madhya Pradesh	49,296,075	98,223,318		1,393	147,520,786 (6.18)
6	Karnataka	56,245,275	76,607,226	3,394,733	22,958	136,270,192 (5.71)
7	Jharkhand	110,452,227	23,986,118	0	95	134,438,440 (5.63)
8	Uttar Pradesh	44,737,785	82,438,072	0	992	127,176,849 (5.33)
9	Punjab	16,994,298	102,650,562	0	5	119,644,865 (5.01)
10	Rajasthan	18,670,115	97,734,862	0	1,976	116,406,953 (4.88)
11	Haryana	8,734,184	99,070,180	0	0	107,804,364 (4.52)
12	Tamil Nadu	22,200,257	81,333,749	1,566,723	22,474	105,123,203 (4.40)
13	Chhatisgarh	87,869,040	14,876,354	0	139	102,745,533 (4.30)
14	West Bengal	46,577,384	32,927,839	3,642,160	19,292	83,166,675 (3.48)
15	Kerala	2,781,248	48,432,962	1,613,042	2,994	52,830,246 (2.21)
16	Delhi	3,789,902	41,447,418	0	45,909	45,283,229 (1.90)
17	Assam	10,043,577	30,613,009	0	2,169	40,658,755 (1.70)
18	Bihar	6,466,736	33,757,089	0	242	40,224,067 (1.69)
19	Himachal Pradesh		27,126,289	0	0	27,126,289 (1.14)
20	Jammu & Kashmir	113,860	14,878,694	0	1,475	14,994,029 (0.63)
21	Goa	5,817,983	6,883,003	325,607	1,382	13,027,975 (0.55)
22	Uttarakhand	446,854	11,644,752	0	0	12,091,606 (0.51)
23	Meghalaya		5,299,413	0	0.01	5,299,413 (0.22)
24	Pondicherry	7,355	4,447,013	0	0	4,454,368 (0.19)
25	Nagaland	24,415	2,641,957	0	24	2,666,396 (0.11)
26	Dadra & Nagar Haveli	0	2,490,099	0	0	2,490,099 (0.10)
27	Daman & Diu	0	2,288,147	0	0	2,288,147 (0.10)
28	Manipur	0	1,473,871	0	365	1,474,236 (0.06)
29	Mizoram	5,345	1,106,180	0	31	1,111,556 (0.05)
30	Arunachal Pradesh	0	992,429	0	0	992,429 (0.04)
31	Tripura	7,390	659,823	0	528	667,741 (0.03)
32	Chandigarh	152,021	175,463	0	94	327,578 (0.01)
33	Sikkim	0	108,101	0	0	108,101 (0.005)
	<b>TOTAL</b>	<b>768,716,167</b>	<b>1,558,875,251</b>	<b>59,101,187</b>	<b>196,285*</b>	<b>2,386,888,890 (100)</b>

Note: Figures in parentheses show % share of States in total traffic.

\* Airways Figure excludes 86859 tonnes carried by exclusive Cargo Carriers for which O-D data are not available.



The State of Maharashtra tops with originating traffic of 263.28 million tonnes, constituting around 11 % of total traffic. Sikkim ranks lowest with annual originating traffic of 0.11 million



tonnes or 0.005 % of total traffic. The first ten states account for over 82 % of the total originating traffic. Nineteen states together account for 91 % of traffic. Structure and level of commodities varies from state to state. Details in this regard can be seen at Annexure 3.3.

### 3.6.2 Total Volume of Traffic Terminating in Different States

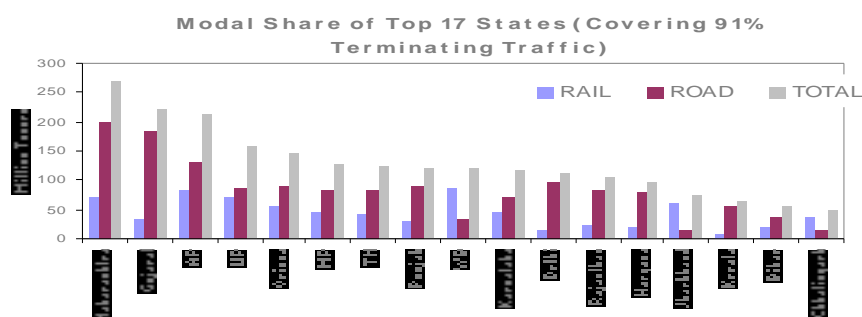
Table 3.8 presents state wise total volume of terminating traffic.

**TABLE 3.8: STATE-WISE TERMINATING TRAFFIC AND MODAL SHARES - 2007-08**

SN	STATE NAME	MODAL SHARE (Tonnes)				TOTAL
		RAIL	ROAD	COASTAL SHIPPING	AIRWAYS	
1	Maharashtra	71,591,699	198,888,597	15,471,902	54,614	286,006,812 (11.98)
2	Gujarat	35,190,578	185,429,162	10,650,915	6,927	231,277,582 (9.69)
3	Andhra Pradesh	82,049,021	130,047,433	3,759,778	12,216	215,868,448 (9.04)
4	Uttar Pradesh	72,346,253	86,561,697	0	2,086	158,910,036 (6.66)
5	Orissa	54,958,917	89,545,286	1,408,097	1,479	145,913,779 (6.11)
6	Tamil Nadu	41,064,279	82,237,475	15,208,337	16,129	138,526,220 (5.80)
7	Madhya Pradesh	46,113,270	81,587,818	0	1,857	127,702,945 (5.35)
8	West Bengal	86,593,862	33,393,742	6,185,624	16,485	126,189,713 (5.29)
9	Karnataka	44,823,762	71,048,584	5,050,159	19,680	120,942,185 (5.07)
10	Punjab	28,961,947	91,619,513	0	49	120,581,509 (5.05)
11	Delhi	16,711,618	96,168,393	0	40,343	112,920,354 (4.73)
12	Rajasthan	23,056,237	81,561,822	0	2,401	104,620,460 (4.38)
13	Haryana	18,569,756	78,952,618	0	0	97,522,374 (4.09)
14	Jharkhand	61,073,630	14,296,695	0	353	75,370,678 (3.16)
15	Kerala	8,327,952	54,903,068	985,691	5,132	64,221,843 (2.69)
16	Bihar	20,608,483	37,096,380	0	918	57,705,781 (2.42)
17	Chhatisgarh	35,819,698	13,498,872	0	1,194	49,319,764 (2.07)
18	Assam	8,433,149	29,495,612	0	5,924	37,934,685 (1.59)
19	Himachal Pradesh	9,533	31,923,590	0	0	31,933,123 (1.34)
20	Jammu & Kashmir	2,481,216	25,475,224	0	2,350	27,958,790 (1.17)
21	Uttarakhand	3,423,476	14,116,168	0	0	17,539,644 (0.73)
22	Goa	3,852,500	7,214,439	38,0684	2,742	11,450,365 (0.48)
23	Pondicherry	81,931	4,349,454	0	0	4,431,385 (0.19)
24	Nagaland	703,856	2,688,126	0	103	3,392,085 (0.14)
25	Dadar & Nagar Haveli	0	3,094,755	0	0	3,094,755 (0.13)
26	Daman & Diu	0	2,775,834	0	1	2,775,835 (0.12)
27	Manipur	0	2,690,493	0	836	2,691,329 (0.11)
28	Mizoram	47,981	2,597,267	0	176	2,645,424 (0.11)
29	Tripura	369,924	1,389,975	0	1,975	1,761,874 (0.07)
30	Chandigarh	1,451,639	210,569	0	314	1,662,522 (0.07)
31	Arunachal Pradesh	0	1,394,560	0	0	1,394,560 (0.06)
32	Meghalaya	0	1,381,504	0	1.2	1,381,505 (0.06)
33	Sikkim	0	1,240,526	0	0	1,240,526 (0.05)
	<b>TOTAL</b>	<b>768,716,167</b>	<b>1,558,875,251</b>	<b>59,101,187</b>	<b>196,285*</b>	<b>2,386,888,890 (100)</b>

Note: Figures in parentheses show % share of States in total traffic.

\* Airways Figure excludes 86859 tonnes carried by exclusive Cargo Carriers for which O-D data are not available.



As would be seen from the table above, the State of Maharashtra also tops in the case of terminating traffic, with terminating traffic of 286.01 million tonnes constituting around 12 % of total traffic. Likewise, Sikkim ranks lowest with annual terminating traffic of 1.24 million tonnes or 0.05 % of total traffic. The first ten states account for about 70 % of the total terminating traffic. Structure and level of commodities varies from state to state. Details in this regard can be seen at Annexure 3.3 in Annexure Volume-1.

### 3.6.3 Total Volume of Originating and Terminating Traffic in Different States

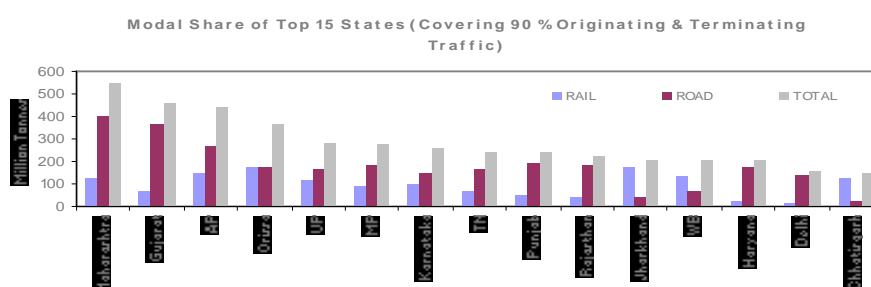
Table 3.9 presents state wise total concentration of originating and terminating traffic.

**TABLE 3.9: STATE-WISE TOTAL ORIGINATING AND TERMINATING TRAFFIC AND MODAL SHARES - 2007-08**

STATE	MODAL SHARES					% of Total
	RAIL	ROAD	COASTALSHIPPING	AIRWAYS	TOTAL	
Maharashtra	125,717,693	398,830,075	24,636,517	106,841	549,291,126	11.51
Gujarat	70,653,039	370,805,860	20,940,398	14,346	462,413,643	9.69
Andhra Pradesh	150,730,911	268,379,744	22,048,828	23,311	441,182,794	9.24
Orissa	173,971,413	178,456,058	12,223,871	2,487	364,653,829	7.64
Uttar Pradesh	117,084,038	168,999,769	0	3,078	286,086,885	5.99
Madhya Pradesh	95,409,345	179,811,136	0	3,251	275,223,732	5.77
Karnataka	101,069,037	147,655,810	8,444,892	42,639	257,212,378	5.39
Tamil Nadu	63,264,536	163,571,224	16,775,060	38,602	243,649,422	5.10
Punjab	45,956,245	194,270,075	0	54	240,226,374	5.03
Rajasthan	41,726,352	179,296,684	0	4,376	221,027,412	4.63
Jharkhand	171,525,857	38,282,813	0	448	209,809,118	4.40
West Bengal	133,171,246	66,321,581	9,827,784	35,778	209,356,389	4.39
Haryana	27,303,940	178,022,798	0	0	205,326,738	4.30
Delhi	20,501,520	137,615,811	0	86,252	158,203,583	3.31
Chhatisgarh	123,688,738	28,375,226	0	1,333	152,065,297	3.19
Kerala	11,109,200	103,336,030	2,598,733	8,126	117,052,089	2.45
Bihar	27,075,219	70,853,469	0	1,160	97,929,848	2.05
Assam	18,476,726	60,108,621	0	8,093	78,593,440	1.65
Himachal Pradesh	9,533	59,049,879	0	0	59,059,412	1.24
Jammu & Kashmir	2,595,076	40,353,918	0	3,825	42,952,819	0.90
Uttarakhand	3,870,330	25,760,920	0	0	29,631,250	0.62
Goa	9,670,483	14,097,442	706,291	4,124	24,478,340	0.51
Pondicherry	89,286	8,796,467	0	0	8,885,753	0.19
Meghalaya	0	6,680,917	0	1	6,680,918	0.14
Nagaland	728,271	5,330,083	0	127	6,058,481	0.13
Dadar & Nagar Haveli	0	5,584,854	0	0	5,584,854	0.12
Daman & Diu	0	5,063,981	0	1	5,063,982	0.11
Manipur	0	4,164,364	0	1,201	4,165,565	0.09
Mizoram	53,326	3,703,447	0	206	3,756,979	0.08
Tripura	377,314	2,049,798	0	2,503	2,429,615	0.05
Arunachal Pradesh	0	2,386,989	0	0	2,386,989	0.05
Chandigarh	1,603,660	386,032	0	407	1,990,100	0.04
Sikkim	0	1,348,627	0	0	1,348,627	0.03
<b>TOTAL</b>	<b>1,537,432,334</b>	<b>3,117,750,502</b>	<b>118,202,374</b>	<b>392,570</b>	<b>4,773,777,781</b>	<b>100</b>

Note: Figures in parentheses show % share of States in total traffic.

\* Airways Figure excludes 86859 tonnes carried by exclusive Cargo Carriers for which O-D data are not available.



The maximum concentration of traffic is in the State of Maharashtra, followed by Gujarat and Andhra Pradesh with their shares in total traffic ranging between 11.51 % and 9.24 %. Thirteen states viz., Maharashtra, Gujarat, Andhra Pradesh, Orissa, Uttar Pradesh, Madhya Pradesh, Karnataka, Tamil Nadu, Punjab, Rajasthan, Jharkhand, West Bengal and Haryana together account for over 83 % of the total originating and terminating traffic in the country. Fifteen states together account for 90 % of total traffic. The remaining twenty states together have 17 % share in total traffic.

### 3.7 INTER-REGIONAL ORIGIN-DESTINATION (O-D) WISE FREIGHT TRAFFIC FLOWS

#### 3.7.1 Total Volume of Traffic Flow between Top 100 Pairs of Regions

Detailed tabulations of commodity flows between different pairs of regions are given in a separate volume of the Report. Traffic flows by rail relate to 15576 pairs of regions out of which 1393 pairs of regions account for about 80 % of the total traffic moving by rail. In the case of road transport the corresponding figures in respect of pairs of regions are 39994 and 6539, respectively. Coastal Shipping and Airways have limited number of flow links. From amongst these, the total volume of traffic flow by all modes between top 100 pairs of regions, in descending order, is given in Table 3.10 enclosed as Appendix-2 at the end of the chapter. These traffic flows constitute around 18 % of the total volume of traffic by all the four modes. Major commodities moving between the 100 pairs of regions include coal, iron/other ores, iron & steel, limestone & dolomite, stones, POL, fertilizers, cement and food grains.

