7

Industry

7.1 INDUSTRY INCLUDING SMALL AND MEDIUM ENTERPRISES (SMEs)

INTRODUCTION

7.1.1 The Tenth Plan target of 10% industrial growth has not been met, but there was an acceleration in the industrial growth rate during the Plan period and the target was exceeded in the terminal year. The CAGR rose from 4.5% in the Ninth Five Year Plan to 8% in the Tenth Five Year Plan. Manufacturing showed particular dynamism, the CAGR rising from 3.8% in the Ninth Five Year Plan to 8.7% in the Tenth Five Year Plan. The annual growth rate of manufacturing rose consistently during the period, registering 12.3% in 2006–07. For the first time in many years, industrial growth at 11% equalled the growth rate in services, with manufacturing outstripping both (Table 7.1.1).

7.1.2 The rising demand in both domestic and external markets was a major contributory factor but the impressive performance of manufacturing was due in no small measure to the cumulative effect of industrial and fiscal policy changes carried out since the economic reforms of 1991–92. The competitive environment created by the reduction of external barriers to trade finally started to bear fruit. Against a CAGR of 6.3% in the Ninth Five Year Plan, exports of manufactures registered a CAGR of more than 19% during the Tenth Five Year Plan.

7.1.3 Going by the marked improvement in the GCF in manufacturing and the quantum jump in the values shown in the Industrial Entrepreneurs' Memoranda (IEM) filed with the DIPP, a continuation of the high growth rates of manufacturing is highly likely during the Eleventh Five Year Plan (Annexure 7.1.1).

TABLE 7.1.1
Growth Rates

	CAGR in Ninth Plan	2002–03	2003–04	2004–05	2005–06 (QE)	2006–07 (RE)	CAGR in Tenth Plan
GDP	5.5	3.8	8.5	7.5	9.0	9.4	7.6
Agriculture, forestry, and fishing	2.0	–7.2	10.0	0.0	6.0	2.7	2.1
Industry (manufacturing)	4.5	6.8	6.0	8.4	8.0	11.0	8.0
	(3.8)	(6.8)	(6.6)	(8.7)	(9.1)	(12.3)	(8.7)
Services[#]	8.1	7.4	8.9	10.0	10.3	11.0	9.5

Note: [#] Construction is included in Services; QE = Quarterly Estimates. Figures in parentheses relate to manufacturing.
Source: Central Statistical Organization.

Review of the Tenth Plan

7.1.4 During the Tenth Five Year Plan the sectoral share of industry in the GDP started rising after several years of decline. The share of manufacturing also maintained a rising trend after falling in the first year of the Tenth Plan (Table 7.1.2).

TABLE 7.1.2
Sectoral Share in GDP

(in %)

	Agriculture, Forestry, and Fishing	Industry (Manufacturing)	Services
2001–02	24.0	25.0 (14.8)	51.0
2002–03	21.5	25.8 (15.2)	52.7
2003–04	21.7	25.6 (15.0)	52.7
2004–05	20.2	26.1 (15.1)	53.7
2005–06 (QE)	19.7	26.2 (15.1)	54.1
2006–07 (RE)	18.5	26.6 (15.5)	54.9

Note: The data given here are not comparable with the data used in the Ninth Five Year Plan and MTA Documents as the base year has been changed by CSO from 1993–94 to 1999–2000.
Source: Press Note, 31 May 2007, National Accounts Statistics 2007, CSO.

Output of the Manufacturing Sector

7.1.5 The Annual Survey of Industries (ASI) is the basic source of data for the registered units and no reliable data are available for the unregistered ones. In this situation, the Central Statistics Organization (CSO) has been using the somewhat limited Index of Industrial Production (IIP) to project growth of both the registered and the unregistered units at a two-digit level for manufacturing. The data from the IIP shows that manufacturing posted a CAGR of 8.82% during the Tenth Five Year Plan in terms of the output (Table 7.1.3).

7.1.6 Cotton textiles, textile products, paper and paper products, basic metals and alloys, machinery and equipment, transport equipment, and other manufacturing industries scored substantial increases in the rate of growth, while beverages and tobacco as well as chemicals and chemical products maintained impressive rates of growth. After recording negative growth in the first two years of the Plan period, cotton textiles made remarkable progress in the last three years following the fiscal policy reforms in the 2004–05 Budget, which created a level playing field between the small-scale and other industries. The performance of the textile industries other than cotton was even more striking. The performance of the capital goods industry was another positive feature in view of the implication it has about the increasing investment in manufacturing. The production of metals surged ahead, with both steel and non-ferrous metals showing a good response to the worldwide buoyancy. Although paper and paper products showed good overall growth, the performance was uneven. Chemical products were lifted by the accelerating growth in the export of pharmaceutical products. Another major industry that seems to be on a high growth path is automobiles and auto products, in which both do mestic and export demand have been picking up. The three areas that showed negative growth are jute textiles, wood and wood products, and leather and leather products. In leather the negative growth in 2002–03, 2003–04, and 2005–06 is not consistent with the export data which show substantial increases in those years. The anomaly in data is due to fact that there is less than full coverage of the enterprises engaged in manufacturing in this sector in the collection of production data by the DIPP.

Capital Formation

7.1.7 After having reached a high of 13.53% in 1995–96, the rate of GCF in manufacturing as a percentage of GDP at market price showed a declining trend, bottoming out in the terminal year of the Ninth Plan. The Tenth Five Year Plan period saw a striking reversal of trend from the outset and in 2005–06 it had increased to 13.6%. Registered manufacturing showed a higher level of GCF rising from 3.8% in 2001–02 to 10.4% in 2005–06 (Table 7.1.4).

Industrial Investment Intentions

7.1.8 The optimistic outlook about future investment in manufacturing also emerges from the industrial investment intentions, as reflected in IEM, Letters of Intent (LOI), and Direct Industrial Licenses (DIL). There was a significant increase particularly between 2005 and 2006 in the value of proposed investment (Annexure 7.1.1).

TABLE 7.1.3
Trends in the Performance of Industrial Sub-Sectors— Annual Growth Rate

(in %)

Industry Code	Industry Name	Weight in IIP	CAGR 1997–2002	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	CAGR 2002–07
20–21	Food products	9.08	2.49	–1.68	11.0	–0.5	–0.4	2.0	8.7	4.05
22	Beverages and tobacco	2.38	11.17	12.18	27.9	8.5	10.8	15.7	11.3	14.67
23	Cotton textiles	5.52	0.29	–2.20	–2.7	–3.1	7.6	8.5	14.8	4.79
24	Wool, silk, and man-made fibre textiles (except cotton)	2.26	8.53	4.40	3.0	6.8	3.5	0.0	8.1	4.25
25	Jute textiles	0.59	0.37	–5.86	8.3	–4.2	3.7	0.5	–15.8	–1.85
26	Textile products	2.54	2.60	2.40	14.4	–3.2	19.2	16.3	11.5	11.38
27	Wood and wood products	2.70	–6.79	–11.03	–17.6	6.8	–8.4	–5.7	29.1	–0.39
28	Paper and paper products	2.65	4.29	2.99	6.8	15.6	10.5	–0.9	8.4	7.95
29	Leather and fur products	1.14	8.07	5.93	–3.2	–3.9	6.7	–4.8	0.4	–1.05
30	Chemical and chemical products	14.00	8.56	4.76	3.7	8.7	14.5	8.3	9.4	8.86
31	Rubber, plastic, petroleum	5.73	7.55	11.08	5.5	4.5	2.4	4.3	12.7	5.81
32	Non-metallic mineral products	4.39	8.89	1.37	5.1	3.7	1.5	11.0	12.9	6.75
33	Basic metals and alloys	7.45	2.16	4.01	9.2	9.2	5.4	15.8	22.9	12.32
34	Metal products and parts	2.81	5.34	–9.59	6.4	3.7	5.7	–1.1	11.4	5.14
35–36	Machinery and equipment	9.57	6.51	1.02	1.6	15.8	19.8	12.0	14.2	12.48
37	Transport equipment	3.98	6.40	6.83	14.6	17.0	4.1	12.7	15.0	12.58
38	Other manufacturing industries	2.56	0.35	8.86	0.1	7.7	18.5	25.2	7.7	11.49
	Manufacturing	79.36	5.27	2.86	6.0	7.4	9.2	9.1	12.5	8.82

Source: Central Statistical Organization.

TABLE 7.1.4
Gross Capital Formation and Capital Formation in Manufacturing

Year	Capital Formation as % of GDP (at Market Price)				Capital Formation in Registered and Unregistered Manufacturing as % of Respective GVA@	
	GDCF# at Current Price	Manufacturing GCF&	Registered Manufacturing	Unregistered Manufacturing	Registered	Unregistered
1999–2000	25.9	8.9	7.0	2.0	78.5	42.0
2000–01	24.3	6.9	4.6	2.4	48.0	49.5
2001–02	22.9	5.0	3.8	1.2	40.5	27.9
2002–03	25.2	7.1	4.9	2.3	51.0	50.2
2003–04	28.0	8.4	5.4	3.0	56.6	67.1
2004–05	31.5	11.6	8.1	3.4	81.4	76.2
2005–06 (P)	33.8	13.6	10.4	3.2	102.5	72.2

Note: @ Gross Value Added (GVA), #Gross Domestic Capital Formation (GDCF), & Gross Capital Formation (GCF).
Source: Central Statistical Organization.

7.1.9 The data on capital investments compiled by the RBI on the basis of the envisaged capital expenditure of companies that have been sanctioned assistance by the banks and the financial institutions during 2004–05, 2005–06, and 2006–07 reinforce the picture of increasing investment in the pipeline in the industry and some other sectors (Annexure 7.1.2).

7.1.10 In the last three years of the Tenth Five Year Plan, the investment in projects in the pipeline rose rapidly, not only in power, petroleum products, metal and metal products, textiles and cement but also in sugar, chemical and petrochemical products, electrical and non-electrical machinery, transport equipment, and construction.

Exports of Manufactured Products

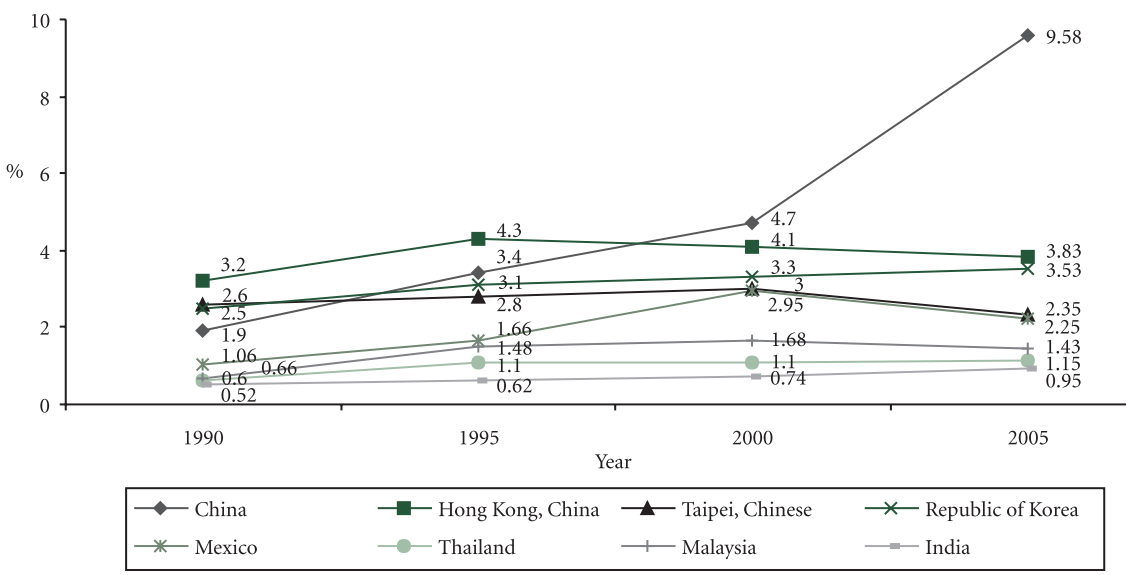
7.1.11 A major feature of the performance of industry was the remarkable increase in the export share of manufacturing sustained during the entire Plan period. Against a CAGR of 6.3% achieved during the Ninth Plan, exports of manufactured products had a CAGR of 19.9% during the Tenth Five Year Plan (Annexure 7.1.3).

7.1.12 The export of engineering goods recorded the highest CAGR of 33.1% mainly on the basis of the increase in auto and auto components; the export of basic chemicals was not very far behind, with CAGR of 23.1% due to the growth recorded in pharmaceuticals. Among traditional products, textiles and readymade garments responded well to the dismantling of quotas that had restricted imports to the major developed economies until 1 January 2005, and gems and jewellery bettered the performance during the Tenth Plan. The share of manufactures in world exports also inched up.

Share in World Trade

7.1.13 Despite the recent impressive growth in exports, textiles and clothing, iron and steel, and chemical products are the only products in which India's share was 1% or more of the world exports in 2005. Taking manufactures as a whole, India's share in the world trade of manufactures is close to 1%. Apart from China, which has become the manufacturing powerhouse of the world, six developing countries and customs territories have a larger share in world exports of manufactured products (Figure 7.1.1).

7.1.14 The comparatively low share of India in the world export of manufacturers is reflected in its low share of manufacturing value added in GDP compared to countries in South East and East Asia [15.9% of



Source: International Trade Statistics, WTO.

FIGURE 7.1.1: Share in World Exports of Manufactured Goods

India against China (34.5%) in year 2000, Thailand (34.5%), and Malaysia (31.4%)].

Creation of Jobs in Manufacturing

7.1.15 The performance of the organized manufacturing sector continued to be a source of concern. There was a massive decline in employment in the public sector following the rationalization of staffing in some units and closure of the sick units. In the early post-reform years, the increase in private sector employment made good the decline in the public sector; however, the early years of the Tenth Five Year Plan saw a decline in the private sector employment as well, causing an absolute decline by as much as 5.40 lakh employees (Table 7.1.5).

7.1.16 The grim scenario reflected by the above data has, however, been considerably brightened by the release of findings of the Fifth Economic Census and the 61st Round of the NSS. Both the surveys found that accelerating output growth has been accompanied by the faster rate of job growth. The Fifth Economic Census has found that the employment in economic activities other than crop production and plantations increased by 2.49% annually between 1998 and 2005 (against the annual increase of 5% in workforce). Data from the latest NSS round for 2004–05 suggests that the non-agricultural employment expanded strongly at the annual rate of 4.7% during 1999–2005. Obviously this growth has come entirely from the unorganized sector in manufacturing and services, which accounts for about 71.6% of all non-agricultural workers in the unorganized sector. The slow growth of regular jobs and the intensification of duality in labour markets (formal versus informal) has become a serious issue.

Investment Climate

7.1.17 A number of favourable factors have helped to improve the investment climate for the industry and to create considerable optimism on the manufacturing front. India maintained an upward climb in the global competitiveness indices drawn up by reputed bodies and business confidence was high at the end of the Tenth Five Year Plan.

Elimination of Entry Barriers

7.1.18 Entry barriers adversely affect the investment climate of the State. One of the determinants of the investment climate for an industry is the ease with which the firms are able to enter into the business activities. *Doing Business 2007: How to Reform*—a co-publication of the World Bank and the International Finance Corporation (2007) shows that the average time spent in completing entry requirement in India is 35 days and the number of procedures is 11 compared to 35 days and 13 numbers of procedures in China. Figure 7.1.2 illustrates this point.

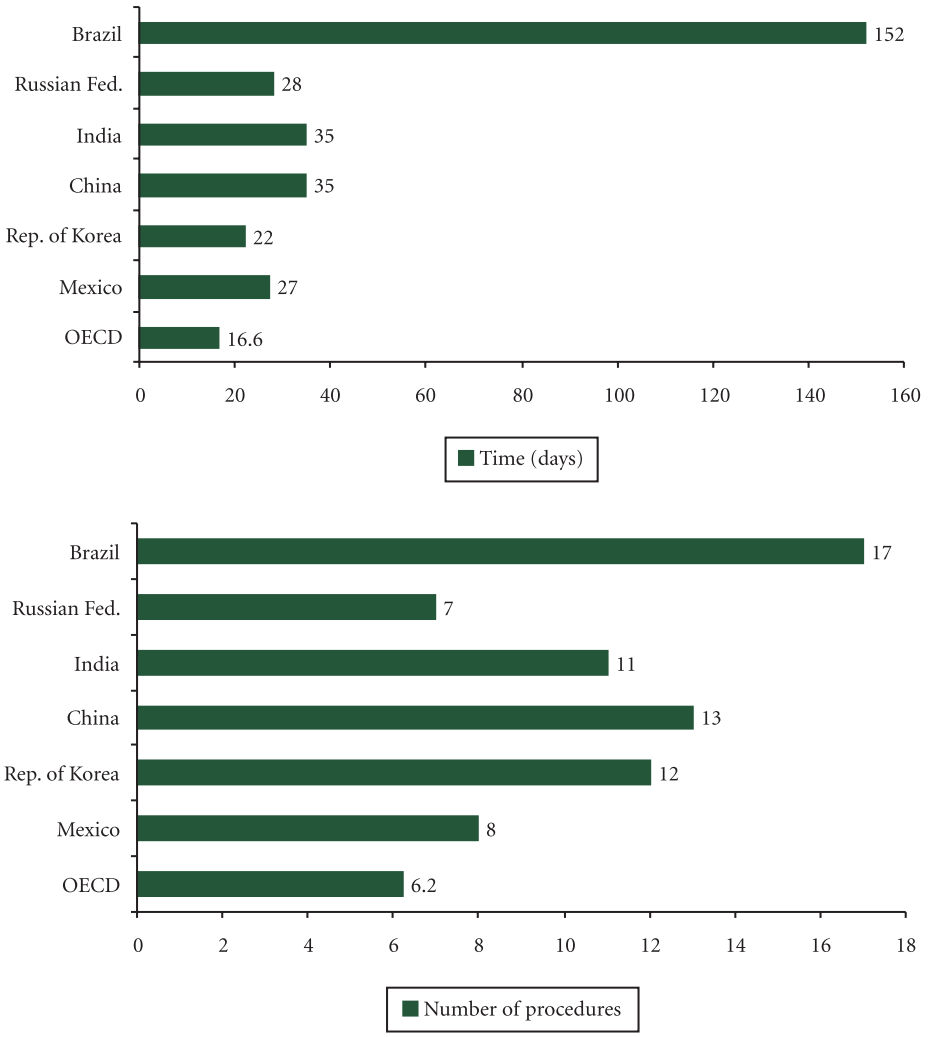
7.1.19 Industrial licensing had already been substantially dismantled and during the Tenth Five Year Plan period further measures were taken to pare it down. Drugs and pharmaceuticals including biotechnology were delicensed in 2005. At the end of the Tenth Five

TABLE 7.1.5
Employment in Organized Manufacturing

(in Lakh)

	Manufacturing (Private Sector)	Manufacturing (Public Sector)	Total Employment in Manufacturing	Employment (in Public Sector Industry)	Employment (in Private Sector Industry)	Total Employment Organized Sector
1991	44.81	18.52	63.33	190.57	76.77	267.34
1996	50.49	17.38	67.87	194.29	85.12	279.41
2000	50.85	15.31	66.16	193.14	86.46	279.60
2001	50.13	14.30	64.33	191.38	86.52	277.89
2002	48.68	13.50	62.18	187.73	84.32	272.06
2003	47.44	12.60	60.04	185.80	84.21	270.00
2004	44.89	11.89	56.78	181.97	82.46	264.43

Source: Economic Survey, 2006–07.



Source: Unleashing India's Innovation: Toward Sustainable and Inclusive Growth, Mark A. Dutz, World Bank Publication, 2007.

FIGURE 7.1.2: Starting a Business—Time, and Procedures

Year Plan period only the following manufacturing activities needed industrial license:

- distillation and brewing of alcoholic drinks;
- cigars and cigarettes of tobacco and manufactured tobacco substitutes;
- electronic aerospace and defence equipment;
- industrial explosives;
- specified hazardous chemicals.

7.1.20 Entrepreneurs are free to select the location for setting up industry. Approval is required from the government for locating an industrial unit within 25 km of the periphery of cities having a population of more than one million according to the 1991 census, provided that is not within an industrial area designated before 24 July 1991. However, these locational restrictions are not applicable for electronics, computer software, printing industries, and other non-polluting industries that may be designated from time to time.

7.1.21 Apart from the licensing restrictions, there are some restrictions arising from certain industries

reserved for the public sector and for the small-scale sector. Reservation for the public sector is now very limited, covering only manufacturing involving certain substances relevant for atomic energy (as well as production of atomic energy and provision of railway transport). The list of items reserved for SSIs has been reduced to 114. Larger units are allowed to manufacture items reserved for the small-scale sector only if they undertake an export obligation of 50% of their industrial production.

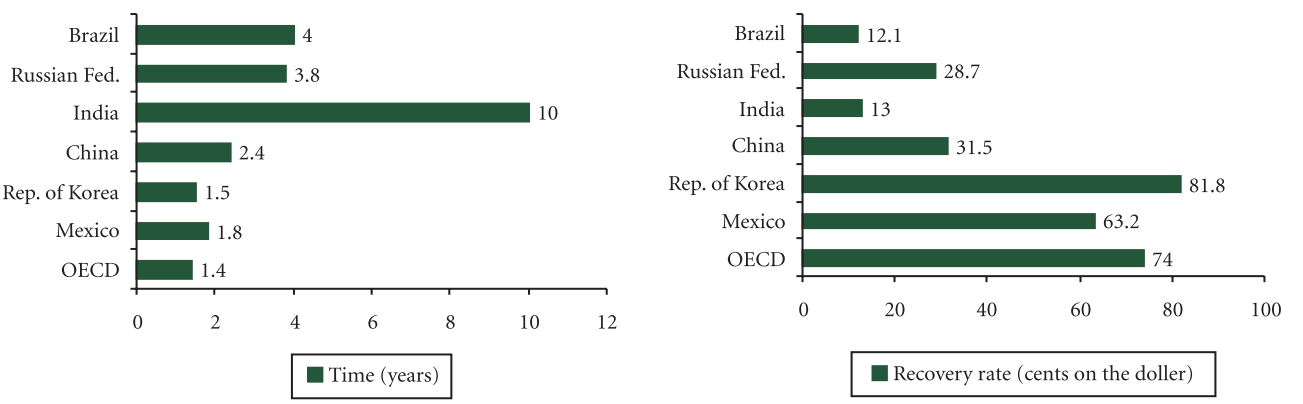
7.1.22 The Foreign Direct Investment (FDI) policy was also successively liberalized during the Tenth Five Year Plan. Following a comprehensive review in 2006 it was further liberalized, particularly by allowing FDI under the automatic route for manufacture of industrial explosives and hazardous chemicals and making it easier for new investments by foreign investors who had entered into joint ventures with Indian partners earlier. At the end of the Plan period, FDI upto 100% was permitted in all manufacturing activities except where the foreign investor had an existing joint venture/technical collaboration/trademark agreement in the same field of activity.

7.1.23 There are caps on the foreign equity in certain service sectors, viz., 20% on FM radio broadcasting; 26% on insurance, defence production, print and electronic media covering news and current affairs; 49% on air transport services, asset reconstruction companies, cable network, direct to home (DTH), hardware for uplinking, HUB, etc.; 51% on single brand retailing of products; and 74% on atomic minerals, private sector banking, telecom services, and the establishment and operation of satellites. FDI is even prohibited in a few other services, viz., retail trading (except single brand product retailing), gambling and betting, lottery, and atomic energy. However, there is no foreign equity cap on any manufacturing activity other than in public sector undertakings (PSUs) for petroleum refining.

Elimination of Exit Barriers

7.1.24 Investment climate in the country is also affected by the exit barriers. Perhaps the most important exit barrier relates to Chapter V-B of the Industrial Disputes Act 1947 under which units with more than 100 employees cannot exit an unprofitable enterprise without the consent of the concerned State Government. This consent is often difficult and time consuming to obtain.

7.1.25 The other important exit barrier to the industries in India is the legal provision relating to insolvency, rehabilitation, liquidation, and winding up proceedings, which need to be simplified and be made time bound. The co-publication of the World Bank and the International Finance Corporation (2007) reports that resolving the insolvency cases takes upto 10 years in India against 2.4 years in China, 1.5 years in South Korea, and 3 years in the US. Similarly, the recovery rate of closing business is 13% in India compared to 82% in South Korea. Figure 7.1.3 illustrates this point.



Source: Unleashing India's Innovation: Toward Sustainable and Inclusive Growth, Mark A. Dutz, World Bank Publication, 2007.

FIGURE 7.1.3: Closing a Business—Time, and Recovery Rate

7.1.26 A comprehensive draft of the new Companies Bill 2007 has been proposed by the Ministry of Corporate Affairs (MCA) to simplify the rules and procedures and to set up a quasi judicial fora such as the National Company Law Tribunal and the National Company Law Appellate Tribunal to deal with cases relating to insolvency, rehabilitation, liquidation, and winding up proceedings, taking over the related functions of Company Law Board, Bureau of Industrial and Financial Reconstruction (BIFR), and the judiciary in this respect. The actual setting up of such bodies can be done on the basis of the decision in a related matter pending before the Constitution Bench of the Supreme Court.

7.1.27 A major initiative taken during the Tenth Five Year Plan period, which would help to alleviate entry barriers, was the introduction of MCA 21 e-Governance Project' to computerize and speed up the process of registration of companies. The decision to introduce legislation for limited liability partnerships was another step forward.

Liberalization of Trade

7.1.28 Quantitative restrictions on trade had already been progressively eliminated before the Tenth Five Year Plan period and import tariffs on non-agricultural products drastically reduced after the introduction of economic reforms in 1991–92. The process was carried forward strongly and peak tariffs on non-agricultural products were brought down from 30% in 2002–03 to 10% in the Union Budget for 2007–08, although there are some exceptions. The liberalization of trade was one of the factors contributing to the impressive increase in manufacturing value added and increase in the GCF in manufacturing.

Rising Domestic Demand

7.1.29 India's growing competitiveness in skill-intensive segments such as auto components, fine chemicals, and pharmaceuticals is an important recent development. The sustained increase in merchandise exports at a rate above 20% over the last few years has established India's export competitiveness over a wide range of manufactured products. However, the future growth of India's manufacturing (as of services) will be stimulated increasingly by the domestic consumer demand. The research carried out by the National Council for Applied Economic Research (NCAER) (*The Great Indian Middle Class: Results from the NCAER Market Survey of Households*, NCAER in association with Business Standards, 2004) and McKinsey (*The 'Bird of Gold': the Rise of India's Consumer Market*, Mckinsey & Company, 2007) has brought out that the number of households with an income above Rs 2 lakh will rise from 14.4 million households in 2005 to 63.9 million in 2015 and 137.5 million in 2025. The aggregate disposable income in the hands of this class will rise by about four-fold by 2015 and more than 10-fold by 2025. Another factor influencing consumer demand will be the changing demographic profile of the country resulting in a drop in the dependency ratio from 60% in 2005 to 52% in 2015 and 48% in 2025. By 2025, India is expected to become the fifth largest market in the world, overtaking Germany's consumer market. 'Rising incomes will lift 291 million out of poverty and create a 583 million-strong middle class' (Mckinsey).

The Eleventh Plan Perspective on Industry

7.1.30 In order to achieve an average growth rate of 9% per annum in GDP during the Eleventh Plan, it has been projected that, individually, industry and manufacturing will have to grow at an average annual rate of 9.8%. However, if a number of issues are addressed as discussed below and particularly the plans for improvement of infrastructure (power and transport) fructify in full measure, and the recommended policies on mining (para 7.2.60) and construction (para 8.1.6) are implemented, a substantially higher industrial growth rate can be achieved. The National Manufacturing Competitiveness Council (NMCC) has, infact, suggested a growth rate of at least 12%–14% per annum for manufacturing. Various issues requiring urgent attention are discussed as under:

Issues in Industrial Growth

World-class Infrastructure

7.1.31 Investment in physical infrastructure was intensified during the Tenth Five Year Plan, and in other chapters we describe the investment plans and policies being adopted for the Eleventh Five Year Plan. However, despite substantial progress, the quality of

infrastructure remained many notches below world class at the end of the Tenth Five Year Plan. Problems related to the availability and quality of electric power as well as roads, railways, ports, and airports have been highlighted in Chapter 1 of Volume I along with the outline of the new strategies adopted in the Eleventh Plan to tackle these problems.

Taxation

7.1.32 Tax policy is a very important determinant of the investment climate. The rates of direct taxes determine the structure of incentives to work, save, and invest, while the level and structure of indirect taxes influences the aggregate demand and thus the scale of operations on the one hand and relative prices of different goods and services on the other. Concerted efforts to simplify the tax system, moderate the rates of tax, and avoid cascading of taxes, which intensified since the 1991–92 reforms and were continued during the Tenth Five Year Plan, have improved the investment climate. But more needs to done.

DIRECT TAXES

7.1.33 The rate of Corporate Tax has been brought down to a level of 30%, which with surcharge and cess amounts to a maximum marginal rate of 33.99%. However, analysis has brought out two features of the direct taxation in the country arising from the regime of exemptions. First, the average effective rate of Corporate Tax paid in 2005–06 was 17% or about half of the statutory rate. Second, the range of incidence varied from 11.7% to 32.5%.

7.1.34 Different effective rates of direct taxes can cause misallocation of resources. Capital investment should be driven by efficiency considerations rather than by tax advantage. Withdrawal of industry-specific concessions will make it possible to consider the introduction of a flat rate without any exemptions. The desirability of a flat rate stems from the fact that it promises to introduce transparency and equity in taxation of different economic activities, reduces the incentive to evade or avoid tax, and minimizes the use of discretion of tax authorities (regarding eligibility for concessions). The Kelkar Task Force on direct taxes had recommended a similar regime of Corporate Tax at 25%.

INDIRECT TAXES

7.1.35 In indirect taxes great progress was made during the Tenth Five Year Plan in reducing the cascading effect of indirect taxes by the adoption of State VAT by almost all the States and UTs. However, the rates of indirect taxes in India remain among the highest in the world. Most industrial products are subject to Central value-added tax (CENVAT) on the manufactured value, at an average of 16% and a State VAT at a modal rate of 12.5% of retail value (though there are a number of goods that are exempt from State VAT and some are subject to lower rates of tax). At present the incidence of CENVAT and State VAT together is about 23%. In addition, States and local levels of government levy such taxes as octroi or entry tax, etc. The overall rate of indirect taxes compare unfavourably with those prevailing in Association of South-East Asian Nations countries, which are closer to 10%–12%.

7.1.36 High taxes raise the final price of products, reducing demand for specific products and dampening aggregate demand. Lower taxes lead to an increase in the aggregate demand, providing long-lasting incentive to investment, simultaneously increasing employment and incomes. If the buoyancy in tax collection seen in the recent years continues, it will provide an opportunity for making a beginning toward the gradual reduction of the combined incidence of CENVAT and State VAT.

INVERTED DUTY STRUCTURE

7.1.37 The customs duty in India on non-agricultural products has come down drastically since 1991–92, and during the past five years the peak duties (except for a handful of products) have fallen from 30% to 10% ad valorem (as on 1 March 2007). The vast majority of manufacturing industries have withstood increased competition from imports arising from the lowering of customs duties. However, what is affecting them adversely is the inverted duty structure arising from elimination or reduction of duty on value-added products, while higher duties apply on the raw material and intermediate products. In some cases, inverted duties are embedded in the Most-Favoured-Nation duties, as in the cases of Information Technology (IT) products and books. Although under the obligations of the

Information Technology Agreement, basic customs duty has been eliminated from almost all IT products including intermediate products, some basic raw materials that go into the production of these products still attract varying levels of customs duty. Similarly, paper is subject to excise duty (and when imported it is subject also to import duty), but import of printed books does not attract any basic customs duty or additional customs duty imposed in lieu of excise. The incidence of inverted duty structure has been considerably increased by the Regional Trading Arrangements (RTAs) that India has entered into, and exacerbated by selective preferences implemented at the outset through Early Harvest Lists. While measures have been taken to alleviate the problem of inverted duty structure arising from RTAs through specific interventions, more needs to be done.

7.1.38 It is also important to safeguard the domestic industry from possible disruption as a result of implementation of several free trade agreements (FTAs), the negotiations for which are in an advanced State with some of world's leading trading countries. Efficiency in manufacturing, in particular, is a function of the quality of physical infrastructure and of skill development, and our infrastructure, both social and physical, is at present not of world class. It is necessary to raise the level of education and skills and to improve power and transport infrastructure in the country even as we enter into FTAs, as otherwise there would be flight of capital from the country to the trading partners with superior infrastructure and level of skills. Furthermore, a level playing field must be created on the fiscal side. In order to ensure that our industries do not suffer a disadvantage in an FTA, the introduction of Goods and Service Tax (GST) must be firmly on course. There must be an understanding also on the exchange rate policy as well before we can have a soundly functioning FTA, because a market driven exchange rate policy in one partner country cannot co-exist with a substantially controlled exchange rate policy in another. These fundamental aspects need to be attended to first before the major FTAs, which we are negotiating, enter into force.

GOODS AND SERVICES TAX

7.1.39 Non-discretionary application of uniform taxes to all economic activities is among the most important desiderata of a tax system. The introduction of an integrated GST would go a long way in meeting this objective. The Report of the (Kelkar) Task Force on Implementation of the Fiscal Responsibility and Budget Management Act 2003 recommended the introduction of the GST. The government has agreed to introduce the GST and has set 2010 as the target year for its introduction. To prepare for this, it has also begun a phased reduction of Central Sales Tax (CST) to zero by 2010. This is because CST, which is an origin-based tax, is inconsistent with VAT, which are destination based—the two should not co-exist. As revenue from CST was transferred to the states, they are to be compensated by being given the right to levy service tax on certain commodities. A Group of State Finance Ministers has been constituted to work on the modalities for the introduction of GST on lines similar to the group that had been set up for the introduction of State VAT.

7.1.40 Once the integrated GST across the country is introduced, it will simplify tax administration and eliminate cascading of taxes. It will lead to a reduction in the distortions in the structure of production, consumption, and exports and further to a more efficient allocation of the resources. The demand for manufactured goods can be expected to grow significantly.

Structural Change in Manufacturing Sector

7.1.41 Review of data from the ASI, which covers all factories registered under Factories Act 1948, reveals that by 2004–05 a substantial change in the shares of different sectors of manufacturing had occurred since 1990–91. After accounting for the change in classification from National Industrial Classification (NIC) 87 prevalent in 1990–91 to NIC 2004 based on which the index of industrial production is computed in 2004–05, the main changes seen are increases in the shares of chemical and chemical products from 8.42% to 16.4% and basic metals and alloys industry from 12.9% to 19%, and reductions in the shares of machinery, machine tool, and electrical machinery (NIC 35–36) from 16.14% to 10% and of textile and textile products including apparel from 14.37% to 7.3%. Transport equipment and parts registered a small increase from 8.3% to 9.5% while

food, beverages, and tobacco showed a decline from 11.9% to 8.8%.

7.1.42 The capital intensity of the manufacturing sector in terms of fixed capital per employee has increased at a CAGR of about 6.5% since 1990–91 at constant prices. Increase in outsourcing in manufacturing segment might have inflated the increase in capital intensity. The fixed capital to net value-added ratio decreased from 2.53 in 1980–81 to 1.85 in 1990–91 before rising marginally to 1.97 in 2004–05. The segments where capital intensity has increased are paper, basic metals, and non-metallic minerals and even large employment-generating sectors such as textile and food processing.

7.1.43 A recent study on India's pattern of development by Kalpana Kochhar et al.[1] has noted that 'The paradox of Indian manufacturing in the early 1980s is that a labor-rich, capital-poor economy using too little of the former, and using the latter very inefficiently'. It has further observed that little has changed since the economic reforms on account of the fact that the labour markets have not been touched and the education expenditure continues to be skewed toward tertiary education. If the structure of Indian industry is to be adapted to the factor endowments of the country, it is evident that the impediments in the way of labour-intensive industries must be removed and, while not relenting on the expenditure on higher education, emphasis must be also put on skill development for making the workforce employable in such industries.

Skill Development

7.1.44 A skill deficit in virtually all areas of manufacturing has emerged as one of the major impediments to growth in manufacturing. All areas of manufacturing are affected but the more dynamic areas such as pharmaceuticals, automobiles and auto parts, textiles and clothing, leather and leather manufactures are affected more severely. And the shortages are at all levels, from executives and designers at the top to the base level skilled workers such as tailors and machine operators. The shortage has led to a serious problem of poaching of skilled personnel being experienced by established industrial units.

7.1.45 Skills and knowledge are the driving force of the economic growth and social development of the country. Development of skills and knowledge is basic to enhancing employment opportunities and a comprehensive strategy to address this problem in the Eleventh Plan is outlined in Chapter 4 of Volume I.

Labour Flexibility

7.1.46 We need to recognize three influences that could work on firm behaviour in organized manufacturing in the future. First, in order to meet the pressures of increased competition resulting from global integration, firms have a need to build flexibility into their organizational structure, so that they can adjust to volatility in the international demand for their products. Enterprises are increasingly focusing on their core competence and outsourcing all other activities to specialist organizations, which can deliver better and at lower cost.

7.1.47 Second, the lack of flexibility in some of the labour laws, such as Chapter V-B of the Industrial Disputes Act 1947, and Contact Labour (Regulation and Abolition Act), which focus on job protection, inhibits employment. In the MTA it was recognized that these laws make it difficult for employers to flexibly respond to the changes in demand when necessary and have the net effect of discouraging the growth of strong labour absorbing sectors. It must be acknowledged here that the aforementioned provisions of the Industrial Dispute (ID) Act 1947 has not proved to be a major obstacle in downsizing by several manufacturing enterprises during the past few years with the aid of generous packages for voluntary retirement. Furthermore, in the context of severe shortages of skilled personnel being experienced by existing manufacturing enterprises, the need to reduce staff is not a current problem for many labour-intensive enterprises. Similarly, despite the provisions of the Contract Labour

[1] *India's Pattern of Development: What Happened, What Follows*, Kalpana Kochhar, Utsav Kumar, Raghuram Rajan, Arvind Subramanian, and Ioannis Tokatlidis, Working Paper 12023, National Bureau of Economic Research, Cambridge, February 2006.

(Regulation and Abolition) Act, the scope of prohibitions issued under Section 10 of the Act has not been very wide, being limited to specific processes, operation, or other work in particular establishments. However, Chapter V-B of the ID Act 1947 does create a psychological block in entrepreneurs against establishing new enterprises with a large workforce and impede attainment of economies of scale. As a result, firms prefer to set up enterprises with a smaller permanent workforce, and these enterprises are unable to cope with large size orders from retail market chains in garments and footwear for instance. Similarly the Contract (Regulation and Abolition) Act constrains seasonal employment because of the fear that work done by employees recruited to meet the temporary or seasonal demand would be declared to be work of perennial nature.

7.1.48 Third, while several fiscal incentives for corporate investment encourage capital, only one relates to labour use, and that too is of little practical value. This induces enterprises to give preference to capital-intensive over labour-intensive technology.

7.1.49 We have seen earlier that, according to the *Economic Survey*, employment in the organized manufacturing sector was on the decline up to 2004. The 61st Round (2004–05) NSS data has revealed that in manufacturing, employment growth was 3.9% per annum, raising the sectoral share of manufacturing in employment from 12.13% in 1999–2000 to 12.90% in 2004–05. The latest NSSO data implies that the increase in the manufacturing employment has come from the unorganized sector. The quality of employment in the unorganized sector is poor and the NSSO 61st Round shows that large numbers of such workers do not have written job contracts as well as are not eligible for paid leave and social security benefits. The need is to bring about an increase in quality employment, which only either the organized sector or the MSME's hiring workers on wage contract can provide. For this reason, it is necessary to consider during the Eleventh Five Year Plan practical ways of resolving the difficulties created by these laws. In addition, fiscal benefits related to employment objectives will have to be carefully designed and implemented.

Scarcity of Raw Materials

7.1.50 Scarcity of raw materials, feedstock, and fuels is another impediment limiting the growth of some industries. Coal, natural gas, and forestry resources are the main materials in short supply.

