Chapter 6 Industrial Promotion Policy

6.1 Industrial Policy Makers

The institutional structure of the industrial policy makers is complicated in India. It is the Department of Industrial Policy and Promotion that has the main responsibility for making the national industrial policy. Yet, there are many other ministries which relate to promotion of the manufacturing sub-sectors as listed in Table 10. In addition, Ministry of Small Scale Industries and Ministry of Agro and Rural Industries are responsible for promotion of small-scale enterprises and agro & rural industries. Moreover, such vertical demarcation exists at two horizontal levels; i.e. the national and provincial levels.

Table 11 Ministries Corresponding to the Manufacturing Sub-sectors

Sub-sectors	Corresponding Ministries
Food, Beverage and Tobacco	Ministry of Food Processing Industries
Textile, Apparel and Leather	Ministry of Textiles
Wood Material and Wooden Products	————
Paper, Paper Products and Printing	————
Chemical, Petroleum, Coal, Rubber and Plastics	Ministry of Chemicals and Fertilizers Ministry of Petroleum and Natural Gas Department of Atomic Energy
Non Metallic Mineral	Ministry of Coal and Mines
Basic Metal	Ministry of Steel
Fabricated Metal, Machinery and Equipment	Ministry of Heavy Industry & Public Enterprises Ministry of Shipping

Source: Study Team

6.2 10th 5 Year Plan

The 10th 5 Year Plan (2002-2007) provides the overall picture of the current industrial policy in India. The Plan aims to attain GDP growth at 8% per annum. The manufacturing sector, which is considered to be the driving force of economic development, aims at 10% growth per annum. In order to achieve the targeted growth, the following strategies are proposed for implementation:

Table 12 Proposed Actions in the 10th 5 Year Plan

Element of Strategy	Proposed Actions
Conductive policy environment	・Labour, fiscal reforms and streamlining of procedures ・Legal and procedural reforms ・Bankruptcy and foreclosure laws
Word-class infrastructure	・Clusters, Andhra model, Apparel Parks, Agri Zones
Augment resource base	・Stronger capital and institutional finance markets / institutions ・Attract higher level of FDI
Optimise resource allocations ・Increased flows into high growth areas ・Release of unproductive resources	・Pricing policy ・Leverage resources through effective PPP ・Expeditious closure of non-revivable public sector undertakings ・Expeditious divestment of non-strategic public sector undertakings ・Improving productivity and efficiency of transitional public sector undertakings
Efficiency enhancing policies	・Innovation ・Technology upgrade ・Modernisation ・R&D ・Skill upgrade
Export thrust	・Assist States for updating export infrastructure ・SEZ, Maharashtra model ・Standardisation, accreditation and certification ・Market access initiatives ・Marketing products / processes / practices eco-friendly
Level playing field	・Rationalisation of taxes and duties ・Cost of finance and credit availability ・Intellectual property rights regime ・World class infrastructure ・Modernising patent offices

Source: Planning Commission (2002) "10th Five Year Plan (2002-2007)", p.703

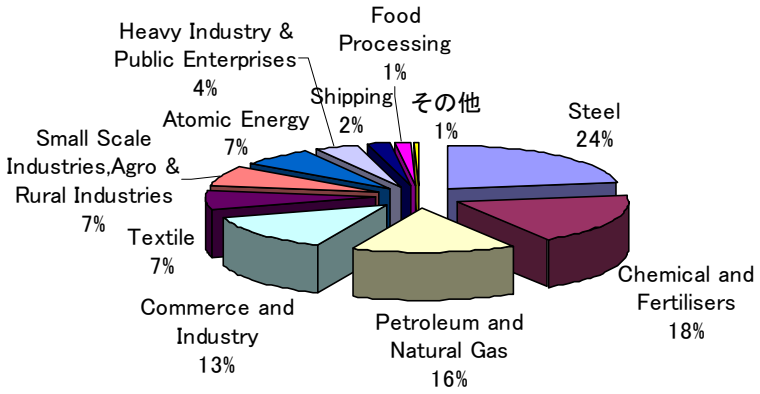
Fig. 23 shows budget allocation for the industrial development among the ministries in the 10th 5 Year Plan. Three ministries – the Ministry of Steel, Ministry of Chemicals and Fertilizers and Ministry of Petroleum and Natural Gas, occupy more than half of the total budget of Rs. 488 billion in 5 years.

The Ministry of Steel aims to renew and strengthen the facility of the public undertakings as well as development of R&D through the Steel Development Fund. The main target of the Ministry is to equip the steel industry with global competitiveness through higher level of productivity and quality.

The Ministry of Chemicals and Fertilizers reserves its main portion of the budget for pricing control of the fertilizers (urea, phosphate and potassium) through subsidisation. The ministry aims to balance the soil nutrition through facilitating the usage of fertilizers.

The Ministry of Petroleum and Natural Gas reserves its main portion of the budget for the infrastructural development for securing the stable supply of the oil as well as for transportation, reserves and market expansion of oil and gas; thus, rebalancing the supply and the demand of the oil and the gas.

Fig. 23 Budget Allocation of the 10th 5 Year Plan for the Industrial Development among Ministries



Source: Planning Commission (2002)"10th Five Year Plan (2002-2007)", p.724.

6.3 Policies by the Department of Industrial Policy and Promotion, Ministry of Commerce and Industry

The Department of Industrial Policy and Promotion of the Ministry of Commerce and Industry is in charge of formulating policies on industrial promotion, investment promotion and intellectual property. The Department looks after the overall strategies proposed in the 10th 5-Year Plan. In the area of development of the local industry, two focused areas are put into implementation: 1) deregulation and simplification of administrative procedures for encouraging the private activities and 2) constructing the global-level infrastructure.

In the area of the activities 1), "single window clearance system" has been activated throughout the different levels of the administrative bodies; central, province and district governments. The provincial and district governments have set up industrial committees with membership of various stakeholders who are committed to the promotion of private-sector activities and infrastructural development. Each committee is designed to hold a regular meeting where requests from enterprises shall be resolved at once with the presence of all the stakeholders. The contact window of the enterprises is the district industrial centre in charge of the district where the enterprise operates.

In the area of the activities 2), "industrial infrastructure upgrade scheme" is implemented. This scheme assists in the development of the common facility and infrastructure for the "cluster", which consists of manufacturers carrying out similar operations in a concentrated area. The central government assists with % of the project cost (up to Rs. 500 million) while the industry has to contribute more than 15%. The remaining fee up to 10% shall be financed locally including the local government and the financial sector. The 10th 5-Year Plan assumes to assist from 20 to 25 clusters up to 2007. The target clusters for assistance shall be determined after thorough study for implementation and decided by the committee comprised of relevant ministries. There were 24 applications in 2004/05.

Moreover, the Department of Industrial Policy and Promotion places importance on strengthening

competitiveness of the manufacturing sector. The National Manufacturing Competitiveness Council was formed under the Department in 1994. Representatives from the various institutions from the private sector are present in the Council. It aims to promote dialogues and cooperation between the public and the private sectors. The Council not only functions as an advisory body for policy recommendations but also assists in the implementation of the policies. The Council drafted "the National Strategy for Manufacturing" in October 2005. It recognises the necessity for strengthening the manufacturing sector in order to absorb the labour force from the agricultural sector. Accordingly, it proposes that the manufacturing sector aims at 12% annual growth, which exceeds 10% growth as targeted in the 10th 5-Year Plan. Furthermore, it considers the importance of quality upgrade by taking the following measures:[9]

- Investment in R&D and technology,
- Continuous commitment to skill development and education,
- Quality upgrade with benchmarks of the leading enterprises,
- Adopting the best manufacturing practices and production techniques and
- Delivery with global quality standards.

In concrete, the following actions are proposed:

- Setting up common facility under the operation of enterprises,
- Strengthening intellectual property right,
- Market oriented R&D activities by the National R&D Laboratories,
- Setting up a "Global Technology Acquisition Fund",
- Setting up industrial training institutions for each state with the public-private initiatives and
- Setting up industrial qualification system.

Thus the policy recommendation by the National Manufacturing Competitiveness Council is oriented towards upgrading of technology and quality unlike the on-going industrial policy by the Department of Industrial Policy and Promotion, which gives priority to infrastructure and investment promotion in the area of promoting large-scale enterprises.

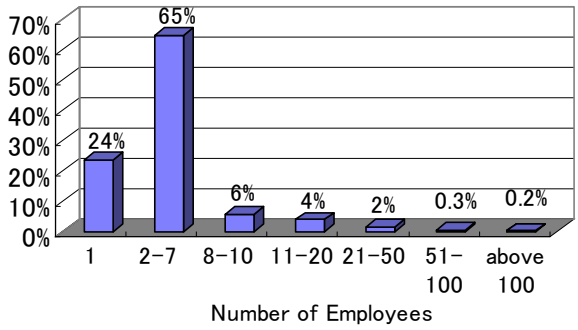
[9] National Manufacturing Competitiveness Council (2005) "The National Strategy for Manufacturing", p. 12.

6.4 Promotion of the Small Scale Industry

The Government of India considers it the utmost importance to assist small scale industry as the main absorbing source of the labour force; however, its policy is traditionally protective. The small scale manufacturer is defined as that with investment in plant and machinery up to Rs. 10 million provided that no more than 24% of its shares are held by another company..

According to the third census of the small scale industry (2001-02), the average employment size of the registered small scale companies is 4.48 persons. The majority of small scale enterprises (94%) have less than 10 employees, but a small portion of the companies (0.5%) have more than 50 employees (See Fig. 2).[10] This is due to the fact that the small scale industry in India is not defined by the number of employees. Thus the small scale industry actually includes a few large scale enterprises in terms of the number of employees. Some of such "large-scale" enterprises operate as suppliers of the assembly makers or manufacturers of export products.

Fig. 24 Employment Size of the Registered Small Scale Industries (2001-2002)



Source : Ministry of Small Scale Industries and Agro and Rural Industries (2004) "Final Results - Third All India Census of Small Scale Industries 2001-2002", Annexure 5, p.20

The Ministry of Small Scale Industries encourages upgrade of the facility for productivity improvement. According to the census, average investment in fixed asset is Rs. 668,000. Yet, some advanced enterprises optimize the investment limit at Rs. 10 million and promote some level of automation.

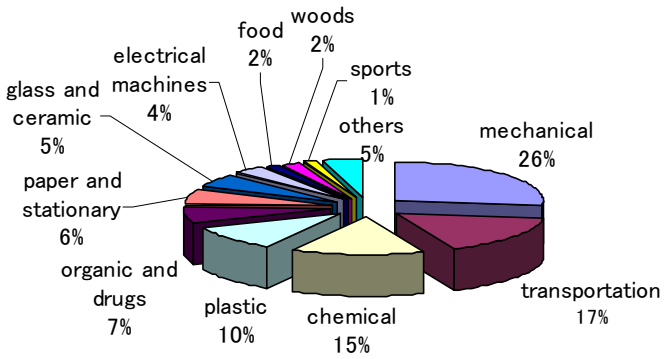
[10] Most of the small scale manufacturers visited during this study had more than 50 employees. It is considered that visited small-scale manufacturers belong to the top-class in the category of the small scale industries.

Local garment manufacturer (small-scale)

Local bread factory (small-scale)

Although the small-scale industrial policy of India has been traditionally protective, its emphasis is now moving towards strengthening competitiveness. A symbolic protection measure is reserving items for exclusive manufacturing by the small scale industries started in 1951. This protection policy aims at expanding the labour absorbency through preventing the erosion of the market by the large scale enterprises. However, since 1991, the reservation policy has been criticised of being a hindrance for the manufacturing sector to gain global competitiveness. In response to the criticism, the reservation items have been gradually reduced to 506 items from the 873 items at its peak (See Fig. 25). Moreover, since October 2001, enterprises eligible for producing 140 of the reserved items have been expanded to those with the investment limit up to Rs. 50 million from those with Rs. 10 million. In addition, enterprises which export more than 50% of the output can be licensed to produce the reserved items, and the enterprises producing 100% of the output for the export and those operating in EPZ and SEZ are not restricted by the regulations of the reserved items. Thus, the protected area given to the small scale industry is inevitably narrowed in the liberalisation era compelled by the global competition.

Fig. 25 Distribution of 506 reservation items



Source: SIDO <http://www.laghu-udyog.com/publications/reserveditems/resvex.htm> (accessed on 2006.4.10)

The Ministry of Small Scale Industry implements various schemes for small-scale industrial promotion as listed in Table 12.

Table 13 Major Schemes under the Ministry of Small Scale Industry

Schemes	Outline
Integrated Infrastructural Development	Infrastructure development targeted at the clusters with high growth potential in the backward and rural areas. Investment assistance is given with the upper limit of Rs. 50 million in forms of subsidies and loans from SIDBI.
Credit Guarantee Fund Scheme for Small Scale Industries	The fund invested by SIDBI and the government extends guarantees to the financial institutions for the loans given to small scale enterprises.
Microfinance	Financial and technical assistance are extended to the microfinance institutions by SIDBI.
Equipment Leasing	Machinery lease by NSIC
Credit Rating	NSIC rates small scale industry for promoting lending from the financial institutions.
Credit Linked Capital Subsidy Scheme for Technology Upgrade of Small Scale Industries	SIDBI and NABARD subsidise 15% of loan amount, which are spent on technological upgrade.
Cluster Development	The governmental agencies cooperate in solving various issues for cluster development. The government subsidises from Rs. 2.5 million to Rs. 4 million in 3 years per cluster for its activities paid in installment.
ISO9000/ISO14001	The government subsidises 75% of expense spent on obtaining ISO 9000/14001 with a limit of Rs. 75,000.
Testing Centres	Subsidizing 50% of the machinery and equipment cost with a limit of Rs. 5 million for the establishments of the testing laboratories run by industrial associations.
Mini Tool Rooms and Training Centres	The state governments and state agencies can receive subsidies for the facilities of the mini-tool rooms and training centres; 75% for the installation and 75% for the renewal with the ceiling of Rs.150 million.
Marketing and Export Promotion	Enterprises can receive subsidies for the marketing activities abroad; 90% of the flight charge, 25% of the advertising material and 50% of the marketing studies and 75% of the one-time registration fee for adoption of bar coding.
International Exhibitions	Operational assistance and subsidies for attending international exhibitions
Government Stores Purchase Programme	The government purchase products from Small Scale Industries through NSIC, which also provides the industries with assistance in technology and procurement.
Ancillary Development	Industrial associations and NGOs receive subsidies up to Rs. 470,000 for constructing database of possible suppliers among the small scale industries.
Entrepreneurship Development	50% subsidies with the ceiling of Rs. 10 million shall be granted to the states or state agencies for setting up or renewing entrepreneurship development institutions.
Prime Minister's Rozgar Yojana	Young generation over 18 years old with proper education background are assisted with starting business. UP to 15% of the project cost is subsidised. The government helps the starters to borrow money from banks, which can receive margin money up to 20% of the project cost subtracted by subsidies. The starters can also receive from 15 to 20 days training.

Note： SIDBI：Small Industries Development Bank of India
NSIC: National Small Industries Corporation
NABARD：National Bank for Agriculture and Rural Development

Source: Ministry of Small Scale Industries and Agro & Rural Industries (2005) "A Guide to Self-Employment"

It is anticipated that competition in the domestic market intensifies since the inflow of the import goods shall be inevitably accelerated. Accordingly, policy for the small-scale industrial promotion has to have more emphasis on strengthening competitiveness of the industry rather than being protective. For example, the traditional small-scale retailers have worked as the outlet of the products from the small-scale industries. However, the retailing activities funded by the foreign investors have been approved since February 2006 provided that they receive prior approval from the government and that they sell a single brand. Construction of the shopping complexes in big cities reveals the impact from the retailing deregulations. Such changes in the markets would affect the demand from the middle-income group for the products produced by the small scale industries.

The cluster development strategy is the policy that responds to changes in the market position of the small scale industries. Cluster development assists geographically concentrated enterprises operating similar industrial activities with aims of upgrading technologies and/or quality and volume of business development services through strengthening linkages between the companies and supporting institutions. A typical example is promotion of the joint actives for sales, procurement or product testing. Cluster development policy in India is influenced by "UNIDO Cluster/Network Development Programme", which has been implemented since 1996. The main beneficiaries of the cluster assistance are small-scale enterprises, but the cluster development policy is implemented not only by the Ministry of Small Scale Industries but also by other ministries and industrial associations. Approaches in the cluster development assistance are varied, and they can be categorised as follows:

1) Integral Approach: In the initial stage, the issues which should be conquered for growth of the cluster are analyzed. Then necessary supports are given by linking various factors that can solve the issues. The cluster development activities are facilitated by cluster agents such as industrial associations and Small Scale Industry Service Institute (SISI). This is a typical approach promoted by the UNIDO cluster project.

2) Technical Assistance Approach: The cluster assistance is focused upon technological upgrade of the member enterprises. For example, UNIDO carries out an automotive component cluster project in cooperation with the Ministry of Heavy Industry and Public Works and the Automotive Component Manufacturers Association of India (ACMA) particularly for upgrading the production control and management.

3) Infrastructural Assistance Approach: Assistance is given to establishment of the infrastructure and common facilities for the use of cluster enterprises. For example, this is implemented by the Ministry of Commerce and Industry in the Industrial Infrastructure Upgradation Scheme (refer to 6.3).

6.5 Supporting Institutions

As described in Section 6.1, multiple ministries are involved in industrial promotion. Accordingly,

supporting institutions under the ministries are varied. It is difficult to grasp the whole structure because there are some overlaps in services among the supporting institutions.

The Ministry of Small Scale Industries has 15 supporting institutions under its authority. 11 of them are under the direct control of the Small Industries Development Organisation (SIDO) including Small Industries Service Institute (SISI), testing centers and technology centres.

SISI

SISI is a subordinate institution of SIDO and offers integrated services to the small-scale enterprises. There are 30 offices located in main cities and 28 branches. Their services include:

- Implementing the Prime Minister's Rozgar Yojana (see Table 12),
- Cluster development,
- Consultation,
- Holding exhibitions,
- Matching service with the large-scale enterprises,
- Technical trainings,
- Testing and
- Technology information delivery.

As compared with its abundant services and facilities, the utilisation level of SISI does not seem to be optimal. Moreover, cooperation with the organisations under the state government tends to be weak. However, the original courses offered in response to the request from the local community with its own financial resource of SISI seem relatively popular. It is expected that usage of SISI will increase because SISI can offer more comprehensive services to small-scale enterprises than any other supporting institutions.

SISI- Chennai :
Library

SISI -Chennai :
Workers from the local enterprises using the common facility

SISI -Hyderabad :
Stained glass workshop
(An original course)

Testing Centres

In the category of the testing centres, there are 4 Regional Testing Centres in New Delhi, Mumbai, Chennai and Kolkata under SIDO. In addition, there are 7 Field Testing Centres. For example, the

Regional Testing Centre of New Delhi is equipped with the testing facility for chemicals, machinery, metallurgical and electrical products.

Testing centres are run by various ministries while the National Accreditation Board for Testing and Calibration Laboratories under the Ministry of Science and Technology is responsible for guiding the testing centres to keep the quality of the service. Yet, upgrading the facility and providing training to the staff depend on the decision of each respective centre. This institutional structure tends to underlie delay in catching up with the technological advancement. Moreover, the services offered by the private testing centres overlap with those by the public testing centres. The Government of India is aware of the limitations in the testing centres purely run by the public organisations. The Government is now assisting the private sector in setting up the testing centres as common facilities and run with the private initiatives.

Technology Centres

As listed in Table 13, there are many centres providing technological assistance under SIDO. Many of them received funding from donor agencies at the initial stage; yet, most of them now run without donor funding except Indo German Tool Rooms and Indo Danish Tool Rooms. Their services include consultancy, common facility, receiving outsource orders and trainings.

Table 14 Technological Assistance Centres under SIDO

Organization	Location	Donor
Central Tool Room and Training Centre	Kolkata, Bhubaneshwar	Denmark
Indo Danish Tool Room	Jamshedqur	Denmark
Central Tool Room	Ludhiana	Germany
Indo-German Tool Room	Ahmedabad, Aurangabad, Indore	Germany
Central Institute of Tool Design	Hyderabad	UNDP/ILO
Central Institute of Hand Tool	Jalandhar	UNIDO
Tool Room and Training Centre	Guwahati	
Hand Tool Design Development and Training Centre	Nagaur	UNIDO
Electronic Service and Training Centre	Ramnagar	UNDP
Centre for the Development of Glass Industry	Firozabad	UNDP
Product-CAM Process Development Centre	Meerut	UNDP
Process & Product Development Centre	Agra	UNDP/UNIDO
Fragrance and Flavour Development Centre	Kannauj	
Institute for Design of Electrical Measuring Instruments	Mumbai	UNDP
Central Footwear Training Institute	Chennai, Agra	

Source: Ministry of Small Scale Industries (2005)"Annual Report 2004-05"

Entrepreneurship Promotion Institutes

Small Entrepreneurs Promotion and Training Institutes are located in Tiruvulla and Ettumanur as subordinate agencies of SIDO. Their services are focused upon assisting in starting businesses. In

addition, Indian Institute of Entrepreneurship (Guwahati, National Institute for Entrepreneurship and Small Business Development (New Delhi) and National Institute of Small Industry of Small Industry Extension Training (Hyderabad) exist as autonomous bodies. These institutes have training courses at the master level.

NSIC

National Small Industries Corporation (NSIC) Ltd. is positioned under the Ministry of Small Scale Industries, but its management is autonomous. The main office is located in New Delhi, and there are 6 zone offices and 30 branch offices. The main activities of NSIC are as follows:

- Implementing the Government Stores Purchase Programme for the products of small-scale industries (see Table 12)
- Lending services for the machinery and equipment
- Rating services of small-scale enterprises
- Holding exhibitions
- South-South Cooperation (assigned by Ministry of External Affairs)

Now that the private sector can replace many types of the services offered by the public sector, the function of NSIC, which was established in 1955, has to be redefined. For example, the lending rate of NSIC has become relatively higher than the private financial institutions. Moreover, there are many private institutions which provide rating services. Yet, as long as the government continues the Government Stores Purchase Programme, NSIC shall function as an implementing agency of the Programme. Table 14 shows a list of major supporting institutions under other ministries.

Table 15 Major Supporting Institutions under the Ministries (Except Ministry of Small Scale Industries)

Ministry	Supporting Institutions
Ministry of Commerce and Industries	Indian Institute of Packaging Footwear Design and Development Institute Indian Plywood Industries Research & Training Institute Institute of Toy Making Technology National Centre for Trade Information India Trade Promotion Organisation
Ministry of Food Processing Industries	Central Food Technological Research Institute
Ministry of Textiles	National Institute of Fashion Technology National Centre for Jute Diversification
Ministry of Chemical and Fertilizers	Central Institute of Plastics Engineering and Technology
Ministry of Steel	Biju Patnaik National Steel Institute National Institute of Secondary Steel Technology

Source: compiled by the Study Team based on the homepage of respective ministry.

6.6 IT Industry Promotion

The Department of Information Technologies (DIT) under the Ministry of Communications &

Information Technologies is responsible for IT policies in India. DIT's functions are i) policy matters relating to IT, electronics, and the Internet, ii) promotion of the Internet, IT and IT enabled services, iii) promotion of IT education, etc. Software Technology Parks are being developed with the initiatives of DIT.

In 1998, the National Task Force on IT and Software Development was established by the Prime Minister's Office in 1998 under the Chairmanship of the Deputy Chairman of Planning Commission. The Task Force formulated the Information Technology Action Plan which consisted of three parts. Part I focused on software, Part II on hardware, and Part III on long-term national policy. The objective of Part I includes the development of information infrastructure, IT export target of US$50 billion by the year 2008, and expansion of people's access to IT. In 2002, the National Advisory Committee on Communications and IT (NACCIT) was set up by the Indian Government with the purpose of promoting investments to the high-tech sector. The NACCIT reviews such measure as tariff reduction and quality improvement of information and communications services.

The Indian Government has established the Software Development Park of India (STPI) as an IT industry promotive measure targeting on 100% export-oriented software development businesses. Under this scheme, a registered company can enjoy such incentives as duty free imports in the STPI, simple export procedures, access to high-speed data communication network, 5-year exemption of corporate tax, etc. According to the 2004/05 Annual Report of STPI, as of the end of March 2005, the number of STP units which were operative was 5,806 units, of which 4,379 units were exported. STPI has set up 17 centres in Class I towns (with population above 1.0 million), 17 centres in Class II towns (with population between 0.5 to 1.0 million) and 11 centres in Class III towns (with population below 0.5 million).

6.7 Human Resource Development

In the area of human resource development, the Ministry of Human Resource Development and Ministry of Labour and Employment take major roles.

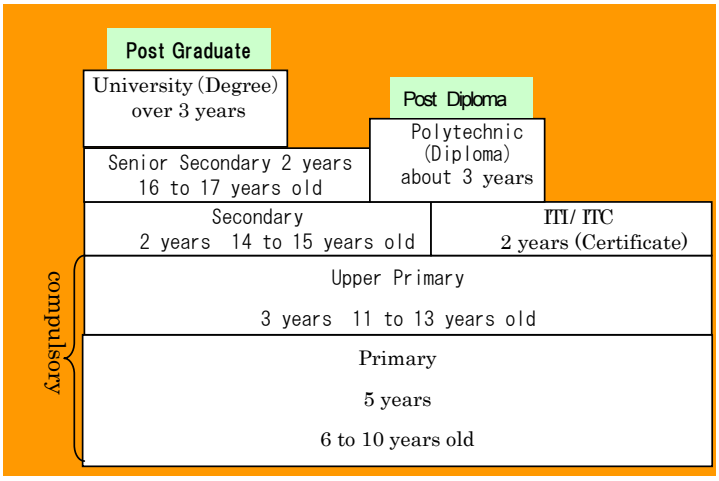
The education system in India is based on "10 plus 2". The first 10 years is divided into "5-3-2" with some variations depending on the provinces. The first 8 years is compulsory and is controlled by the Ministry of Human Resource Development.

From the 9th year, students can choose either academic or industrial training courses. The industrial training course consists of vocational training courses within academic secondary schools administered by the Ministry of Human Resource Development and vocation training institutions approved by the National Council for Vocational Training under the Ministry of Labour and Employment. As for the number of graduates, vocational training institutions comprise 60% of the

total and vocational training courses within secondary schools comprise the rest[11]. There are 5114 vocational training institutions accredited by the National Council for Vocational Training. There are two types of vocational training institutions, i.e., state industrial training institutes (ITIs) and private industrial training centres (ITCs). Vocational training institution graduates from ITIs and ITCs can gain a certificate after passing the All India Trade Test. This certificate is not eligible for continuing higher education. These graduates can go on to polytechnics for a three-year diploma course. Polytechnics are administered by the Ministry of Human Resource Development and Ministry of Labour and Employment.

In India's vocational education system, the demarcation of two ministries, Ministry of Human Resource Development and Ministry of Labour and Employment is complicated in one way.

Fig. 26 Education System in India



Note□ITI□Industrial Training Institute, ITC: Industrial Training Centre
Source: JICA Study Team

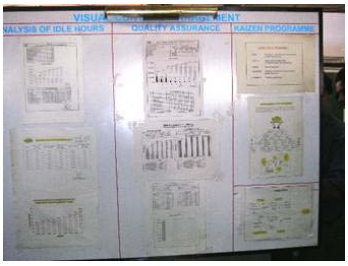
The education system in India has produced a large number of talented engineers in the field of IT and biotechnology. However, the capacity of labourers who work in production lines and in maintenance services requires upgrading. First, strengthening capacity of the general labourers calls for improvement in school attendance rate. The enrolment rate of the compulsory education is 82.5%; yet, the drop-out rate is reportedly quite high. For example, the drop-out rate of the primary education is 34.9%.[12] Secondly, the curriculum has to respond to the needs of the industrial sector, and it is necessary to minimise the technological gap between the educational institutions and the industrial sector. One way to overcome the problem is inviting lecturers from the private sector. Moreover, it is necessary to give training not only in production techniques but also in production and quality management.

[11] ILO(2003)「Industrial Training Institutes of India: the Efficiency Study Report」p.7
[12] Ministry of Human Resource Development (2005) "Annual Report 2004-05", P.4.

Box Industrial Training Model: Tool Room & Training Centre in Bangalore

The industrial training run by the Government Tool Room & Training Centre in Bangalore demonstrates a good model. The Centre runs under the State Government of Karnataka and was established with the assistance of Government of Denmark in 1972. The Centre offers diploma and post-diploma courses in metalwork and moulding. The Centre is keen on the latest technology since they receive orders from the private companies. Its modern CNC and CAD/CAM are in full operation. The characteristic of the Centre is that it teaches production management together with manufacturing techniques. The graduates from the Centre hold high profile and are fully absorbed in the manufacturing sector. They are also highly demanded from abroad. From 20 to 25% of the graduates are employed abroad including in Malaysia, Singapore and Australia.

A board showing the progress of the training



Proposals for "Kaizen" posted on the wall

Student's note
The work procedure is explained in diagram.

A training scene

Chapter 7 Financial System

The role of finance is important in the private sector development as a provider of funds. In connection with technical cooperation, indirect financing (banking section) will become more important from direct financing (securities section) which have close connections with major listed companies.

7.1 Overview of India's Financial Sector

(1) India's finance sector

The fund size of India's financial sector in terms of M2 (money supply) shows a high growth of average 15% annually for the past five years. M2-GDP ratio is expected to reach 72.2% in 2004/05.The M2-GDP ratio of is about 4 times of 18.5% which is the budget scale-GDP ratio representing the rapid growth of finance sector. India's private sector has developed owing to few leading industries such as IT, pharmaceuticals. Compared to the securities market, total market value of listed shares was expanded by 2.8 times in the past three years. The GDP ratio in 2004/05 fiscal year becomes 54.7%, which is approaching M2 rapidly. Consequently, the financial market in India is becoming balanced both in the direct market and the indirect market.

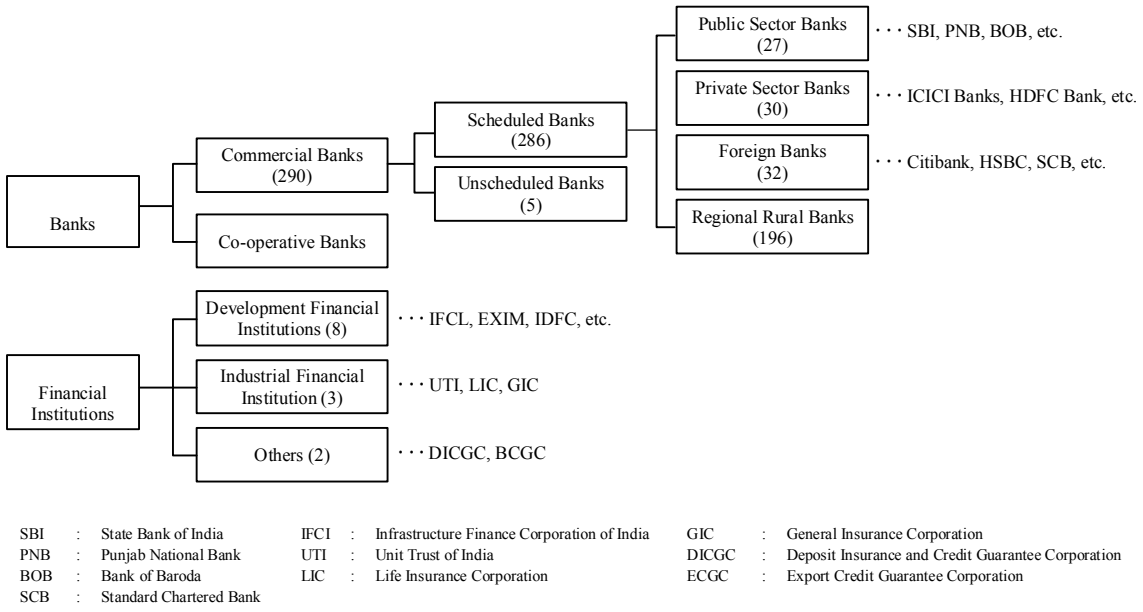
(2) Recent trends in financial sector

India's private sector has grown remarkably driven by a few leading industries, such as IT and pharmaceutical industries. This trend eventually spread to other sectors and is now at the stage of overall growth. Moreover, financing depends more on foreign capital rather than only from domestic sources. Due to the increasing inflow of foreign capital, the financial market turned into a borrower's market. Therefore, competition among financial institutions is intense and the margin is thin. This tendency does not remain only in a city but is gradually spreading into rural small cities. In addition, commercial banks are increasingly entering into the field of micro finance which used to be the territory of public institutions.

(3) Organizational structure of financial institutions

Financial institutions in India are divided to "Banks" based on the bank law (1949) and others based on individual governing laws, however all controlled by the Reserve Bank of India (RBI) which is the central bank of India. (See below) Commercial banks have the largest presence in India (72.3% share in terms of asset; 2004/05), followed by investment finance institutions such as insurance (15%), and policy-based financial institutions (9.7%). Within commercial banks, public (government –owned) commercial banks consists 73.2% of all asset exceeding private commercial banks (19.8%) and foreign banks (7.0%) to a great extent.

Fig. 27 Structure of India's financial sector



SBI : State Bank of India
PNB : Punjab National Bank
BOB : Bank of Baroda
SCB : Standard Chartered Bank
IFCI : Infrastructure Finance Corporation of India
UTI : Unit Trust of India
LIC : Life Insurance Corporation
GIC : General Insurance Corporation
DICGC : Deposit Insurance and Credit Guarantee Corporation
ECGC : Export Credit Guarantee Corporation

Source: RBI: Report on Trend and Progress of Banking in India, 2003-2004

(4) Main features of Indian financial institutions

To sum up, India's finance sector is well-advanced with various players, based on tough and developed legal structure. The total number of financial organizations in India may reach over a few thousand. Also, major commercial banks have around a thousand branches covering the whole country. Vast land with a large number of people and the penetration of money economy even in rural areas seems to be the reason of the current wide existence of financial institutions in India. As a result, various financial organizations are active from the national to state, and to district levels.

Both public and private banks co-exist in the commercial banking sector and some special-purpose institutions are set up for some sectors such as agriculture, SMEs and infrastructure. These government-owned banks are systematically organized in a hierarchical manner from the top national level down to the state and to the lower level where the fund flows smoothly. One prominent example is the re-financing scheme by policy-based institutions, and the other is the priority sector lending quota towards commercial banks under the control of RBI.

(5) Financial policy of the priority sector lending

For the purpose of concentrating all assets in the country, the government decided to nationalize financial institutions in 1969. However, due to the rapid development of the financial market, government's policy shifted to privatisation of government-owned institutions starting 1989. Consequently, this resulted in higher saving rates and raised M3-GDP ratio up to over 100%.