#### 3.7.2 Coal Flows by MGR Systems

As mentioned already, the traffic flows include inter-regional coal flows emanating from MGR systems of NTPC. The top pair (Sonebhadra-Sidhi) amongst the 100 pairs given in Table 3.10 reflects coal movement at Shaktinagar and Rihand thermal power plants of NTPC. Of the eight MGR systems of NTPC, four generate inter-regional flows (Table 3.11).

**TABLE 3.11: INTER-REGIONAL COAL TRAFFIC AT NTPC THERMAL PLANTS**  
(In Million Tonnes)

PLANT LOCATION	FROM REGION	TO REGION	TONNES	NTKMS	AVERAGE LEAD (KMS)
Shaktinagar	Sonebhadra	Sidhi	11.31	67.92	6
Rihand	Sonebhadra	Sidhi	6.27	267.95	43
Kahalgaoon	Bhagalpur	Godda	3.01	93.43	31
Farakka	Murshidabad	Godda	5.50	439.92	80
TOTAL			26.09	869.22	33

Since the pit-heads and plants in the case of MGR lie in different districts, the flows are contextually of inter-regional nature even though their leads are rather short.

3.7.3 As would be seen, huge volumes of traffic move between various regions. The traffic would continue to grow over time in pace with the growth of economy. While the programmed expansion and modernizing plans for augmenting capacities of various modes would help to an extent in easing flow of traffic, other measures for improved logistics like setting up of multi-modal logistics parks would need to be instituted to facilitate traffic distribution which would lead not only to efficient movement of traffic but also result in decongesting the system in no small measure. The detailed inter-regional traffic flow data thrown up by this study could help in identifying suitable locations for such logistics parks.

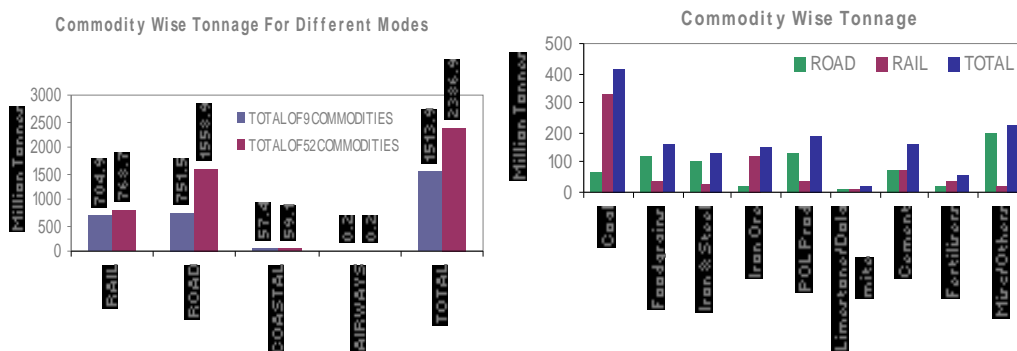
### 3.8 COMMODITY-SPECIFIC FREIGHT TRAFFIC FLOWS

Nine commodities viz., coal, food grains, iron & steel, fertilizers, cement & cement structures, POL, iron ore, limestone & dolomite and miscellaneous/other commodities constitute 63.43 % of the total traffic in all commodities carried by all the modes. Table 3.12 gives details in this regard.

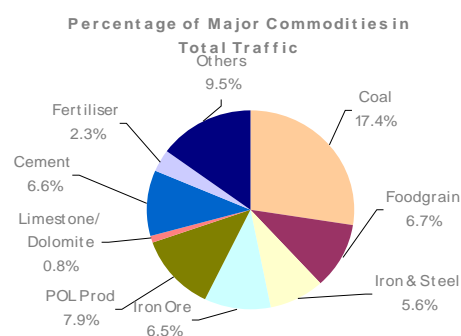
**TABLE 3.12: SHARE OF NINE MAJOR COMMODITIES IN TOTAL TRAFFIC ('000 Tonnes)**

COMMODITY	RAIL	ROAD	COASTAL SHIPPING	AIRWAYS	TOTAL	%AGE SHARE OF MAJOR COMMODITIES IN TOTAL TRAFFIC
Coal	331768	68352	15247	0.00	415367	17.40
Food grains *	37651	122685	0.00	0.00	160336	6.72
Iron & Steel	27314	107177	0.00	0.00	134491	5.63
Iron Ore	121799	23296	9590	0.00	154685	6.48
POL Products (Liquid)	35129	128138	26296	0.00	189563	7.94
Limestone & Dolomite	13694	6152	0.00	0.00	19846	0.83
Cement	78830	75981	3046	0.00	157857	6.61
Fertilizers	36382	18189	0.00	0.00	54571	2.29
Miscellaneous / Others	22293	201499	3181	283	227256	9.52
TOTAL	704860	751469	57360	283	1513972	
Total of 52 Commodities	768716	1558875	59101	283	2386976	
% Share of above 9 Commodities in Total 52 Commodity Traffic					63.43	
Rail & Road Share in Total Movement of above 9 Commodities		Rail : 46.56 %		Road : 49.64 %		

\* Combined Volume of rice (all types), wheat and wheat flour, other food grains and grams & pulses



Drawn from the detailed commodity wise inter-regional traffic flows, movement of each of the above major commodities between respective top 25 pairs of regions is illustratively presented in the following paragraphs. As brought out above, share of rail and road transport in movement of these commodities is 46.56 % and 49.64 %, respectively, together accounting for 96.16 % of the total traffic. The ensuing commodity wise analysis, therefore, pertains to these two predominant modes.



### 3.8.1 Coal

In terms of volume (415.37 million tonnes), coal falls in the top slot, constituting 17.40 per cent of the total multi-commodity inter-regional traffic of 2386.97 million tonnes carried by all the modes. Coal flows span a total of 3717 pairs of regions of which 247 pairs account for around 80 % of total flow of the commodity.

Summary Table 3.13 showing details of coal traffic flows between the top 25 pairs of regions by two major modes viz. rail and road is enclosed as **Appendix-3** at the end of the chapter. Total movement between these regions accounts for 30.31 % of the total coal movement by both the

modes with associated NTKMs of 23.16 %. These flows constitute 35.25 % of the total coal flow by rail and 6.32 % by road. Corresponding shares in NTKMs are 26.14 % and 4.97 %.

Coal movement between Sonebhadra-Sidhi, Bhagalpur-Godda and Murshidabad-Godda relates to MGR operations at Shaktinagar, Rihand, Kahalgaon and Farakka power plants of NTPC.

### 3.8.2 Food Grains

The total originating traffic in food grains amounted to 160.34 million tonnes during 2007-08, constituting 6.72 % of the total multi-commodity originating traffic of 2386.97 million tonnes carried by all modes. Total flows span 20592 pairs of regions of which 15274 pairs account for about 80 % of the total movement of the commodity. A summarized statement of commodity flow between top 25 pairs of regions by rail and road is given in Table 3.14 enclosed as Appendix-4 at the end of the chapter.

The 25 pairs of regions account for 8.41 % of total food grains movement by both the modes and 3.29 % of the associated NTKMs. These flows constitute 3.48 % of the total commodity flow by rail and 9.92 % by road. The shares of corresponding NTKMs are 2.61 % and 3.92 %. Quantum of annual movement of the commodity between the above pairs of regions range between 5.23 million tonnes and 0.21 million tonnes. The low percentage share of the top 25 pairs of regions in total movement and range of volumes reflect wide demand spread of the commodity.

### 3.8.3 Iron & Steel

Iron & steel accounted for 5.63 % (134.49 million tonnes) of the total multi-commodity inter-regional traffic in the base year (2386.97 million tonnes). The commodity flow spans 10670 pairs of regions of which 3102 account for about 80 % of total commodity traffic. Illustratively, flows of the commodity between 25 top pairs of regions by rail and road, in descending order, are given in Table 3.15 enclosed as Appendix-5 at the end of the chapter.

Flow of the commodity between top 25 pairs of regions accounts for 12.53 % of the total movement of iron & steel by both the modes. The corresponding share of NTKMs is 8.04 %. These flows constitute 19.13 % of the total commodity flow by rail and 10.84 % by road. The shares of corresponding NTKMs are 2.61 % and 3.92 %.

### 3.8.4 Fertilizers

Total movement of fertilizers amounted to 54.57 million tonnes accounting for 2.29 % of the total multi-commodity traffic of 2386.97 million tonnes in the base year. 4848 pairs of regions figure in total movement of the commodity of which 1836 pairs reflect 80 % of the total movement. Contribution of the top 25 pairs of points, in descending order, is given in Table 3.16 enclosed as Appendix-6 at the end of the chapter.

The 25 pairs of regions account for 12.86 % of the total flow of the commodity by both the modes and 4.01 % of the corresponding NTKMs. Commodity flows between the 25 pairs of regions constituted 3.75 % of the total commodity flow by rail and 31.09 % by road. The corresponding shares of NTKMs were 2.61 % and 3.92 %.

### 3.8.5 Cement & Cement Structures

Total movement of cement & cement structures amounted to 157.86 million tonnes during the base year, accounting for 6.61 % of the total multi-commodity traffic (2386.97 million tonnes). Flows extend across a total of 7374 regional pairs, of which 1390 pairs of regions reflect 80 % of the total commodity movement.

Illustratively, movement of the commodity between top 25 pairs of regions by rail and road is presented in **Table 3.17** enclosed as **Appendix-7** at the end of chapter. The 25 regions contributed 16.32 % of the total commodity flow by both the modes. Corresponding share of NTKMs was 14.79 %. The share of these flows in total movement of the commodity by rail was 21.55 % and 10.90 % by road. The corresponding shares of NTKMs stood at 19.64 % and 6.95 %.

### 3.8.6 POL

Total originating volume of mineral oils amounted to 189.56 million tonnes, constituting 7.94% of the total multi-commodity originating traffic (2386.97 million tonnes). The commodity flow spans 4497 pairs of regions of which 1693 pairs account for 80 % of the traffic. A selective presentation of contribution of top 25 pairs of regions in flows by rail and road, in descending order, is given in **Table 3.18** enclosed as **Appendix-8** at the end of the chapter.

The 25 pairs of regions contributed 7.53 % of the total commodity flow by both the modes. Corresponding share of NTKMs was 6.30 %. The share of these flows in total movement of the commodity by rail was 15.51 % and 5.34 % by road. The corresponding shares of NTKMs stood at 9.72 % and 4.03 %.

### 3.8.7 Iron Ore

Total iron ore movement during the base year amounted to 154.69 million tonnes, constituting 6.48 % of the total multi-commodity flow of 2386.97 million tonnes. Iron ore flows extend over 458 pairs of regions, 61 of them contributing 80 % of the total movement. Iron ore flows by rail and road between top 25 pairs of regions are given in **Table 3.19** enclosed as **Appendix-9** at the end of the chapter.

The 25 regions account for 60.87 % of total commodity volume moved by both the modes and 58.10 % of the corresponding NTKMs. Commodity flows between the 25 pairs of regions constituted 61.29 % of the total commodity flow by rail and 58.64 % by road. The corresponding shares of NTKMs were 58.15 % and 57.73 %.

### 3.8.8 Limestone & Dolomite

The total originating tonnage in the case of limestone & dolomite was 19.85 million tonnes constituting 0.83 % of the total multi-commodity traffic (2386.97 million tonnes). The flows encompass 871 pairs of regions of which 113 pairs account for 80 % of the total traffic of limestone & dolomite. Illustratively, commodity flow between 25 top regions, in descending order, is given in **Table 3.20** enclosed as **Appendix-10** at the end of the chapter.

The total volume of the commodity carried between top 25 pairs of regions represents 52.64 % of the total movement of the commodity by both the modes. The corresponding share of NTKMs amounts to 37.59 %. The share of these flows in total movement of the commodity by rail was 72.05 % and 9.13 % by road. The corresponding shares of NTKMs stood at 77.44 % and 1.10 %.

### 3.8.9 Miscellaneous/Other Commodities

Miscellaneous/other commodities amounted to 227.17 million tonnes constituting 9.52 % of total multi-commodity inter-regional traffic of 2386.97 million tonnes. The flows extend over 19961 pairs of regions of which 6710 pairs account for 80 % of the commodity movement. From amongst these, commodity flow between 25 top regions, in descending order, is given in **Table 3.21** enclosed as **Appendix-II** at the end of the chapter.

Total volume of the miscellaneous commodities carried between the top 25 pairs of regions represents 8.03 % of the total movement of the commodity, reflecting a wide spread of flows. Corresponding share of NTKMs amounts to 6.01 %. Commodity flows between the 25 pairs of



regions constituted 10.60 % of the total commodity flow by rail and 8.53 % by road. The corresponding shares of NTKMs were 9.22 % and 6.03 %.

### 3.9 INTER-REGIONAL TRAFFIC FLOWS BY COASTAL SHIPPING AND AIRWAYS

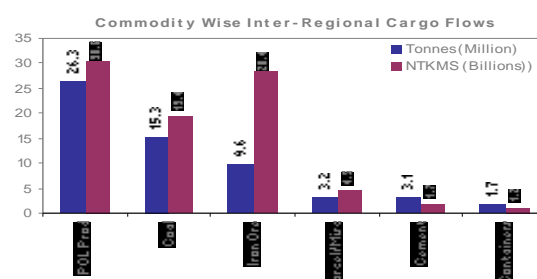
As brought out in Table 3.2, during the base year, only six commodities viz. POL, coal, iron ore, cement & cement structures, containers (loaded & empty) and miscellaneous commodities were carried by Coastal Shipping. Their total volume amounted to 59.10 million tonnes, constituting 2.48 % of the total traffic in these commodities carried by the four modes under study. Airways which primarily carry parcels & miscellaneous goods handled around 0.28 million tons of traffic.

#### 3.9.1 Total Commodity wise Inter-Regional Cargo Flows by Coastal Shipping

Detailed inter-regional commodity flows by Coastal Shipping are given in Annexure 3.4 in Annexure Volume-1. Table 3.22 presents commodity wise total volumes along with intra-commodity shares in total traffic carried by Coastal Shipping.

**TABLE 3.22: COMMODITY WISE TOTAL INTER-REGIONAL CARGO FLOWS BY COASTAL SHIPPING**

COMMODITY	TONNES (MILLION)	% OF TOTAL	NTKMS (MILLION)	% OF TOTAL
POL Products (Liquid)	26.30	44.49	30582	35.68
Coal	15.25	25.80	19374	22.61
Iron Ore	9.59	16.23	28430	33.17
Parcels & Miscellaneous	3.18	5.38	4480	5.23
Cement & Structures	3.04	5.15	1680	1.96
Containers (Ldd & Empty)	1.74	2.95	1157	1.35
<b>TOTAL</b>	<b>59.10</b>	<b>100</b>	<b>85703</b>	<b>100</b>



Inter-regional traffic flows by Coastal Shipping extend over 188 pairs of regions of which 34 pairs account for 80 % of the total cargo movement. Table 3.23 gives commodity wise flows between top 25 pairs of regions.