COAL

7.1.51 A number of industries, including steel and cement (which are essential inputs for building infrastructure) and electricity generation, use coal as the basic fuel in their production process. Adequate availability of the required grades of coal needs to be ensured for them if their supply is not to prove an obstacle to growth.

7.1.52 Since the nationalization of coal mines, the investment in coal mining for commercial sale has been determined by the availability of financial resources with Coal India Ltd. Only owners of captive coal mines could undertake production according to their demand perceptions. All other users have had to rely on the coal-linkage committee to allocate whatever coal was available in an equitable manner. The coal-linkage committee classified coal consumers as core and non-core. Initially the core sector included power utilities, independent power producers, cement, defence, railways, fertilizer, sponge iron, and steel plants. Subsequently, in 2004, aluminum, paper, Central public sector enterprises (CPSEs), and coal for export were also included in the core sector.

7.1.53 India has large reserves of coal, and there is a need to utilize coal in an optimal manner. As the public sector coal mining companies have, for various reasons, not increased their output to the desired level, there is a need to supplement their efforts by private participation in coal mining for merchant sale. The availability of adequate quantity of coal is as important as, and a pre-condition for, the availability of electric power, which is a basic requirement of growth.

7.1.54 Improvement in availability can come only when it is possible to increase production so that the need for coal linkages and allocation by government committees can be minimized. Until that becomes possible, merchant sales should be allowed not only to new players but also to captive mine owners.

FERTILIZER FEEDSTOCK/NATURAL GAS

7.1.55 The increased emphasis on the agriculture sector and agricultural productivity requires that all the inputs for agricultural production are made available in adequate measure and at affordable prices. One of the most important inputs for the agricultural production is fertilizer. The government recognizes this and has been providing fertilizer subsidy.

7.1.56 Urea is the most widely used fertilizer and the ideal feedstock for it is natural gas. Many urea units are producing urea using uneconomic feedstock such as naphtha and diesel oil. A decision has now been taken, in principle, to convert all these units into gas-based units. Assured supply of natural gas for the production of urea, the sources of supply, and the price at which such supplies would be made are unresolved issues. The most efficient use of gas is in the production of fertilizer (urea) that utilizes this as a feedstock using both its heat value and the chemical components. Therefore, the sectors where gas is utilized as feedstock should have priority in terms of allocation.

7.1.57 A lot of offshore gas has been discovered in the Krishna–Godavari (K–G) basin in fields allocated under the New Exploration Licensing Policy (NELP). There is a production sharing agreement in the NELP, according to which the government is entitled to an agreed share of the profit. One option that is often suggested is for the Central Government to provide gas from its share in the production sharing agreement to the urea-producing units. However, even when taken in kind it will be available in significant amount only after five to seven years of the start of production of gas. In any case, whether the government gives gas at a subsidized price or gives a subsidy for it makes no difference.

7.1.58 The pricing of gas is a contentious issue, as there is no properly functioning market for gas in India. Power plants and fertilizer units are entitled to a pass-through of the cost of gas and thus have no incentive to push for lower prices. Consequently, price bids by them cannot be accepted for price discovery of fair market value. As the government provides fertilizer subsidy, supplying gas at the cost of production could be considered until a fair market price has been determined. As in the case of gas produced by Oil and Natural Gas Corporation (ONGC) and by Oil India Ltd (OIL) the Tariff Commission could be asked to determine the cost of production/fair price for K–G basin gas as well.

RAW MATERIAL FOR PAPER

7.1.59 The growth of the paper industry has not been able to match the growth in the demand for paper as the industry has been acutely short of domestically available wood. The limitation on cutting trees and other forest produce has led it to depend on imported wood and wood-based materials. As there is a low import duty on paper, domestic production of paper is progressively becoming uncompetitive. For the industry to grow, it needs to have an assured source of supply of wood from domestic sources.

7.1.60 One way to achieve this and also improve the forest cover is to lease degraded forestland to the paper mills for development of captive plantations. They could thus grow trees to meet their raw material needs and in their self-interest they would need to do this on a sustainable basis.

7.1.61 The degraded forestland in the hands of the Forest Department has remained degraded owing to the other demands on the Department's resources and time. The land could benefit by grant of long-term lease to paper mills, which will devote the resources necessary to grow trees, as a matter of their own commercial viability. The lease agreement could have a condition that the lease is given on usufruct terms, that is, at the end of the lease period the lessee will return the land in a condition that is no worse than when the lease was awarded. Experience in some developed countries has shown that the generation of trees in captive plantations is more than the requirement of the paper mills and can provide additional forest cover.

7.1.62 In view of the accepted position that the first charge on natural resources should be of the local communities and the policy of JFM, an arrangement such has been advocated above has not been possible. This leaves the government with the possibility of allowing joint ventures with paper mills only on non-forest

wasteland. Consent of the local communities in public hearing would be required here too, but this could be obtained if the paper mills agree to spend a part of their turnover in social infrastructure for their benefit. The other alternative is for the State Governments to facilitate linkages between paper mills and farmers for growing tree crops as suggested in Chapter 3, Volume III.

Fostering Innovation

7.1.63 For the growth of the Indian economy, the key driver has to be innovation. Innovation[2] is broadly defined to include 'new to the world' knowledge creation and commercialization as well as 'new to the market' knowledge diffusion and absorption. Although both types of innovation activities are essential, India stands to gain more from catching up to the global frontier of knowledge through increased absorption than from trying to push out the frontier through creation. An enormous amount of global knowledge is not fully utilized in India. Given the overriding need to better address the needs of the poor in India, innovation could be 'inclusive' by addressing knowledge creation and absorption efforts most relevant to the poor. For fostering innovation, sharpening competition by reducing entry and exit barriers is essential so that innovation becomes a necessity. Similarly, innovation-friendly socio-cultural norms could be strengthened by dissemination of success stories and provide high profile awards and prizes. For diffusing and absorbing knowledge, technology-support programmes could be taken at cluster level for the MSMEs and world-class demand responsive metrology, standards, testing, and quality infrastructure closely linked to innovation created for fostering inclusive innovation. Financial support for grassroot innovators could be increased and Intellectual Property Rights for traditional knowledge strengthened.

7.1.64 Innovation whether in goods and services or processes can be instrumental in increasing profitability by increasing competitiveness and market share. The national investment on R&D activities during 2002–03 as per the Ministry of Science and Technology was Rs 18000.16 crore, of which only about one-fourth could be attributed to the private sector (20.3%) and public sector (4.5%) enterprises. The ratio of R&D expenditure to the gross national product was only 0.80% in 2002–03 compared to 5.11% in Israel, 4.27% in Sweden, 3.11% in Japan, and 1.23% in China. Obviously, there is scope for considerable improvement on the R&D front in India for fostering innovation.

7.1.65 The National Knowledge Commission, set up by the Planning Commission, has highlighted the following aspects in its national survey on innovation:

- Innovation intensity (i.e., the percentage of revenue from products/service less than three years old) has increased for large firms and SMEs, with the SMEs registering a greater increase in innovation than large firms.
- About 7.3% of the large firms have achieved breakthrough in innovation while 76.4% have introduced incremental innovation.
- Internal processes for innovation such as maintaining a specific innovation department, allocating funds, rewarding innovative employees, maintaining physical locations for innovations, and constituting cross functional teams are all important factors which encourage firms to become more innovative.
- Firms with more patent filings and use of IPR consultants are more innovative.
- Firms partnering with government agencies, collaborating with universities and R&D labs also tend to be innovative.

7.1.66 However, the most important barrier to innovation is skill shortage and a lack of effective collaboration with the R&D institutions. NDC has recommended that there is a need for systematic reforms of the higher education system, including skill-based marketable vocational education in India which would facilitate the development of the required intellectual capital as well as enable more effective collaboration between industry, educational institutions, and the government. Apart from this, it is necessary to

[2] *Unleashing India's Innovation: Toward Sustainable and Inclusive Growth*, Mark A. Dutz, World Bank Publication, 2007.

encourage innovation through fiscal incentives on a continuing basis.

7.1.67 The NMCC was set up in September 2004 by the government to provide a continuing forum for policy dialogue to energize and sustain the growth of manufacturing industries in India. The NMCC presented its report 'The National Strategy for Manufacturing' to the government in March 2006 which has identified challenges being faced by Indian manufacturing and has recommended measures in consultation with different departments and industries. A High-Level Committee on Manufacturing under the Chairmanship of the Prime Minister has been constituted to ensure implementation of the recommendations. The analysis and policy recommendations in the sections that follow reflect, inter alia, the strategy drawn up by the NMCC as well as suggestions made in the 11 Working Groups set up by the Planning Commission for the Eleventh Five Year Plan.

Public Sector Enterprises (PSEs)

7.1.68 PSEs have made a notable contribution to the economic growth of the country, particularly by creating a diversified industrial base. After the introduction of economic reforms in 1991–92, a policy of disinvestments and privatization was adopted and upto 2001–02 equity had been sold in 123 enterprises and receipt of Rs 26012 crore realized. During the first two years of the Tenth Five Year Plan, the process intensified and a sum of Rs 18895 crore was realized from disinvestments. In 2004–05, there was a policy shift and the United Progressive Alliance (UPA) government, while expressing a commitment toward a strong and effective public sector, decided that 'generally profit making companies will not be privatized'. Residual disinvestments made in the last three years of the Plan brought in receipts of Rs 4335 crore.

Performance of Central Public Sector Undertakings

7.1.69 Despite the privatization accomplished upto the middle of the Tenth Five Year Plan, when the policy changed, the role of PSEs and their contribution to the GDP has not diminished. In fact, the GDP from non-departmental enterprises (NDEs) registered an increase during the first two years of the Tenth Five Year Plan as shown in the Table 7.1.6.

TABLE 7.1.6
Contribution of Non-departmental Enterprises to GDP at Factor Cost (Current Price)

Year	GDP from NDEs (Rs Crore)	GDP at Factor Cost (Rs Crore)	Share (%)
1996–97	141710	1260710	11.24
2001–02	244345	2100187	11.63
2002–03	282518	2265304	12.47
2003–04	312364	2549418	12.25
2004–05	338352	2855933	11.85

Source: National Accounts Statistics 2007 for 2001–02 onwards; for 1996–97 based on 'Back Series' information provided by CSO.

7.1.70 In 2004–05, the share of CPSEs in the GDP was 6.82% out of 11.85% for NDEs. The number of operational CPSEs has decreased from 231 in 2001–02, the last year of the Ninth Five Year Plan, to 225 in 2005–06. What is significant is that the number of profit-making CPSEs has gone up from 120 to 157 and the number of loss-making CPSEs has decreased from 109 to 58. The profits of profit-making CPSEs have increased from Rs 36432 crore to Rs 76240 crore and the losses of loss-making ones has come down from Rs 10454 crore to Rs 5752 crore during the same period. Table 7.1.7 gives the macro picture of CPSEs.

7.1.71 The net profits made by the CPSEs has led to the accumulation of large reserves which totalled as much as Rs 353641.62 crore for 157 profit-making enterprises at the end of the financial year 2006–07. Between 2002–03 and 2005–06, the cash and bank balances of all CPSEs rose from Rs 53453 crore to Rs 150680 crore. Thus, CPSEs have accumulated large amounts of investible funds, which are not being put to productive use.

7.1.72 The top 10 profit-making CPSEs made a net profit of Rs 47371 crore in 2005–06. The ONGC (Rs 14431 crore), Bharat Sanchar Nigam Ltd. (BSNL) (Rs 8940 crore), National Thermal Power Corporation (NTPC) (Rs 5820 crore) were the top three profit-making CPSEs. The top 10 loss-making CPSEs accounted for a net loss of Rs 4552 crore, the top three loss-making units being the Fertilizer Corporation

TABLE 7.1.7
Macro View of Central Public Sector Enterprises

(Rs Crore)

	2001–02	2002–03	2003–04	2004–05	2005–06	April–September 2005	April–September 2006
Number of operating CPSEs	231	226	230	227	225		
Profit before interest, tax, and EP (PBITEP)	63190	72539	95039	108420	106533	64962	73169
Capital employed	289934	417160	452336	504407	581250		
Turnover	478731	572833	630704	744307	832584	377370	468221
Net profit	25978	32344	52985	64963	70288	27235	35465
Net profit as % of turnover	5.4	5.6	8.4	8.7	8.4	7.2	7.6
Profit of profit-making CPSEs	36432	43316	61606	74433	76240		
Loss of loss-incurring CPSEs	10454	10972	8522	9356	5952		
Profit-making CPSEs (nos.)	120	119	139	138	157		
Loss-incurring CPSEs (nos.)	109	105	89	79	58		

Source: Public Enterprise Survey 2005–06 and Mid-Year Review of CPSEs for 2006–07, Department of Public Enterprises (DPE).

of India, Food Craft Institute (FCI) (Rs 1294 crore), Hindustan Fertilizer Corporation Limited, HFC (Rs 965 crore), and Hindustan Photo Films Co. Ltd, (Rs 561 crore). While the top 10 profit-making enterprises are diversified, the top 10 loss-making enterprises are largely concentrated in manufacturing.

7.1.73 Mid-year review (April–September 2006 against April–September 2005) showed that the turnover of 202 CPSEs (out of 225) for which data was available increased by 24.07% and the net profit increased by 18.18%. The performance of CPSEs in different industry sectors during the Tenth Five Year Plan is presented in Annexure 7.1.4.

Policies toward CPSEs and their Implementation

7.1.74 In accordance with the mandate in the NCMP the two main elements of the GoI policy have been devolution of full managerial and commercial autonomy to successful, profit-making companies and modernization and restructuring of sick PSUs (as well as sell-off or closure of chronically sick CPSEs).

7.1.75 Pursuant to the recommendations of an ad hoc group of experts under the chairmanship of Arjun Sengupta, the government introduced a series of measures for enhancement of financial delegation to *Navratna*s, *Miniratna*s, and profit-making CPSEs. These include measures for creation of and disinvestment in subsidiaries, transfer of assets to such subsidiaries, and floating of fresh equity.

7.1.76 Under the provisions of Sick Industrial Companies (Special Provisions) Act 1985, 62 CPSEs had already been referred to the BIFR earlier and during the Tenth Five Year Plan 12 more were referred to them for considering revival/restructuring/closure. A total of 28 of these had been recommended for winding up. Because of the delays inherent in the process of BIFR, the government has already sought to replace it by the National Company Law Tribunal (NCLT) but the creation of NCLT has been under dispute in the Honourable Supreme Court. Hearing in the special leave petition is already over and the final judgment has been reserved.

7.1.77 The government constituted a Board for Reconstruction of Public Sector Enterprises (BRPSE) in December 2004, as a part time advisory body to address the task of strengthening, modernization, revival, and restructuring of CPSEs. Until February 2007, the BRPSE had considered cases of 46 CPSEs received from 14 administrative ministries/departments and made recommendations in respect of 40 CPSEs. On the basis of the recommendations of BRPSE, the government has also approved the winding up of one CPSE, namely, Bharat Opthalmic Glass Limited. It has

approved revival schemes in respect of 25 CPSEs, envisaging assistance of Rs 1951.30 crore in cash by way of equity/loan/grant and Rs 5709 crore by way of waiver of interest/loan/guarantee fees. Out of the 20 CPSEs for which the budgetary support has been sanctioned for revival, 13 had posted profits after tax in 2005–06 while the remaining have continued to incur losses. The data for 2006–07 that have been made available in respect of some CPSEs show that while some like the Cement Corporation of India, Heavy Engineering Corporation, Mineral Exploration Corporation Ltd (MECL), Bharat Compressors Ltd have shown better financial performance than projected in the revival proposal, others such as Hindustan Antibiotics Ltd and Andrew Yule & Company Ltd have been below the projected levels. Thus rehabilitation proposals have been effective in about 50% of the cases. However, it must be observed here that the improvement in market situation and hand-holding by the government in terms of price preference, placing of orders on nomination basis have also contributed to the success of the revival efforts of the government.

Performance of State-level Public Enterprises (SLPEs)

7.1.78 No regular survey is carried out for SLPEs. As on 31 March 2005, 1129 SLPEs were in operation (Table 7.1.8). The majority of SLPEs—about 50% in number—are in manufacturing followed by utilities, promotional, and welfare enterprises. The total investment in SLPEs increased every year in the post-economic reform period reaching a peak of Rs 285564 crore in 2002–03 before going into a declining trend ending up with Rs 259124 crore in 2004–05. The accumulated losses of SLPEs have been on the increase reaching a figure of Rs 60517 crore in 2004–05, with consequential adverse fiscal impact on the States. Table 7.1.8 gives the picture of the financial performance of SLPEs at the end of Seventh, Eighth, and Ninth Five Year Plan periods and in the first three years of the Tenth Five Year Plan. The overall financial health of SLPEs was very weak at the end of 2004–05.

7.1.79 A total of 579 manufacturing sector SLPEs constituted about 51% of the total number of 1129 SLPEs. Manufacturing SLPEs constituted a major share of the SLPEs portfolio in States such as Assam, Gujarat, Kerala, Maharashtra, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal. It is also noteworthy that a considerable number of these enterprises are taken over sick units. The investment in manufacturing enterprises increased from Rs 17099 crore in 1997–98 to Rs 23912 crore in 2004–05. The CAGR of investment was 4.2%. These enterprises incurred losses during all the years excluding 2003–04 and 2004–05. As a result of that their net worth in 2004–05 was Rs 12951 crore.

RESTRUCTURING OF SLPEs

7.1.80 Some States have been active in restructuring sick PSEs. According to the information collected by Institute of Public Enterprises (IPE) Hyderabad upto 2004–05, 30 units including co-operatives had been privatized in Andhra, 3 in Gujarat, and 1 each in Haryana, Orissa, Punjab, and Rajasthan. West Bengal is another State which has shown substantial progress in the last two or three years. Out of 82 PSEs, 18 were profit making, and 63 loss making at the end of 2004–05. The Government of West Bengal has taken up restructuring of 34 units in the first phase, of which 4 have been successfully restructured under government ownership, 3 have been converted into joint ventures, and 21 units have been closed. The 34 units had about

TABLE 7.1.8
Performance Indicators of State-level Public Enterprises

(Rs Crore)

	1991–92	1996–97	2001–02	2002–03	2003–04	2004–05
Number of operating SLPEs						1129
Turnover	42986	86681	87375	86284	113208	127150
Total investment	90983	144471	280116	285564	247676	259184
Capital employed	83277	150291	179831	179627	232889	244770
Accumulated losses	8754	13122	22764	27353	64486	60517
Net worth	13248	35352	38429	44631		

Source: Study by IPE, Hyderabad.

11000 employees. With a view to reducing manpower these employees were offered compensation if they opted for early retirement. Insurance and retraining facilities were also given.

Future Strategies

7.1.81 In a globalized economy, cost-cutting strategic acquisitions and mergers are vital for facing international competition. CPSEs must have full autonomy and functional powers to take investment decisions to take advantage of the opportunities offered by the competitive international market. The informal levers of control from the ministries have no place in the competitive corporate world. Constitution of an independent Advisory Board to look after the government's interests in the CPSEs and leaving them to manage the corporation with the help of strong independent directors would be explored.

7.1.82 Substantial progress has been made in the revival of sick CPSEs, but close monitoring would be needed to ensure that the restructuring plans are successfully implemented. In considering the revival of the remaining sick CPSEs, greater caution is necessary as it has been seen that a few of the rehabilitated units are not performing in accordance with expectations.

7.1.83 The investment behaviour of the large profit-making CPSEs needs review. Many CPSEs appear to prefer investing in financial assets or reducing their debt burden in preference to investment which would contribute to capital formation. As on 31 March 2006, CPSEs have made financial investment to the tune of Rs 136558 crore. A substantial portion of this investment is by Navratna CPSEs. One reason for this phenomenon is the risk-averse nature of top management in CPSEs and the absence of institutional mechanisms which facilitate quick decision-making. The government has set up a special mechanism of an Empowered Committee of Secretaries in Ministries of Petroleum and Natural Gas, Ministry of Finance, and DPE for considering projects in the oil sector involving financial decisions above a certain threshold. The recommendations of this Empowered Committee are submitted to the CCEA directly for approval. Present mechanisms are inadequate to ensure optimum investment decisions. The supervisory body (that is, independent Advisory Board) suggested above could also be given the task of guiding and facilitating the investment decisions in all profit-making CPSEs.

7.1.84 The system of MoUs between CPSEs and the government has proved to be ineffective and dysfunctional. While the CPSEs are expected to perform in accordance with the norms, the government's commitments are marginal and not effectively monitored. There is a need to review and overhaul the system to ensure effective operational autonomy and functioning of the CPSEs. Financial delegations, particularly of the profit-making CPSEs, will have to be enhanced.

Autonomous Institutions in Industry Sector

7.1.85 Over the past Plans a number of autonomous institutions were set up to support the industry to meet various needs, such as technology transfer, skill development, and introduction of advanced technology. These institutions were designed to function in close coordination with industry and the governing bodies included all stakeholders. Some industry associations set up such institutes on their own initiative with initial government support. Some institutes such as the Central Pulp and Paper Research Institute (CPPRI) and Institute of Pesticides Formulation Technology (IPFT) were set up with assistance from international organizations such as United Nations Industrial Development Organization (UNIDO). Institutes such as the National Test House (NTH) have the backing of statutes for some of the activities although they work on a commercial basis also.

7.1.86 No systematic study has been carried out so far on a comprehensive basis on the functioning of these autonomous institutions. The Expenditure Reform Committee (ERC) in 2001 had recommended that budgetary support should be progressively reduced having regard to the scope for maximizing internal resources generation and restraining of expenditure growth. ERC also proposed greater autonomy to autonomous institutions whose performance had been outstanding and had received international acclaim and recommended that an MoU be entered into by autonomous institutions with the parent ministry/department, spelling out clearly not only the input but also more importantly the output targets.

7.1.87 There are about 24 institutions under the control of different ministries/departments concerning Industry Sector (see Box 7.1.1).

7.1.88 In the Tenth Plan, Budgetary support of about Rs 850 crore was provided to autonomous institutes for new infrastructure/modernization. Apart from institutes shown in the Box 7.1.1, there are a number of autonomous institutes providing services to small-scale industries, FPI, and handloom and handicraft industries. The emphasis in the Tenth Five Year Plan has been to enable the institutions to achieve higher levels of self-sufficiency and to provide only project-based support. An important new initiative during the Tenth Five Year Plan was to set up the National Automotive Testing and R&D Infrastructure Project (NATRIP) to meet the homologation and testing need of automotive industry. The seven centres of NATRIP in different locations in the country, mainly in the areas of concentration of manufacturing activity in automobiles and auto components, will be completed during the Eleventh Five Year Plan. Once completed, the individual centres will be managed by the industry with no recurring assistance from the government. During the Tenth Five Year Plan period new centres of NIFT, Central Institute of Plastics Engineering and Technology (CIPET), and NID were also set up.

7.1.89 The emphasis in the Eleventh Plan would continue to promote self-sufficiency in these institutions so that they can operate on a self-sustaining basis without the requirement of budgetary support. The government support will be limited to one time grants for the creation of new facilities, with recurring expenses being met from the revenues generated by them.

Area Development for Industry

7.1.90 Since the beginning of planned development, a policy has been followed for the development of industrial areas and industrial estates within such areas to facilitate the establishment of small and medium industrial units. Initiative has also been taken for improving the infrastructure of existing clusters outside of such areas. At the end of the Tenth Five Year Plan there were a multiplicity of schemes of cluster and area development established for the creation or upgradation of infrastructure as shown in Box 7.1.2.

Box 7.1.1
Autonomous Institutions in Industry Sector

- Quality Council of India (QCI).
- Central Manufacturing Technology Institute (CMTI), Bangalore.
- National Council for Cement and Building Materials.
- Indian Rubber Manufacturers Research Association (IRMRA).
- NID.
- National Productivity Council.
- Central Institute of Plastics Engineering and Technology (CIPET).
- National Institute of Pharmaceutical Education and Research (NIPER) and IPFT.
- Six Textiles Research Associations (TRAs).
- NIFT.
- Bureau of Indian Standards (BIS).
- NTH.
- Automotive Research Association of India (ARAI), Pune.
- NATRIP.
- Fluid Control Research Institute (FCRI).
- National Ship Design and Research Centre, Visakhapatnam.
- Biju Patnaik National Steel Institute.
- National Institute of Secondary Steel Technology.

Box 7.1.2
Industrial Area Development Schemes

- Growth Centre Scheme—announced in June 1988 and became operational from 1991—DIPP.
- Industrial Park Scheme 1999–2000, DIPP.
- IIUS 2003–04, DIPP.
- Apparel Parks for Exports 2001–02, Ministry of Textiles.
- Textile Centres Infrastructure Development Scheme (TCIDS) 2002–03, Ministry of Textiles.
- Scheme for Infrastructure Development 2002–03, MFPI.
- SEZs 2005–06, Department of Commerce.
- PURA—2004–05, Ministry of Rural Development.
- Scheme for Integrated Textile Parks (SITP) 2005–06, Ministry of Textiles.
- Petroleum, Chemicals, and Petrochemical Investment Regions (PCPIRs) 2006–07, Department of Chemicals and Petrochemicals.

7.1.91 Among the listed schemes the oldest is the Growth Centre Scheme of the DIPP, which was designed for promoting the development of manufacturing industries in industrially backward areas. Although as many as 52 growth centres were established, there was a weak response from the entrepreneurs to set up units within the centres, as a result of which large areas within the centres were lying vacant. The scheme was discontinued after the MTA of the Tenth Five Year Plan. The Industrial Parks Scheme, also of DIPP, envisaged the establishment of industrial parks for development of industrial infrastructure or built up space with common facilities in any area allotted or earmarked for the purposes of industrial development. Driven by the benefits available under Section 80 IA of the Income Tax Act 1961, as many as 270 industrial parks were set up. The objective of the Industrial Infrastructure Upgradation Scheme (IIUS) was to provide quality infrastructure facilities in existing functional clusters/industrial locations. Eligible activities included physical infrastructure such as water supply, effluent treatment, solid waste management, etc. A total of 26 industrial areas spread over 14 districts have been sanctioned assistance under the scheme. A feature of the IIUS is that it is based on PPP and the initiative has to come from the beneficiary units.

7.1.92 To improve the infrastructure facilities specifically for units in textiles and clothing, the Central Government initiated two CSS of the Ministry of Textiles in 2002, namely, (i) Textile Centres Infrastructure Development Scheme (TCIDS) with the objective of modernizing infrastructure facilities at major textiles centres in the country and (ii) Apparel Parks for Exports Scheme (APES) to promote setting up of modern apparel units at major growth centres. Although 19 TCIDS and 12 APES projects were taken up, the progress was slow and eventually none could be completed during the Tenth Five Year Plan. Consequently, the Scheme for Integrated Textile Parks (SITP) was introduced in 2005–06. As in the case of the IIUS, the SITP is based on PPP and is demand driven, and following a good response from the industry 30 SITP projects were taken up during the Tenth Five Year Plan.

7.1.93 The scheme for food parks was an element of the scheme for infrastructure development begun in 2002–03 by the MFPI. The scheme also envisaged the establishment of packaging centre, integrated cold chain facilities, value-added centre, and irradiation facilities. During the Tenth Five Year Plan, 18 food parks were approved, but progress was limited as only 8 were actually established with just 28 industrial units functioning within the parks. In 2004–05, the MoRD launched the scheme for Provision of Urban Amenities in Rural Areas (PURA) to encourage development of identified growth centres for the working population in the rural areas and prevent their migration to the urban areas. To start with, the development of clusters on a pilot basis has been envisaged at seven locations in the country.

7.1.94 A new scheme for SEZs has been launched by the Department of Commerce on the basis of the SEZ Act 2005. The objective of the scheme is to establish industrial townships divided into processing and non-processing areas. Apart from the existing export processing zones earlier set up by the Department of Commerce, which have been converted into SEZs, the establishment of new SEZs has been left to the initiative of private developers. The SEZs benefit from various tax incentives such as exemption from excise or customs duty, income tax exemption under Section 80-1AB of the Income Tax Act, exemption from minimum alternate tax, dividend distribution tax, CST, and Service Tax. Units in SEZs have access to the Domestic Tariff Area on payment of full customs duties on the finished product. The scheme has evoked a good response and up to the end of August 2007, 366 SEZs had been approved formally and 141 had been notified.

7.1.95 In 2006 another area development scheme known as the Petroleum, Chemicals, and Petrochemical Investment Regions (PCPIRs) was announced through a policy resolution of the Ministry of Chemicals and Petrochemicals. The PCPIR is a 'specifically delineated investment region/s with an area of around 250 sq km—including SEZ/s, Free Trade and Warehousing Zones, EOU units, and other existing industrial clusters—wherein is provided an internationally competitive and hassle-free environment with world-class infrastructure facilities to encourage global scale investments in petroleum, chemical, and petrochemical sectors to accelerate economic growth'. The policy provides for a duly notified SEZ to be set up within the PCPIR. Although a number of locations are under consideration, up to the end of August 2007, no State Government had initiated action for notifying a PCPIR.

7.1.96 Experience of establishing area development programmes up to the end of the Plan period seems to suggest that they can succeed only if they are demand driven and are so designed as to ensure that the initiative comes from entrepreneurs who are willing to commit not only to make a substantial initial capital investment on their part but also to run the programme on a self-sustaining basis.

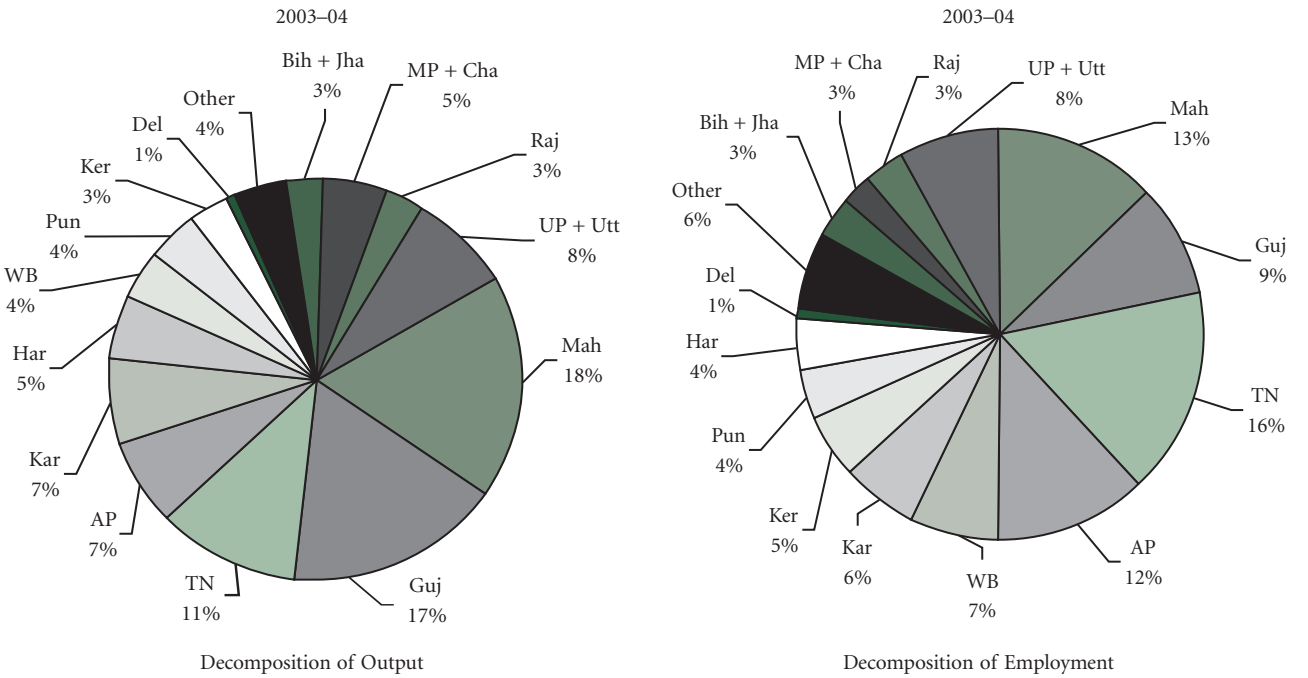
7.1.97 The newly conceptualized Delhi–Mumbai Industry Corridor (DMIC) project is in partnership with Japan. An approximately 150 km wide band on either side of the proposed 1483 km long dedicated rail freight route is to be developed into a planned industrial belt. Several large hubs/nodes have been identified for development as large industrial regions in consultation with the government of the six States through which the corridor would pass. In the first phase (2008–09 to 2012–13), it will have six investment regions (about 200 sq km each) and six industrial areas (about 100 sq km each). The implementation would adopt a PPP approach.

Regional Development of Industry

7.1.98 The disparities in the performance on manufacturing output and employment of the States are reflected in Figure 7.1.4, which depicts the position as it stood in 2003–04.

7.1.99 The State-wise data on investment intentions notified to the DIPP during the Tenth Five Year Plan bring out some new trends (Annexure 7.1.5). While Gujarat, Karnataka, and Maharashtra continue to be in the forefront, Chhattisgarh, Jharkhand, Orissa, and West Bengal are getting increasing attention. The data on capital investments compiled by the RBI on the basis of the envisaged capital expenditure of companies that have been sanctioned assistance by banks and financial institutions show a different picture (Annexure 7.1.6). In 2006–07, Gujarat has emerged as the leading investment destination in the country, while Andhra Pradesh, Karnataka, Maharashtra, and Tamil Nadu are also attracting very substantial investments. Orissa too has come up, registering a substantial increase in projects in the pipeline during 2006–07. Jharkhand, Himachal Pradesh, and Uttarakhand have shown large increases in investment projects during the last two years of the Tenth Five Year Plan.

7.1.100 The most important determinant of the investment climate in the States is the state of physical infrastructure, particularly power and transport connectivity with the rest of the country. Although skilled personnel can move from other parts of the country, local availability of such personnel is an advantage. A fundamental requirement, however, is



Source: 'Towards a Competitive Manufacturing Sector', ICRIER paper by Rajiv Kumar, Chief Executive and Director, ICRIER and Abhijit Sen Gupta, Fellow, ICRIER.

FIGURE 7.1.4: Contribution of States to Output and Employment in Manufacturing

social stability and the existence of the rule of law, giving confidence to the entrepreneurs that their life and property will be safeguarded. Efforts of the government have to address these prerequisites for fostering a more balanced industrial development of the country.

Central Government Initiatives for Balanced Industrial Development

7.1.101 On 24 December 1997, the Central Government notified the North East Industrial Policy (NEIP) providing a package of fiscal and other incentives aimed at facilitating the process of industrial development in the NER. During the Tenth Five Year Plan period, industrial incentives were extended to some other States. On 23 December 2002, similar incentives were extended to Sikkim, when it became a member of the North Eastern Council. A special package for J&K was announced on 14 June 2002. On 7 January 2003, the Central Government granted incentives for industrial investment to the States of Himachal Pradesh and Uttarakhand, which would remain for industries that are set up till 31 March 2010. The NEIP, which was originally valid until 31 March 2007, has been extended for another period of 10 years.

7.1.102 All the States covered by the incentive programmes benefit from full excise duty exemption on finished products as well as income tax exemption on profits as also from capital subsidy on investment in plant and machinery. The North Eastern States get additionally enhanced capital subsidy, interest subsidy on working capital loan, reimbursement of 100% premium under Comprehensive Insurance Schemes as well as transport subsidy of 50%–90% of the cost of transportation of raw materials and finished products to/from designated railheads. J&K also benefits from most of the additional incentives appli/cable to the North Eastern States. An evaluation report by a professional consultant in 2004 had brought that in the NER a total of 681 units had been set up from 1999 to September 2004, with an investment of Rs 1067.28 crore and employment generation of 20709. Assam accounted for about 49% of the investment and

Meghalaya for about 41%. The experience of other States is much better. According to the reports submitted by the State Governments concerned, the investment already made up to March 2007 was Rs 5902 crore in Uttarakhand, Rs 2884 crore in Himachal Pradesh, and Rs 3403 crore in J&K, the latter predominantly in the Jammu region. Data compilation from IEMs and RBI of the investment envisaged in projects receiving financial assistance from banks and financial institutions also suggest that the incentives have stimulated industrial activity in Himachal Pradesh and Uttarakhand significantly.

7.1.103 There have been complaints from not only the adjoining States but also from the States in the south of flight of capital induced by excise duty exemptions in Himachal Pradesh and Uttarakhand. Some other States with hilly regions such as West Bengal have raised questions of equity. During the Eleventh Five Year Plan, the industrial incentives would have to be closely monitored. Because of the distortions introduced by excise duty exemptions in particular, consideration would have to be given to replacing the incentives, fully or partly, by an accelerated programme for infrastructure improvement.

Intellectual Property Rights (IPRs)

7.1.104 Recognizing the importance of the IPRs as a means for fostering innovation and contributing to enhanced economic growth and competitiveness, India has adopted a four-pronged strategy to strengthen its IPR regime: (i) to meet international obligations, (ii) to safeguard national interests, (iii) to modernize the IPR administration, and (iv) to create awareness regarding IPRs.

Legislation

7.1.105 In keeping with the above strategy, India has updated its Intellectual Property related legislation, that is, patents, trade marks, geographical indications, industrial designs, copyrights, biodiversity, semiconductor integrated circuits layout design, etc., so as meet its international obligations. At the same time, necessary safeguards to protect public interest have also been suitably incorporated in the Patents Act to ensure availability of patented products, including pharmaceuticals, at reasonably affordable price. The law also contains provisions which ensure that grant of patents for frivolous innovations resulting in 'evergreening' of patents would not be possible. 'Evergreening' of patents could have adverse consequences on both the availability as well as the prices of essential medicines impacting the health and lives of millions of people. The law thus encourages substantive R&D.

7.1.106 The legislative modernization exercise has also been utilized to streamline and rationalize the procedural aspects so as to make the system more efficient and user-friendly. Definitive timeframes have been prescribed for various activities by the Patent Offices. At the same time, the time lines available for the applicants and the public have been extended. In addition, the maximum time period for grant of patent has been reduced from 104 months to 52 months. A patent can be obtained in a shorter period depending upon the initiatives taken by the applicant.

Modernization of Infrastructure

7.1.107 As a part of improving and strengthening the infrastructure, the government has implemented modernization of IP Offices at a cost of Rs 153 crore in the Ninth and the Tenth Five Year Plans. This included: new, integrated IP offices in the four metros; strengthening of library and novelty search facilities by acquiring books, journals, and CD-ROMs of patents, designs, trademarks, and geographical indications granted or registered; and making operations in the IP offices IT enabled.

Impact

7.1.108 The legislative and administrative initiatives taken during the last few years have had a very positive impact on the creation and securing of IP in India during the Tenth Five Year Plan period. Patent filing which was a mere 11466 in 2002–03 has gone up by two and a half times to 28882 in 2006–07. The patents granted also registered a five-fold growth from 1379 to 7559 during the same period. The number of trademarks registered increased phenomenally from 11190 in 2002–03 to 109361 in 2006–07.

7.1.109 The Geographical Indications of Goods (Registration and Protection) Act 1999 was an entirely new

legislation for India. This was brought into force on 15 September 2003 and with the initiatives taken by the government, it has been possible to generate 97 applications out of which 37 products have already been registered including Darjeeling tea, Chanderi saree, Pochampally ikat, etc.

7.1.110 A major initiative taken recently has been the announcement of a National Design Policy. This is expected to give a boost to the design sector in India where the country with its diversity and long cultural traditions has an edge over others.

7.1.111 The increase in the activities in the IP offices has also resulted in substantial growth in revenue generation. The income of the Patent and Trademark Offices, which was a mere Rs 17.06 crore in 2002–03 has gone up to Rs 163.67 crore in 2006–07. This has been possible because of the trust and confidence that the IP creators and owners developed in the services provided by these offices, particularly in clearing huge backlogs.

Second Phase of Modernization

7.1.112 Further modernization of IP offices has also been planned in the Eleventh Five Year Plan. This would address the needs of human resource development, training, and awareness and also infrastructure besides regular updating of the IT facilities.