(6) Approach to government-owned development banks

Financial assets collected by banks will be distributed to the demand side according to the government decision. Industrial promotion and social issues such as rural development and poverty reduction are the two target sectors of the government. However, financial assets owned by banks are focused more on industrial sector in terms of financial profitability. Policy-based financial institutions set up by each target sector are, for example, Export-Import bank of India, SIDBI and NABARD to be described later.

(7) “Priority sector lending” for commercial banks

'Priority Sector Lending' policy intends commercial banks to follow the government's political decision in allocating funds. Commercial banks are obliged to lend a certain ratio of the final total balance of outstanding loans (32% as of April 2006) to priority industries; (1)12% for export-related, (2) 10% for SMEs, and (3) 10% for agriculture, housing industry. If commercial banks fail to achieve the lending target, the government will impose a penalty such as purchase bonds of the development bank which controls each priority industries, or oblige deposits etc. In addition, although the target bank of this priority lending scheme is called the "designated bank", in reality, only five banks among 290 commercial banks in India are excluded. (as of April 2006) This regulation is strictly controlled by the government and the Reserve Bank of India is monitoring the track record under the instruction of the Ministry of Finance.

(8) Trend of commercial bank lending

The amount of commercial bank loan shows a steady growth. The total balance of outstanding loans of designated banks has reached Rs 11 trillion (US$ 225 billion) at the end of March 2005 which is a rise of 30.9% over the last year's corresponding period. This is twice as high as the end of March, 2001. On the other hand, the level of interest-rate-on-loans has been rather stable for the past several years, around 6% sliding to the prices trend. Due to the increase in national savings ratio and foreign currency inflow, financing of commercial banks are also stable and the bank loan-deposit ratio is increasing.

(9) Fiscal policy

As in the case with other countries, RBI is responsible for supervision of commercial banks and financial policy for price level control. However, close collaboration with the governmental fiscal policy, as mentioned above, is one of its prominent features. In respect to the financial policy, it is mainly managed by reserve requirements change instead of discount rate policy and open market operations. Even in such an irregular manner, generally financial policy is well-functioning in India. The price level is shifting stably around 4% since 2000, and the financial situation is basically sound. (10) Non-performing Loans

The rate of bad debts has remarkably improved as loan increased and collection of bad loans progressed. Although the total bad debt ratio of all the appointed commercial banks was 8.8% at the end of March

2003, it fell to 5.5% at the end of March 2005.However, bad-loans recovery in public banks is much behind commercial banks, and this problem is not yet solved especially in state level banks.

7.2 Four priority development areas and its financial aspect

India's development strategy focuses on 4 sectors; Rural/agriculture development, SMEs, microfinance, and infrastructure. These four fields are mutually related and thus, in reality the various policies of each field co-exist and harmonize on the on-site level. Regarding the financial aspect, to realize the development strategy, public funds of government-owned banks and 'priority lending scheme' applied to commercial banks are the two sources.

(1) Rural Agriculture Development

Financial aspect of rural / agriculture development

Nearly 70 percent of India's population reside in rural areas, and engage in agriculture. Since many of them remain in poverty, income disparity is a big social problem. The government defines agriculture and rural development as equally important problems for national development and has taken many measures.

Agriculture-related sector is categorised as the priority lending sector thus banks are required to distribute a certain amount. Recently commercial banks are increasing loans for agricultural-related 'non-farm' activities. Moreover, in addition to agricultural promotion, rural SMEs promotion and rural small-scale infrastructure are also the government's target sectors. Thus government banks specializing in each sector are responsible for providing funds.

Overview of NABARD

NABARD (National Bank for Agriculture and Rural Development) is established as a governmental development finance institution (Apex) specializing in both agriculture and rural area issues. The capital is approximately 500 US$ million, and 100% government-owned. The financial position of NABARD is generally healthy. Total assets at the end of 2005 were US$15.2 billion (increase of 8% compared with the corresponding period of last year), and equity reached as high as 37% of its capital composition. Moreover bond issue and divided income accounted for about 50% of borrowed capital. This asset portfolio is considered to be the result of risk management toward various risks around development finance. The degree of government dependence is very low, with the percentage of the gross amount of assets being less than 1% from the government, and 6% from RBI lending in 2005.

Major Activities of NABARD

NABARD's main activity as a financial institution is re-financing to the appointed commercial bank, a local regional bank (RRB), etc. Others include direct-financing to state governments, NGOs etc and co-financing to support mega projects syndicated loans. This feature is close to wholesale type banks. Since loans are generally long-term bases for development projects in rural areas, NABARD has been broadly engaged in various businesses in connection with development as follows, not only in forms of investment and financing.

- Loan scheme:

  Out of 592 districts existing in India (2001 Census), NABARD covers 467 districts through its 381 district offices. NABARD's approach is to start from the needs of district level, then summarizes their financial plan at the state and national level.

- Institutional Development:

  Capacity Building of NABARD's counterpart agencies/institutions for each project such as project implementation agency, NGO partner, borrowers etc.

- Project Management:

  Management and Supervision of each stage of projects (Planning, Construction, Operation)

- Regional Development:

  Project formulation from various approaches such as projects linked to industrial promotion for specific region, projects targeting specific techniques (i.e. hand looming / weaving). Indian government is also supporting these activities.

- Consulting Service:

  Widely provided towards central and state government, international donors, NGOs etc.

(2) SMEs sector

SME sector in India

SMEs in India consist of two categories: those who are capable of becoming subcontractors in Japanese companies and the vast majority of tiny small-scale companies. These tiny companies are also divided into venture-type IT-related companies located in urban areas and rural-based micro enterprises.

SME financing

The government is promoting SMEs development as a top priority policy in the aim of solving India's serious employment problem. Financial support to SMEs is considered as an important tool, such as

SMEs-oriented loans and, most of all, active involvement of SIDBI as an implementing agency of government policies.

Overview of SIDBI

SIDBI (Small Industries Development Bank of India) is a government-owned apex financial institution. They became independent in 1990 separated from IDBI (Industrial Development Bank of India). In fact, IDBI is a historical bank established in 1964 by World Bank's support to promote industrial development. However due to separation of SIDBI and decentralization policy, IDBI is now shifting its focus on private commercial banking minimizing its function as a development bank.

SIDBI's major activities

SIDBI's total asset is over 45 US$ billion (as of 2005) and total lending amounts 2.5 US$ billion annually for the past 4-5 years. In the early years, its main operation was re-financing. Recently the share of direct financing has been expanding up to half of whole lending due to new IT-related type venture business which 2nd tier banks avoid lending their money to. Similar to NABARD, SIDBI operates as a wholesale bank specializing in Small enterprises working closely with NABARD in rural development fields. Major on-going projects include Rural Industries Programme, Cluster Development Programme and Micro-Finance Foundation. SIDBI has also separately established SME-specialized credit rating & risk sharing agencies to promote SME development.

SIDBI's balance sheet is quite stable, such as Capital (5.5%), internal reserve (24%), bond issue (34%) and long-term debt (13%) etc. Half of long term debt loan consists of JBIC Yen loan.

(3) Microfinance (MF)

Microfinance is one of the most effective tools in pushing the majority of poor people to enter the market economy. This sector is growing rapidly and expected to grow further as a response to the growing vast population of India.

The reason why Microfinance became so popular in India can be explained as follows;

i) New type of MF has been introduced which allows access even for the most poor people by forming a group. Also, the structure of SHGs:Self-Help Group-Linkage model matched was appropriate to India's rural social structure.
ii) Business opportunity for MF was wide open in the rural areas, and its success rate was higher than any other country.
iii) Source of Capital is growing followed by MF market expansion. Currently most of the banks consider MF as its strategic policy.
iv) New schemes and tools for MF are still being developed, such as risk sharing method.

v) The menu of MF is expanding from banking (lending/saving) to other financial areas such as 'Micro Insurance' utilizing MF's experience and established network.

Since India is the largest country of various types of micro-finance institutions, there is much to learn from India.

(4) Infrastructure

The insufficiency of basic infrastructure is one of the most important subjects in India. Special focus is on transportation, such as road, port, airport and electric power and these are planned on the government level. On the other hand, since the local government is taking charge of water and sewage, the problem remains relatively under the surface but the degradation of equipment is serious. The actual condition is quite severe and immediate action is needed.

70 percent of the total expense for infrastructure construction is provided by the government's budget as public investment, 30 percent of the fund is provided by PPP or funds from international donors. The government has the intention of expanding much more investment to infrastructure by increasing the portion of the loan from PPP or donors.

IDFC, initially established as a government organisation (although privatised, the government still holds 23% of stocks), and the investment bank section (e.g. ICICI Securities) of commercial banks are actively leading this field as an investor.

Commercial banks in particular compose project finance by utilizing their security functions, such as bond issue, not only investing by themselves or providing funds. Their business scale is expanding while corresponding to the large demand for funds. IDFC, ICICI group etc. have competed and tendered a bid for the privatisation of airport construction of New Delhi and Bombay which had the result announcement in January 2006.

Another important financial institution in the PPP infrastructure development in India is IL&FS (Infrastructure Leasing & Financial Services Limited). IL&FS's core business is lease-based formation of PPP projects, although the object field is broad to residence, industrial complex, and urban planning. Its share is occupied by the investment by private enterprises, mainly IFC (from Japan, ORIX takes part as the 2nd largest stockholder), and the Reserve bank of India is the 5th stockholder on the India government side.

The government announced the foundation of a new financial institution (IIFCL) so that it may strengthen participation of the government in PPP field in December 2005. IIFCL is established as a 100% government-owned financial institution in order to promote large-sized infrastructure projects, such as roads, ports according to information from media and people concerned. According to the local industry journal, Director S.S.Kohli of IIFCL has announced officially, saying that US$ 2 billion will be supplied by bond issue (ten-year refund) as an activity fund for the 1st year.

In addition to the large-scale infrastructure development led by the central government, local Pro-Poor infrastructure development is also considered as an important sector. Although Pro-Poor infrastructure development is financed by central or state budgets, its progress is very slow due to severe financial condition. NABARD and SIDBI constantly working in rural areas are the main investors in this field. Both banks are approaching the Pro-Poor infrastructure development as part of rural agriculture development, or SMEs development programme. They play an active role not only in terms of finance, but development planning, capacity building of the implementing agency etc. Since these projects do not meet profitability level, there is only limited participation by commercial financial institutions.

Japan has supplied JBIC yen loans to India in electric power, water and sewage, road, and subway infrastructure projects. Although JICA is not so active in this field, the development project concerning pollution control of the Ganges River is an example which resulted in a JBIC yen loan.

7.3 Relationship with Japanese companies and financial institutions

Since the demand for infrastructure is huge, it is necessary to examine new approach of expanding cooperation in infrastructure besides the former traditional support which went via Indian government.

For example, the provision of a yen loan to IIFCL established recently deserves consideration. Regarding JICA's cooperation in the infrastructure field, technical guidance for both the technical and management side, and capacity building for the implementing organizations under the state level, is required.

Like other foreign countries, when a Japanese company advances to India and starts its operation, since FDI is treated favorably politically, it is rare to receive disadvantage in any way. It seems that therefore, Japanese companies may not consider asking a Japanese bank for financial facilities. Rather, a Japanese bank is in a situation where it is struggling its way to expand its business in India. The reason seems to be the following; restriction of the amount of capital, the application of RBI regulation, and eventually the excessive cost caused by serving especially to Japanese customers.

Chapter 8 Economic Infrastructure

8.1 Inadequate Infrastructure is the Major Constraints in Investing India

(1) Economic Infrastructure form the Investors Point of View

Japan Bank for International Corporation (JBIC) annularly publishes "Research on operation of Japanese manufacturing companies in overseas". According to the research report in 2003, India was selected by Japanese companies as the 3rd most promising mid-term investment destination. However, Japanese company's evaluation of infrastructure in the country is quite low. According to the survey, 112 companies selected India as a promising mid-term investment destination. While the 82.1% of them answered "Market growth potential", 56.3% "Cheap Labor Cost", and 36.1% "excellent human resources" as reasons for selection, none of them answered "Sufficient Infrastructure" as a reason.

As much as 43.2% of respondents answered that "Inadequate Infrastructure" is the major constraint in investing in India. "Inadequate Infrastructure" was the most significant factor among other constraints such as "Unstable Politics/ Social Situation (33.7%)", "Lack of Adequate Information about India (34.7%)", and "undeveloped legal system (29.5%)" (see the figure below right). When comparison is made among top-ten promise medium term investment destination countries, the highest ratio of respondents answered "Inadequate Infrastructure" as constraints in investing in India (see the figure left below).

Fig. 28 Ratio of Respondents answered "Inadequate Infrastructure" as Major Constraints

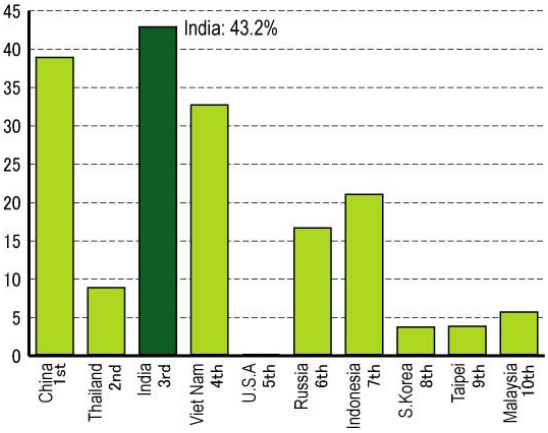
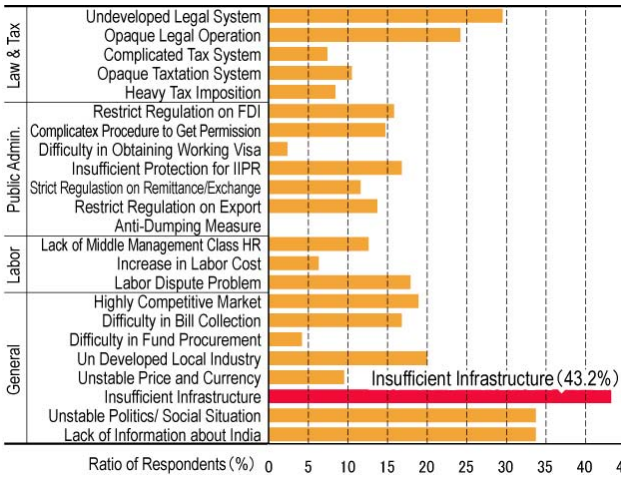


Fig. 29 Problems/ Constraints in Investing India



Source: "Research on operation of Japanese manufacturing companies in overseas 2004"

As mentioned above, insufficient infrastructure is a major constraining factor in promoting direct foreign investment in India. One of the major reasons for stagnant Infrastructure development in the country is restraining investment in infrastructure over the last decade to reduce deficit of fiscal balance. It is said that while the Indian Government took aggressive action to solve social issues such

as poverty alleviation, the government was unvalued on infrastructure development, which did not lead to popularity ratings.

Development of infrastructure holds the key to realising stable growth for the Indian economy. In other words, in order to materialise a target annual growth ratio of 8% and annual foreign direct investment of US$ 7.5 billion, which were mentioned in the Tenth Five-Year Plan (2002-07), the biggest barrier is sluggishness in the infrastructure development. The Mid-term Appraisal of the Tenth Five-Year Plan (September 2004, Planning Commission) clearly mentioned that railway, electricity, and urban infrastructure (including urban transport) is a major weak spot which, if corrective steps are not taken, will prevent the economy from transiting to higher rates of growth.

(2) Electric Power Sector and Transport Sector are the Major Constraints

Among various infrastructures, lack of adequate electric power infrastructure and transport infrastructure are deemed serious constraints in investing in India. India is suffering from serious electricity shortage (7.3% of energy shortage and 11.7% of peak demand shortage during 2004/05). Lack of adequate generation capacity and aging of transmission and distribution systems have resulted in frequent blackouts and unstable voltage levels, and which have negative repercussions for industry and civil life. Transport infrastructure has to play a vital role for coping with trade growth and for strengthening international competitiveness through reduction of transportation costs. However, the poor quality of transport infrastructure- especially urban transport, port and railway- is also regarded as a major constraint. Thus, India's Tenth Five-Year Plan has emphasized the importance of power and transport sectors.

In addition, the Japanese government's country assistance program for India, May 2006, also placed great importance on the electric power sector and transport sector. The strategy mentioned that *"Japan intends to assist infrastructure development, from medium and long term perspective, that contributes to private-investment oriented economic development through improving India's investment climate. Specifically, Japan will place priority on the electric power and transport sectors whose services are continually in short which act as a bottleneck for economic growth"*.

Based on the these conditions, current situation and problems on transport and electric power sectors were examined as follows;

8.2 Current Situation and Problems of Transportation Sector

Physical distribution (or Logistics) performs one of the most important functions in the economy, without which the country's favorable economic growth cannot be expected. However, logistics in India is generally inefficient due to undeveloped transport infrastructure and immature service providers. According to the Road Transport & Highways, the total logistics costs in the country constitute nearly 10% of the GNP. In the U.S., the estimates show that the cost is around 6% of the

GNP. In addition, logistics cost constitutes about 10 to 35% of the gross sales of an Indian company[*13].

The road freight industry comprises small operators accounting for as much as 85% of the total fleet. The total transport function is shared among several actors. For example, operators perform only the haulage function, while the marketing, aggregating, storing and delivery functions are undertaken by agents and brokers. Such structure makes physical distribution inefficient.

In the case of India, logistics cost constitutes about 10 to 35% of the gross sales of an Indian company. Logistics management has become a growing concern today for many industries and is regarded as the single most critical point, which can leverage businesses towards success.

Also, the present insufficient transport infrastructure aggravated the problem on physical distribution. Along with the deterioration of railway infrastructure and rapid popularization of the motor vehicles, the freight traffic tends to shift from the Railways to road transport (1950/51 Railway 89% and road 11% in 1950/51, railway 35% and road 65% in 2000/01). However, the Rakesh Mohan Committee estimated that the economic cost of bad roads ranges from Rs.200 to Rs.300 billion annually. Bad roads not only obstruct and delay movement of goods, but also increase the cost of vehicle maintenance, and increase the probability of breakage of goods in transport.

According to the World Bank's estimate in India, a unit increase in GNP generates an increase of 1.5 times in freight transport demand. Expecting the Indian economy to grow at more than 6% per year in the near future would imply doubling of freight transport output in about 14 years. If India fails to develop transport infrastructure to keep up with the transport demand, it could become a heavy drag on economic progress. Current situations, issues and future plan of transport sector are summarized as follows.

(1) Urban Transport

Services and manufacturing industries particularly concentrate around major urban areas, and require efficient and reliable urban transport systems to move workers and connect production facilities to the logistics chain. But growth in the services sector and development of Indian manufacturing industries will put more pressure on already saturated urban transport systems.

India’s urban population is around 30% of its total population in 2001. It is projected that India’s urban population would grow to about 820 million by 2025 (urbanization ratio of 50%), as against only 285 million in 2001. In addition, motor vehicle ownership is increasing very rapidly (21.37 million in 1991, 67.03 million in 2003). Rapid growth in population and private vehicles will put more pressure on urban transport systems.

It is very difficult to construct new road and to expand existing roads in urban areas because of difficulty in land acquisition. In order to alleviate congestion, construction grade separation on congested junctions is implemented most of urban area, and a metro railway system was introduced in Delhi and

[13] Source: “Impact of transportation infrastructure on logistics in India”, Prof. Vijayaraghavan, T A S, 2002

Kolkata. In addition, Mass transit system will be introduced in Mumbai, Chennai, Bangalore and Hyderabad in the near future. The Japanese government has played an active role in metro railway projects in India. The Japanese government has already provided an ODA loan for metro railway projects in Delhi and Kolkata, and will provide an ODA loan for the project in Bangalore.

In India, road, railway, and mass transit system are planned individually in many cases. There are almost no comprehensive transport development plans, which includes detailed traffic demand forecast and study about connectivity and complementary of each transport mode. There are, however, few notable exceptions like Mumbai. In the case of Mumbai, Mumbai Metropolitan Region Development Authority (MMRDA) is currently executing the Mumbai Urban Transport Project (MUTP) with technical and financial assistance from the World Bank. MUTP is a comprehensive and multimodal urban traffic master plan including modernisation and expansion of suburban railway, modernisation of traffic signs and signals, construction of pedestrian walk and grade separation, procurement of bases, re-examination of bus routes, re-education of workers of railway and bus companies.

To address the problems of urban traffic, the Ministry of Urban Development drew up “National Urban Transport Policy (NUTP)” in March 2005. NUTP mentioned about integrating land use and transport planning to reduce the number of trips, discouraging personal use of private vehicles and priority use of public transport, innovative financing mechanisms using land as a resource, introduction of mass rapid transit, set up of Unified Metropolitan Transport Authorities (UMTAs) in all million plus cities, pricing of public transport, and etc.

Each state government should formulate an urban transportation master plan for cities with a population of over one million. The central government subsidises a part of planning costs. In principle a state government is responsible for investment, management, and maintenance of the urban transportation system. In case that private funds are introduced into new transport projects, a financial support from the central government is available through the Viability Gap Funding Scheme as described later.

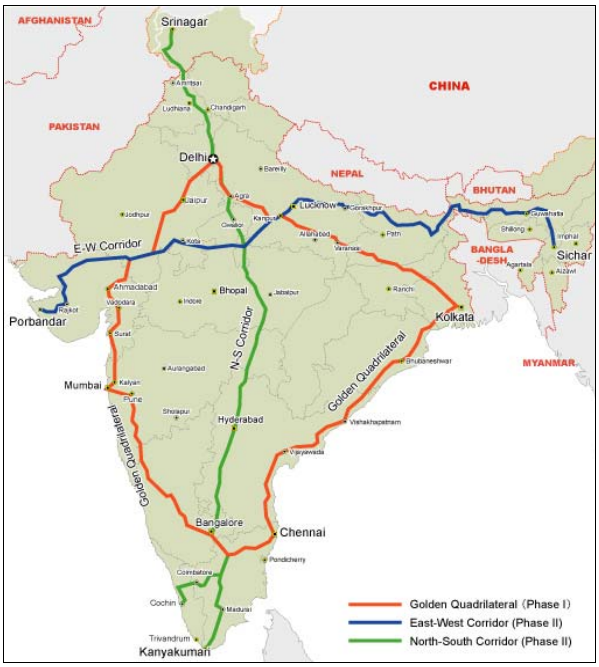
(2) Highways

Total length of road network in India is 3,313,769 km. They carry about 85% of passenger and 70% of freight forwarding. The country's road network can broadly be divided into three categories viz. a) Express way (200 km), b) National Highways (65,569 km, 2%), c) State Highways (128,000 km, 3.9%), d) Major District Roads (470,000 km, 14.2%), and e) rural roads (2,650,000 km, 80%). The National Highways, running across the length and breadth of the country, have a length of 65,569 km.

Though national highways comprise only about 2% of the road network, they carry about 40% of the road based traffic. Planning, development, maintenance and management of express way and highway are executed by National Highways Authority of India (NHAI), which was established in 1995. State highways and roads at lower levels are administered by relevant state or local government.

National highways connect major cities and play important roles in the distribution of goods. National Highways are mostly two lanes with high traffic, low service and slow speeds. They are increasingly a major constraint to faster economic growth and social development.

Fig. 30 National Highway Development Plan



To improve the situation, the Ministry of Shipping, Road Transport and Highways was formulated "National Highway Development Program (NHDP)". NHAI is responsible for implementing the plan using participation of the private sector through public-private partnership (PPP). Most of projects using private investments are implemented on a BOT (built operate and transfer) basis. Even if the project is financially not viable, part of construction costs (maximum 40%) will be subsidized by government under "Viability Gap Funding Scheme" (see the column in the next page). Coupled with the reasonable scheme and sufficient money supply based on favorable economic growth in the county, massive private investment has flow into the projects, recently.

Under NHDP phase I, the Golden Quadrilateral (5,846 km, 4 lanes) connecting Delhi, Mumbai, Chennai and Kolkata was the first project to be taken up and is expected to be completed by December 2006. Out of total length, construction of 5,052 km (86.4%) road section had completed as of the end of 2005.

According to the interview with several companies during the site survey in India, it is understood that the project is highly appreciated by Japanese- affiliated firms and local firms because they can reduce the time to transport goods/ materials.

For example, Japanese affiliated auto company "T" situated in suburban Bangalore relies 90% of the transportation of finished cars on road. Before the project implementation, it took about 8 days to transport finished cars from Bangalore via Mumbai to Delhi. Travel time has been reduced by 3 days after the project completion. Also, one of the biggest domestic IT companies "W" decided to construct their branch office in Pune after the commencement of construction work of Mumbai - Pune road, which constitutes part of Phase I project. After the full open of the road in March 2002, travel time between two cities has decreased from 5 hours to 2.5 hours.

Table 16 Summary of National Highway Development Plan

Phase	Contents	Length
Phase I	Development of 4-laning of Golden Quadrilateral connecting the four major cities of Delhi, Mumbai, Chennai and Kolkata.	5,846km
Phase II	Development of North-South and East-West Corridor connecting Srinagar in the north to Kanyakumari in the south, and Silchar in the east to Porbandar in the west.	7,716km
Phase III	Development of new national highway connecting major city and major tourist area	10,417km
Phase IV	2-laning with paved shoulders national highways, which are excluded from Phase I-III	20,000km
Phase V	6-laning of Golden Quadrilateral and some other selected stretches	6,500km
Phase VI	Development of Expressway (including Mumbai – Baddara)	1,400km
Phase VII	Development of ring roads, bypasses, grade separators, service roads, at Major Cities	---

Source: NHAI

The North South - East West Corridor (NS-EW) is the second phase of the National Highways Development Project (NHDP), and consists of building 7300 kilometers of four/six lane expressways connecting Srinagar, Kanyakumari, Porbandar and Silchar. As of December 2005, 10.3% (797 km) of the entire sections has been completed, 65.0% (5,915 km) was under construction, and 24.7% (1,904 km) was under preparation of bidding. The Phase II project will be completed by December 2007.

The phase I and phase II projects have been implemented under public- private partnership. 19% of phase I project and 27% of phase II project has been and will be implemented on a BOT basis. NHAI intends to execute all of the following phases of NHDP on a BOT basis.

Viability gap funding for Infrastructure

Infrastructure projects have long gestation periods and, in some cases, are not financially viable on their own. It is almost impossible to fund all of the investment requirements of massive infrastructure project fully from the budgetary resources of the Government of India alone.

In order to remove this shortcoming and to bring in private sector resources and techno-managerial efficiencies, the Government is promoting Public Private Partnerships (PPP) in infrastructure development through a special facility envisaging support to PPP projects through 'viability gap funding'. Primarily, this facility is meant to reduce capital cost of the projects by credit enhancement, and to make them viable and attractive for private investments through supplementary grant funding.

Viability gap funding can take various forms, including but not limited to capital grant, subordinated loans, O&M support grants or interest subsidy. A mix of capital and revenue support may also be considered.

The funding is to be disbursed contingent on agreed milestones, preferably physical, and performance levels being achieved, as detailed in funding agreements. The funding is to be provided in installments, preferably in the form of annuities, and with at least 15% of the funding to be disbursed only after the project is fully functional. The total Government support its agencies required by the project must not exceed 20% of the total project cost as estimated in the preliminary project appraisal, or the actual project cost, whichever is lower.

The criteria for eligibility for funding are;

(i) The project must be implemented, i.e. constructed, maintained and operated during the project term, by an entity with at least 40% private equity.

(ii) The project must belong to one of the following sectors: a) roads, railways, seaports, and airports; b) power, c) water supply, sewerage and solid waste disposal in urban areas and, d) International convention centers.

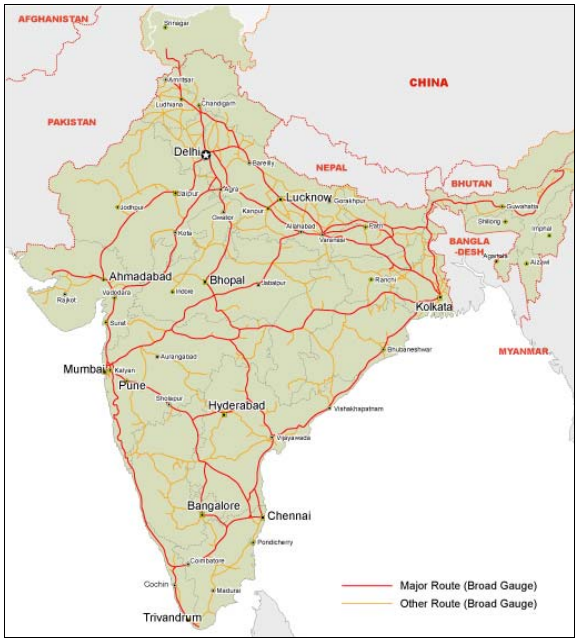
The implementing agency must be selected through a competitive process. The main criterion for selection will be the extent of viability gap funding required by the private partner to successfully implement the project. The extent of viability gap funding shall be determined on the basis of the net present value of the actual viability gap funding required. For this purpose and for all calculations under these guidelines, the rate of discount shall be the rate of interest on 10-year gilts on the date of submission of the bid.

(3) Railways

India has the one of the longest railway networks in the world (109,221km). Trains in India carry about 17.7 million passengers and 1.49 million tons of freight in a day.

Three kinds of railway gauges are adopted in India; broad gauge (1676mm), meter gauge (1000 mm), and narrow gauge (762 and 610 mm). Broad gauge although forming 72% of the route, generated 98.5% of freight output and 90.5% of the passenger output during 2002/03.

Fig. 31 Railway Network in India (Broad Gauge)



Since freight tonnage in the country has increased by 15% per annum, capacity of freight railway has almost saturated. Thus, augmentation and new development of freight railway system is indispensable to realize countries economic growth. Cargo handling volume of the railways along the Golden Quadrilateral (GQ) -Delhi, Mumbai, Chennai, and Kolkata- occupied 65% of all Indian railway freight traffic, and are expected to increase along with development of container terminal in ports and with increase in the traffic demand of agricultural, mining and manufacturing materials/ products.

For example, container handling volume in Indian ports has increased rapidly with an annual growth rate of 15% during the past years (0.68 million TEU in 1990/91 to 3.9 million TEU in 2003/04). Planning Commission forecasts that container traffic in ports in the country will be increase to 7.0 million TEU in 2006/07 based on the recent trends of import and export.

Given this situation, the Government of India plans to construct the first full scale high-speed freight railway in Asia, which connects Delhi, Mumbai, and Kolkata. This computer control freight train system with a total length of 2,800 km is expected to start commercial operation in the end of 2010. Currently, the Ministry of Railway has executed a feasibility study on the project with technical assistance from JICA. Total project cost was estimated at about US$ 5 billion (equivalent to 550 billion Japanese Yen). India intends to utilize Japan's STEP loans (while interest rate is lower than conventional loan, prime contractors are tied to Japanese firms) for implementing Railway Freight Corridor Project.

According to the basic plan prepared by Indian Railways, the newly constructed Railway Freight Corridor connects Delhi - Mumbai (1,350 km), and Delhi - Kolkata (1,450 km). The whole stretch will be electrified double track. Electric locomotive specially designed for the corridor will be manufactured, and will run at the speed of more than 100 km per hour.

(4) Ports

Indian ports consists of 13 major ports (Kolkata, Haldia, Paradip, Visakhapatnam, Chennai, Ennore, Tuticorin, Cochin, New Mangalore, Mormugoa, Jawaharlal Nehru, Mumbai, and Kandla, see Fig.32) managed by port trust of India under central government jurisdiction, and 146 intermediate/ minor ports managed by state government. During the year 2003/04, the major ports handled 344.8 million tons of traffic, which accounted for 75.3% of handling volume of all Indian ports (458.0 million ton).

In 2001/02, total cargo handling volume of the major ports was 287.6 million tons or 83.6% of aggregated throughput of major ports (344.0 million ton/ year). While cargo handling capacity of the major ports had enhanced to 389.5 million ton (2003/04), cargo handling volume has more quickly increased, capacity utilization ration has increased 88.5% in 2003/04. To improve traffic handling efficiency and capacity, privatisation of part of port functions is under way on a BOT basis.

Visakhapatnam port in Andhra Pradesh handled 50,147 ton/year of cargo, which is the largest in Indian ports. When combined with cargo handling volume of adjacent ports, Mumbai port and Jawaharlal Nehru port in Maharashtra handled 67,934 ton/year, and Chennai port and Ennore port handled 53,286 ton/year.

Fig. 32 Major Ports & Port Connectivity Project

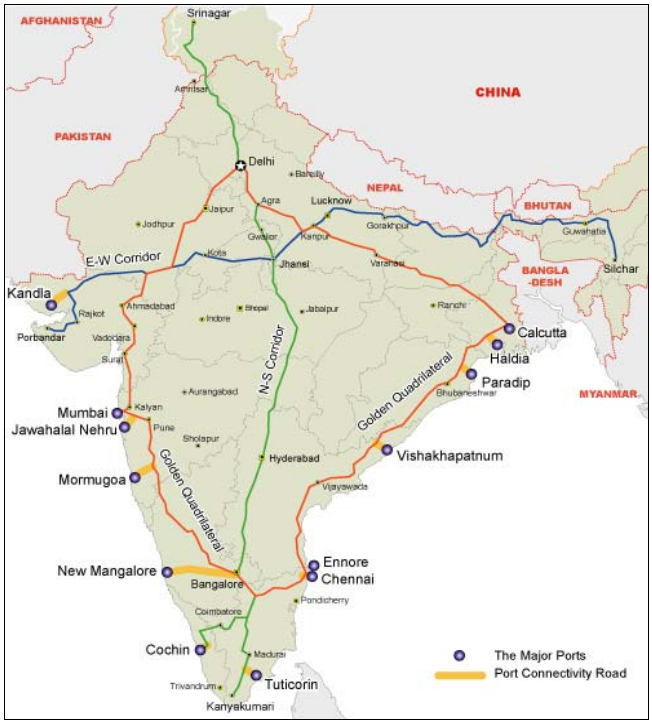
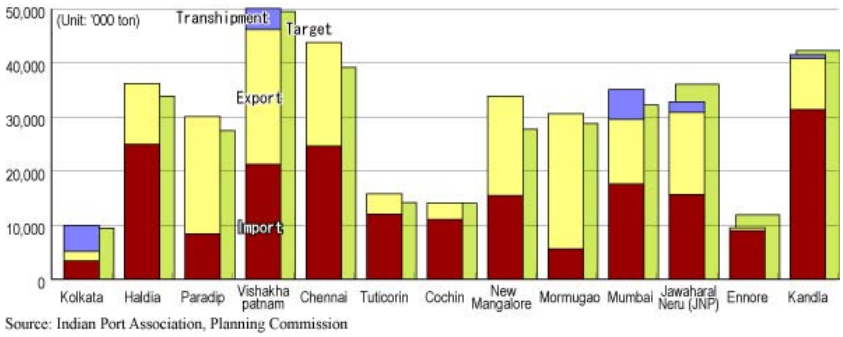


Fig.-32 compares cargo handling volume in 2004/05 of the major ports and their target mentioned in the 10th Five-Year Development Plan. Since expansion projects in Jawaharlal Nehru port, Ennore port and Kandla port were delayed, their handling volume was lower than the target. Handling volume of the other 7 ports exceeded their targets.