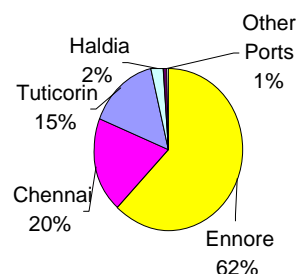
**TABLE 3.23: INTER-REGIONAL CARGO FLOWS BETWEEN TOP 25 PAIRS OF REGIONS BY COASTAL SHIPPING – 2007-08**

SN	COMMODITY	FROM REGION	TO REGION	TONNES ('000)	NTKMS (MILLION)
1	Coal	Paradeep Port	Ennore Port	6690	7209
2	Iron Ore	Vishakhapatnam Port	Surat	4758	16213
3	Pol Products	Mumbai Port	Mangalore Port	3920	2812
4	Pol Products (Liquid)	Vishakhapatnam Port	Haldia Port	2557	1813
5	Iron Ore	Vishakhapatnam Port	Mumbai Port	2413	7666
6	Coal	Vishakhapatnam Port	Chennai	2381	1477
7	Pol Products	Jamnagar	Surat	2340	1400
8	Coal	Paradeep Port	Chennai	2119	2318
9	Coal	Paradeep Port	Mumbai Oil Refineries	1633	3657
10	Pol Products	East Godavari	Haldia Port	1550	1131
11	Pol Products	Mumbai Port	Kandla Port	1528	1125
12	Coal	Haldia Port	Mumbai Oil Refineries	1392	3391
13	Cement & Structures	Junagadh	Ahmednagar	1265	956
14	Pol Products	Mumbai Port	Chennai	1224	3287
15	Pol Products	Kakinada Port	Vishakhapatnam Port	1063	158
16	Coal	Haldia Port	Ennore Port	1030	1320
17	Iron Ore	Vishakhapatnam Port	Nandurbar	877	2798
18	Pol Products	Mangalore Port	Vishakhapatnam Port	759	1878
19	Pol Products	Cochin Port	Mumbai Port	719	776
20	Pol Products	Kakinada Port	Kolkata Port	651	546
21	Pol Products	Mangalore Port	Paradeep Port	642	1839
22	Cement & Structures	Pipavav Port	Jnpt	612	180
23	Pol Products	Chennai	Mumbai Oil Refineries	600	814
24	Pol Products	Jamnagar	Mumbai Port	549	375
25	Pol Products	Vishakhapatnam Port	Chennai	497	308
<b>TOTAL OF 25 PAIRS</b>				<b>43769</b>	<b>65447</b>
<b>% SHARE OF ALL PAIRS</b>				<b>74.06</b>	<b>76.37</b>

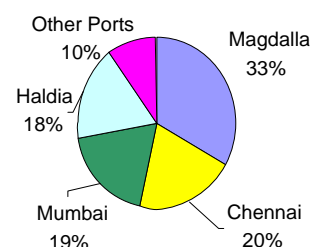


The volumes of above commodity wise flows accounts for 74.06 % of the total tonnage of cargo and 76.37 % of the corresponding NTKMs. The flows from top two O-D pairs are shown below:

**Cargo Flow From Paradip To Other Ports**



**Cargo Traffic From Vishakhapatnam To Other Ports**



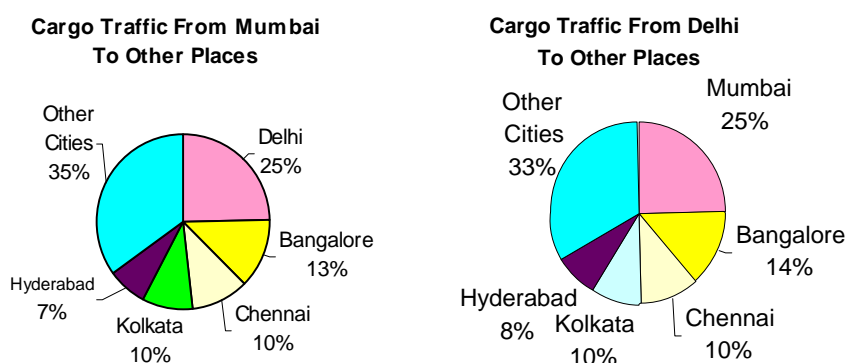
### 3.9.2 Inter-Regional Cargo Flows by Airways

Only one commodity group viz. parcels, miscellaneous and others figures in cargo flows by Airways. Total movement of cargo by air was 0.28 million tonnes during 2007-08, with corresponding NTKMs at 0.29 billion. Detailed inter-regional air cargo flows are given in Annexure 3.5 in Annexure Volume-1 (excludes the cargo traffic carried by exclusive cargo carriers). Air cargo flows span 359 pairs of regions of which 54 pairs account for 80 % of cargo by volume. Cargo flows between top 25 pairs of regions are presented in Table 3.24.

**TABLE 3.24: INTER-REGIONAL CARGO FLOWS BETWEEN TOP 25 PAIRS OF REGIONS BY AIRWAYS (2007-08)**

SN	FROM REGION	TO REGION	TONNES	NTKMS
1	Delhi (All Districts)	Mumbai (Suburbs)	11,353	13,248,563
2	Mumbai (Suburbs)	Delhi (All Districts)	10,981	12,814,697
3	Chennai	Mumbai (Suburbs)	7,983	8,373,851
4	Bangalore	Delhi (All Districts)	7,178	12,662,705
5	Bangalore	Mumbai (Suburbs)	7,172	6,225,718
6	Delhi (All Districts)	Bangalore	6,430	11,342,822
7	Mumbai (Suburbs)	Bangalore	5,821	5,053,010
8	Chennai	Delhi (All Districts)	5,536	7,988,979
9	Delhi (All Districts)	Chennai	4,789	6,910,121
10	Kolkata	Delhi (All Districts)	4,760	6,502,716
11	Mumbai (Suburbs)	Chennai	4,688	491,7207
12	Delhi (All Districts)	Kolkata	4,401	6,012,380
13	Mumbai (Suburbs)	Kolkata	4,322	7,260,556
14	Kolkata	Mumbai (Suburbs)	4,097	6,882,284
15	Delhi (All Districts)	Hyderabad	3,576	4,291,587
16	Kolkata	Kamrup	3,225	1,773,863
17	Mumbai (Suburbs)	Hyderabad	3,217	2,094,001
18	Hyderabad	Mumbai (Suburbs)	3,101	2,018,399
19	Hyderabad	Delhi (All Districts)	3,076	3,691,640
20	Ahmedabad	Mumbai (Suburbs)	2,342	1,058,342
21	Delhi (All Districts)	Pune	2,228	2,575,802
22	Mumbai (Suburbs)	Ahmedabad	2,222	1,004,201
23	Chennai	Kolkata	2,153	3,023,141
24	Mumbai (Suburbs)	North Goa	2,087	901,622
25	Chennai	Bangalore	2,056	555,025
TOTAL OF 25 PAIRS			118,794	139,183,232
% SHARE OF ALL PAIRS			60.52	69.05

Volume of cargo flows between the above pairs of regions constitutes 60.52 % of the total cargo flow. Corresponding NTKMs represent 69.05 % share. The initial two O-D pairs of cargo traffic from Mumbai and Delhi to other places is represented in the pie charts below:



### 3.10 AVERAGE LEADS OF MAJOR COMMODITIES

Average leads of movement of the 52 commodities by the four modes under study are given in Table 3.25. In the case of Railways, 23 commodities out of 52, display leads of more than 1100 km. The lowest lead is that of sugar cane (88 km) and the highest lead (2489 km) relates to Tyre & Tubes. The overall lead for 52 commodities is 661 km. In the case of road transport, the lowest lead is of sugar cane (136 km) and the highest (810 km) for cars/vans. Overall average lead for 52 commodities is 545 km.

**TABLE 3.25: MODE-WISE AVERAGE LEADS OF 52 COMMODITIES**

SN	COMMODITY	MODEWISE AVG. LEAD (KMs)				ALL MODES (KMs)
		RAIL	ROAD	COASTAL SHIPPING	AIRWAYS	
1	Rice (All Types)	1294	327			639
2	Wheat and Wheat Flour	1375	437			714
3	Other Food grains	895	370			448
4	Grams & Pulses	1261	607			619
5	Sugar and Khandsari	997	462			591
6	Sugar Cane	88	136			133
7	Oil Seeds (All Types)	1155	576			598
8	Cotton (Raw & Mfd)	1633	576			583
9	Jute and Coir (Raw & Mfd)	1585	697			758
10	Rubber (Raw & Products)	1888	574			574
11	Fodder	1742	415			452
12	Fruits and Vegetables	1653	522			552
13	Tea and Coffee	478	750			750
14	Tobacco & Products	250	645			645
15	Wood, Timber, Plywood, etc	737	450			460
16	Iron Ore	437	304	2965		574
17	Ores other than Iron	478	350			398
18	Coal	581	463	1271		587
19	POL Products (Liquid)	658	272	1163		467
20	Coal tar and Bitumen	1204	399			521
21	Limestone & Dolomite	676	438			602
22	Salt	1452	480			886
23	Granite, Marbles & other stones	331	551			504
24	Cement and Structures	557	358	552		461
25	Building materials	327	153			160
26	Chemical Manures & Fertilizers	834	373			680
27	Iron & Steel (All Types)	936	525			609
28	Metals other than Iron & Steel	575	477			479
29	Edible Oils	1519	538			579
30	Chemicals ( All Types)	943	611			622
31	Paints & Dyes	758	627			627
32	Electricals (Incl. Wires)	810	614			614
33	Cloths Raw & Manufactured	1629	601			601

SN	COMMODITY	MODEWISE AVG. LEAD (KMs)				ALL MODES (KMs)
		RAIL	ROAD	COASTAL SHIPPING	AIRWAYS	
34	Leather & Goods (Incl. Bones)	564	545			545
35	Gas Cylinder - All Types		151			151
36	Paper & Paper Products	2044	545			571
37	Plastic & Plastic Goods	2070	611			612
38	Car, Vans, etc.	2025	810			868
39	Cycle & Cycle Parts		729			729
40	Heavy Machinery (Agr. Equip.)	1345	595			596
41	Three Wheelers		739			739
42	Two Wheelers		728			728
43	Tyre and Tubes	2489	673			673
44	Spare Parts (All Types)	1763	568			569
45	Empty Tins, Bottes, Drums, etc.	311	374			374
46	Provisions & Household Goods	2095	535			539
47	Containers (Loaded & Empty)	1250	306	664		613
48	Fish/Egg/Meat	476	600			600
49	Livestock	1529	215			234
50	Milk & Products	2223	160			165
51	Scrap (All Metals)	1188	455			465
52	Parcels, Misc, Others, etc.	720	628	1408	1027	648
<b>AVERAGE OF ALL MODES</b>		<b>661</b>	<b>453</b>	<b>1450</b>	<b>1027</b>	<b>545</b>

The average lead of six commodities carried by Coastal Shipping ranges between 552 (cement & cement structures) and 2965 km (iron ore) with all commodity average lead of 1450 km. Miscellaneous commodities forming part of air cargo have an average lead of 1027 km.

### 3.II ZONAL RAILWAY SHARE IN ORIGINATING AND TERMINATING TRAFFIC

State wise and major corridor wise concentration of traffic has already been presented. In the regional context only, it is equally important to know share of Zonal Railways in originating and terminating traffic.

#### 3.II.1 Share of Zonal Railways in Originating Traffic

Share of Zonal Railways in total inter-regional multi-commodity originating traffic including revenue and non-revenue traffic, in descending order, is presented in Table 3.26.

**TABLE 3.26: SHARE OF ZONAL RAILWAYS IN TOTAL INTER-REGIONAL ORIGINATING TRAFFIC (Million Tonnes)**

SN	ZONE	TONNES	% OF TOTAL	NTKMS	% OF TOTAL
1	South Eastern Railway	105	14.1	47093	9.3
2	South East Central Railway	104	14.0	86828	17.1
3	East Coast Railway	88	11.9	47100	9.3
4	East Central Railway	67	9.0	42702	8.4
5	South Central Railway	65	8.8	37376	7.4
6	Central Railway	52	7.0	40585	8.0
7	Western Railway	44	5.9	41500	8.2
8	South Western Railway	44	5.9	26075	5.1
9	Eastern Railway	42	5.7	22230	4.4
10	Northern Railway	36	4.8	44483	8.8
11	Southern Railway	30	4.0	12330	2.4
12	West Central Railway	30	4.0	21059	4.2
13	North Western Railway	13	1.7	14803	2.9
14	North Frontier Railway	12	1.6	15871	3.1
15	North Central Railway	7	1.0	5509	1.1
16	North Eastern Railway	3	0.4	1259	0.2
17	Konkan Railway	1	0.2	430	0.1
<b>TOTAL</b>		<b>743</b>	<b>100</b>	<b>100</b>	<b>100</b>

In addition, there was inter-regional movement of 261 million tonnes of coal from Sonebhadra to Sidhi, Bhagalpur to Godda and Murshidabad to Godda by MGR systems of NTPC at their Shaktinagar, Rihand, Kahalgaon and Farakka thermal plants (paragraph 3.7.2 refers).

### 3.11.2 Share of Zonal Railways in Terminating Traffic

As in case of originating traffic, share of Zonal Railways in total inter-regional traffic, in descending order, is given in Table 3.27.

**TABLE 3.27: SHARE OF ZONAL RAILWAYS IN TOTAL INTER-REGIONAL TERMINATING TRAFFIC  
(Million Tonnes)**

SN	ZONE	TONNES	% OF TOTAL	NTKMS	% OF TOTAL
1	Northern Railway	97	13.11	108370	21.36
2	South Eastern Railway	88	11.9	34015	6.71
3	East Coast Railway	87	11.72	39635	7.81
4	South Central Railway	59	7.9	35166	6.93
5	Central Railway	56	7.59	37855	7.46
6	Southern Railway	55	7.4	38007	7.49
7	Eastern Railway	55	7.38	26995	5.32
8	South East Central Railway	48	6.44	23667	4.67
9	Western Railway	47	6.29	47123	9.29
10	East Central Railway	37	5.02	16304	3.21
11	South Western Railway	30	4.08	20631	4.07
12	West Central Railway	21	2.87	15752	3.11
13	North Central Railway	21	2.86	18818	3.71
14	North Frontier Railway	15	1.97	19972	3.94
15	North Western Railway	14	1.84	16236	3.2
16	North Eastern Railway	11	1.47	7744	1.53
17	Konkan Railway	1	0.16	947	0.19
	<b>TOTAL</b>	<b>743</b>	<b>100</b>	<b>507236</b>	<b>100</b>

### 3.12 TRAFFIC CONCENTRATION AT MAJOR RAIL TERMINALS

The study so far has concentrated on inter-regional traffic flows. However, it may be worth the while to identify specific railway stations/terminals handling heavy volumes of originating and terminating traffic. Contribution of top ten stations in terms of originating traffic is given in Table 3.28. As indicated, 10 stations/sidings contributed 16.63 % of the total originating traffic on the Railways. With a view to identifying railway terminals with maximum concentration of both originating and terminating traffic, the volumes handled at the top 10 railway terminals are given in Table 3.29. 10 stations/sidings handled 12.49 % and 11.14 % of the Railways' total originating and terminating traffic, respectively.