7.1.113 The second phase of modernization would contribute toward making the Indian Intellectual Property Office (IPO) a front ranking IPO. The Indian IPO would be made an International Searching Authority (ISA) and an International Preliminary Examining Authority (IPEA) under the Patent Cooperation Treaty of World Intellectual Property Organization, placing it in an exclusive group of 12 countries currently recognized as ISA/IPEA. Accession to the Madrid Protocol, a facilitation system for international registration of trademarks, will also be considered. A National Institute for Intellectual Property Management will be established at Nagpur. The Institute will cater to the requirements of training and awareness and also act as a centre for policy, research, and IP think tank.

Plan Outlays and Expenditure in the Tenth Plan

7.1.114 The Industry and Mineral Sector spans 11 departments and ministries. The actual expenditure on the schemes in the industry sector was about Rs 25000 crore during the Tenth Five Year Plan period, which is 65% of the original outlay and 75% of the outlay as revised after the MTA. A summary of the Plan outlay and expenditure on major schemes in the industry sector during the Tenth Plan is given in Annexure 7.1.19. A review of the major schemes implemented during the Tenth Five Year Plan is given in the following paragraphs.

7.1.115 With a view to enhancing competitiveness by providing quality infrastructure in existing clusters, IIUS was launched in 2003 with an outlay of Rs 675 crore for assisting 20–25 clusters. The IIUS was envisaged as a user-driven scheme, based on PPP, implemented through a Special Purpose Vehicle (SPV) formed by the users, and administered by the Apex Committee in the DIPP. During the Tenth Five Year Plan, the Apex Committee sanctioned 26 projects with total cost of Rs 1766.18 crore and a GoI grant component of Rs 952.10 crore. A sum of Rs 437.38 crore was released up to the end of 2006–07. Evaluation has not been possible, as none of the schemes have been completed although several are in an advanced state of completion. However, since the design of the scheme ensures that the schemes are taken up only after the users have taken initiative and made investments, and several schemes are in an advanced state of completion, it will be useful to continue with the scheme in the Eleventh Five Year Plan. The scheme would need to undergo a mid-term review on the basis of the progress made.

7.1.116 A programme focused on tannery modernization in a small way was initiated in 1999 and during the Tenth Five Year Plan it was subsumed in an enlarged Indian Leather Development Programme (ILDP) with an approved outlay of Rs 400 crore, comprising two separate components, viz., Integrated Development of Leather Sector (IDLS) and Infrastructure Strengthening of Leather Sector with outlays of Rs 290 crore and Rs 110 crore, respectively. Owing to late sanction on the account of procedural delays in the GoI the scheme

could not take off during the Tenth Five Year Plan and will spill over into the Eleventh Five Year Plan.

7.1.117 The major schemes implemented by the Ministry of Textiles are the TUFS, Technology Mission on Cotton (TMC), APES, and TCIDS.

7.1.118 The TUFS was initially introduced in 1999 with the objective to provide adequate impetus to all the sub-sectors of textiles and jute industry by way of 5% interest reimbursement so as to reduce the cost of capital for modernization. Small-scale textile and jute industrial units were given an option either to avail Credit-linked Capital Subsidy (CLCS) or interest reimbursement. An additional option of credit linked 20% capital subsidy for small-scale powerloom and weaving preparatory machinery, with the option to obtain credit from an enlarged credit network, was also introduced. Besides, an additional capital subsidy of 10% for benchmarked processing machinery over and above the extant 5% interest reimbursement was started in April 2005. In the Tenth Plan, as against the loan disbursed by the banks and financial institutes of Rs 18506 crore, subsidy amount of Rs 2043.66 crore was granted under the scheme. In the Eleventh Plan period, there is a spillover liability of Rs 984 crore relating to the subsidy for the projects sanctioned during the Tenth Plan period. Preliminary findings of the evaluation of the scheme by a professional consultant reveal an improvement in profitability and productivity. However, substantial dependence on import of second-hand machinery and low share of powerloom and processing sector have emerged as areas of concern. In view of the continuing need to stimulate investment and the positive response of the industry to the scheme, the TUFS would need to be continued during the Eleventh Five Year Plan.

7.1.119 The SITP was launched in August 2005. The primary objective of the scheme is to provide the industry with world-class infrastructure facilities for setting up of textile units in clusters. As in the case of IIUS, the scheme is being implemented through SPVs with industry associations/groups of entrepreneurs as the main promoters of the integrated textile parks. GoI's support under the scheme by way of grant or equity is limited to 40% of the project cost, subject to a ceiling of Rs 40.00 crore. The SITP envisaged creation of 30 new textile parks of international standards in potential growth centres before 2007–08. An amount of Rs 625.00 crore was allocated for the development of these parks against which Rs 88.27 crore of GoI grant was released till the end of the Tenth Five Year Plan. In all the 30 schemes, the SPV has been formed and land has been acquired. Since 9 schemes were sanctioned late in 2005–06 and the remaining 21 in the period after July 2006, none of the projects has been completed. A major factor has been that the industry is awaiting the issuance of the guidelines for the revised TUFS before moving for bank loans for the units within the parks. During the Eleventh Five Year Plan the first priority will have to be completion of the 30 projects already taken in hand but provision will have to be made for additional projects within the available plan allocation.

7.1.120 In addition to the SITP there were two pre-existing schemes, the APES and the TCIDS, which were commenced in 2002. A total of 18 projects were sanctioned under TCIDS and 12 under APES, with a GoI assistance of Rs 271.06 crore and Rs 191.70 crore, respectively. An amount of Rs 172.50 crore is estimated to have been spent by the end of the Tenth Five Year Plan under APES and TCIDS. There was a design defect in these schemes in as much as the schemes were implemented on the initiative of the State Governments without the assurance of interest among the entrepreneurs. As a result, these schemes have been languishing. An assessment would need to be made on the sustainability of these schemes, and during the Eleventh Five Year Plan only those would need to be assisted in which there is an interest among the entrepreneurs.

7.1.121 The Technology Mission on Cotton (TMC) was launched in February 2000, with the objective of bringing tangible improvement in the productivity and quality of cotton. An evaluation of the scheme by a professional consultant has indicated marked improvement by way of reduced contamination levels in cotton processed by the modernized Ginning and Pressing (G&P) factories matching to international

levels. It is expected that 80% of the cotton produced in the country would be able to meet the higher standards of international markets on completion of modernization of 1000 G&P factories. This scheme too will need to be continued during the Eleventh Five Year Plan.

7.1.122 The Consumer Protection Act has been in operation for about 20 years. The objective of the Central Consumer Protection Council established under the Act is to promote and protect consumer rights that include the right to be informed and the right to consumer education. The consumer movement is still in infancy in the country. One of the reasons for the slow progress is lack of consumer awareness especially in the rural areas. The National Action Plan taken up by the Department of Consumer Affairs envisages a two-pronged approach, that is creating consumer awareness and strengthening grievance readressal machinery for consumer protection. A new service, National Consumer Helpline, was launched during 2004–05. From the expenditure level of Rs 9.12 crore in the first three years of the Tenth Five Year Plan, the allocation was stepped up significantly to Rs 67.49 crore and Rs 69.40 crore during 2005–06 and 2006–07, respectively. The multimedia campaign covered topics such as maximum retail price (MRP), gold hallmarking, ISI mark on products, expiry dates, and consumer rights. About Rs 70.00 crore was utilized on consumer awareness '*Jago Grahak Jago*' campaign during each of the years 2005–06 and 2006–07. An evaluation of the scheme carried out by the Indian Institute of Mass Communication (IIMC) in August 2006 has shown that the percentage of recall of the campaign among the consumers was 65% in the sample states.

7.1.123 The industry programmes run by the Department of Atomic Energy (DAE) provide inputs such as structural materials, fuels, heavy water, and electronics and instrumentation to the nuclear power plants. The Department is also engaged in activities pertaining to fuel reprocessing, waste management, and thermal and fast reactor technology. The industry programmes were allocated Rs 818.93 crore but the expenditure was higher at Rs 1280.88 crore. Some of the developments during the Tenth Plan were the following: augmentation of existing zirconium sponge plant and capacity expansion of zirconium oxide plant, modification of heavy water plant, tube bundle for condensers, heavy water clean up facility, boron exchange distillation facility, advanced vetrification system, large capacity spent fuel storage facilities, fabrication of fuel and structural materials, and Instrumentation packages for nuclear power plants.

7.1.124 The ship-building sector of the Department of Shipping was allocated Rs 1047.86 crore against which the actual expenditure has been Rs 282.45 crore. The shortfall in expenditure was on account of the fact that the expansion plans of Cochin Shipyard Ltd and the revival plan of Hindustan Shipyard Ltd (HSL) did not materialize.

7.1.125 The outlay of the Ministry of Steel was revised from Rs 11044 crore to Rs 8477 crore at MTA stage, mainly financed by Internal and Extra Budgetary Resources (IEBR), except for Rs 65 crore. The actual expenditure on steel sector schemes was Rs 4119 crore out of total expenditure of Rs 4825 crore in the Industry and Minerals (I&M) sector. Implementation of the modernization and expansion programmes of Steel Authority of India Ltd (SAIL) was sluggish in the first three years of the plan. The expansion plan of Rashtriya Ispat Nigam Ltd (RINL) from 3.5 million per year hot metal capacity to 6.3 million per year hot metal capacity, which was approved in 2005, also remained behind schedule.

7.1.126 The outlay of the Department of Heavy Industry was increased in the later half of the Tenth Five Year Plan with the new emphasis in the government policy on restructuring of sick PSEs. The overall expenditure was Rs 2606 crore. The expenditure on 'support to existing public sector undertakings' and 'restructuring of CPSEs' was increased considerably. The progress of expenditure in respect of the NATRIP scheme was satisfactory. Revival and restructuring of the Nagaland Pulp and Paper Company Ltd at Tuli, Nagaland and expansion of the Hindustan Newsprint Ltd, Kerala were taken up during the Tenth Plan in addition to restructuring of 14 sick CPSEs based on the recommendation of BRPSE.

7.1.127 The DBT took up a new scheme for setting up of biotechnology incubators, pilot-level facilities, and biotech parks. Subsequently, a new scheme under the PPP mode to promote Small Business Innovation Research Initiative (SBIRI) towards development of new technologies/products through industry academia interaction was also started. Under the Biotech Park Scheme two projects were taken up for implementation: setting up of the Biotechnology Park at Lucknow and establishment of Biotechnology Incubators Centre at Shapoorji Pallonji Biotech Park at Hyderabad. Financial support for another four incubation centres was also provided. The actual implementation of SIBRI scheme commenced in 2005–06 and some research projects have been supported. The schemes were initially allocated Rs 30 crore in the Tenth Five Year Plan but the expenditure was higher at Rs 102 crore.

Eleventh Plan Outlays and Major Schemes

7.1.128 Eleventh Plan outlays of various ministries/departments concerning the industry sector are indicated in Annexure 7.1.19. The scheme-wise break-up is indicated in the Appendix, Volume III. Major ongoing and new schemes are as follows.

Ongoing Schemes

- TUFS
- SITP
- TMC
- Second phase of NATRIP
- Modernization and strengthening of Intellectual Property offices
- IIUS
- Setting up of Biotechnology Incubators, Biotech parks and SBIRI
- Industry segment of DAE
- Strengthening, reviving, and restructuring of PSEs
- North East Industrial and Investment Promotion Policy, and package for special category states

New Schemes

- ILDP (modified and increased coverage)
- Scheme for enhancement of competitiveness in capital goods sector
- Setting up of National Institute of Pharmaceutical Education and Research (NIPER) like institutes for pharmaceutical sector
- Schedule M compliance by SMEs in Drugs and Pharmaceuticals
- Capital Subsidy for conversion of existing Furnace Oil (FO)/Low Sulphur Heavy Stock based fertilizer plants to NG/liquefied natural gas (LNG)
- DMIC
- R&D in ship-building sector

Sectoral Profiles

The Automotive Industry

7.1.129 If there is one manufacturing industry in India that has moved from strength to strength after the economic reforms of 1991–92, it is the automotive sector. It has grown at the spectacular rate of 17% over the last few years, with an investment of Rs 50000 crore in 2005–06 (and another Rs 30000 crore in the pipeline), attaining a turnover of Rs 165000 crore. In 2005–06, the passenger car segment crossed the one million mark.

7.1.130 At present the direct employment in the industry is 2 lakh in vehicle manufacturing and 2.8 lakh in component companies. With the additional investment and increase in production, it is expected that the direct employment in the sector will double in the next five years. In 2005–06, the component manufacturers added investment worth US$ 1 billion (Rs 4500 crore) in new capacity. In 2006–07, the automobile manufacturers have announced investment of Rs 60380 crore and the component manufacturers have announced investment of Rs 2523 crore so far.

Production and Exports of Vehicles

7.1.131 The production of various categories of automobiles in the Tenth Five Year Plan period grew at a CAGR of 16% crossing the 10 million mark in 2006–07, as shown in the Annexure 7.1.7.

7.1.132 The industry proved its international competitiveness in all categories of vehicles by achieving a CAGR of 35% in exports during the Tenth Five Year Plan period (Annexure 7.1.7). The segments that have shown particular buoyancy are passenger vehicles, two wheelers, and three wheelers, which have risen four-fold, six-fold, and ten-fold, respectively, during the Tenth Five Year Plan period as compared to the

last year of the Ninth Five Year Plan. About 2 lakh passenger vehicles and 6 lakh two wheelers were exported in 2006–07.

AUTO COMPONENTS

7.1.133 The performance of the Indian auto components industry has been even more impressive. Around 500 manufacturers in the organized sector and more than 10000 in the small-scale sector had a turnover of about Rs 54000 crore (US$ 12 billion) in 2005–06. The auto components industry now has holistic capability, manufacturing the entire range of components. The share of different segments in the industry are engine parts (31%), transmission parts (19%), suspension and braking parts (12%), electrical parts (9%), body and chassis parts (12%), equipment (10%), and others (7%). This has enabled the wholly Indian producers to achieve full indigenization in popular makes such as Tata Indica, Tata Indigo, Mahindra Scorpio, Bajaj Pulsar, TVS Victor, etc. The fact that nine manufacturers are Deming Prize winners, four are Japan Institute of Plant Maintenance award winners, and one is a Japan Quality Medal winner bear testimony to quality of the auto components produced in India.

7.1.134 One of the biggest auto ancillary industries in the country is the tyre industry. The total installed capacity is 850 lakh units against which 660 lakh units were produced and 620 lakh units were consumed within the country in 2005–06. All types of tyres barring some specialized ones such as aircraft tyres and snow tyres are now manufactured in the country.

7.1.135 India's exports of auto components have been growing even faster than of complete vehicles. During the last three years of the Tenth Five Year Plan period exports have grown by 40%, 50%, and 33%, respectively, and annual exports crossed Rs 11000 crore in 2006–07. A quantum forward leap in the quality of Indian auto components has brought about a major change in the customer base in global markets. In the 1990s, more than 80% of the exports were to the international after-market. In the year 2005–06, more than 70% of the exports were to the global original equipment manufacturers (OEMs) and Tier 1 companies.

PROJECTION OF GROWTH IN PRODUCTION AND EXPORTS OF VEHICLES AND COMPONENTS

7.1.136 The inherent strength of the Indian automotive industry has given it the confidence to make a bold projection of growth in production and exports of vehicles during the Eleventh Five Year Plan. Table 7.1.9 gives the projections for the last year of the Eleventh Five Year Plan as compared to the achievement in the last year of the Tenth Five Year Plan.

TABLE 7.1.9
Projection of Growth in Vehicle Production and Exports in the Eleventh Five Year Plan

(In Thousand)

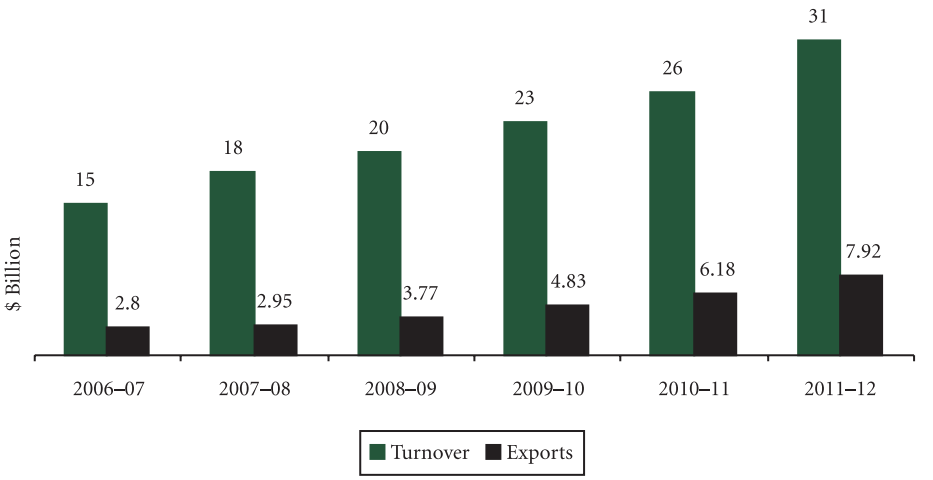
Category	Production		Export	
	2006–07	2011–12	2006–07	2011–12
Passenger Vehicles	1238	1850	192	462
Multi-utility Vehicles (MUVs)	306	321	6	12
Commercial Vehicles (CVs)	520	604	50	71
Two wheelers	8444	18934	619	1634
Three wheelers	556	903	144	229
Total	11065	22612	1011	2408

Source: Report of the Eleventh Five Year Plan Working Group on Automotive Industry.

7.1.137 The projections of auto component exports are even more ambitious. The projection made by the Eleventh Five Year Plan Working Group on Automotive Industry is given in Figure 7.1.5.

CHALLENGES

7.1.138 Improvement of infrastructure to lower logistical cost is the most critical requirement of the auto and auto components industry. The major clusters of the auto industry are in and around Gurgaon and Manesar in the north, Pune in the west, Chennai and Bangalore in the south, Jamshedpur and Kolkata in the east, and Indore in central India. However, industry depends upon movement of large volumes of raw materials and finished products by surface transport to and from every part of the country. Speedy transport of goods can contribute considerably to increasing its competitiveness. At present transport of auto components from Ludhiana to assembly plants in Kolkata takes as many as five days, thereby increasing



Source: Working Group on Automotive Industry for Eleventh Five Year Plan.

FIGURE 7.1.5: Auto Components—Projection of Turnover and Exports

the working capital requirement and making the adoption of just-in-time manufacturing impossible.

7.1.139 Since the industry will become increasingly export-oriented, the port infrastructure is also crucial for its development. Chennai and Mumbai ports, which handle the bulk of the exports of vehicles, lack space for parking and repair of vehicles damaged in transit. The longer turnaround time and poor port connectivity are also impediments that need to be addressed.

7.1.140 Adequate and supply of quality power is another infrastructure requirement. It is estimated that the industry will need an incremental supply of 12000 MW of power during the Eleventh Five Year Plan period.

7.1.141 Harmonization of emission norms as per Economic Commission for Europe (ECE) guidelines, measures to increase road safety, computerization and interconnection of Regional Transport Authorities (RTOs) to enable recall of vehicle in case of defects, mandatory inspection and certification of vehicles in use are other suggestions that have been made for the benefit of the vehicle users as well as the industry.

7.1.142 The industry needs to strive continuously for innovation and upgradation for increasing its productivity, and for this the industry has to carry out R&D activities. The government encourages research by giving weighted reduction in corporate tax for expenditure incurred on R&D, but the provision is renewed for short periods, discouraging long-term commitment to R&D. In addition to the fiscal benefits, the government's assistance is needed for setting up world-class automotive testing and R&D infrastructure.

STRATEGIES

7.1.143 The substantial programme for improvement of transport infrastructure and power being undertaken during the Eleventh Five Year Plan and described elsewhere in this document will go a long way toward alleviating the problems faced by the automotive industry. Of special relevance to the automotive industry will be the Dedicated Freight Corridor (DFC) of the railways, the expressways, and the port modernization programme. With the expected increase in exports of completed vehicles, it is necessary to consider dedicating existing or new berths for export of vehicles, at Mumbai, Chennai, and Kolkata, with provision for ample parking space.

7.1.144 An ambitious NATRIP has already been commenced in the Tenth Five Year Plan, for full-fledged testing and homologation centres in Manesar and Chennai, upgradation of existing testing and homologation centre at Pune and Ahmednagar, world-class testing tracks at Nagpur, facilities for testing of tractors

and off-road vehicles at Rae Bareilly, and hill area driving training centre at Silchar. Substantial work remains to be done to complete the initiative.

7.1.145 Concessions in corporate taxes for R&D expenditure must be made a permanent feature of our corporate tax laws.

7.1.146 A National Road Safety Board needs to be established at an early date as recommended by the Sunder Committee set up by the Ministry of Roads, Transport, and Highways. Mandatory inspection and certification of in-use vehicles is also a pre-requisite for improving road safety. Computerization of RTOs and their interconnection is also a desirable course of action from the point of view of effective regulation of transport services and also for facilitating recall if a manufacturing defect is detected.

7.1.147 It is necessary for the industry to achieve international safety and pollution standards by 2015 by aligning the domestic standards with the ECE regulations.

7.1.148 In order to meet the growing scarcity of trained human resources there is need to consider the setting up of a National Level Automotive Institute for running training courses in the automobile sector and formulating courses and modules for training in the automobile sector to be imparted by various Industrial Training Institutes (ITIs) and Automotive Training Institutes (ATIs). It is also necessary to create centres of automotive manufacturing excellence in four IITs and open an auto design centre at NID Ahmedabad. The OEMs and Tier 1 component manufacturers could be encouraged to adopt ITIs and ATIs.

7.1.149 Encouragement through suitable fiscal concessions should be provided for manufacture and assembly of fuel-efficient and hybrid vehicles and for use of alternative fuels for promoting energy conservation and environmental protection.

7.1.150 The main ongoing Plan scheme is setting-up of NATRIP. In the Eleventh Plan an outlay of Rs 1407 crore has been made to complete the second phase of the project.

Capital Goods and Engineering Industry

7.1.151 The Indian engineering industry has emerged as a dynamic sector in the country's industrial economy and has made the country self-reliant in key areas. The capital goods value addition contributes about 9%–12% to the total manufacturing. The annual production of the capital goods industry stood at Rs 50000 crore as of 2003–04. The capital investments made in this sector have registered a healthy CAGR of close to 10% during the period from 1995 to 2005, the investment picking up from 2001–02.

7.1.152 The five major sectors in the capital goods industry, viz., electrical machinery, process plant equipment, mining and construction machinery, machine tools, and textile machinery contribute nearly 57% of the total sector. The production, export, and import in these five sectors are presented in Annexure 7.1.8. Production of the five segments grew at rates ranging between 12% and 32%. Exports of machine tools, mining and construction machinery, and process plant equipment grew impressively and export of textile machinery grew modestly. Exports of electrical machinery fell during the Tenth Five Year Plan.

MACHINE TOOLS SECTOR

7.1.153 The industry constitutes 450 manufacturing units of which nearly 33% are in the organized sector. Top 10 companies in the sector contribute to almost 73% of the total production in the sector. Since 2002, the industry has shown a healthy growth and as in 2006, production in the sector has been growing at 12% and export at 17%. The industry's turnover in 2006–07 was Rs 2900 crore and it is estimated that the industry's turnover would be Rs 6000 crore by 2011–12.

7.1.154 During the Tenth Plan, the support measures by the government were in the form of machine tool cluster under IIUS Scheme, UNIDO-sponsored Bangalore Machine Tool Cluster and support for infrastructure and technology development to CMTI, Bangalore.

TEXTILE MACHINERY

7.1.155 The textile engineering industry currently has an annual installed capacity to the tune of Rs 3800 crore

per annum and the capacity utilization has gone up from 55% to 67% during 2005–06 over its preceding year. The size of the industry is likely to grow up to Rs 10000 crore by 2010. The industry is unable to cope with the demand of domestic textile and clothing units and at present it is estimated that 80% of the requirement is being imported. The liberal policy of import of second-hand textile machinery promoted in the sector has affected the prospect of fresh investment in the sector.

INDIAN HEAVY ELECTRICAL INDUSTRY

7.1.156 The Indian heavy electrical industry has registered a growth of almost 20% during 2004–05 over its preceding year. The fortune of the industry is closely linked to the development of power sector in the country. A capacity addition of 78000 MW is planned in the Eleventh Five Year Plan. There is a substantial order backlog in the industry that is to be completed over a span of two years. Capacity addition in the country, particularly for the manufacture of boilers, has become imperative. The sector is experiencing difficulties in technology transfer since foreign companies can now directly participate in the infrastructure projects. The level of R&D and technology innovation within the country is low by international standards.

MINING AND CONSTRUCTION EQUIPMENT SECTOR

7.1.157 The mining and construction equipment industry is dominated by a few large manufacturers in each product segment. Bharat Earth Movers Limited supplies to nearly half of the total market. The mining and construction equipment sector registered a healthy growth in its output and exports over the last two years. The domestic demand has increased from a level of Rs 6300 crore in 2004–05 to Rs 8400 crore in 2006–07.

PROCESS PLANT EQUIPMENT INDUSTRY

7.1.158 The process plant machinery and componenet industry in India is a very heterogeneous industry with a turnover of Rs 10000 crore per annum as of 2004–05. The growth projection for 2005–06 manufacturing total equipment in the process industry was Rs 6000 crore, a jump of 15% on an average. Owing to the fragmented nature of the industry and the small size of the players, most of them have not implemented any of the latest soft technologies.

CHALLENGES

7.1.159 The Indian Capital Goods Industry shares with other industries the major hindrances to growth in the country, which are low scale of operation, technological dependence, high input costs (raw materials, power, fuel, and high rates of interest on term loan and working capital), lack of world-class infrastructure, and stringent labour laws.

7.1.160 Some of the problems specific to the sector are purchase preference to CPSEs and unimpeded imports of second-hand machinery.

STRATEGIES

7.1.161 To encourage investment, assistance would need to be provided for setting up of sector-specific parks in machine tools, textiles machinery, and heavy electricals. Apart from general infrastructure, the parks could also have CFCs such as testing laboratories and R&D centres. But the process would have to be demand driven and the initiative would have to come from the industry.

7.1.162 On the same pattern as sector-specific parks, CFCs for existing clusters could be set up with facilities for testing, R&D, heat treatment, etc., on the model of the IIUS scheme of the DIPP.

7.1.163 To bring some level playing between private sector and CPSEs, the purchase preference policy for CPSEs would need to be discontinued.

7.1.164 The policy for import of second-hand capital goods in textiles and other areas should be reviewed and government assistance by way of interest subsidy on bank finance should not be provided for imports of such capital goods.

7.1.165 For attracting investors from abroad who have the necessary technology in textile machinery, it is necessary to mount a campaign. It is also necessary to induce foreign companies manufacturing electrical generation equipment to set up manufacturing facilities in the country by introducing an offset

clause in the procurement of generation units for PSUs.

Cement

7.1.166 Although India is the second largest cement producer in the world, it is way behind China, where the capacity is more than five times larger. The industry provides direct employment to 70000 people and has the capability to create huge indirect employment downstream. It has a high rate of excise duty and accounts for 5% of total excise collection.

CAPACITY, PRODUCTION, AND EXPORTS OF CEMENT

7.1.167 During the Tenth Plan, cement production grew at a healthy CAGR of 8.67% while the installed capacity showed modest CAGR of 3.69%. Exports too showed an upward trend. The growth in capacity, production, and export are given in Table 7.1.10.

TABLE 7.1.10
Capacity, Production, and Export of Cement

(Million mt)

Year	Capacity	Production	Exports
2002–03	151.17	116.35	6.92
2003–04	157.74	123.50	9.00
2004–05	165.39	133.57	10.06
2005–06	171.34	147.81	9.19
2006–07	174.99#	162.00*	10.00
CAGR%	3.69	8.67	14.24

Note: #Capacity: As in June 2006; *Estimated.
Source: Report of the Working Group on Cement Industry for the Eleventh Five Year Plan.

7.1.168 The industry has been modernizing and some units can now boast of having the state-of-the-art technology plants with energy consumption comparable with the best in the world. Till the late 1970s, a major share of production relied on the inefficient wet process technology. By 2006, 96% of the production had shifted to the dry process. The average consumption of energy in domestic industry hovers around 725 kcal per kg of clinker (thermal energy) and 82 kWh per tonne of cement (electrical energy). The best thermal and electrical energy consumption is as low as 667 kcal per kg of clinker and 68 kWh per mt of cement, which are comparable to the best global figures of 650 kcal per kg of clinker and 65 kWh per mt of cement.

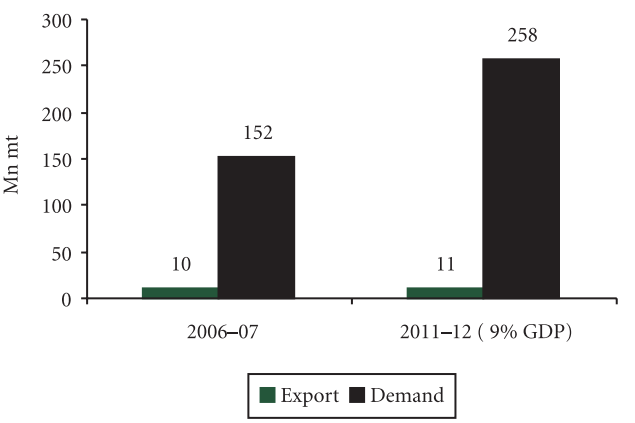
DEMAND FORECAST AND INVESTMENT REQUIREMENT FOR THE ELEVENTH PLAN

7.1.169 Cement consumption has generally grown at 2%–3% higher than growth of GDP. Keeping the past trends in view and taking into consideration the renewed emphasis on infrastructure, the cement industry can be expected to grow at about 11.5% corresponding to the GDP growth of 9%. The demand projections in 2011–12 are given in Figure 7.1.6.

7.1.170 Realization of capacity projection of 298 million tonnes would imply a capacity addition of 118 million mt during the Eleventh Plan period. Of the total capacity addition required for the Eleventh Plan, 86 million mt would come from new greenfield units requiring an investment of Rs 34400 crore and 32 million tonnes through brown field expansions/de-bottlenecking requiring investment of Rs 6400 crore. Thus the total investment requirement during the Eleventh Plan works out to Rs 52400 crore together with Rs 1100 crore and Rs 500 crore required for conversion of existing wet process plants to dry process technology and setting up of coal washeries.

ISSUES AND CHALLENGES

7.1.171 Achievement of growth and targets for the cement industry is crucially dependent on various inputs such as limestone, coal, power, and last but not the least, on transportation of limestone. Coal



Source: Report of the Working Group on Cement Industry for the Eleventh Five Year Plan.

FIGURE 7.1.6: Cement—Export, Project Demand and Capacity needed by 2011–12

continues to be the main fuel for the cement industry and will remain so in the near future. At present, 60% of coal requirement of the cement industry is met through linkages and fuel supply agreements, while the remaining requirement is met from open-market purchases, import, and use of petroleum coke. With the capacity addition projected for the Eleventh Plan, the annual requirement of coal would substantially go up from the current level of 28.68 million tonnes to 57.97 million tonnes by the end of the Eleventh Plan. Side-by-side depletion of higher quality of coal reserves and increasing open cast mine would call for increasing beneficiation of coal in the regional washeries.

7.1.172 The production of cement is a continuous process requiring uninterrupted power supply. Since the availability and quality of grid power supply continue to be a problem, the use of captive power has been increasing. Most of the cement units have installed captive power generation capacities to the extent of 60% to 100% of their requirement. The captive power generation capacity of cement industry is estimated to be 1825 MW at present, of which 61% is based on diesel and the rest 39% on coal. With growing uncertainties of grid power availability, it is estimated that 2000 MW captive power would be required during Eleventh Plan.

7.1.173 Cement is a low-value and high-volume commodity mainly concentrated near limestone deposits available in a few States. The main input coal is also available in a few States. In view of this, long leads of movement both for inputs and for outputs are required and the railways remain the only economical mode for such transportation. Against the envisaged level of 60% movement of cement production by rail on macro level, the current share of dispatches through rail accounts for 39%–45% after continuous decline during the past decade. With the intended capacity addition in the Eleventh Plan, requirement of rail facilities for movement of cement and clinker as well as other inputs such as coal, granulated slag, and fly ash would increase substantially.

7.1.174 The availability of cement grade limestone is essential for making technological and financial decisions of the entrepreneurs for capacity addition projected for the Eleventh Plan. The gross reserves of cement grade limestone stood at 97430 million tonnes as on 31 March 2006 as under.

7.1.175 Out of 97430 million tonnes of gross reserves as on 31 March 2006, proven reserves are only 22931 million tonnes. Since 50% of the proven reserves are located in inaccessible or ecologically sensitive areas, these would suffice only for the lifecycle of cement plant that would be existing at the end of the Eleventh Plan period.

7.1.176 Modernization of the construction industry is heavily dependent on the availability of cement in bulk and ready-mix concrete (RMC) usage. However, bulk transportation of cement in our country accounts for only 5% as against the global average of 70%. Likewise use of RMC in construction activity is only 10% in India. RMC usage and bulk transportation of cement complement each other with inherent advantages of lower pilferage, higher consistency, and environment-friendly application. A major limiting factor in bulk handling of cement is the small number of bulk cement terminals in the country. There are only two rail bulk cement terminals and three port-based bulk cement terminals in the country.

7.1.177 Ordinary Portland Cement is currently used in the government/public sector for most of the construction activities. However, the performance requirement of most constructions could be met by the use of Portland Pozzolana Cement/slag cement, and in fact these types should be preferred as they conserve non-renewable resources.

STRATEGIES

7.1.178 Additions to capacity to the tune of 118 million mt projected for the Eleventh Plan would be critically dependent on the measures adopted to mitigate logistics-related issues. Substantial augmentation of railway capacity being envisaged in the Eleventh Five Year Plan will help in meeting the requirements of the cement industry. However, to facilitate long-term planning and to ensure that adequate handling and storage facilities and wagon capacity are created, the railways should set up a consultative process with the industry.

7.1.179 Bulk cement transportation in specialized tankers, viz., railway wagons, trucks, or ships provide business opportunities to railways, truck, and cargo operators. Setting up bulk cement terminals would help in attracting huge investments. Wherever possible the railways could provide land on long-term lease for the purpose.

7.1.180 Concerted efforts would be required to identify new commercially exploitable limestone deposits. Joint exploration should be intensified by various State departments of mines and geology in association with the Indian Bureau of Mines (IBM), MECL, etc., for exploring and identification of new limestone deposit.

7.1.181 With a view to promoting the use of PPC and slag cement, construction codes of the Central and State Governments need to be appropriately modified to allow their use. Furthermore, in addition to standards for slag and fly ash based cement, Bureau of Industrial Standards should work for setting standards of cement using more than one waste material.

7.1.182 Installation of greenfield mini-cement plants should not be encouraged except in deficient far-flung areas, that is North Eastern States, J&K, etc. The ceiling on the capacity of a mini-cement plant should be removed and they should be set free to use the most economically viable technology.

Chemical Industry

7.1.183 The chemical industry is an important constituent of the Indian economy with an estimated turnover at around US$ 35 billion, constituting 1.5% of the global chemical industry estimated at US$ 2400 billion. The total investment in the sector is nearly US$ 60 billion and the employment is about one million. It accounts for 13%–14% of total exports and 8%–9% of total imports of the country. Gujarat dominates with 51% of the total share of major chemicals produced in the country. Various sub-sectors such as chloralkali, inorganic chemicals, organic chemicals, dyestuffs and dye intermediates, and agro-chemicals grew at varying rates during the Tenth Five Year Plan, with inorganic chemicals recording the highest CAGR at 10% and agro-chemicals the lowest CAGR at 0.7%. The chemicals industry as a whole grew at an average of 4.7% during the Tenth Five Year Plan. The industry expectation is that the sector may grow in the range of 5%–8% during the Eleventh Plan (Annexure 7.1.9).

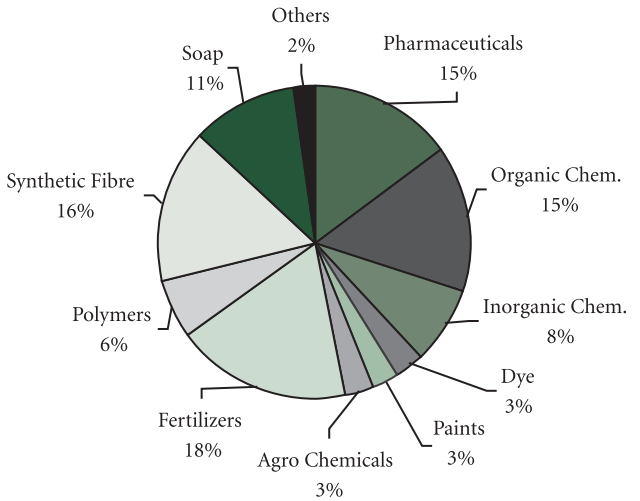
7.1.184 Increased competition resulting from globalization is driving the chemical industry towards consolidation, cost reduction, location of manufacturing bases close to raw materials, cheaper energy sources, lower tax regimes, increased use of information technology (IT), and intensification of R&D activities. At the same time the industry is responding to the increased environment consciousness worldwide. Consolidation has become imperative as the industry seeks economies of scale in manufacturing, logistics, and R&D. Cost reduction is being aggressively attempted through improved operating norms and financial restructuring. Enhanced worldwide concern for the protection of the environment has been forcing the industry to modernize and innovate.

7.1.185 Over the last decade, the Indian chemical industry has evolved from being a basic chemical producer to becoming an innovative industry. With increasing investments in R&D, the industry is registering significant growth in the knowledge sector comprising specialty chemicals, fine chemicals, and pharmaceuticals. Broadly, the share of basic, knowledge, and specialty chemicals is 57%, 18%, and 25%, respectively. Share of different segments of Chemical Industry in India is shown in Figure 7.1.7.

CHALLENGES

7.1.186 The major hindrances for a double-digit growth of the Indian chemical industry are sub-optimal size of plants, higher input costs (raw materials, power, fuel, etc.), lack of world-class infrastructure (roads, ports, and power supply), lack of competitiveness, and stringent labour laws. Without addressing these issues it would be very difficult for the industry to compete globally with rapidly declining duty differentials and appreciation in the value of rupee. Some of the sector-specific challenges are:

- While peak duties on non-agricultural products have been reduced from year to year, commensurate



Source: Report of the Task Force on Chemicals, 2002, Department of Chemicals and Petrochemicals.

FIGURE 7.1.7: Share (Value of Output) of Different Segments of Chemical Industry in India

reduction has not taken place on fuels, raw materials, building blocks, and feedstock, such as denatured ethyl alcohol, flourspar, carbon black feedstock, and molasses, that go into the production of various downstream value-added chemicals.

- Tank terminals for such chemicals as methanol, ammonia, benzene have not been provided at critical railway junctions.
- Although various laws have been enacted by the government relating to air and water pollution, environment protection in general, hazardous waste management, and product liability insurance, and the government is a signatory to international treaties, conventions, protocols, and codes of conduct, there is lack of awareness in the industry about these laws and international agreements.
- In 2007, the European Union had passed legislation on registration, evaluation, and authorization of chemicals (REACH). For compliance with the provisions of this legislation it would be necessary for exporters to submit test data from accredited laboratories following good laboratory practices (GLP). Until Indian laboratories are so accredited the exporters would have to get the test data generated in foreign laboratories, which will be costly.
- The levels of R&D expenditure by the chemical industry in India are very low by international standards.

STRATEGIES

7.1.187 Duty structure on building blocks for the chemical industries needs to be reviewed with a view to considering how far these can be brought on par with those prevailing in the other emerging economies.

7.1.188 Railways should consult with the chemicals industry with a view to determining the locations in which it would be in their mutual interest to establish infrastructure at ports to handle bulk chemicals and Petroleum, Oil, and Lubricants (POL) products.