Fig. 33 Cargo Handling Volume at 13 Major Ports (2004/05)



Source: Indian Port Association, Planning Commission

To improve connectivity of the major ports and national highway, NHAI is executing the Port Connectivity Project.

As of the end of 2005, projects in Kandla port, Jawaharlal Nehru port, Mormugoa had been completed. At the time, out of 365 km of planned road, 99 km was completed, 251 km was under construction, and the remaining 7 km (connecting Chennai port and NH-5) was under preparation of bidding.

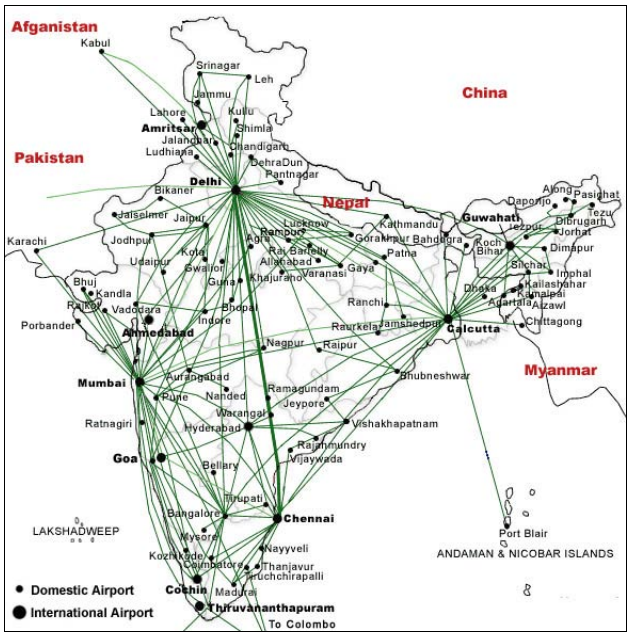
(5) Airports

In India, there are 126 airports (11 international, 89 domestic, and 26 military airports). All of them are controlled by Airports Authority of India (AAI).

Most of the airports in India are shabbily managed. The air traffic has boomed in the last two years and several private airlines have been launched. But the infrastructure at most of the airports has remained inadequate. In addition to that insufficient operation/ management, out of the 126 airports in the country, only 11 airports (including Delhi and Mumbai airports) record current account surplus.

In order to improve inefficient airport operations, the Government of India issued a privatisation policy on airport infrastructure sector in December 1997. Since then, there have been various debates about the role of private sector in airport infrastructure sector.

Fig. 34 Air Network in India



In January 1999, the government decided to corporatize international airports. In January 2000, long-term lease route was adopted. However, the government modified its decision and decided on joint venture routes. During such longstanding debates, neither public investment nor private investments were made for renovation/ expansion of Delhi Airport and Mumbai Airport, which were the first candidates for privatisation. As a result, the severity of deterioration of airport facilities and inadequateness of capacity had intensified.

Currently, 74% of stocks of AAI have been offered to private investors (foreign companies holding are limited to a 49% share and subject to government approval). And after the long debates, currently, privatisation process of Delhi and Mumbai airports are under way. Concessionaire is requested to pay a certain percentage of operating revenue to the government (the scheme is called revenue sharing). Beside the technical proposal, proposed percentage of revenue sharing is the key factor in deciding winner of bidding.

On January 31, 2006, the government finally selected two bidders and awarded the contracts to them. A consortium led by GVK Industries Ltd and the Airports Company of South Africa was awarded the

work for Mumbai airport. And for the Delhi airport, the contract was awarded to a consortium led by the GMR group in collaboration with German airport operator Fraport. GMR-Fraport and GVK-South African Airports has offering 43.0% and 33.03% revenue share to the government, respectively.

The government plans to take care of the welfare of the employees in the airport modernization process. Both bidders have agreed to subsequently absorb 60% of the employees after the reeducation program. The remaining 40% of the employees are to receive salary for 3 years as a compensation, and are expected to retire by 2009. However, thousands of employees executed strikes against the government's privatisation plans.

Even as the modernisation of the Delhi and Mumbai airports arouse controversy, the Airports Authority of India has decided to upgrade the infrastructural facilities at the Chennai and Kolkata airports. Bidding for the Chennai and Kolkata airports to privatise will open soon. In addition, AAI plans to construct new international airports in Bangalore and Chennai. According to the documents of Planning Commission, development costs of Bangalore airport and Chennai airports are estimated at US$ 3.09 billion and US$ 3.24 billion. While central government and local government will invest 13% each, the remaining 74% will be invested by the private sector.

8.3 Current Situation and Problems of Power Sector

The power sector remains the most important element of infrastructure essential for promoting private investment from abroad and for delivering targeted levels of GDP growth. Problems in the Indian power sector can be broadly divided into i) lack of adequate power facilities (mainly generation and distribution side), and ii) distorted electricity tariff structure. In addition, insufficient use of electricity aggravates the demand supply balance.

The power sector is administered by the central government and state governments. Related ministries at the central level are the Ministry of Power (MOP), Ministry of New and Renewable Energy (MINES), Ministry of Coal (DOC), and Department of Atomic Energy (DAE). The MOP is responsible for the administration of power-related laws and the coordination of policy issues among the ministries at the central level, the Planning Commission and state governments. The Central Electricity Authority (CEA) under the MOP is in charge of the formulation of national electricity policy and plan, coordination in the developments and utilisation of power resources.

Some large-scale electric power plants and high-voltage power transmission networks are administered by the Central Power Sector Undertaking (CPSU) such as the National Thermal Power Corporation (NTPC), National Hydro Power Corporation (NHPC), Power Grid Corporation of India, etc. Some power plants and power transmission & distribution networks are administered by the states such as State Electricity Boards (SEBs). Individual SEB and state power corporations have the authority of providing power-related approvals and licenses and deciding own management. However, in reality, they receive interferences of state government in all aspects including the appointment and

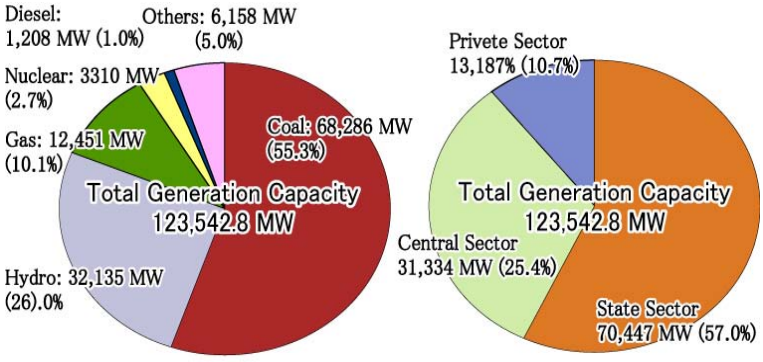
dismissal of staff, payroll, budget, investments, etc.

(1) Insufficient Generation Capacity and Repeated Blackout

Insufficient Generation Capacity

From 1990s onwards, energy demand in India has been rapidly increasing along with the sharp economic growth. During that period, many factories and offices were newly constructed, and the dissemination ratio of various electric appliances, including air conditioners, increased rapidly in urban areas. As a consequence, energy consumption of domestic, industrial and commercial sectors has grown rapidly. Per capita energy consumption in India has increased by 255% during the period from 1990/91 (238 kWh) to 2004/05 (606 kWh).

Fig. 35 Type of Generation Capacity in India as of Nov .2005



Source: Power Scenario At A Grance, CEA, Planning Wing

In order to cope with such increase in the energy demand, Central Power Sector Undertakings (CPSUs), State Electricity Boards (SEBs), and state owned generation companies are augmented generation capacities at a high pace. Generation capacity in the country increased from 105,046 MW at the end of the 9th Five-Year Development Plan (end of March 2002) to 123,543 MW on the end of November 2005 with growth ratio of 17.6%.

As shown in the Fig.-35, 55% of the generation capacity in the country was occupied by coal-fired power station as of the end of November 2005, and followed by hydropower (26%), gas (10%), and nuclear (2.7%). 57% of generation capacity was owned by state sector (such as SEB and state owned generation companies), and 25.4% was owned by CPSUs (such as National Thermal Power Corporation and National Hydro Power Corporation). However, independent power produces (IPPs) owned only 10.7% of generation capacity in the country.

To bridge the gap between demand and supply, most of the states entered into power purchase agreements with CPSUs and IPPs, and purchase electricity from them. Even though, in most of the states, generation capacity is still not enough to fulfill active demand due to the delay of power station development. During the period of 9th Five-Year Development Plan (1997/98- 2001/02), achievement of generation capacity augmentation was less than half of the originally envisaged capacity. In addition, achievement ratio as of the end of 2004/05 was only 67% against the target for the year. Even if the planned power stations will be completed on schedule, generation capacity addition during the 10th Five -Year Development Plan (2002/03- 2006/07) is 31,290 MW, which is only 76.1% of planned capacity

addition of 41,110MW.

Such delay in the power generation projects resulted in 7.3% of energy deficit and 11.7% of peak demand deficit on the average during the fiscal year 2004/05. Energy and peak demand shortage is forecasted to become worse 13.4% and 16.3%, respectively, by the end of 10th Five-Year Development Plan (2006/07). Maharashtra, Uttar Pradesh, Madhya Pradesh and Gujarat are especially facing serious energy shortfall. In 2004/05, these states experienced 12- 20% of energy deficit and 17- 25% of peak demand deficit. Fig. 36 and 37 illustrate state-wide energy deficit and peak demand deficit from April to November 2005. While the north-western part of the country faces severe energy shortfall, the situation in the southern and eastern part of the country, rich in coal resources, looks better.

Fig. 36 Peak Demand Deficit (Apr.-Nov. 2005)

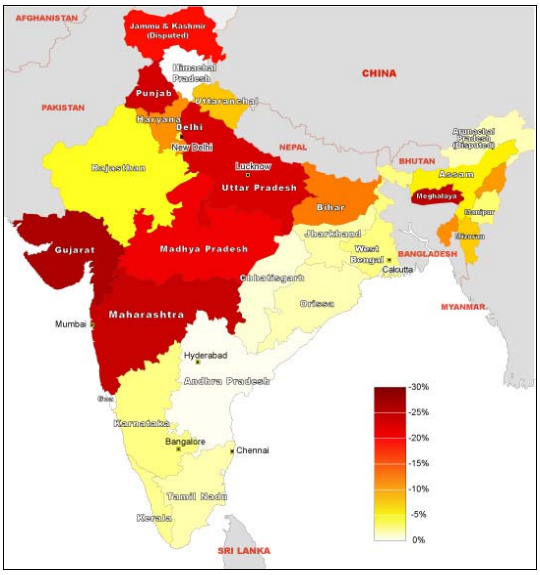
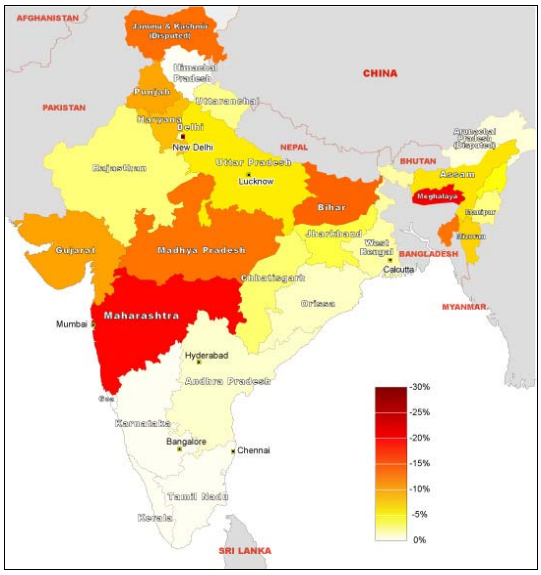


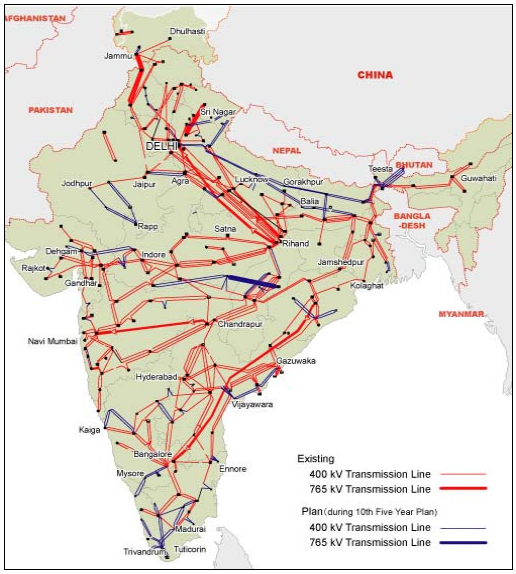
Fig. 37 Energy Deficit (Apr.-Nov. 2005)



Data Source: Central Electricity Authority

In order to avoid power system distortion, load shedding (planned blackout) is implemented repeatedly. In addition, (unplanned) blackouts, and voltage sag problems occur. Voltage levels and frequency of the system often fluctuate.

Fig. 38 National Grid of India (Above 400 kV)



Transmission and Distribution System

While state transmission company and/or state electricity board is responsible for development of state level transmission and distribution network, Power Grid Corp. Limited of India (PGCLI) is in charge of developing a national transmission network, which connects states in the country.

During the period from April to November 2005, out

of the total electricity trade among the regions, 59.6% originated from the eastern region, where there is a surplus generation capacity. Particularly, electricity transmission from the eastern region to the western region accounted for 37.9% of the total electricity trade. In order to enable nation wide electricity trade, PGCIL extends 220kV, 400kV and 765kV transmission line throughout the country (please refer to the Fig.-38). PGCIL's capability for construction, operation and maintenance is generally regarded as well qualified. Problems concerning the national electricity grid are not so much compared with other issues.

On the other hand, state owned transmission and distribution facilities, especially the latter, have a lot of problems. Transmission and distribution loss (T&D loss) in India is considerably high. T&D loss consists of technical loss and non-technical loss. Non- technical loss includes electricity theft and loss of billing resulted from non-installment of electric meter and inefficient billing system. While T&D loss is normally around 6% in developed countries and 15% in developing countries, T&D loss in India was 29.9% in 2003/04.

Negative Affect on Industries and Civil Life

Lack of adequate generation capacity and aging of transmission and distribution system resulted in frequent blackout and unstable voltage level. Thus, most of the factories and companies have been forced to install captive power generators and UPS (Uninterrupted Power Supply).

According to the World Bank's Investment Climate Study 2003, a company in India experienced a blackout 14.8 times in a month on an average, which means a blackout occurred every other day. On the other hand, a company in China and Brazil experienced once a fortnight and once a week, respectively. Blackout leads to decrease in sales and production volume due to non-operation of equipment and workers, and also resulted in damage of equipment and materials under processing. The study also verified that a manufacturing company in India lost 8.4% of sales due to a blackout, which was considerably higher than China and Brazil (both below 2%). To avoid these losses, 61% of Indian manufacturing companies possessed captive power generators, which is again higher than China (21%) and Brazil (17%). The companies in India are suffering from the heavy expenditure for investment cost of generators and expensive fuel costs, which is higher than the supply from the distribution company.

(2) Distorted Electricity Tariff Structure

In India, electricity tariff for domestic and irrigation consumers are kept at a very low level, because of strong political intervention. To compensate this, the tariff for commercial and industrial is higher. Nevertheless, the average electricity tariff is well lower than average supply costs. Coupled with this problem and low revenue collection ratio, SEBs and distribution companies in each state stay mired in chronic financial deficits.

Table-16 compares electricity tariff for domestic, commercial and industrial consumers between India and other countries. In the case of other countries shown below, tariffs for industrial consumers are

lower than domestic consumers. However, in the case of India, industrial tariffs are far above domestic tariffs as well as average tariffs. Such distorted tariff structure makes industry less competitive. Particularly, industries using a large amount of electricity, such as the steel and iron industry, suffer from high electricity tariff.

Table 17 Comparison of Electricity Tariff between India and Other Counties in 2002 (Cent/kWh)

	Japan	Germany	America	India	Brazil	China
Domestic Tariff	21.3	12.4	8.6	4.7	12.8	4.5
Industrial Tariff	14.3	4.4	5.5	8.6	5.7	4.4
Average Electricity Tariff	17.8	8.4	7.7	5.6	9.25	4.5

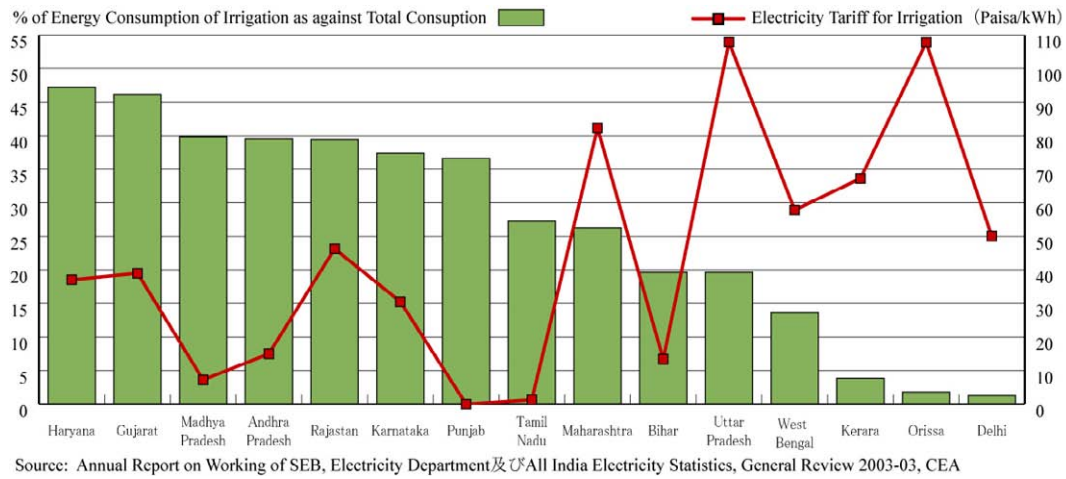
Source: Mid Term Appraisal of the Tenth Five Year Plan (2002-2007), Planning Commission

Cross subsidy among consumer categories also affect energy consumption pattern. Tariffs for irrigation consumers (Rs. 0.35 per kWh on the average) are heavily subsidized and are far below average electricity tariffs of Rs. 2.26 per kWh. Several states, including Punjab, adopted "0" tariff policy.

As a result, energy consumption for irrigation purposes occupied 24.1% of total energy consumption in the country. Energy consumption of irrigation consumers occupied more than 45% in Haryana and Gujarat, more than 35% in Madhya Pradesh, Andhra Pradesh, Rajasthan, Karnataka, and Tamil Nadu. Fig.-39 illustrates the relation between irrigation tariff (2000/01) and its ratio of energy consumption as against total energy consumption (2003/04). The figure clearly shows that energy consumption for irrigation occupied higher percentage where irrigation tariff is low.

State Electricity Regulatory Committees (SERC) were established in each state from 1990s onward with technical assistance from the World Bank, and has been executing gradual tariff increase and moderation of cross subsidy. Although they have been suffering from political intervention, the gap between electricity tariff and supply costs is in a decreasing trend (see Table 17). Cross subsidy is also becoming moderate to some extent. In the case of Maharashtra, after the establishment of Maharashtra State Electricity Regulatory Committee, electricity tariff for industrial consumers was reduced from Rs. 4.2 per kWh in 1999 to Rs. 3.0 in 2005 in spite of domestic inflation.

Fig. 39 Relation between Irrigation Tariff and Energy Consumption for Irrigation Purpose



Source: Annual Report on Working of SEB, Electricity Department及びAll India Electricity Statistics, General Review 2003-03, CEA

Table 18 Average Cost of Supply and Average Electricity Tariff of the Major 20 States

	2000/01	2001/02	2002/03	2003/04	2004/05
Average Cost of Supply (Rs./kWh)	3.526	3.526	3.545	3.610	3.594
Average Electricity Tariff (Rs./kWh)	2.298	2.437	2.641	2.743	2.765
Gap (Rs./kWh)	1.147	1.089	0.904	0.867	0.829

Source: Mid Term Appraisal of the Tenth Five Year Plan (2002-2007), Planning Commission

(3) Inefficient Use of Electricity and Actions towards Energy Conservation

According to the Ministry of Power, India's energy intensity per unit of GDP is higher compared to Japan, America and Asia as a whole by 3.70, 1.55 and 1.47 times respectively. This indicates inefficient use of energy but also substantial scope of energy savings.

Recognizing the importance and benefits of energy conservation, the government of India has enacted the Energy Conservation Act 2001 which has come into force from March 2002. Under the provisions of the Act, the Bureau of Energy Efficiency (BEE) was established in the same month. The BEE would be responsible for spearheading the improvement of energy efficiency of the economy through various regulatory and promotional instruments.

Industrial Sector

As mentioned in the previous section, the irrigation sector is one of the sectors using electricity inefficiently. The trouble is that irrigation isn't the only sector using electricity uneconomically. For example, the industrial sector in India is a major energy user, accounting for about 48% of commercial energy consumption. The sector has become increasingly energy-intensive over time, which is partly due to investments made mainly for energy intensive industries (including Cement, Steel, and Pulp) due to the emphasis laid in the past development plans on achieving self-reliance of industrial materials. The Ministry of Power estimated that the energy savings potential in the sector is 25% making it the sector having the maximum potential in the economy. Despite the large potential for energy efficiency investments having financially attractive returns, only a small effort is made on the sector.

The Energy Conservation Act lists fifteen energy intensive industries and other establishments as designated consumers. Designated consumer would be required to appoint a certified energy manager and to get energy audit conducted by an accredited energy auditor, both of which will require some time to come into place. At present, energy audit is conducting among the notified designated consumers in Cement, Pulp and Paper, Aluminum, Fertilizer, and Textile industry sectors.

Domestic Sector

Energy conservation in the domestic sector requires a mix of strategies for a sustainable energy conservation awareness campaign. Currently, the Energy Conservation and Commercialization Project

(ECO-II) is implemented in Maharashtra and Karnataka under funded by USAID. In the case of Karnataka, Bangalore Electricity Supply Company Ltd (BESCOM) is implementing a Demand-Side Management projects under the ECO II Project

The program is called "BESCOM Efficient Lighting Program" (BELP) and has been implemented in the Bangalore Urban district. The technologies promoted under the program will be Compact Fluorescent Lamps (CFLs) and 36-watt Fluorescent Tubes. The selection of lighting suppliers will be through a tender process and based on product quality, price, and retail network. Eligible customers (with no arrears on electricity bills) could purchase lamps from approved retailers. The CFLs could be purchased outright at a discounted price or payment in installments over 9 months through electricity bills. In case of lump sum payment CFL costs Rs. 125 on an average (about 15% below current retail price of Rs. 150). In case of installment scheme, CFL costs Rs. 135 on an average. 12-months warranty is adopted for both schemes. Every light replaced with CFL, according to BESCOM, will save consumers around Rs. 17 per month, which is higher than the average monthly installment of Rs. 15.

The program was initially targeting 2.6 million residential customers in Bangalore. According to BESCOM's estimate, 117 MW of load and 17.5 GWh/month of energy were saved by the program. Following the evaluation, BESCOM plans to expand to all its residential customers (3.8 million). BEE expects that the BELP could be used by other distribution company in India.

Chapter 9 Economic Relationship between Japan and India

9.1 Japan's Direct Investment in India

(1) Trend of Direct Investments

According to the table showing accumulating totals of direct investments received by India after 1991, when its economic liberalisation gained momentum (between August 1991 and December 2003), Japan's total was US$3,078.37 million, or 4.1% of the whole. Japan ranks fourth after the US (US$15.61 billion), Mauritius (US$8.78 billion) and the UK (US$5.95 billion).

Mauritius is a transit place of direct investment, taking advantage of tax havens. Given that the country maintains a strong economic tie with India (the old country of the majority of its people), France (its former colonial power) and the UK (-ditto-), it may play an intermediate role of putting many investments made by nonresident Indians (NRI) in the West into India. NRI of approximately two million living in the US also underlies the support of the investment in India.

Table 19 Foreign Direct Investment Received by India
(Accumulating Totals of 1991-2003)

(Unit: US$ mil., %)

	1991～2003 (Accumulating Total)	Ratio
US	15,610.60	20.76
Mauritius	8,784.13	11.68
UK	5,953.58	7.92
Japan	**3,078.37**	**4.09**
ROK	2,562.47	3.41
Netherlands	2,373.62	3.16
Germany	2,489.98	3.31
Australia	1,792.51	2.38
France	1,669.18	2.22
Malaysia	1,597.97	2.12
NRI	2,923.07	3.89
Others	26,373.05	35.07
Total	75,208.53	100.00

Note: NRI is the abbreviation of "nonresident Indians".

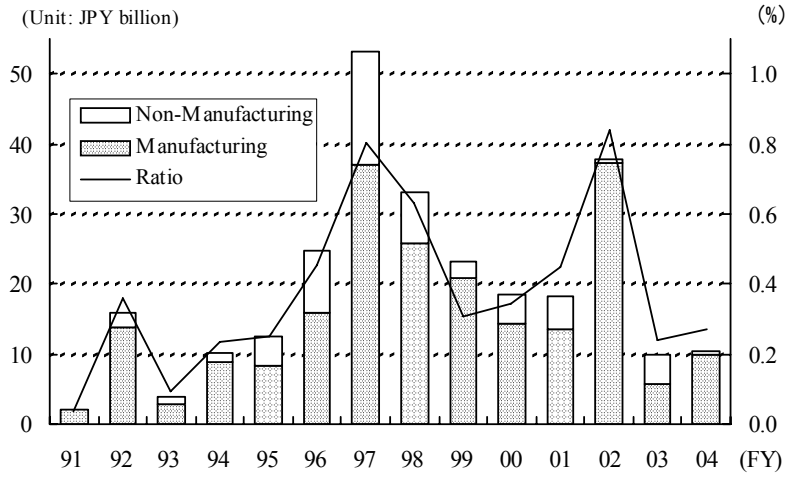
Source: Ministry of Commerce and Industry, India (MCI), *SIA Newsletter*

Regarding the statistics issued by the Ministry of Finance, Japan, the direct investment in India has rapidly expanded since 1992 in the wake of economic deregulation of the latter, and reached JPY53.2 billion in the FY 1997, when a large scale project of Toyota Motor Corporation was completed. After the peak of FY 1997, Japan's direct investment in India showed a downward trend due to Indian emerging problems, such as delayed liberalisation of the domestic market, worsened relation with Pakistan, adverse effects of nuclear tests, complicated and inefficient administrative proceedings, high

customs duty and corporate tax, opaque tax system, undeveloped supporting industry, slow pace of infrastructure development, and biased social system which overemphasizes worker protection. The FY 2003 investment decreased to seven in number, and JPY9.9 billion in an amount (0.24% in the whole), recoding less than one-fifth of that of the peak. The amount is just one thirty-sixth of that of China of JPY355.3 billion at the same fiscal year.

After hitting the lowest point in the FY2003, the Japanese investment has been on a recovery trend. The number of FY2004 investments was seven, totaling up to JPY10.4 billion (0.27% in the whole). An increase in the manufacturing sector is remarkable, and its investment amount stands at JPY9.9 billion, approximately one and one half times larger than that of the FY 2003 of JPY5.9 billion.

Fig. 40 Japan's Foreign Direct Investment in India
(Notification Base)



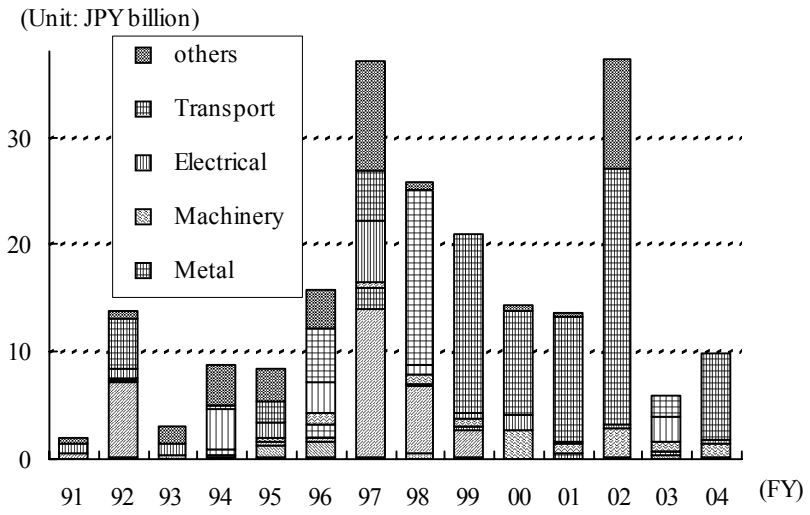
Source: Ministry of Finance, Japan (MOF), Outward and Inward Foreign Direct Investment

(2) Japan's Direct Investment in India by Industry

The focus of the Japan's direct investment in India is on the manufacturing sector. The investment ratios for transport equipment, chemicals and electrical machinery jointly dominate two-thirds of the whole. The ratio of transport equipment is especially large, having accounted for approximately half (48.5%) of the accumulating total of investments between FY1991 and FY2004. According to information compiled by the Embassy of Japan in India, there were 298 Japanese companies operating in India as of April 2005, whose majority is composed of the above industries: automobiles 9, auto parts 57, machinery and instruments 35, electrical machinery 19 and chemicals 6.

A rapid increase in the investment in the transport equipment sector in the FY2004 was caused by huge investments made in Maruti Udyog Limited and Toyota Kirloskar Motor Private Limited. A sharp increase in the whole Japan's direct investment in India in the FY2002 was also backed by the investment by Suzuki Motor Corporation, which increased the capital of Maruti Udyog by Rs 4 billion.

Fig. 41 Japan's Direct Investment in India by Industry Sector
- Manufacturing – (Notification Basis)



Source: Ministry of Finance, Japan (MOF), Outward and Inward Foreign Direct Investment

(3) Prospects of Japan's Direct Investment in India

With recognition of the potentiality of India to be a giant market, Japanese companies show keen interests in India, and thus the Japan's direct investment in India is expected to continuously expand at a moderate pace. The questionnaire survey conducted by the Japan Bank for International Cooperation (JBIC) in 2005 i.e. "FY2005 Survey: The Outlook for Japanese Foreign Direct Investment (17th Annual Survey) - "Japanese Manufacture's Overseas Business Operation 2005"" rated India the second most promising country after China for Japanese companies to expand overseas business operation over the medium term (next three years). The fact that India has annually moved up its rank from the seventh in the FY 2000 also implies intense interests of Japanese companies in India.

Table 20 Intentions to Strengthen or Expand Overseas Operations through FDI, by Region over the Medium Term (Next Three Years)

	FY2005		FY2004		FY2002		FY2000	
Rank	Country	(%)	Country	(%)	Country	(%)	Country	(%)
1	China	82	China	91	China	89	China	65
2	India	36	Thailand	30	Thailand	28	US	41
3	Thailand	31	India	24	US	26	Thailand	24
4	Vietnam	27	Vietnam	22	Indonesia	15	Indonesia	15
5	US	20	US	20	Vietnam	15	Malaysia	12
6	Russia	13	Russia	10	India	13	Taiwan	11
7	ROK	11	Indonesia	10	ROK	8	India	10
8	Indonesia	9	ROK	9	Taiwan	8	Vietnam	9
9	Brazil	7	Taiwan	8	Malaysia	8	ROK	9
10	Taiwan	7	Malaysia	6	Brazil	5	Philippine	8

Note: Percentages do not add up to 100 because of multiple answers to questions.

Source: Japan Bank for International Cooperation (JBIC), *FY2005 Survey: The Outlook for Japanese Foreign Direct Investment*

Furthermore, the survey conducted by the Embassy of Japan in India indicates that the number of

planned direct investment in India by Japanese companies between 2005 and 2007 is 22 totaling up to over JPY210 billion (US$1.8 billion), even though the source of data is limited to reports by Japanese papers. Large-scale investment included in the future plan are as follows: JPY80 billion (US$0.7 billion) by Suzuki Motor Corporation, JPY43 billion (US$0.37 billion) by Mitsubishi Chemical Corporation, JPY29 billion (US$0.25 billion) by Honda Motor Co., Ltd., JPY15 billion (US$0.13 billion) by Toyota Motor Corporation, and JPY15 billion (US$0.13 billion) by Asahi Glass Co., Ltd. (Source: Home Page of the Embassy of Japan in India, http://www.in.emb-japan.go.jp/default.htm).

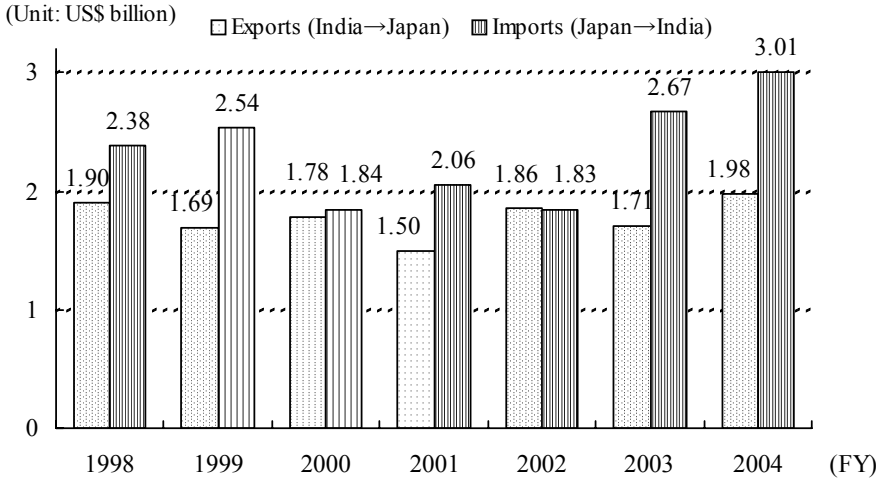
The largest amount of the Japanese direct investment in India in the past was JPY 53.2 billion in 1997, and such huge investments are expected to be continuously made in the future.

9.2 Exports and Imports between Japan and India

(1) Present Situation

While the export and import amount between Japan and India had shown sluggish growth since the middle of the 1990s, it shifted upward after bottoming out in the period between FY2001 and FY2002. According to the statistics of the Indian side, the FY2004 exports for Japan totaled US$1.98 billion, a 15.7% increase over the previous year's to rank the tenth (2.5% in the whole) in descending order of amount. On the other hand, the imports from Japan totaled US$3.01 billion, up 12.7% from the previous year to take the same ranking as that of exports (2.8% in the whole).