**TABLE 3.28: CONTRIBUTION OF TOP 10 STATIONS IN ORIGINATING TRAFFIC**

(Million Tonnes)			
SN	STATION/SIDING	TONNES	NTKMS
1	Talcher Road	30.25	12745
2	Korba-Gevra Project	20.44	21529
3	Vishakhapatnam Port	14.67	7810
4	Bacheli	10.78	5632
5	Paradip Gcb Sdg	10.16	5495
6	Ranjitpura	9.90	5413
7	Belpahar Cast Mines I and li	9.15	4474
8	Dalli Rajhara	9.11	911
9	Pakur	8.97	8546
10	Shaktinagar Sudhi Chua Coal.Sdg.	8.86	441
	TOTAL	132.29	72996
	% of Total	16.63	14.26

**TABLE 3.29: TOP 10 STATIONS IN HANDLING ORIGINATING & TERMINATING TRAFFIC**

(Million Tonnes)				
SN	STATION/SIDING	ORIGINATING	TERMINATING	TOTAL
1	Talcher Road	30.25	1.58	31.83
2	Visakhapatnam Port	14.67	12.67	27.34
3	Korba-Gevra Project	20.44	0	20.44
4	Chennai Harbour	5.60	11.82	17.42
5	Vishakapatnam Sp.Sdg	2.54	13.90	16.44
6	Paradip Gcb Sdg	10.16	6.24	16.40
7	Nhava Sheva Port	8.74	6.34	15.08
8	Bokaro Steel City Sdg	0	14.93	14.93
9	Haldia Dock Complex & Bulk	6.90	7.49	14.39
10	Adityapur Tisco Worksite Sdg	0.06	13.66	13.72
TOTAL		99.36	88.62	187.99
% of Total Rail Traffic		12.49	11.14	11.82

### 3.13 INTER-REGIONAL TRAFFIC ORIGINATING ON METRE GAUGE

Meter Gauge (MG) system constitutes around 17 % of the total route-kilometers on IR. Its share in total inter-regional traffic was only 2.77 million tonnes, representing 0.36 % of the total originating traffic of 768.72 million tonnes. In terms of NTKMs, the share of MG was 0.31 %, 1598 million out of total 508104 million. Details of commodity wise inter-regional traffic originating on the MG are given in Annexure 3.6 in Annexure Volume-1. The information is also detailed in Table 3.30.

**TABLE 3.30: ORIGINATING COMMODITY TRAFFIC ON MG**

SN	COMMODITY	TONNES ('000)	% SHARE	NTKMS	% SHARE
				MILLION	
1	Parcels, Mics, Others, etc.	604.75	21.79	333.07	20.85
2	Sugar and Khandsari	587.62	21.17	356.20	22.30
3	Limestone & Dolomite	217.47	7.84	179.85	11.26
4	Containers (Loaded & Empty)	193.54	6.97	76.93	4.82
5	Building Materials	176.69	6.37	23.21	1.45
6	Chemical Manures & Fertilizers	142.14	5.12	47.21	2.95
7	Rice (All Types)	123.84	4.46	28.03	1.75
8	Wheat and Wheat Flour	109.40	3.94	27.75	1.74
9	Sugar Cane	97.88	3.53	8.59	0.54
10	Salt	91.45	3.29	18.84	1.18
11	POL Products (Liquid)	76.43	2.75	22.67	1.42
12	Cement & Structures	67.20	2.42	22.43	1.40
13	Scrap (All Metals)	67.00	2.41	120.72	7.56
14	Paper & Paper Products	62.43	2.25	155.00	9.70
15	Other Food Grains	58.00	2.09	30.15	1.89
16	Fruits and Vegetables	45.25	1.63	77.76	4.87
17	Wood, Timber, Plywood, etc.	17.89	0.64	38.50	2.41
18	Oil Seeds (All Types)	13.38	0.48	18.72	1.17
19	Granite, Marbles & Other Stones	13.22	0.48	2.60	0.16
20	Provisions & Household Goods	3.77	0.14	2.41	0.15
21	Chemicals ( All Types)	2.12	0.08	0.33	0.02
22	Edible Oils	1.80	0.06	1.67	0.10
23	Metals other than Iron & Steel	0.99	0.04	3.16	0.20
24	Cloths & Cloth Manufactured	0.45	0.02	0.05	0.00
25	Iron Ore	0.34	0.01	1.60	0.10
26	Iron & Steel (All Types)	0.32	0.01	0.03	0.00
27	Ores other than Iron	0.08	0.00	0.18	0.01
TOTAL OF MG		2775.45	100	1597.66	100.00
% of Total Railway Traffic (768.72 M)		0.36		0.31	

Of the 27 commodities figuring in originating traffic on the MG, the first 10 commodities listed in the above table constituted 84.48 % of the total inter-regional traffic. Remaining 17 commodities accounted for the balance 15.52 % of the traffic.

### 3.14 CONTAINERISED TRAFFIC FLOWS

In the case of container movement, specific origin and destination points become more relevant as against regional links. However, while in for Railways such distinction is feasible, in the case of Highways, data pertain to inter-regional container flows. Further, while information regarding bulk commodities carried in containers is available in the case of Railways, road flow data indicates only the total inter-regional count of loaded and empty containers predominantly moving on comparatively short leads. Because of this incompatibility of data, flow of containers is separately analyzed in relation to their movement by rail and road transport.

#### 3.14.1 Movement of Containers by Railways

##### ISO (Import/Export) and DSO (Domestic) Container Movement

Details of origin-destination (O-D) wise movement of bulk commodities in containers and traffic flow in ISO and DSO containers between various O-Ds are given in Annexure 3.7. in Annexure Volume-1. A summary indicating overall level of movement is given in Table 3.31. Movement of containers relates to 722 pairs of O-Ds in the case of EXIM containers and 1326 pairs of O-Ds for domestic containers.

**TABLE 3.31: ANNUAL TRAFFIC IN ISO AND DSO CONTAINERS BY RAIL**

TYPE OF CONTAINER	TOTAL TONNES (MILLION)	TOTAL NTKMS (MILLION)
ISO/EXIM	21	25084
DSO/Domestic	6	8824
TOTAL	27	33908

##### O-D wise Container Movement by Rail

Drawn from the detailed tabulations at Annexure 3.7, volumes carried by ISO containers between top 10 pairs of O-Ds are given in Table 3.32.

**TABLE 3.32: TRAFFIC CARRIED IN ISO CONTAINERS - TOP 10 O-D PAIRS**

SN	FROM	TO	NO. OF WAGONS	TONNES ('000)	NTKMs MILLION
1	Nhava Sheva Port	Tuglakabad Container Sdg.	213319	3650	5266
2	Tuglakabad	Nhava Sheva Port	126308	1637	2362
3	Nhava Sheva Port	Dhandari Kalan	53135	1069	1897
4	Nhava Sheva Port	Dadri	67624	1031	1539
5	Dadri	Nhava Sheva Port	51371	786	1166
6	Dhandari Kalan	Nhava Sheva Port	49426	730	1293
7	Chennai Harbour ICD	Whitefield	29300	607	198
8	Nhava Sheva Port	Mulund New Goods Depot	27741	506	35
9	Nhava Sheva Port	Nagpur Jn. C.R.(B.G.)	23715	448	381
10	ICD Sabarmati	Nhava Sheva Port	27276	433	252
		TOTAL	669215	10897	14389

The above 10 pairs account around 52% of total tonnage carried in ISO containers. Corresponding share of NTKMs is about 43%.

Likewise, the volume of traffic carried by DSO containers between top ten O-Ds was as under:

**TABLE 3.33: TRAFFIC CARRIED IN DSO CONTAINERS - TOP 10 O-D PAIRS**

SN	FROM	TO	NO. OF WAGONS	TONNES ('000)	NTKMS (MILLION)
1	Tuglakabad Container Sdg.	Tondiarpet - Containers	13232	337	731
2	Tondiarpet ICD	Tuglakabad Container Sdg.	9436	251	545
3	Tuglakabad Container Sdg.	Whitefield	9568	249	586
4	Sanat Nagar Concor	Tuglakabad Container Sdg.	7488	209	348
5	Tuglakabad	Nhava Sheva Port	6255	139	200
6	Panipat Jn.	Nagpur Jn. C.R.(B.G.)	5446	127	149
7	Turbhe Apm Complex	Tuglakabad Container Sdg.	4803	121	172
8	Tuglakabad Container Sdg.	Sanat Nagar CONCOR	5176	103	172
9	Noli	Nhava Sheva Port	7760	95	143
10	Dhandari Kalan	Nhava Sheva Port	4452	95	167
		TOTAL	73616	1726	3213

Traffic between the above 10 pairs of points represents around 28 % of the total traffic carried in DSO containers.

### 3.14.2 Commodities Carried in Containers

Details of commodities carried in domestic containers are presented in Table 3.34.

**TABLE 3.34: COMMODITIES CARRIED IN DOMESTIC CONTAINERS**

SN	COMMODITY	WAGONS	TONNES ('000)	NTKM (MILLION)
1	Domestic containers - DSO	160287	1711	2543
2	Other commodities	105266	1558	2521
3	Sugar	35902	811	260
4	Iron & steel	33579	598	939
5	Food grains	16030	385	708
6	Cement	12742	357	436
7	Iron & Steel	11757	333	558
8	Food grains	10206	252	354
9	Stone (incl. gypsum) other than marble	4448	115	156
10	Iron ore & other ores	3926	112	160
11	Salt	1575	42	45
12	Limestone & Dolomite	1619	38	38
13	Stones (Incl Gypsum) other than marble	1440	35	41
14	Coal	1417	32	47
15	Fertilizer	364	10	7
16	Cement	205	5	3
17	Sugar	145	3	5
18	Fertilizer (Chemical Manure)	88	2	2
19	Mineral Oil (POL)	91	2	2
20	Salt	3	0.06	0.06
	<b>TOTAL</b>	<b>401090</b>	<b>6401.06</b>	<b>8825.06</b>

Commodities moved by EXIM containers included as given in Table 3.35.

**TABLE 3.35: COMMODITIES CARRIED IN EXIM CONTAINERS**

SN	COMMODITY	WAGONS	TONNES ('000)	NTKMs (MILLION)
1	Containers – Export / ISO	805881	11597	14301
2	Other Commodities	497669	7816	9195
3	Food grains	18197	445	600
4	Stones (incl. gypsum) other than marble	16356	431	430
5	Iron & Steel	16456	305	375
6	Iron Ore and other ores	5129	90	51
7	Sugar	2461	66	92
8	Cement	3172	63	15
9	Coal	2099	52	13
10	Mineral Oil (POL)	935	23	7
11	Salt	257	10	4
12	Fertilizer	46	1	0.9
13	Limestone & Dolomite	78	0.6	0.7
	<b>TOTAL</b>	<b>1368736</b>	<b>20899.6</b>	<b>25084.6</b>



### 3.14.3 Movement of Containers by Road Transport

Road traffic survey data provided information regarding number of loaded and empty containers between different pairs of regions. The flows span 954 pairs of regions. The total volume of traffic reflected in the flows is 56.60 million tonnes. Detailed flows are listed in Annexure 3.7 in Annexure Volume-1. Movement between top 20 pairs of regions is given in Table 3.36.

**TABLE 3.36 CONTAINERS TRAFFIC BY HIGHWAYS - TOP 20 PAIRS OF REGIONS**

SN	ORIGINATING REGION	TERMINATING REGION	TONNES ('000)	TKM (MILLION)	AVERAGE LEAD (KM)
1	JNPT	Mumbai Port	9764	586	60
2	Mumbai	JNPT	9553	477	50
3	Ernakulam	Cochin Port	3376	101	30
4	JNPT	Mumbai	2891	173	60
5	Cochin Port	Ernakulam	1986	59	30
6	Kandla Port	Kachchh	1276	100	78
7	Coimbatore	Ernakulam	1230	234	190
8	Ahmedabad	JNPT	962	598	621
9	Kachchh	Kandla Port	809	63	78
10	JNPT	Ahmedabad	738	459	622
11	JNPT	Delhi (All Districts)	655	951	1452
12	Delhi (All Districts)	JNPT	617	896	1453
13	Pune	JNPT	572	106	185
14	JNPT	Pune	526	97	185
15	East-Medinipur	Haldia Port	436	20	46
16	Thane	JNPT	410	25	62
17	JNPT	Thane	333	21	62
18	Kolkata Port	Haldia Port	316	58	185
19	JNPT	Raigad	281	38	137
20	Gautam Budhnagar	Delhi (All Districts)	276	9	34
<b>TOTAL</b>			<b>37007</b>	<b>5074</b>	<b>137</b>
<b>% SHARE IN TOTAL TRAFFIC</b>			<b>65.38</b>	<b>29.25</b>	

The above container flows between top 20 pairs account for around 65 % of the volume and 29 % of the total NTKM. The average lead is 137 km. As brought earlier in Table 3.4, over 60 % of movement of containers by road is confined to leads up to 150 km. Another 11 % move over leads between 151 and 300 km. The share of container movement beyond 300 km is around 28 %.

A Special Report on multi-modal traffic is enclosed at the end of the Report.

## 3.15 INTRA-REGIONAL TRAFFIC

### 3.15.1 Intra-Regional Traffic by Rail

Intra-regional traffic by rail comprises traffic carried over IR system as well at MGR systems of NTPC. Total intra-regional traffic by rail during the base year amounted to 96.66 million tonnes including 43.90 million tonnes of coal movement over the following MGR systems of NTPC at the indicated thermal power plants (Table 3.37).

**TABLE 3.37: INTRA-REGIONAL COAL TRAFFIC AT NTPC THERMAL PLANTS**

PLANT LOCATION	REGION	TONNES (MILLION)	NTKMS (MILLION)	AVERAGE LEAD (KM)
Vindhyachal	Sidhi	11.53	92	8
Korba	Korba	12.21	183	15
Angul	Angul	11.52	323	28
Karimnagar		8.63	112	13
<b>TOTAL</b>		<b>43.89</b>	<b>710</b>	<b>16</b>

### 3.15.2 Commodity wise Intra-Regional Traffic Flows by Rail

Details of commodity composition of the 96.66 million tonnes of intra-regional traffic are presented in Table 3.38 enclosed as Appendix- 12 at the end of chapter.