7.1.189 Creation of R&D hubs with state-of-the-art testing needs to be initiated in the PPP mode in the line of NATRIP.

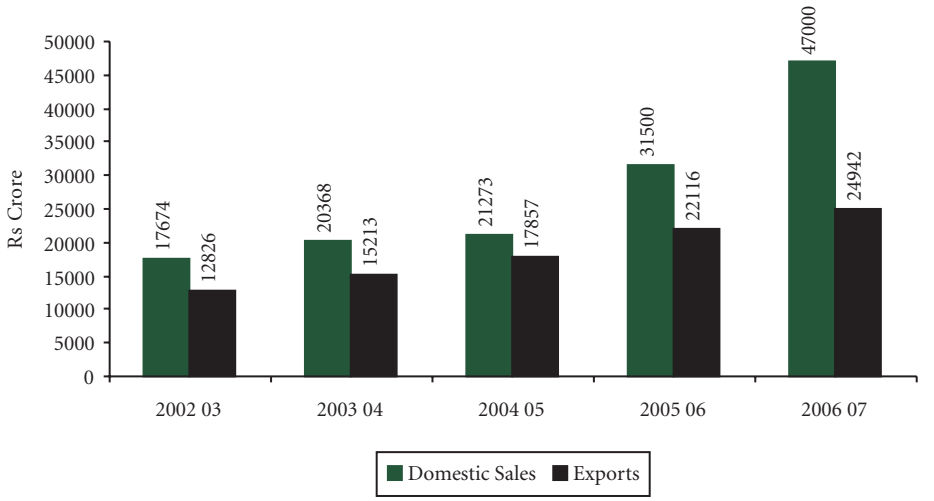
7.1.190 The government should consider upgrading the national laboratories such as the Indian Institute of Chemical Technology, Hyderabad and the Central Drug Research Institute, Lucknow to GLP standards so that they can obtain accreditation from the European Union (EU) bodies to enable them to generate test data for compliance with REACH.

7.1.191 The government should regularly hold workshops and seminars to disseminate knowledge relating to environmental laws and related international treaties and negotiations.

Drugs and Pharmaceuticals

OVERVIEW

7.1.192 The Indian pharmaceutical industry registered strong growth during the Ninth and Tenth Five Year Plan periods and has emerged as an area of strength especially in generics. The adoption of world-class patent laws for pharmaceutical products w.e.f. 1 January 2005, pursuant to obligations under the WTO Agreement, has not dampened the robust growth but has improved the overall IPR environment. The turnover of the industry was Rs 72000 crore during 2006–07, having risen by more than 12 times since 1990. India has become one of the leading global



Note: Estimated retail market in 2005–06 is based on ORG-IMS, for 2006–07 retail market includes institutional sales.

Sources: Export: actual—DGCI&S; estimate—Indian Pharmaceuticals Alliance; Domestic sales actual/estimated—ORG-IMS.

FIGURE 7.1.8: Domestic Sales and Exports of Pharmaceuticals (Rs Crore)

players, holding fourth position in terms of volume and thirteenth position in terms of value of production. Exports have also grown significantly to over Rs 24942 crore in 2006–07, accounting for as much as 34% of the turnover (Figure 7.1.8).

PRODUCTION AND EXPORTS OF PHARMACEUTICALS

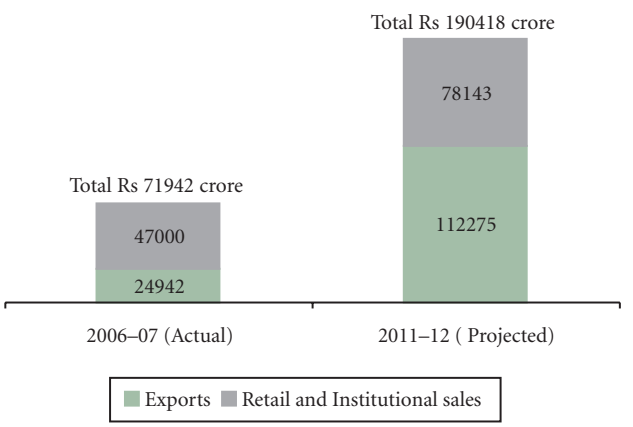
7.1.193 According to the report submitted in 2003 by the committee headed by R.A. Mashelkar, the number of drug manufacturing licenses issued was as follows: bulk drugs (1333), formulations (4534), large volume parenterals (134), and vaccines (56) making the total of 6057 manufacturing units. About 300 of these pharmaceutical units are large units.

7.1.194 India is one of the signatories of the World Health Organization (WHO) certification scheme on the quality of pharmaceutical products moving in international commerce. WHO GMP certificate is granted after inspection by the Central Drugs Standard Control Organization and the State Licensing Authorities. The GMP, which involve both the premises and the plants, are laid down in Schedule M of the Drugs and Cosmetics Rules 1945. The present Schedule 'M' provisions, which have become mandatory since 1 July 2005, conform to international standards and have a higher level of GMP that can lead to better quality of products destined for both domestic and international markets. Another important development is that the manufacturers and exporters are going beyond the WHO GMP and accepting regulatory approvals from national agencies of important foreign markets such as United States Food and Drug Administration (USFDA), UK Medicines and Healthcare Products Regulatory Agency, Australia Therapeutic Goods Administration, and South Africa Medicines Control Council. With about 100 USFDA approvals, India has the largest USFDA approved plants outside the US. As the US is the largest market for pharmaceuticals, accounting for half of the world's generics market, the focus of many Indian companies has remained on the US generics market, with India accounting for almost half of Drug Master File (DMF) filings and one-fourth of Abbreviated New Drug Application (ANDA) in the US in 2006. DMF is a document filed with the USFDA by a manufacturer of bulk drug (Active Pharmaceutical Ingredient, API) offering API in the US market. ANDA is a document filed by a manufacturer of generic formulations (finished dosage form). Regulatory approval of DMF takes two years and that of ANDA 30 months.

7.1.195 Production, domestic sales, and exports rose rapidly during the Tenth Five Year Plan period. During the Tenth Five Year Plan domestic sales grew generally at the rate of 11%–15% and exports at the

rate of 20%–26%. Industry estimates are that domestic sales will grow at the rate of 16% and exports at the rate of 30%–35% during the Eleventh Five Year Plan, so that by the terminal year exports will constitute close to 60% of the domestic production. The optimism about increase in the export growth rates is based on the fact that the sharp increase in DMF and ANDA filings by Indian manufacturers in the US during the years 2004–06 will begin showing its effect only from the year 2007–08, because of the time taken for regulatory approvals. Projections for 2011–12 are given shown in Figure 7.1.9.

7.1.196 India's rich human capital is its greatest asset for this knowledge-led industry. With US$ 60 billion worth of medicines coming off patents in the next few years, India is poised to emerge as one of the biggest player in the area of generics. The biopharmaceuticals market is also evolving very fast and India could emerge as the largest vaccine producer in the world. Other favourable factors are the growing dependence on generics across the world, wide acceptance of Indian generic products as safe and effective, aggressive thrust of Indian companies for building and acquiring sales, and marketing network abroad, entry of third and second tier Indian companies in the international market. The industry projection is that by the end of the Plan period the domestic sales will increase to Rs 78000 crore (about US$ 19.5 billion) and exports to Rs 112000 crore (US$ 28 billion).



Source: Report of the Working Group on Drugs and Pharmaceuticals for the Eleventh Five Year Plan (2007–12).

FIGURE 7.1.9: Pharmaceuticals—Exports, Retail Sale and Institutional Sale by 2011–12

RESEARCH AND DEVELOPMENT (R&D)

7.1.197 Internationally, pharmaceutical companies spend 15%–20% of their sales revenue on R&D, particularly for the discovery and development of new chemical entities. In the absence of the law for product patents before 2005, Indian pharmaceutical companies had traditionally confined their research activities to processes rather than to products. The law for grant of product patents on pharmaceutical products has now been enacted. But few Indian company has the resources to pursue the cutting edge research and take a new compound through all stages up to marketing. However, Indian companies are adopting one of the following options to lower costs and mitigate risks:

- Collaboration with large R&D based MNCs either for co-development or through the co-licensing route.
- Work on existing molecules with proven market by developing chiral molecules or race-mates currently marketed, or through new formulations of existing drugs with beneficial characteristics of increased efficacy and safety.
- Identify through clinical trials new indications for marketed drugs.
- Develop traditional medicines acceptable to global markets.

7.1.198 Apart from the Indian companies investing in R&D, MNCs are setting up research facilities in India or entering into tie-ups with Indian companies. Astra-Zeneca of the UK, Altan Pharma of Germany, Eisai of Japan, and Ethy Pharma of France have set up R&D centres and wholly owned sub-sidiaries and Eli Lily has entered into collaboration with Jubilant. More importantly, nine Indian companies (three in Hyderabad, two each in Mumbai and Chennai, and one each in Bangalore and Vadodra) have entered business to exploit the outsourcing opportunities in drug discovery services and their clients include MNCs. International drug discovery companies are also in the process of setting up their presence in India.

7.1.199 Cost advantage has also resulted in the country becoming a hub for clinical trials and MNCs such as Pfizer, Johnson & Johnson, GSK, Merck, Eli

Liliy, Novartis, and Novo Nordisk are using India as a base for running their Phase II and Phase III clinical trials. Quintiles, Icon Clinical, and Pharmaolam are some of the foreign clinical research organizations working in India.

7.1.200 The enactment by the Parliament of world-class IPR laws has created the environment conducive to the outsourcing of drug discovery and clinical research to India. Apart from this, the adoption of GLP and Good Clinical Practices by Indian companies has also induced the outsourcing of these services. By some estimates, the global R&D expenditure on pharmaceuticals may touch US$ 100 billion by 2011–12 and if outsourcing is done from Indian companies. India's share at the end of the current Plan could be in the range of US$ 1–3 billion. Estimate from industry puts the Indian Clinical Trial market at present at US$ 100 million, which may increase to US$ 300 million in two or three years.

PRODUCT PATENTS AND DRUG PRICES

7.1.201 At the time of India's decision to accept the WTO Agreement, there was a fear that the introduction of product patents in pharmaceuticals in the country would lead to the price of drugs becoming unaffordable for the poor people. This has not happened and is not likely to happen on account of several factors. First, all the drugs included in the list of essential drugs published by the Ministry of Health are already in the public domain. Second, most of the patented medicines introduced from time to time usually bring about some improvement over the previous generation and their price cannot be far out of line with that of the existing drugs. At any point of time there are more than half a dozen patent expired therapeutic equivalents available. Thus the price competition among drugs in the same therapeutic group will automatically keep the prices of new entities under control. The limited purchasing power of the Indian public will also act as a check on any dramatic rise in price. And ultimately recourse can be always had to the provisions on compulsory licensing and government use for non-voluntary licensing of patented drugs.

7.1.202 India has had price control on drugs for a long time but the span of control has been progressively reduced. If the promise shown by this dynamic industry is to be realized and the figures of production and export projected above are to be achieved, it would be important to maintain this trend even though the price control is consistent with WTO obligations. Concerns for making medicines available at affordable prices must be met through alternatives other than by means of control on the basis of cost plus pricing. The route to lower prices is greater competition and that will happen if new manufacturers find it attractive to enter the sector. Price control will diminish profits and turn entrepreneurs away from the sector and lower the competition. Furthermore, diminishing profits will limit the capacity of firms to invest in R&D, which is the soul of a vibrant pharmaceutical sector.

CHALLENGES

7.1.203 According to a survey of the small-scale pharmaceutical companies in 2001–02, as many as 327 units had been closed or had their licenses suspended or may have shifted to some other States and another 370 units were not in a position to comply with the GMP norms. Since the GMP norms have been made mandatory with effect from 1 July 2005, these units have been closed.

7.1.204 If the Indian pharmaceutical sector is to live up to the promise in both manufacturing and R&D services, the supply of science and pharmacy graduates with quality education has to be substantially raised. In order to double the exports, the pharmaceutical industry requires 1000 highly trained manpower every year for the next 10 years.

7.1.205 Since R&D in pharmaceuticals is a highly risky venture, there is need to incentivize it through tax concessions on a permanent basis.

INTERVENTIONS

7.1.206 In order to enable the small-scale sector to acquire GMP compliant facilities, it is necessary to provide financial assistance to them through interest subsidies.

7.1.207 The NIPER at Mohali has made a significant contribution in providing human resources of the right calibre needed by the industry, academia, and

regulatory bodies. To meet the future demand of the industry, it is necessary to replicate NIPER through five more institutes in different parts of the country.

7.1.208 The provision for weighted reduction of R&D expenses for corporate tax purposes should be made permanent after the current validity expires.

7.1.209 The main Eleventh Plan Scheme is setting-up of five new NIPER like institutes in the PPP mode. An allocation of Rs 514 crore has been made for these new institutes. The existing NIPER has been provided an allocation of Rs 164 crore for modernization and expansion. An allocation of Rs 340 crore has been made for a new scheme to support Schedule M compliance by SMEs in drugs and pharmaceutical sector by providing interest subsidy to these units in Eleventh Plan. A new scheme with an allocation of Rs 75 crore has been envisaged to assist the Pharma CPSEs to meet WHO pre-qualification.

Fertilizer Industry

7.1.210 India is the fourth largest producer of fertilizers in the world after China, the US, and Russia. It meets the bulk of its substantial needs for nitrogenous and phosphatic fertilizers from domestic production but potassic fertilizers' needs are met through imports. For the production of phosphatic fertilizers, the country relies on imports of raw materials.

7.1.211 During the Tenth Plan the increase in consumption outstripped the slow growth in production, with the result that in the later years of the Plan period, imports registered strong increases (Annexure 7.1.10).

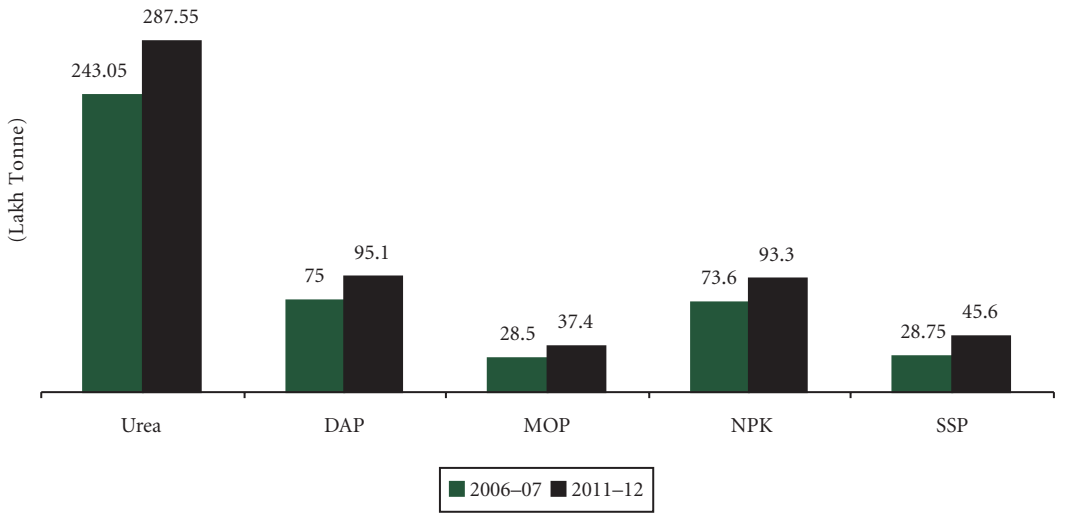
7.1.212 During the terminal year of the Ninth Five Year Plan (2001–02), the installed capacity of the domestic fertilizer industry was 120.58 lakh metric tonnes (LMT) of nitrogen and 53.87 LMT of P_2O_5 (phosphate) per annum. In the absence of fresh investment, the capacity of the fertilizer industry remained by and large stagnant during the Tenth Plan period. The actual domestic production of urea in 2005–06 was 200.98 LMT from 28 functional units and 13.25 LMT from the Joint Venture (JV) Oman India Fertilizer Company (OMIFCO) against the projected demand of 242.14 LMT per annum urea by the terminal year (2006–07). During the Tenth Five Year Plan various capacity additions such as Brahmaputra Valley Fertilizer Corporation Limited revamp project, OMIFCO materialized. Thal III expansion of Rashtriya Chemicals and Fertilizers Ltd (RCF) (11.55 LMT) and Krishak Bharati Co-operative Limited (KRIBHCO)-Hazira expansion Projects (10.56 LMT) could not be taken up due to lack of availability of natural gas/LNG.

7.1.213 There has been a significant growth in fertilizer consumption over the years. The per hectare consumption of NPK (nutrients) increased from less than 1 kg in 1951–52 to 106.7 kg in 2005–06. However, the consumption is still much lower than the levels achieved even in China and Pakistan. With a growth rate of 4.1 per annum on the estimated base level consumption of 220 LMT in 2006–07, the total nutrient consumption for 2011–12 is envisaged at 269 LMT. The demand forecasts for 'N', 'P', and 'K' are estimated at 163.10 LMT, 72.90 LMT, and 33 LMT, respectively, in the terminal year of the Eleventh Five Year Plan. This corresponds to a demand of 287.55 LMT for urea, 95.10 LMT for di-ammonium phosphate (DAP), 37.40 LMT for muriate of potash (MOP), 93.30 LMT for complex fertilizers, and 36.45 LMT for SSP (Figure 7.1.10).

7.1.214 The Working Group on Fertilizer for the Eleventh Plan has estimated that over and above the present installed capacity of 213.52 LMT of urea, a total of 128 LMT of additional urea capacity can come up through revamp of existing gas-based units; new Brownfield expansion of plants such as Indo Gulf, RCF, KRIBHCO, and Indian Farmers Fertilizer Co-operative Ltd (IFFCO); JV abroad on the basis of cheap gas/LNG and revival of seven FCI and HFC plants by joint venture or any other suitable model. Investment of Rs 36000 crore may be required to increase the capacity of urea by about 12 million mt by expanding domestic units and reviving sick ones.

CHALLENGES

7.1.215 The production of urea in the country is still saddled with the legacy of the era of import substitution policies, when pursuit of self-sufficiency led to the establishment of units based on inefficient feedstock/fuel such as naphtha and fuel oils. Since the



Source: Report of the Working Group on Fertilizers for the Eleventh Plan.

FIGURE 7.1.10: Demand of Fertilizer by 2011–12.

costs of production of these units were much higher than those of units based on natural gas, the GoI introduced the Retention Price Scheme (RPS). Each urea unit had a unique retention price depending upon the technology, feedstock used, capacity utilization, energy consumption, distance from the source of feedstock, etc., and the government paid to them the difference between the retention price and the MRP fixed by the government for sale of urea to farmers. As the RPS was cost plus in nature and encouraged gold plating, it was replaced by the New Pricing Scheme (NPS) on the recommendations of the Expenditure Reforms Commission in 2000, to be implemented in three stages: Stage I (1 April 2003 to 31 March 2004), Stage II (1 April 2004 to 31 March 2006), and Stage III. Under the NPS, the existing units have been divided into six groups on the basis of vintage and feedstock for determining the group-based concession. Stage III has commenced on 1 October 2006, with some policy changes to encourage additions to capacity. An important decision taken is that the non-natural-gas-based units would have three years to convert into NG/LNG units. But to make such conversion possible, issues have to be resolved relating to connectivity, supply, and price of gas.

7.1.216 While there is an increasing gap between supply and demand, a number of sick PSE units are lying closed. Most of these units have excellent infrastructure in the shape of residential colonies, coal and electricity tie-ups, railway sidings, etc., and revival of these units is a major issue that needs to be tackled.

7.1.217 Fertilizer use in India is inadequate, imbalanced, and skewed in favour of nitrogen, which has resulted in the emergence of nutrient deficiencies in Indian soils. As against the recommended N:P:K ratio of 4:2:1, the average for the country was 5.3:2.2:1 in 2005–06. However, the average conceals variation within the States and the actual ratio in Punjab in the same year was 20:6:1 and in Haryana 30:9:1. Balanced use of fertilizers will have implications for the demand for production and import of fertilizers.

7.1.218 India does not have sufficient quantities of known reserves of rock phosphates, and where available these are of low quality. As a result, India has to import large quantities of rock phosphates or phosphoric acid.

7.1.219 Large quantities of urea, DAP, rock phosphates, and MOP are being imported and the ports are not sufficiently equipped to deal with such large volumes of imports. Absence of railway wagons designed for the bulk movement of fertilizers is another impediment that the industry faces.

STRATEGIES

7.1.220 The most important element of future strategies relating to the urea industry is to establish a single producer price, and with this end in view, the GoI has already decided on a sunset for non-gas-based units. For implementation of the decision, the issues of connectivity, supply, and price has to be resolved. Pipeline connectivity already exists in respect of 22 units and it is likely to become available to others in the next few years. The units at Goa, Mangalore, and Tuticorin are expected to be serviced by the Reliance Gas Transportation Infrastructure Limited Chennai–Tuticorin pipeline and Chennai–Mangalore pipeline. Although in the past natural gas has been in short supply even for gas-based units, it is expected that the new discoveries will make it possible to supply gas not only to them but also to the newly converted units. As for price, a single producer price policy will necessitate that the government ensures gas supplies to all urea producers at the same price.

7.1.221 Although currently the import parity prices for urea are ruling high, the fact remains that natural gas is available in oil-rich countries at a much lower price than in India; an appropriate long-term policy should be announced so that more joint ventures are set up such as the one in Oman.

7.1.222 Effort should be made to revive those units that are revivable, including setting up of joint ventures with private sector participation.

7.1.223 Efficient use of fertilizers can be promoted by extension for adoption of better agronomic practices. However, the single most effective way for achieving efficient use of fertilizers will be to make subsidies for agriculture nutrient-based.

7.1.224 In order to ensure sufficient supplies of raw materials for phosphatic fertilizers, it is necessary to intensify exploration activities in India. Additionally, Indian companies must be encouraged to invest in mining and production of intermediates in resource-rich countries.

7.1.225 Port facilities need to be enhanced to enable efficient handling of imported fertilizers and fertilizer material. The railways should also introduce specially designed wagons for handling of fertilizers.

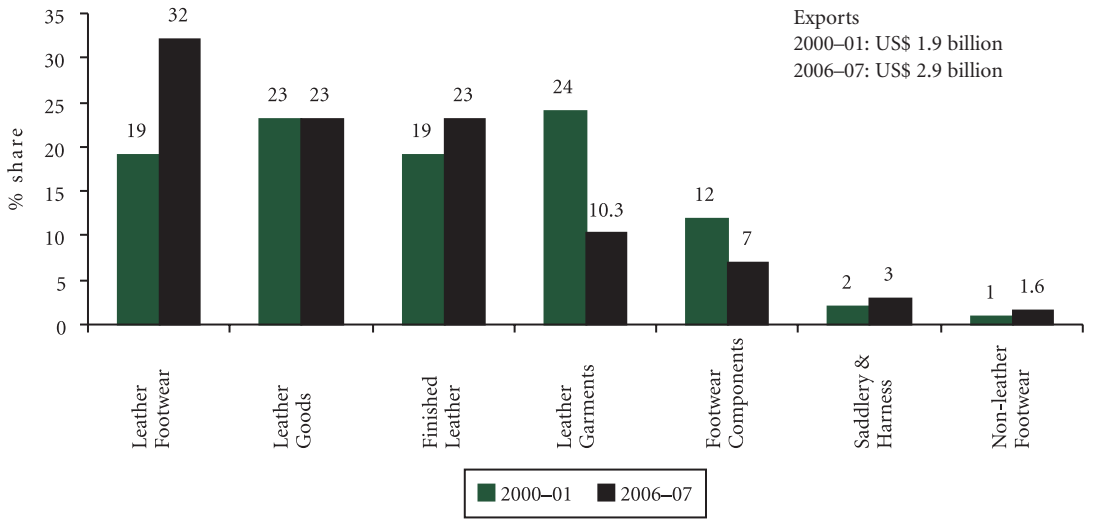
7.1.226 An outlay of Rs 20628 crore including a budgetary support of Rs 1492 crore has been made in the Eleventh Plan, mainly to support conversion of old fuel oil-based fertilizer units to gas-based ones and restructuring of the CPSEs.

Leather and Leather Goods

7.1.227 The importance of the Indian leather industry is derived from the fact that it is labour-intensive and contributes substantially to exports. Artisans, micro enterprises, and SSIs account for 60% to 65% of the total production. The manufacturing activity provides full-time employment to 1 million persons and activities connected with the recovery of hides from carcasses provides part-time employment to another 0.8 million. The turnover of the industry was Rs 25000 crore in 2004–05, out of which Rs 10800 crore (43%) was exported. Exports have risen in recent years from US$ 1.9 billion in 2000–01 to US$ 2.9 billion in 2006–07. The composition of exports of leather and leather goods has been moving increasingly toward leather footwear, but the share (32% in 2006–07) still falls far short of the 65% share of footwear in the world export of leather and leather products (Figure 7.1.11).

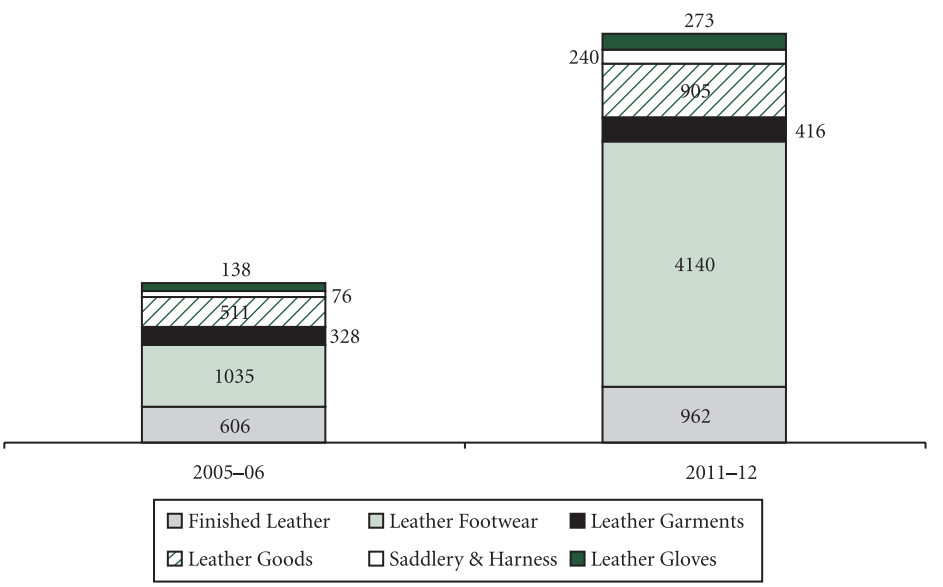
7.1.228 The Inter-Ministerial Group constituted to evolve a comprehensive strategy for the development of the leather sector has assessed that India has the potential to expand exports from the level of US$ 2.7 billion in 2005–06 to US$ 7 billion in 2011–12. The break-up of the projections is given in the Figure 7.1.12.

7.1.229 Footwear is the component accounting for the largest growth. In quantitative terms, the exports of footwear translate into 300 million pairs in the last year of the Eleventh Five Year Plan period against 92 million pairs in 2005–06. This would require the creation of capacity of 750000 pairs a day against the capacity of 250000 pairs a day in 2005–06. If non-leather footwear is added, the required capacity for exports alone will be 1 million pairs. Similarly the production of leather garments would need to grow from 24 million



Source: Council for Leather Exports, India.

FIGURE 7.1.11: Indian Leather Exports—Changing Structure



Source: Inter-Ministerial Committee on Enhancement of the Competitiveness of Leather Industry, 2008.

FIGURE 7.1.12: Projected Growth of India's Exports of Leather and Leather Products (in US$ Million)

pieces in 2005–06 to 72 million pieces in 2011–12, and of leather goods from 6 million pieces to 18 million pieces in the same period.

7.1.230 However, before the above potential can be realized a number of challenges would need to be addressed.

CHALLENGES

- The indigenous raw material base of the industry is deficient. As of now about 90% (1.8 billion sq ft) of leather is produced in the country from indigenous hides and skins. To achieve exports of US$ 7 billion, 4 billion sq ft will be needed in 2012.

- The tanneries in the country have low capacities and outdated technologies with a majority of tanneries still using manual systems. During the Tenth Five Year Plan, the scheme for IDLS under ILDP was launched for technology upgradation and modernization, but the funds could be utilized only to a small extent because of delay in the finalization of the scheme.
- Another problem faced by the existing tanning units (in Tamil Nadu) has been the imposition of rigorous environmental requirement (Zero Liquid Discharge) by the State Pollution Control Board under the directions of the Honourable High Court. While the large units have been able to make additional investment needed to comply with the requirement, the small-scale units do not have the financial strength to do so without the government assistance.
- There is acute shortage of skilled and semi-skilled workforce and it is estimated that if the full potential is to be realized 0.5 million workers would need to be trained.
- A large majority of the manufacturers produce small quantities and are unable to meet the large volume orders from the US, which accounts for a large share of world imports. Also much of the footwear production in India is of dress shoes for men, while there is increasing requirement for comfort shoes. Ladies shoes are also not being manufactured for exports. What is needed is to scale up the production and diversify the product mix.
- The competitiveness of Indian exporters of leather products suffers on account of bad roads, delays in Inland Container Depots, and the fact that a large part of Indian cargo from the eastern seaboard, where the production is concentrated, is transshipped at Colombo and Singapore. This is due mainly to the fact that the channels in the ports on the eastern coast lack the depth necessary to allow large ships to come to these ports.

STRATEGIES

7.1.231 In order to address the above challenges the following significant interventions are proposed.

7.1.232 For augmenting the raw material base, rearing of male buffalo calves would be encouraged as also scheme for modernization of slaughter launched under PPP. For the better utilization of the skins of fallen animals, a scheme will be launched in the Department of Animal Husbandry for establishing 50 carcass centres, 20 bone-crushing plants, and 5000 hide-flaying units.

7.1.233 In order to stimulate fresh investment in new tanning units as well as in leather products, it is proposed that at least 10 leather parks/complexes would be established on the pattern of the SITP scheme of the Ministry of Textiles.

7.1.234 The Tenth Five Year Plan schemes, Leather Tanning Complex at Nellore (which did not take off during the Plan period but in which the State Government has recently taken positive steps) and the Footwear Complex in Tamil Nadu (which has been substantially completed) need to be carried forward into the Eleventh Five Year Plan. It is also proposed to continue the Tenth Five Year Plan scheme for the IDLS but the expenditure would be limited to the extent that the allocations remained unutilized in the Tenth Five Year Plan.

7.1.235 The small and medium tanning units in Tamil Nadu and elsewhere would be assisted for making investment to enable them to comply with rigorous environment norms imposed by the Pollution Control Boards. The GoI will provide 60% assistance, the remaining amount coming from the State Government and the units themselves.

7.1.236 A large Human Resource Development Mission will be launched for onsite training of workers and artisans in the unorganized sector and also for entrepreneurship development. The Mission will also cover the development of skilled manpower by the existing institutions, which offer courses at the degree level. The Footwear Design and Development Institute (FDDI), Noida, will be provided with additional machinery, equipment, workshops, and laboratory facilities for running courses on design and technology with increased intake and a new branch of the FDDI will be set up at Fursatganj. Consideration will be given to setting up more branches of FDDI in other parts of the country with concentrations of leather manufacturing units.

7.1.237 In the Eleventh Plan an allocation of Rs 1300 crore has been made for the ILDP.

Paper Industry

OVERVIEW

7.1.238 Paper industry is one of the 35 high-priority industries in India and is presently growing at a rate of 6.3% per annum. The turnover is nearly Rs 17000 crore per annum and its contribution to the national exchequer is around Rs 2500 crore. The industry employs 0.3 million people directly and is estimated to employ 1 million people indirectly. The per capital consumption of paper in India is 7.2 kg, which is far lower than in other emerging economies, for example 45 kg in China, 15–20 kg in other East Asian countries, and much higher level that exists in the US and Europe. The consumption of paper is likely to increase manifold with the growth in the economy and the rise in literacy.

7.1.239 At the end of the Tenth Five Year Plan there were about 666 industrial units with the total installed capacity of 8.50 million mt for paper and paperboard. However, 98 units with a capacity of 1.1 million mt are closed due to environmental problems. The industry produces 5.80 million mt of paper and paperboard. It has made significant progress after independence with government support and fiscal incentives. The country is almost self-sufficient in most varieties of paper and paperboard, and imports are taking place only of certain specialty items such as coated paper, cheque paper, etc. However, the industry has failed to keep pace with the technological advances and is beset with major difficulties such as high production cost, pollution problems, and finished paper quality not conforming to international standards.

7.1.240 The Indian paper industry is highly fragmented and 458 mills are of capacities less than 60 tonnes per day (tpd), 48 are of capacities ranging from 60 tpd to 100 tpd, and 62 are of capacities above 100 tpd. A variety of fibrous raw materials, viz., bamboo, hardwoods, agricultural residues, and waste paper are being used for paper-making in the country.

7.1.241 From the raw material perspective, the industry can broadly be divided into three segments, namely, wood based, agro based, and recycled fibre based. The contribution of these towards production is 30%, 32%, and 38%, respectively. The industry lacks abundant raw material here in the country and increasing quantities of waste paper and wood pulp are being imported. The imports of waste paper increased from about 1.4 million mt in 2004–05 to about 1.8 million mt in 2005–06. During the same period, the import of wood pulp increased from 378432 mt to 472391 mt. The production, import, and export of paper and paperboard are given in Annexure 7.1.11. The production has shown a slow increase during the Tenth Five Year Plan.

NEWSPRINT INDUSTRY

7.1.242 The paper mills producing newsprint conforming to BIS and supplying to newspaper publishers are considered for inclusion in Schedule of Newsprint Control Order 2004, enabling them to avail exemption of the excise duty. There are at present 77 mills including 2 Central public sector units and 2 State public sector units which are manufacturing newsprint paper with a total installed capacity of 15.9 lakh mt. The domestic production was 9.1 lakh mt in the year 2005–06 and 10.3 lakh mt in 2006–07.

7.1.243 The production, import, and export of newsprint during the last four years are as given in Annexure 7.1.12.

ISSUES AND CHALLENGES

7.1.244 The paper industry uses wood, agri-residue, and waste paper as raw materials with all the three segments contributing equally to the production. The use of non-wood raw material and waste paper has increased over the years and accounted for about 70% of total production at the end of the Tenth Five Year Plan period. With the liberalization of trade, the domestic industry has been exposed to increasing competition, and both product quality and price have come under pressure. While production has been increasing gradually, growth of the industry is hamstrung by the non-availability of particularly forest-based raw material. From the angle of this important industry, it has

become imperative that there is a paradigm shift in the management of forest from a 'conservation-centred' to a 'production-centred' approach.

7.1.245 No major greenfield integrated pulp and paper mill has come up in a decade. Raw material shortage is undoubtedly a major factor contributing to the stagnation of production capacity. Low per capita consumption of paper in the country and rising literacy levels present opportunities for growth of this industry. Steps are required to improve competitiveness of the industry which should specifically focus on the problems of technological obsolescence and economic use of water and energy as well effluent treatment to mitigate environmental problems.

STRATEGIES

7.1.246 The foremost problem that needs to be addressed is increasing the raw material base of the industry. Vast opportunities exist on degraded forest land but the rights of local communities and the principle of JFM constitute an insurmountable obstacle in leasing out such land to paper mills. If these lands remain bereft of forests for prolonged periods, the issue would need to be revisited. In the meantime, wastelands should be considered for developing forests under appropriate PPP arrangements, with the participation of local communities. The State Governments also need to consider ways of stimulating agro-forestry.

7.1.247 A programme should be put in place for incentivizing the SMEs to adopt energy-reducing and less water-intensive technologies and to take adequate steps for effluent treatment.

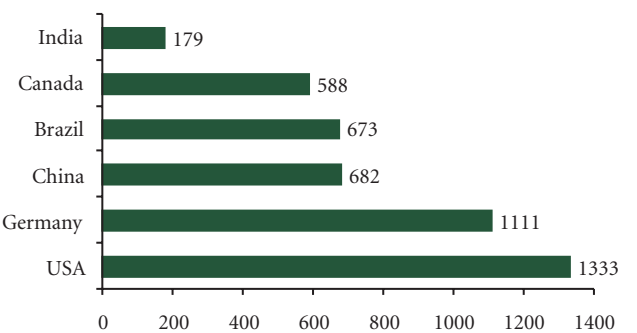
Petrochemical Industry

7.1.248 Internationally the petrochemical industry has been one of the drivers of industrial development, constituting 40% of the global chemical market. During 1950–90 countries West of Suez were dominating in the manufacture of petrochemicals but after that the global epicentre shifted to East of Suez, largely due to the availability of crude oil and natural gas in the Middle East and the growth of consumption centres in Asia, which has a large population base.

7.1.249 With 15 raw material producers and more than 50000 downstream processing units, the Indian petrochemical industry has a share of about 2.5% of the global petrochemicals production capacity. The Indian petrochemical industry consists of building blocks, commodity polymers, performance plastics, synthetic fibre, synthetic rubber, surfactants, and downstream plastic processing industry. Domestic demand growth for petrochemicals has slowed down during the Tenth Five Year Plan as compared to the previous Plan period. The production of commodity polymers and synthetic fibre which grew modestly during the Tenth Plan is presented in Annexure 7.1.13.

7.1.250 The downstream plastic processing sector is highly labour-intensive, currently providing employment to 3.3 million people but having the potential to generate 3.7 million new jobs by 2011–12. Domestic industry is extremely fragmented and operating with sub-optimal scale of operation, which is inhibiting its international competitiveness. This is mainly due to the government's past policy of reservation of various plastic products for exclusive manufacture in small-scale units and excise duty exemptions for them. The scale of operation in downstream plastic processing industry is sub-optimal in the country as can be seen from Figure 7.1.13.

7.1.251 Imports of plastic products from China and Thailand into India have increased rapidly in the recent years due to non-availability of quality plastic products in the country. Recognizing the economic



Source: Industry Association, Report of the Working Group on Petrochemicals Sector, Eleventh Five Year Plan.

FIGURE 7.1.13: Relative Scale of Operation of Plastic Processing Industry (unit size in tons per unit)

benefits and employment potential of the downstream sector, China had first developed the plastic processing sector and is the largest global exporter of plastic goods worth of US$ 18 billion compared to India's US$ 1 billion. After establishing globally competitive downstream processing industry, China started focusing on upstream cracker investments to increase their raw material and intermediate security.

7.1.252 India's competitiveness in the plastic processing industry is likely to improve in the future because in January 2007 and March 2007 the government has de-reserved 70 out of 84 items. Further the Micro, Small, and Medium Enterprises Act 2006 has raised the limit on investment in plant and machinery for SSIs from Rs 1 crore to Rs 5 crore.

7.1.253 According to the assessment of the Working Group on the Petrochemical Sector for the Eleventh Plan, the demand for polymers in the country has the potential to reach 12.5 million mt by the end of the Eleventh Five Year Plan growing at a CAGR of 18% necessitating commissioning of 5 additional crackers of 1 million mt average size with investments of US$ 8 billion and US$ 6 billion investments in the downstream plastic processing sector by 2011–12. The existing naphtha and gas cracker plants at Pata and Haldia are under expansion and new upcoming investments are in the Crackers at Panipat and Jamnagar and Assam with an investment of Rs 32000 crore.

CHALLENGES

7.1.254 The polymer industry has not grown because of stagnation in the processing industry on account of structural factors, viz., fragmentation of the industry on account of reservation of manufacturing for SSIs. Now that this problem has been resolved, modernization and achievement of scale economies need to be incentivized. The high level of 16% excise duties on polymers and articles of plastic dampens the demand. If the excise duty is lowered the demand will be stimulated.

7.1.255 At a time when growth in the processing industry is likely, it would be important to ensure that the industry adopts the highest quality standards. Although India is late in making its presence felt in the international markets in plastic products, high quality products can enable the industry to make up for the lost time.

7.1.256 To facilitate modernization, special effort will be needed for improvement of infrastructure in the vicinity of existing and proposed industrial units.

7.1.257 If expansion of the industry takes place at the scale that is envisaged, additional manpower requirement will be of 6 lakh including 1.4 lakh skilled workers. The training arrangements will have to be stepped up.

7.1.258 The use of plastic conserves natural reserves such as wood, metals, etc., for better productive use.Plastics can boost agricultural growth through plasticulture, better access to potable water, laying durable roads based on polymer-modified bitumen, and can save precious materials currently used in construction industry. The challenge is to persuade the users to use plastics in preference to more scarce alternatives derived from natural resources.

STRATEGIES

7.1.259 Consideration should be given to the reduction of excise duties on polymers and plastic products in order to stimulate demand.

7.1.260 The use of BIS specifications should be made mandatory for both domestically produced and imported articles of plastic for identified areas.