Fig. 42 India's Exports to and Imports from Japan



Source: Directorate General of Commercial Intelligence and Statistics, Ministry of Commerce and Industry, Government of India (DGCI&S)

(2) Breakdown of Trade

The top three commodities exported from India to Japan in the FY2004 in descending order of amount is as follows: (1) Gems and jewelry (including diamond), (2) Marine products (including prawn), and (3) Iron ore, all of which are categorized as primary products or labour-intensive light industry

products. Exported amount of these three commodities accounts for approximately half (49.5%) of the whole exports from India to Japan. Sharp rises in the exports of iron ore as well as other ores and minerals (excluding iron ore) are connected to an increase in international commodity prices for natural resources caused by a world-wide great demand. In addition to the above primary products and labour-intensive products, there is a steady rise in the exports of industry products or chemical products, including (1) Drugs, pharmaceuticals and fine chemicals, (2) Machinery and instruments, (3) Inorganic/organic/agro chemicals.

On the other hand, the top two commodities exported from Japan to India in the FY2004: the first ranked; Non-electrical machinery and the second ranked; Electronic goods, dramatically grew, both of which resulted in increases by 20% over the previous year. In the Machinery and instruments sector, the export amounts of the following: motors, machine tools, industrial machinery as well as scientific and optical instruments exhibit drastic increases. With expansion of direct investments made by Japanese companies in India, the export amounts of intermediate goods and capital goods from Japan to India are considered to be increasing. Moreover, the export amount of electronic goods has gone up with the help of steady growth of consumer spending in India.

On the contrary, the export amount of Transport equipment decreased over the previous fiscal year. This is considered to be stemmed from increased local content as well as increased replacement of Japan by Thailand as a partner to procure parts based on the Early Harvest Scheme between India and the latter.

Table 21 India's Exports to and Imports from Japan

(Unit: FY, US$ mil., %)

Exports					Imports				
Commodity	2003	2004	Composition Ratio	Growth Rate	Commodity	2003	2004	Composition Ratio	Growth Rate
Gems & jewellery	351	496	25.1	41.3	Non-electrical machinery	613	737	24.5	20.2
Marine products	239	252	12.7	5.4	Electronic goods	325	394	13.1	21.2
Iron ore	177	232	11.7	31.1	Transport equipment	288	267	8.9	-7.3
Cotton yarn fab. Madeups etc.	98	84	4.2	-14.3	Iron & Steel	184	253	8.4	37.5
RMG of cotton incl. Accessories	62	63	3.2	1.6	Professional inst, optical goods etc.	205	240	8.0	17.1
Drugs, pharm. & fine chemicals	54	60	3.0	11.1	Organic chemicals	153	173	5.8	13.1
Machinery & instruments	54	59	3.0	9.3	Machine tools	117	116	3.9	-0.9
Oil meals	52	48	2.4	-7.7	Manufactures of metals	86	99	3.3	15.1
Other ores & minerals (excl. iron ore)	11	46	2.3	318.2	Artfcl. Resins, plastic matrls, etc.	66	83	2.8	25.8
Inorg/org/agro chemicals	30	41	2.1	36.7	Project goods	60	80	2.7	32.9
Total (incl. other commodities)	1,709	1,978	100.0	15.7	Total (incl. other commodities)	2,668	3,006	100.0	12.7

Note: RMG is the abbreviation of ”readymade garments”.

Source: Japan External Trade Organization (JETRO), *White Paper on International Trade and Foreign Direct Investment (FDI) FY 2006 (Primary Source; Monthly Review of the Indian Economy, etc.)*

9.3 Movement toward Conclusion of Economic Partnership Agreement (EPA)

(1) Dialogue on the Theme of Japan-India Public- and Private-sector Investment

Between Japan and India, forums of dialogues on the theme of Japan-India public- and private-sector

investment have been carried out in order to further promote investment. Up to now, three forums were held.

At the first forum of dialogues in August 1999, both countries recognized the importance of holding dialogues and the importance of India's proper management to be taken against barriers to Japan's investments in India, on the basis of insufficient dialogues between both countries and decreasing investment amount from Japan in India. Then, three working groups were formulated in the fields of IT, infrastructure, and food processing.

At the second forum of dialogues in December 2000, the Japanese side expressed its deep appreciation to India for India's investment promote measures which were announced in 2000 (introduction of negative list approval system of incoming direct investments, establishment of new administrative organization to prompt approval of direct investments, and automatic approval of royalties on technology transfer). On the other hand, the Japanese government requested the Indian government for further improvement of investment climate such as the abolition of additional duty system, development of infrastructure, and reformation of the labour law.

At the third forum of dialogues in January 2003, the Japanese side requested the Indian side to improve 20 items of investment impediments to Japanese investors as well as crucial investment barriers faced by Japanese investors.

(2) Establishment of the Joint Study Group for a Comprehensive Study

India relaunches efforts to improve the economic tie with Japan, where there had been little progress for a long time, as it enhances its relation with ASEAN and China rapidly.

Japanese Prime Minister Yoshiro Mori agreed with Indian Prime Minister Vajpayee on the formation of "Global Partnership between Japan and India in the 21st Century" on his visit to India in August 2000. In particular, Prime Minister Mori reaffirmed the economic exchange in the IT sector, focusing on the strengthening of the exchange between private sectors.

In addition, India and Japan agreed to hold policy dialogue at the level of undersecretary with an eye to the execution of FTA/EPA on the visit by a Minister for Economy, Trade and Industry, Shoichi Nakagawa to India in August 2004.

Accordingly, the establishment of the Japan-India Joint Study Group for a Comprehensive Study (JSG-CS) within the framework of industry-academia-government collaboration to discuss the economic relationship between Japan and India in terms of trade and investment, was agreed at the Japan-India Foreign Ministers' Meeting held in November 2004.

In April 2005, Japanese Prime Minister Junichiro Koizumi and Indian Prime Minister Manmohan Singh decided on adding greater substance to bilateral relations and on measures to further deepen the

Japan-India Global Partnership, taking into account the steady development in bilateral relations and the far-reaching changes in the international situation. An Eight-fold Initiative was agreed on to strengthen the Japan-India Global Partnership. "Comprehensive economic engagement, through expansion of trade in goods and services, investment flows and other areas of economic cooperation, and exploration of a Japan-India economic partnership agreement" was decided as a part of the Eight-fold Initiative. Accordingly, the governments of Japan and India are supposed to make a special effort, in collaboration with the private sector, to encourage higher levels of investment by Japanese companies in India. They will also strengthen technical cooperation to improve the competitiveness of Indian manufacturing industries.

Mr. Taro Aso, Minister for Foreign Affairs, paid a visit to India in January 2006 to make a proposal to accelerate the discussion for concluding the EPA including FTA in relation to the topic of JSG, and India accepted the offer.

There have been three JSG meetings to date, which were held respectively in July 2005, November 2005 and February 2006. The JSG is planned to produce a report by June 2006, and submit it to two leaders. Japan and India will start a full scale negotiation toward the execution of FTA based on the report, exploring specific measures to enlarge their comprehensive economic relationship including matters of transactions in goods and services as well as direct investment.

Considering that a certain time period will be required to ratify the EPA, private companies of both nations take preemptive actions to enjoy probable benefits in prospect of the enactments of FTAs, for which India is negotiating with neighbouring countries. Above all, the India-ASEAN FTA draws their attention.

(3) Direction of India-ASEAN FTA and its Influence on Japanese Companies Operating in India

India has expanded the economic cooperation with ASEAN. In October 2003, the ASEAN-Indian Framework Agreement on Comprehensive Economic Cooperation was ratified. Member states are struggling to enter the agreement into force in 2007. Notwithstanding, the Early Harvest Programme planned to be preferentially implemented in April 2005 was scrapped, because consensus on it has not been formed yet. The introduction of tariff reduction scheduled in January 2006 was also postponed.

India is arranging a negotiation with individual ASEAN member nations, working toward the ratification of the India-ASEAN FTA. Among them, negotiations with Thailand and Singapore are preferably undertaken. The India-Thailand FTA was signed in October 2003, and the tariff reduction on 82 commodities ranging from food, home appliance, machinery to auto parts, pursuant to its Early Harvest Programme, was introduced in September 2004.

Tariffs on almost all agricultural and industrial products will be eliminated by 2010 in incremental steps. The Comprehensive Economic Cooperation Agreement (CECA), a pact between India and

Singapore, was implemented in August 2005.

Table 22 India's Counterparts of Free Trade Agreement (within Asia)

Country /Region	FTA	Ratification
ASEAN	The ASEAN-India Framework Agreement on Comprehensive Economic Cooperation	concluded in Oct. 2003 (will be effective in 2007)
Thailand	The Framework Agreement for an FTA	concluded in Oct. 2003 (EH implemented in Sep. 2004)
Singapore	The Comprehensive Economic Cooperation Agreement (CECA)	concluded in Jun. 2005 (became effective in Aug. 2005)
Sri Lanka	The Free Trade Agreement (FTA)	became effective in Mar. 2003
Afghanistan	The Preferential Trade Agreement (PTA)	concluded in Mar. 2003
SAARC	The South Asia Free Trade Agreement (SAFTA)	became effective in Jan. 2006
BIMSTEC	The BIMSTEC Free Trade Agreement (FTA)	concluded in Feb. 2004

Notes: *1 - Member states of the SAARC (South Asian Association for Regional Cooperation),are as follows: India, Pakistan, Sri Lanka, Bangladesh, Brunei, Maldives and Nepal.
*2- Member states of the BIMSTEC (Bay of Bengal Initiative for MultiSectoral Technical and Economic cooperation) are as follow: Bangladesh, India, Myanmar, Sri Lanka, Thailand, Nepal and Bhutan.

Source: JICA Study Team

Under the circumstances, Japanese companies in India are preferentially enjoying the benefits of the Indo-ASEAN FTA. Some companies in the electronics industry cancelled local production in India and started importing products from Thailand. One automobile manufacturing company, which produces complete products in India, makes use of the Indo-Thai FTA's Early Harvest Scheme in reducing costs by importing parts from Thailand. In another case, a Japanese auto parts manufacturer, having factories both in India and Thailand, has expanded its local manufacturing activity and started complementary supply of certain parts, keeping in mind that the complementary relation between the two countries will be deepened in the near future.

On reflection, Japanese companies have a long investment history in ASEAN nations, and have already built a solid network of division of labour within them. Taking into account of the increasingly reinforced economic cooperation between ASEAN and India, as well as the above strength, they would employ a strategic plant arrangement to realize optimal production in Asia, keeping a direct tie to India and utilizing its manufacturing network throughout ASEAN.

Chapter 10 Evaluation of Indian Export Competitiveness

In this chapter, the trend of India's trade is first reviewed. Then, promising export commodities are discussed based on the analysis of export growth and global competitiveness. In addition, the trend of India's export by destination country is examined in order to realise the background of the change of India's export structure.

10.1 Trend of India's Trade

(1) Breakdown of Export by Commodity

The top ten export commodities of India in the FY2004 (between April 2004 and March 2005) listed in descending order of amount is as follows: (1) Gems and jewellery (accounting for 17.3% in the whole), (2) Petroleum products (8.6%), (3) Basic chemicals, pharmaceuticals and cosmetics (8.5%), (4) Readymade Garments (7.6%), (5) Textiles and textile products (excluding readymade garments) (7.6%), (6) Machinery and instruments (4.4%), (7) Manufactures of metals (4.1%), (8) Primary and semi-finished iron and steel (4.1%), (9) Plastic and linoleum products (3.7%), and (10) Transportation equipment (3.6%). The feature of Indian exports is that they cover a variety of commodities ranging from manufactured articles, mineral products to vegetable products, placing the primary focus on labour-intensive light industry products.

Compared to the statistics of the FY2003, the share of Petroleum products in the FY2004 has grown by 90.4%, second only to that of Gems and jewelry. This is supported by enhanced production capacity of petroleum products in some companies including Reliance Industries Ltd. and price increases in these commodities at an international level. On the other hand, the export values of Readymade Garments and Textiles as well as textile products (excluding readymade garments) turned flat with an exposure to fierce competition from foreign nations involving China, brought by the termination of the Multifibre Arrangement (MFA) at the end of the FY2004. The capital-/technology- intensive industries such as Basic chemicals, pharmaceuticals and cosmetics and Transportation equipment have seen steady growths in recent years. Service exports, especially in the IT industry, have also increased sharply.

(2) Exports of the IT/Software Industry

The IT/Software industry witnessed an average annual export growth rate of over 50% between the middle of the 1990s and the FY2000 and has grown to one of the most important sources to obtain foreign currencies. It maintained over 20% annual export growth since the FY2001, and stood at US$17.7 billion, up 37.2% from the previous year in the FY2004. This ratio is equivalent to the three-fourths of the whole IT/Software production. Moreover, the export ratio of IT/Software products accounted for approximately 20% in the whole Indian exports of the FY2004.

Approximately two-thirds of the software products are exported to North America. In addition, the method to render services has recently changed from "onsite software development service," which was provided by a staff dispatched to the actual place where his/her overseas clients operated business and had been popular by the FY2002, to "offshore software development service," which is offered by a staff working in India instead of a local staff. The share of the latter surpassed that of the former, accounting for a little fewer than 60% of the whole during the FY2002.

The Indian government designated a goal to increase the export amount of software to be US$50 billion and that of hardware to be US$10 billion by the FY2008. To date, these export amounts have been expanding at a satisfactory pace.

10.2 Evaluation of Export Competitiveness

(1) Competitiveness in terms of Export Performance

The export structure of India has drastically changed from the early 1990s to date in the process of its economic liberalisation.

The JICA study team uses an international six-digit commodity classification, Harmonized Commodity Description and Coding System (HS), to analyze export competitiveness subject to foreign trade statistics produced in India. In addition, the largest, though a little broader, group "Section" is used, instead of "Heading (4-digits)" and "Chapter (2-digits)" both of which are too detailed to produce effective results in the study. The result reveals the trends of competitiveness of each product, which is very useful in conducting the analysis.

The trends of each commodity exports between the FY1991 (April 1991 to March 1992) and the FY2003 are shown in the following table:

Table 23 Exports of Principal Commodities in India

(Unit: US$ bil.)

HS	Commodity	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
01	Animals and animal products	777	816	989	1,296	1,284	1,401	1,529	1,299	1,425	1,815	1,600	1,787	1,713
02	Vegetable products	1,903	1,670	1,860	2,041	3,659	3,254	3,473	3,885	3,255	3,173	3,053	3,715	3,924
03	Animal or vegetable fats	78	63	108	159	278	196	181	173	261	236	175	153	211
04	Prepared foodstuffs	717	1,022	1,097	821	1,230	1,757	1,567	900	845	1,065	1,354	1,210	1,657
05	Mineral products	1,350	1,286	1,287	1,322	1,487	1,416	1,228	829	789	2,884	3,210	4,257	5,589
06	Chemical products	1,665	1,416	1,620	2,065	2,536	2,866	3,374	3,058	3,530	4,310	4,302	5,374	6,530
07	Plastics and rubber	220	373	529	683	811	741	744	638	726	1,082	1,171	1,523	1,974
08	Hides and skins	910	1,015	917	1,129	1,256	1,091	1,209	1,169	1,071	1,422	1,356	1,321	1,538
09	Wood and wood products	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Wood pulp products	-	-	-	-	-	-	-	-	-	-	-	-	-
11	Textiles and textile articles	5,282	5,708	5,891	7,194	8,388	9,177	9,600	9,189	9,987	11,765	10,464	11,805	13,297
12	Footwear, headgear	518	481	520	573	628	591	568	626	643	701	714	678	836
13	Articles of stone, plaster, cement, asbestos	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Pearls, precious and semi-precious	2,972	3,442	4,126	4,519	5,457	4,781	5,495	6,071	7,632	7,328	7,419	9,052	10,616
15	Base metals and articles thereof	883	1,235	1,450	1,451	1,828	1,954	2,255	1,818	2,312	3,076	2,890	4,207	5,554
16	Machinery and mechanical appliances	938	878	1,011	1,227	1,644	1,909	2,092	1,814	1,874	2,766	2,863	3,160	4,346
17	Transportation equipment	538	596	609	772	954	971	952	777	831	1,074	1,032	1,332	1,929
18	Instruments - measuring, mechanical	81	66	83	99	124	146	161	170	248	333	363	424	543
19	Arms and ammunition	-	-	-	-	-	-	-	-	-	-	-	-	-
20	Miscellaneous manufactured articles	62	75	113	146	174	178	176	172	191	232	235	263	383
21	Works of art	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		19,366	20,715	22,874	26,351	32,798	33,533	35,827	33,872	37,060	45,297	44,296	52,486	62,977

Source: Asian Development Bank (ADB), Key Indicators 2005

Another table below indicates a composition ratio and growth rate by each commodity at the points of FY1991, FY1997 and FY2003. Comparing the data of the FY1991 with that of the FY2003, the composition ratios of agro and marine products such as “Animals and animal products (HS01)”, “Vegetable products (HS02)”, “Prepared foodstuffs (HS04)”, “Hides and skins (HS08)” and textile products or light industry products such as “Textiles and textile articles (HS11)” and “Footwear, headgear (HS12)” have sharply fallen. Especially, there have been dramatic drops since the FY1997. These declines can be assumed to reflect significant changes in industry/export structures brought by industrialisation based on the economic liberalisation, implemented in the FY1991.

Meanwhile, there have been expansions in the composition ratios of commodities produced with use of natural resources, reflecting their advanced international prices, and of industry products in the electrical machinery/machinery and instruments sectors thanks to increased recipient of direct investment. Commodities manufactured using natural resources include “Mineral Products (HS05),” and industrial products cover “Chemical products (HS06)”, “Plastics and rubber (HS07)”, “Base metals and articles thereof (HS15)”, “Machinery and mechanical appliances (HS16)” and “Instruments – measuring, mechanical (HS18)”. While an increase pattern differs by commodity, each export amount exhibits a sharp rise after 1997.

Considering both elements of the composition ratio and growth rate of exports, the JICA study team identified commodities which can be supposed to enhance the Indian export competitiveness in the future (promising export commodities). As a result, seven commodities listed with half-tone dot meshing in the below were identified, subject to the following criteria for the selection: (1) there is an increase in the composition ratio, (2) the average annual growth rate is over 10% during the period of FY1997 and FY2003, and (3) the FY2003 composition ratio exceeds 3% of the whole.

Table 24 Composition Ratios and Average Annual Growth Rates by Commodity (FY)

HS	Commodity	Composition Ratio by Commodity			Average Annual Growth Rate		
		1991	1997	2003	91～97	97～03	91～03
01	Animals and animal products	4.0%	4.3%	2.7%	11.9%	1.9%	6.8%
02	Vegetable products	9.8%	9.7%	6.2%	10.5%	2.1%	6.2%
03	Animal or vegetable fats	0.4%	0.5%	0.3%	14.9%	2.6%	8.6%
04	Prepared foodstuffs	3.7%	4.4%	2.6%	13.9%	0.9%	7.2%
05	Mineral products	7.0%	3.4%	8.9%	-1.6%	28.7%	12.6%
06	Chemical products	8.6%	9.4%	10.4%	12.5%	11.6%	12.1%
07	Plastics and rubber	1.1%	2.1%	3.1%	22.6%	17.7%	20.1%
08	Hides and skins	4.7%	3.4%	2.4%	4.9%	4.1%	4.5%
09	Wood and wood products	-	-	-	-	-	-
10	Wood pulp products	-	-	-	-	-	-
11	Textiles and textile articles	27.3%	26.8%	21.1%	10.5%	5.6%	8.0%
12	Footwear, headgear	2.7%	1.6%	1.3%	1.5%	6.7%	4.1%
13	Articles of stone, plaster, cement, asbestos	-	-	-	-	-	-
14	Pearls, precious and semi-precious	15.3%	15.3%	16.9%	10.8%	11.6%	11.2%
15	Base metals and articles thereof	4.6%	6.3%	8.8%	16.9%	16.2%	16.6%
16	Machinery and mechanical appliances	4.8%	5.8%	6.9%	14.3%	13.0%	13.6%
17	Transportation equipment	2.8%	2.7%	3.1%	10.0%	12.5%	11.2%
18	Instruments - measuring, mechanical	0.4%	0.4%	0.9%	12.1%	22.5%	17.2%
19	Arms and ammunition	-	-	-	-	-	-
20	Miscellaneous manufactured articles	0.3%	0.5%	0.6%	19.0%	13.8%	16.4%
21	Works of art	-	-	-	-	-	-
Total		100.0%	100.0%	100.0%	10.8%	9.9%	10.3%

Note: Commodities listed with half-tone dot meshing are promising export commodities.
Source: Asian Development Bank (ADB), *Key Indicators 2005*

These seven commodities can be classified by manufacturing type in the following, and the table below reveals that there are some emerging commodities such as Electronic goods, and Machinery and instruments along with conventional commodities including resource-oriented and/or labour-intensive products.

Table 25 Classification of Promising Export Commodities by Feature

HS	Commodity	Feature
05	Mineral Products	Resource-oriented products
06	Chemical Products	Resource-oriented products
07	Plastics and rubber	Labour-intensive products
14	Pearls, precious and semi-precious	Resource-oriented/Labour-intensive products
15	Base metals and articles thereof	Labour-intensive products
16	Machinery and mechanical appliances	Electronic goods/Machinery and instruments
17	Transportation equipment	Electronic goods/Machinery and instruments

Source: JICA Study Team

The FY2004 exports have already reflected such growing trend.

First, labour-intensive products, supported by cheap labour force, still showed export competitiveness. In fact, the top export commodity of Gems and jewelry marked an explosive growth rate, up 29.6% from

the previous year. India employs the method of re-export in distributing the above product: It first imports gemstone from countries such as the Republic of South Africa to polish and process them to be sold as gems and jewelry by using its cheap labour, and then exports these completed products to all over the world.

Secondly, the export amounts of Electronic goods, and Machinery and instrument have also gone up. The amount of Transportation equipment has risen especially after the expansion of the inflow of direct investment in the automobile industry, recording a steep increase by 44.7% in the FY2004 from the previous year. An increase in the export amount of completed cars relies on the work of TATA Motors Ltd. contracted by a UK Company, MG Rover Group Ltd. and the production of automobiles exported to the Europe allocated by Hyundai Motor Company. Furthermore, the auto parts industry has grown to be one of the major exporters along with the development of the domestic automobile industry.

Thirdly, there were sluggish growths in the second ranked commodity of Readymade garments and the third ranked of Textiles and textile articles (excluding readymade garments) after Gems and jewelry, as India faced severe competition from other Asian nations such as China and Vietnam, following the expiry of the Multifiber Agreement at the end of 2004.

(2) Competitiveness Evaluation by Using Global Competitiveness Index

The JICA study team also calculated global competitiveness indices by commodity. There were nine targeted commodities: seven chosen as promising export commodities and the other two of "Vegetable products (HS02)" and "Textiles and textile articles (HS11)", both of which constitute a far greater portion in the whole export amount.

The global competitiveness indices on specific commodities are calculated as follows:

"(Export Value – Import Value) / (Export Value + Import Value)"

The index becomes 0 when export value and import value are even. If the index exceeds 0, it can be concluded that the export value surpasses import value, and that the targeted commodity has global competitiveness. In other words, as the index approaches +1, the competitiveness increases. On the contrary, if the value becomes lower than 0 and approaches -1, it can be said that the competitiveness decreases.

Points to be noted can be summarized as follows:

i) The index of "Textiles and textile articles (HS11)" held the largest value during the period from FY1991 to FY2003. This implies that the commodity had a high level of global competitiveness. This index value, though, has gradually dropped, in fact, from 0.9 of the FY1991 to 0.7 of the FY2003, and the competitiveness has weakened.

ii) "Vegetable products (HS02)" is ranked second after "Textiles and textile articles (HS11)".

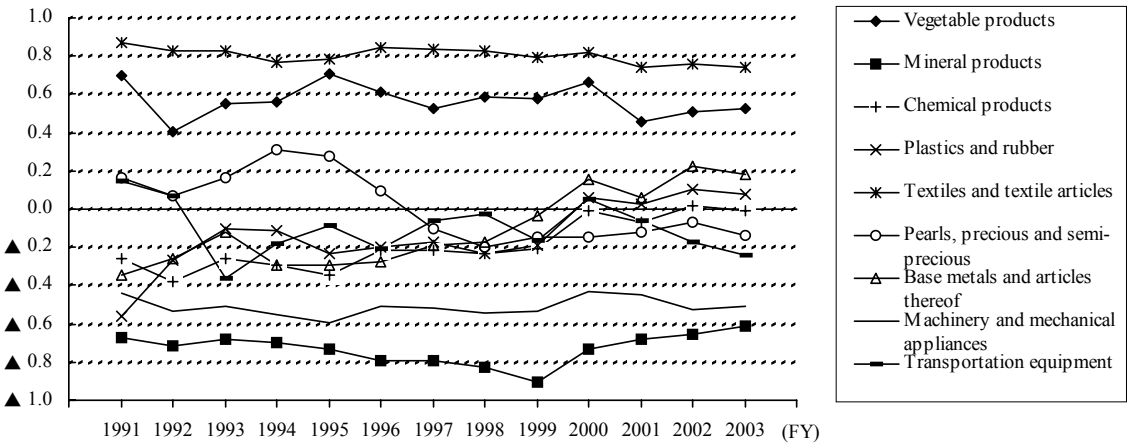
Unfortunately, its index value has fallen, in fact, from 0.7 of the FY1991 to 0.5 of the FY2003. The value of "Pearls, precious and semi-precious (HS14)" also decreased from 0.2 to -0.1 during the same period, which gave a severe impact on its competitiveness.

iii) There were increases in the index values of commodities such as "Chemical products (HS06)" (index: -0.3→-0.0), "Plastics and rubber (HS07)"(-0.6→0.1), and "Base metals and articles thereof (HS15)"(-0.3→0.2), all of which are labour intensive light industry products, and can be regarded as Indian competitive edge.

iv) With regard to the index value of "Machinery and mechanical appliances (HS16)", it has remained almost unchanged (-0.4→-0.5). The index value of "Transportation equipment (HS17)" has declined (0.1→-0.2). More or less, decreases in the index value of the two commodities are presumably caused by the development of mutually complementary relationships, increasingly supported by international division of labour, rather than their reduced competitiveness, since both export and import amounts have sharply grown.

The trends of global competitiveness indices of specified commodities are shown in the table below.

Fig. 43 India's Global Competitiveness Indices by Commodity



Source: Asian Development Bank (ADB), *Key Indicators 2005*

(3) Major Trading Partner Country/Region

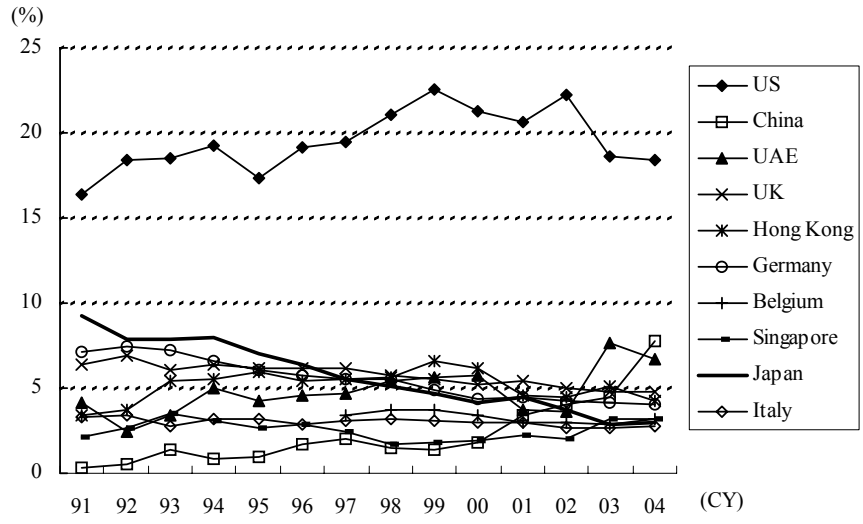
Next, this report summarizes a shift in Indian major trading partners by country/region.

The US maintained its position at the top of the ranking of the country/region of Indian exports through the period from the FY1991 to FY2003. After reaching a peak of 22.5% in the FY1999, the US ratio in the total export value decreased to 18.4% in the FY2004. On the other hand, the Chinese ratio has rapidly increased in recent years. It expanded from just 1.8% in the FY2000 to 7.8% in the FY2004, which resulted in an increase of China's rank following the US.

As for imports, the balance of major trading partner countries has changed as well. Each ratio of the

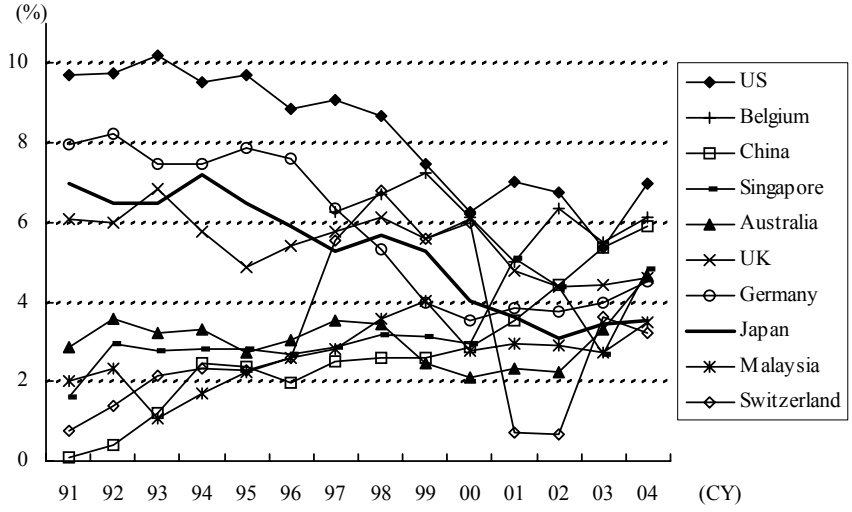
major trading partner countries of the early 1990s: US, Germany, Japan and UK has reduced. A point to be noted is that Belgium, China and Singapore replaced the former three, in which there were decisive reductions in their ratios. In the FY2004, China occupied the third place in the ranking after US (7.0%) and Belgium (6.1%), as its ratios increased from 0.1% in the FY1991 to 5.9%.

Fig. 44 Shift in the Indian's Major Country/Region for Exports



Source: Asian Development Bank (ADB), *Key Indicators 2005*

Fig. 45 Shift in the Indian's Major Country/Region for Imports



Source: Asian Development Bank (ADB), *Key Indicators 2005*

The table below shows how much an exporter, i.e. India, trades with receptors, i.e. US and neighbouring nations, using the trade intensity index. The trade intensity index shows the relative significance of a bilateral trade flow.

If the index exceeds 1.0, which is used as a standard, then the trade relationship is intense. The shorter

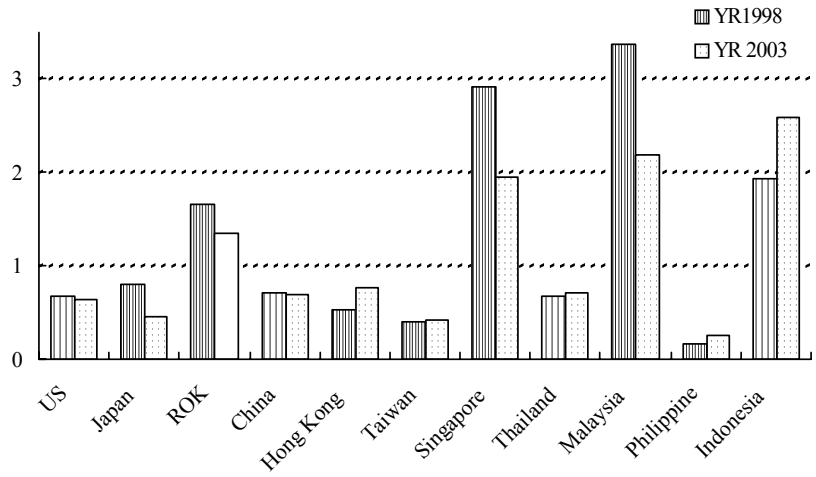
the distance between two nations, the larger the index value becomes.

Countries whose index value of the 2003 surpassed 1.0 are as follows: Republic of Korea (1.3), Singapore (2.0), Malaysia (2.2), and Indonesia (2.6).

In the case of the Republic of Korea, it can be claimed that aggressive investment in India made by some leading companies, such as Samsung Electronics Co., Ltd., LG Electronics Inc. and Hyundai Motor Company, contributes to the expansion of the bilateral trade in terms of parts and capital goods. As pertains to the rest of Singapore, Malaysia and Indonesia, the result can be assumed to reflect their active trades with India, supported by a wide-range of local business operation pursued by Indian companies and NRIs. An increase recognized in the index value of Indonesia between 1998 and 2003 could be supported by resumption of trade relation with India in connection with the recovery from the Asian Currency Crisis.

The fact that the value of China's index is less than 1.0 implies that the ratio of India's exports to China in India's total exports is lower than that of China's total exports in the whole world imports. In other words, the economic development between India and China is in its infancy and would be strengthened in the future. In fact, there has been a rapid trade expansion between the two in recent years.

Fig. 46 Trade Intensity Indices of India's Major Trading Partner Country



Source: *Japan Machinery Centre for Trade and Investment (JMC),* Strategic International Specification in the Machinery Industry within the Framework for the Formation of East Asian Free Trade Zone *(June 2005)*

** The name of JMC report is not published as of April 2006, therefore, this report uses a tentative name.*

Chapter 11 Evaluation of Investment Environment of India

In this chapter, international competitiveness and the investment environment of India are outlined, after which issues for improvement of the investment environment are pointed out based on the results of various surveys.

11.1 International Competitiveness

(1) Evaluation by the International Institute for Management Development

The International Institute for Management Development (IMD) publishes an annual "World Competitiveness Yearbook" where more than 300 countries of the world are evaluated and ranked based on their competitiveness. In recent years, India has been ranked 40th and in 2005, was ranked 39th . As for the ranking of other Asian countries, Thailand, Malaysia, South Korea and China are 27th, 28th, 29th and 31st respectively, better positions than India. Among several criteria for the evaluation, India was evaluated high in economic performance, but low in government efficiency, business efficiency and infrastructure. Further breakdown of criteria indicated that India was advantageous in the scale of employment, scale of services export, and the number of engineers and IT engineers, but disadvantageous in the dependency on trade, foreign investment, productivity, and construction and maintenance of infrastructure.