### 3.15.3 Intra-Regional Freight Traffic by Road Transport

The methodology adopted for assessment of intra-regional traffic by road has been given in methodology section of Chapter I (paragraph 1.4.5). As explained, in view of the cost and time constraints, it was agreed to adopt a sampling approach envisaging conduct of surveys at select regions representative enough to throw up results which would be replicable in the case of other districts/regions with similar demographic, agricultural, mineral, commercial and industrial texture. Accordingly, the extent of intra-regional flows in the case of sample Districts/Regions emerging from surveys have been estimated and are given in Annexure 3.8 in Annexure Volume-1. The summary estimates of all-India intra-regional traffic arrived at on the basis of allocation of sample results to other Districts/Regions is given in Table 3.39. All-India annual intra-regional traffic by road was worked out to 4640.68 million tonnes.

**TABLE 3.39: ESTIMATE OF ANNUAL INTRA-REGIONAL ROAD TRAFFIC (2007-08)**

SN	Regional Category	Sample Size (No. of Regions)	Total Installed Capacity (Tonnes)	Total Population 2001 Census)	Annual Traffic ('000 Tonnes)	Tonne Km (Million)	Average Lead (Km)
1	Ports*	13	355,912,000	-	132,929	167.18	1.26
2	Major Industries	10	47,860,000	-	12,831	106.49	8.30
	<b>Sub-Total</b>	23	403,772,000	-	145,760	273.68	1.88
3a	<b>Non-Metro Cities</b>						
	Population up to 1.0 Lac	21	-	1,187,797	3,586.83	120.95	33.72
	Population 1.0-5.0 Lac	63	-	187,107,670	170,941	3208.88	18.77
	Population 5.0-10.0 Lac	95	-	70,539,141	153,555	4224.36	27.51
	Population 10.0-20.0 Lac	207	-	299,130,082	1,523,480	26414.54	17.34
	Population 20.0-30.0 Lac	108	-	264,775,804	289,160	7957.31	27.52
	Population above 30 Lac	66	-	258,365,593	1,118,895	14273.10	12.76
	Regions not covered	15	-				
3 b	<b>Metro Cities</b>	25		126879891	386657	7461.54	19.30
	<b>Sub-Total</b>	600		1,207,985,978	3,646,275	63660.68	17.46
4	<b>Mine Haulage</b> (All Minerals Except POL)				848,647	3317.82	3.91
	<b>Total (Incl. Mine Haulage)</b>				<b>4,640,682.0</b>	<b>67252.17</b>	<b>14.5</b>
	<b>Total (Excl. Mine Haulage)</b>	623			<b>3,792,034.9</b>	<b>63,934.4</b>	<b>16.9</b>

Note: Ports include traffic assessed for important Intermediate + Minor Ports  
\* Included in re-demarcated Districts.

Since it is the first time that assessment of intra-regional freight traffic has been attempted, a document giving detailed process adopted for the purpose is presented separately (Special Report-2 placed at the end of this report) to help such exercises that may be taken up in this regard in future.

## Appendix-1 Chapter 3

**TABLE 3.3**  
**RAIL AND ROAD SHARES IN INTER-REGIONAL COMMODITY TRAFFIC- 2007- 08**

COMMODITY	MODAL SHARE									
	RAIL				ROAD				TOTAL	
	Tonnes (‘000)	% of Total	NTKMS (MILLION)	% of Total	Tonnes (‘000)	% of Total	NTKMS (MILLION)	% of Total	Tonnes (‘000)	NTKMS (MILLION)
Rice (All Types)	22427.50	32.25	29025.00	65.32	47117.01	67.75	15413.00	34.68	69544.51	44438.00
Wheat & Wheat Flour	12311.38	29.55	16932.00	56.91	29356.80	70.45	12821.00	43.09	41668.18	29753.00
Other Food grains	2285.49	14.95	2046.13	29.86	13002.68	85.05	4807.40	70.14	15288.16	6853.53
Grams & Pulses	626.70	1.85	790.55	3.77	33208.81	98.15	20154.00	96.23	33835.50	20944.55
Sugar & Khandsari	5980.52	24.08	5964.67	40.65	18860.23	75.92	8709.33	59.35	24840.75	14674.00
Sugar Cane	97.88	5.96	8.59	3.94	1543.17	94.04	209.32	96.06	1641.05	217.91
Oil Seeds (All Types)	330.99	3.85	382.23	7.44	8258.33	96.15	4753.63	92.56	8589.32	5135.85
Cotton(Raw & Manufactured)	134.02	0.67	218.81	1.87	19979.83	99.33	11503.00	98.13	20113.85	11721.81
Jute, Coir (Raw & Manufacture)	220.88	6.88	350.04	14.38	2991.65	93.12	2084.55	85.62	3212.53	2434.60
Rubber (Raw & Products)	1.00	0.02	1.88	0.07	4855.82	99.98	2786.20	99.93	4856.81	2788.08
Fodder	533.00	2.85	928.74	10.96	18199.93	97.15	7545.02	89.04	18732.94	8473.76
Fruits & Vegetables	1888.89	2.63	3121.63	7.88	69925.61	97.37	36509.00	92.12	71814.50	39630.63
Tea & Coffee	0.20	0.00	0.09	0.00	5622.45	100.00	4218.36	100.00	5622.64	4218.45
Tobacco & Tobacco Products	0.06	0.00	0.02	0.00	4351.57	100.00	2807.47	100.00	4351.64	2807.49
Wood, Timber, Plywood, etc.	1139.42	3.36	840.27	5.39	32769.75	96.64	14758.00	94.61	33909.17	15598.27
Iron Ore	121799.48	83.94	53239.00	88.26	23295.60	16.06	7084.87	11.74	145095.09	60323.87
Ores other than Iron	5490.15	37.40	2626.92	44.92	9191.02	62.60	3220.57	55.08	14681.17	5847.50
Coal	331767.59	82.92	192630.00	85.90	68351.62	17.08	31622.00	14.10	400119.20	224252.00
POL Products (Liquid)	35128.64	21.52	23104.00	39.90	128138.34	78.48	34805.00	60.10	163266.98	57909.00
Coa tar & Bitumen	457.22	15.16	550.66	35.04	2559.04	84.84	1020.72	64.96	3016.26	1571.39
Limestone & Dolomite	13693.95	69.00	9256.04	77.47	6152.37	31.00	2692.36	22.53	19846.33	11948.40
Salt	4618.93	41.75	6708.14	68.43	6444.37	58.25	3094.09	31.57	11063.30	9802.24
Granite, Marbles & other Stones	6788.45	21.24	2244.01	13.92	25179.26	78.76	13875.00	86.08	31967.71	16119.01
Cement & Cement Structures	78830.26	50.92	43936.00	61.78	75981.02	49.08	27183.00	38.22	154811.27	71119.00
Building Materials	5045.17	4.17	1648.29	8.48	116084.46	95.83	17787.00	91.52	121129.63	19435.29
Chemical Manures & Fertilizers	36382.33	66.67	30334.00	81.72	18188.80	33.33	6785.82	18.28	54571.14	37119.82
Iron & Steel (All Types)	27314.35	20.31	25569.00	31.22	107176.65	79.69	56320.00	68.78	134491.00	81889.00
Metals other than Iron & Steel	251.19	1.60	144.31	1.92	15445.96	98.40	7367.54	98.08	15697.15	7511.86
Edible Oils	1094.05	4.15	1662.08	10.89	25261.93	95.85	13600.00	89.11	26355.98	15262.08
Chemicals (All Types)	1111.48	3.18	1048.37	4.83	33795.65	96.82	20654.00	95.17	34907.12	21702.37
Paints & Dyes	2.52	0.06	1.91	0.07	4263.62	99.94	2673.85	99.93	4266.14	2675.76
Electricals (Incl. Wires)	5.90	0.03	4.78	0.03	23339.81	99.97	14338.00	99.97	23345.71	14342.78
Cloths & Cloth Manufactured	5.81	0.03	9.46	0.09	17091.23	99.97	10274.00	99.91	17097.04	10283.46
Leather & Goods (Incl. Bones)	4.94	0.16	2.79	0.16	3108.27	99.84	1694.51	99.84	3113.22	1697.30
Gas Cylinder - All Types	0.00	0.00	0.00	0.00	14604.47	100.00	2206.09	100.00	14604.47	2206.09
Paper & Paper Products	368.93	1.72	754.10	6.17	21022.66	98.28	11464.00	93.83	21391.59	12218.10
Plastic & Plastic Goods	0.81	0.01	1.68	0.02	15698.23	99.99	9598.88	99.98	15699.04	9600.56
Car, Vans, etc.	440.92	4.78	892.64	11.15	8781.24	95.22	7114.22	88.85	9222.16	8006.86
Cycle & Cycle Parts	0.00	0.00	0.00	0.00	1898.33	100.00	1383.40	100.00	1898.33	1383.40
Heavy Machinery, Tractors, etc.	80.59	0.26	108.42	0.58	31092.95	99.74	18486.00	99.42	31173.55	18594.42
Three Wheelers	0.00	0.00	0.00	0.00	761.20	100.00	562.61	100.00	761.20	562.61
Two Wheelers	0.00	0.00	0.00	0.00	5388.11	100.00	3921.80	100.00	5388.11	3921.80
Tyre and Tube	0.06	0.00	0.15	0.00	6606.99	100.00	4444.30	100.00	6607.05	4444.45
Spare Parts (All Types)	14.43	0.12	25.45	0.36	12342.22	99.88	7011.59	99.64	12356.65	7037.04
Empty Tins, Bottles, Drums	1.88	0.01	0.59	0.01	17466.93	99.99	6541.07	99.99	17468.82	6541.66
Provisions & Household Goods	188.61	0.23	395.21	0.91	80745.98	99.77	43198.00	99.09	80934.59	43593.21
Containers (Loaded & Empty)	27095.40	32.37	33873.00	66.13	56602.91	67.63	17346.00	33.87	83698.31	51219.00
Fish/ Egg/ Meat	1.33	0.01	0.63	0.01	10931.66	99.99	6555.80	99.99	10932.99	6556.44
Livestock	117.03	1.42	178.97	9.31	8099.48	98.58	1743.76	90.69	8216.51	1922.73
Milk & Products	74.66	0.27	165.95	3.63	27644.60	99.73	4411.00	96.37	27719.25	4576.95
Scrap (All Metals)	267.89	1.42	318.15	3.63	18595.59	98.58	8457.15	96.37	18863.48	8775.30
Parcels, Miscellaneous, Others	22293.30	9.96	16056.00	11.26	201499.07	90.04	126540.00	88.74	223792.37	142596.00
<b>TOTAL</b>	<b>768716.17</b>	<b>33.03</b>	<b>508101.37</b>	<b>41.84</b>	<b>1558875.25</b>	<b>66.97</b>	<b>706157.29</b>	<b>58.16</b>	<b>2327591.42</b>	<b>1214258.66</b>

## Appendix-2 Chapter 3

**TABLE 3.10: TOTAL COMMODITY FLOWS BY ALL MODES - TOP 100 PAIRS OF REGIONS**

SN	FROM REGION	TO RE GION	MODAL SHARE (TONNAGE)				
			RAIL	ROAD	COASTAL	AIRWAYS	TOTAL
1	Sonebhadra	Sidhi	17583000	0	0	0	17583000
2	Angul	Paradip Port	10998510	161221	0	0	11159731
3	JNPT	Mumbai Port	1274	10355499	594147	0	10950920
4	Krishna	Hyderabad	91027	10608056	0	10	10699093
5	Bellary	Madras Port	9588149	22111	0	0	9610260
6	Mumbai (Suburbs)	Jnpt	0	9553003	0	0	9553003
7	Kachchh	Kandla Port	20871	9095318	0	0	9116189
8	Kendujhargarh	Jagatsinghpur	0	8673091	0	0	8673091
9	Dantewara	Vishakhapatnam Port	6940263	0	0	0	6940263
10	Kandla Port	Kachchh	4650	6754345	0	0	6758995
11	Paradip Port	Ennore Port	0	0	6690382	0	6690382
12	Korba	Panchmahals	6397928	0	0	0	6397928
13	Faridabad	Delhi (All Districts)	13357	6255648	0	0	6269005
14	Gumla	Ranchi	6106566	0	0	0	6106566
15	Dantewara	Visakhapatnam	5886864	0	0	0	5886864
16	Jhajjar	Delhi (All Districts)	0	5584242	0	0	5584242
17	Murshidabad	Godda	5499000	0	0	0	5499000
18	Sonebhadra	Mirzapur	5463282	2208	0	0	5465490
19	Angul	Visakhapatnam	5304427	56399	0	0	5360826
20	Angul	Krishna	5077142	13174	0	0	5090316
21	Jagatsinghpur	Sundargarh	0	5072076	0	0	5072076
22	Surat	Ahmedabad	18073	4977274	0	0	4995347
23	Jaipur	Delhi (All Districts)	178	4872424	0	343.55	4872945.55
24	Ernakulam	Cochin Port	0	4766817	0	0	4766817
25	Vishakhapatnam Port	Surat	0	0	4757883	0	4757883
26	Hyderabad	Krishna	3573	4675897	0	183	4679653
27	Cochin Port	Ernakulam	0	4535098	0	0	4535098
28	Ghaziabad	Delhi (All Districts)	255	4518260	0	0	4518515
29	Dhanbad	Bardhaman	4399224	107608	0	0	4506832
30	Jajpore	Ranchi	4463562	6063	0	0	4469625
31	Vishakhapatnam Port	Vishakhapatnam	4394961	42670	0	0	4437631
32	Tiruvallur	Salem	4413039	17426	0	0	4430465
33	Jajpore	Raigarh	4361281	25352	0	0	4386633
34	Jnpt	Delhi (All Districts)	3651433	672027	0	0	4323460
35	Marmugao Port	Bellary	4308603	0	0	0	4308603
36	Vishakhapatnam Port	Durg Steel Plant	4045118	0	0	0	4045118
37	Jajpore	Durgapur Steel Plant	3998376	8954	0	0	4007330
38	Mumbai Port	Mangalore Port	0	15148	3919889	0	3935037
39	Bardhaman	West-Midnipur	3924249	0	0	0	3924249
40	Ahmedabad	Surat	29657	3835819	0	0	3865476
41	Yavatmal	Chandrapur	3847091	8753	0	0	3855844
42	Korba	Ganganagar	3771768	0	0	0	3771768
43	Sundargarh	Bokaro Steel Plant	3721775	0	0	0	3721775
44	Bellary	Chennai	996074	2687231	0	0	3683305
45	Hazaribagh	Ghaziabad	3602503	3920	0	0	3606423
46	Mumbai (Suburbs)	Pune	0	3509267	0	191	3509458
47	Jagatsinghpur	Jharsuguda	0	3489373	0	0	3489373
48	Dhanbad	Panipat	3404977	15425	0	0	3420402
49	Thane	Mumbai (Suburbs)	0	3418886	0	0	3418886
50	Gautam Budhnagar	Delhi (All Districts)	0	3416142	0	0	3416142
51	Pune	Mumbai (Suburbs)	0	3379966	0	266	3380232
52	Bellary	Kakinada Port	3349333	0	0	0	3349333
53	Delhi (All Districts)	Faridabad	0	3282611	0	0	3282611
54	Korba	Nagpur	3251100	21996	0	0	3273096