7.1.261 Since with enhanced demand both petrochemical producers and processing industry will be benefited, a joint effort of promoting polymer application in non-traditional areas should be initiated through their associations.

7.1.262 At present, CIPET is entrusted with providing the middle-level manpower requirement of the process industry. CIPET is creating technical manpower for the process industry in its 15 branches at different parts of the country and till date it has created 27000 professionals since its inception 40 years ago. In view of the projected demand of 1.4 lakh skilled

plastic professionals during the Eleventh Plan, the intake capacity of each centre may be enhanced.

7.1.263 PCPIRs should be established with dedicated plastic parks to stimulate new investment activity in the sector. Cluster development programmes such as in the IIUS of DIPP also need to be undertaken for the existing clusters.

7.1.264 The Eleventh Plan allocation for CIPET is Rs 136.50 crore including an Organization of the Petroleum Exporting Countries (OPEC) loan of Rs 55 crore. The Assam Gas Cracker Project has been approved by the government in 2006. The project is being implemented by a joint venture company, with Gas Authority of India Ltd (GAIL) having 70% equity participation. The joint venture company namely M/s Brahmaputra Cracker and Polymer Ltd (BCPL) was incorporated during January 2007 for implementation of this project.

Shipbuilding and Ship-repair Industry

SHIPBUILDING

Overview

7.1.265 The Indian shipbuilding is mainly centred around 27 shipyards comprising 8 public sector (6 yards under Central Government and 2 under State Governments) and 19 private sector shipyards. The shipyards between them have 20 dry docks and 40 slipways with an estimated capacity of 281200 Dead Weight Tonnage (DWT). A major share of this capacity is held by the 8 public sector yards and only Cochin Shipyard Limited (110000 DWT) and HSL (80000 DWT) have the required infrastructure and graving dock to build large vessels.

7.1.266 After a pronounced boom in the mid-1970s, the global shipbuilding industry experienced a prolonged depression for more than 20 years, which lasted until the end of the Tenth Five Year Plan. Since then another boom has set in and the outlook of the shipbuilding industry has been transformed. At the beginning of the Eleventh Five Year Plan, the order book position of Indian shipyards was very healthy. Private shipyards are severely limited by capacity and the size of ship they can build. However, five of them are in the process of expanding or setting up new capacities, including for building Very Large Crude Carrier (VLCC) size ships, with an investment in the region of Rs 4000 crore.

Production and Export

7.1.267 The growth of shipbuilding in India has gone up from 4.5% in the Ninth Five Year Plan period to 15% per year in the Tenth Five Year Plan period, and India's share in the world market from an insignificant 0.1% in the beginning of Tenth Plan to 1.3% in 2006. On the export front, one public sector shipyard, that is Cochin Shipyard Ltd (CSL), and three private sector shipyards, viz., ABG, Bharati, and Chowgule, performed remarkably well during the Tenth Five Year Plan period and were able to get export orders. The Indian ship-repair industry is having an average turnover of around US$ 76 million. The ship-repair market potential is much more than what is presently being undertaken.

7.1.268 A meagre six ships were exported in the Ninth Five Year Plan but orders for export of more than 50 ships have been taken by Indian yards in the Tenth Five Year Plan. Against 0.3 million DWT exported during the Ninth Five Year Plan, the order book for export is more than 1.0 million DWT and the projections for the Eleventh Five Year Plan are about 4.00 million DWT. The bulk of the export is in the small-ship segment where India has emerged as a major supplier, and for the construction of offshore and oil industry ships such as Offshore Supply Vessels (OSVs) and anchor handling tugs. From an inward-looking industry dependent on government orders, the Indian shipbuilding industry has emerged as a competitive export-led industry.

Market Potential

7.1.269 As per Indian National Shipowners Association (INSA), the total tonnage required to be added in the Eleventh Plan will be around 5.33 million GT involving about 455 vessels, and the investment required will be Rs 55000 crore.

7.1.270 The annual average global order book grew by 78.86 million DWT in the period 2001–05 and in

excess of 100 million DWT in the last two years. Of the Rs 14000 crore worth vessels on order in the Indian yards, nearly 68% are for foreign buyers. Clearly the outlook for the Indian shipbuilding industry is very bright and a faster growth of shipbuilding capacity is imperative for seizing the opportunity presented by the current boom. Projected shipbuilding order book turnover in Eleventh Five Year Plan is given in Table 7.1.11.

TABLE 7.1.11
Projected Shipbuilding Order Book Turnover

	2006–07	2007–12
Order book (Mn DWT)	1.3	5.00
Global order book (Mn DWT)	231.2	231.2
India's share of global order book	0.4%	2.2%
Delivery (Mn DWT)	0.65	2.50
Turnover (US$ Billion)	0.65	2.50
Shipbuilding industry % of GDP	0.04%	0.16%
Total employment	12000	78000

Source: DIPP.

Investment

7.1.271 The Indian Shipbuilders Association has estimated that the industry can grow at a rate of more than 30% and this momentum can be maintained for the next 10 years to reach a level of 5 million DWT order book for the Eleventh Five Year Plan as against 1.3 million for the Tenth Five Year Plan.

Challenges

7.1.272 Shipyards get orders only if they are credible (i.e., deliver quality ships on time) and it can be credible only after successfully executing consistently under international competition. During the Tenth Five Year Plan the industry has demonstrated its international competitiveness and the ability to respond to a buoyant market. The main challenges are removing the policy impediments, ensuring a stable environment, and encouraging R&D, design, and productivity improvement.

7.1.273 The Working Group has highlighted that cost competitiveness of Indian yards was affected on account of service tax, custom duty on ships manufactured in Indian yards, high excise duty on raw materials and capital goods required for manufacturing ships, etc. While foreign shipping companies are building their medium and small merchant ships in India, Indian shipping companies are purchasing their ships from abroad, both big and small but more big than small. The present fiscal and statutory rules on shipbuilding in the country are heavily loaded in favour of export and discourage construction of ships by Indian yards for the Indian flag.

7.1.274 The shipbuilding subsidy has been the main promotional instrument for the shipbuilding industry. The shipbuilding subsidy scheme has been operating since 1971 for Central public sector shipyards. The scheme was discontinued in 1975, was later re-introduced in 1977, and was modified in August 2000. The shipbuilding subsidy up to 2002 has been used as a measure for revival of public sector shipbuilding. Re-modified subsidy scheme introduced in 2002 discontinued Interest Differential Subsidy upto 5% and extended the benefits to 30% subsidy on the price of the ship to private sector yards also. The subsidy has clearly been a major contributing factor in enabling the industry to get a foothold in the international market. It is also a fact that the major shipbuilding nations of the world have been granting shipbuilding subsidies in the past.

7.1.275 In order to be able to join the league of major shipbuilding nations, the industry needs to undertake design development and R&D. With the changing technological environment, increasing application of information technology, and changes in safety norms, it is imperative for shipyards to keep pace with such developments to meet emerging classification standards.

Strategies

7.1.276 It is necessary to examine in depth the impact of the fiscal regime on the Indian shipbuilding industry to see if any corrective measures need to be taken. In particular, the reasons have to be ascertained for the preference of the Indian shipping industry to purchase from foreign sources and remedial measures taken.

7.1.277 It has become apparent that the existing shipbuilding subsidy scheme cannot be continued indefinitely when boom conditions are prevailing in the

international market. However, a gradual phase down rather than sudden termination may seem to be called for.

7.1.278 The R&D institutional set up serving the shipbuilding sector needs to be reviewed and strengthened. The R&D scheme in the shipbuilding sector will have to cover projects for industry-wide improvement in knowledge base, standardization, and skill development. The government should extend budgetary support for R&D in shipbuilding.

7.1.279 An allocation of Rs 170 crore has been made in the Eleventh Plan for R&D in the shipbuilding sector.

SHIP-REPAIR INDUSTRY

Overview

7.1.280 Unlike the shipbuilding industry, which experiences cyclical downturns and upturns, the ship-repair industry is evergreen. Ship-repair yards generally have a continuous and consistent flow of business and revenue generation is more predictable. Another attractive feature of the ship-repair industry from the Indian perspective is its job-creating potential on the one hand and the availability of skilled personnel on the other.

7.1.281 Unlike in some other countries where ship repairs are done mainly in dedicated units, in India there is only one dedicated unit and all the other yards carry out ship repairs and shipbuilding side by side. Ship repairs are also carried out in dry docks and floating docks. The Indian ship-repair industry is regulated through ship-repair units (SRUs), which are registered and licensed by the Director General of Shipping to enable them to avail customs duty and other concessions. There are 35 SRUs of which only 7 SRUs have been registered on a permanent basis.

PERFORMANCE AND MARKET POTENTIAL

7.1.282 During the Tenth Five Year Plan the industry achieved an annual turnover of about Rs 436 crore. The Tenth Five Year Plan had envisaged that India would emerge as a dominant ship-repair centre challenging Dubai, Singapore, and Bahrain. This did not happen because, inter alia, the industry turned its attention to shipbuilding in response to the prevailing boom conditions. The Working Group has assessed the annual market potential for ship repairs in India to be between Rs 2440 crore and Rs 2790 crore. Of this almost 50% will be accounted for by foreign ships on overseas trade visiting Indian ports, and the remaining by domestic ships engaged in overseas trade, coastal/service vessels, offshore rig repairs, navy and coast guard vessels, and other merchant vessels in the region.

Challenges

7.1.283 While the Indian shipbuilding industry is benefiting from an unprecedented boom, the ship-repair industry is in the doldrums. One of the reasons is poor productivity. The Yiu Lian Dockyard Ltd, the biggest shipyard in China, has steel renewal capacity of 250 mt per day as against 5 mt per day at best in India, and sand/grit blasting capacity of over 15000 sq m per day against around 1000 sq m per day in India. It takes 6 to 7 days in India to blast the outer hull of a 30000–40000 DWT ship and 50 days to replace 250 mt of steel in India against just one day in China for each of these operations. Since the time taken for ship repair of the essence for competitiveness, the longer time taken by the Indian ship-repair industry makes it less competitive.

7.1.284 The existing docking facilities in India have not grown to meet the requirements of the modern tonnage with only the two CPSEs, Cochin Shipyards Ltd and Hindustan Shipyards Ltd, able to provide dry dock and repair facilities for large size vessels. There is no dry dock facility for VLCC class of vessels, which are bound to increase in number on the west coast with the commencement of new refineries in Gujarat. Even Suezmax size vessels do not have dry docking facilities in the country. Further, the 13 dry docks and 1 floating dock in existence in the major port trusts are underutilized for the repair business.

7.1.285 While exemption is available to SRUs from both customs duty and excise duty, no such exemption is available in respect of service tax. The service tax of 12.24% has made the industry uncompetitive vis-à-vis ship repairers in Bahrain, Dubai, and Singapore.

Customs clearance procedures also are time consuming and impose costs on the industry.

Strategies

7.1.286 The CPSEs are the engines of growth in ship repairs. While the private sector units will no doubt respond to market demands by creating the capacity for repair of large size ships and to improve productivity, it is also necessary to make additional investments toward this end in the CPSEs, particularly the CSL and HSL. Further the reasons for underutilization of dry dock and floating dock facilities in major ports need to be examined and corrective measures taken.

7.1.287 The possibility of exemption of the ship-repair industry from service tax and improvement of customs procedures for speedy clearance of import consignments of spare parts needed for ship repairs need to be examined.

Steel Industry

OVERVIEW: PRODUCTION, IMPORT, AND EXPORT

7.1.288 The Tenth Five Year Plan has seen robust growth of the steel industry with significant increases in both production and consumption. Crude steel production grew at the rate of 9.8% annually from 34.83 million tonnes in 2002–03 to 50.88 million tonnes in 2006–07 (provisional). This growth was driven by both capacity expansion (from 40.41 million tonnes in 2002–03 to 56.84 million tonnes in 2006–07) and improved capacity utilization (from 86% in 2002–03 to 89% in 2006–07). The year-wise production, availability, consumption, export, and import of finished steel in the Tenth Plan are presented in Annexure 7.1.14.

7.1.289 The average increase in production during the Tenth Five Year Plan was 3.7 million tonnes per annum compared to just 1.1 million tonnes per annum in the Ninth Five Year Plan (1997–2002), and the annual growth rate of steel consumption doubled to 9.8% in the Tenth Five Year Plan compared to only 3.8% in the Ninth Five Year Plan. Capacity creation during the last decade after deregulation has taken place entirely in the private sector. As a result, there has been a noticeable shift towards the private sector both at the crude and finished steel stages. Private sector during 2006–07 accounted for 67% of the total crude steel output compared to 41% in 1992–93 and 74% of the total finished steel output compared to 54% in 1992–93.

7.1.290 The National Steel Policy 2005 has projected consumption to grow at 7% based on GDP growth of 7%–7.5% and production capacity of 110 million tonnes by 2019–20. The estimates have been revised upward by the Working Group. In the 'Most Likely' scenario of 9% GDP growth, demand for steel is projected to be 70 million tonnes by 2011–12. Therefore, it is envisaged that in the next five years, the demand will grow at a considerably higher annual average rate of 10.2% as compared to around 7% growth achieved between 1991–92 and 2005–06.

7.1.291 Several existing steel mills have planned expansion of capacity and there are new investments including foreign investment in the pipeline. The public sector units, namely, SAIL and RINL, are planning to increase production of crude steel from a level of 16 million tonnes per annum in 2006–07 to 30 million tonnes per annum by 2011–12. The Eleventh Five Year Plan Working Group on the steel industry has estimated that the capacity that will actually come up by the terminal year will be 80 million tonnes per annum of crude steel.

7.1.292 The world steel industry has been buoyed up by the frenetic pace of growth in the consumption and production of steel in China. The world crude steel production grew from 0.850 billion tonnes in 2001 to approximately 1.24 billion tonnes in 2006 recording a growth of 7.9% per annum compared to a mere 2% annual growth recorded between 1995 and 2001. China's steel production rose by more than 210 million tonnes since 2001 to reach a level of 423 million tonnes in 2006. Today more than 34% of the global steel production is attributed to the Chinese economy. The World Steel Dynamics in its latest forecast for next 15 years (June 2006) projects global steel demand at least at a rate of 3.1% per year till 2015. The impetus for expansion of steel capacity in India has come from the expected expansion of the domestic demand.

7.1.293 The Indian steel industry has withstood international competition despite the reduction of basic customs duty on steel from 25%–30% in 2002–03 to 5% in 2006–07. By the end of the Tenth Five Year Plan the industry was fully geared to operate in an open economy where exports and imports respond to increases or decreases in the domestic demand driven primarily by market signals. While exports of finished carbon steel were sustained at a level of 4–5 million mt per annum during the Tenth Five Year Plan imports increased sharply from about 1.5 million mt in 2002–03 to 4.10 million mt in 2006–07 (provisional), it was not because of fall in competitiveness but rather to fill up supply–demand gap in the domestic market.

CHALLENGES

7.1.294 If steel production is to increase to the projected levels by the end of the Eleventh Five Year Plan, there would be a large requirement of raw materials and other inputs. The indicative requirements that have been worked out by the Eleventh Five Year Plan Working Group are presented in Annexure 7.1.15.

7.1.295 The challenge arises from the fact that iron ore resources in the country are depleting, aided by the rapid growth of exports, and high grade coking coal needed by the industry which is in short supply, globally leading to hardening of prices from US$ 48 per mt FOB Australian ports in 2003 to US$ 115 per mt in 2006. Although non-coking coal reserves in the country are adequate, the production of the raw material is constrained by low investment by Coal India Ltd. An added problem of the Indian steel industry is that adequate sintering and pelletization capacities do not exist in the country as a result of which steel mills rely on lump ores and fines have to be necessarily exported.

7.1.296 A related problem is that of movement of raw materials such as iron ore, non-coking coal, and limestone from the mines to the plants. Large volumes of coking coal would have to be moved from the ports to the plants, which are mostly situated inland. The quality of transport infrastructure in the country imposes huge costs on the steel industry and with increased quantities needed to be moved the problem will increase.

STRATEGIES

7.1.297 It would be necessary to monitor the exports of iron ore from the country with a view to ensuring that supplies to the Indian steel plants are not affected. Export duty has already been imposed and it is expected that the exports would come down. At the same time, for assured metallurgical coke supplies, the possibility should be explored of an arrangement with China to swap iron ore for metallurgical coke. To incentivize the development of sintering and pelletization capacities consideration should be given for fiscal concessions to the industry.

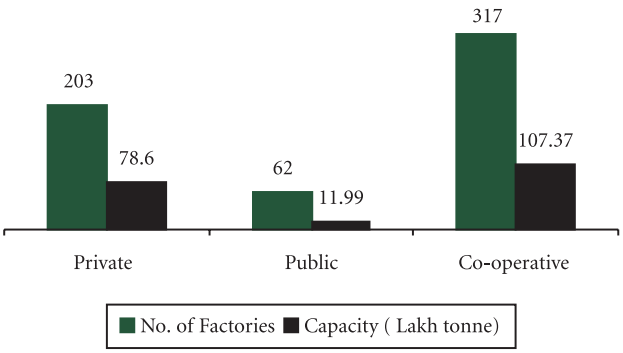
7.1.298 Increased movement of input and output from the steel industry will be considerably facilitated by the investment envisaged in the Eleventh Five Year Plan in road, rail, and ports. The financing plan of ports already takes into consideration the likely increase in imports of coking coal. Since the internal movement of bulk raw materials will be largely by rail, and projected increases of movement are very large, the railways should set up joint consultative machinery with the industry to ensure that the requirements of the industry are fully factored into the plans of the railways.

7.1.299 In steel sector, in the Eleventh Plan, the outlay of Rs 37318.18 crore includes the budgetary Rs 216 crore only. Out of total allocation of Rs 37318.18 crore, SAIL and RINL account for Rs 27409 crore and Rs 9569.18 crore, respectively. The budgetary support is for the restructuring of CPSEs in steel sector and for some of the ongoing and new R&D schemes.

Sugar Industry

7.1.300 India is the largest producer–consumer of sugar in the world. The sugar industry is the second largest agro-based industry, next to textiles in the country. About five lakh workers are directly employed in the sugar industry besides many more in industries, which utilize by-products of sugar industry as raw material. The country has 582 sugar factories with an aggregate capacity of 197.97 lakh tonnes. The ownership-wise break up is given in Figure 7.1.14.

7.1.301 As a result of a conducive policy environment resulting from progressive decontrol and favourable



Source: Annual Plan 2007–08, Department of Food and Public Distribution (DFPD).

FIGURE 7.1.14: Ownership-wise Distribution

monsoon, sugar production in the country experienced strong growth in the last four years of the Ninth Plan to reach an all time high level of 201.32 lakh tonnes in 2002–03. After a decline due to failure of monsoon in some States during 2003–04 and 2004–05 seasons, domestic production again picked up, achieving the estimated level of 283 lakh tonnes in 2006–07.

7.1.302 Out of 582 sugar-producing units in the country, 410 are in the small segment, with 228 having a capacity of 2500 Metric Tonnes Crushed per day (TCD) and 282 having a capacity of 2500 to 5000 TCD. Mid-size segment has 64 units with capacities higher than 5000 TCD but below 10000 TCD, while only 8 units are large, having capacities of 10000 TCD and above. The position regarding production, internal consumption, and export of sugar during 2002–03 to 2005–06 are given in the Annexure 7.1.16.

POLICY INTERVENTIONS

7.1.303 While the sugar industry has benefited from the withdrawal of industrial licensing under the Industries Development and Regulation Act 1951 and the abolition of stockholding and turnover limits on wholesalers/dealers, it is still subject to a number of policy interventions as described below:

- The industry is subject to statutory minimum price (SMP) for sugarcane fixed by the Central Government from year to year on the basis of the recommendations of the CACP taking into account cost of production of sugarcane, return to growers from alternative crops, fair consumer price of sugar, etc. SMP is fixed after consulting the State Governments and associations of sugar industry and cane growers.
- While the policy of blanket control on sugar under Essential Commodities Act 1955 has been discontinued, a policy of partial control and dual pricing is still in operation. Under this policy, a certain percentage of sugar production in factories is levied by the government on a pre-fixed price for distribution under PDS and the remaining production goes for free sale. The proportion of levy sugar has however been reduced from 40% to 10%. The Sugarcane Control Order stipulates that a new mill cannot be established within a distance of less than 1 km from an existing mill.
- While the erstwhile Sugar Export Promotion Act 1958 was repealed and export of sugar decanalized, the level of exports is regulated through several measures such as system of advance licensing, periodic ban, etc.

SUGAR DEVELOPMENT FUND (SDF)

7.1.304 Under the Sugar Cess Act 1982, a cess of Rs 14.00 per quintal is collected on all sugar produced in the country and an amount equivalent to the same is credited in the SDF created under the SDF Act 1982. The Fund has benefited the domestic industry by providing loans at concessional rates to sugar factories for modernization and expansion of capacities, rehabilitation, development of sugarcane, setting up facilities for internal transportation for export obligation, setting up of bagasse-based co-generation units, production of ethanol from molasses, and maintenance of buffer stock as well as providing grant for industrial research. Commensurate with the technology upgradation and price escalation, normative project costs of various components, especially, bagasse-based co-generation, etc., are being revised from time to time. In an amendment dated 15 September 2006 the normative project cost for bagasse-based co-generation unit has been revised upwards and the SDF loan component raised to 40% of the project cost from 30% earlier. The amendment also relaxed the earlier requirement of bank guarantee for SDF loans to set up ethanol units by sugar factories.

BUFFER STOCKS

7.1.305 In order to alleviate the difficulties of the mills in times of surplus production, the Central Government undertakes buffer stock operations from time to time. In August 2007 the government decided to create a buffer stock of 30 lakh mt for a period of one year.

CHALLENGES

7.1.306 While international prices have been fluctuating, the SMP fixed by the Central Government has been raised gradually from Rs 62.05 per quintal in 2001–002 to Rs 81.18 per quintal in 2007–08. Additionally some of the State Governments have been advising sugar factories to pay cane price at a higher level than the SMP. The sugar industry thus faces a predicament in which it is asked to pay more for the raw materials even as it gets less for its produce in the market.

7.1.307 Indian sugar exports experience wide fluctuations from year to year. While exports are restricted in the years when international prices are high, they need to be subsidized in years in which such prices are low. Export subsidies have become inconsistent with India's obligations under the WTO Agreement from 2004 after the expiry of the validity of the WTO provision which gave special dispensation to the developing countries in respect of subsidies on market promotion expenses including international freight as well as on concessions on internal freight on export shipments.

7.1.308 Indian sugar industry is amongst the most diversified industry in the world, with an installed capacity to produce 1000 MW co-generated power against a potential of 7500 MW. An addition of 1000 MW is under implementation. Despite emphasis laid by the GoI to harness the growth potential further, the progress as co-generation of power is sapped by problems with regard to tariff fixation, third-party sale, and timely payments by State Electricity Boards (SEBs).

7.1.309 The economics of sugar production are crucially dependent on the production of by-product ethanol. Recently, the 5% ethanol-doping programme has been extended to the country as a whole, with the annual doping requirement estimated at 550 million litres of ethanol. With further increase in the ethanol doping to 10% from June 2007, the annual demand would rise up to about 1100 million litres. Already a capacity of about 1550 million litres has been established in major sugarcane-producing States, which is sufficient to meet this scale of ethanol-doping requirement. However, the oil companies are going slow. Further, in as many as seven States, the EDP has not been implemented due to taxation problem by the State Governments. It may be noted that in Brazil, doping has been mandated by the government at 24%.

STRATEGIES

7.1.310 Since fluctuation in international prices is a feature of international commodity markets, it needs to be examined how the fall in sales realization in certain years can be taken into account in fixing the SMP for sugarcane or in considering additional payments sometimes mandated by the State Governments.

7.1.311 The evolution of the WTO rules has made export subsidies by India in sugar (or any agricultural products) arguably inconsistent with the WTO obligations. The developing countries are likely to get a time-limited window for such subsidies once the Doha Round concludes. In the meantime, it needs to be examined how the government can assist the industry in a WTO-consistent manner to deal with surplus production.

7.1.312 The difficulties of sugar mills in the sale of additional power from co-generation need to be resolved.

7.1.313 A long-term policy needs to be devised on the mixing requirements for petroleum fuel with ethanol.

Textiles and Jute

7.1.314 The strength of the Indian textiles and clothing industry is based on the long tradition of manufacturing, strong raw material base, indigenous design capabilities, presence in the entire value chain, large and growing domestic demand, and the availability of trained manpower at internationally competitive rates. The Indian textile and clothing industry consumes a diverse range of fibres and yarns but is predominantly cotton based. At current price, the total market size of

the Indian textiles industry is approximately US$ 47 billion. The industry contributes 14% to the total industrial production and directly employs 35 million people. It accounted for 17% of India's export earnings, 3.37% share in international merchandise, and 18% of industrial employment in 2006.

7.1.315 During the Tenth Five Year Plan period, the growth rate of the industry accelerated under the twin stimuli of domestic policy reforms and the end of the quota regime with effect from 1 January 2005 in major industrialized countries following agreement in the WTO. The excise duty structure was streamlined and rationalized, customs duty on machinery reduced, and the reservation for SSI units for garments eliminated. Removal of the policy tilt towards the SSI units had a significantly positive effect on the industry. The TUFS and the cotton technology mission also boosted the industry. The production of cloth increased strongly in the last three years of the Plan period after stagnating in the first two years. During the first two years of the Tenth Five Year Plan, the total production of cloth hovered around 42 million sq m but rose to 49.5 million sq m in 2005–06, and is estimated to have reached a figure of 53.7 million sq m in 2006–07 (Annexure 7.1.17).

7.1.316 Following the end of textile quotas, exports registered a strong increase in the year 2005–06 but there was a deceleration in the subsequent year. Export of textiles and clothing during the Tenth Five Year Plan is presented in Annexure 7.1.18.

7.1.317 The available export data (April 2006–February 2007) seem to suggest that the growth of exports decelerated sharply (to about 7.75%) as compared to 25.9% during April 2005–February 2006. Even in 2005–06, when exports had risen overall, man-made textiles had shown a decline, indicating lack of competitiveness in a quota-free regime. Clearly, despite the progress in the latter half of the Tenth Five Year Plan, the well-known constraints, which are indicated later, are still affecting competitiveness in man-made textiles. Overall, however, at the end of the Tenth Five Year Plan period there was considerable vibrancy in the textile industry and confidence that it was poised for significant growth during the Eleventh Five Year Plan. The vision projected by the industry envisages that cloth production would grow at 12% and the total turnover at 16% during the Eleventh Five Year Plan. The turnover will rise from US$ 47 billion to US$ 115 billion and the exports from US$ 17 billion to US$ 55 billion. The industry expectation is that the incremental investment of Rs 30000 crore would be replicated during each of the five years of the Eleventh Five Year Plan. The industry also projects an increase in employment by 6.5 million, of which almost 2 million will be in the skilled and managerial categories.

TEXTILES MACHINERY INDUSTRY

7.1.318 The fortunes of the textiles engineering industry are linked with textiles industry. The performance of textiles engineering industry has shown significant improvement during the last —two to three years in line with the textiles industry. The production of textiles machinery has been steadily increasing over the last five years and a significant increase of 28% has been recorded during the year 2005–06. The capacity utilization of the industry has also been gradually increasing. It has increased from 28% in 2001–02 to 57% in 2005–06. In terms of value, the production of textiles machinery has increased from Rs 1072.46 crore in 2001–02 to Rs 2151.10 crore during 2005–06.

JUTE INDUSTRY

7.1.319 The jute industry occupies an important place in the national economy. It is one of the major industries in the eastern region, particularly in West Bengal. It supports nearly four million farm families, besides providing direct employment to about 2.6 lakh industrial workers and livelihood to another 1.4 lakh people in the tertiary and allied sectors. The target for raw jute production in the Tenth Plan is likely to be achieved in 2006–07. Against the production target of 110 lakh bales for the terminal year 2006–07 of the Tenth Five Year Plan, the achievement in 2005–06 was 85 lakh bales and the expectation is that the target would have been achieved in 2006–07. The average of jute and mesta produced during 2002–03 to 2005–06 was 91.25 lakh bales. Jute goods production, however, will fall short of the Plan target by 18%: against the target of 19.50 lakh mt for terminal year 2006–07, the achievement during 2005–06 was 15.82 lakh mt and the average production of jute goods from 2002–03 to

2005–06 was 15.96 lakh mt. In contrast, export targets had been met and exceeded. Against the export target for jute goods of US$ 154.36 million for the terminal year 2006–07, the achievement in 2005–06 was US$ 276 million. The average exports of jute goods from 2002–03 to 2005–06 was US$ 240 million.

REVIEW OF MAJOR TENTH PLAN SCHEMES

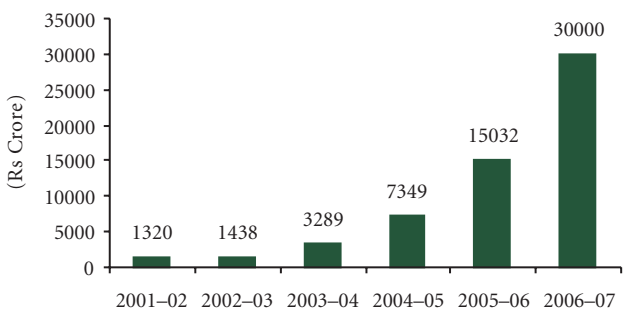
7.1.320 We review below the three major Plan schemes that were in operation during the Tenth Five Year Plan.

Technology Upgradation Fund Scheme (TUFS)

7.1.321 Investments in the textiles sector, which was being incentivized by the TUFS, picked up steam from 2004–05 after the major steps taken by the Central Government for rationalizing the excise duty structure in that year. Another reason for the spurt was the implementation of the WTO Agreement for the elimination of quotas. Figure 7.1.15 shows the growth of investment stimulated by the TUFS.

Technology Mission on Cotton (TMC)

7.1.322 TMC, which commenced during the Ninth Plan, had four mini-missions, the first two for increasing agricultural productivity, implemented by the Ministry of Agriculture, and the other two for the development of marketing yards and modernization of G&P units, implemented by the Ministry of Textiles. The missions implemented by the Ministry of Agriculture have contributed to an increase in the productivity from 308 kg per ha in 2002 to 467 kg per ha in 2005 (world average: 680 kg per ha; US: 830 kg per ha; Brazil: 1180 kg per ha; China: 1140 kg per ha).



Source: Report of the Working Group on Textiles and Jute Industry for Eleventh Plan.

FIGURE 7.1.15: Project Cost Sanctioned under TUFS

Under mini-mission III 250 marketing yards were sanctioned for development against which 225 are expected to have been sanctioned until the end of the Tenth Five Year Plan. Under mini-mission IV, modernization of about 900 Ginning and Pressing units is expected to have been sanctioned against a target of 1000. Some of the ginners have availed of the TUFS for modernization, making the total number 1500. With the completion of these programmes the industry will have the capability to process about 325000 bales of cotton, which is expected to be clean and contamination free.

Scheme for Integrated Textile Parks (SITP)

7.1.323 The SITP was launched in 2005 to neutralize the weakness of fragmentation in the various sub-sectors of textiles value chain and the non-availability of quality infrastructure. The aim was to consolidate individual units in a cluster, and also to provide the industry with world-class infrastructure facilities on a PPP model to set up their textile units. A total of 26 parks have already been approved and these are expected to be developed by March 2008. These parks would incorporate facilities for spinning, sizing, texturizing, weaving, processing, apparels, and embellishments. The estimated project cost (for common infrastructure and common facilities) is Rs 2428.33 crore of which the GoI assistance under the scheme would be Rs 866 crore. (The estimated investment in these parks would be Rs 13445 crore and the estimated annual production would be Rs 19200 crore.) A total of 2219 entrepreneurs will put up their units in these parks. The estimated employment generation would be around five lakh (direct/indirect).

CHALLENGES

7.1.324 The Indian textiles industry suffers from all the handicaps of the manufacturing sector mentioned earlier, viz., deficiencies in the transport infrastructure, shortcomings in the quantity and quality of supply of electricity, lack of adequate flexibility in the labour laws, high transaction cost, and direct and indirect taxes that are short of world standards. Although much has been done during the Tenth Five Year Plan in particular, the task remains formidable. We consider some of these problems in the context of the textiles industry.

7.1.325 The main reason for India to be well behind China in textiles and clothing is the absence of economies of scale in the manufacturing enterprises in the country. While many units in China have tens of thousands of workers, the industrial units in India are discouraged by the requirements of Chapter V-B of the Industrial Disputes Act 1956 from employing more than 100 workers. The result is that the industry is fragmented and is unable to respond to the large volumes of orders that are placed by the retail chains in the industrial economies. The Contract Labour (Regulation and Abolition) Act 1970 is another hurdle in these enterprises being able to respond to enquiries for supply of large volumes of goods unless they are assured of long-term demand, which is seldom the case. This is the main reason behind the fact that the share of textiles in the FDI flows into the country so far has been about 1% against 10% in China.

7.1.326 Technologically, our textiles industry is still backward and the modernization process that began during the Ninth Five Year Plan and accelerated midway through the Tenth Five Year Plan has not made enough progress. To give one example, only 2% shuttleless looms are in place as against the world average of 16%. Another segment that has not made progress is processing. A big handicap is that the order books of the textile machinery industry are full and the industry is not able to get delivery in quick time. As a result the enterprises are purchasing second-hand equipment, which costs a fraction of the new equipment. Large-scale purchase of the used machinery, with a limited life, cannot be really called modernization.

7.1.327 The technical textile is an upcoming area in the textile sector which is primarily textile materials and products with specific physical and functional properties, mostly used as component/part of another product to improve the performance of the product. These include spun-bonded geo-textiles, needle-punched geo-textiles, woven geo-textiles, geo-grids, woven narrow fabrics, and non-woven for disposables healthcare textiles, sanitary napkins, incontinence diapers, and diapers. The domestic market in 2005 was worth US$ 6.7 billion as against the size of US$ 107 billion. The global market is expected to grow to US$ 127 billion by 2010. The challenge for the Indian textile sector is to increase its share of the global market during the Eleventh Five Year Plan.

7.1.328 A related problem is that modernization is based on the government support through the TUFS, which was made operational in the Ninth Five Year Plan. The financial assistance being given by the Central Government under the programme is not inconsistent with WTO obligations, but the problem is that it renders our exports vulnerable to countervailing duties being imposed by importing countries if these exports are assessed by them to be causing material injury to their domestic industry. Since the subsidy is on capital goods, the vulnerability will remain for the entire period of the useful life of the machinery. If the SEZ benefit of income tax concession on profits from export income and/or the benefits of the SITP are added, the importing countries could impose high countervailing duties. Furthermore, the requirement of funds for continuing the TUFS is likely to be very high if the scheme is rolled over into the Eleventh Five Year Plan.

7.1.329 As mentioned earlier, it is expected that during the Eleventh Five Year Plan period there would be a large requirement of additional workforce in the industry. The Working Group for Textiles and Clothing for the Eleventh Five Year Plan has identified category-wise requirement (in lakh) of workforce as managerial, technical, and administration (6.5); skilled, ITIs and Certificate courses (13); semi-skilled machine operators (32.5); and unskilled (13). In the absence of organized effort the requirement is not likely to be met.

STRATEGIES

7.1.330 It has been difficult to achieve consensus on proposals for changes in labour laws, particularly Chapter V-B of the Industrial Disputes Act 1956 and the Contract Labour (Regulation and Abolition) Act 1970, but given the potential for unlocking substantial additional employment in the textile and clothing industry if these changes are carried out, consideration of such changes and consultations for the same would have to continue so that early action is taken during the Plan period. In the absence of any change, the ambitious programmes of the industry are likely to remain unrealized.

7.1.331 In order to continue the stimulus for investment for modernization, upgradation, and additional capacity creation, the TUFS, SITP and TMC would have to be continued during the Eleventh Five Year Plan. However, it would be necessary to limit the TUFS, either in time or scope, in order to ensure that the financial commitment of the Central Government does not cross the allocation available for the programme. Furthermore, in order to ensure that the industry modernizes, the assistance should be restricted only to the purchase of new machinery.

7.1.332 It has become apparent that substantial additional effort would be needed for skill upgradation and training of managerial, skilled, and semi-skilled manpower. In order to ensure that the effort is demand driven, the individual initiatives must come from the industry, which should be willing to take complete responsibility for running the additional programmes. The government's contribution could come as a one-time assistance for developing the needed infrastructure, by way of buildings and equipment needed for the creation of new facilities or expansion of existing ones.

7.1.333 The total outlay for the industry segment of the textile sector is Rs 11000 crore. In the Eleventh Plan the TUFS would continue for two years. Other main continuing schemes are SITP and TMC. Jute Technology Mission has already been revised by bringing all components together in Mission Mode in 2006. For skill upgradation, a 'Human Resource Development Scheme' is proposed in the Eleventh Plan.

Micro And Small Enterprises (MSEs)

Introduction

7.1.334 Worldwide, MSMEs[3] have been recognized as engines of economic growth. In India, MSEs (till recently, known as village and small enterprises) account for almost 40% of the total industrial production, 95% of the industrial units (along with medium industries), and 34% of the exports. They manufacture over 6000 products ranging from handloom sarees, carpets, and soaps to pickles, papads, and machine parts for large industries.

7.1.335 It is estimated that an investment of Rs 10 lakh in fixed assets in the small sector produces goods or services worth Rs 46.2 lakh with an approximate value addition of 10 percentage points. In 2003–04, the contribution of SSI sector alone to the GDP was 6.71%. In the last decade, the growth rate of MSEs has been consistently higher than the overall growth rate of the industrial sector, crossing the 12% mark in the terminal year of the Tenth Plan.

7.1.336 The MSEs are, however, more than just GDP earners; they are instruments of inclusive growth which touch upon the lives of the most vulnerable, the most marginalized—women, Muslims, SCs, and STs—and the most skilled. Being the largest source of employment after agriculture, the MSE sector in India enables 650 lakh men, women, and children living in urban slums, upcoming towns, remote villages and isolated hamlets to use indigenous knowledge, cultural wisdom, dextrous hands, and entrepreneurial skills for the sustenance of their lives and livelihoods. Yet, in successive Five Year Plans this sector has not received its due. A subset of the MSE sector is what can be termed as 'cultural and creative industries'. India's cultural diversity and heritage is capable of giving the country a strong presence in the global market for products from such industries. The Planning Commission had constituted a Task Force with a view to integrate production by cultural and creative industries with our development strategy. The recommendations of the Task Force will be examined for implementation in the Eleventh Plan.Table 7.1.12 indicates the allocation for Village and Small Enterprises (VSE) in the past three Plan periods.

TABLE 7.1.12
Plan Outlays for the Last Three Five Year Plans for VSE Sector

(Rs Crore)

Sector	Eighth Plan Period	Ninth Plan Period	Tenth Plan Period
MSME	1629.55	4303.85	5534.00
Textiles	1157.00	1270.00	1600.00
FPI	146.00	235.04	650.00

Source: Ninth and Tenth Plan, Planning Commission.

[3] In this chapter, MSME means micro, small, and medium enterprises; SME means small and medium enterprises; while MSE means micro and small enterprises.

7.1.337 TThe MSME sector has been artificially fragmented across various ministries, such as MSME, textiles, and FPI to name a few. As a result, sectors such as handloom, powerloom, handicrafts, khadi, and coir have suffered greater neglect than other manufacturing and service based MSEs.

7.1.338 In an attempt to correct these discrepancies and neglect, the Micro, Small and Medium Enterprises Development Act was enacted on 16 June 2006. This Act provides the first-ever legal framework recognizing the concept of 'enterprise' (comprising both manufacturing and service entities), defining medium enterprises and integrating the three tiers of these enterprises, namely, micro, small and medium. Carrying forward the vision behind this Act, the Eleventh Plan recognizes the MSE sector as an important component of the industry that needs infrastructure, credit, and policy support. During this Plan period, the endeavour would be to recognize the heterogeneity of the MSE sector and at the same time remove artificial distinctions within the sector to ensure that the unorganized, home-based industries such as handlooms and food processing are able to avail the benefits and schemes launched for the industry in general and the MSE in particular.