Table 26 World Competitiveness Ranking

Country/Region	2001	2002	2003	2004	2005
United States	1	1	1	1	1
Hong Kong	4	13	10	6	2
Japan	23	27	25	23	21
Thailand	34	31	30	29	27
Malaysia	28	24	21	16	28
South Korea	29	29	37	35	29
China	26	28	29	24	31
India	**42**	**41**	**50**	**34**	**39**
Philippines	39	40	49	62	49
Russia	43	44	54	50	54
Indonesia	46	47	57	58	59

Source: JETRO, with original source IMD "World Competitiveness Yearbook"

(2) Evaluation by World Economic Forum

The World Economic Forum is another institution which evaluates competitiveness of countries in its publication "Global Competitiveness Report", based on both statistical data and questionnaire surveys. The Global Competitiveness Report shows the ranking of competitiveness of each country in accordance with two indexes, Growth Competitiveness Index and Business Competitiveness Index, which complement each other. The former index is calculated based on potential growth of macro economic indicators, while the latter is based on micro indicators for business environment. According

to the ranking of 2005, India is placed at 50th with the Growth Competitiveness Index and 31st with the Business Competitiveness Index.

Table 27 Competitiveness Index

Country/Region	Growth Competitiveness Index		Business Competitiveness Index	
	2004	2005	2004	2005
Finland	1	1	2	2
United States	2	2	1	1
Taiwan	4	5	17	14
Singapore	7	6	10	5
Japan	9	12	8	8
South Korea	29	17	24	24
Malaysia	31	24	23	23
Hong Kong	21	28	11	20
Thailand	34	36	37	37
China	46	49	47	57
India	**55**	**50**	**30**	**31**
Indonesia	69	74	44	59
Philippines	76	77	70	69

Source: World Economic Forum

(3) Evaluation by JBIC and JETRO

JBIC and JETRO conducts annual surveys of Japanese companies on FDI which include issues related to India as mid and long term investment destination.

According to the result of "JBIC FY2005 Survey: Outlook for Japanese Foreign Direct Investment (17th Annual Survey)" [14] by JBIC, India is ranked by Japanese companies as the second most favourable overseas investment destination in the mid term (around next 3 years), only after China. India's ranking has improved from the third in the previous year (China was ranked the first and Thailand the second), although most responding companies seem to not yet have a specific plan of investing in India. The number of respondents who consider China as a favourable investment destination again is the largest, but the number has drastically decreased from the survey in the previous year. According to the 127 companies which nominated India as a favourable investment destination, the main reasons for choosing India were: growth potential, low labour cost, and excellent human resources. It was also pointed out that India should improve infrastructure, information on investment environment, and transparency of implementation of laws and regulations.

On the other hand, according to "Survey of Japanese Manufacturing Companies Operating in Asia: ASEAN and India (FY 2005)"[15] by JETRO, 110 companies, or 11% of the 966 respondents consider

[14] This survey covered 945 Japanese manufacturing companies, each of which had, as a general rule, three or more overseas affiliates incorporated locally, including at least one production base. Effective responses were returned from 590 companies.

[15] The survey covered 1,865 Japanese manufacturers operating in 6 ASEAN nations (Thailand, Malaysia, Singapore, Indonesia, the Philippines and Vietnam) and India. Effective responses were returned from 966 manufacturers.

India as the most suitable production base in the mid and long term (next 5 to 10 years). Manufacturers of parts for transport equipment, in particular, show significant interests in India as 28 of the 144 companies, or 19%, see India as the best investment destination for production.

11.2 Problems in Investment Environment of India

Although India has successfully proceeded its economic liberalization and deregulation since the introduction of the New Economic policy in 1991, there remain a number of issues and problems to be tackled to improve business environment.

(1) Evaluation of Business Environment by FICCI Survey

The Federation of Indian Chambers of Commerce and Industry, FICCI, conducts an annual survey of 100 companies with foreign capital operating in India, called the FDI Survey. According to the FDI Survey 2005, a large number of foreign companies operating in India consider "Procedural delays" and "Labour laws" as very serious problems in doing business. For procedural delays, more than half of responding companies answer that it takes as many as 5 to 7 days to clear customs for imports and 2 to 4 days for exports. As for labour laws, FDI analyses that difficulty of utilising contract labour due to the regulations damages the flexibility and productivity of operations in India.

Table 28 Difficulty in Business Environment of India

(%)

Problem Areas	Very Serious		Quite Serious		Not Serious	
	2005	2004	2005	2004	2005	2004
Procedural Delays	44	49	50	44	6	7
Tax Regime	27	30	52	50	21	20
Labour Laws	44	27	41	42	16	31
Real Estate Prices	33	13	67	40	0	47
India's Image	16	24	44	40	41	36

Source: FICCI, "FDI Survey 2005"

(2) Evaluation of Business Environment by JICA Survey

In our Study, JICA Team conducted a questionnaire survey of 491 companies operating in India[16], asking for evaluations on business environment of the country. The result shows that more than 20% of the responding companies see the issues "Labour laws", "Tax regime", "Administrative procedures at the central level", "Administrative procedures at the state level", "Real estate prices", " Electric power supply", "Transport system/network" as either very bad or bad. In particular, more than 10% of the respondents rate "Labour laws" as very bad, together with evaluation as bad, bringing negative evaluation of the issue to 37%. On the other hand, issues such as "Economic conditions", "Cost of labour", "Availability of skilled human resources", "Availability of funds" and "Telecommunication

[16] Among 491 effective respondents, 462, or 87%, are companies with foreign capital.

system" are favourably evaluated, all of which are rated as very good or good by more than 50% of the responding companies.

Table 29 Evaluation of Business Environment of India

(%)

Business Environment	Very Good	Good	Average	Bad	Very Bad
Political and social conditions	6.3	34.6	43.8	9.4	3.5
Economic conditions	14.9	55.2	22.8	4.5	0.6
Policy framework in general	3.3	24.6	50.3	17.9	1.6
Labour laws	1.2	11.2	46.8	26.5	10.2
Tax regime	2.2	15.5	49.9	24.8	5.1
Administrative procedures (applications and approvals) at the Central level	1.4	10.8	50.3	18.9	6.9
Administrative procedures (applications and approvals) at the State level	1.2	13.2	46.8	24.2	7.3
Import/export procedures	2.2	28.1	44.0	10.8	1.2
Cost of labour	8.6	47.5	34.8	4.9	1.8
Availability of skilled human resources	14.1	46.6	22.4	12.0	2.2
Availability of funds	11.8	46.8	29.3	7.1	1.8
Real estate prices	5.9	26.7	35.6	19.8	3.7
Electric power supply	9.0	35.8	27.1	17.7	8.1
Telecommunication system	24.8	50.9	17.5	3.9	0.8
Water supply for industry	8.1	37.3	31.6	13.4	5.1
Transport system / network	4.7	39.1	32.6	15.1	5.9

Source: JICA Study Team

(3) Comparison of Business Environment between India and China

In "Survey of Japanese Manufacturing Companies Operating in Asia: ASEAN and India (FY 2005)" by JETRO, as mentioned in the previous section, comparison of the investment environment between India and China is also made. According to the survey, investors feel that India has advantages over China in the areas of "Communication skills of employees", "Political and economic stability", "Protection of Intellectual property rights" and "Standards of researchers/engineers", while India's conditions of "Infrastructure", "Customs procedures" and "Availability of supporting industries" are worse than those of China. As for "Standards of researchers/engineers", all Japanese companies operating in ASEAN, except for Singapore, rate that China is better than the country in which they are operating, which confirms that India has abundant human resources with high standards for research and development.

Table 30 Investment Environment of India as Compared with China

Evaluation Items	Evaluation Index
Communication skills of employees	71.8
Political and economic stability	50.0
Protection of Intellectual property rights	39.5
Standards of researchers/engineers	33.3
Transparency of investment related laws	22.5
Easiness of labour management	0.0
Risk of foreign exchange fluctuation	▲13.2
Tax regime	▲13.2
Availability of supporting industries	▲31.6
Customs procedures	▲40.5
Infrastructure	▲77.5

Note: Index is calculated as difference of the percentage of respondents answering "better" deducting those answering "worse". The value ranges from negative 100 to positive 100. Respondents are Japanese companies operating in India which have whatever business basis in China.

Source: JETRO

(4) Request for Improvement of Indian Business Environment by Japanese Companies

Among all problems pointed out in various surveys mentioned above, the most serious problems in doing business in India seem to be "labour problem", "inefficient administrative procedures" and "tax regime". In addition, developments of "infrastructure" and "supporting industries" are very much desired by investors. These problems have been confirmed by JICA Study Team's interviews with managers of Japanese companies operating in India.

Listed in Table 30 are problems relating to trade with and investment in India, which were prepared by the Japan Business Council for Trade and Investment Facilitation, based on opinions of Japanese companies. Issues regarding problems such as employment, administrative procedures and tax regime are specified.

Table 31 Problems Relating to Trade and Investment

Categories	Main problems
Restrictions on entry of foreign capitals	The cap on the capital ratio by foreign investors
Export requirements	Export requirements and indigenization conditions
Restrictions on withdrawal of operations	Withdrawals restricted, Nebulous withdrawal regulations
Reduction and elimination of preferential policies for foreign capital	Paucity of merits for investing in India
Restrictive export/import trade, duty, and customs clearance	High import tariffs, Frequent changes of duty rates and their varying interpretations, Delay and complexities in customs clearance procedures, Import restrictions, Difficulty in importing second hand and refurbished items, Return of products for repair is rejected, Return of shipment is refused, Inconsistency in Import Policy and delays in implementation, Difficulty in changing the details of the Export License

Categories	Main problems
Restrictive measures for operations in Free Trade Zones and Special Economic Zones	Conditions for permission through Automatic Route for enterprises operating in Free Trade Zones and Special Economic Zones
Collection of technical fees demands for technological transfer	Restrictions on remittance, Complex procedure for remittance
Exchange controls	Payment on behalf of non-residents prohibited, Restrictions on foreign exchange account, Arbitrary foreign exchange controls
Taxation Systems	Tax on royalty, Heavy burden of income tax, High indirect tax rates, Repeated changes in Excise Duty, Complex taxation system, Sales tax is suddenly raised, Nebulous taxation investigation, Predicting the tax rates is difficult, Tax on liaison office representatives
Employment	Difficulty in dismissal of workers, Overly protective Labour Act, Strikes, Delays in issuance and renewal of work permit, Shortage of the support system for upbringing the human resources,
Implementation of intellectual property rights	Regulation on royalty, Protection of intellectual property rights hardly enough
Demands for technology transfer	Transfer of technology guideline
Industrial standards, approval of safety standards	Certification system
Environmental pollution and waste disposal	Unfair application of restrictions
Inefficient administrative procedures, regimes and practices	Complexity and delay in the permits and approval procedure, Inefficient customs clearance, Rampant bribery, State control of enterprises with excessive liabilities, Discrepancies in policy between governmental agencies
Indigested legislation, abrupt changes	Nebulous and inefficient procedure
Government procurement	Nebulous and inefficient procedure, Preference given to public enterprises

Source: JICA Study Team, based on Japan Business Council for Trade and Investment Facilitation

It is also pointed out that the fact India has many government organizations related to investment procedures, such as RBI, FRII and SIA, would be confusing to foreign investors. Although for Japanese FDI, the Japan Cell of Ministry of Commerce and Industry is supposed to be a first contact point in India, the organization is not well known to Japanese investors. More efforts to provide information are desirable. The Constitution of India clearly stipulates responsibility and authority of central and state governments[17] and both governments have their own roles and functions in FDI procedures, making it difficult to set up a single window (one stop service) at the central government.

[17] The central government is responsible to receive applications and give approvals to investment, while state government is in charge of land acquisition/leasing and local authority is responsible to provide public utility such as power and water and to deal with employment procedures.

Chapter 12 Evaluation of industrial competitiveness in India

12.1 Evaluation of industrial competitiveness

In India a recognition that both "competitiveness" and strengthening competitiveness be important has been increased, while Indian industries have faced economic liberalisation and global economic environment. The Indian government established the "National Manufacturing Competitiveness Council (NMCC)" in September 2004, and the organization has analyzed challenges and issues that both the whole Indian industries and each important industrial sector face and has also made proposals on how the country should tackle those issues[18].

NMCC publicized "The National Strategy for Manufacturing" in March 2006, which analyzed the country's industrial competitiveness by referring to the annual global competitiveness ranking (2005 data) by the World Economic Forum. According to that, India is ranked 50th in the "Growth Competitiveness Index (GCI)" and 31st in the "Business Competitiveness Index (BCI)" among 116 countries (See Table 1). When comparing these figures with those of China, China is positioned above India at 49th in GCI and below India at 57th in BCI.

Although Indian GCI rose in terms of both ranking and score from 2004, the technology score in GCI declined to 55th, which made directions of improvement in the country's industrial competitiveness unclear.

Table 32 Ranking of India's Global Competitiveness (2005)

Index		Rank	Score change
GCI: Growth Competitiveness Index		50th	↗
	Technology Index	55th	↘
	Public Institution Index	52th	↗
	Macro-economic Index	50th	↗
BCI: Business Competitiveness Index		31th	-

Note: "Score change" shows an increase or a decrease compared to the figure in 2004

Source: "Global Competitiveness Report 2005-2006", World Economic Forum

According to the questionnaire survey conducted by the Study, many companies responded that inferior price competitiveness, lower technology, poorer quality, and poorer facilities are major obstacles for their business expansion even at the Indian domestic market which is seen as having a comparatively lower product specification level demanded by customers. This shows a tendency that Indian companies

[18] NMCC is a public-private forum for policy dialogue in relation to strengthening competitiveness in manufacturing sector, established by a strong initiative by Prime Minister, Dr. Manmohan Singh. Dr. V. Krishnamurthy, Chairman of the Council and also a Cabinet Member, is a prominent businessman who experienced a top executive at Maruti-Suzuki and Steel Authority of India (SAIL) and has a strong respect in industries. 26 Committee members, including himself, representing various public and private organizations, analyze different issues in each industrial sector, draft policy recommendations, and exchange views between public and private sectors, while making frequent contacts with industrial organizations and enterprises.

themselves are very skeptical about their competitiveness and believe improvement is needed, given an increasingly competitive business environment.

Furthermore, it is estimated that there are many enterprises that have not reached to level shown by the country's competitive index as a whole, because there are large-scale variations between different categories in corporate structure and their competitiveness. It is imperative for India to upgrade competitiveness of companies that are positioned at the bottom and middle level of a pyramid shape of the industrial structure.

12.2 Challenges and issues for strengthening industrial competitiveness

NMCC has identified 12 industrial sectors as potential; i) Textiles and garments, ii) Leather and leather goods, iii) Food processing, iv) Gems and jewelry, v) Handlooms and handicrafts, vi) Chemicals, vii) Pharmaceuticals, viii) IT hardware/software, ix) Auto components, x) Human resource development relating to manufacturing, xi) Capital goods industry, and xii) Paper industry. Focusing on these sectors, NMCC is scheduled to proceed with analyzing challenges and issues to be solved by each sector and also to draft concrete proposals.

"The National Strategy for Manufacturing" set a high growth target for the manufacturing sector of an annual 12% in order to realize the country's expected economic growth rate of 8-10% in the near future, and summarized overall, necessary challenges and issues to be solved for strengthening competitiveness as follows (See Table 32);

Table 33 Challenges for strengthening competitiveness

1. Challenges that the Government should tackle with	
	(1) Ensuring macro economic stability
	(2) Ensuring cost competitiveness and stimulating domestic demand (Correction of import duties, indirect taxes, cost of capital, and cost of infrastructure)
	(3) Strengthening education and skill building
	(4) Investing in innovations and technology
	(5) Enabling speedy development of infrastructure
	(6) Providing right market framework and regulatory environment
	(7) Ensuring effective coordination between Central, State and Local levels
	(8) Enabling SMEs to achieve competitiveness (Strengthening Cluster approach)
	(9) Enabling Public Sector Enterprises to meet competitive market conditions
	(10) Encouraging intellectual property rights in manufacturing sector
	(11) Increasing the usage of ICT in manufacturing sector
	(12) Creating a monitoring mechanism and measuring performance
2. Challenges that industries and companies should tackle with	
	(1) Investing in R&D and technology
	(2) Showing a continuing commitment to skill development and knowledge development
	(3) Adopting global standards and Benchmarking their performance against the best in the class
	(4) Adopting best manufacturing practices and production techniques (5S、JIT、KANBAN, etc.)
	(5) Evolving broad based strategy cutting across various sectors to make the entire value chain competitive
	(6) Increasing the scale of operations and delivering on globally acceptable quality level

Source: "The National Strategy for Manufacturing", National Manufacturing Competitiveness Council, Government of India, March 2006

As shown above, various challenges and issues are widely and deeply rooted in Indian economic and social foundations, while both public and private sectors are about to prepare and cooperate with each other to strengthen the country's industrial competitiveness, and thus, more efforts and time will be required to solve those issues.

Chapter 13 Direction of India's Industrialisation

13.1 India in the World Economy

With the report titles "Dreaming With BRICs: The Path to 2050" by U.S. securities house Goldman Sachs in October 2003, India has captured world investors' attention as well as other BRICs countries, Brazil, Russia, and China. The economic growth of BRICs is considered to be due to such reasons as abundant human resources, natural resource endowment, and economic policy changes which enable stable growth.

Following China, India is the second largest economy in the Asian developing countries. India has great potential in view of recent well-sustained economic growth and growing labour power.

India has the second largest population. India's GNI in dollar value is the eleventh in the world (2004) and this is the third largest in the Asia after Japan and China. India has topped the list for several manufactured products. As for material production, India is the eighth largest in crude steel production (2005) after such countries as China, Japan, the U.S., Russia, Korea, Germany, and Ukraine and the second largest for cement production (2005) after China. As for textiles, India is the third largest in raw cotton production after China and the U.S. and the fifth largest in chemical fibre production (2004) after China, the U.S., Taiwan, and Korea. India is the twelfth producer of automobiles (2004), the second of two-wheelers (2003), and the fourth in medicines (2002/03).

13.2 Indian Economy's Global Competitiveness

Indian economy's significant potential is far from being fully tapped. Global evaluation toward India's competitiveness remained low compared with its scale of economy. On the whole, India is evaluated to have advantages in the supply of advanced human resources and business operation and have disadvantages in government institution/policy and infrastructure development. According to the Business Competitiveness Index (2005), which evaluates sources of corporate competitiveness and business environment as explained in Chapter 12, India received a high score in "availability of scientists and engineers," "extent of locally based competition," "local availability of components and parts," quality of management schools," "local supplier quantity," "state of cluster development," "local equity market access," "prevalence of foreign technology licensing," "local availability of process machinery," "quality of math and science education," "incentive impact of tax system," etc. On the other hand, India was given a low score in "cell phones per 100 people," "quality of electricity supply," "internet users per 10,000 people," "quality of public schools," "regional disparities," "nature of competitive advantage," "tariff liberalization," "overall infrastructure quality," "port infrastructure quality," etc.

Cost competitiveness examined based on JETRO's data, India is competitive in wages over Southeast countries but less competitive against the coastal areas of China. In the 1990s, the coastal areas of China received an enormous amount of foreign investments due to a comparatively developed infrastructure and internationally low level of labour cost. However, China is weakening its cost competitiveness due to the investment accumulation and rapid economic growth. As a whole, it may be said that India's wage level is less competitive against the Southeast Asian countries; meanwhile, India is superior to them in the quality of labour. At the same time, India's electricity and water charges are high compared with other major Asian countries, which pressures India to take cost reduction measures.

Table 34 Comparison of Investment-related Cost of Major Cities in Asia

	India (New Delhi)	India (Bangalore)	Indonesia (Jakarta)	Thailand (Bangkok)	Vietnam (Hanoi)	China (Shanghai)	China (Shenzhen)
Wage: worker (general industry) (monthly)	208.7	238.4	170.3	186.5	159.9	397.3	250.9
Wage: engineer (mid-level engineers) (monthly)	485.9	598.8	351.1	403.7	385.7	778.7	582.8
Wage: mid-level managers) (section and department chief level) (monthly)	1,186.6	1,201.2	803.5	746.1	731.8	1,926.1	1,075.3
Industrial estate rent (per square meter) (monthly)	—	3.79 - 5.92	3.60 - 4.10	4.86	0.16、0.23	1.00	1.86 - 4.96
Office rent (per square meter) (monthly)	18.88 - 35.40	9.49～14.23	22.00 - 26.00	11.67	28.70, 22.00	28.35	18.59
International call charge (to Japan) (for 3 miniatures)	0.79 - 1.18	0.79	3.39	1.46	1.35	3.0	3.0
Electricity rate for business use (per KWh)	0.09	0.08、0.09	0.04	0.041 – 0.042	0.05 - 0.06	0.04 – 0.11	0.04 - 0.15
Water rate for business use (per cubic meter)	0.49 - 1.64	1.32	0.98	0.24 – 0.51	0.28	0.15	0.28
Corporate Income Tax (effective tax rate) (%)	33.66%	33.66%	30% (Case of over 100 MLN Rps.)	30%	28%	33%	33%
Value-added Tax (standard tax rate) (%)	12.5%	12.5%	10%	7%	0%、5%、10%	17%	17%

Note: Wage includes bonus and social security expenses.

Source: Processed JETRO's data in "The 16th Survey of Investment-Related Cost Comparison in Major Cities and Regions in Asia" dated March 2006.

13.3 Necessity of India's Manufacturing Sector Development

The ratio of the manufacturing sector to GDP in India is a relatively low of 17% (2003/04). In the manufacturing sector, large and medium enterprises comprise approximately 60% of total output, although they are a small portion of the number of enterprises.

The major reasons for low industrialisation rate are as follows:

i) a demand growth is constrained by limited purchasing power in the rural area;

ii) the unorganised sector has a high proportion of the manufacturing sector in number;

iii) the international competitiveness is comparatively low except in some industries;

iv) rich resources are not fully utilised by such industries and food processing, material production, and so on; etc.

Considering the GDP growth contribution by industry, the manufacturing sector as well as trade, transportation & communication and finance has played a role in the driving force for growth. The Indian government should encourage further development of the manufacturing sector by clearing bottlenecks to achieve a balance growth of Indian economy. The manufacturing sector is expected to make the following contributions:

i) To absorb surplus labour in the rural sector

ii) To efficiently meet an expanding domestic demand

iii) To improve efficiency in the use of resources including agricultural and mineral resources

iv) To increase foreign currency earnings by expanding exports

v) To increase national income by the manufacturing sector's impact on the overall economy

Among the total number of employees, 411.5 million persons, the number of employees employed by the organised sector is only 27.79 million, less than 7% of the total. The number of employees in the organised sector has been on a decreasing trend since 1998. This means that most of the increasing labour force is absorbed by the unorganised sector. It is estimated that more than 80% of employees are employed by the unorganised sector.

13.4 Advantages of India's Manufacturing Sector

The advantages of India's manufacturing sector are considered to be as follows:

i) abundant and cheap labour force with anticipated growth of young labour

ii) natural resources such as iron ores, coals, cottons, etc.

iii) large potential domestic market

iv) highly competent researchers and engineers

v) English-speaking labour force

Meanwhile, the major problems of India's manufacturing sectors are considered to be as follows:

i) There exists a two-tiered structure consisting of the modern manufacturing sector and the traditional sector

ii) Foreign direct investments have been sluggish although they should become a leading force in the industrial development.

iii) Except some industries, product technology and production technology are generally low and do not have international competitiveness.

iv) Export-oriented industries are underdeveloped although India's manufactured product export ratio is adequately high.

v) There exists geographical disparity of industrial locations.

vi) Expansion of industrial infrastructure cannot keep up the pace with the industrial development.

vii) Business environments leave much to be improved even though the deregulation has been promoted.

13.5 Possible Approaches to Manufacturing Sector Development

When promoting India's manufacturing sector, it is indispensable to consider an appropriate combination of approaches according to the characteristics of India's manufacturing sector.

As for the development of capital-intensive industry such as petrochemicals, chemicals, pharmaceuticals, and steel, each company's efforts in investing in plant & equipment and R&D activities principally become a driving force for growth. The government should consider supportive measures in the areas of competition law, intellectual property right, policy-oriented finance, investment incentives, etc. As for the development of industries with a wide industrial linkage such as machinery including automobiles, industrial machinery, and electric & electronic equipment, textiles, etc., a industry cluster development approach is considered to be effective. These industries can be classified in the capital-intensive and/or technology-intensive modern sectors. In the meanwhile, overall development measures are required for the small and medium enterprises constituting the bottom of the manufacturing sector.

Generally speaking, a top-down approach is considered to be effective for capital-intensive and/or technology-intensive modern industries and a bottom-up approach for small and medium-sized traditional industries.

In regards to the competitiveness improvement of modern industries, important points are the realisation of internationally competitive product quality and cost through technology improvement and

the achievement of more efficient and effective management and marketing.

The technology improvement is an essential part of competitiveness of the manufacturing sector. According to the growth accounting model, economic growth is broken down by the following factors.

$$\frac{\Delta Y}{Y} = \alpha \frac{\Delta K}{K} + (1-\alpha)\frac{\Delta L}{L} + \frac{\Delta A}{A}$$

Y: aggregate production, K: Capital, L: Labour, A: Total Factor Productivity, α: capital share

Capital investment and productivity improvement as well as labour input are important factors for the industrial development. Like developed countries, India's manufacturing sector requires investment for automation to sell products of certain quality level to domestic and overseas markets and to achieve cost competitiveness. The creation of new value and service is also important for India's manufacturing sector to attain an international competitiveness in the areas of advanced industries. To facilitate active investments, it is also necessary to establish a fund supply mechanism and promote foreign investments.

Secondly, the modernization and promotion of small and medium enterprises are also important tasks in developing the manufacturing sector. This portion of the manufacturing sector is expected to play a role of labour absorption in addition to a role of propping up the whole manufacturing sector. It is estimated that nearly 10 million of the labour force newly enter the labour market every year during the period from 2005 - 2015. The National Manufacturing Competitiveness Council (NMCC) estimates that the growth target of 12% in manufacturing would create approximately 1.6 million direct jobs annually with the current employment elasticity[20]. In addition, indirect job creation is estimated at two to three times the direct jobs as a result of multiplier effects. Labour-intensive sub-sectors such as textiles & garments, leather & leather products, food processing, etc. should be emphasized as for the aspect of labour absorption.

On any of the above-mentioned approaches, the improvement of industrial competitiveness should be highlighted at the first setout. High competitiveness realizes the market expansion in domestic and overseas markets, and this leads to larger employment enlargement and higher income. Industrial competitiveness is associated with individual enterprises' issues and government's policy issues. Individual enterprises' issues for competitiveness are corporate strategy, technology, production and management, financing, etc. Government's issues are a competition policy, level of market mechanism, infrastructure development, industrial linkage, etc. Therefore, competitiveness improvement requires comprehensive measures.

13.6 Indian Government's Industrial Development Policy

The 10th Five-Year Plan (2002 - 07) set an average annual growth rate target of 10% for the

[20] Government of India National Manufacturing Competitiveness Council, "The National Strategy for Manufacturing", March, 2006.

manufacturing sector. The following strategies are set forth for the development of the manufacturing sector.

i) Creation of favourable investment environments: shift from inward-looking policy to outward-looking policy, revision of related regulations

ii) Capacity development: competitiveness improvement through modernization and technology upgrading

iii) Development of world-standard infrastructure: promotion of PPP

iv) Expansion of resource bases: closure of low-productivity public sector enterprises, revision of subsides, restoring of financial sector, promotion of FDIs, etc.

v) Improvement of efficiency: promotion of market mechanism, correction of market imperfection by the government

Furthermore, the National Manufacturing Competitiveness Council, advisory body to the government, formulated "The National Strategy for Manufacturing" in March 2006. This strategy suggests that an average annual growth rate for the manufacturing sector should be 12% to achieve India's balanced growth of 8 - 10% per annum during the 10-year period from 2006 to 2015. The strategy recommends twelve roles of the government (For details, please refer to Box. .

13.7 Policy Issues for India's Manufacturing Sector Development

To further develop India's manufacturing sector, the government is urged to remove structural impediments: two-tiered industrial structure; sluggish FDIs to the manufacturing sector; low product and production technology level; underdeveloped export-oriented industries; uneven geographical industry location; insufficient infrastructure development; and unfavourable business environments.

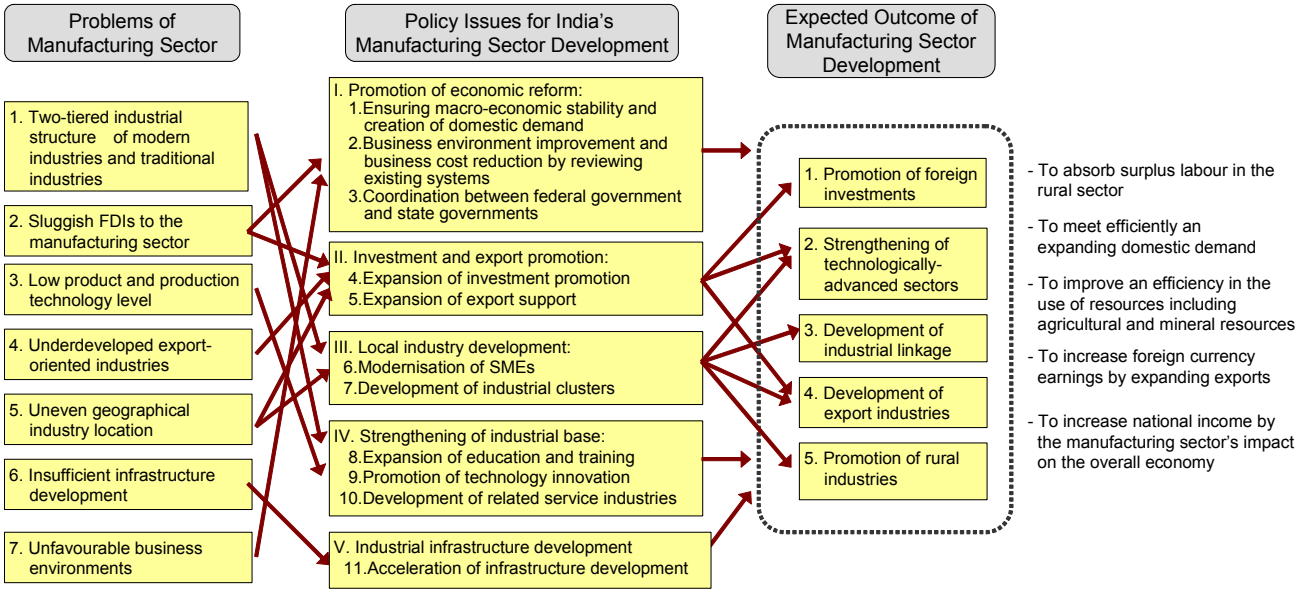
Major policy issues for the above-mentioned task can be summarised into the following five groups.

I. Promotion of economic reform:	1. Ensuring macro-economic stability and creation of domestic demand
	2. Business environment improvement and business cost reduction by reviewing existing systems
	3. Coordination between federal government and state governments
II. Investment and export promotion:	4. Expansion of investment promotion
	5. Expansion of export support
III. Local industry	6. Modernisation of SMEs[21]

[21] The classification of enterprises by the government of India principally consists of "small scale industry" and the other (larger scale industry). However, the study team considers that it is important to promote small and medium enterprises (SMEs) in a broader framework.

development:	7. Development of industrial clusters
IV. Strengthening of industrial base:	8. Expansion of education and training
	9. Promotion of technology innovation
	10. Development of related service industries
V. Industrial infrastructure development	11. Acceleration of infrastructure development

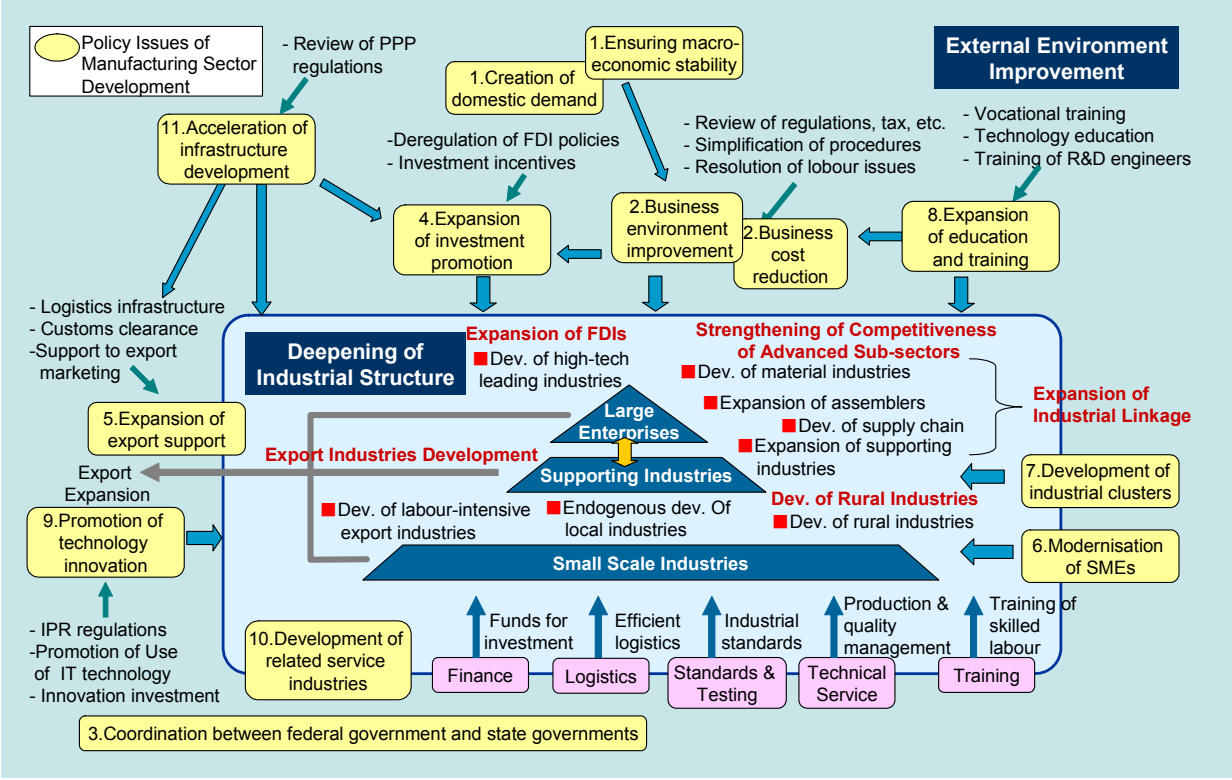
Fig. 47 Policy Issues for India's Manufacturing Sector Development



Source: JICA Study Team

These policy measures, when effectively implemented, will contribute to such objectives as the promotion of foreign investments, strengthening of technologically-advanced sectors, development of industrial linkage, development of export industries, and promotion of rural industries.