SN	FROM REGION	TO RE GION	MODAL SHARE (TONNAGE)				
			RAIL	ROAD	COASTAL	AIRWAYS	TOTAL
55	Jajpore	Paradeep Port	3092097	142507	0	0	3234604
56	Bardhaman	Birbhum	3221578	0	0	0	3221578
57	Bhiwani	Delhi (All Districts)	0	3215377	0	0	3215377
58	Gumla	Haldia Port	3181892	0	0	0	3181892
59	Adilabad	Karimnagar	3094395	64487	0	0	3158882
60	Jagatsinghpur	Angul	15410	3125025	0	0	3140435
61	Jharsuguda	Angul	2978093	133729	0	0	3111822
62	East-Medinipur	Haldia Port	0	3086912	0	0	3086912
63	Mumbai (Suburbs)	Delhi (All Districts)	0	3074020	0	10981	3085000.9
64	Bhagalpur	Godda	3014000	0	0	0	3014000
65	Bardhaman	South 24-Parganas	2996298	0	0	0	2996298
66	Vishakhapatnam Port	Chennai	1248	81888	2897807	0	2980943
67	Korba	Kota	2967917	0	0	0	2967917
68	Nalgonda	Hyderabad	40821	2924238	0	0	2965059
69	Bellary	South Goa	2955415	0	0	0	2955415
70	Sundargarh	Raigarh	2684823	253428	0	0	2938251
71	Mumbai Port	Mumbai (Suburbs)	0	2921508	0	0	2921508
72	Warangal	Khammam	2903641	7957	0	0	2911598
73	Jnpt	Mumbai (Suburbs)	0	2890800	0	0	2890800
74	Bellary	Mangalore Port	141318	2706319	0	0	2847637
75	Raigad	Thane	0	2786826	0	0	2786826
76	Chhindwara	Betul	2768378	0	0	0	2768378
77	Surat	Vadodara	1279	2735972	0	0	2737251
78	Vishakhapatnam Port	Mumbai Port	0	5964	2714062	0	2720026
79	Jamnagar	Surat	56110	317495	2339792	0	2713397
80	Korba	Shahdol	2647329	0	0	0	2647329
81	Vadodara	Surat	20657	2621667	0	0	2642324
82	Korba	Surat	2607331	0	0	0	2607331
83	Haldia Port	Bokaro Steel Plant	2604367	0	0	0	2604367
84	Vishakhapatnam Port	Haldia Port	3770	0	2556788	0	2560558
85	Korba	Gandhinagar	2510121	0	0	0	2510121
86	Bellary	Belgaum	2400802	90492	0	0	2491294
87	Chitradurga	Nilgiris	2478911	0	0	0	2478911
88	Hazaribagh	Rae Bareli	2454420	2110	0	0	2456530
89	Delhi (All Districts)	Jnpt	1832052	616784	0	0	2448836
90	Vadodara	Bharuch	460718	1983910	0	0	2444628
91	Bellary	Dakshin Kanara	1877200	545830	0	0	2423030
92	Adilabad	Raichur	2400166	0	0	0	2400166
93	Gurdaspur	Amritsar	22008	2345092	0	0	2367100
94	South Goa	North Goa	0	2329853	0	0	2329853
95	Paschim Singhbhum	Bokaro Steel Plant	2265610	18264	0	0	2283874
96	Jajpore	Jagatsinghpur	0	2271240	0	0	2271240
97	Bharuch	Vadodara	8011	2259173	0	0	2267184
98	Dhanbad	Bokaro	2252934	0	0	0	2252934
99	Jharsuguda	Sundargarh	1192607	1037820	0	0	2230427
100	Hazaribagh	Ranchi	2158879	0	0	0	2158879
<b>A) TOTAL ABOVE 100 PAIRS OF REGIONS</b>			<b>221245119</b>	<b>175113485</b>	<b>26470750</b>	<b>11974 *</b>	<b>422841328</b>
<b>B) TOTAL ALL PAIRS OF REGIONS</b>			<b>768716167</b>	<b>1558875251</b>	<b>59101187</b>	<b>196285</b>	<b>2386888890</b>
<b>C) A AS PERCENTAGE OF (B) ABOVE</b>			<b>28.78</b>	<b>11.23</b>	<b>44.79</b>	<b>6.10</b>	<b>17.72</b>
D) TOTAL NTKMS OF ABOVE 100 PAIRS OF REGIONS (Million)			100119.20	32054	39894	13	172080
E) TOTAL ALL PAIRS OF REGIONS (Million)			<b>508100</b>	<b>706150</b>	<b>85703</b>	<b>201.56</b>	<b>1300200</b>
F) (D) AS PERCENTAGE OF (E)			19.70	4.54	46.55	6.45	13.23

\* Airways Figure excludes traffic exclusive of Cargo Carriers.

## Appendix-3 Chapter 3

**TABLE 3.13: RAIL & ROAD SHARES: COAL FLOWS BETWEEN TOP 25 PAIRS OF REGIONS**

SN	FROM REGION	TO REGION	TONNES			NTKMS			% SHARE	
			RAIL	ROAD	TOTAL	RAIL	ROAD	TOTAL	RAIL	ROAD
2	Angul	Paradip Port	17583000	0	17583000	335870000	0	335870000	100	0
3	Korba	Panchmahals	10987396	38110	11025506	2312640435	8193575	2320834010	99.6	0.35
4	Murshidabad	Godda	6397928	0	6397928	9437343866	0	9437343866	100	0
5	Murshidabad	Godda	5499000	0	5499000	439920000	0	439920000	100	0
6	Angul	Vishakhapatnam	5415473	0	5415473	219200522	0	219200522	100	0
7	Angul	Vishakhapatnam	5300848	0	5300848	3183715757	0	3183715757	100	0
8	Angul	Krishna	5077142	0	5077142	4802201297	0	4802201297	100	0
9	Dhanbad	Bardhaman	4390132	40041	4430173	527625338	7008219	534633557	99.1	0.90
10	Tiruvallur	Salem	4406406	0	4406406	1766795979	0	1766795979	100	0
11	Jagatsinghpur	Sundargarh	0	4171165	4171165	0	1.525E+09	1524519236	0	100
12	Marmugao Port	Bellary	4087356	0	4087356	1701547535	0	1701547535	100	0
13	Vizag Port	Durg St. Plant	3988594	0	3988594	2213670003	0	2213670003	100	0
14	Bardhaman	West-Midnipur	3906529	0	3906529	985331458	0	985331458	100	0
15	Vizag Port	Vishakhapatnam	3851766	0	3851766	385176640	0	385176640	100	0
16	Yavatmal	Chandrapur	3847091	0	3847091	230622728	0	230622728	100	0
17	Korba	Ganganagar	3771768	0	3771768	6421926895	0	6421926895	100	0
18	Hazaribagh	Ghaziabad	3602503	0	3602503	4129835577	0	4129835577	100	0
19	Dhanbad	Panipat	3404977	15425	3420402	4391430926	20684791	4412115717	99.6	0.45
20	Korba	Nagpur	3222790	0	3222790	1707496624	0	1707496624	100	0
21	Bardhaman	Birbhum	3175940	0	3175940	311409681	0	311409681	100	0
22	Adilabad	Karimnagar	3079988	38230	3118218	306554540	9442835	315997375	98.8	1.23
23	Bhagalpur	Godda	3014000	0	3014000	93434000	0	93434000	100	0.00
24	Jharsuguda	Angul	2978093	14491	2992584	774837944	3052521	777890465	99.5	0.48
25	Bardhaman	S. 24-Parganas	2989755	0	2989755	716813047	0	716813047	100	0
26	Korba	Kota	2967917	0	2967917	2965598634	0	2965598634	100	0
<b>TOTAL</b>			<b>116946392</b>	<b>4317462</b>	<b>121263854</b>	<b>50360999426</b>	<b>1572901177</b>	<b>51933900603</b>	<b>96.44</b>	<b>3.56</b>
%Age of above to Total Commodity Flow by both Modes			<b>35.25</b>	<b>6.32</b>	<b>30.31</b>	<b>26.14</b>	<b>4.97</b>	<b>23.16</b>		

## Appendix-4 Chapter 3

**TABLE 3.14: RAIL & ROAD SHARES: FOODGRAIN FLOWS BETWEEN TOP 25 PAIRS OF REGIONS**

SN	FROM REGION	TO REGION	TONNES			NTKMS			% SHARE	
			RAIL	ROAD	TOTAL	RAIL	ROAD	TOTAL	RAIL	ROAD
			0	5228727	5228727	0	408194378	408194378	0	100
2	Sonipat	Delhi (all districts)	0	590636	590636	0	38348269	38348269	0	100
3	Krishna	Hyderabad	22710	564647	587357	10311964	162878432	173190396	3.87	96.13
4	Gurdaspur	Jammu	39876	505880	545756	6336409	77998139	84334548	7.31	92.69
5	East Godavari	Ernakulam	527558	0	527558	718943223	0	718943223	100	0
6	Indore	Mumbai (suburbs)	0	462845	462845	0	283971799	283971799	0	100
7	Ahmedabad	Surat	5052	441318	446370	1187220	121031999	122219219	1.13	98.87
8	West Godavari	Kakinada port	424268	0	424268	53147316	0	53147316	100	0
9	Pune	Mumbai (suburbs)	0	417673	417673	0	61453556	61453556	0	100
10	Surat	Ahmedabad	0	357907	357907	0	98056080	98056080	0	100
11	Faridabad	Delhi (all districts)	0	347335	347335	0	14249487	14249487	0	100
12	Hyderabad	Krishna	0	332964	332964	0	95851613	95851613	0	100
13	Jaipur	Delhi (all districts)	0	321817	321817	0	91027478	91027478	0	100
14	Hisar	Delhi (all districts)	2542	268359	270901	457560	45716196	46173756	0.94	99.06
15	Kandla port	Kachchh	0	268484	268484	0	21047572	21047572	0	100
16	Vadodara	Surat	0	268187	268187	0	43296183	43296183	0	100
17	Nellore	Chennai	0	267191	267191	0	48315601	48315601	0	100
18	Bhiwani	Delhi (all districts)	0	242860	242860	0	30314736	30314736	0	100
19	Mumbai port	Mumbai (suburbs)	0	234148	234148	0	10302490	10302490	0	100
20	Jhajjar	Delhi (all districts)	0	233994	233994	0	14112634	14112634	0	100
21	Hyderabad	Mumbai (suburbs)	0	227790	227790	0	172351573	172351573	0	100
22	Ludhiana	Kokrajhar	226372	0	226372	434109994	0	434109994	100	0
23	Jammu	Srinagar	0	221310	221310	0	85157252	85157252	0	100
24	Ahmedabad	Bharuch	7568	206605	214173	1319318	38875428	40194746	3.53	96.47
25	Kandla port	Indore	52710	161107	213817	46648350	120053041	166701391	24.65	75.35
<b>TOTAL</b>			<b>1308656</b>	<b>12171784</b>	<b>13480440</b>	<b>1272461354</b>	<b>2082603936</b>	<b>3355065290</b>	<b>9.71</b>	<b>90.29</b>
%Age of above to Total Commodity Flow by both Modes			<b>3.48</b>	<b>9.92</b>	<b>8.41</b>	<b>2.61</b>	<b>3.92</b>	<b>3.29</b>		

## Appendix-5 Chapter 3

**TABLE 3.15: RAIL & ROAD SHARES: IRON & STEEL FLOWS BET. TOP 25 PAIRS OF REGIONS**

SN	FROM REGION	TO REGION	TONNES			NTKMS			% SHARE	
			RAIL	ROAD	TOTAL	RAIL	ROAD	TOTAL	RAIL	ROAD
1	Kendujhargarh	Jagatsinghpur	0	3228786	3228786	0	949343239	949343239	0.00	100.00
2	Ghaziabad	Delhi (All)	0	990887	990887	0	21820875	21820875	0.00	100.00
3	Krishna	Hyderabad	0	892535	892535	0	256566658	256566658	0.00	100.00
4	Faridabad	Delhi (All)	0	871722	871722	0	35753119	35753119	0.00	100.00
5	Sundargarh	Jharsuguda	0	782837	782837	0	27399309	27399309	0.00	100.00
6	Vishakhapatnam	Hyderabad	214197	536619	750816	155000056	332365361	487365417	28.53	71.47
7	Surat	Ahmedabad	0	627950	627950	0	170669657	170669657	0.00	100.00
8	Bellary	Anantapur	581158	44399	625557	97854205	3967900	101822105	92.90	7.10
9	Durg Steel Plant	Raipur	587060	0	587060	58705990	0	58705990	100.00	0.00
10	Gautam	Delhi (All)	0	570152	570152	0	19385165	19385165	0.00	100.00
11	Kandla Port	Kachchh	0	567652	567652	0	44321592	44321592	0.00	100.00
12	Bellary	Mumbai	483929	74190	558119	486990190	63442676	550432866	86.71	13.29
13	Tata Steel Plant	Mumbai	399070	107774	506844	705155461	210886890	916042351	78.74	21.26
14	Sundargarh	Vishakhapatnam	72623	422436	495059	48124201	258122583	306246784	14.67	85.33
15	Bokaro	Ghaziabad	485445	4088	489533	564800282	4701200	569501482	99.16	0.84
16	Mumbai	Pune	0	473693	473693	0	70161574	70161574	0.00	100.00
17	Tata Steel Plant	Howrah	456342	16859	473201	113258175	6254819	119512994	96.44	3.56
18	Tata Steel Plant	Delhi (All)	450049	3486	453535	594064548	4744106	598808654	99.23	0.77
19	Pune	Mumbai	0	450417	450417	0	66340739	66340739	0.00	100.00
20	Tata Steel Plant	Nagpur	374990	64266	439256	328115156	67010781	395125937	85.37	14.63
21	Delhi (All)	Faridabad	0	425524	425524	0	17451577	17451577	0.00	100.00
22	Angul	Jagatsinghpur	0	407566	407566	0	69618304	69618304	0.00	100.00
23	Cuttack	Paradip Port	347032	58360	405392	56913066	8889685	65802751	85.60	14.40
24	Bellary	Marmugao Port	393574	0	393574	164242447	0	164242447	100.00	0.00
25	Tata Steel Plant	Faridabad	380867	0	380867	498929999	0	498929999	100.00	0.00
TOTAL			5226336	11622198	16848534	3872153776	2709217809	6581371585	31.02	68.98
%Age of above to Total Commodity Flow by both Modes			19.13	10.84	12.53	15.14	4.81	8.04		