Role of SMEs in Global Economy: International Scenario

7.1.339 The overall contribution of small firms—formal and informal—to the GDP and employment remain about the same across low, middle, and high-income group countries. As income increases, the share of the informal sector decreases and that of the formal SME sector increases.[4]

7.1.340 In Brazil, MSEs represent 20% of the total GDP. Of the country's 4.7 million registered businesses, 96.8% are MSEs and–along with the other 9.5 million informal enterprises—they employ 59% of the economically active population.[5] Similarly, informal and micro enterprises account for 39% of labour force and contribute to 24% of the GDP in South Africa; SMEs employ 27% of the labour force and contribute 32% to the GDP; while large enterprises employ 34% people and account for 44% of GDP. (Stats SA 2000 and Abedian 2001).[6] SMEs comprise over 90% of all industrial units in Bangladesh contributing between 80% and 85% of the industrial employment and 23% of the total civilian employment (SEDF, 2003).[7] They contribute three-quarters of the household income in both the urban and the rural areas. In Japan, SMEs employ more than 70% of the wage earners, contributing over 55% of value added in the manufacturing sector.[8] In Thailand in 2003, there were 2006528 enterprises of which 99.5% were SMEs. These SMEs generated products worth 38.1% of GDP and in 2003 they employed 60.7% of Thailand's working population.[9]

7.1.341 The real importance of the SMEs, however, can be seen in China where over 68% of the exports come from the SMEs (Table 7.1.13). China has created more SMEs in the last 20 years than the total number of SMEs in Europe and the US combined. Their numbers have

TABLE 7.1.13
Chinese Town and Village Enterprises (TVEs) Exports
(in Billion US$)

	Total Exports	SME Exports	SME Exports as % of Total
2002	438.23	272.48	62.3
2003	593.32	390.44	65.8
2004	761.99	518.16	68.0

Source: SME Briefing, Vol. 91, by SME Division of National Development and Reform Commission on 28 November 2006.

[4] *http://www.worldbank.org/research/projects/sme/abd.pdf*
Small and Medium Enterprises across the Globe: A new Database, Meghana Ayyagari, Thorsten Beck, and Asli Demirgüç-Kunt, August 2003.

[5] *http://www.dai.com/pdf/developments/developments_ fall_2005.pdf*

[6] *http://www.ciionline.org/services/112/Images/defsme.pdf*

[7] SEDF: South Asia Enterprise Development Facility *http://www.bei-bd.org/beireport/sme/The%%20Small%% 20and%%% 20Medium% 20Enterprises %%20(SME) %%20in %%20Bangladesh.pdf*

[8] *http://www.mofa.go.jp/region/asia-paci/thailand/joint0312.pdf*

[9] *http://www.jetro.go.jp/thailand/e/data/smesupport.htm*

increased from about 1 million private sector SMEs in the 1990s to 40 million in 2004. In China, an industrial SME is defined as having up to 2000 employees, while a small business has less than 300 employees and a medium-size business has employees between 301 and 2000.

Defining MSEs—MSMED Act, 2006

7.1.342 There is no globally accepted definition of MSMEs. Different countries use different criterion; most of the definitions are based on investment ceiling and number of people employed.[10] In India, the Micro, Small, and Medium Enterprises Development (MSMED) Act 2006 defines MSMEs. It introduces the concept of 'enterprise' as opposed to the earlier concept of industry. According to the Act, MSMEs are classified into the following: (i) enterprises engaged in the manufacture or production of goods pertaining to any industry specified in the first schedule to the Industries (Development and Regulation Act 1951) and (ii) enterprises engaged in providing or rendering services. Table 7.1.14 defines the MSMEs in both these sectors:

TABLE 7.1.14
Definition of MSMEs

Manufacturing Sector	
Enterprises	Investment in plant and machinery (original cost excluding land and building and the items specified by the then ministry of small scale industries, vide its notification No. S.O.1722(E) dated 5 October 2006)
Micro enterprises	Does not exceed Rs 25 lakh
Small enterprises	More than Rs 25 lakh and less than Rs 5 crore
Medium enterprises	More than Rs 5 crore and less than Rs 10 crore
Service Sector	
Enterprises	Investment in equipments
Micro enterprises	Does not exceed Rs 10 lakh
Small enterprises	More than Rs 10 lakh and less than Rs 2 crore
Medium enterprises	More than Rs 2 crore and less than Rs 5 crore

Source: Micro, Small, and Medium Enterprises Development Act, 2006.

7.1.343 The Act also provides for a statutory consultative mechanism at the national level with a balanced representation of all the sections of stakeholders and with a wide range of advisory functions. Establishment of specific funds for promotion, development, and enhancement of the competitiveness of these enterprises; notification of schemes/programmes, progressive credit policies and practices; preference to products and services of MSEs in the government procurement; more effective mechanisms for mitigating the problems of delayed payments; and a scheme for easing the closure of business by these enterprises are some features of the Act.

Need for Greater Engagement with MSEs

TO GENERATE LARGE-SCALE EMPLOYMENT

7.1.344 As countries develop, the share of agriculture in providing employment and in GDP decreases. According to the Australian Economist Chris Hall, the SMEs contribute about 70% of net new jobs across the globe, while larger firms tend to be job destroyers.[11]

7.1.345 The MSE sector in India has grown significantly since 1960, when there were only 12376 MSEs providing employment to 10 lakh people—of which, direct employment was 1.85 lakh; annual production level was Rs 875 crore. At the beginning of the Tenth Plan, 249 lakh people in the rural and urban areas were employed in 105.21 lakh MSEs. This has increased to 295 lakh people in 128 lakh units now; an average annual growth rate of 4.4% in the number of these units and 4.62% in employment. If the units in the khadi industries, village industries, and coir industries are taken into account, the employment is estimated to be over 332 lakh. With the inclusion of handlooms, handicrafts, wool, and sericulture, the total job in the MSE sector in India goes up to 650 lakh. The employment intensity of the registered units indicates that an investment of Rs 0.72 lakh is required for creating one employment in MSME sector as against Rs 5.56 lakh in the large organized sector.

[10] *http://www.worldbank.org/research/projects/sme/abd.pdf*. According to a World Bank research paper, 54 countries define SMEs as enterprises employing no more than 200–300 people. These include 13 low-income, 24 middle-income, and 17 high-income countries. Most African countries use a cut-off of 200 employees; Japan uses 300 employees.

[11] *http://www.cesifo-group.de/pls/guestci/download/CESifo%20Forum%202007/CESifo%20Forum%202/2007/forum 2-07-focus5.pdf*

7.1.346 Not only do MSEs generate the highest employment per capita investment, they also go a long way in checking rural–urban migration by providing villagers and people living in isolated areas with a sustainable source of employment. Among the MSEs in India, the dispersed food products sector generates maximum employment (13.7% of total employment in the MSE sector), followed by non-metallic mineral products (10.9%) and metal products (10.2%). In chemicals and chemical products, machinery parts except electrical parts, wood products, basic metal industries, paper products and printing, hosiery and garments, repair services, and rubber and plastic products, the contribution ranges from 9% to 5%. In all other industries the contribution is less than 5%.

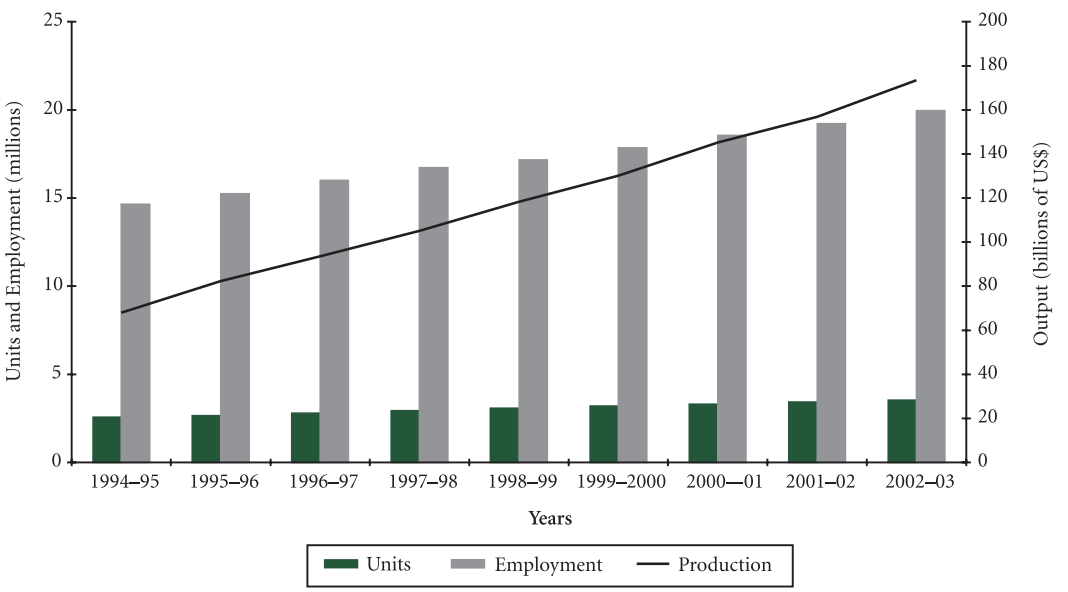
7.1.347 Per unit employment is highest (20) in units engaged in beverages, tobacco, and tobacco products. Next come cotton textile products (17), non-metallic mineral products (14.1), basic metal industries (13.6), and electrical machinery and parts (11.2). Per unit employment is highest (10) in the metropolitan areas and lowest (5) in the rural areas. Non-metallic products contribute 22.7% to the employment generated in the rural areas, followed by food products (21.1%), wood products, and chemicals and chemical products. As for the urban areas, food products and metal products almost equally share 22.8% employment. Machinery parts except electrical, non-metallic mineral products, and chemicals and chemical products between them account for another 26.2% employment. Metal products, machinery and parts except electrical, and paper products and printing (total share being 33.6%) are the leading industries in metropolitan areas.

7.1.348 The presence of MSEs across States is not uniform. Tamil Nadu (14.5%) makes the maximum contribution to employment followed by Maharashtra (9.7%), Uttar Pradesh (9.5%), and West Bengal (8.5%). Per unit employment is high—17, 16, and 14, respectively—in Nagaland, Sikkim, and Dadar & Nagar Haveli; Madhya Pradesh has the lowest figure of 2. In all other cases it is around 6.

TO SUSTAIN ECONOMIC GROWTH AND INCREASE EXPORTS

7.1.349 Estimates say that in order to achieve the target of 10% growth in the Eleventh Plan, the MSE sector needs to grow at 12%.

7.1.350 Figure 7.1.16 indicates the growth of the SME sector in terms of number of units, employment, and production.



Source: CII Website.

FIGURE 7.1.16: Growth of the SME Sector in India

7.1.351 Non-traditional products account for more than 95% of the SSI exports. The performance of garments, leather, and gems and jewellery units has been remarkable in the last decade. The SSI sector dominates in export of sports goods, readymade garments, woollen garments and knitwear, plastic products, processed food, and leather products. Annexure 7.1.20 indicates performance of SSIs from 2000–01 to 2006–07. The US, Europe, and West Asia are the major export destinations as indicated as Annexure 7.1.21.

7.1.352 There is tremendous potential to expand the quantum of exports from traditional MSEs because they are handcrafted and hence eco-friendly and exclusive. Further, while MSEs are unable to take advantage of economies of scale, they are ideal for meeting small order quantities—a bonus in industries such as readymade garments, home furnishings, etc.

7.1.353 MSEs often act as ancillary industries for LSIs providing them with raw materials, vital components, and backward linkages. For instance, large cycle manufacturers of Ludhiana rely heavily on the small MSEs of Maler Kotla which produce cycle parts. MSEs also promote eco-friendly growth, especially in difficult terrains and the ecologically sensitive areas. In large tracts of barren desert land in Barmer and Kutch, in the scattered *dhani*s of Udaipur, in the hilly hamlets of J&K, Ladakh, Himachal, and the North East, in the tribal hinterlands of central India, they are the only source of livelihood.

FOR MAKING GROWTH INCLUSIVE

7.1.354 The MSE sector is a microcosm of all vulnerabilities—it touches upon the lives of women, children, minorities, SCs, and STs in the villages, in the urban slums, and in the deprived pockets of flourishing towns and cities. For many families, it is the only source of livelihood. For others, it supplements the family income. Thus, instead of taking a welfare approach, this sector seeks to empower people to break the cycle of poverty and deprivation. It focuses on people's skills and agency.

7.1.355 Different segments of the MSE sector are dominated by different social groups. Women are mostly found in the unregistered sector—food processing enterprises, manufacturing enterprises, and weaving—and often work part time in the family enterprises. Women and small children roll bidis, make agarbattis, do zari and sequin work for meagre wages. Annexure 7.1.22 gives state-wise figures for women employed in MSMEs.

7.1.356 Large number of Muslims are found in the unorganized weaving sector and in powerlooms. STs produce wonderful handcrafted articles and are involved in sericulture. In the North East, most women weave. In States like Tripura, 50% of rural men and 35% rural women are engaged in MSEs. In Nagaland and Mizoram over 68% of urban men are with MSEs.

Challenges

AN OVERVIEW

7.1.357 The MSE sector in India is heterogeneous, dispersed, and mostly unorganized. It includes diverse types of production units ranging from traditional crafts to high-tech industries. Yet, it is often considered to be limited to large units among the SSIs which deal with high-tech industries or serve as ancillaries to large industries. Segments such as powerlooms, handlooms, handicrafts, food processing, coir, sericulture, khadi, village industries, and wool, which are mostly unorganized, are fragmented across various ministries and often seen only as rural livelihoods. This is, however, far from the truth. Towns and cities such as Benaras, Berhampur, etc., are big handloom centres; Lucknow, Bhopal, Delhi, and Jaipur are famous for their handicraft products while powerlooms are normally only found in urban areas. The artificial fragmentation of the sector often pits the traditional MSEs against each other and against non-traditional ventures. It also limits their access to capital, infrastructure, and support policies.

7.1.358 Due to the unorganized nature of the sector, entrepreneurs and artisans/workers face difficulties in accessing government schemes. Consequently, the workers engaged in the MSE sector—and these are often the most vulnerable and poor—have very little bargaining power and are exploited by the middlemen, unit owners, and big business houses. Unable

to take up aggressive marketing, like big industries, they cannot find markets despite good quality and competent prices (Box 7.1.3)

7.1.359 The dispersed, unorganized nature of the industry also raises issues of quality, bulk production, and inability of meeting big orders. Often individual units lack packaging facilities.[12] As a result, markets, especially for traditional MSEs, are shrinking and workers are experiencing a dip in wages. Moreover, as most non-traditional MSEs serve as 'captive units' for big industries, often workers, especially women do not get paid until the product is picked up. The situation is same for the traditional sector where payments are made by traders and even government corporations only after the stock is sold. Thus money is held up, further impoverishing the workers.

7.1.360 The MSEs engaged in manufacturing of products such as paints, dyes and chemicals, explosives, minerals, leather and leather goods, etc., pollute the environment. These units have to obtain non-pollution certification from the concerned pollution control agencies of the State.

INADEQUATE ACCESS TO CREDIT AND WORKING CAPITAL

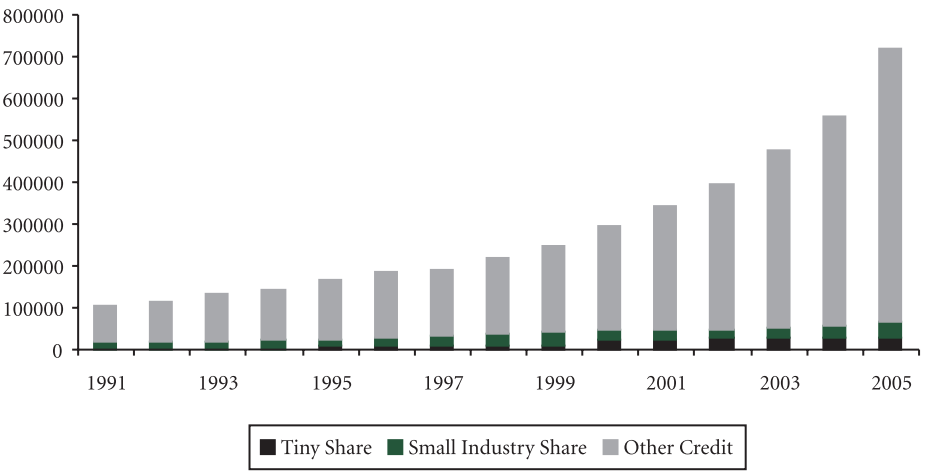
7.1.361 Though most sub-sectors of the MSE under different ministries have a scheme for credit availability, everywhere across the country—from the iron mongers of Jodhpur to powerloom units of Malegaon, from young entrepreneurs trying to set up food processing units in Kargil to handloom weavers of Kaithun, Berhampur, and Pochampally—artisans, weavers, and entrepreneurs rue the non-availability of the working capital. The percentage share of the MSEs (erstwhile SSI) in non-food Bank Credit declined from 15.1% in 1990–91 to 8.0% in March 2007. The fall in the percentage share of credit to MSEs under priority sector can, in part, be attributed to the expanding scope of the priority sector lending to accommodate fast-growing areas such as housing, exports, etc. As per the Third All-India SSI Census (2001–02), only 14.2% of the registered and 3.09% of the unregistered MSEs availed of bank finance. Though the Nayak Committee (set up by RBI in 1991–92) had recommended working capital to the SSEs at 20% of their annual turnover, SSI and KVI units together received only 13.3% of their production value from scheduled commercial banks (SCBs) in 2005–06.

7.1.362 Lending to micro enterprises, which is stipulated at 60% of the total credit to MSE sector, has fallen from 51.2% in 2002–03 to 45.1% at the end of 2005–06. Moreover, difficulty in arranging collaterals or third-party guarantees continues to be a problem. Though the RBI had issued instructions to advance collateral free loans up to Rs 5 lakh, at the end of 2005–06, only 24% of the total outstanding loans under Rs 5

Box 7.1.3
Dwindling of a Vibrant Sector

People working in MSEs, especially in the traditional sector, are being increasingly impoverished. In Tantol village (Rajsamand district, Rajasthan), the silver minakari workers have not received a hike in wages for the last 60 years. As the markets are flooded by cheap machine-made and Chinese goods, weavers of Barabanki, Uttar Pradesh, have experienced a fall in wages. So while the trendy stoles, shawls, and *duppatta*s they make are sold at upmarket stores for Rs 300 onwards, they get only Rs 5–10 a piece.The powerloom weavers of Bhiwandi and Malegaon and the handloom weavers of Benaras have no civic amenities. In Malegaon, powerloom weavers say that every day they suffer a loss of Rs 1 crore due to power cuts. Most of the looms in both Malegaon and Bhiwandi are old. Hence productivity is very low. The Bhairongarh print from district Ujjain, Madhya Pradesh is one of the many crafts which have become extinct. Handloom Himroo Shawl from Aurangabad is on the verge of exitinction. The Langas and Manganiyars of Rajasthan who have long entertained people with their music are now finding it difficult to survive. Leh and Kargil cannot sustain big industries but have a huge tourist market where their handlooms, handicrafts, processed apricots plus Leh berry juice can be sold. Yet in the absence of packaging facilities and credit, small entrepreneurs are unable to set up food processing units.

[12] Specific challenges faced by different segments of the MSE sector will be discussed separately in the chapter on MSEs and Rural Livelihoods (Chapter 5, Volume III).



Source: RBI and Ministry of SSI, GoI, Annual Report 2005–06.

FIGURE 7.1.17—Availability of Credit for SSI and Tiny Units

lakh were without collaterals. The high cost of credit to MSEs also impacts the competitiveness of their products. The Figure 7.1.17 indicates availability of credit for the SSI and tiny units.

7.1.363 Though the percentage of NBC available to MSEs has been declining, the absolute amount of credit to this sector has been increasing. Since the Union Budget 2003–04, Indian Banks' Association has advised banks to adopt the interest rate band of 2% above and below their prime lending rates (PLRs) for advances to SSI. In order to ensure that credit is available to all segments of SSI sector, RBI has issued instructions that 40% of funds available to MSE sector be given to units with investment in plant and machinery up to Rs 5 lakh, 20% for units with investment between Rs 5 lakh to Rs 25 lakh, and remaining 40% for other units. As on March 2002, 391 specialized SSI branches were working in the country. Laghu Udyami Credit Card Scheme was also launched by public sector banks for providing simplified and borrower-friendly credit facilities to SSI, tiny enterprises, retail traders, and artisans.

7.1.364 The Credit Guarantee Cover Fund Scheme for Small Industries was launched jointly by the GoI and SIDBI (on a 4:1 contribution basis) in August 2000, with a view to ensure greater flow of credit to the MSE sector without collateral security. It picked up during the last two years of the Tenth Plan and till the end of March 2007, 68062 proposals were approved and guarantee covers for Rs 1705 crore were issued.

NON-AVAILABILITY OF QUALITY RAW MATERIALS AND PACKAGING FACILITIES ON A TIMELY BASIS

7.1.365 Non-availability of quality raw materials such as dyes and yarn (especially for handlooms and powerlooms); vital inputs such as power (for powerlooms, handicrafts, other industrial MSEs); and proper packaging facilities continue to be a major bottleneck. Lack of credit combined with inadequate raw materials often forces weavers, artisans, and entrepreneurs into the clutches of loan sharks and middlemen. The modern manufacturing MSE units are also constrained due to non-availability of quality raw materials in adequate quantity. Though the National Small Industries Corporation (NSIC) and State Small Scale Industries Development Corporations are providing some raw materials, their efforts are not in consonance with the requirements.

INSUFFICIENT MARKET RESEARCH, LINKAGES, AND DESIGN INPUTS

7.1.366 Most MSEs do not have money to invest in market research and are unable to carry out design and technical improvements to keep up with market demands. Unlike big businesses, they cannot invest in

advertising and packaging. This limits their ability to tap markets and attract consumers. Most people are unaware of *Chamba Chugh*, natural fibre purses and cushion covers, passion fruit pickles, *Bhuvastra* (garment of the Earth—made in coir), *Chamba Chappal*s, Camel Hair Carpets (which do not burn) of Jodhpur, and the intricately carved tables of Ladakh. MSEs, especially those pertaining to traditional livelihoods, are therefore, increasingly being forced to rely on middlemen, petty traders, and big businesses to market their products. This has reduced many to the status of daily workers, earning less than the minimum wages.

REHABILITATION OF SICK SSI UNITS

7.1.367 The major causes of sickness in the SSI sector, as per the Third Census of SSI (2001–02), were lack of demand, shortage of working capital, non-availability of raw material, power shortage, marketing problems, etc. Combining the three yardsticks used to measure sickness, viz., (i) delay in repayment of loan over one year, (ii) decline in net worth by 50%, and (iii) decline in output in last three years, 13.98% of the units in the registered SSI sector and 6.89% in the unregistered sector were either sick or incipiently sick. In the total SSI sector, this percentage was 7.82%.[13] The five States of Kerala, Tamil Nadu, Andhra Pradesh, Karnataka, and Maharashtra together accounted for 54.28% of the sick/incipiently sick SSI units in the country.

GLOBALIZATION

7.1.368 Many segments of MSE, especially the traditional sectors, find it difficult to compete against aggressive marketing by the big domestic and multinational players. Street vendors, petty traders, handloom and powerloom weavers, home-based food processing units, khadi institutions, *attar* (perfumers), zari workers, and rural artisans, many of whom have even lost livelihoods and places of work due to developmental works, are the worst affected. There is a need to evolve a constructive response to this situation. As these sectors employ the most marginalized, our indigenous/traditional industries should be given opportunities to tap both the domestic and international markets. Most important, however, is that the license raj and redtapism, which is being minimized in other sectors, needs to wither away from the micro sector as well.

7.1.369 As in other countries, globalization can also act as a tool for development of the MSE sector. MSEs engaged in the manufacturing of engineering and automobile products have shown excellent growth in the past decade due to their expertise in supplying OEM assemblies and sub-assemblies, components, etc. What is needed is a rational policy which offers adequate support and protection to this sector, enabling it to reach Indian markets. MSEs have many inherent advantages such as exclusivity, ability to produce small order quantities, etc. In a globalized world, they can tap new markets, especially in the West where there is a big demand for handcrafted products. Information technology can be used as a tool to provide online information on indigenous products and producers, while the GI Act and patents can be used to prevent cheap imitations of our designs and products by other countries.

TECHNOLOGY UPGRADATION AND ACHIEVING 'ECONOMIES OF SCALE'

7.1.370 The investment ceiling on plant and machinery used for defining the small-scale units create problems. Efforts such as raising investment ceiling to Rs 5 crore for micro and small-scale units will help these units to graduate to medium-scale enterprises. The Tenth Plan schemes such as TUFS and SITP, which have helped some units to modernize, will be continued in the Eleventh Plan as well. There is an urgent need to devise measures to tackle the problem of loss of fiscal benefits when the micro and small-scale units graduate into larger units. The general excise duty exemption, which was traditionally available to the SSIs, is now restricted to Rs 1.5 crore of the transactions, a figure which is largely insignificant for many of the larger SSEs. As has been demonstrated by units such as Hero Cycles, Nirma detergents, Videocon, and Onida electronics, and vertical expansion and upward movement of MSEs to the medium and large sector enables them to achieve economies of scale. But today MSEs are encouraged to go for horizontal expansion and deliberate fragmentation, mainly to stay within the

[13] *http://www.smallindustryindia.com/ssiindia/performance.htm*

limits of excise exemptions. During the Eleventh Plan it would be necessary to consider policy initiatives to incentivize MSEs to achieve economies of scale by expanding production. One possibility could be to allow them to retain the benefit of excise duty exemption up to the prescribed limit even after they graduate into medium-scale enterprises. Measures would also need to be taken to deal with the problems arising from Chapter V-B of the Industrial Dispute Act to facilitate the MSEs to overcome fragmentation and inefficiency. While doing all this, however, it is imperative to ensure that the small, household based units are not neglected.

7.1.371 Owing to liberalization and opening up of the economy, the MSEs are facing stiff competition from imports and need technological upgradation to produce better quality products at cheap rates. They should be able to access production supply units around the world through the Internet. Information dissemination about availability of recent technologies, literature on modern machinery, contact details of suppliers, etc., is essential. A Technology Bank could be set up for this purpose. There is a need to intensify implementation of the Credit Linked Capital Subsidy Scheme (CLCSS) along with ready availability of model modernization projects for manufacturing industries.

Potential of MSE Sector in Eleventh Plan: Monitorable Targets

7.1.372 Monitorable targets for the MSE sector (excluding khadi, village industries, handicrafts, handloom, and food processing) for the Eleventh Plan are given in the following Table 7.1.15.

ELEVENTH PLAN STRATEGIES FOR PROMOTION OF MSEs

7.1.373 The Eleventh Plan approach to the MSE sector marks a shift from the welfare approach to that of empowerment. The Plan looks at this sector as an engine for sustained and inclusive economic growth and employment. The strategy is two-pronged—it focuses on livelihood and social security. This is not just a rights issue but also makes economic common sense—artisans and entrepreneurs can be most productive only when they are physically and mentally fit.

7.1.374 The Eleventh Plan considers the MSE sector as an important segment of industry which is unorganized and hence needs support and access to all schemes of industry with special enabling provisions. As it is, Tribal Sub-Plan (TSP) and Special Component Plan (SCP) are constitutional requirements. Support for women's empowerment and minority development has been stressed upon in the Prime Minister's 15-point programme and in other flagship schemes of the government. We know that it is mostly the tribes, SCs, minorities, and women who are engaged in traditional livelihoods and in the small and micro sector. In the handloom sector alone, 60.6% weavers are women, 10.76% belong to SCs, 25.5% to STs, and 42.65% to OBCs.[14]

7.1.375 Thus providing enabling provisions for artisans, weavers, and small entrepreneurs within industrial policies and schemes will automatically fulfil the constitutional requirement and the commitments made by various Plans. While planning infrastructure development for industries, the needs of the micro and small sector would be kept in mind. There is need to move from adversarial to complementary relationships between various segments of industry and MSE. For instance, handlooms can target hi-end exclusive products—stoles, shawls, sarees, and furnishings—while powerloom mills do bulk production for *gamcha*s, *dhoti*s, towels, bed and table linen, etc. Big

TABLE 7.1.15
Year-wise Physical Targets for the Eleventh Plan

Item	2007–08	2008–09	2009–10	2010–11	2011–12	CAGR
Production at current price (Rs crore)	682613	816705	977144	1169112	1398803	15.4%
Employment (lakh persons)	322.28	338.39	355.31	373.08	391.73	4%

Source: Ministry of MSME.

[14] Joint handloom and powerloom census conducted in 1995–96.

brands can continue to develop products such as suitings, shirtings, t-shirts, etc.

7.1.376 The MSE sector, including handlooms and handicrafts, presents an opportunity for exports. Exclusivity, which stems from the dispersed nature of this sector, is its biggest strength (Box 7.1.4). And yet, the dispersed nature of the sector makes it difficult to meet bulk orders, raises quality control issues, robs the workers of bargaining power, limits access to credit and markets, results in absence of social security, and prevents enterprises from benefiting from economies of scale. The effort during the Plan period will therefore be to organize this sector, to create clusters and SHGs of weavers/artisans to improve their bargaining power and to enable them to pool resources. These groups, comprising weavers, artisans, and entrepreneurs, will be given full control over cluster decisions and will be provided support in the form of credit, inputs, expertise, and marketing links.

7.1.377 The Working Group on MSMEs for the Eleventh Plan had projected the need for Rs 296400 crore as the working capital and term loans for MSEs during the Eleventh Plan. At present, there is no sub-sector target for the MSE sector within the overall stipulated 40% ceiling for the priority sector lending. Since sub-targets have already been fixed at 18% for agriculture and at 10% for the weaker sectors, the MSE sector has to compete with real estate, housing, education, retail, etc. for the remaining 12%. Considering the vital role of the MSE sector in generation of large-scale employment opportunities, consideration should be given to whether a separate sub-target for the MSE sector can be effectively introduced in all SCBs. If this is not possible then other means must be found to incentivize lending to this sector.

7.1.378 For micro and small entrepreneurs who cannot bring in sufficient equity/promoter's contribution, a flexible debt–equity ratio may need to be adopted while sanctioning export credit. Banks will be encouraged to ensure that all loans upto Rs 5 lakh to MSEs (excluding credit from MFIs) are given free of collateral at the interest rate of 8%. Coverage under the Credit Guarantee Trust Fund will be increased. As international experience indicates cluster based financing is the most effective way of providing credit to MSEs, 100 MSE clusters based on the PPP model will be adopted on a pilot basis.

7.1.379 During the Eleventh Plan period, an aggressive marketing campaign using the media and icons will be launched. Handlooms, handicrafts, food

Box 7.1.4
Small Success

Individual success stories in various nooks and corners of the country have demonstrated the potential of MSEs. Kolkata-based Mallika's *Kantha* has rejuvenated the traditional Kantha weave. Today, hundreds of women sit at their village homes in West Bengal, making stoles, shawls, sarees, dupattas, table covers, cushion covers, etc., which sell for anything between Rs 5000 to Rs 50000. From the Pope to the Prime Minister, everyone appreciates the art of Kantha.Fab India has shown the tremendous appeal of Indian handlooms and handprints, especially for the young, college-going crowd. Even brands like Pantaloons are starting handloom ranges for both men and women. In Andhra, designer shirts and *kurta*s of khadi made under the PRODIP scheme are a big success. Hotels like the Jahanuma Palace in Bhopal use handlooms and other handcrafted products for interior decoration. This experience is cherished by tourists. Tourists pick up a large number of products, chappals, bags, masks, papier mâché etc., from small shops allotted to artisans inside the Mehrangarh Fort in Jodhpur. The artisans on their part get a steady source of income.Chizami is a small village in the Phek district of Nagaland. Here, an NGO, North East Network, has provided the local youth with a source of livelihood. They make passion fruit, guava, and ginger jams, pickles, and squashes. India has many natural fibres such as banana, *khus*, sisal, korai grass, talipot, palm leaf, coconut, pineapple, screwpine, golden grass, jute, sabai, etc. Not-for-profit organizations such as Industree Crafts are encouraging rural artisans to convert these fibres into value-added finished products such as bags, table mats, cushion covers, hats, floor coverings, curtains, office and home accessories, etc. These products are now being marketed in top stores across the country. Likewise, natural soaps, shampoos, and cosmetics produced by various small units under the brand name of Khadi are already catching on in the domestic market and have tremendous scope for exports.

processing, and other cultural industries will be linked to tourism; circuits for heritage and fabric tourism will be developed. In the West, the cultural industries have become the most rapidly growing sector in the world, contributing over 7% of the world's GDP. Giving an 'industry' status to craftspersons is important because it entitles them to tax benefits and export promotion schemes, makes them eligible for banking and credit support, and helps them lobby for protection of intellectual property.[15]

7.1.380 Mapping of the MSE sector will be carried out and registration of products under the GI Act will be encouraged and supported. Strict enforcement of laws relating to reservation will be carried out. Neglected areas such as occupational health, insurance, and so on will be taken up as an integral part of the MSE policy. Special emphasis will be laid on skill development and upgradation across all sectors.

7.1.381 An effective preference policy for procurement of goods and services produced by MSEs both at Central and State levels will be developed. A policy for women in the micro and small sector, particularly in the unorganized segments, will also be formulated to ensure that women get their rights and that their special needs are catered to.

ELEVENTH PLAN SCHEMES OF MINISTRY OF MSME

7.1.382 Most of the existing schemes for the MSME sector have been evaluated by independent organizations and suitably modified and reorganized. These will be continued during the Eleventh Plan period along with addition of some new schemes. The schemes which will be carried forward in the Eleventh Plan are given in Annexure 7.1.23.

NEW INITIATIVES

7.1.383 The Small Industries Development Organization (now called Micro, Small, and Medium Enterprises Development Organization) has a network of more than 3000 technically qualified personnel working through its Small Industries Service Institutes (and Branch SISIs), testing centres, and autonomous organizations such as the Tool Room, Product and Process Development Centres, etc. In the Eleventh Plan, the Ministry of MSME will establish a Technology Mission to promote new and emerging technologies, assess present levels of technology and their upgrdation, set up technology information centres/data banks and an IT portal for information dissemination to carry out detailed technology audits.

7.1.384 In 2006, the government launched the National Manufacturing Competitiveness Programme. The NMCC and the Ministry of MSME chalked out a five-year programme with a projected expenditure of Rs 850 crore. The programmes include: setting up of design clinics, application of lean manufacturing technologies for increasing competitiveness of firms by systematically identifying and eliminating waste throughout the business cycle. These programmes will be demand driven and will be implemented in the PPP mode in selected industrial clusters.

7.1.385 Infrastructural constraints, notably the power outages, affect the MSEs much more than the larger enterprises. Although some States do offer differential power tariffs in favour of the MSEs, the real deficiency is the quality and quantity of power supply. During the Eleventh Plan, group/associations of the MSEs will be incentivized to establish captive power plants as enjoined in the Electricity Act 2003 or to set up common large-scale generation facilities with dedicated feeder lines. Roads, transport, water, and other infrastructure problems, or their total absence, push up operating costs of MSEs as against goods produced in more favourable conditions in other countries and it is, therefore, imperative for the government to develop adequate infrastructure.

7.1.386 Labour Laws and Factory Laws have created problems for MSE units in terms of number of inspections. The committee set up under Member (Industry) Planning Commission recommended a system of third-party inspection to give enterprises an option to get their regulatory compliance certified by accredited agencies. Once such certification has been obtained the unit would be exempted from routine inspection. Special inspections would be

[15] InfoChange News and Features, September 2006.

authorized only on receipt of credible complaints. Early implementation of this recommendation during the Eleventh Plan will provide relief to the MSMEs.

7.1.387 A proper database is critical for formulation of appropriate schemes for the MSE sector. The recently announced 'Package for Promotion of Micro and Small Enterprises (SMEs)' contains a proposal for providing financial support to the MSE Associations for their capacity building and for strengthening the database and contacts with the grassroots. This initiative would be carried forward during the Eleventh Five Year Plan.

7.1.388 An outlay of Rs 11500 crore has been allocated to Ministry of MSME, out of which Rs 4000 crore is for DC (MSME) and Rs 7500 crore is for agro and rural industries.

7.2 MINERALS

Introduction

7.2.1 Accelerated growth rate of the Indian economy needs rapid development of the mining sector, on which most of the basic industries depend. The efforts for locating minerals over the last 55 years have enhanced reserves for various minerals such as mica, barites, chromite (metallurgical), coal (thermal), lignite, bauxite (metallurgical), manganese ore, and iron ore, and have placed the country among top 10 producers of these minerals. However, in respect of fertilizer minerals, diamond, gold, nickel, copper, lead, zinc, platinum group of metals, and rare metals, there has hardly been any discovery despite an extremely favourable geological environment.

7.2.2 With the surge in the demand for metals in response to strong economic growth, it has become necessary to mount a well-planned, comprehensive, and time-bound programme for regional and detailed exploration for locating and delineating the country's hidden mineral deposits, which are likely to be considerable.

7.2.3 The mining sector was opened to FDI in 1993 and 100% FDI has been allowed since 2000. However, the actual flows have been minimal in the absence of policies conducive to FDI for prospecting. Attracting the FDI into exploration and prospecting will require a revision of the current non-investor-friendly mining regime and adoption of a multi-disciplinary approach, embracing the legal framework, technology, sustainability, infrastructure, and procedural streamlining.

Review of the Tenth Plan

7.2.4 The Offshore Areas Mineral (Development and Regulation) Act 2002 providing for the development and regulation of mineral resources in the territorial waters, continental shelf, and the exclusive economic zone was notified on 31 January 2003. The legislation would enable the streamlining of mineral exploration and development in the offshore areas and ensure systematic and scientific exploitation of mineral reserves (except petroleum, natural gas, and hydrocarbon resources) for attracting private investment in the offshore mineral sector.

7.2.5 In 2000, the ceiling of 74% on FDI in exploration and mining of diamonds and precious stones was removed though it continued to require Foreign Investment Promotion Board approval. In 2006, this restriction too was removed and all FDI in the mining sector, including FDI above 74% in mining of diamonds and precious stones, is now on the automatic route.

7.2.6 For a comprehensive review of the National Mineral Policy and for suggesting possible amendments to the MMDR Act 1957, the Planning Commission constituted a high-level committee under the Chairmanship of Member (Industry), Planning Commission. The high-level committee submitted its report to the government on 19 July 2006. The committee recommended a number of changes in the National Mineral Policy and in the relevant laws and rules to stimulate mineral exploration activities and promote the development of a vibrant mining and mineral sector in the country. For augmenting state revenues from the mineral sector, the committee recommended that the method of fixation of royalty should move decisively toward ad valorem rates, away from the tonnage system currently prevailing for a number of

economically important minerals. Based on the recommendations of the high-level committee, the government approved the National Mineral Policy 2008, and the next task is to introduce a Bill in the Parliament for amendment to the MMDR Act 1957 and further appropriately amend Mineral concession Rules, 1960 and Mineral Conservation and Development Rules (MCDR), 1988.

7.2.7 The Ministry of Mines constituted a study group in August 2006 for revision of the rates of royalty and dead rent on major minerals (other than coal, lignite, and sand for stowing), and to make appropriate recommendations to the government. The terms of reference of the group are in line with the recommendations of the high-level committee on National Mineral Policy.

7.2.8 The concept of reconnaissance permit (RP) was introduced in 1999 and until 31 December 2006, 205 RPs covering an area of 282908.50 sq km were granted prior approval. However, during the Tenth Five Year Plan there was a declining trend in the number of RP approvals as shown in Figure 7.2.1.

7.2.9 The RP instrument resulted in the mining companies blocking up large areas while actually undertaking exploration over very small areas. It is in this context that the high-level committee has recommended the introduction of Large Area Prospecting License.