Fig. 48 Development Scenario of India's Manufacturing Sector and Relevant Policy Issues



Source: JICA Study Team

13.8 Sub-sector Development

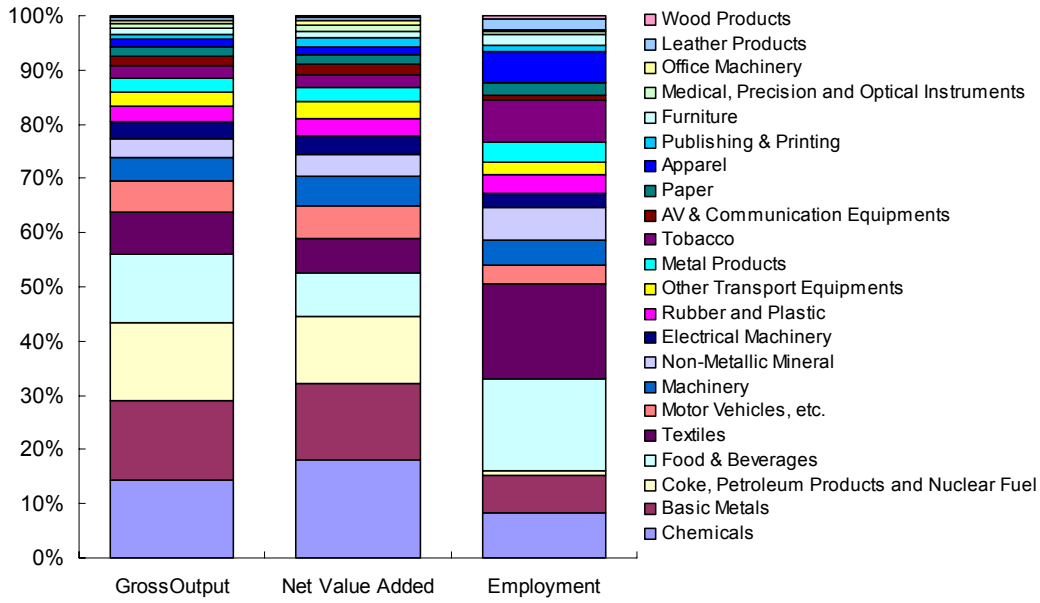
The breakdown by sub-sector in total output, net value added, and number of employment of the organised manufacturing sector in 2002/03 are as shown in Fig. 48.

As for total output, major sub-sectors are food & beverage, chemicals, coke/petroleum products/nuclear fuel, basic metals, textiles, automobiles, machinery. Above all, food & beverage, textiles, automobiles and machinery are sub-sectors having a large production inducement impact on material-supplying sub-sectors.

As for the size of employment, principal sub-sectors are food & beverage, textiles, tobaccos, nonmetallic mineral products, and garments.

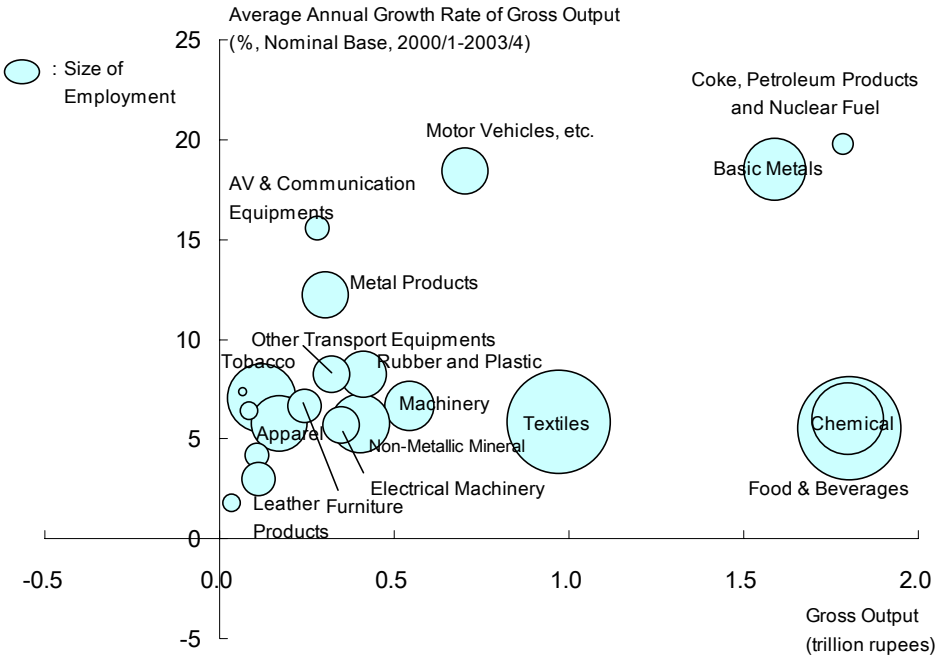
The sub-sectors which showed a high growth during 2000/1-2003/4 are automobiles, coke/petroleum products/nuclear fuel, metal products, rubber & plastics, and other transport equipment. This implies the situation that the growth of machinery industry including automobiles and electronic equipment is creating a demand for materials.

Fig. 49 Sector-wise Breakdown of Manufacturing Sector in 2003/4



Source: Ministry of Statistics and Programme Implementation "Annual Survey of Industries"

Fig. 50 Portfolio of Sub-sectors in the Manufacturing Sector



Source: Ministry of Statistics and Programme Implementation "Annual Survey of Industries"

Furthermore, the potential sub-sectors from the viewpoint of export potential are textiles & garments (resource-oriented location and labour-intensive-oriented location□, mineral processing

(resource-oriented location), chemicals (resource-oriented location and technology-intensive-oriented location), plastic & rubber products (labour-intensive-oriented location), pearls, gems, & jewelry (labour-intensive-oriented location), metal products (labour-intensive-oriented location), machinery, electronic equipment, & parts (technology-intensive-oriented location), vehicles, aircraft, ships and transport equipment parts (technology-intensive-oriented location).

The National Manufacturing Competitiveness Council (NMCC) mentions that sub-sectors with competitive advantages in the world market are textiles & garments, leather & leather products, auto components, drugs & pharmaceuticals, food processing and IT hardware. On that basis, the NMCC carried out sub-sector wise engagements to suggest initiatives for the 11 sub-sectors, i.e., food processing, textiles & garments, auto components, capital goods, it hardware & electronics, paper, chemicals & petrochemicals, drugs & pharmaceuticals, telecom equipment, and handicrafts. In addition, sub-sectors wise engagements are said to be necessary for steel, bio-technology, fertilizers, cement, and gems & jewelry.

Based upon the above-mentioned consideration, each sub-sector's priority and impact on the development can be examined as follows.

Table 35 Evaluation of Priority Sub-Sectors

Contribution / Sub-sector	Employment Absorption	Use of Domestic Resource	Use of India's Technology	Potential Size of Domestic Market	Export Potential
Textiles & Garments	●	●		●	●
Leather & Leather Goods	●	●		●	●
Food Processing	●	●		●	
Gems and Jewellery	●				●
Handicrafts	●	●			●
Chemicals & Petrochemicals			●		
Drugs & Pharmaceuticals			●		●
Electronics	●		●	●	
Automotive & Auto Components	●			●	●
Industrial Machinery					
Paper		●		●	
Steel		●		●	

Source: JICA Study Team

Box : The role of the government proposed in "The National Strategy for Manufacturing"

i) Ensuring macro-economic stability

To maintain long-term economic stability through a macroeconomic framework which includes appropriate monetary and fiscal policies and ensures sound public finances based on the principles of transparency, responsibility and accountability.

ii) Ensuring cost competitiveness and stimulating domestic demand

Lowering cost of manufacture and improvement of quality are of high priority for manufacturing firms. Import duty, VAT framework, reduction of procedures, interest rates, labour related issues, free exit, etc.

iii) Strengthening education & skill building

To revise the curriculum for all technical courses; to attract the best minds to teaching & research; to strengthen PG education and make it more attractive; to upgrade the industrial training institutions through public-private partnerships; to encourage the private sector to establish and operate demand driven technical training centres; to develop a comprehensive 'National Vocational Education Qualification System' and set up a Vocational Education & Training Institute in each State; to encourage large private sector manufacturing/ engineering National Manufacturing organizations to adopt Vocational Education Institutes; to upgrade the Polytechnics; to create 'Centres of Excellence in Manufacturing Technologies' with close interaction between academia-industry-government, etc.

iv) Investing in innovations & technology

Investing in R&D to review existing policies relating to R&D funding, incentives; better coordination with greater focus on innovation and productivity enhancing technologies; to support prototype development and design innovations; to create common testing facilities and centres of manufacturing technology excellence; to strength the Intellectual Property Rights framework; to establish technology parks on the lines of those existing in USA; to create a coordination mechanism on manufacturing research and development), tax relief measures on R&D expenditure, to enhance government funding of research & development, setting-up of a 'Global Technology Acquisition Fund'; merger or consolidation of national technology institutions; to provide special incentives for small business innovation and development of products.

v) Enabling infrastructure development

To prepare reliable power supply at reasonable cost; to increase the port capacities; to establish high speed road and rail corridor projects connecting respective hinterlands to the ports

vi) Providing right market framework & regulatory environment

To review existing regulations and reduce the burden of paper work and inspector raj; to minimize the cost of compliances of regulations on SMEs; to simplify procedures related to compliance with environment & safety regulations; to rationalise approval/permission requirements of manufacturing industries; to optimise inspections by Regulatory Authorities to reduce the transaction costs; to set up an Empowered Group to promote reforms of procedural and regulatory hassles inhibiting both domestic and foreign investment; to set up independents Commissions should be set up both at Central and State Governments levels to

follow up on the suggestions of the empowered Group.

vii) Role of state governments

State Governments would need to address vital areas like taxation, availability of land and other infrastructure requirements like water, electricity, implementation of regulatory laws dealing with labour, environment, etc. State Governments would reform related procedures investment climate, infrastructure, computerization of required records, abolish multiplicity of inspections, outsourcing of various inspections to recognized private agencies. An appropriate continuing mechanism for coordination between the Centre and States should be established.

viii) Enabling Small & Medium Enterprises (SMEs) achieve competitiveness

To ensure the competitiveness of the Small Scale sector; to adopt new and innovative approaches to cluster development should be adopted; to enhance flow of credit to small enterprises by encouraging credit rating of these enterprises in conjunction with cluster wide measures to minimize credit risks; to develop a National Competitiveness Programme to support SMEs in restructuring and becoming competitive; to encourage SMEs to enhance innovation and technology development; to conduct a National Quality campaign especially for the SMEs; to provide industrial design expertise; to review the reservation of certain products for exclusive manufacture by the SSI units, etc.

iv) Enabling Public Sector Enterprises (PSEs) to meet competitive market conditions

In the context of PSEs, further reforms are needed to make them competitive from the viewpoints of autonomy, review mechanism, delegation of powers, cost & productivity, sourcing decisions, technology, ancillaries & supporting industry. To make the PSEs globally competitive in every aspect of management.

v) Encouraging Intellectual Property Rights (IPRs) in the manufacturing sector

To embrace the network model of innovation and R&D by intensifying collaboration with research institutes, universities and other counterparts; to launch a national campaign for Indian firms to invest in next generation intellectual property.

vi) Increasing the usage of Information & Communication Technology (ICT) in manufacturing sector

Government must focus on encouraging implementation of a planned model of ICT adoption by the Indian manufacturing sector.

vii) Benchmarking against best practices & breakthrough thinking

A Manufacturing Advisory Service should be established by the government to deliver practical help to manufacturing sector. A group should be set up comprising of representatives of CII, FICCI and ASSOCHAM to suggest suitable policy initiatives that need to be taken by the manufacturing sector.

Chapter 14 Recent Trends of External Assistance to India

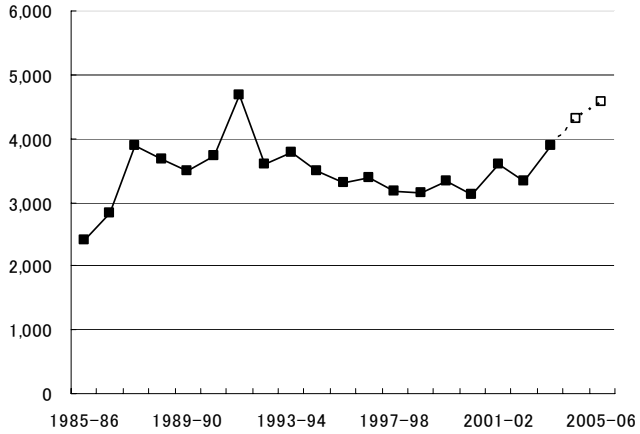
14.1 External Assistance to India

Despite India's dramatic economic growth throughout the 1990s, one-third of its population still suffers from poverty[22]. To achieve Millennium Development Goals (MDGs) notably reducing the world's poor to half by 2015, the international donor community is under pressure to expand its assistance to India.

The World Bank, Japan and ADB dominate over 85% of the total aid flow into India which approximately US$3.8 billion in 2003/04. This results in high shares of loan compared to grants[23]. Although the trend of total inflow has been constant during the 1990s, both the World Bank and ADB's recent announcement to double its assistance within a few years will come close to reaching the highest-ever level.

Fig. 51 Trend of aid inflow to India

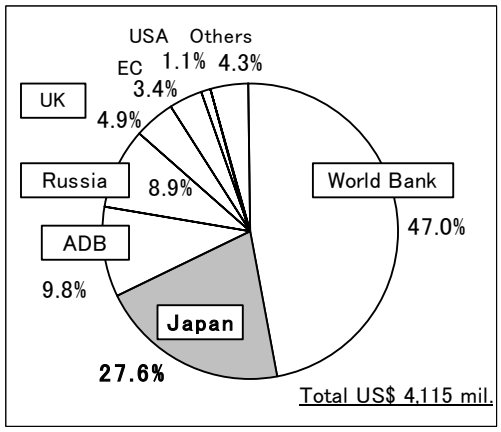
(US$ million)



*2004/05 Budget Estimate, 2005/06 Government Estimate
**Increase in 1991/02 is due to emergency aid for economic crisis
Source: Union Budget 2005-06

Fig. 52 Aid to India by major donors

(FY2004/05 Budget Estimates; US$ million)



Source: Economic Survey 2004-05

14.2 India's policy towards external assistance

(1) Internal destination of aid

Allocation of public finance in India is discussed by three major organizations; 1) Planning Commission, 2) Finance Commission[24], and 3) other line ministries to a lower extent. The Planning Commission (2003) and the 12th Finance Commission report (2005-2010) published last year have marked an

22 Absolute poverty defined as less than 1 US$ per day (World Development Indicators 2005)
23 Proportion of loan to grant in 2004/05 Budget Estimate was around 80%.
24 Major function of the committee is to make policy recommendation on central-region revenue share and subsidiary allocation issue.

important turning point of aid flow to India.

Regardless of its regional or sectoral target, all aid money used to be gathered into the central budget at first, and then distributed to each states as a part of revenue share. Thus, the state government was free from foreign exchange risk. Whether the condition agreed between donors was 100% grant or soft loans etc. the government applied '70% loan to 30% grant' as a standard rate for subleasing to states[25]. Thus major grant-oriented donors such as DFID and USAID used to call on the government to reform the system.

In 2005, the 12th Finance Commission announced the statement of 'transfer external assistance to states at the same term and condition as received from donor agencies'. In response to this recommendation, the federal government decided to set up a fund for the new lending scheme. State governments which were obliged to receive grants as partially loans from the central government will be relieved from repayment of interest for the loan. At the same time, this policy shift requires each state to bear the risk of exchange rate fluctuation and other administrative costs which require sensitive debt-risk management. Furthermore, additional risks of state financial collapse arise from the donor's point of view. As a transitory measure, the Indian government will continue to provide government guarantee to all external assistance which will not put any additional risk for donors.

(2) Bilateral Development Assistance Policy

In a 2003 budget speech, the Indian government announced its new bilateral development assistance policy which listed 6 countries/region notably Japan, UK, Germany, USA, Russia and EC as exclusive future bilateral partners. Also, India refused to accept all tied aid in future agreements. Additionally in the speech made by the new cabinet in September 2004, partner countries expanded to all G8 members plus EU member countries with a commitment of a minimum US$25 million aid package. Although the primary purpose of this policy change is to reduce the transaction cost of working with various donors, this illustrates India's high sense of ownership as a recipient of external assistance[26].

As a result of the discussion with each donor agencies, quite a few donors who have long been providing aid to India has made a decision to cease its assistance to India, i.e. Denmark, Norway, the Netherlands, and Australia. However, some countries have reviewed its strategy towards India, independent from change on the Indian side, following its economic expansion. Australia, a member of G8, will stop its direct assistance by March 2006 however will continue its support via local NGOs and major donors –World Bank and DFID. French aid may also be affected by India's strict attitude towards tied aid.

[25] In case of special category states, the proportion changes to 10% loan to 90% grant.

[26] The fact that India being a donor by itself, providing aid to other developing countries also reflects its uniqueness as well as its high level of ownership. Bhutan, Nepal and East African countries where many Indian workers exist are the major target. However, recently Indian government announced to provide total 650 US$ million aid to Afghanistan.

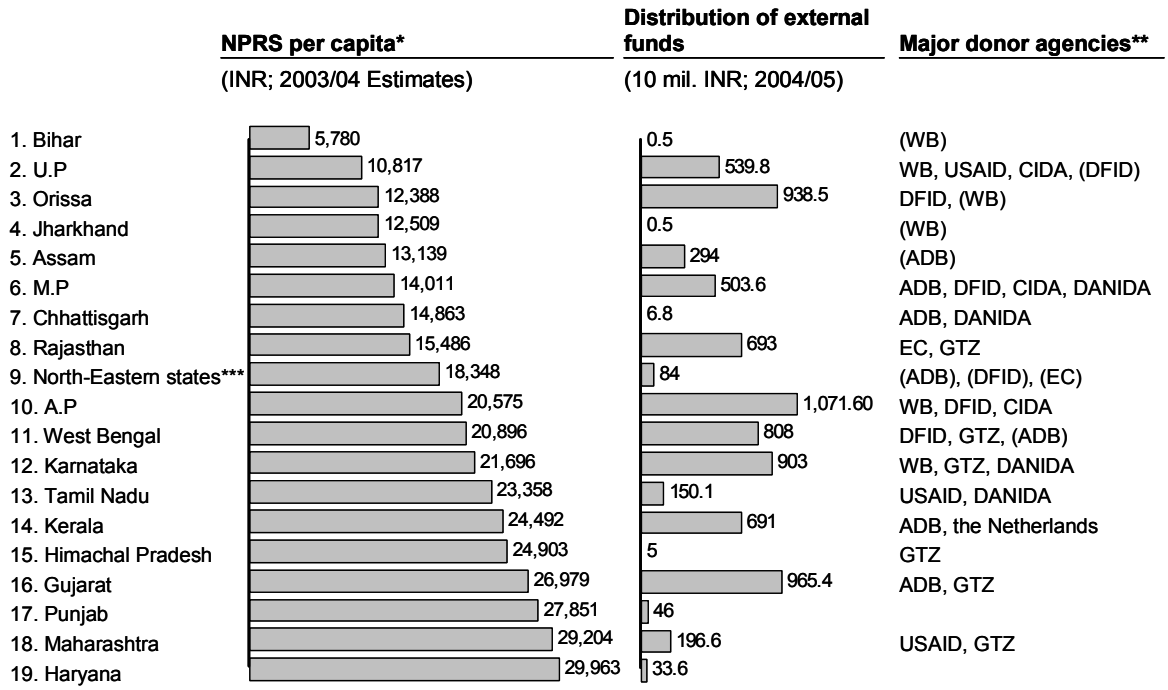
14.3 Recent trend of international donors in India

(1) Regional disparity in aid allocation

Many international donor agencies have applied the 'priority state approach' from the early stage mainly due to make the best use of their limited budget. However, in fact, the criteria of the state selection were not only poor states with desperate needs but also the existence of good governance, especially its willingness to reform. As a result, distribution of external aid to states varies widely (see below) which does not necessarily connect to its degree of poverty.

However, as raised in India's 10th five-year plan, the widening gap within Indian society has regarded as more important than ever. In the budget speech (March 2006), Finance Minister Chidambaram announced to set up 'Backward Regions Grant Fund' and allocate US$1.1 billion for 4 years. Additionally three special regions, Bihar, Jam-Kashmir and North-Eastern States will be provided a 'special economic package' and 10% of each ministries` annual budget. In response to this policy shift, donors are expanding its support area to allocate their resources towards desperate states.

Fig. 53 NSDP* per capita and distribution of external funds (1996－2003 annual average)



*Net state domestic product
**Organizations in ( ) parenthesis refers to newly made decisions.
***North-Eastern states excluding Assam (Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Meghalaya)
Source: Economic Survey 2004/05; External Assistance Brochure 2004/05

(2) Major activities of international donors agencies

The following table summaries the basic strategy of major international donor agencies in India.

Table 36 Priority area of Major Donor Agencies in India

Donor Agencies		Basic Strategy	Priority Areas	Priority States*
Japan		Poverty Reduction through Sustainable Economic Growth	・Promotion of Economic Growth ・Poverty/Environment Issue ・Enhance Human Resource Development & Interaction	―
International Donors	World Bank	Economic Growth and Poverty Reduction	・Infrastructure (Road, Irrigation, Water, Urban etc.) ・Human Development (Education, Health etc.) ・Rural Development	AP, Karnataka, UP;(new) Bihar, Jharkand, Orissa
	ADB	Infrastructure-led Economic Growth	・State Budget Reform ・Economic Infrastructure, Private Sector Development ・Rural Agriculture ・Social Development incl. Environment Preservation ・Good Governance	Gujarat, MP, Kerala;(new) West Bengal, Assam, Sikkim, Chattisgarh
Bilateral Donors	DFID	Poverty Reduction	・Partnership with Priority States ・State Budget Reform, Governance ・Education, Health, & Water Sanitation ・Environment Preservation	AP, Madhya Pradesh, Orissa, West Bengal
	USAID	Humanitarian Support	・Economic Reform ・Health, Medical ・Reconstruction/Rehabilitation ・Environment Conservation	UP, Maharashtra, Tamil Nadu
	GTZ	Improvement of Sustainable Living Environment	・Economic Reform, Market Economy Development ・State Energy Reform ・Primary Health ・Environment Conservation Policy	Himacchal Pradesh, Rajasthan, Maharashtra, West Bengal, Karnataka

*States in bold refer to this study's target states

Source: JICA Study Team, Website research, "21 seiki no nichi-inkankei to tai-inkyouryoku no arikata (Japan-India relations in the 21st century and direction of ODA to India)"

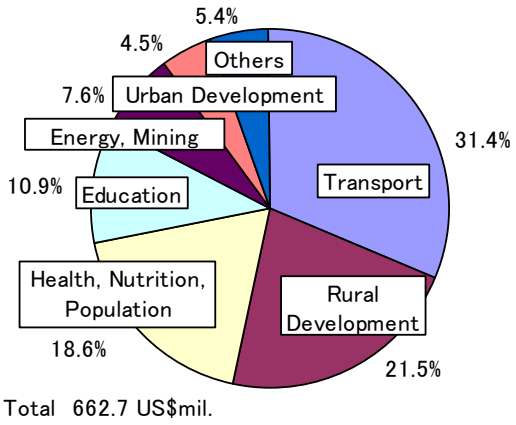
World Bank Group (IBRD/IDA)

The World Bank Group will increase its lending towards India from 2005/06 to up to US$ 3 billion per year. Its ratio of IBRD to IDA is currently 1:1 which is aimed to shift to 2:1. India is a target country for IDA in terms of GDP per capita. At the same time, however, India is creditworthy with access to IBRD financing which is categorized as a 'blend country' by the Bank. The Bank will be increasingly shifting the ratio to let India graduate out from being an IDA member country[27].

The Bank's basic strategy in India was to focus its resources on several 'priority states' which are selected in terms of good governance, and to apply a performance-based approach. However, recently there has been more emphasis on the poor states. The fact that the Bank will start supporting Bihar which has long been avoided by international donors especially with its problem in governance is a prominent example of its policy shift.

[27] During 1960-70s, nearly 80% of the Bank's loan to India was IDA lending.

Fig. 54 Sector-wide distribution of World Bank lending in India



Source: World Bank

According to the Bank's Country Assistance Strategy (CAS; 2005-08), private sector development is raised as an independent component. Focus areas are summarized below.

- Facilitate greater private sector competitiveness (improve investment environment, financial intermediaries, and direct support to private firms)
- Promote private sector participation in infrastructure
- Promote private sector participation in the provision of health/education
- Promote improved rural productivity and growth through greater private investment

Initially these projects started as structural adjustment lending (SAL) towards three states such as AP, Karnataka and UP, instead of independent project assistance. In addition to the active role of IBRD/IDA lending, IFC, the private sector arm of the World Bank Group, is also supporting India through promoting Public-Private Partnership (PPP) in infrastructure, health and SMEs development field.

Below is a brief summary of the Bank's project related to 'trade investment promotion' and 'industrial development'.

Trade investment promotion

Since 2002 for every 2 years, the Bank has been conducting an overall survey on 'Investment Climate Assessment' jointly with the Confederation of Indian Industry (CII). This survey was similarly implemented in 7 different countries with relatively low performance. Also, the target area in India has expanded from 14 (2002) to 16 states (2006). Based on the latest survey results, the existence of various and complex regulations is pointed out as significant as insufficient industrial infrastructure issues.

The 'Doing Business Report', conducted by the Bank since 2004, reviews business climates in 145

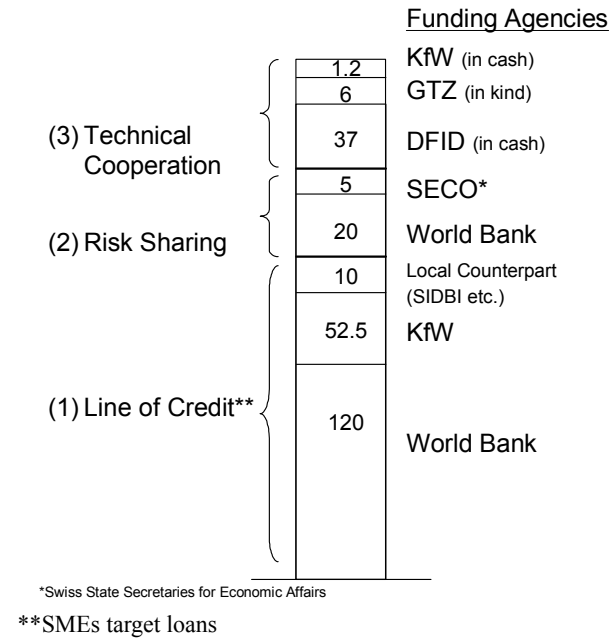
countries. In this report, the current situation of Indian economy is shown as being nearly moved out from 'License Raj' during the 1990s economic reform, but shifted to the new 'Inspection Raj' which refers to companies still strictly controlled by inspectors from several governmental offices. The existence of vested interest in every stage of business operation is widely known in India today.

SMEs development

The World Bank is currently leading a multi-agency project targeting SMEs sector development in India. The Bank's credit line to SIDBI, policy-based finance institutions focusing on SMEs, is the major component of the overall project. Since 2005, however, DFID (UK), GTZ and KfW (Germany) and SECO (Swiss) have also become members of the project review committee where coordination among each donor project has been made. These donors will contribute by technical assistance especially through capacity-building of finance institutions.

At the end of 2005, US$ 100 million out of US$ 120 million has already been distributed to SMEs through SIDBI. In addition to 2-step loans provided to 4 participating banks through SIDBI, the project includes various technical assistance components such as institutional development of India's first SME specialized rating agency, and RSGC (Risk Sharing Guarantee Company), BDS (Business Development Service) to selected clusters.

Fig. 55 Major Component of SME project (US$ million)



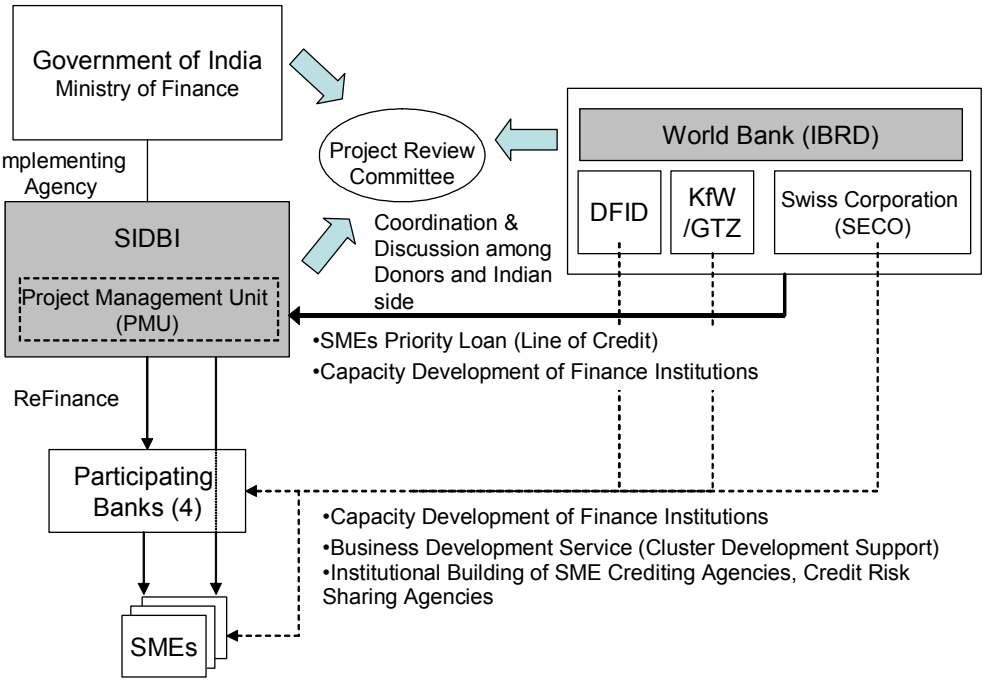
*Swiss State Secretaries for Economic Affairs

**SMEs target loans

Source: SIDBI, Interviews

SIDBI is assigned as the implementing agency of the entire project/program. Project Management Unit (PMU) of SIDBI and the project review committee is also established for coordination and information sharing between India and international donors.

Fig. 56 WB-led multi-agency/multi-project SME Development Project Structure



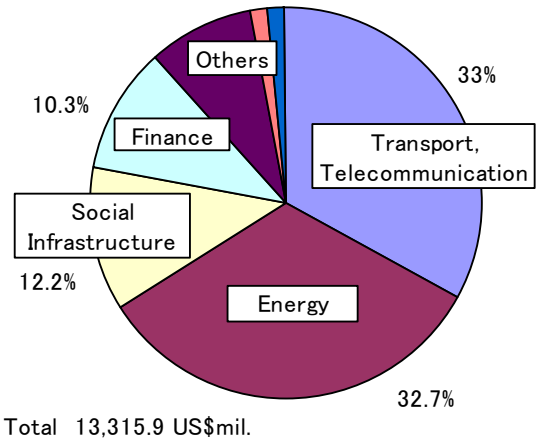
Source: SIDBI Interview, JST

Asian Development Bank (ADB)

ADB's total loan amount for India has reached US$2 billion scale per year in 2005. Furthermore, when the President of ADB visited India in September in the same year, he made the announcement to expand its scale up to US$ 6.5 billion for three years. Also ADB`s annual meeting in 2006 was held in Hyderabad.

The basic strategy of ADB is "poverty reduction through infrastructure-led growth", and three core sectors; transportation, urban infrastructure, and energy are defined in the revised country strategy paper (2006-2008). Nearly 75% of the total loan amount is scheduled to be spent in these sectors during the period. Recently the shift from the conventional priority state approach has been promoted since ADB is now increasing its commitment to states where the degree of poverty is much higher than others, such as Assam, Jammu Cashmere, North-eastern states, Sikkim, Jharkhand, and Orissa. Based on its basic strategy, ADB aims to raise India's economy by bottom-up approach to stop the widening gap within the country by promoting infrastructure development in backward states.

Fig. 57 Sector distribution of ADB accumulated lending (2004)



Source: ADB

ADB has also positioned improving business climate for private sector development as one of the priorities in economic infrastructure development. In particular, two step loans are provided to promote private sector participation in state-level infrastructure projects, such as the road, port and telecommunications sector. Last year ADB expressed further focus on promoting public-private partnership in infrastructure development. The India side also welcomed this decision and has presented agriculture, water resources, and tourism sectors as priority sectors.

In 2004, ADB extended the first local currency loan funded by rupee-denominated bonds issued in Indian capital market. This attracts high interest mainly from India's infrastructure and banking sector. Not only by the use of rupee-denominated bonds but ADB is continuously considering application of new approaches, prior to other developing countries, to provide long-term fixed rate loans which contribute to infrastructure development for India.

Table 37 ADB major projects in private sector development field (2005-2007)

Scheme / Year		Project title	Loan amount (US$ million)
Loan	2002-07	Private Sector Infrastructure Facility II:IL&FS	100
	2004	Private Sector Creation Initiative	200
	2005	Small and Medium Enterprise Finance Sector Development	250
	2005	Agribusiness Sector Development Program	150
	2005	Private Sector Participation in the Power Sector	500
	2005	Capital Markets Development Cluster Program (Subprogram I)	300+800
	2006	Capital Markets Development Cluster Program (Subprogram II)	250
	2006	Private Sector Participation in Electricity Distribution(W. Bengal)	500
TA	2006	Private Sector Infrastructure Facility III	600
	2006	Policy Research on Trade Regime and Industrial Performance	n.a.

Source: ADB, India, Country Strategy and Programme Update 2005-2007(2004.9)

EC (European Commission)

EU is the largest trading partner for India while India consists of merely a few percent of overall EU trade. However EU considers India as a potential significant partner to promote India as a 'strategic partner' in 2005. Assistance from EU to India is categorized by two functions; 1) development cooperation and 2) economic cooperation. The former copes with social issues such as poverty reduction, and the latter focuses more on economic relations such as trade investment promotion, human resource development etc. Although regular meetings are held between the two departments, their locations in India differ and activities are operated in separate manners following different coordination with the head office in EU.

In 2003, the Department for Economic Cooperation agreed to start a new project 'TIDP□Trade & Investment Development Program' which targets capacity building / set up of food sanitization laboratories, set up investment desk for EU-India companies and administration side. However, a considerable delay of the overall programme timeframe is inevitable due to time-consuming discussions with the Government of India on details of the programme.

Case Study: EU-India Business Associations' Cross Cultural Network for Business & Trade Promotion

This is a part of the scheme of EU-India Economic Cross Cultural Programme (ECCP) supported by EU as a two-year program which started in starting from 2004. Six domestic experts from Association of Women Entrepreneurs of Karnataka (AWAKE) and Federation of Chambers of Commerce and Industry of Karnataka (FKCCI) were dispatched to Germany and Denmark, and transferred know-how about the knowledge and export promotion to overseas markets. After they returned to India, these trained experts held a seminar to transfer technology tofor its members.