## Appendix-6 Chapter 3

**TABLE 3.16: RAIL & ROAD SHARES: FERTILISER FLOWS BETWEEN TOP 25 PAIRS OF REGIONS**

SN	FROM REGION	TO REGION	TONNES			NTKMS			% SHARE	
			RAIL	ROAD	TOTAL	RAIL	ROAD	TOTAL	RAIL	ROAD
1	Cochin Port	Ernakulam	0	1724048	1724048	0	51721449	51721449	0.00	100.00
2	Kandla Port	Kachchh	0	942142	942142	0	73984120	73984120	0.00	100.00
3	Haldia Port	East-Medinipur	0	617335	617335	0	28397431	28397431	0.00	100.00
4	Ernakulam	Cochin Port	0	437285	437285	0	13118538	13118538	0.00	100.00
5	Mangalore Port	Dakshin Kanara	0	315557	315557	0	9488577	9488577	0.00	100.00
6	Indore	Kandla Port	0	288051	288051	0	225250866	225250866	0.00	100.00
7	Mumbai (Suburbs)	Nasik	0	232888	232888	0	39970420	39970420	0.00	100.00
8	Bharuch	Ahmedabad	19288	175098	194386	3221096	33787568	37008664	9.92	90.08
9	South Goa	Sangli	175098	0	175098	56772964	0	56772964	100.00	0.00
10	Jagatsinghpur	Angul	0	168798	168798	0	27619725	27619725	0.00	100.00
11	Kakinada Port	Karimnagar	162983	0	162983	89420904	0	89420904	100.00	0.00
12	Kandla Port	Ahmedabad	56394	101996	158390	21147750	35699730	56847480	35.60	64.40
13	Jagatsinghpur	Cuttack	0	155643	155643	0	22722677	22722677	0.00	100.00
14	Kakinada Port	Guntur	152492	0	152492	48223409	0	48223409	100.00	0.00
15	Jagatsinghpur	Dhenkanal	0	140678	140678	0	25158567	25158567	0.00	100.00
16	Kachchh	Jalgaon	137983	0	137983	119668919	0	119668919	100.00	0.00
17	Jagatsinghpur	Jajpore	0	134776	134776	0	19418485	19418485	0.00	100.00
18	Kakinada Port	Nizamabad	119667	0	119667	88050044	0	88050044	100.00	0.00
19	Coimbatore	Tuticorin	0	118808	118808	0	42533085	42533085	0.00	100.00
20	Kakinada Port	Warangal	113925	0	113925	49744447	0	49744447	100.00	0.00
21	Kachchh	Nasik	109094	0	109094	109883781	0	109883781	100.00	0.00
22	Kakinada Port	Kurnool	107506	0	107506	66252291	0	66252291	100.00	0.00
23	Kachchh	Indore	107151	0	107151	87339796	0	87339796	100.00	0.00
24	Kakinada Port	Hyderabad	102462	0	102462	60833526	0	60833526	100.00	0.00
25	Jagatsinghpur	Sundargarh	0	101813	101813	0	37375788	37375788	0.00	100.00
TOTAL			1364043	5654916	7018959	800558927	686247026	1486805953	19.43	80.57
%Age of above to Total Commodity Flow by both Modes			3.75	31.09	12.86	2.64	10.11	4.01		



## Appendix-7 Chapter 3

**TABLE 3.17: RAIL & ROAD SHARES: CEMENT & STRUCTURES FLOWS BETWEEN TOP 25 PAIRS OF REGIONS**

SN	FROM REGION	TO REGION	TONNES			NTKMS			% SHARE	
			RAIL	ROAD	TOTAL	RAIL	ROAD	TOTAL	RAIL	ROAD
1	Gulbarga	Bangalore	2076732	0	2076732	1216298918	0	1216298918	00.00	0.00
2	Gulbarga	Solapur	1910209	3212	1913421	317457958	433620	317891578	99.83	0.17
3	Satna	Sultanpur	581867	43366	1625233	620328095	13443352	633771447	97.33	2.67
4	Satna	Allahabad	295806	1268696	1564502	61579457	255319894	316899351	18.91	31.09
5	Nalgonda	Hyderabad	0	1427716	1427716	0	161658442	161658442	0.00	00.00
6	Gulbarga	Pune	397541	11797	1409338	597591850	5080767	602672617	99.16	0.84
7	Bilaspur HP	Roopnagar	0	1131507	1131507	0	110484781	110484781	0.00	00.00
8	Rewa	Allahabad	0	1088310	1088310	0	161196103	161196103	0.00	00.00
9	Satna	Rae Bareli	313835	740209	1054044	95552418	205037907	300590325	29.77	70.23
10	Raipur	Tata Steel Plant	1001895	8687	1010582	510967419	6356074	517323493	99.14	0.86
11	Chandrapur	Nagpur	51658	855951	907609	11876856	128830057	140706913	5.69	94.31
12	Solapur	Pune	713247	178394	891641	390775784	52831761	443607545	79.99	20.01
13	Neemach	Bhatinda	868460	0	868460	797704784	0	797704784	00.00	0.00
14	Gulbarga	Raigad	789756	0	789756	447715249	0	447715249	00.00	0.00
15	Krishna	Hyderabad	67890	721145	789035	22320771	207922947	230243718	8.60	91.40
16	Chandrapur	Greater Mumbai	755282	0	755282	689225866	0	689225866	00.00	0.00
17	Satna	Nainital	738131	0	738131	563575896	0	563575896	00.00	0.00
18	Anantapur	Tiruvallur	712411	0	712411	242200310	0	242200310	00.00	0.00
19	Raipur	Howrah	703961	0	703961	542289558	0	542289558	00.00	0.00
20	Raipur	Bargarh	679084	13505	692589	199060612	3302308	202362920	98.05	1.95
21	Adilabad	Jalgaon	667144	0	667144	398951918	0	398951918	00.00	0.00
22	Chandrapur	Nasik	644304	3358	647662	449472801	2672968	452145769	99.48	0.52
23	Guntur	Chennai	515047	102788	617835	283387772	43094090	326481862	83.36	16.64
24	Rewa	Araria	0	601593	601593	0	508346085	508346085	0.00	00.00
25	Damoh	Jhansi	507064	80895	587959	170379753	23630863	194010616	86.24	13.76
TOTAL			5991324	8281129	25272453	8628714045	1889642019	0518356064	67.23	32.77
%Age of above to Total Commodity Flow by both Modes			21.55	10.90	16.32	19.64	6.95	14.79		

## Appendix-8 Chapter 3

**TABLE 3.18: RAIL & ROAD SHARES: POL FLOWS BETWEEN TOP 25 PAIRS OF REGIONS**

SN	FROM REGION	TO REGION	TONNES			NTKMS			% SHARE	
			RAIL	ROAD	TOTAL	RAIL	ROAD	TOTAL	RAIL	ROAD
1	Chennai	Bangalore	900715	46224	946939	308982196	17052238	326034434	95.12	4.88
2	Vadodara	Bharuch	455146	265538	720684	45641911	20586730	66228641	63.15	36.85
3	Ambala	Solan	0	704567	704567	0	71871471	71871471	0.00	00.00
4	Panipat	Kachchh	631972	0	631972	799819992	0	799819992	00.00	0.00
5	Jagatsinghpur	Angul	0	608411	608411	0	100483916	100483916	0.00	00.00
6	Rewari	Gurgaon	0	601812	601812	0	35995431	35995431	0.00	00.00
7	Ernakulam	Alappuzha	311118	244276	555394	31429434	15498539	46927973	56.02	43.98
8	Ernakulam	Kozhikode	359677	145040	504717	71590569	31088667	102679236	71.26	28.74
9	Vadodara	Anand	382038	99769	481807	38737147	4221535	42958682	79.29	20.71
10	Vadodara	Kachchh	451070	23783	474853	185832108	11701433	197533541	94.99	5.01
11	Golaghat	Kamrup	0	466455	466455	0	147181461	147181461	0.00	00.00
12	Bhatinda	Firozpur	0	444844	444844	0	46435939	46435939	0.00	00.00
13	Ambala	Kullu	0	431937	431937	0	138322922	138322922	0.00	00.00
14	Ernakulam	Kollam	345	424156	424501	71677	67260660	67332337	0.08	99.92
15	Vadodara	Panchmahals	348193	72270	420463	53951223	5932710	59883933	82.81	17.19
16	Dibrugarh	Kamrup	0	405533	405533	0	208856216	208856216	0.00	00.00
17	Visakhapatnam	Raipur	273712	130462	404174	140422194	78609703	219031897	67.72	32.28
18	Surat	Ahmedabad	0	401442	401442	0	110354465	110354465	0.00	00.00
19	Mangalore Port	Bangalore	303174	83081	386255	163082203	31996506	195078709	78.49	21.51
20	Ernakulam	Tirunelveli	385852	0	385852	138121486	0	138121486	00.00	0.00
21	Vishakhapatnam	Durg	269182	111409	380591	148856179	70393688	219249867	70.73	29.27
22	Panipat	Sirsa	0	380133	380133	0	92374426	92374426	0.00	00.00
23	Nasik	Akola	377449	0	377449	118044937	0	118044937	00.00	0.00
24	Ernakulam	Malappuram	0	376680	376680	0	63434628	63434628	0.00	00.00
25	Ambala	Saharanpur	0	375950	375950	0	34211450	34211450	0.00	00.00
TOTAL			5449643	6843772	12293415	2244583256	1403864734	648447990	44.33	55.67
%Age of above to Total Commodity Flow by both Modes			15.51	5.34	7.53	9.72	4.03	6.30		

## Appendix-9 Chapter 3

**TABLE 3.19: RAIL & ROAD SHARES: IRON ORE FLOWS BETWEEN TOP 25 PAIRS OF REGIONS**

SN	FROM REGION	TO REGION	TONNES			NTKMS			% SHARE	
			RAIL	ROAD	TOTAL	RAIL	ROAD	TOTAL	RAIL	ROAD
1	Bellary	Madras Port	9509229	0	9509229	5190521186	0	5190521186	100.00	0.00
2	Dantewara	Vishakhapatnam	6895143	0	6895143	3846707023	0	3846707023	100.00	0.00
3	Gumla	Ranchi	6030376	0	6030376	766348698	0	766348698	100.00	0.00
4	Dantewara	Vishakhapatnam	5886864	0	5886864	3314437475	0	3314437475	100.00	0.00
5	Kendujhargarh	Jagatsinghpur	0	5293442	5293442	0	466293480	1466293480	0.00	00.00
6	Jajpore	Raigarh	4242613	0	4242613	1728333297	0	1728333297	100.00	0.00
7	Jajpore	Ranchi	4076593	0	4076593	644614879	0	644614879	100.00	0.00
8	Jajpore	Durgapur Steel Plant	3876923	4468	3881391	1244065606	1675350	1245740956	99.88	0.12
9	Bellary	Chennai	988046	2454096	3442142	567968961	231440205	1799409166	28.70	71.30
10	Bellary	Kakinada Port	3331762	0	3331762	2481405061	0	2481405061	100.00	0.00
11	Sundargarh	Bokaro Steel Plant	3323689	0	3323689	1215949725	0	1215949725	100.00	0.00
12	Gumla	Haldia Port	3177990	0	3177990	1220863749	0	1220863749	100.00	0.00
13	Jajpore	Paradip Port	2997912	111478	3109390	938691797	16721745	955413542	96.41	3.59
14	Bellary	South Goa	2955055	0	2955055	1058021314	0	1058021314	100.00	0.00
15	Sundargarh	Raigarh	2650688	0	2650688	685376834	0	685376834	100.00	0.00
16	East-Medinipur	Haldia Port	0	2569155	2569155	0	118181116	118181116	0.00	00.00
17	Bellary	Belgaum	2395002	0	2395002	652110389	0	652110389	100.00	0.00
18	W.Singhbham	Bokaro Steel Plant	2265610	0	2265610	831478386	0	831478386	100.00	0.00
19	Bellary	Mangalore Port	141318	1998587	2139905	93359571	888250137	981609708	6.60	93.40
20	Bellary	Dakshin Kanara	1877200	179456	2056656	1540526734	78760890	1619287624	91.27	8.73
21	Chitradurga	Dakshin Kanara	1956922	49863	2006785	844192158	15306837	859498995	97.52	2.48
22	Gumla	West- Midnipur	1980820	0	1980820	549702663	0	549702663	100.00	0.00
23	Dantewara	Bastar	1917233	0	1917233	323851308	0	323851308	100.00	0.00
24	Tumkur	Dakshin Kanara	650444	999052	1649496	234179463	273740371	507919834	39.43	60.57
25	Jajpore	Raipur	1526292	0	1526292	984179004	0	984179004	100.00	0.00
TOTAL			74653724	13659597	88313321	30956885281	1090370131	35047255412	84.53	15.47
%Age of above to Total Commodity Flow by both Modes			61.29	58.64	60.87	58.15	57.73	58.10		