The Sub-sector Profile during the Tenth Plan

Iron Ore

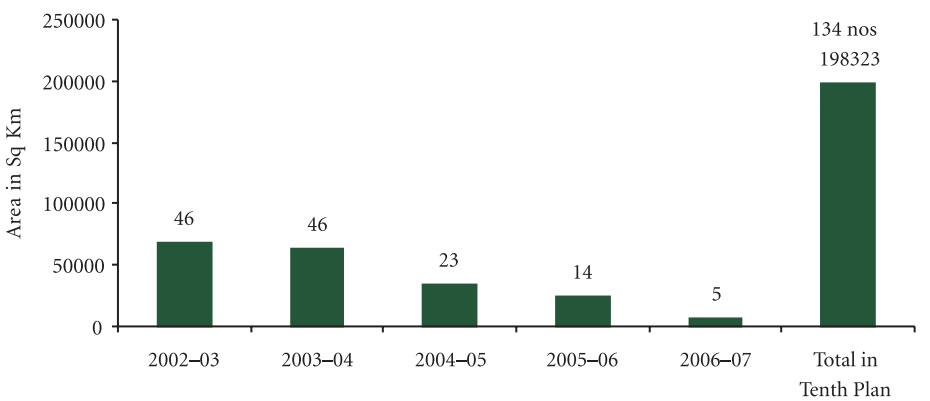
7.2.10 Owing to the increase in the demand and production of steel worldwide and particularly in China, there was considerable buoyancy in the production and exports of iron ore during the Tenth Five Year Plan period. The production of iron increased from 86.23 million mt in 2001–02 to 172.30 million mt in 2006–07 and the exports increased from 23.09 million mt in 2001–02 to 84.05 million mt in 2005–06.

Non-ferrous Metals

ALUMINUM

7.2.11 The production of bauxite increased from 8.60 million tonnes in 2001–02 to 13.075 (P) million tonnes in 2006–07. Panchpatmali bauxite mine of National Aluminium Company Ltd. (NALCO) in Orissa accounts for about 40% of the country's production. It is a world-class, fully mechanized mine with an existing capacity of 4.8 million tonnes per annum. There are six alumina refineries owned by five aluminium companies in the country, namely NALCO, HINDALCO, Indian Aluminium Company Limited (Indal), Bharat Aluminium Co. Ltd (BALCO), and Madras Aluminium Company Ltd.

7.2.12 The total alumina capacity increased from 2.72 million tonnes in 2001–02 to 4.24 million tonnes in 2006–07, which is very small considering the prospect



Source: Ministry of Mines.

FIGURE 7.2.1: Approvals of Reconnaissance Permit

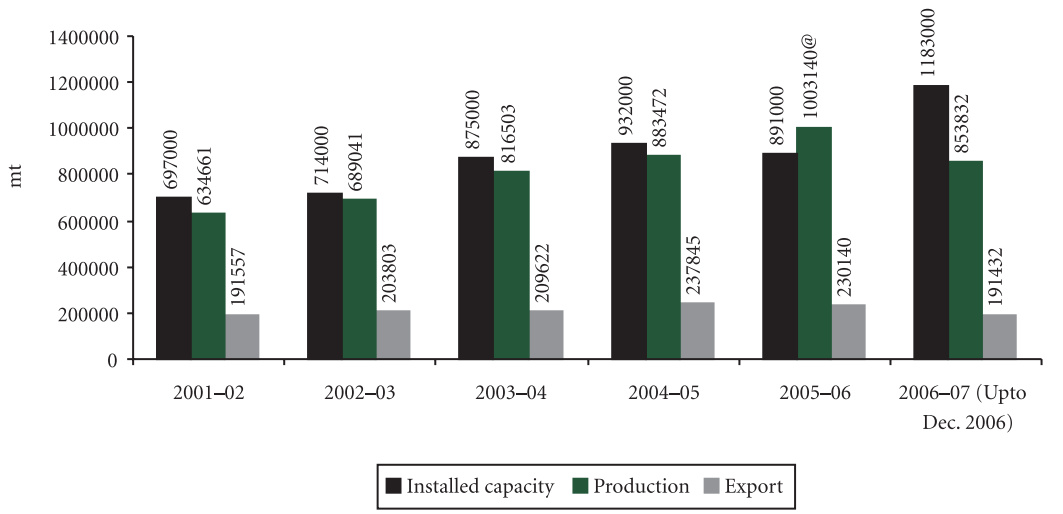
for producing and exporting this product in which India is internationally very competitive.

7.2.13 Despite the limitation imposed by the high energy cost, there was a substantial increase in the capacity, production, and export of aluminum in the country during the Tenth Five Year Plan as shown in Figure 7.2.2.

7.2.14 Production of aluminum is estimated to have increased by 65% during the Plan period, the bulk of the increase being absorbed domestically. NALCO, a CPSE, has about 35% share of production.

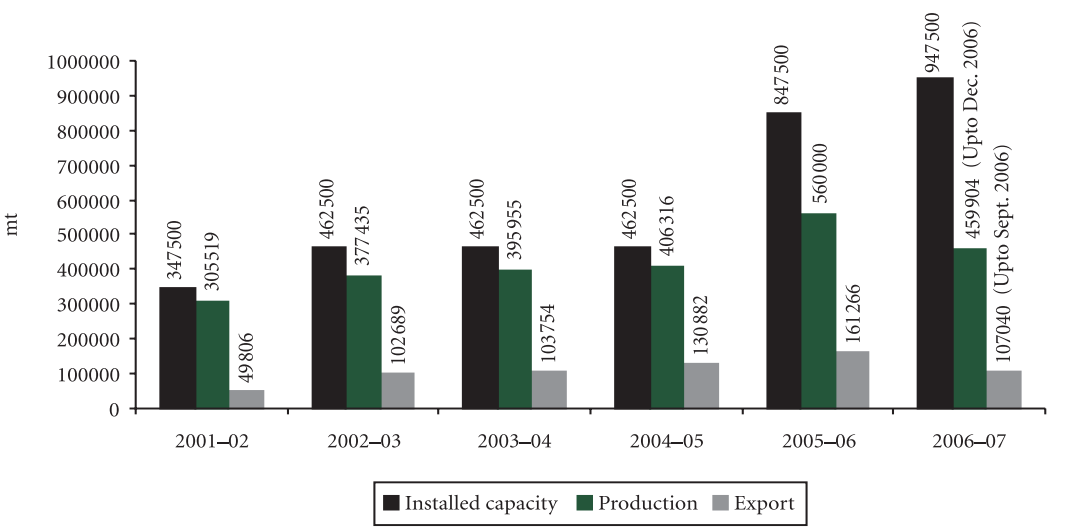
COPPER

7.2.15 India has a substantial capacity for the production of primary copper metal but is significantly



Note: @ In 2005–06, additional production of aluminum is due to capacity expansion in BALCO.
Source: Annual Reports, Ministry of Mines and Department of Commerce.

FIGURE 7.2.2: Production and Export of Aluminium



Source: Annual Reports, Ministry of Mines and Department of Commerce.

FIGURE 7.2.3: Capacity, Production and Export of Copper

dependent on the import of copper metal-in-concentrates. The production and import of copper concentrate in 2005–06 was 22984 mt and 1072905 mt, respectively. Figure 7.2.3 gives the figures of capacity, production, and export of primary copper during the Tenth Five Year Plan period.

7.2.16 Although India is dependent on imports of copper concentrate, its smelting capacity in the metal grew almost three-fold and the production by about 60% during the Tenth Five Year Plan period. The share of the public sector (HCL) in the production fell from about 13% in 2001–02 to about 6% in 2005–06.

ZINC AND LEAD

7.2.17 The capacity expansion and growth of production of zinc and lead were also impressive, almost doubling for both metals as shown in Figure 7.2.4.

7.2.18 After privatization, Hindustan Zinc Ltd (HZL) expanded its zinc mining and used the mineral from its captive Rampura Agucha mines to expand smelting. The capacity and production of lead during the Tenth Five Year Plan are shown in Figure 7.2.5.

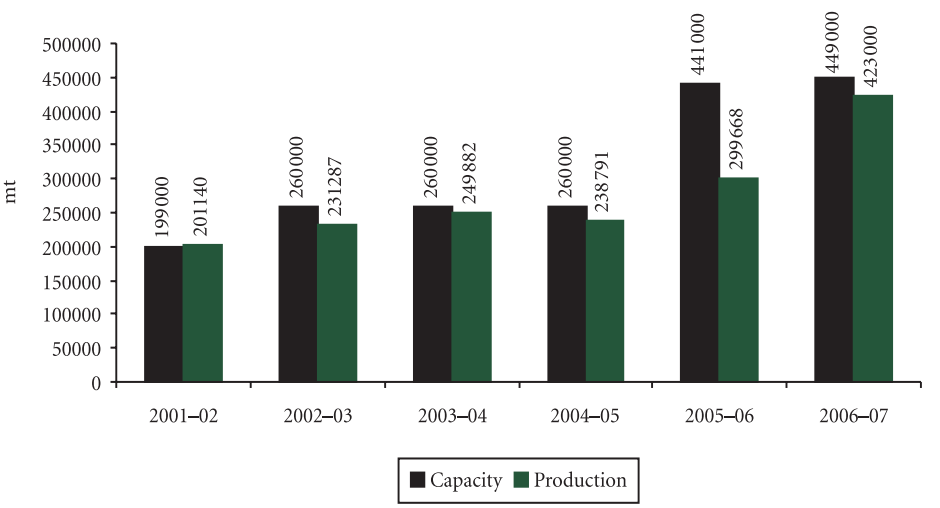
PLAN OUTLAY AND EXPENDITURE DURING THE TENTH PLAN

7.2.19 An outlay of Rs 8344.50 crore was approved for the Tenth Five Year Plan (2002–07) for the Ministry of Mines with gross budgetary support of Rs 1271.00 crore, net budgetary support of Rs 1021.00 crore, and (IEBR) of Rs 7073.50 crore. There was a provision of Rs 250 crore [Geological Survey of India (GSI) Rs 200.00 crore and IBM Rs 50.00 crore] for external aid through the Budget in the Tenth Plan. However, during the MTA of the plan, the outlay was reduced to Rs 4485.28 crore against which the expenditure was of the order of Rs 2856.29 crore. The shortfalls were mainly on account of delay in the approval of second phase expansion of NALCO and slow progress in the modernization and replacement scheme of the GSI. (The details are given in Annexure 7.2.1).

ELEVENTH PLAN OBJECTIVES

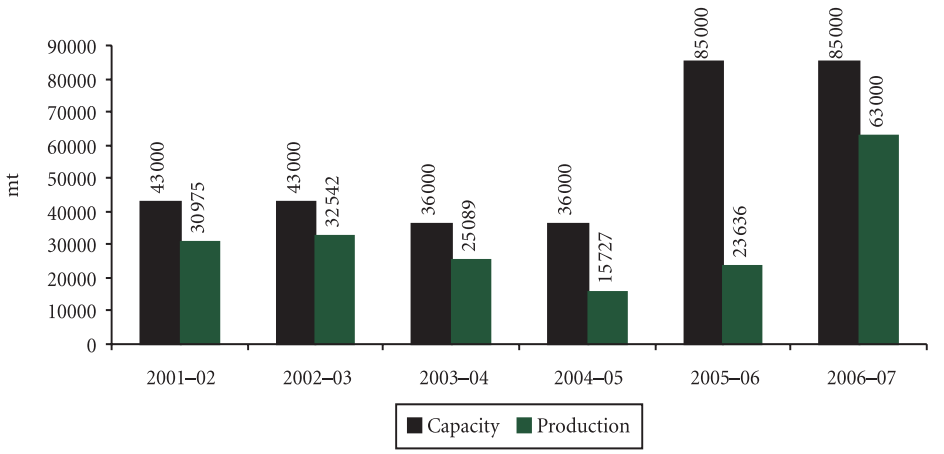
7.2.20 The following are the main objectives of the Eleventh Five Year Plan in the mining sector:

- Intensification of exploration for low-volume high-value minerals such as gold, diamond, base metals, and platinum group of minerals and efforts towards augmentation of the existing resources in respect of ferrous and non-ferrous minerals and industrial minerals.
- Improvement of the National Mineral Inventory, particularly for those minerals in which reserves are low such as base metals, nickel, tin, graphite, noble metals, precious stones, and rock phosphate.
- Restructuring and modernization of the GSI in the



Source: Working Group Report on Mineral Exploration and Development (Other than coal and lignite), Eleventh Five Year Plan, Volume III.

FIGURE 7.2.4: Capacity and Production of Zinc



Source: Working Group Report on Mineral Exploration and Development (Other than coal and lignite), Eleventh Five Year Plan, Volume III.

FIGURE 7.2.5: Capacity and Production of Lead

areas of instrumentation for both ground and airborne surveys, and acquisition of state-of-the-art laboratory facilities with high-precision capabilities. Establishment of a comprehensive portal giving meta-data in respect of regional exploration work done by GSI and the scope for investment based on such work.

- Modernization of the IBM and the State directorates for establishment of a national registry (Cadastre) and a mineral atlas. The database would comprise both physical and resource inventory and include a Tenement Registry with details of green field areas, brown field areas, and relinquished areas including areas identified by the GSI as not worth pursuing. The data would be maintained online giving instant information to prospective investors on what is available for reconnaissance, prospecting, and mining.
- Acceleration of the process of adoption of United Nations Framework Classification (UNFC) system of classification of mineral resources so as to present reserves/resources of minerals on an internationally uniform system and help in attracting more private investment into the sector.
- Development of minerals in the NER with the States of this region playing a major role and the Central Government agencies facilitating their initiatives with specific interventions.
- Strengthening R&D activities in all aspects of mining.

Eleventh Plan Strategy

7.2.21 Given the technology and resource limitations of GSI, it would be necessary to encourage private sector initiative as the main driver of investment in exploration even as the GSI is strengthened to access the latest technologies such as deep imaging and electromagnetic probing.

7.2.22 In line with the current economic policy, in future the core functions of the State in mining will be facilitation of the exploration and mining activities of investors and entrepreneurs, provision of infrastructure, regulation, and tax collection. Where it is deemed necessary for the State to continue the mining activities, there will be arm's length between State agencies that explore and mine and those that regulate. Transparency would be maintained in the allocation of ore bodies for mining.

7.2.23 An environment conducive for private sector investment will be promoted by streamlining the licensing procedures, granting security of tenure to the RP/prospecting license (PL)/ML holders, minimizing the procedural delays, and improving the transport infrastructure.

7.2.24 It would be ensured that mining is done in a sustainable manner, without any adverse effect on the environment, by effective enforcement of the laws and by developing a Sustainable Development Framework

(SDF), especially tailored to the context of India's mining environment, to be adhered to voluntarily by the mining firms.

7.2.25 New relief and rehabilitation norms (to be adhered to on a voluntary basis) will be developed building on the existing packages announced by the States for compensation to the PAPs as well as for the benefit that must accrue to the communities living in the villages around the mining area.

Structure of Output

7.2.26 In all, about 90 minerals are produced in the country, which include 4 fuel minerals, 10 metallic minerals, 50 non-metallic minerals, 3 atomic minerals, and 23 minor minerals. The total value of mineral production (excluding atomic minerals) during the year 2006–07 is estimated at Rs 87866.35 crore. During the year 2006–07, the provisional value of fuel minerals was put at Rs 63938.76 crore (73% of total value), metallic minerals at Rs 12858.71 crore (15% of the total value), and non-metallic minerals including minor minerals at Rs 11068.88 crore (12% of the total value).

Life Indices of Principal Minerals

7.2.27 The life indices as at the end of the Tenth Plan of important minerals such as bauxite, copper ore, chromite, lead–zinc ore, iron ore (haematite and magnetite) are given in Annexure 7.2.2. The life indices beyond 1 April 2007 estimated at the current level of production for important minerals are: bauxite (166 years); copper (200 years); chromite (33 years); lead–zinc ore (69 years); and iron ore (97 years).

7.2.28 The estimated apparent consumption, domestic production, resource situation, and life indices of some selected minerals in the terminal years of the Tenth and Eleventh Plans are given in Annexure 7.2.3. The life indices in years at the end of the Eleventh Five Year Plan of some of the important minerals are estimated as follows: bauxite—refractory grade (96 years); chromite (16 years); graphite (58 years); gypsum (125 years); and rock phosphate (68 years).

Material Balance of Principal Non-ferrous Metals

7.2.29 The projections of production, import, export, and domestic demand up to 2011–12 of principal non-ferrous metals—such as aluminum, copper, zinc, and lead—based on the Eleventh Five Year Plan Working Group Report on Mineral Exploration and Development are given in Annexure 7.2.4. Strong growth in domestic demand is expected in all non-ferrous metals, but the country will remain a net exporter of aluminum and copper (based largely on imported mineral concentrate). It will become self-sufficient in zinc but will be a net importer in lead.

Sectoral Profile

Iron Ore Resources

7.2.30 The iron ore resources identified so far and estimated on the UNFC basis as on 1 April 2005 are about 14630 million tonnes of haematite ore and about 10619 million tonnes of magnetite ores. Unlike haematite, almost the entire magnetite resource is still to be converted to reserves. Even the small proportion, which has been converted so far by the National Mineral Development Corporation Limited, is in the Western Ghats biodiversity area and is presently not available for extraction because of the ban imposed by the Supreme Court for reasons of environmental protection. Of the haematite resources, high-quality reserves above 65% Fe content constitute only about 1.3 billion tonnes. The details are given in Annexures 7.2.5 and 7.2.6.

Manganese Ore

7.2.31 The all-India total resources of manganese ore as on 1 April 2005 are 380 million tonnes. Out of these, 37.29% are in the reserve category and balance 62.71% in the remaining resource category. Of the total resources, the blast furnace grade constituted 130.2 million tonnes, medium grade 31.63 million tonnes, and ferro–manganese grade 25.3 million tonnes.

Chromite

7.2.32 The all-India total resources of chromite are 232.12 million tonnes as on 1 April 2005 (provisional). Out of these 28.48% are in the reserve category and 71.52% are in the remaining resource category. Grade wise, 18% are metallurgical, 1.79% are refractory, 23.69% are charge chrome, 18.28% are beneficiated, and the balance 38.24% are low-grade ferrochrome, other unclassified and undefined grades. The bulk of

the resources, that is 93.38%, is located in Orissa. Out of the 161 million tonnes of resources in leasehold, 33.67% are in the public sector and 66.33% in the private sector. Chromite deposits associated with Iron Ore Group are the most important. Among them, two belts, namely, Sukinda Ultramafic Belt and Nausahi Ultramafic Belt of Orissa, contain about 97% of the total Indian resources of chromite.

BAUXITE

7.2.33 The all-India total resources of bauxite as on 1 April 2005 (provisional) are 3306 million tonnes. Out of these, 915 million tonnes are under the reserve category and the balance 2392 million tonnes under the remaining resource category. Grade wise, 0.4% are chemical, 2.1% are refractory, 83.39% are metallurgical, and the balance 14.1% are unclassified and other mixed grades. Out of the leasehold resources of 1079 million tonnes, 41.94% are in the public sector and 49.06% in the private sector. Out of the total resources, 54.35% are in the captive sector and 45.65% are in the non-captive sector. Out of the public sector resources of 453 million tonnes, 300 million tonnes are in the captive area.

COPPER ORE

7.2.34 The all-India total resources of copper ore as on 1 April 2005 (provisional) are 1394 million tonnes, with a metal content of 11.41 million tonnes. Out of these, 369.5 million tonnes of ore with a metal content of 4.4 million tonnes is under the reserve category and the balance under the remaining resource category. Grade wise, 28.031 million tonnes are with +1.85% copper, 622 million tonnes are with 1.0%–1.85% copper; 604 million tonnes are with 0.5%–1.0% copper, and 140 million tonnes are with less than 0.5% copper.

7.2.35 HCL, a CPSE, is the only undertaking mining copper ore in the country. Most of the copper deposits under mining have been explored in detail. Exploration activities have also led to discovery of small deposits in the western, eastern, southern, and central Precambrian shield areas of the country. It is necessary to intensify exploration activities for copper and for this HCL could enter into joint ventures with specialized companies abroad that have the latest technologies to undertake the exploration activity.

LEAD–ZINC ORE

7.2.36 The all-India total resources of lead–zinc ore are 522 million tonnes with 7.2 million tonnes of lead metal and 24.25 million tonnes of zinc metal. Out of the total resources, 126 million tonnes with 2.6 million tonnes of lead metal and 11.0 million tonnes of zinc metal are under reserve category. Grade wise, 86.82 million tonnes are with +10% lead and zinc, 144.67 million tonnes are with 5%–10% lead and zinc, and 291 million tonnes are with less than 5% lead and zinc metal. Out of the total resources, 352.82 million tonnes with 3.7 million tonnes of lead metal and 8.99 million tonnes of zinc metal are in the freehold sector. In the leasehold, the total resources are 169.7 million tonnes with 3.5 million tonnes of lead metal and 15.26 million tonnes of zinc metal. Table 7.2.1 gives the production and import figures for lead–zinc ores.

TABLE 7.2.1
Production and Imports of Lead–Zinc Concentrate
(Million Tonnes)

Year	Production	Imports
2001–02	450438	68148
2002–03	544986	37550
2003–04	663234	103007
2004–05	750675	81547
2005–06	984745	40187

Source: Annual Reports—Ministry of Mines.

GLOBAL SCENARIO VIS-À-VIS INDIAN MINERAL SECTOR

7.2.37 Mineral exploration activities are risky ventures with long gestation period and requiring huge investment. During the first half of the last decade (1991–95), the global spending on mineral exploration was US$ 18500 million, which declined to US$ 14900 million in the second half (1996–2000). Indian spending on mineral exploration is hovering around 0.7%–0.8% of the total global expenditure. Low spending on the exploration activities has resulted in non-realization of the mineral potential in the country. The following data of some important minerals suggest that there is need for accelerating exploration activities for converting resources into reserves (Table 7.2.2). Reserve-to-resource ratio is lower in the case of India as compared with global reserve-to-resources ratio except for lead and zinc.

TABLE 7.2.2
Minerals—Unrealized Potential
(in Million Tonnes)

Commodity	Global		India	
	Resources	Reserves	Resources	Reserves
Copper	1600	940	11.4	4.4
Zinc	1900	460	24.2	11.0
Lead	1500	140	7.2	2.6
Nickel	140	140	1.9	0.0
Gold#	90000	90000	497	85.0
Diamonds*	1250	1250	4.6	1.2

Note: # in tonnes, * in million carats.
Source: Indian Mineral Year Book 2004, IBM.

MAIN ACITIVITIES OF GOVERNMENT AGENCIES AND CPSEs PROPOSED FOR THE ELEVENTH PLAN

Geological Survey of India (GSI)

7.2.38 During the Eleventh Five Year Plan, the GSI will be undertaking seven schemes namely, Survey and Mapping, Mineral Exploration, Specialized Investigation, R&D and other Exploration, Map and Publication and Information Dissemination, Human Resource Development, and Modernization and Replacement. Under the Mineral Exploration programme, the GSI would be undertaking activities for augmentation of resources of such minerals in which the country is deficient and also for high-value minerals such as gold, diamond, platinum group of elements (PGE); other minerals such as copper, lead, zinc, iron ore, manganese ore, chromite, bauxite, and limestone; and strategic minerals such as tungsten, nickel, fertilizers minerals, etc. The GSI will also undertake the procurement of laboratory equipments and replacement of blue water research vessel for the aging RV Samudra Manthan for carrying out sea-bed survey and exploration. It will also acquire a geo-technical vessel and a Heli-borne geophysical survey system. The process for procurement of these items was initiated in the Tenth Five Year Plan and is programmed to be completed in the Eleventh Five Year Plan. Details of physical programmes proposed for the Eleventh Five Year Plan by GSI are given in Annexure 7.2.7.

7.2.39 Two issues that need to be tackled quickly vis-à-vis the GSI are the separation of earth science activity from the mineral search activity and out-sourcing the search for coal and lignite to Coal India Limited which should undertake such search on a commercial basis.

Indian Bureau of Mines (IBM)

7.2.40 In accordance with its charter of function, the activities of IBM have been grouped into four broad schemes, namely, Inspection of Mines for Scientific and Systematic Mining; Mineral Conservation and Mines Environment, Mineral Beneficiation Studies—Utilization of low grade and sub-grade ores and analysis of environmental samples; Technological Upgradation and Modernization; and Collection, Processing, Dissemination of data on mines and minerals through various publications. It is imperative that the budgetary resources of IBM are augmented in order to strengthen it with manpower and equipment so that it can effectively tackle the problem of bad mining practices in the country. IBM will be taking two new projects, namely, (i) computerized online register of mining tenements system and (ii) management of solid waste from mining in India. The details of physical targets proposed for Eleventh Five Year Plan by the IBM are given in Annexure 7.2.8.

Mineral Exploration Corporation Ltd (MECL)

7.2.41 During the Eleventh Five Year Plan, MECL will undertake detailed exploration work under the promotional scheme and procurement of equipments under the capital scheme. MECL needs funds for undertaking development (promotional) and exploration in areas which the private sector finds unattractive. It also needs to enter into joint ventures with specialized exploration companies abroad for undertaking commercial exploration for RP and PL holders.

7.2.42 The company will make concerted efforts on improving the mineral inventory, particularly of ferrous and non-ferrous minerals, and will endeavour to improve its competitiveness so that it can secure work orders from mineral-rich States. Details of the physical targets proposed for the IBM and MECL for the Eleventh Five Year Plan are given in Annexure 7.2.8.

National Aluminium Company Ltd (NALCO)

7.2.43 NALCO is a profit-making CPSE with a share of 35% of the domestic production of the metal. Its second phase expansion scheme, which was approved

by the GoI in October 2004 at an estimated cost of Rs 4091.51 crore, is likely to be completed by December 2008. The capacity of various project segments being expanded is given in Annexure 7.2.9. NALCO will also initiate action for setting up green field projects and diversifying its activities.

Hindustan Copper Ltd (HCL)

7.2.44 HCL, which was earlier a sick CPSE, has been making profits over the past three years. During the Eleventh Five Year Plan, HCL will be undertaking replacement and renewal of equipments to be funded through their internal resources for maintaining the existing level of production and for planning enhanced production in the future.

Research and Development (R&D)

7.2.45 Research work is being undertaken by the National Institute of Rock Mechanics, Jawaharlal Nehru Aluminium Research, Development, and Design Centre, the National Institute of Miners' Health, and other educational institutions. The funds for research are being provided to these institutions by the Ministry of Mines on approval of research projects by the Standing Advisory Group in the Ministry.

7.2.46 The major thrust areas identified for R&D in the mineral sector include: exploration, mining technology, mineral processing and value addition, metal extraction, alloys and product development, and environment management for ensuring sustainable development of the sector.

7.2.47 There is need for a focused approach in the field of R&D in the mineral sector. Some of the specific projects identified for the Eleventh Plan are as follows:

- Study of greenstone belts and their associated minerals, especially gold (Au) and PGE mineralization.
- The by-products and wastes that are available are valuable products for the future. With metal prices for titanium (Ti), vanadium (V), and gallium (Ga) scaling new highs, an integrated approach to win many materials from the same source has become imperative. Red mud requires a serious second look as it is possible to recover the above-mentioned metals. Similarly, a re-look at various slags and anode slimes for high-value trace metals for PGE metals is needed and specific R&D programmes should be taken up for secondaries and wastes.
- Multi-material extraction technology for extraction of metals such as tungsten, molybdenum, vanadium, chromium, nickel, etc., on the one hand, and value-added trace elements such as gallium, indium, tellurium, etc., on the other hand, needs to be developed.

7.2.48 For strengthening R&D activities in mining, consideration needs to be given to the proposal to set up a centralized R&D institution for undertaking research on all aspects of mining.

Human Resource Development

7.2.49 GSI, IBM, State Directorates of Mines and Geology, State Mining Corporations, Central Public Sector Undertakings (CPSUs), private and joint venture exploration and mining companies, research institutions, and academic institutions are the key players which recruit competent and trained manpower in the mineral sector. Organizations such as GSI and IBM are facing problems of shortage of trained manpower. The best talents are being attracted by areas such as IT and business management and there is little demand among students for taking up mining engineering and geology as courses of study. Non-induction of officers at the entry level in the GSI and IBM has compounded the problem. In order to remedy the situation, it is necessary to make an assessment of the future requirement of geologists and mining engineers in the GSI and IBM and announce a long-term programme of recruitment.

Sustainability of Mineral Development

7.2.50 Mineral development faces opposition in the country on two accounts. First, there is scepticism about mining operations being done in a manner that does not have an adverse impact on the environment. Second, there is a feeling among PAPs that they have not received enough compensation. More importantly, there are unfulfilled expectations from mining companies for providing development services in return for the social license to operate the mines.

7.2.51 There are two statutes, viz., the Forest (Conservation) Act 1980 and the Environment (Protection)

Act 1986, which lay down the law that must be followed in the development of mines. A criticism that has been made is that the two statutes have a preoccupation with two concerns, namely, compensation for diversion of forest land to non-forest use in various forms (including compensatory afforestation) and the need for environment impact studies prior to the grant of environmental clearances. The best practice internationally goes much beyond these concerns. Worldwide, mining interventions are becoming increasingly sophisticated and the objective is 'to ensure that the critical natural capital is maintained, that ecosystems are enhanced where possible, and that mineral wealth contributes to net environmental continuity.' (National Mineral Policy: Report of the High Level Committee, 2006).

7.2.52 As for relief and rehabilitation, various mineral-rich States already have in position policies and executive orders that lay down the entitlements of the PAPs. But the practice in the country falls short of that prevailing internationally in mining sector interventions. The international best practices include 2%–3% of the turnover of mining companies being expended on social infrastructure in the region, a direct financial stake in the mining venture to indigenous communities (e.g., tribals) in the form of equity, and all this is in addition to fair compensation to PAPs by way of cash, housing, and jobs. Mining companies in India now under statutory obligations, routinely undertake welfare measures for the development of entire local communities. However, as observed by the high-level committee, 'these are unorganized ad hoc initiatives that are voluntary in nature and for which there is no accountability to outside agencies'. It is necessary to have a formalized framework so that standards are laid down and adherence to the standards is ensured.

7.2.53 In order to enhance the contribution of mining to the enrichment of the environment and improve the well being of the indigenous communities beyond what the current law and policy provides, the high-level committee on the Mineral Policy has recommended that a framework should be prepared and adapted to the Indian mining context on the basis of the SDF developed by the International Council of Mining and Metals and the International Union for the Conservation of Nature and Natural Resources. Once such a framework has been prepared, all mining leaseholders would be required to adhere to it as a condition of their lease. The government would establish a mechanism for monitoring such adherence in a participative mode along with the NGOs and PAPs.

Impediments to Investment in Mining

7.2.54 The main reason for the lack of private sector investment in exploration and mining activity is that there is no assurance that the RP holder will get the prospecting license and the PL holder will get the ML. Further, even after an entrepreneur gets the ML, several discretionary provisions in the statutes pose a threat to the ML holder's security of tenure.

7.2.55 At present, the system of exclusive RPs contains no incentive for the RP holder to expedite reconnaissance work. Furthermore, the lack of clarity on the right to transfer PLs limits the applications for RP only to large companies, which have the ability to take up reconnaissance, prospecting, as well as mining activity. Without a guaranteed and explicit right to transfer the PLs, standalone exploration companies, which have the ability to do reconnaissance and prospecting on the basis of state-of-the-art techniques, but do not undertake mining as this is a separate activity, are discouraged from making an application for RP. This is the single most vital issue for attracting investment in exploration and it lies at the core of the recommendation for 'unbundling' made by the high-level committee on the National Mineral Policy.

7.2.56 Even though the regulations contain time limits for the State Government in disposing of applications, they may defer indefinitely a decision on an application for RP/PL/ML in the hope that applications would come in future from value-adders.

7.2.57 Procedural delays in the disposal of applications occur for a number of reasons. One of them is that a great deal of time is taken for the verification of mineral titles. The availability of a spatially represented, easily accessible registry of all pending and granted exploration titles is a key part of a modern regulatory system.

7.2.58 Several State Government undertakings are involved in mining activity and since the State is also a regulator the State's involvement in mining, in competition with private mining companies it can become a disincentive for the private sector investment.

Mineral Development in the States

7.2.59 In line with the current economic and new mineral policy, the core functions of the State in mining will be facilitation of exploration and mining activities of investors and entrepreneurs, provision of infrastructure, and regulation and tax collection. The mineral-producing States need to update their mineral policy in line with the National Mineral Policy.

Infrastructure in Mining Areas

7.2.60 While deficiencies in arterial roadways, railways, and port infrastructure need to be addressed by the Central Government, equally crucial for the development of mining is the infrastructure that links mines to the arterial routes. While the Central Government is providing funds for arterial routes, there is a need for funds for linking infrastructure as well. This is particularly important in our country where non-captive mining is mainly an SME sector activity.

Strategies to meet the Challenges

7.2.61 At the end of the Tenth Five Year Plan, the potential of the mineral sector in the country remains largely unrealized in the absence of exploration activities on the scale needed. The public sector bodies are hamstrung by the lack of financial resources and the private sector does not find the legal framework and the procedures to be conducive for the enterprise. There are other challenges as well, particularly those relating to the transport infrastructure, the protection of the environment, rehabilitation of the people displaced by the mining activity, and increasing the revenue for the State Governments from mining activity. We give below the more important strategies for tackling them, based largely on the recommendations of the high-level committee on National Mineral Policy referred to earlier.

- It is necessary to effect changes in law so that the transition from RP to PL and further to ML is made seamless. Discretionary powers of the government, which affect the security of tenure of the holders of RP/PL/ML, should be eliminated or at least substantially curtailed.
- For maximizing the investment in exploration, RPs should be made non-exclusive and prospecting companies should be given explicitly a guaranteed right to transfer the PL with the accompanying right to be granted the ML.
- The present registry system should be modernized by creating a digitized online mineral atlas, which would show the mineral titles clearly. This will make it feasible for applicants to ascertain the availability of areas before applications and to apply online, which should be allowed.
- Co-ordination-cum-empowered committees need to be established in the Centre as well as in the States to monitor the clearances and to serve as a pressure point to ensure speedy clearance by different departments and agencies.
- In line with the current economic policy, the core functions of the State in mining should be facilitation of exploration and mining activities of private sector investors and entrepreneurs, provision of infrastructure, and regulation and tax collection.
- To facilitate the provision of infrastructure linking the mines to the arterial routes, each State Government with major mining activity should set up a mineral development fund (MDF) by earmarking 15% of the annual royalty collections for the fund. The GoI should also make matching contribution to the MDF of each State every year for the duration of the Eleventh Plan.

Plan Outlay in the Eleventh Plan

7.2.62 The scheme-wise break up of the Eleventh Plan outlay is given in Annexure 7.2.10. The total projected outlay for the Eleventh Five Year Plan for Ministry of Mines is Rs 7430 crore at 2006–07 price (Rs 8404 crore at current price) which includes Rs 1043 crore of GBS at 2006–07 price (Rs 1180 crore at current price) and Rs 6387 crore of IEBR at 2006–07price (Rs 7224 at current price).

ANNEXURE 7.1.1
Industrial Investment Proposals

Year	Industrial Entrepreneur Memoranda (IEM)		Letter of Intents (LOIs)		Direct Industrial Licenses (DILs)	
	No. of Proposals	Proposed Investment (Rs Crore)	No. of Proposals	Proposed Investment (Rs Crore)	No. of Proposals	Proposed Investment (Rs Crore)
2001	2981	91234	117	1318		
2002	3172	91291	89	649		
2003	3875	118612	116	1395	14	
2004	5118	267069	39	381	61	4884
2005	6203	353956	24	333	111	2657
2006	6260	588271	20	137	90	4693
2007 (up to March 2007)	1030	204517	1	37	6	886

Source: SIA Statistics, April 2007, DIPP.

ANNEXURE 7.1.2
Investment Projects Benefiting from Loans from Banks/FIs in 2004–05, 2005–06 and 2006–07

		2004–05			2005–06			2006–07		
		Number of Projects	Project Cost Amount (Rs Crore)	% Share	Number of Projects	Projects Cost Amount (Rs Crore)	% Share	Number of Projects	Project Cost Amount (Rs Crore)	% Share
1	Industry				2	3	4	5	6	7
1.	Infrastructure	75	31294	33.3	109	44541	33.9	125	101744	35.9
	(i) Power	60	12419	13.2	66	35358	26.9	64	51451	18.2
	(ii) Telecom	4	15832	16.9	5	2639	2.0	9	17950	6.3
	(iii) Ports and airports	11	3043	3.2	3	2295	1.8	7	10745	3.8
	(iv) Roads, storage, and water management				22	2386	1.8	8	13083	4.6
	(v) SEZ, industrial, biotech, and IT parks				13	1864	1.4	37	8515	3.0
2.	Sugar	14	763	0.8	20	2857	2.2	33	8867	3.1
3.	Textiles	126	7458	8.0	158	14128	10.8	258	25933	9.2
4.	Paper and paper products	17	2330	2.5	23	2397	1.8	24	2915	1.0
5.	Coke and petroleum products				2	1107	0.8	11	44083	15.5
6.	Chemicals and petrochemicals	38	2822	3.0	26	3021	2.3	35	4136	1.5
7.	Cement	14	3642	3.9	13	1945	1.5	27	10567	3.7
8.	Metal and metal products	141	27331	29.1	126	21799	16.6	130	39876	14.1
9.	Electrical and non-electrical machinery	23	671	0.7	22	384	0.3	20	4486	1.6
10.	Transport equipments	25	1289	1.4	13	988	0.8	29	5174	1.8
11.	Construction	8	275	0.3	33	4700	3.6	34	9277	3.3
12.	Hotels and restaurants	20	2254	2.4	37	4454	3.4	74	11122	3.9
13.	Transport services	45	4201	4.5	21	16947	12.9	17	1561	0.5
14.	Entertainment				9	1807	1.4	20	761	0.3
15.	IT	16	974	1.0	7	2683	2.0	8	228	0.1
16	Food products/processing	47	1754	1.9						
17.	Others*	81	3401	3.6	193	7540	5.7	209	12710	4.5
	Total	720	93859	100.00	812	131299	100.0	1054	283440	100.0

Note: *Comprise industries, each with a share of less than 1% in total cost of projects in 2005–06 and 2006–07.
Source: RBI, Bulletin, August 2006 and August 2007.

ANNEXURE 7.1.3
Composition of Exports and Growth Rates

Commodity	Exports 2006–07 P (US$ Million)	% Share of Exports		Compound Annual Growth Rate (CAGR) in Ninth Plan	Growth Rate over Previous Year					CAGR in Tenth Plan
		Ninth Plan	2006–07		2002–03	2003–04	2004–05	2005–06	2006–07	
I. Primary Products	19547.8	18.3	15.5	–2.3	21.5	13.7	36.9	20.9	19.4	22.2
A. Agriculture and allied products	12514.6	15.6	9.9	–3.0	13.7	12.3	12.5	20.3	22.5	16.2
B. Ores and minerals	7033.1	2.7	5.6	1.5	58.1	18.7	114.4	21.9	14.1	41.0
II. Manufactured Goods	82817.8	77.4	65.6	6.3	20.6	20.5	25.2	18.3	14.1	19.9
A. Leather and manufactures	2933.1	4.5	2.3	3.5	–3.2	17.0	12.0	8.4	8.7	9.0
B. Chemicals and related products	16727.1	12.9	13.2	9.1	23.2	26.7	31.7	16.6	13.3	22.5
1. Basic chemicals, pharmaceuticals, and cosmetics	10445.8	8.2	8.2	8.2	26.0	25.5	22.1	25.2	14.4	23.1
2. Others	6281.3	4.7	5.0	10.7	18.8	28.7	47.3	5.1	11.3	21.7
C. Engineering goods	29079.1	14.9	23.0	7.0	29.8	37.3	39.8	24.2	33.9	33.1
D. Textile and textile products	17009.7	25.5	13.5	3.4	13.8	10.1	6.0	18.3	3.7	10.8
1. Cotton yarn, fabrics, madeups, etc.	4136.6	8.1	3.3	–0.3	9.1	1.3	1.6	12.0	4.9	6.1
2. Readymade garments	8694.7	12.2	6.9	5.9	13.6	9.5	5.3	28.1	0.9	11.7
3. Man-made yarn, fabrics, madeups, etc.	2164.6	2.3	1.7	8.7	28.8	28.4	11.4	–2.2	10.6	15.2
4. Other (silk, jute, coir, woolen products, and carpets)	2013.8	2.9	1.6	0.1	13.4	16.6	12.6	17.2	7.0	13.7
E. Gems and jewellery	15585.7	17.3	12.3	9.0	23.6	17.1	30.2	13.0	0.4	16.4
F. Handicrafts (excluding hand-made carpets)	371.7	1.6	0.3	2.9	43.0	–36.4	–24.5	8.7	–19.5	–7.5
G. Other manufactured goods	1111.4	0.8	0.9	7.7	22.5	29.0	34.1	37.7	13.0	23.4
III. Petroleum Products	18551.9	2.3	14.7	34.5	21.6	38.5	95.9	64.7	59.4	54.3
IV. Others	5413.7	2.0	4.3	28.2	1.5	57.7	20.3	32.9	115.6	35.8
Total Exports	126331.1	100.0	100.0	5.5	20.3	21.1	30.8	23.0	22.5	23.6

Note: P = Provisional.
Source: Handbook of Statistics on Indian Economy, RBI, 2007.