UNIDO

In alliance with other donor agencies or local organizations, UNIDO is quite active in India especially in the field of private sector development. The "Cluster survey" which UNIDO conducted with 15 nations as joint research with UNDP in 1996 was the first attempt in India to implement the cluster approach which defined and analyzed about 400 clusters. These results became the base of cluster development policies led by India`s central and state governments. UNIDO also carried out original programmes for supporting SMEs training by 2001. New projects for industrial cluster development based on UNIDO approach are still in operation.

(1) Industrial Cluster Development (1996-2001; US$1,800,000)

Target: Increase competitiveness through promotion of industrial cluster development

Output: Provide technology support to develop activities in the selected four local industry cluster (food processing, handloom cloth, wool/knit cloth etc.)

(2) Integrated Investment and Technology Promotion (1994-1998; US$1,340,000)

Target: Promotion of Private Investment in SME sector

Output: Selected potential local SMEs and support its business expansion by providing information through investment forums, match-making with foreign potential partner firms, and supporting negotiation process.

Case Study: UNIDO / Automotive Industry Cluster Support

UNIDO is transferring quality control techniques from 2 dispatched international experts to domestic experts which are appointed by ACMA (Automotive Component Manufacturers Association).The training period for technology transfer is a total of 15 days. Ten domestic experts are trained with this project which that started in 2002, and each expert is responsible for training 8-10 small-medium subcontractors for 30 months per company. The company which received technical support visits other companies and evaluates each achievement level, which promotes further improvement by stimulating good competition among companies.

Other bilateral donor agencies

- DFID of UK is the largest donor country in terms of grants. With its clear focus on "poverty reduction" which is DFID's greatest and only target, their support to India expanded rapidly in the mid-1990s. Since 2000, India has become DFID's largest supporting country. Liaison offices were located in four priority states (Karnataka, Madya Pradesh, West Bengal, and Orissa) and resources invested were concentrated in these areas. However, recently DFID has been shifting more to national level programmes and the share is almost half of total investment. DFID's basic principle in project operation is to respect the ownership of the counterpart in India as much as possible. For example, the authority of selection and bid of consultants are given to the India side. And although initial analysis and advice are provided, DFID's forms of grants are "in cash" in principle, and their support is limited in areas such as management support of the monitoring of a project, financial auditing, etc.

- The US Congress under the Bush Administration has gone through selection and concentration of supporting nations, and India was considered as a graduated country where the economic relation in the private sector has grown to significant level. As a result, USAID will be withdrawn by 2009. Although taking the parliamentary decision seriously, USAID India office anticipates possible changes of US aid policy accompanied by power changes in US politics. Therefore, USAID plans to maintain its long-time relationship with active NGOs in an effot of creating best practices in assisting high value-added sectors from its limited budget.

- German GTZ/KfW specializes in two sectors, finance and private sector development, in the field of economic development. Major projects include promotion of overseas trade investment, SMEs development, infrastructure, and vocational training. Since technical cooperation and loans are divided into two separate organizations which is similar to Japan, this presents a challenge for adjustment between the two organizations. However, on the local level at least, both offices are located in the same building and have regular meetings for information sharing, project coordination etc. They conduct regular visits together to the DEA (Department of Economic Affairs), Ministry of Finance, which is the contact window for all donors in India.

GTZ's project/programme related to economic reform/market development

Closed / On-going projects

- Indo-German Export Promotion Project (IGEP)
- National Vocational Training System (NVTS) Project
- Society for Electronic Test Engineering (SETE)
- Linking Savings & Credit Self-Help Groups to the Formal Banking System in India (NABARD)
- Indo-German Institute for Advanced Technology (IGIAT)

New projects since 2005

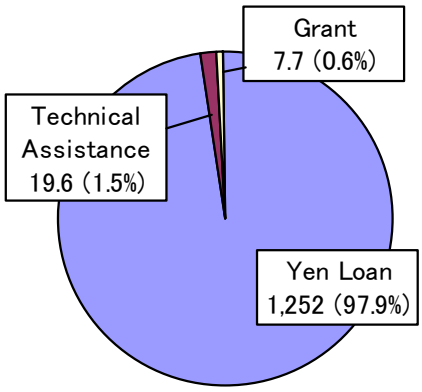
- SME Financing and Development
- Rural Financial System Development Program
- Promotion of Industrial Services and Employment

14.4 Japan ODA activities in India

India is the top nation for Japanese ODA in terms of total amount provided which exceeded China in 2003/04 actual results. Total accumulated since 1958 amounts over US$ 20 billion which is third after China and Indonesia. According to Japan's ODA official data (2004), actually 98% was Yen loan by JBIC, and technical assistance scheme consisted only 1.5%. Furthermore JICA's operation in India was less than 1%. Thus in terms of technical assistance[28], India's ODA ranking drops to the 17th which is about 6% of total amount spent on China.

[28] Include JICA, related ministries, local governments, exchange student programmes, and ODA by public-interest corporations.

Fig. 58 Composition of Japan ODA to India (2004actual; US$ mil.)



Source: JBIC, JICA, OECD/DAC

(1) Japan International Cooperation Agency (JICA)

Given the small scale of JICA activities, projects in the economic development sector is even more limited. Major on-going or prospective projects are as follows; Sericulture development (project-type TA) and other infrastructure-related projects such as National highway operation & maintenance assistance (project-type TA), Railway transport enhancement, Raichak-Kukrahati bridge construction, Water sanitation project in Goa (master plan study) [29].

(2) Japan Bank of International Cooperation (JBIC)

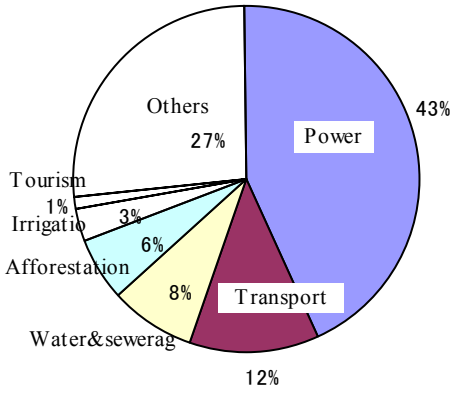
The government of Japan has agreed with Indian government to provide a total of over US$1.3 billion (approx. 155.4 JPY billion) consisting of 10 project loan contracts. This number is an increase of 15.6% over last year which allows India to become the top recipient of Japan's ODA for three consecutive years. Although 5 states (UP, AP, West Bengal, Delhi and Gujarat) comprise more than 50% of the share, over 20 states throughout India have received Yen loans in the past. This is assumed to be the result of the 'request-based' principle which differs from other donor agencies.

Major projects related to private sector development are 'Small scale industries development programme' (I - VI) provided to SIDBI as a 2-step loan which aims to promote job creation in the SME sector, and 'Delhi mass rapid transport system project' known as the Delhi metro and transmission system project in West Bengal. Both are widely recognized as successful cases in India[30]. In terms of distribution among the states, although over half of the total loan amount comprises five states, there is no concentration in a few particular states.

[29] Compared to other developing countries, foreign experts are rarely seen in Indian ministries or public offices. This situation was also pointed out from donor interviews.

[30] Study on competitiveness of Special Economic Zone (SEZ) in India in progress (Jan 2005)

Fig. 59 Composition of JBIC Yen loan (1975-2004 Accumulated)



Source: JBIC

Table 38 Major projects of Japan ODA to India by sector

India Country Assistance Plan		Major ODA Projects	
		JICA	JBIC
1. Promote Economic Growth	(1) Electricity (hard)		• North Karanpura super thermal power plant • Purulia Pumped Storage(Ⅲ) • Rural Electrification
	(2) Transport (hard)		•Delhi Mass Rapid Transport System •Bangalore Metro Rail •Visakhapatnam Port Expansion(E/S)
	(3) Improvement of Value-Added (soft)	•O/M support for express highway **•Freight transport capacity of trunk rail line** **•Raichak-Kukrahati bridge construction**	
2. Improve Poverty / Environment Issues	(1) Poverty issues	•Sericulture industry development •Diarrheal measures •Reproductive Health/Women Empowerment	•Buddhist Tourism Development in Uttar Pradesh •Small-scale irrigation improvement in Rajasthan
	(2) Environment issues	•Gujarat forestry development •River purification **•Augumentation of water supply / sanitation in Goa** •Conservation & wise use of natural resources of Chilk Lagoon **•Hussain Sagar Lake/Catchment Area Improvement Management**	•Ganga Jal project for Agra •Tamil Nadu Forestry Sector Development •Karnataka conservation & sustainable forestry management •Bangalore Water Supply/ Sewerage •Swan River Integrated Watershed Management •Orissa Forestry Sector Development **•Hussain Sagar Lake / Catchment Area Improvement** •Kolkata Solid Waste Management Improvement
3. Enhance Human Resource Development / Interpersonal Exchange	(1) HR development / Interpersonal exchange	•JOCV: Japanese, Judo	
	(2) Investment climate support (soft component)		
	(3) Intellectual Exchange		

*JICA projects (on-going/plan) as of the end of 2005; Master plan study and technical assistance project scheme only.
**Projects in Bold refers to JICA-JBIC cooperation project
Source: India Country Assistance Plan (2006.5), JICA, JBIC

In response to the request to JICA from India to join the rolling plan discussion for JBIC Yen loan from its initial phase, the 1st joint meeting was held with the participation of all related organizations at the end of 2005. Although JICA-JBIC cooperation is already in progress in a few ongoing projects, JICA is expected to take an even more positive role in leading all Japan ODA activities in India. The

establishment of the ODA taskforce in 2003 which consists of JBIC, JICA, AOTS and JETRO is one attempt to strengthen close coordination among the members.

Chapter 15 Experience of Private Sector Development in Other LDCs

15.1 Experience of East Asian Economic Growth

(1) Export-led growth pattern in East Asia

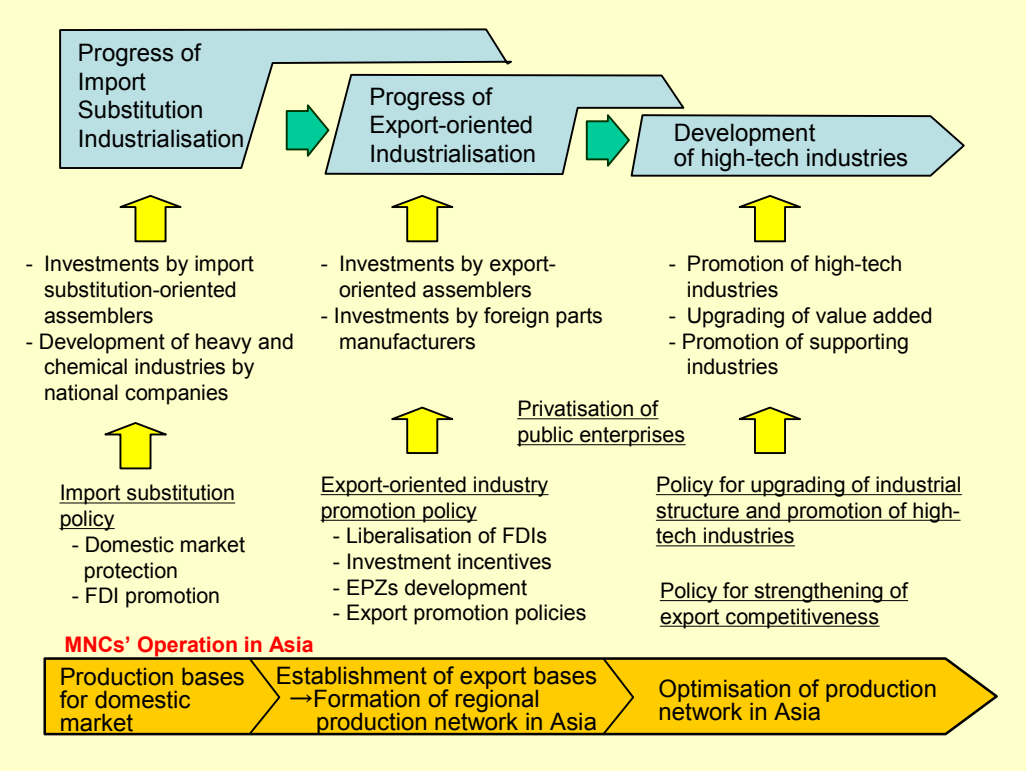
East Asian countries took an export-oriented industrialization policy of introducing foreign capitals to strengthen export businesses as a driving force of their economic development. In doing so, deregulation was promoted to lift up their export competitiveness. The deregulation included lowering import tariff, giving favorable treatments to foreign capital to promote export businesses and expansion of export processing zones. In this stage, infrastructure was also improved using borrowings from foreign countries under ODA. Through these measures, East Asian countries paved a way for advancement of foreign capitals into the countries aiming at curtailing costs.

Various export-oriented foreign businesses proactively invested in East Asia seeking low production costs benefited to lift up the economic growth of the recipient countries. This caused East Asia to have a flying-goose pattern economic growth. In the 1970s, NIEs in Asia entered in the era of high economic growth, followed by the leading ASEAN countries in the 1980s, and then the era arrived at China in the 1990s.

However, such a rapid economic growth caused an increase of production costs for the companies due to the increase of labour costs in the area. Multinational companies, therefore, had to seek other places of low production cost and shifted their target of investment from NIEs in Asia to ASEAN and China in a consecutive manner. Their products and production processes (mainly labor intensive processes) lost competitiveness due to the economic growth of the country and were gradually shifted to other countries of low production cost. In this process, the export-oriented multinational companies underwent business restructuring of leaving competitive products and production processes in the country to further enhance their added values.

Due to the reasons above, many multinational companies conducted a network-type division of labor by scattering their production processes, assembly processes and parts procurement functions to more than one country in East Asia.

Fig. 60 Process of Industrialisation in the East Asian Countries



Source: Prepared by the Study Team based on Kazuo Mishima, "Problems of Industrial Structure Upgrading in the East Asia," *Japan Research Review*, December 1998.

As for the factors contributing to such a rapid economic growth of East Asia, the World Bank points out in its report 'The Miracle of East Asia' issued in 1993 that (1) East Asian countries took conservative macroeconomic policies of keeping the inflation rate at low level and competitive foreign exchange rate, (2) they proactively invested in education to nourish competent people, (3) they kept actual interest rates at a positive level and protected savings at financial institutions by which a high saving ratio was maintained, (4) price distortion was successfully controlled, (5) absorption of foreign technologies was encouraged and (6) no policies that could cause adverse bias to the country's agriculture were taken[31].

(2) Contributions of Japan's ODA to the Economic Development of East Asia

The Industrial Structure Council said in its interim report "Promotion of a 'Japan ODA Model' based on Previous Successful Implementations of Economic Cooperation" released in July 2005 that Japan's ODA focused on such areas as improvement of hardware/software infrastructure and education and training of personnel resources in East Asia and that this opened a way of private investment to the area which facilitated revitalization of the private sector there. It also stated that due to this, East Asia realized a great economic growth of approximately 8% in or after the 1980s and Japan's tie with the area was further strengthened in this process. This demonstrates that Japan's ODA created a chain of (i)

[31] Release of interim report by Subcommittee on Economic Cooperation (Trade and Economic Cooperation Committee, Industrial Structure Council): "Promotion of a 'Japan ODA Model' based on Previous Successful Implementations of Economic Cooperation" (July 2005)

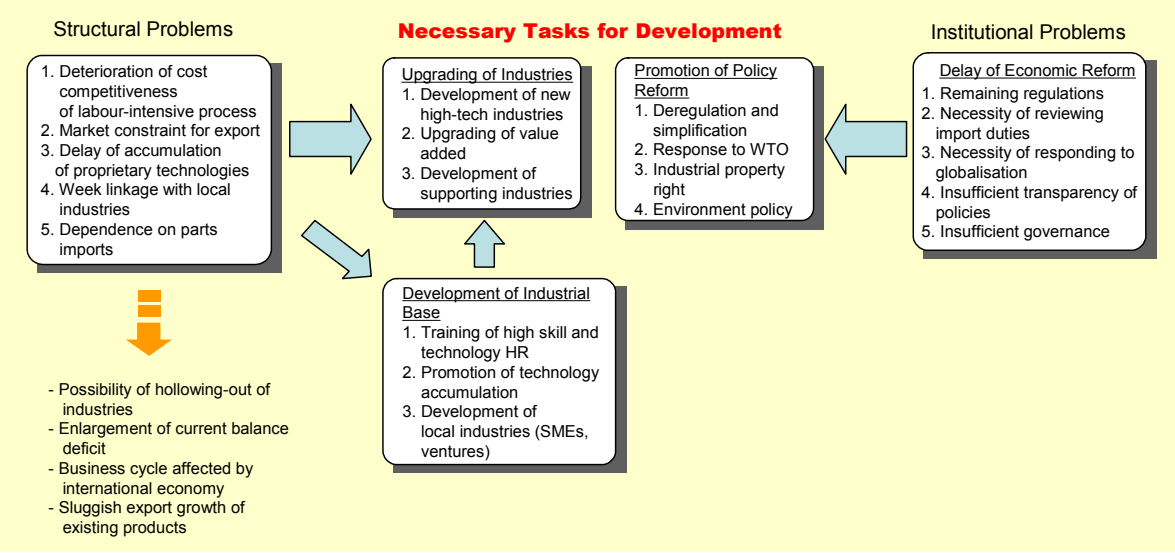
infrastructure development and education and training of competent personnel resources to support it in East Asia through yen loans, (ii) increase of private direct investment to the area due to this, and (iii) enhanced economic status and living conditions of people living there. The interim report defines 'Japan ODA Model' as a process in which Japan extends financial and technical assistance to East Asian countries for economic infrastructure development consisting of hardware/software infrastructure and nourishment of competent personnel resources by which dynamism of sustainable economic growth can be activated through revitalization of production, trade and investment activities of the recipient countries.

(3) Learning from the Experience of East Asia

Due to the spread of production networks of multinational companies all over Asia, excessive concentration of investment to China, delay of software/hardware infrastructure development on the part of developing ASEAN countries and other factors, the simple flying-goose pattern economic growth is disappearing.

It cannot be negated that such style of export-oriented economic development has taken a positive role in driving economic development in East Asia. There is a negative side as well. In fact, there are many issues to be resolved in the advanced ASEAN countries and China which experienced rapid economic growth. Formation of economic enclaves in the area by the export sector has limited economic growth of the country in which each company operates businesses. Due to the limited spill-over effect of investment by multinational companies, there appears to be a delay in accumulation of R&D in each East Asian country. Regional gaps and poverty issues remain unattended there. Also, seen in the region are the environmental issues as negative sides of economic growth. In China, a place of continued high economic growth, there is a gap between the economically advanced coastal areas and inland areas. The government of China now addresses the issue of developing its western inland areas (or 'Sannong Wenti': 'increase of income and reduction of loads to farmers,' 'economic growth of agricultural villages' and 'promotion of agriculture') as the priority political issues.

Fig. 61 Limit of Catch-up Model Industrialisation Driven by FDIs and Necessary Tasks



Source: Prepared by the Study Team based on Kazuo Mishima, "Problems of Industrial Structure Upgrading in the East Asia," *Japan Research Review*, December 1998.

The trend of decreasing the weight of economic issues for the government sector is unavoidable, and it is almost certain that each country will make a shift to an economic mechanism in which the private sector leads the country's economy. Revitalization of the private sector through deregulation and strengthening competitiveness is a must to attain economic growth. Under the environment of economic globalization, the private sector in East Asia faces against new types of development needs. This includes strengthening economic cooperation among the region, abiding by international trade rules such as WTO, protection of intellectual properties, global logistics, environmental issues, energy saving and IT. Equally important for the region is to depart itself from the conventional laissez-faire policies on global issues such as energy and environment. After the collapse of the flying-goose pattern economic development and in the process of regional cooperation, each East Asian country should find a unique economic development model best suited for it.

It is a visible trend that the private sector will strengthen its role in leading economic development of each country through investment, consumption and production activities. The approach of ODA assisting economic development of East Asia through improving hardware/software to reinforce its trade and investment environments continues to be effective and important.

What can be said from the arguments above is that there are many aspects in which Japan's experience in East Asia is applicable to India as well. What should be kept in mind in doing so is (i) that international economic environment surrounding Asia has changed and (ii) that ASEAN, China and India have their own economic structure, competitive advantages and historical and social restrictions.

Another point is that the key to revitalizing the private sector depends on whether a business environment in which each private sector can do business smoothly without restrictions can be created or not. Companies are the entities which conduct sales, purchases and investments. In order to promote

trade and investment, it is the responsibility of each government and donor to remove restrictions on trade and investment and to create a business environment in which the private sector can do business smoothly. This is also applicable to the nourishment of local industries and SMEs. Stimulating local companies to attain growth voluntarily and removing any elements that hinders the growth of them are the most important things in nourishing the private sector.

15.2 General Objectives on Trade and Investment Promotion and Examples of Technical Cooperation to Other Countries

(1) General Objectives on Trade and Investment Promotion

As for the issues on promoting trade and investment in developing countries, the Institute for International Cooperation of JICA issued 'Development Objectives Chart for Trade and Investment Promotion 32.' The chart shows 'Development Objectives,' its subordinate objectives of 'Mid-Term Objectives' and 'Sub-Targets of Mid-Term Objectives' and 'Examples of Activities.' Table 39 lists these objectives, excluding 'Examples of Activities.'

Table 39 Development Objectives Chart for Trade and Investment Promotion

Development Objectives	Mid-term Objectives	Sub-targets of Mid-term Objectives
1 Strengthening Responsive Capacity for Promoting Trade and Investment within the International Framework	1-1 Establishing Basic Conditions for Promoting Trade and Investment	1-1-1 Legal System Development for Commercial Transactions 1-1-2 Provision of Economic Infrastructure 1-1-3 Creation of Sound Business Environment for Domestic Industries 1-1-4 Human Resources Development
	1-2 Strengthening Capacity to Respond to International Trade and Investment Rules of the WTO and Others	1-2-1 Enhancing Understanding on the Significance of Trade and Investment Liberalization 1-2-2 Assistance for Accession to the WTO and Other International Regimes 1-2-3 Improving Capacity to Implement the WTO and Other International Rules
2 Capacity Building for Trade Promotion	2-1 Establishing System for Formulating Trade related Policies and Institutions and their Proper Implementation	2-1-1 Formulation and Implementation of Industrial and Trade Policies Based on Medium- to Long-term Perspectives 2-1-2 Establishment of Trade related Laws, Regulations, and Institutions 2-1-3 Simplification and Appropriate Enforcement of Trade-related Procedures
	2-2 Strengthening Information Services to the Private Sector	2-2-1 Information Provision on Overseas Trade-related Procedures and Domestic Procedures and Preferential Measures 2-2-2 Overseas Market Development
	2-3 Fostering Viable Private Sector	2-3-1 Fostering Viable Private Sector
3 Capacity Building for Foreign Direct Investment Promotion	3-1 Developing System for Formulating Investment-related Policies and Institutions and their Appropriate Implementation	3-1-1 Investment Promotion Policy Development 3-1-2 Establishing of Investment related Laws and Institutions 3-1-3 Facilitation for Sourcing Production Materials

[32] 'Approaches for Systematic Planning of Development Projects: Trade and Investment Promotion' by Institute for International Cooperation of JICA (Sept. 2003, pp 13, 32-33)

Development Objectives	Mid-term Objectives	Sub-targets of Mid-term Objectives
	3-2 Strengthening Information Services to the Private Sector	3-2-1 Development of Information and Services on Investment Climate 3-2-2 Promotion of Mutual Exchanges of Investment

Source: JICA "Effective Approaches on the Promotion of Trade and Investment"

(2) Examples of Technical Cooperation to Other Countries

Table 39 shows some of the examples in which JICA extended its technical cooperation to overseas countries other than India. The domain of technical cooperation is selected and extracted from the 'Sub-Target of Mid-Term Objectives' shown in Table 40 from the viewpoint that a need for technical cooperation may exist in India.

Table 40 Examples of JICA Technical Cooperation in Trade and Investment Promotion

Sub-targets of Mid-term Objectives and Examples of Activities	Activity Cases of JICA Technical Cooperation in Other Countries
1-1-2 Provision of Economic Infrastructure - Assistance toward development plans of distribution infrastructure such as airports, ports, and roads	- Many cases all over the world
1-1-3 Creation of Sound Business Environment for Domestic Industries - Training of the fundamental skills (metallurgical skills, casting skills), basic research, R&D	- Projects in the field of metal working in Thailand, Sri Lanka, Pakistan, Indonesia, Philippines, etc.
1-1-4 Human Resources Development - Human resources development for business in private sector (Japan centre, trade training centre, etc.)	- Projects for trade training centre activities in Indonesia and Egypt. Setting up of Japan centre in Vietnam, Laos, Cambodia, Myanmar, Mongolia, Kazakhstan, Kyrgyz and Uzbekistan (incl. preparation stage).
2-1-3 Simplification and Appropriate Enforcement of Trade-related Procedures - Optimization of customs operation - Capacity building in examinations and tests and metrology and standards - Capacity building in quarantines	- Projects for improvement of customs operation in Vietnam and Indonesia. - Projects in the field of metrology, etc. in Chile and Indonesia. - Project in the field of quarantines in Sri Lanka
2-2-1 Information Provision on Overseas Trade-related Procedures and Domestic Procedures and Preferential Measures - Functional empowerment of trade promotion agencies	- Projects in Indonesia and Malaysia
2-2-2 Overseas Market Development - Overseas market information gathering and provision	- Many cases all over the world as part activity of functional empowerment of trade promotion agencies, or as dispatch of experts and senior volunteers.
2-3-1 Fostering Viable Private Sector - Management and technical guidance through the support to public agencies	- Projects in productivity improvement and technical improvement of specific industries in Thailand, Sri Lanka, Indonesia, Philippines, etc.
3-2-1 Investment Promotion Policy Development - Functional empowerment of investment focal-points - Establishment and management of Japan desk	- Dispatch of experts of investment promotion. Many cases all over the world. - Same
3-2-2 Establishing of Investment related Laws and Institutions - Organizing investment seminars, dispatching investment missions	- Many cases all over the world as part activity of investment promotion experts or projects for trade training centre.

Source: Prepared by the Study Team based on JICA materials

Fig. 60 shows a summary of the recent technical cooperation for trade and investment promotion extended to Indonesia.

Fig. 62 Examples of Technical Cooperation for Trade and Investment Promotion in Indonesia

Formulation of and Advising on Industry and Trade Promotion Policies and Plans - The Second Phase of the Follow-up Study on the Development of Supporting Industries in Indonesian Export Promotion (Development Study) - Investment Promotion Policy (Long-term Dispatch of Experts)
Legal System Development - Industrial Property Rights Administration (Long-term Dispatch of Experts) - Deregulation and Competition Policy (Long-term Dispatch of Experts)
Capacity Building for Administrative Procedures - Improvement of Customs System in Indonesia (Development Study) - Improvement of Customs Administration Project (Development Study) - Improvement of Customs Procedures on Special Fields (Intellectual Property Rights) (Short-term Dispatch of Experts) - The Study on Trade Related Systems and Procedures (Development Study) - Improvement of Customs Administration Project (Technical Cooperation Project)
Formulation of and Advising on Investment Policies and Investment Promotion Plans - Investment Policy Improvement (Development Study) - Investment Promotion Policy (Long-term Dispatch of Experts)
Strengthening Competitiveness of the Private Sector - Management of Export Credit Agency (Long-term Dispatch of Experts) - Establishment and Capacity Building of Regional Export Training and Promotion Centers (Technical Cooperation Project) - Human Resource Development in Trade Sectors (Technical Cooperation Project) - Support for Small and Medium Scale Industries in Agribusiness (Country-focused Training) - Project on Supporting Industries Development for Casting Technology in Indonesia (Technical Cooperation Project)
Establishing Basic Conditions for Promoting Trade and Investment - Higher Education Administration (Technical Cooperation Project)

Source: Prepared by the Study Team based on JICA materials

15.3 General Objectives for Development of SMEs and Examples of Technical Cooperation to Other Countries

(1) General Development Objectives

As to the objectives for SME promotion, Institute for International Cooperation of JICA issued the 'Development Objectives Chart on Promotion of Small and Medium Enterprises[33].' This chart is similar to the one shown in 'Development Objectives Chart for Trade and Investment Promotion.' Table 41 shows 'Development Objectives,' its subordinate objectives of 'Mid-Term Objectives' and 'Sub-Targets of Mid-Term Objectives' shown in the chart.

33 'Approaches for Systematic Planning of Development Projects (Basic Education / Anti-HIV/AIDS Measures / Promotion of Small and Medium Enterprises / Rural Development)' by Institute for International Cooperation of JICA (May 2002, p121)

Table 41 Development Objectives Chart for the Promotion of Small and Medium Enterprises (SMEs)

Development Objective	Mid-term Objective	Sub-targets of Mid-term Objective
1. Development and Operation of a Conducive Business Environment for the Growth of Small and Medium Enterprises	1-1 Elimination of System Constraints and Regulations	1-1-1 Development of Economic and Business-related Legal System 1-1-2 Improvement of the Business Environment for SMEs
	1-2 Planning and Implementation of SME Promotion Policies	1-2-1 Enactment of Basic Laws 1-2-2 Capacity Building of the Government Administration and Human Resources 1-2-3 Development of Provincial Networks
	1-3 Facilitation of Fund Supply and Enhancement of Equity Capital	1-3-1 Development of Corporate Accounting 1-3-2 Development of Fund Supply Systems 1-3-3 Development of a Capital Procurement System 1-3-4 Revision of related Taxation System
	1-4 Development of Intellectual Infrastructure for Industrial Activities	1-4-1 Development of a Standard System 1-4-2 Development of Systems Protecting Intellectual Property Rights 1-4-3 Development of Statistics on Corporations in Various Industries
	1-5 Improvement of Trade and Investment Systems	1-5-1 Deregulation of Trade Investment 1-5-2 Cultivation of Foreign Markets 1-5-3 Promotion of Foreign Markets
2. Development of Small and Medium Enterprises which Increase Industrial Competitiveness	2-1 Strengthening of SME Management Capacity	2-1-1 Strengthening of Management Resources 2-1-2 Revitalization of Exchange, Cooperation, Organization and Accumulation
	2-2 Promotion of Business Innovation and Business Start-ups	2-2-1 Promote Creative Business Activities 2-2-2 Business Innovation and Start-up Promotion
	2-3 Development of Supporting Industries	2-3-1 Planning of Strategic Promotion 2-3-2 Strengthening of Management Resources 2-3-3 Promotion of Linkages Between Enterprises
	2-4 Development of Specific Sub-sectors	2-4-1 Plan for Strategic Development 2-4-2 Strengthening of Management Resources 2-4-3 Promotion of Linkages Between Enterprises 2-4-4 Export Promotion
	2-5 Promotion of Wholesale Business and Retail Sales	2-5-1 Promotion of SME Wholesale Business 2-5-2 Promotion of SME Retail Sales
3. Development of Small and Medium Enterprises Contributing to Revitalizing Local Communities and Creating Employment	3-1 Development of Local Manufacturing Industries (including processing of agricultural products)	3-1-1 Planning of Promotion Strategy 3-1-2 Strengthening of Management Resources 3-1-3 Revitalization of Exchange, Cooperation, Organization and Accumulation 3-1-4 Infrastructure Building 3-1-5 Assistance for Market Securing
	3-2 Promotion of Micro and Domestic Industries	3-2-1 Planning of Promotion Strategy 3-2-2 Product Development 3-2-3 Promotion of Skilled Workers 3-2-4 Securing Routes 3-2-5 Preservation of Traditional Handicrafts 3-2-6 Supply of Funds

Source: JICA "Effective Approaches on the Promotion of Small and Medium Enterprises (SMEs)"

(2) Examples of Technical Cooperation in the area of SME Promotion by JICA

Table 42 shows some of the examples in which JICA extended its technical cooperation to overseas countries by a type of SME promotion.