## Appendix-10 Chapter 3

**TABLE 3.20: RAIL & ROAD SHARES: LIME STONE & DOLOMITE FLOWS BET. TOP 25 PAIRS OF REGIONS**

SN	FROM REGION	TO REGION	TONNES			NTKMS			% SHARE	
			RAIL	ROAD	TOTAL	RAIL	ROAD	TOTAL	RAIL	ROAD
1	Bilaspur Cg	Durg Steel Plant	809693	0	809693	104841174	0	104841174	100.00	0.00
2	Durg Steel Plant	Durg	673323	0	673323	67332300	0	67332300	100.00	0.00
3	Dakshin Kanara	Bellary	636846	0	636846	408348595	0	408348595	100.00	0.00
4	Warangal	Visakhapatnam	631999	0	631999	319791396	0	319791396	100.00	0.00
5	Jaisalmer	Durg Steel Plant	534191	0	534191	996786070	0	996786070	100.00	0.00
6	Paradip Port	Ranchi	520424	0	520424	265977026	0	265977026	100.00	0.00
7	Kurnool	Bellary	489160	9764	498924	84624625	1370283	85994908	98.04	1.96
8	Sundargarh	Durgapur Steel	497413	0	497413	178361842	0	178361842	100.00	0.00
9	Krishna	Visakhapatnam	432965	0	432965	195454610	0	195454610	100.00	0.00
10	Vizag Port	Visakhapatnam	419010	0	419010	41901000	0	41901000	100.00	0.00
11	Jaisalmer	Ranchi	418494	0	418494	834941724	0	834941724	100.00	0.00
12	Jaisalmer	Durgapur Steel	407479	0	407479	790429390	0	790429390	100.00	0.00
13	Haldia Port	Ranchi	405392	0	405392	97699477	0	97699477	100.00	0.00
14	Jaisalmer	Sundargarh	391610	0	391610	802017280	0	802017280	100.00	0.00
15	Garhwa	Bokaro Steel	352559	0	352559	134324979	0	134324979	100.00	0.00
16	Bhind	Bokaro Steel	338170	0	338170	275109930	0	275109930	100.00	0.00
17	Sundargarh	Bokaro Steel	335341	0	335341	107318890	0	107318890	100.00	0.00
18	Umaria	Bokaro Steel	324140	0	324140	244016920	0	244016920	100.00	0.00
19	Umaria	Durg Steel Plant	320360	0	320360	162364580	0	162364580	100.00	0.00
20	Haldia Port	East-Medinipur	0	293978	293978	0	13523002	13523002	0.00	100.00
21	Dehra Dun	Haridwar	0	258183	258183	0	14708241	14708241	0.00	100.00
22	Jaisalmer	Bokaro Steel	250381	0	250381	462913521	0	462913521	100.00	0.00
23	Nagaur	Ranchi	231445	0	231445	375500211	0	375500211	100.00	0.00
24	Mahoba	Bokaro Steel	225711	0	225711	185769189	0	185769189	100.00	0.00
25	Bilaspur Cg	Raigarh	219825	0	219825	31870739	0	31870739	100.00	0.00
TOTAL			9865931	561925	10427856	7167695468	29601526	7197296994	94.61	5.39
%Age of above to Total Commodity Flow by both Modes			72.05	9.13	52.54	77.44	1.10	60.24		

## Appendix-11 Chapter 3

**TABLE 3.21: RAIL & ROAD SHARES: MISC/OTHER COMMODITIES FLOWS  
BETWEEN TOP 25 PAIRS OF REGIONS**

SN	FROM REGION	TO REGION	TONNAGE			NTKMS			% SHARE	
			RAIL	ROAD	TOTAL	RAIL	ROAD	TOTAL	RAIL	ROAD
1	Krishna	Hyderabad	427	4460669	4461096	153781	1280064662	1280218443	0.01	99.99
2	Hyderabad	Krishna	3573	2151795	2155368	1336149	616795283	618131432	0.17	99.83
3	Mumbai (Suburbs)	Delhi (All)	0	1088550	1088550	0	1621953865	1621953865	0.00	100.00
4	Hyderabad	Guntur	5732	942353	948085	2447820	281986389	284434209	0.60	99.40
5	Pali	Delhi (All)	0	890253	890253	0	525274603	525274603	0.00	100.00
6	Koraput	Visakhapatnam	846267	35905	882172	241185804	7879992	249065796	95.93	4.07
7	Ahmedabad	Surat	2095	781819	783914	531765	213331006	213862771	0.27	99.73
8	Koraput	Dhenkanal	701529	0	701529	481950507	0	481950507	00.00	0.00
9	Surat	Ahmedabad	52	586248	586300	12513	160154999	160167512	0.01	99.99
10	Jaipur	Delhi (All)	152	563399	563551	52236	159136511	159188747	0.03	99.97
11	Delhi (All Districts)	Ghaziabad	17405	514792	532197	1740500	10862520	12603020	3.27	96.73
12	Delhi (All Districts)	Faridabad	0	496247	496247	0	20351323	20351323	0.00	100.00
13	Raigad	Thane	0	480106	480106	0	50692379	50692379	0.00	100.00
14	Visakhapatnam	Hyderabad	2496	464065	466561	1814592	285288603	287103195	0.53	99.47
15	Mumbai (Suburbs)	Bangalore	0	462616	462616	0	503765193	503765193	0.00	100.00
16	Nagpur	Chandrapur	15671	442263	457934	3049598	66612566	69662164	3.42	96.58
17	Delhi (All Districts)	Mumbai	0	454706	454706	0	675930378	675930378	0.00	100.00
18	Faridabad	Delhi (All)	4156	413341	417497	415600	16961718	17377318	1.00	99.00
19	Belgaum	Nagpur	0	413311	413311	0	411216497	411216497	0.00	100.00
20	Vishakhapatnam	Korba	403536	0	403536	297001023	0	297001023	00.00	0.00
21	East Godavari	Hyderabad	136	397470	397606	77880	191963209	192041089	0.03	99.97
22	Mumbai (Suburbs)	Pune	0	388214	388214	0	57572114	57572114	0.00	100.00
23	Bangalore	Mumbai	0	381148	381148	0	413754849	413754849	0.00	100.00
24	Nasik	Mumbai	0	378071	378071	0	64871629	64871629	0.00	100.00
25	Bikaner	Satna	360122	0	360122	448524440	0	448524440	00.00	0.00
TOTAL			363349	17187341	9550690	480294208	7636420288	9116714496	12.09	87.91
%Age of above to Total Commodity Flow by both Modes			10.60	8.53	8.74	9.22	6.03	6.39		

## Appendix-12

### Chapter 3

**TABLE 3.38: COMMODITY WISE INTRA-REGIONAL TRAFFIC FLOWS BY RAIL**

SN	COMMODITY	REGIONS FIGURING IN INTRA-REGIONAL TRAFFIC FLOWS
1	<b>Coal</b> Vol. (T) 76394786 Average Lead(Km) 45	Mirzapur, Sonebhadra, Jamnagar, Chhindwara, Shahdol, Korba, Bhagalpur, Bokaro, Dhanbad, Hazaribagh, Ranchi, Bardhaman, Birbhum, Purulia, Durgapur Steel Plant, Angul, Sambalpur, Sundargarh, Chandrapur, Nagpur, Adilabad, Karimnagar, Khammam, Ernakulam, Sidhi
2	<b>Food Grains</b> Vol. (T) 7639478 Average Lead(Km) 48	Amritsar, Firozpur, Patiala, Sangrur, Jind, Yamunanagar, Barabanki, Shahjahanpur, Begusarai, Darbhanga, East Champaran, Katihar, Madhubani, Patna, Samastipur, Sitamarhi, Bongaigaon, Kamrup, Kokrajhar, Lakhimpur, Hooghly, North 24-Parganas, Uttar Dinajpur, Bargarh, Ahmednagar, Greater Mumbai, Dhule, Nasik, Chittoor, Guntur, Mahabubnagar, Chennai, Coimbatore, Villupuram, Madras Port, Bangalore, Dakshin Kanada, Kottayam, Kollam, Trissur, Delhi (All Districts)
3	<b>Iron And Steel</b> Vol. (T) 657098 Average Lead (Km) 95	Amritsar, Agra, Jhansi, Kanpur, Mathura, Mirzapur, Alwar, Durg, Durg Steel Plant, Munger, Bokaro, Deoghar, Sahebganj, Lakhimpur, Bardhaman, Birbhum, Hooghly, Howrah, North 24-Parganas, West Midnipur, Durgapur Steel Plant, Balashwar, Bargarh, Cuttack, Sundargarh, Raigad, Cuddapah, Isakhapatnam, Hyderabad, Cuddalore, Thanjavur, Tiruchchirappalli, Tiruvallur, Ernakulam
4	<b>Iron &amp; Other Ores</b> Vol. (T) 14905394 Average Lead (Km) 97	Amritsar, Durg, Hazaribagh, Ranchi, Bardhaman, Howrah, Purulia, West Midnipur, Dhenkanal, Jajpore, Rayagada, Sundargarh, Raigad, Kakinada Port, Madras Port, Bellary
5	<b>Cement</b> Vol. (T) 579611 Average Lead(Km) 115	Roopnagar, Ajmer, Kota, Neemach, Satna, Raipur, Katihar, Deoghar, Gumla, Tata Steel Plant, Lakhimpur, Bardhaman, Howrah, Malda, Balangir, Bargarh, Jajpore, Ahmednagar, Greater Mumbai, Pune, Solapur, East Godavari, Guntur, Karimnagar, Coimbatore, Tiruchchirappalli, Bangalore, Dakshin Kanada, Gulbarga, Shimoga, Alappuzha, Ernakulam, Kozhikode, Pallakad
6	<b>POL (Min Oil)</b> Vol. (T) 671813 Average Lead (Km) 97	Amritsar, Jalandhar, Faridabad, Panipat, Kanpur, Mathura, Vadodara, Begusarai, Deoghar, Ranchi, Golaghat, Tinsukia, Bardhaman, Chandrapur, Pune, Raigad, Prakasam
7	<b>Fertilizers (Chemical Manures)</b> Vol. (T) 150881 Average Lead (Km) 149	Amritsar, Bhatinda, Roopnagar, Panipat, Bareilly, Budaun, Shahjahanpur, Sultanpur, Kota, Ahmedabad, Surat, Bhavnagar, Katihar, Sonitpur, West Midnipur, Ahmednagar, Pune, Chittoor, East Godavari, Guntur, Krishna, Karimnagar, Kurnool, Mahabubnagar, West Godavari, Belgaum, Bellary, Shimoga, Ernakulam, Pallakad
8	<b>Lime Stone &amp; Dolomite</b> Vol (T) 477696 AL (Km) 46	Amritsar, West Midnipur, Sundargarh
9	<b>Stones (Incl. Gypsum)</b> Vol. (T) 406975 Average Lead(Km) 99	Amritsar, Farrukhabad, Gorakhpur, Udham Singh Nagar, Bharatpur, Kota, Sawai Madhopur, Karauli, Bhopal, Guna, Jabalpur, Mandasaur, Narsimhapur, Ratlam, Sagor, Satna, Shajapur, Umaria, Vidisha, Raipur, Rajnandgaon, Mahasamund, Deoghar, Sahebganj, Bankura, Bardhaman, Birbhum, Hooghly, Howrah, Jalpaiguri, Malda, North 24-Parganas, Purulia, South 24-Parganas, West Midnipur, Balashwar, Madras Port
10	<b>Salt</b> Vol 01532T AL (Km) 148	Jamnagar
11	<b>Sugar</b> Vol 23172, AL (Km) 86	Amritsar, Shahjahanpur, Sitapur, Sitamarhi, Hooghly, Greater Mumbai, Kakinada Port, Pallakad
12	<b>Domestic Containers</b> Vol. (T) 172147 Average Lead (Km) 120	Amritsar, Jalandhar, Moga, Gurgaon, Azamgarh, Etah, Mathura, Sonebhadra, Varanasi, Kota, Sawai Madhopur, Ahmedabad, Kachchh, Kandla Port, Hoshangabad, Satna, Vidisha, Raipur, Begusarai, Saran, Siwan, West Champaran, Bokaro, Deoghar, Dhanbad, Hazaribagh, Palamau, Ranchi, Lakhimpur, Bardhaman, Howrah, North 24-Parganas, West Midnipur, Greater Mumbai, Solapur, Delhi (All Districts)
13	<b>Exim Containers</b> Vol (T) 29779 Average Lead (Km) 34	Ludhiana, Gurgaon, Etah, Farrukhabad, Gonda, Meerut, Moradabad, Udham Singh Nagar, Kota, Begusarai, Munger, Saran, Siwan, Deoghar, Hazaribagh, Birbhum, Greater Mumbai, Solapur, Jnpt, Delhi (All Districts)
14	<b>Non-Revenue Traffic</b> Vol (T) 836459 Average Lead (Km) 102	Amritsar, Hisar, Agra, Allahabad, Bulandshahar, Jhansi, Kanpur, Mathura, Ajmer, Barmer, Bikaner, Churu, Dungarpur, Ganganagar, Jaisalmer, Jodhpur, Kota, Sawai Madhopur, Hanumangarh, Karauli, Ahmedabad, Amreli, Jamnagar, Junagadh, Kachchh, Panchmahals, Vadodara, Valsad, Bhopal, East Nimar, Guna, Hoshangabad, Mandasaur, Rajgarh, Ratlam, Vidisha, Rajnandgaon, Bilaspur Cg, Purulia, Balangir, Khurda, Greater Mumbai, Nagpur, Nasik, Raigad, Solapur, Chittoor, East Godavari, Guntur, Khammam, Krishna, Kurnool, Nalgonda, Nellore, Prakasam, Vizianagaram, Warangal, West Godavari, Hyderabad, Dharampuri, Karur, Perambalur, Salem, Tiruchchirappalli, Tirunelveli, Tiruvallur, Vellore, Virudhunagar, Bidar, Kozhikode, Malappuram, Pallakad
15	<b>Others</b> Vol. (T) 1138252 Average Lead (Km) 95	Kathua, Amritsar, Bathinda, Gurdaspur, Patiala, Roopnagar, Faridabad, Jind, Kaithal, Yamunanagar, Agra, Azamgarh, Bareilly, Farrukhabad, Ghaziabad, Ghazipur, Gorakhpur, Lakhimpur Kheri, Lucknow, Sant Kabir Nagar, Sonebhadra, Unnao, Varanasi, Haridwar, Udham Singh Nagar, Ajmer, Dungarpur, Ganganagar, Jaipur, Jodhpur, Kota, Nagaur, Rajsamand, Sirohi, Udaipur, Hanumangarh, Ahmedabad, Jamnagar, Junagadh, Kachchh, Panchmahals, Surendranagar, Vadodara, Balaghat, Betul, Jabalpur, Durg, Raipur, Dantewara, Mahasamund, Begusarai, Munger, Rohtas, Samastipur, Saran, Sitamarhi, Siwan, Bokaro, Gumla, Hazaribagh, Paschim Singhbham, Cachar, Golaghat, Kamrup, Lakhimpur, Nowgong, Sibsagar, North Tripura, Bankura, Bardhaman, Birbhum, Hooghly, Howrah, Jalpaiguri, Malda, North 24 Parganas, Purulia, West Midnipur, Angul, Balashwar, Bargarh, Jajpore, Khurda (Bhubaneswar), Nauparha, Sambalpur, Sundargarh, Beed, Greater Mumbai, Chandrapur, Jalgaon, Nagpur, Nasik, Pune, Raigad, Solapur, Gondia, Jnpt, Anantapur, Chittoor, Guntur, Khammam, Krishna, Kurnool, Nalgonda, Nellore, Rangareddy, Vizianagaram, Warangal, West Godavari, Hyderabad, Chennai, Coimbatore, Kanchipuram, Thanjavur, Tirunelveli, Tiruvallur, Virudhunagar, Bangalore, Bellary, Bidar, Dakshin Kanada, Gulbarga, Hassan, Kanur, Ernakulam, Kozhikode, Pallakad, Kollam, Delhi (All Districts)
<b>TOTAL VOLUME (Tonnes): 96660332</b>		<b>AVERAGE LEAD (KM) 56</b>