ANNEXURE 7.1.4
Performance of CPSEs during the Tenth Five Year Plan

(Rs Crore)

	Turnover					Net Profit/Loss (–)				
Industry	2001–02	2002–03	2003–04	2004–05	2005–06	2001–02	2002–03	2003–04	2004–05	2005–06
Steel	20135	24885	31008	40820	41742	–1781	229	4091	8893	5307
Minerals and non-ferrous metals	5461	5846	7160	10153	12384	568	755	1467	2876	4039
Coal and lignite	22001	26920	29048	33698	34489	2158	3035	5238	4826	8216
Power	23977	25271	25321	30010	34306	5613	5219	8605	8730	9082
Petroleum	253012	305335	330074	406247	499555	12639	22322	23819	25959	26181
Fertilizers	7429	8280	8017	8999	9364	–1796	–2329	–2128	–2104	–1990
Chemicals and pharmaceuticals	810	981	1005	1298	976	–388	–253	–376	–557	–74
Heavy engineering	7892	7973	9041	10823	15042	144	–6	43	313	977
Medium and light engineering	7808	7946	7864	8443	9559	–191	–687	–977	–450	–25
Transportation equipment	6112	6505	6962	8198	9619	776	388	293	679	1045
Consumer goods	1241	1241	1311	1325	1606	–306	–721	–575	–848	225
Agro-based industries	129	142	158	150	173	–14	–14	–11	–26	–21
Textiles	753	940	825	875	856	–1032	–1961	425	–1479	1211
Total industry	356759	422264	457793	561039	669672	16390	25978	39914	46815	54172
Enterprises rendering services	107174	138930	160064	166302	162912	10003	6199	12576	17269	16117
Total CPSEs	463934	561194	617857	727341	832584	26393	32176	52490	64083	70288

Note: The data is in respect of 225 CPSEs in operation in 2005–06 for 2001–02 to 2004–05. In 2005–06, 10 CPSEs did not report the data to DPE and therefore data for 2005–06 pertains to 215 CPSEs.
Source: DPE, 2007, Public Enterprises Survey 2005-06, Volume–I.

ANNEXURE 7.1.5
State-wise and Year-wise Investment Intentions (IEMs + LOIs + DILs)

(in Rs Crore)

S. No.	Name of the State	2003–04	2004–05	2005–06	2006–07	2007–08 (April–May)
1.	Andhra Pradesh	16527	16596	19001	48660	2577
2.	Assam	163	430	809	2044	169
3.	Bihar	27	314	3913	4850	308
4.	Chhattisgarh	16155	47602	39914	118737	17559
5.	Dadra and Nagar Haveli	4137	834	2374	2794	431
6.	Gujarat	32341	29695	82901	72283	7946
7.	Haryana	8372	2737	5578	16095	769
8.	Himachal Pradesh	1126	3384	1774	1906	254
9.	Jammu and Kashmir	774	2719	2058	2306	400
10.	Jharkhand	1861	10539	54089	35257	17969
11.	Karnataka	14074	10969	15353	72250	7059
12.	Madhya Pradesh	1616	8538	18782	12537	1963
13.	Maharashtra	8878	13256	24694	62191	6907
14.	Orissa	17718	45565	38255	96869	5997
15.	Punjab	1844	4190	7127	10128	544
16.	Rajasthan	1096	2162	5077	10040	1768
17.	Tamil Nadu	2898	54481	11841	20377	5373
18.	Uttar Pradesh	2179	21633	31710	33745	1823
19.	Uttarakhand	1334	2441	5706	14887	968
20.	West Bengal	7637	14078	12047	51836	9410
21.	Others	17628	1931	3378	6574	1857
	Total	158385	294094	386381	696366	92051

Note: Investment in terms of IEMs filed, Letters of Intent (LOIs) issued, and DILs.
Source: SIA Statistics, June 2007.

ANNEXURE 7.1.6

State-wise Investment Projects Benefiting from Loans from Banks/FIs during 2004–05, 2005–06 and 2006–07

State	2004–05			2005–06			2006–07		
	Number of Projects	Project Cost		Number of Projects	Project Cost		Number of Projects	Project Cost	
		Amount (Rs Crore)	% Share		Amount (Rs Crore)	% Share		Amount (Rs Crore)	% Share
1	2	3	4	5	6	7	8	9	10
Andhra Pradesh	38	3330	3.6	76	11254	8.6	105	25173	8.9
Chhattisgarh	40	8620	9.2	19	5162	3.9	13	2365	0.8
Delhi	12	1471	1.6	24	2127	1.6	19	6359	2.2
Gujarat	81	10983	11.7	95	24531	18.7	86	73170	25.8
Haryana	21	1440	1.5	29	1805	1.4	42	3897	1.4
Himachal Pradesh	17	1358	1.4	19	9325	7.1	30	2644	0.9
Jharkhand	–	–	–	8	367	0.3	13	7174	2.5
Karnataka	50	6641	7.1	51	4537	3.5	91	19930	7.0
Madhya Pradesh	19	766	0.1	12	2514	1.9	23	4878	1.7
Maharashtra	102	9808	10.4	121	24828	18.9	142	24330	8.6
Orissa	30	9256	9.9	20	4525	3.5	23	14806	5.2
Punjab	32	2609	2.8	27	2041	1.5	48	5902	2.1
Rajasthan	26	1587	1.7	27	2466	1.9	38	9806	3.5
Sikkim	–	–	–	–	–	–	3	9418	3.3
Tamil Nadu	110	9929	10.6	124	12160	9.3	157	24299	8.6
Uttar Pradesh	23	1348	1.4	50	10415	7.9	60	9836	3.5
Uttarakhand	10	599	0.6	24	2959	2.2	31	5633	2.0
West Bengal	40	2324	2.5	27	2548	1.9	37	3404	1.2
Multi-State	33	18893	20.1	29	5730	4.4	46	25428	9.0
Others*	36	2898	3.1	30	2005	1.5	47	4988	1.8
Total	720	93859	100.0	812	131299	100.0	1054	283440	100.0

Note: *Comprise States/UTs, each with share of less than 1% in aggregate cost of projects in 2005–06 and 2006–07.
Source: RBI Bulletin August 2006 and August 2007.

ANNEXURE 7.1.7
Production and Export of Vehicles

Category	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07
			Production of Vehicles (in thousands)			
PVs	564	609	842	960	1046	1238
MUVs	106	114	146	249	263	306
CVs	163	203	275	350	391	520
Two-wheelers	4271	5076	5625	6527	7600	8444
Three-wheelers	213	277	341	374	434	556
Total	5316	6280	7229	8461	9735	11065
			Exports of Vehicles (in thousands)			
PVs	50	71	126	161	170	192
MUVs	3	1	3	6	6	6
CVs	12	12	17	30	40	50
Two-wheelers	104	180	265	367	513	619
Three-wheelers	15	43	68	67	77	144
Total	183	307	479	630	806	1011

Note: PVs = Passenger Vehicles.
Source: Society of Indian Automobile Manufacturers.

ANNEXURE 7.1.8
Production and Export Performance in Capital Goods Sector

(Rs in Crore)

Category	2002	2003	2004	2005	2006	CAGR (%)
			Production Performance in Capital Goods Sector			
Machine tools	1835	2371	2457	2645	2899	12
Textile machinery	1073	1175	1256	1668	2151	19
Heavy electrical equipments			16500	21000		27
Mining and construction equipments		4150	4750	6300		23
Process plant equipments		2850	3560	5000		32
			Export Performance			
Machine tools	436	568	628	686	819	17
Textile machinery	427	406	535	457	516	5
Heavy electrical equipments			3075	2700		–12
Mining and construction equipments		216	280	330		24
Process plant equipments		630	860	1150		35

Source: Department of Heavy Industry.

ANNEXURE 7.1.9
Production of Chemicals

(Thousand Tonnes)

Category	Installed Capacity (as on March 2007)	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	CAGR
Alkali	7072	4342	4792	5070	5272	5475	5269	3.9
Inorganic chemicals	748	374	404	441	508	544	602	10
Dyestuffs and dye intermediates	52	24.8	26.2	25.9	28.5	29.5	32.5	5.6
Agro chemicals	145	81.8	69.56	85.12	93.97	82.24	84.7	0.7
Organic chemicals	1889	1166	1353	1473	1506	1545	1545	5.8
Total chemicals	9908	5990	6645	7096	7408	7676	7534	4.7

Source: Department of Chemicals and Petrochemicals.

Foreign Trade in Chemicals

(in Rs Crore)

	Inorganic Chemicals		Organic Chemicals		Pesticides		Dye and Dyestuff	
Year	Export	Import	Export	Import	Export	Import	Export	Import
2001–02	1259	5730	7624	8795	1356	362	2436	1138
2002–03	1946	5579	10190	10695	1487	287	2943	1344
2003–04	1949	5916	12975	14363	1746	501	3112	1617
2004–05	2872	8130	16269	18785	2096	712	3111	1878
2005–06	3431	10446	21504	22775	2791	754	3750	2245
2005–06 (April–December)	2638	8531	19080	20451	2001	656	3366	2072

Source: Department of Chemicals and Petrochemicals.

ANNEXURE 7.1.10
Production, Consumption and Import of Fertilizers

(Lakh Tonnes)

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07 (Est.)
Production						
Urea	190.03	186.21	190.38	202.39	200.85	203.08
DAP	50.91	52.36	47.09	51.84	46.28	48.51
MOP	0	0	0	0	0	0
NPK (Complex Fert.)	49.66	48.16	47.59	55.08	66.94	74.44
Consumption						
Urea	199.17	184.93	197.67	206.65	222.98	244.85
DAP	61.81	54.73	56.25	62.56	67.64	69.24
MOP	19.92	19.73	20.13	23.10	27.31	24.50
NPK	49.63	50.67	51.20	53.63	66.94	74.44
SSP	26.05	24.99	25.44	25.49	27.56	30.57
Import of Fertilizers						
Urea	2.20	1.19	1.43	6.41	20.57	47.18
DAP	9.33	3.83	7.34	6.44	24.36	28.41
MOP	28.3	25.33	25.83	34.09	45.78	–

Note: Est = Estimate.
Source: Department of Fertilizers.

ANNEXURE 7.1.11
Production, Import and Export of Paper and Paperboard

(Lakh Tonnes)

Year	Production	Imports	Exports
2003–04	55.57	3.15	2.32
2004–05	57.93	1.95	2.70
2005–06	58.70	2.85	2.29
2006–07	61.28	3.10 (April 2006–February 2007)	2.6 (April–Dec 2006)

Source: Annual Reports, DIPP.

ANNEXURE 7.1.12
Production, Import and Export of Newsprint

(Lakh Tonnes)

Year	Production	Imports	Exports
2003–04	6.8	7.5	0.03
2004–05	7.6	6.7	0.05
2005–06	9.1	6.8	0.10
2006–07	10.3	7.9	0.04

Source: Annual Reports, DIPP.

ANNEXURE 7.1.13
Performance of Commodity Polymers and Synthetic Fibres

(Kilo Tonnes)

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07
			Performance of Commodity Polymers			
Capacity	4252	4316	4431	4614	4710	5187
Production	3974	4175	4499	4776	4768	5183
Consumption	3826	3795	4107	4177	4795	na
Imports	420	381	450	416	722	na
Exports	568	761	843	1015	695	na
Net trade	148	380	393	599	(–) 27	
			Performance of Synthetic Fibre			
Capacity	2071	2113	2204	2341	2413	3246
Production	1669	1755	1868	1875	1906	2244
Consumption	1718	1800	1882	1890	1893	na
Imports	147	189	155	193	162	na
Exports	98	144	141	178	175	na
Net trade	(–) 49	(–) 45	(–) 14	(–) 14	13	

Source: Department of Chemicals and Petrochemicals.

ANNEXURE 7.1.14
Production, Import and Export of Finished Steel

(Million Tonnes)

	2002–03	2003–04	2004–05	2005–06	2006–07(P)
Production for sale	35.41	38.58	41.32	44.39	49.58
Domestic availability	28.6	31.2	34.5	39.4	43.7
Consumption (apparent)	28.7	31.1	34.3	39.1	43.7
Import	1.51	1.54	2.11	3.85	4.10
Export	4.51	4.84	4.38	4.48	4.75

Source: Joint Plant Committee.

ANNEXURE 7.1.15
Estimated Requirement of Raw Material and Other Inputs in Steel Production by 2011–12

Input	Unit	Estimated Consumption 2005–06	Estimated Consumption 2011–12
Coking coal	Million mt	31.5	46.0
Non-coking coal	Million mt	15	24.5
Coal dust injection	Million mt	Negligible	3.00
Iron Ore	Million mt	66.9	130
Scrap Steel	Million mt	10.2	18.0
Limestone	Million mt	11	19.5
Dolomite	Million mt	4.0	7.4
Natural Gas	Mcal	10000	15000
Ferro Alloys	Million mt	0.85	1.5
Power	MW	4120	7700

Source: Report of the Working Group on Steel for the Eleventh Five Year Plan.

ANNEXURE 7.1.16
Production, Consumption and Export of Sugar during 2002–03 to 2006–07

(Lakh Tonnes)

S. No.	Particulars	2002–03	2003–04	2004–05	2005–06	2006–07
1.	Carryover stock	113.19	116.16	85.00	40.00#	
2.	Production	201.32	198.58	130.00	189.59	283.0
3.	Import	0.41	5.53	20.74	3.62	
4.	Internal consumption	183.76	175.00	171.44	183.21	
5.	Exports	15.00	2.94	0.98	13.68	
6.	Closing stock	116.16	85.00*	57.00*	36.32	

Note: #After excluding damaged sugar; * as indicated by Central Excise Authority.
Source: Annual Plan 2007–08 of DFPD, GoI, 2006–07 statistics from Indian Sugar, August 2007.

ANNEXURE 7.1.17
Production of Cloth—Year on Year Growth

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07#
Cotton	0.26	–2.37	–6.53	14.50	15.13	9.67
Blended	–1.01	–6.54	3.27	–0.59	3.48	8.34
100% non-cotton	12.70	5.22	9.16	2.19	4.16	7.07
Khadi, etc.	15.41	2.80	0.00	4.68	0.00	0.00
Total cloth	4.48	–0.15	0.98	7.07	9.00	8.37

Note: # Provisional, Confederation of Indian Textile Industry.
Source: Report of the Working Group on Textiles and Jute Industry for the Eleventh Five Year Plan.

ANNEXURE 7.1.18
Exports of Textiles and Clothing during the Tenth Five Year Plan

(US$ Million)

	2001–02	2002–03	2003–04	2004–05	2005–06	April 2005–February 2006#	April 2006–February 2007#	Y-o-Y Growth (%)
Cotton textiles	3092	3370	3609	3543	4493	4038.0	4781.90	18.40
Man-made textiles	1092	1421	1826	2050	2000	1813.70	2104.70	16.00
Silk textiles	287	315	381	405	430	631.50	634.30	0.50
Woolen textiles	52	51	58	70	84	418.10	412.50	–1.30
Clothing	5024	5705	6248	6559	8403	7051.40	7273.40	3.10
Total	9547	10862	12122	12627	15410	13952.70	15206.80	9.0
Jute, coir, and handicrafts	1254	1583	1409	1394	1668	1574.80	1524.70	–3.18
Grand Total	10801	12445	13531	14021	17078	15527.50	16731.50	7.75
Percentage growth		15.22	8.73	3.62	21.80			7.75

Note: # DGCI&S, Kolkata.
Source: Report of the Working Group on Textiles and Jute Industry for the Eleventh Plan.

ANNEXURE 7.1.19

The Tenth Plan Outlay and Anticipated Expenditure and the Eleventh Plan Outlay

(Rs Crore)

Ministry/Department	Tenth Plan						Eleventh Plan (at Current Price)		
	Outlays			Anticipated Expenditure					
	BS	IEBR	Outlay	BS	IEBR	Expenditure	BS	IEBR	Outlay
1. Steel	65	10979	11044	106	4708	4814	217.00	45390.08	45607.08
Iron and Steel	60	6039	6099	103	3994	4097	216.00	37102.18	37318.18
Minerals	5	4940	4945	3	714	717	1.00	8287.90	2288.90
2. Fertilizer	1050	4850	5900	657.36	1893.74	2551.10	1492.06	19135.87	20627.93
3. Chemicals and Petrochemicals	300	2744	3044	574.91	0	574.91	1960.00	296.36	2256.36
4. Industrial Policy and Promotion	2000	0	2000	1779	0	1779	4183.00	0.00	4183.00
5. Heavy Industry	700	1363	2063	1351	1255	2606	4093.00	7208.67	11301.67
6. Public Enterprises	50	0	50	94	0	94	54.00	0.00	54.00
7. Textiles	3500	80	3580	4504.48	0	4504.48	14000.00	0.00	14000.00
Industry segment	1900	80	1980	2686.63	0	2686.63	11000.00	0.00	11000.00
VSE segment	1600	0	1600	1817.85	0	1817.85	3000.00	0.00	3000.00
8. Consumer Affairs	55	0	55	280.24	0	280.24	1083.00	0.00	1083.00
9. Company Affairs (Corporate Affairs)	50	0	50	0	0	0	211.00	0.00	211.00
Industry Segment Outlay in other Ministries/Departments									
10. Petroleum (Petrochemicals and Engineering)	0	7614.81	7614.81	0	6824	6824	0.00	15557.00	15557.00
11. Ship Building	242.86	805	1047.86	156	127	282	170.00	550.00	720.00
12. Atomic Energy (I&M)	2270	1079.5	3349.5	1645.53	392.44	2037.97	8425	2554.12	10979.12
Industry	1811	90.0	1901.0	1241.23	39.65	1280.88	6975	160.00	7135.00
Minerals	459	989.5	1448.5	404.30	352.79	757.09	1450	2394.12	3844.12
13. Biotechnology	30	0	30	102	0	102	750.00	0.00	750.00
14. DSIR	25	0	25	25	0	25	150.00	0.00	150.00
15. Earth Sciences (Ocean Development)	100	0	100	93	0	93	319.00	0.00	319.00

Source: Planning Commission.

ANNEXURE 7.1.20
Performance of SSIs, Year 2000–01 to 2006–07

Year	Total SSI Units (Lakhs)	Fixed Investment (Rs Crore)	Production		Employment (In Lakh Persons)	Exports (Rs Crore)
			Current Price (Rs Crore)	Constant Price (1993–94 in Rs Crore)		
2000–01	101.1	151527	261297	184401.4	240.94	69797
	(4.07)	(8.25)	(11.78)	(8.23)	(5.17)	(28.78)
2001–02	105.21	160673	282270	195613	252.29	71244
	(4.07)	(6.04)	(8.03)	(8.00)	(4.71)	(2.07)
			At 2001–02 Price			
2002–03	109.49	169579	314850	306771	263.68	86013
	(4.07)	(5.54)	(11.54)	(8.68)	(4.51)	(20.73)
2003–04	113.95	178269	364547	336344	275.30	97644
	(4.07)	(5.12)	(15.78)	(9.64)	(4.41)	(13.52)
2004–05	118.59	188793	429796	372938	287.55	124417
	(4.07)	(5.90)	(17.90)	(10.88)	(4.45)	(27.42)
2005–06	123.42	198050	497842	418884	295.85	150242
	(4.07)	(4.90)	(15.83)	(12.32)	(4.28)	20.76
2006–07 (Prov.)	128.44	207307	585112	471663	312.52	–
	(4.07)	(4.67)	(17.53)	(12.60)	(4.23)	–

Note: Figures in brackets indicate increase in the percentage over the last year.
Source: Ministry of SSI, GoI, Annual Report 2005–06.

ANNEXURE 7.1.21
Export Destination (Country) of SSI Products

S. No.	Product Group	Main Destination (Countries)
1.	Readymade garments	USA, Europe, Canada, West Asia, and North Africa.
2.	Plastic items	UAE, China, Italy, Saudi Arabia, and Oman.
3.	Marine products	Japan, USA, European Union, China, and South East Asia.
4.	Sports goods	UK, USA, Australia, Germany, and South Africa.
5.	Spices	East Asia, European Union, North African Zone, and American Zone.
6.	Cashew items	USA, Netherlands, UK, Japan, and UAE.
7.	Shellac items	Indonesia, Germany, UAE, USA, and Italy.
8.	Synthetic items (Madeups)	UAE, UK, Turkey, USA, and Italy.
9.	Leather and leather items	Germany, UK, Italy, USA, and France.
10.	Engineering and electronic items	USA, Europe, Japan, Hong Kong, UAE, Germany, Belgium, and France.
11.	Basic chemical and cosmetic products	USA, Japan, Saudi Arabia, China, Singapore, and Netherlands.
12.	Chemical and allied products	Japan, Belgium, Italy, France, Bangladesh, USA, and UK.
13.	Wool and woollen (Madeups) knitted garments, etc.	Europe, Japan, and Bangladesh.
14.	Processed food items	USA, Europe, and Japan.
15.	Electronic items and computer software	USA, Hong Kong, UAE, UK, Germany, and Japan.
16.	Tobacco and tobacco items	East Europe.

Source: http://www.laghu-udyog.com/ssiindia exportdest.htm

ANNEXURE 7.1.22
Participation of Women in SSI Sector, State-wise

Name of State/UT	No. of Female Employees			No. of Enterprises Managed by Women	No. of Women Enterprises
	Regd. SSI Sector	Unregd. SSI Sector	Total		
Jammu & Kashmir	3313	8153	11466	5640	5742
Himachal Pradesh	4016	4134	8150	3515	3722
Punjab	11757	36013	47770	30190	29068
Chandigarh	659	1975	2634	2059	2243
Uttarakhand	2940	13240	16180	8706	8804
Haryana	15651	14889	30540	10087	9620
Delhi	6306	35798	42104	13368	14383
Rajasthan	15003	46065	61068	29785	36371
Uttar Pradesh	23506	180918	204424	54491	72667
Bihar	8353	68908	77261	38170	49443
Sikkim	212	9	221	30	98
Arunachal Pradesh	342	104	446	131	150
Nagaland	637	2574	3211	207	179
Manipur	3853	19485	23338	9168	10745
Mizoram	2188	4636	6824	3076	3700
Tripura	4294	3325	7619	631	863
Meghalaya	3139	5664	8803	3658	3580
Assam	9077	16988	26065	11189	11757
West Bengal	26549	304969	331518	71847	69625
Jharkhand	5105	8907	14012	7271	7865
Orissa	11723	213123	224846	33274	38233
Chhattisgarh	10177	52476	62653	11766	10034
Madhya Pradesh	29612	111703	141315	62351	68823
Gujarat	41189	79990	121179	55361	53703
Daman & Diu and Dadra & Nagar Haveli	6106	126	6232	167	213
Maharashtra	78731	162700	241431	80662	100670
Andhra Pradesh	60693	270026	330719	77347	77166
Karnataka	117934	223142	341076	101264	103169
Goa	5309	1833	7142	677	810
Lakshadweep	26	405	431	61	67
Kerala	189640	224491	414131	137561	139225
Tamil Nadu	270936	223050	493986	130289	129808
Pondicherry	5613	2670	8283	1089	1065
Andaman & Nicobar Islands	124	294	418	53	110
	974713	2342783	3317496	995141	1063721

Note: Regd. = Registered; Unregd. = Unregistered.
Source: 3rd SSI Census 2001–02– Ministry of MSME.

ANNEXURE 7.1.23
Schemes for MSME

Scheme/Goal	Eligibility	Description
	Fiscal Incentives/Subsidies	
Central excise duty exemption to make MSE products price competitive	All MSEs (manufacturing), including khadi and village industry units	Exemption up to Rs 100 lakh from excise duty, if total annual clearances or sales do not exceed Rs 400 lakh.
	Credit (Grants and Loans)	
Priority-sector lending to facilitate lending to MSEs	All MSEs	10% of all NBC by foreign banks to go to the MSE sector; no specific sub-target for domestic banks, which have to provide 40% of NBC to the priority sector as a whole.
CLCSS for Technology Upgradation	All (manufacturing) MSEs, including khadi and village industry units	Subsidy of 15% (12% prior to 29 September 2005) of capital acquired for upgrading technology or techniques for sub-sectors/products approved under the scheme upto a limit of Rs 100 lakh (Rs 40 lakh prior to 29 September 2005).
Credit Guarantee Scheme, to banks lending to MSEs	All (manufacturing) MSEs, including khadi and village industry units	Guarantee of 75% for loans up to Rs 25 lakh extended by member lending institutions of the Credit Guarantee Fund Trust, guarantee fee being borne by the borrower.
Prime Minister's Rozgar Yojana for employment generation	Educated (VIII standard pass) unemployed youth with family income up to Rs 40000 per annum	Loans of up to Rs 2 lakh for self-employment projects each case (Rs 1 lakh for business/service activities). Subsidy is released as a grant by the government, through the RBI, to the participating banks for crediting to the account of beneficiary, and adjusted against the repayment of last installment of loan by the beneficiary. The subsidy is 15% of the project cost or Rs 7500 per entrepreneur, whichever is less. The bank charges interest (not exceeding PLR) on the loan amount minus subsidy.
ISO 9000/ISO 14001 Certification Fee Reimbursement Scheme for improving quality and business processes	Individual MSEs, including those engaged in business/service	Reimbursement of expenses incurred in acquiring Quality Management System ISO 9000 certification/ environment management ISO 14001 certification, at 75% of the cost or Rs 75000, whichever is less.
Participation in international fairs for export promotion	Individual MSEs	Subsidy for renting space and partial reimbursement of air fare.
	Other Schemes	
Credit Appraisal and Rating Tool (CART)		Scheme for reimbursement of performance and credit rating of MSMEs through reputed Credit Rating agencies. To rationalize the pricing of credit, SIDBI has developed an advanced but simplified, technology-based rating model for MSEs called CART.
Reservation of products for exclusive mfg. by MSEs	All MSEs	114 items at present.
Purchase and price preference in government procurement to help improve marketing	MSEs registered with NSIC	358 items are currently reserved for exclusive purchase by the Central Government and its PSUs from the MSEs. 15% price preference for Central Government purchases, i.e. a micro/small enterprise quoting up to 15% above the quote of a non-MSE bidder would be eligible to get the order, other

Annexure 7.1.23 (contd.)

Annexure 7.1.23 (contd.)

Scheme/Goal	Eligibility	Description
		conditions of quality, terms of supply being met. Tender document is also provided free of charge and exemption from earnest money/security deposits.
Small Industry Cluster Development Programme (renamed as Micro and Small Enterprises Cluster Development Programme) to enhance the productivity, and competitiveness, as well as capacity building of micro and small enterprises	Micro and small (MSE) clusters	Implemented in PPP mode, GoI assistance varies from 30% to 80% of the project cost depending on the average investment in plant and machinery, location of the cluster, level of commercial self-sufficiency, etc.
Integrated Infrastructure Development (IID) Scheme, to facilitate provision of built-up infrastructure with necessary facilities for manufacturing and related service enterprises, with reservation of 50% for rural areas	State governments, industry associations, and NGOs for development/disposal of plots/ sheds on commercial basis	Central Government grants assistance of up to Rs 200 lakh or 40% of the project cost, whichever is less, for setting up new industrial estates for MSEs (up to 80% or Rs 40 million for the NER, including Sikkim, Himachal Pradesh, Jammu & Kashmir, and Uttarakhand). Also available for improvements in existing estates.
Mini Tool Rooms to improve availability of quality equipment, machines, and tooling facilities, necessary for manufacturing, on payment of user charges	State Governments/State Government agencies	Assistance up to 90% of the cost of plant and machinery or Rs 900 lakh, whichever is less, for setting up new mini tool rooms (75% of the cost of plant and machinery or Rs 750 lakh for upgrading existing tool rooms).
Testing centres to improve availability of quality test equipment, machines and other facilities, necessary for testing of raw material, intermediates, and finished products on payment of user charges	Industry associations	Assistance up to 50% of the cost of testing equipment and machinery or Rs 50 lakh, whichever is less, for setting up testing centres.
Sub-contracting exchanges to assist associations of MSEs track bulk orders/ tenders for bulk supplies by large industries to enable member MSEs to bid for parts of these orders	Industry associations	One time grant upto Rs 4 lakh for procurement of hardware such as plain paper copier, telex, fax machine, computer, furniture. Grant paid on reimbursement basis and provides a matching grant on a tapering basis at 50%, 30%, and 10% for running expenses, not exceeding Rs 125000, Rs 75000, and Rs 25000, respectively, during the first three years, subject to a ceiling of Rs 157000 per exchange.
SSI Market Development Assistance for export promotion	MSEs and their associations	Partial subsidization of costs of air fare, space rental, publicity, etc., to MSEs at varying rates, with preferential terms to the micro enterprises, partial financial assistance to contest anti-dumping cases, undertaking market studies, etc. Provision for reimbursement of 75% of one-time registration fee or Rs 15000, whichever is less for adoption of bar coding.
Assistance to Entrepreneurship Development Institutes	State/UT governments and other agencies involved in entrepreneurship development	Financial assistance in the form of non-recurring grant for strengthening infrastructure like building, training aids/equipment, and other support services on matching (50:50 basis) of the cost or Rs 100 lakh whichever is less.
Micro Finance Programme	Micro finance institutions (MFIs)	Portfolio Risk Fund provided to SIDBI for security deposit requirements of the loan amount from the MFIs.

Source: SIDO online information, viewed at *http://www.smallindustry.india.com* [4 July 2006]; RBI online information, viewed at *http://www.rbi.org.in/scripts/FAQView.aspx?Id=8*; and Ministry of Finance (2006), *Economic Survey 2005–06.*

ANNEXURE 7.2.1
Organization/Company-wise Actual Expenditure in the Tenth Five Year Plan—Ministry of Mines

(Rs Crore)

Organization	Approved Tenth Plan	Revised Tenth Plan (Mid-term)	Actual Tenth Plan
National Aluminium Co. Ltd	7056.00	2864.25	1840.27
Hindustan Copper Ltd	50.00	326.16	266.34
Mineral Exploration Corp. Ltd	50.00	73.75	66.45
Geological Survey of India	1000.00	998.56	537.54
Indian Bureau of Mines	103.00	136.08	84.88
S&T Programmes	57.50	52.48	32.95
Construction#	28.00	34.00	27.86
Total	8344.50@	4485.28	2856.29
GBS	1271.00	2881.75	986.27
IEBR	7073.50	1603.53	1870.02

Note: @ excluding outlay for HZL since disinvested; # construction in GSI and IBM.

Source: Tenth Five Year Document, Planning Commission, and Ministry of Mines.

ANNEXURE 7.2.2
Life Indices of Important Minerals

(in Million Tonnes)

S. No.	Mineral	Total Resources as on 1 April 2000	Total Balance Resources as on 1 April 2007	Estimated Domestic Production during 2006–07	Life Index Beyond 1 April 2007 at 2006–07 Production Level
1.	Bauxite	3306.763 (2221.549)	3269.525 (2184.311)	13.142	166
2.	Copper ore	1394.425 (659.789)	1385.094 (650.458)	3.293	200
3.	Chromite	232.120 (146.483)	220.532 (134.895)	4.090	33
4.	Lead–zinc ore	522.579 (316.879)	510.072 (304.372)	4.414	69
5.	Iron ore (haematite and magnetite)	25250 (15946)	24795 (15432)	160.33	97

Note: Figures in parentheses (of proved and probable reserves) have been considered for life index.

Source: Working Group Report on Mineral Exploration and Development (Other than coal and lignite) for Eleventh Five Year Plan, Volume II.

ANNEXURE 7.2.3
Estimated Apparent Consumption, Domestic Production, Resource Situation and Life Index of Selected Minerals

(Thousand Tonnes)

Minerals	Estimated Apparent Consumption in Terminal Year of		Estimated Production for Terminal Year of		Total Estimated Balance of Resources as on 1 April 2012	Life Index beyond 2012
	Tenth Five Year Plan 2006–07	Eleventh Five Year Plan 2011–12	Tenth Five Year Plan 2006–07	Eleventh Five Year Plan 2011–12		
A Refractory minerals						
1. Bauxite	12934	19900	14214	21875	3176799 (2091585)	96
2. Chromite	2978	4583	4302	6619	192569 (106932)	16
3. Graphite	113	174	113	174	157788 (10087)	58
4. Ball clay	2045	3147	1610	2477	52493 (13335)	5
5. Wollastonite	170	262	194	298	18429 (14255)	48
B Flux and construction minerals						
1. Gypsum	3437	5289	3994	6145	1194934 (767507)	125
2. Asbestos	227	349	6	9	21724 (11228)	Very large
C Fertilizer and chemical minerals						
1. Rock phosphate	4475	6695	1340	2061	383547 (139631)	68
2. Sulphur (by-product)	1320	2031	128	197	–	–
3. Fluorspar	126	194	12.86	20	12591 (10765)	538

Note: Figures in parenthesis (proved and probable reserves) considered for life indices.

Source: Working Group Report on Mineral Exploration and Development (other than coal and lignite) for Eleventh Five Year Plan, Volume II.

ANNEXURE 7.2.4
Material Balance of Principal Non-ferrous Metals

(Thousand mt)

	Aluminium			Copper			Zinc			Lead		
	2001–02	2006–07	2011–12	2001–02	2006–07	2011–12	2001–02	2006–07	2011–12	2001–02	2006–07	2011–12
Production (Primary)	660	950	1250	390	740	808	201	423	638	31	63	95
Secondary	40	50	60	–	–	–	25	30	40	40	60	75
Total Production	700	1000	1310	390	740	808	226	453	678	71	123	170
Import	150	120	270	45	–	–	71	2	–	61	152	273
Export	150	200	300	61	300	219	–	–	11	–	–	–
Domestic Demand	700	920	1280	374	440	589	297	455	667	132	275	443

Note: Demand for copper for 2011–12 has been projected at 6% compound growth rate per annum and production at 90% capacity utilization of existing installed capacity of 897500 tonnes.

Source: Working Group Report on Mineral Exploration and Development (other than coal and lignite), Eleventh Five Year Plan, Volume III.

ANNEXURE 7.2.5
Iron Ore Availability—Haematite (as on 1 April 2005)

(Qty in Million Tonnes)

Grade	Reserves	Remaining Resources	Total
High grade (Fe +65%)	1304.3	629.03	1933.33
Medium grade (Fe 62%–65%)	3544.03	3062.02	6606.05
Low grade (Fe below 62%)	1989.75	1686.94	3676.69
Unclassified	159.23	743.67	902.90
Black iron ore	2.52	12.72	15.24
Others	1.62	5.05	6.67
Unclassified	1.98	0	1.98
Not known	0.73	1486.79	1487.52
Grand Total	7004.17	7626.22	14630.39

Source: IBM.

ANNEXURE 7.2.6
Iron Ore Availability—Magnetite (as on 1 April 2005)

(Qty in Million Tonnes)

Grade	Reserves	Remaining Resources	Total
Metallurgical	0.67	2185.05	2185.74
Coal washery	3.33	5.00	8.33
Foundry	0.46	0.30	0.76
Others	0.97	24.16	25.13
Unclassified	52.64	8060.34	8112.98
Not known	0.43	286.12	286.55
Grand total	58.50	10560.98	10619.48

Source: IBM.

ANNEXURE 7.2.7
Physical Targets Proposed by GSI for some Important Activities for the Eleventh Plan (2007–12)

Schemes	Physical Target
1. Survey and Mapping	
Specialized thematic mapping	35000 sq km
Geochemical mapping	180000 sq km
Geophysical mapping	240000 sq km
Air-borne geophysical survey	76000 sq km
Marine surveys	12 cruises with RV Samudra Manthan, 13 cruises with new blue water research vessel, 70 cruises by coastal launches, that is RV Samudra Kaustubh and RV Samudra Saudhikama.
2. Mineral Exploration	226 items out of which 154 items on non-coal minerals and 72 items on coal and lignite (coal 66 items and lignite 6 items). Large scale: mapping 13530 sq km, Drilling: 429000 m
3. Specialized Investigations	Land slide hazard zonation on 1:50000/25000 scale of about 10000 line km through land slide prone hilly terrains; on 1:10000/5000 scale in thickly populated localities. In 20 sites, development of early warning system in 3 problematic land slides. Other specialized investigations include earthquake geology and seismology, environmental geology, geotechnical studies, glaciological and geothermal studies.
4. R&D and Antarctica Studies	202 items covering geochronology and isotope geology, petrology, photo-geology, and remote sensing, etc.
5. Publication and dissemination of information	Transformation of 3892 maps of 1:50000 scale geological maps into uniform .COOF format under GIS platform out of total 4306 maps digitized so far and digitization of 118 mineral belt maps; 130 district resource maps to be placed in public domain after completing them; completion of 1:0.5 M scale maps of 14 States; departmental publication: 100.
6. Human Resource Development	177 in house training courses.
7. Modernization and Replacement	Procurement of laboratory equipment, replacement of RV Samudra Manthan, Geotechnical vessel, and Heli-borne Geophysical Survey System.

Note: M scale = Million scale.
Source: Ministry of Mines.

ANNEXURE 7.2.8
Physical Targets Proposed by IBM and MECL for some Important Activities for the Eleventh Plan (2007–12)

Schemes	Target
Indian Bureau of Mines	
Inspection of mines for enforcement of provision of MCDR 1988.	2500 mines per annum.
Mineral beneficiation studies	Ore dressing investigations: 70 and chemical analysis of 50000 radicals annually; mineralogical studies: 2300.
Technological upgradation and modernization	Management of solid waste from mining in India.
Collection, processing, dissemination of data on mines and minerals	Adoption of UNFC system, 100 multi-mineral maps with corresponding forest overlays on yearly basis. Computerized online register of mining tenements system.
Mineral Exploration Corporation Limited	
Remote Sensing studies	23 items
Environmental studies	75 items
Geophysical surveys	1535 sq km
Geophysical logging	557462 sq m
Geological mapping	4655 sq km
Drilling	1066325 m
Exploratory mining	17500 m
Sampling and analysis	358250 nos

Source: Ministry of Mines.

ANNEXURE 7.2.9
Expansion Projects of NALCO—Capacity Additions

	Product	Unit	Existing Capacity	Expanded Capacity	Increase Capacity
Mine	Bauxite	Lakh TPY	48.00	63.00	15.00
Alumina Plant	Alumina Hydrate	Lakh TPY	15.75	21.00	5.25
Smelter	Aluminium	Lakh TPY	3.45	4.60	1.15
CPP	Power	MW	960 (120 × 8)MW	1200 (120 × 10) MW	240 (120 × 2) MW

Note: TPY = Tonne per Year; CPP = Captive Power Plant.
Source: Ministry of Mines.

ANNEXURE 7.2.10
Scheme-wise Break-up of the Eleventh Plan Outlays at Current Price—Ministry of Mines

(Rs Crore)

S. No.	Organization/Company	Outlay	IR	EBR	GBS	NBS
1.	NALCO	6927.08	6927.08	0.00	–	–
2.	HCL	223.00	223.00	–	–	–
3.	MECL					
	Promotional	50.00	–	–	50.00	50.00
	Capital	44.00	44.00	–	–	–
4.	GSI (including construction)	1020.00	–	–	1020.00	1020.00
5.	IBM (including construction)	90.00	–	–	90.00	90.00
6.	S&T	49.92	26.97	2.95	20.00	20.00
	Total	8404.00	7221.05	2.95	1180.00	1180.00

Note: NBS = Net Budgetary Support.
Source: Planning Commission.