Table 42 JICA's Major Projects on the Promotion of Small and Medium Enterprises (SMEs)

	Project Country and Name	Type of Scheme	Mid-term Objectives
1. Planning of Policies for SME Promotion and Related Legal Systems	Thailand, Indonesia, Malaysia, The Philippines: The Capacity Building Program on the Implementation of the WTO Agreements	Study	1-5 Improvement of Trade and Investment Systems
	Vietnam : Study on the Development of Industrial Standardization, Metrology, Testing and Quality Management	Study	1-4 Development of Intellectual Infrastructure for Industrial Activities
	Vietnam: Study on the Promotion of the Small and Medium Scale Industrial Enterprises	Study	1-2 Planning and Implementation of SME Promotion Policies 1-3 Facilitation of Fund Supply and Enhancement of Equity Capital 2-2 Promotion of Business Innovation and Business Start-ups 2-3 Development of Supporting Industries 2-4 Development of Specific Sub-sectors
	Laos: The study on Special Economic Zone Development Plan in Border Area (Savannakhet Province)	Study	1-5 Improvement of Trade and Investment Systems
	Mexico: Engineering and Industrial Development Center for Small and Medium Scale Industries at Queretaro State	Project	1-4 Development of Intellectual Infrastructure for Industrial Activities 2-1 Strengthening of SME Management Capacity 2-3 Development of Supporting Industries 2-4 Development of Specific Sub-sectors
	Venezuela: Study on Promotion of Small and Medium Enterprises	Study	1-2 Planning and Implementation of SME Promotion Policies 1-3 Facilitation of Fund Supply and Enhancement of Equity Capital 2-2 Promotion of Business Innovation and Business Start-ups 2-3 Development of Supporting Industries 2-4 Development of Specific Sub-sectors
	South Africa: Policies for Promotion of SMEs	Country	1-2 Planning and Implementation of SME Promotion Policies
	Hungary Small and Medium-sized Enterprise Development Through Management Consulting and Training	Expert	2-2 Promotion of Business Innovation and Business Start-ups 2-3 Development of Supporting Industries 2-4 Development of Specific Sub-sectors 3-1 Development of Local Manufacturing Industries
	Multiple Countries Antimonopoly Act and Competition Policy	Group	1-1 Elimination of System Constraints and Regulations
	Multiple Countries: Small and Medium-sized Enterprise Development Policy Seminar	Group	1-1 Elimination of System Constraints and Regulations 1-2 Planning and Implementation of SME Promotion Policies
2. Promotion - Planning for Small and Medium Enterprises 2-1 Promotion Plan for Supporting Industries	Indonesia: Human Resource Development in Trade Sectors	Project	1-5 Improvement of Trade and Investment Systems 2-1 Strengthening of SME Management Capacity 2-4 Development of Specific Sub-sectors 3-1 Development of Local Manufacturing Industries
	Indonesia: The Study on the Development of Supporting Industry	Study	2-3 Development of Supporting Industries 2-4 Development of Specific Sub-sectors
	Indonesia: Follow-up Study Phase 1of the above	Study	1-3 Facilitation of Fund Supply and Enhancement of Equity Capital 2-3 Development of Supporting Industries 2-4 Development of Specific Sub-sectors
	Indonesia: Follow-up Study Phase 2 (Export Promotion) of the above	Study	1-5 Improvement of Trade and Investment Systems 2-3 Development of Supporting Industries

	Project Country and Name	Type of Scheme	Mid-term Objectives
			2-4 Development of Specific Sub-sectors
	Indonesia: Promotion of SMEs	Expert	1-2 Planning and Implementation of SME Promotion Policies 1-3 Facilitation of Fund Supply and Enhancement of Equity Capital
	Thailand: Study on the Industrial Development, Supporting Industry	Study	2-3 Development of Supporting Industries 2-4 Development of Specific Sub-sectors
	Thailand: Follow-up Survey of the above	Study	2-3 Development of Supporting Industries 2-4 Development of Specific Sub-sectors
	Thailand: Development of Industrial Statistics	Study/ Expert	1-4 Development of Intellectual Infrastructure for Industrial Activities
	Thailand: Policies and Finances of SMEs	Expert	1-2 Planning and Implementation of SME Promotion Policies 1-3 Facilitation of Fund Supply and Enhancement of Equity Capital 2-3 Development of Supporting Industries
	Thailand: Investment Promotion	Expert	1-5 Improvement of Trade and Investment Systems
	Thailand: Elaboration of an Evaluation System for SMEs	Expert	1-2 Planning and Implementation of SME Promotion Policies 2-1 Strengthening of SME Management Capacity 2-3 Development of Supporting Industries 2-4 Development of Specific Sub-sectors 3-1 Development of Local Manufacturing Industries
	Thailand: Tool and Mold Technology Development Project	Project	2-1 Strengthening of SME Management Capacity 2-3 Development of Supporting Industries 2-4 Development of Specific Sub-sectors
	Thailand: The Study on the Master Plan for Industries Development in the Provincial Clusters of Nakhon Ratchasima, Surin, and Chaiyapum	Study	1-2 Planning and Implementation of SME Promotion Policies 3-1 Development of Local Manufacturing Industries 3-2 Promotion of Micro and Domestic Industries
	Mexico: Study on Master Plan for the Promotion of the Supporting Industries	Study	2-3 Development of Supporting Industries
	Zimbabwe: The Master Plan Study on the Promotion of Small and Medium Scale Enterprises	Study	1-2 Planning and Implementation of SME Promotion Policies 2-4 Development of Specific Sub-sectors
	Hungary: Promotion Plan for SMEs	Study	1-2 Planning and Implementation of SME Promotion Policies 2-1 Strengthening of SME Management Capacity 2-2 Promotion of Business Innovation and Business Start-ups 2-3 Development of Supporting Industries
2. Promotion - Planning for Small and Medium Enterprises 2-2 Promotion Plan for Local Industries	Indonesia: Project on Supporting Industries Development for Casting Technology	Project	2-1 Strengthening of SME Management Capacity 2-3 Development of Supporting Industries 2-4 Development of Specific Sub-sectors
	Indonesia: The Study on Promotion SME Clusters	Study	1-2 Planning and Implementation of SME Promotion Policies 2-1 Strengthening of SME Management Capacity 2-2 Promotion of Business Innovation and Business Start-ups 2-3 Development of Supporting Industries 2-4 Development of Specific Sub-sectors 3-1 Development of Local Manufacturing Industries 3-2 Promotion of Micro and Domestic Industries
	Malaysia: The Study on Strengthening Supporting Industries through Technology Transfer	Study	2-3 Development of Supporting Industries
	Thailand: Thailand Automobile Institute (TAI)	Expert	1-4 Development of Intellectual Infrastructure for Industrial Activities 2-1 Strengthening of SME Management Capacity 2-3 Development of Supporting Industries 2-4 Development of Specific Sub-sectors
	China: Study on small medium Enterprise Development in Model Cities (Shenyang ad Hangzhou)	Study	1-2 Planning and Implementation of SME Promotion Policies 1-3 Facilitation of Fund Supply and Enhancement of Equity Capital 2-1 Strengthening of SME Management Capacity

	Project Country and Name	Type of Scheme	Mid-term Objectives
			2-2 Promotion of Business Innovation and Business Start-ups 2-4 Development of Specific Sub-sectors
	Multiple Countries: Enterprise Networking Regional Development	Group	2-1 Strengthening of SME Management Capacity 2-2 Promotion of Business Innovation and Business Start-ups 3-1 Development of Local Manufacturing Industries
2. Promotion - Planning for Small and Medium Enterprises 2-3 Individual Plan Measures	Indonesia: Study on Master Plan on Design Promotion	Study/ Expert	2-4 Development of Specific Sub-sectors 3-1 Development of Local Manufacturing Industries 3-2 Promotion of Micro and Domestic Industries
	Vietnam: Artisan Craft Development Plan for Rural Industrialization	Study	3-1 Development of Local Manufacturing Industries 3-2 Promotion of Micro and Domestic Industries
	Mexico: Study on Training and Certification System of Consultants for SMEs	Study	1-2 Planning and Implementation of SME Promotion Policies 2-1 Strengthening of SME Management Capacity 2-3 Development of Supporting Industries 2-4 Development of Specific Sub-sectors 3-1 Development of Local Manufacturing Industries
	South Africa: Study on the Development of SMEs in Kwazulu-Natal State	Study	2-3 Development of Supporting Industries
3. Supporting Activities for Promotion of SMEs	ASEAN: Countries Seminar on Administration for Rural/ Regional Development	Group	1-2 Planning and Implementation of SME Promotion Policies 3-2 Promotion of Micro and Domestic Industries
	Indonesia: Support for Small and Medium Scale Industries in Agribusiness	Country	1-2 Planning and Implementation of SME Promotion Policies 3-1 Development of Local Manufacturing Industries 3-2 Promotion of Micro and Domestic Industries
	The Philippines: Modernization of Industrial Property Administration	Project	1-4 Development of Intellectual Infrastructure for Industrial Activities
	Vietnam: Legal and Judicial Cooperation	Team	1-1 Elimination of System Constraints and Regulations
	Brazil: Quality Improvement of Foundry Technology in Small and Medium Scale Industry	Project	2-1 Strengthening of SME Management Capacity 2-3 Development of Supporting Industries
	Jordan: The Project for a Specialized Training Institute in Hashemite, Kingdom of Jordan	Project	2-1 Strengthening of SME Management Capacity
	Multiple Countries: Stock Exchange Seminar	Group	1-3 Facilitation of Fund Supply and Enhancement of Equity Capital 2-2 Promotion of Business Innovation and Business Start-ups
	Multiple Countries: Seminar on Women's Entrepreneurship Development-Training for Program Managers	Group	2-2 Promotion of Business Innovation and Business Start-ups
	Multiple Countries: Advocating a Law-Oriented Infrastructure to Promote Foreign Direct Investment	Group	1-5 Improvement of Trade and Investment Systems

Note: Project: Project-type Technical Cooperation, Expert: Dispatch of Experts, Team: Dispatch of Team of Experts, Study: Development Study, Group□Group Training, Country: Country-focused Training

Source: JICA "Effective Approaches on the Promotion of Small and Medium Enterprises (SMEs)"

Table 43 shows a summary of cooperation activities conducted in Thailand for promotion of SMEs by referring to "Issues of Sustainable Development the East Asia - the SME Support Policies in Thailand and Malaysia," by Harue Shimato and Yuki Taketani. As it typically demonstrates, effective cooperation was formed by the combination of dispatching experts, technical cooperation projects (formerly project-type technical cooperation), development studies and yen loans.

Table 43 Combination of Japan's Cooperation Schemes on the Promotion of SMEs in Thailand

Area	Dispatch of Expert	Training	Technical Cooperation Project (formerly Project-type technical cooperation)/ Development Study	Financial Cooperation (Yen Loan)
Support to Formulation of Policy Framework	■Dispatch of JICA experts (Proposed a formulation of SME development master plan)	■Training on SME policy (JIC, AOTS, JETRO) ■Holding of SME policy seminar (Used JIC training scheme, Feb. 1999)	■A study on industrial sector development (JICA development study) ■The study on industrial sector development supporting industries (JICA development study) ■The follow-up study on supporting industries development (JICA development study) ■The study on the master plan for the industrial development in the provincial cluster of Nakhon Ratchasima (JICA development study) ■A study on the development of industrial statistics (JICA development study)	
Support to Finance Area	■Dispatch of experts to the Small Industry Finance Corporation (SIFC) Improvement of loan screening capability and guidance for institutional building (JICA experts) ■Dispatch of experts to the Ministry of Industry Guidance on loan screening capability and use of consultants (JICA experts) ■Dispatch of experts for guidance of financial accounting (JODC experts) ■Recommendation on a credit guarantee scheme (JETRO experts) ■Dispatch of experts to financial institutions (JODC experts to Bank Thai)			■Loans for Small and Medium Enterprises Loans to the Industrial Finance Corporation of Thailand (IFCT) Signed L/A in Sep. 1987 for ¥1.5 billion Signed L/A in Feb. 1990 for ¥1.0 billion Signed L/A in Sep. for ¥12.0 billion ■Loans to Small Scale Enterprises Loan to the Small Industry Finance Corporation (SIFC) Signed L/A in Sep. 1997 for ¥3.5 billion

Area	Dispatch of Expert	Training	Technical Cooperation Project (formerly Project-type technical cooperation)/ Development Study	Financial Cooperation (Yen Loan)
Support to Management and Technology Areas and Human Resource Development Area	■Training of Consultants for Small and Medium Enterprises (JICA experts, JODC experts) ■Establishment of Consultant System for Small and Medium Enterprises (JICA experts) ■Support to Local Small and Medium Enterprises (Dispatch of senior volunteers to the Department. of Industrial Promotion (DIP) ■Support to the Chamber of Commerce (JODC experts to the Thai Chamber of Commerce)	■Training in Japan by AOTS (mainly concerning the automotive industry) ■Training in Thailand by AOTS	■Foundation of Thailand Productivity Institute (FTPI) Instructor training and promotion of productivity activities (Project-type technical cooperation with dispatch of JODC experts) ■Project for the supporting industry development ・Support by JETRO、JODC、and AOTS to the Supporting Industry Development Center. - Advancement on fine metal mold production (Project-type technical cooperation) ■Support to Industry-wise Institutes (food, textile, automobile, electric and electronic equipment) (Dispatch of JICA experts) ■Support by the Institute for Small Business Management and Technology (Japan) Provision of equipment to the Technology Promotion Institute (TPI) ■IP Information Center(IPIC) (Project-type technical cooperation) ■National Institute of Metrology (NIMT) (Project-type technical cooperation)	■Human Resource Development Center for Industries (HRDCI) Pledged to support the establishment of training center for engineers and skilled workers by financing equipment and training curriculum development in Yen loans in FY1998. ■National Institute of Metrology (NMIT) Pledged to finance facilities of NMIT in Yen loans in FY1999.

Source: Prepared by the Study Team based on Harue Shimato & Yuki Taketani, "Issues of Sustainable Development the East Asia - the SME Support Policies in Thailand and Malaysia," *Kaihatsu Kinyu Kenkyusho Shoho*, January 2001.

15.4 Examples of Cooperation in ASEAN by the Private Sector

In April 2006, the Ministry of Economy, Trade and Industry published Japan's basic policy for overseas economic, industrial and technical cooperation for 2006. In the policy, five priority areas for Japan's economic and industrial cooperation are listed: (1) protection of intellectual properties, (2) improvement and common use of industrial standards and their certification system, (3) efficient logistics (incl. simplification of trade procedures), (4) environment and energy saving and (5) education and training of competent personnel resources.

In the same policy, some successful examples of industrial and technical cooperation are described including (1) SME management consultancy project, (2) automobile industry cooperation, (3) industrial environment management system and (4) cooperation among industries and academies. In the following, these projects are explained based on the documents published by the Ministry of Economy, Trade and Industry[34].

[34] Japan's basic policy for overseas economic, industrial and technical cooperation for 2006 by Economic Cooperation Bureau, Ministry of Economy, Trade and Industry (April 2006)

(1) Application of SME Management Consultancy Project to ASEAN

The SME Management Consultancy Project was first started in Thailand from 2000 to 2004.

a. SME Management Consultancy Project in Thailand

The project outline is shown below.

i) Establishment of SME Management Consultancy System

Support for establishing a legal base of SME management consultancy based on the SME promotion law

Establishment of SME management consultant system (including setting up a system for education and training of SME management consultants and consulting guidelines)

ii) Education and Training of Personnel Resources

Education and training of SME management consultants and assistant consultants: Approximately 400 in 4 years

Operation of a SME management consultant course by Technology Promotion Association (Thailand-Japan)

iii) Practical SME management consulting

Thai consultants and assistant consultants provide consultancy to manufacturing companies under the instruction of Japanese experts.

Approx. 1,000 SMEs in 4 years

After the project, successful cases of Japan's SME promotion cooperation activities have been established in Thailand. The SME management consultancy has been widely recognized in Thailand such that the Japanese words of 'Shindan' and 'Shindanshi' are widely understood in the society of Thailand.

The followings are pointed out as the future challenges of developing an SME management consultant business in Thailand.

i) How to establish a SME management consultant registration system in order to make the SME management consultation a public system

ii) How to expand and apply the SME management consultant business

- Expansion and application of the system from individual consultancy to group/regional/production site consultancies
- Expansion and application of the system from manufacturing to commerce, service, energy saving and IT

JETRO dispatched their specialists to Thailand from 2004 to 2005 to extend the next stage of cooperation there.

- Support to form a training curriculum for mass consultancy, local consultancy and production area consultancy

b. SME Management Consultancy Project in Indonesia

- 'Policy Recommendation for SME Promotion in the Republic of Indonesia' was conducted from 2003 to 2004 under the JICA Development Study project and introduction of SME management consultancy system was recommended.

- JICA experts took a central role in raising awareness of the importance of the SME management consultancy system to the relevant people in Indonesia.

- Establishment of a personnel resources education and training committee was instructed under the name of the Directorate General of Small- and Medium-Scale Industries and Trades, the Ministry of Industry and Trade, in which introduction of SME management consultancy system was mentioned.

- The introduction of the system was started in FY2005 with the cooperation of JICA's project-based technical assistance.

c. SME Management Consultancy Project in the Philippines

- 'Policy Recommendation for SME Promotion in the Republic of Philippines' was conducted in 2003 under the JICA Development Study project and an assistance to educate and train personnel resources using the method of SME management consultancy was recommended for the country's SME regional centers.

- Training seminars were held to the counterparts of the Bureau of Small and Medium Enterprise Development, the Department of Trade and Industry.

- Local staff of JICA visited Thailand to understand the status of their SME management consultancy project.

- In July 2004, the Government of the Philippines announced its 'SME Development Plan 2004-2010.'

- A JICA mission was dispatched to the Philippines for 'establishment of an SME management consultancy system' and a full-scale cooperation to establish it started.

(2) Assistance to Auto Industries

a. Automobile Supporting Industry Promotion Program

The program was implemented to 4 ASEAN countries.

i) Phase 1: October 2000 to September 2003

- JODC experts were dispatched to auto parts manufacturers individually for about 6 months to offer instructions.

  (Recipient countries): 110 companies in Thailand, 33 companies in Indonesia, 48 companies in Malaysia and 59 companies in the Philippines

ii) Phase 2: October 2003 to September 2005 (by JETRO and JODC)

- Experts were sent to the recipient countries from JETRO and JODC to provide OJT training to local people and offer instructions to each country there.

iii) Phase 3: October 2005 – present (JODC)

- JODC experts were sent to the country.

b. Thailand and the Philippines

- In order to reinforce the competitiveness of the overall auto industry, an industrial qualification system was established and education and trainings were implemented as well as qualification tests by JETRO and AOTS. (November 2003 – February 2005)

  Job categories: Molding, pressing, mechanical processing and resin forming

  Qualification level: Level 3 (equivalent to Grade 1 of the qualification test in Japan)

  In Thailand, the scope was expanded to Level 2 (Grade 2) and Level 1 (Grade 3)

In May, the Working Group on Automobile Industry adopted the 'AMEICC Automotive Initiative' at the 7th AEM-METI Economic and Industrial Cooperation Committee and the way the country's automobile industry should be in the future was confirmed. Japan announced its support for the formation of a detailed action plan and realization of the target set out in the Initiative. Based on the announcement, the following supports will be implemented.

c. Education and Training of Competent Personnel Resources

i) Automobile Supporting Industry Promotion Program

After the establishment of an automobile industry personnel training project in Thailand and Malaysia, the program will phase into a bilateral cooperation framework.

ii) Support to Establish an Automobile Industry Qualification System

Modeled by the case in Thailand, support will be extended to the country to establish an automobile industry qualification system (improvement of the system, education and training to examiners and qualification tests)

d. Standards and Certifications

Support will be extended to establish a fuel monitoring system so that each country supporting unification of automobile fuel quality can satisfy EURO 2 by 2005 and EURO 4 by 2010.

(EURO2: Lead-free and sulfur content of 500 p.p.m. or below; EURO 4: Lead-free and sulfur content of 50 p.p.m. or below)

(3) Application of Environmental Management System to ASEAN

A pollution controller system establishment project was implemented in Thailand from 2000 to 2005.

a. Pollution Controller Regime Establishment Project in Thailand

- In May 2004, a pollution controller qualification test (water quality and air quality) was conducted.
- In April 2005, a pollution controller qualification test (wastes) was conducted.
- The 1st pollution controller qualification test (wastes) was conducted in April 2005. Currently, approximately 2,000 controllers in 3 domains hold the license after passing the test.
- In order to facilitate spreading of the system, a pollution controllers seminar and a sustainable development workshop were held in January 2005 and March 2006 respectively to make a presentation on the experience of Thailand in establishing the system.

b. Application to Indonesia

A pollution controller regime is being established in East Java Province as a model case for

spreading it to the entire country. In December 2005, a pre-test was conducted in the domain of water quality.

An official test is planned in 2006. In East Java Province, a national test other than the domain of water quality and application of the test to other provinces are examined now.

c. Application to Indonesia

In Indonesia, Pollution Control Officer (PCO) system is already in place, which is equivalent to Japan's pollution control regime. In the future, Japan will extend further cooperation so that the regime is operated smoothly and that the environment can be well managed in Indonesia.

In 2006, as a course of the support project, the status of the regime will be investigated for instruction of corrective measures if necessary.

d. Application to Vietnam

After the discussion at the Green Aid Plan in May 2005, the Government of Vietnam officially requested Japan to extend supports in introducing a pollution control officer regime to the country.

(4) Application of Industrial-Academic Collaboration Scheme to ASEAN

The scheme was extended to ASEAN with the experience of Thailand as a model.

a. Project in Thailand

- Industrial-Academic Collaboration Scheme Construction Support Project (by JETRO, February 4-7, 2004)

  Prof. Akio Nishizawa of Tohoku University and Kohei Ishimaru, Secretary General of the Japan Association of University Intellectual Property and Technology Management were sent to Technology Promotion Association (Thailand-Japan) to provide guidance and consultation on Japan's experience of technical transfer from universities.

- Thailand Technical Transfer (TLO) Training (AOTS Training Program in Japan: March 22 to 24, 2004)

  15 trainees were trained in Japan from administrative entities, research institutes, universities and private companies in Thailand. The training consisted of the structure of industrial-academic collaborations, especially of the current status of TLO in Japan.

b. Application to Other ASEAN Countries

- ASEAN Technical Transfer (TLO) Training (AOTS Training Program in Japan: September 28 to October 1, 2004)

  After the success of the training program to Thai people, 24 trainees were accepted from 5 ASEAN countries to go to Japan for training.

- Co-organized: Innovation Japan 2004

  Participation to Asia Pacific Technology Transfer Seminar on September 30, 2004

- ASEAN Technical Transfer (TLO) Training (AOTS Third Country Type Overseas Training Program: September 28 to October 1, 2005)

  In Singapore, 25 trainees from 5 ASEAN countries were provided with lectures on industrial-academic collaboration policy in Japan, and participated in designing an action plan

for promoting industrial-academic collaboration through technology transfer. In addition, the trainees from administrative entities, research institutes, universities and private companies took part in the Technology Commercialization Forum (AUTM) 2005 in Singapore.

Chapter 16 Recommendation on Technical Cooperation for India's Private Sector Development

16.1 Key considerations

Total external assistance of India is less than 1% of GDP since its economic size is already 4th in the world. Facing this reality of limited impact on India at the macro level, a consultative group meeting and India development forum (IDF) have been held since 1993 as a discussion / coordination table for international donors. However the due to its limited number of Indian member organizations, this attempt is not so active at the moment.

From the India side, only yen loans with a long-term, low interest rate represented Japanese ODA. As a substitute for IDA funds, the Indian government has utilized yen loans in large-scale infrastructure projects formulated by themselves. On the other hand, past performances of technical cooperation are limited in terms of both number and size. This is probably due to India's strong ownership which led to low demand for JICA's master plan type development projects and project formulation survey. Thus JICA was not well known by the Indian government.

As a result of our survey by reviewing India's priority sector / field of development, we have found much room for JICA assistance by utilizing its long term experience in other developing countries.

(1) Private sector development in terms of Japan's latest country assistance program for India

According to "Country Assistance Program for India" established in May 2006, the important target of India ODA consists of three points; 1) promotion of economic growth, 2) improvement of poverty and environment issues, and 3) enhancement of human resources development and expansion of exchange. In "promotion of economic growth", emphasis is put on the electric power and the transportation sector which is the bottleneck of the economic growth of India. Specifically, support for 1) electric power sector, 2) transportation sector, and 3) increase of the value-added through infrastructure development assistance is emphasized. Following this plan, improving infrastructure in power and transport sector is the priority issue in terms of private sector development.

In fact, when seeing the evaluation of investment climate by investors, it is actually certain that infrastructure development is the biggest subject on private sector development.

As mentioned in the plan," India's ultimate objective is an expansion of direct investment, trade and technology transfers". Thus, one of the roles that should be played by Japan's ODA is "to create a trend in which ODA promotes private sector economic relations". From this perspective, other than infrastructure improvement there are various fields to promote private investment, trade, and technology transfer. Upgrading technology level / standard of India's manufacturing sector is one possible area of

cooperation[35].

(2) Considerations on target sectors and regions

Due to request-based principles of Japanese ODA, distribution of completed and on-going projects are not concentrated in particular regions like other major international donors who used to apply the "priority state approach".

Investments of Japanese companies are concentrated around the national capital of Delhi, Mumbai, Chennai, and Bangalore. If promotion of trade and investment with Japan is decided as one of the criteria of project selection, it is understandable to concentrate resources into these four areas.

However, private sector development in India should also be considered at a national level from the aspect of efficient industry distribution and reducing urban-rural gap. The core issue of private sector development lies on three areas; i) upgrade of industrial structure by promoting trade / investment/ technology transfer, ii) industrial promotion through efficient allocation of resources and income distribution improvement, and iii) balanced industrial development with environment considerations. The target sector and region of Japan's technical cooperation for private sector development should be reviewed and be consistent with the above three issues.

Mumbai and Chennai are considerably developed, industrialized cities of India with high income levels. On the other hand, backward regions such as north-eastern states have been left far behind from the booming economy. In relatively high income states, further promotion of foreign investment, strengthening international competitiveness of the leading high-tech industries, and industrial distribution within the state will be the major issue coping with development. The latter backward regions are facing the need to shift the economy from agriculture to manufacturing sector to improve productivity and income level of the state. It is important to promote industrialization in less developed regions by supporting advanced use of primary products, and absorbing its abundant labour which may lead to reduction of the widening income gap.

Thus, although development of supporting industries is an urgent issue when considering contribution to Japanese companies, inclusion of small-scale companies at much lower development levels at the same time is also needed to solve India's dual structure by expanding employment opportunity and raising income level.

(3) Effective Approach for Technical Cooperation

Including SMEs, there are more than 3 million companies scattered all over India. The need to consider the most efficient approach to maximize spillover effect is significant in implementing technical

[35] In "Eight-fold Initiative for Strengthening Japan-India Global Partnership" (April 2005), both Japan and India government agreed to "strengthen technical cooperation to improve the competitiveness of Indian manufacturing industries".

cooperation projects of local industry development in India.

In India, a considerable number of projects have been implemented not only at a central level, but also at a state level, for example, in the development of industrial sites and related infrastructure, technical training for engineers and skilled labour, subsidiary, tax preference etc. Governmental development bureaus, chambers of commerce and industry, and industrial organizations are also involved in major projects. There is a broad range of needs for India's private sector development, which is reflected in various types of industry, company size and regional distribution.

Sustainability and impact are the most important points to be considered in the project formulation phase for appropriate technical cooperation. Whether to first assign the counterpart organization at the central level, and then expand to other regions or to conduct a pilot project at the local level and then expand the outcome by a bottom-up approach are examples to be considered.

Generally, starting from the central level is preferred to maximize the spillover effect. Public institution exists in almost all industry and sector. In addition to technology support centers under the ministry of small-scale industry, there are many institutions attached to other ministry. However the problem of these central level organizations lies in its weak relation with state level public institutions. In addition since some institutions are not in a favorable financial position, their ability in project implementation such as facility, human resource, operational capability and actual business description should be carefully examined.

There are also various trade associations, as private bodies, at the central level. Some cover all of the industries such as FICCI (Federation of Indian Chambers of Commerce and Industry) and some focus on particular industries such as ACMA (Automotive Component Manufacturers Association). Close cooperation with these trade associations is a key factor for effective implementation of industry-specific technical cooperation project.

On the other hand, local governments will be ideal counterparts by utilising their cross-sectoral network covering a number of organisations. In addition, it will also enable to share common awareness with the target group to local-specific issues which is necessary for effective implementation.

(4) Cooperation with the private sector

Close cooperation with the private sector is critical in implementing effective technical cooperation projects. As mentioned above, there are a number of active trade associations in India.

There activities include training and providing information on technology, marketing, human resource development. In some cases, they can become partners of technical assistance project. In fact, UNIDO and JETRO are providing technical training for auto parts manufacturing companies through ACMA. However, ACMA is considered to be relatively independent as well as active compared to other organizations. When involving other associations, it is necessary to examine whether they can

participate in technical cooperation projects as the same decree as ACMA.

Even when a counterpart on an official basis is to be a public organization, it will be useful to involve trade associations or local joint-enterprise cooperatives at the time of implementation, for example, as an implementing agency. Types of cooperation with trade associations and cooperatives can be training and information sharing, institutionalisation of project participating companies, lecturers from private companies, internship programmes at companies, etc.

(5) Consideration on the role of government

In India, the technical services and corporate support services are rendered by private companies in many ways. When considering technical cooperation for private sector development, it is necessary to examine what kinds of services are provided by the private companies to support the private sector development. To avoid disturbing private businesses is important, and moreover, the perspective of "use private-sector resources wherever possible" is also important.

Currently Japan is going through a major public sector reform by introducing market testing based on market mechanism. It is important to confirm and agree with the Indian government what areas should be or should not be provided as a public service.

In urban areas, there are many private companies which provide inspection, testing, technology / company support service with world's top class testing equipments. On the other hand, SISI, a central governmental agency, and other public inspection/technology support centers were built during the 1950s through the 1970s with insufficient upgrading of equipments and technology. However, the existence as well as service level of private sector differs by state, and region. Thus, the role of government in providing public goods is especially required in backward regions.

(6) Use of India's IT technologies

India has established a firm position as one of the advanced countries in IT, and India has a certain share in the world IT service exports. India provides cooperation in IT area to other countries. As part of technical cooperation, the Center of the International Cooperation for Computerization (CICC) of Japan provided IT engineer training programmes to the Computer Society (CSI) of India. However, CICC terminated this programme because of the developed status of India's IT industry. In the future, it is useful to promote Japan and India`s cooperation and to promote both countries' IT industries based on the high level of India's IT technologies. Important issues will be policy dialogue, cooperation on platform formation, promotion of private-level exchanges, etc. In addition, there is a possibility that Japan can seek India's cooperation when Japan provides technical cooperation in the IT area to developing countries.

The size of India's IT service exports to Japan is significantly small compared with exports to the U.S. and Europe. The number of Japanese IT companies operating in India is small. One reason for this is a

lack of Japanese fluency of most Indian IT engineers. Cooperation in Japanese language education will contribute to promotion of business relations in IT area between the two countries.

(7) Cooperative structure with other Japanese donor agencies

It is also important to develop mutually complementary relationships among JICA, JBIC, JETRO, JODC, and AOTS to raise effectiveness of assistance for private sector development[36]. According to the case of Thailand's automobile industry, infrastructure building by JBIC loan, human resource development by JICA, dispatch of experts by JODC, employee training by AOTS, and trade fairs supported by JETRO all combined together, although not necessarily implemented at the same time, led to the overall growth of the industry.

(8) Consideration on India's ownership

The final point to be considered is India's strong sense of ownership and high requirement for experts' technical level. Thus, not a one way decision in project formulation, but advance coordination with local needs is required.

The government of India is unlikely to accept policy-level recommendations from foreign donors due to its strong ownership. Elite bureaucrats in major ministries are confident in policy-making without any foreign support. However a shift to liberalisation has spread to all sectors in India moving from traditional protective to pro-competitive policy. Strengthening competitiveness and privatisation is now emphasized in industry sector. From international standard perspective, there may be some potential demand for policy/system level know-how accumulated in developing countries including Japan. In other words, considering India's high capability of central government bureaucrats and established administrative structure, problem solving at the operational level as well as enhancement of private sector shall be issues to be focused. Introducing institutionalised system which is already successful in Japan may attract the interest of the Indian government.

There is a concern that compared to feasibility-study-type projects for infrastructure, master plan type surveys which may not always connect to actual project implementation may not always be welcomed by India side. From this standpoint, technical assistance projects with a clear target or dispatch of highly skilled experts is appropriate in private sector development.

16.2 Potential Areas of Japan's Technical Cooperation for the Development of India's Private Sector

[36] JETRO is dispatching short-term experts to 10 local automobile manufacturers which are suppliers of Japanese companies. This JETRO scheme is based on project planning for the fiscal year and generally limited to short-term basis, long term technical assistance is difficult in reality. On the other hand, JICA is able to dispatch long term (2-3 years) experts and, although it depends on policy change, senior volunteer dispatchment. Local counterparts of JICA projects shall be public organizations, while JETRO, JODC, AOTS support private companies directly.

The potential areas of Japan's technical cooperation which can respond to the policy issues for the India'a private sector development examined in the "13.7 Policy Issues for India's Manufacturing Sector Development" can be summarised as follows.

Table 44 Potential Area of Japan's Technical Cooperation Responding to India's Policy Issues for Private Sector Development

Policy Issues	Potential Area of Cooperation
I. Promotion of economic reform:	
1. Ensuring macro-economic stability and creation of domestic demand	Possibility of technical cooperation in the area of macro-economic management is considered small.
2. Business environment improvement and business cost reduction by reviewing existing systems	Improvement of investment climate should be discussed between Japan and Indian governments at EPA discussions or other occasions.
3. Coordination between federal government and state governments	Capacity development of state government is one of potential areas. The improvement of state-level industrial infrastructure such as industrial parks is also a potential area.
II. Investment and export promotion:	
4. Expansion of investment promotion	Technical cooperation to investment promotion activities by Indian government (both of central level and state level) is possible. The above mentioned "2. Business environment improvement and business cost reduction" will contribute to investment promotion. The "11. Acceleration of infrastructure development" mentioned below will contribute to investment promotion.
5. Expansion of export support	Technical cooperation to export promotion activities by Indian government (at both the central level and state level) is possible. Technical cooperation to export-oriented industries to be provided with the purpose of "III. Local industry development" will contribute to the expansion of India's exports.
III. Local industry development:	
6. Modernisation of SMEs	Various types of technical cooperation aiming at improving SMEs competitiveness are areas suited to Japan. Potential areas are production technology improvement, product development capability upgrading, marketing support, etc. Especially SME finance and introduction of production and quality management methods are areas where Japan's technical cooperation has expertise. The Ministry of Small-Scale Industry which is in charge of policy for small-scale companies has a serious structural problem. Dispatch of experts to this ministry is support policy-making to this ministry can be considered.
7. Development of industrial clusters	One potential area is the support to industrial cluster development with the purpose of upgrading local industries in an integrated manner. Strengthening of inter-industrial relationship with Japanese companies is another area.
IV. Strengthening of industrial base:	
8. Expansion of education and training	In the area of reviewing curriculum for vocational education, strengthening public training institutions, review of national qualification system for vocational training etc., Japan's experience in manufacturing can be utilised in Japan's technical cooperation.

Policy Issues	Potential Area of Cooperation
9. Promotion of technology innovation	Development and diffusion of technologies with industry-academic-government cooperation approach, especially focused on SMEs, is a potential area for technical cooperation. Technical cooperation to R&D personnel training may be considered concerning the above mentioned issue, Strengthening of intellectual rights is also an important issue in motivating technology innovation. Promotion of ICT use in the manufacturing sector concerns the upgrading of technology level. Although India's ICT technologies National level is advanced, the diffusion of ICT to SMEs can be a potential area of technical cooperation.
10. Development of related service industries	Development of the nation-wide logistics system and supply chain management system are important factors to improve efficiency and reduce cost of industries. Diffusion of supply chain management and fostering of logistics companies for more efficient logistics system are potential areas. The development of logistics infrastructure is also an important issue as mentioned below. Industrial finance is one of the most important related services. SME finance is a possible area for technical cooperation although large scale companies have access to financing.
V. Industrial infrastructure development	
11. Acceleration of infrastructure development	Potential areas are supports to steady supply of power and to improvement of domestic logistics system. In addition, Japan has experience in supporting the efficiency improvement of customs systems. It is better to consider the possibility of supporting customs system.

Source: JICA Study Team

(2) Priority areas of private sector development support in India

Considering the characteristics of India's private sector, the Indian government's attitudes toward receiving technical cooperation and Japan's experience of private sector development in other countries, priority areas of Japan's technical cooperation can be largely divided into four areas. They are: i) technical cooperation concerning trade and investment promotion; ii) technical cooperation concerning local industries development; iii) technical cooperation concerning industrial base strengthening; and iv) technical cooperation concerning infrastructure development.

These are due to the following reasons:

i) The Indian government has great expectations for the growth of investments from Japan and exports to Japan. However, a need for policy-level cooperation in trade and investment is considered to be small. In India, trade and investment promotion activities both at the central government level and local government level are not active compared with ASEAN countries and China. Technical cooperation to trade and investment promotion by dispatching experts, collaboration with JETRO, etc. will contribute to the progress of economic relationship between Japan and India.

ii) SMEs development is one of key issues on which India's government put emphasis. On the other

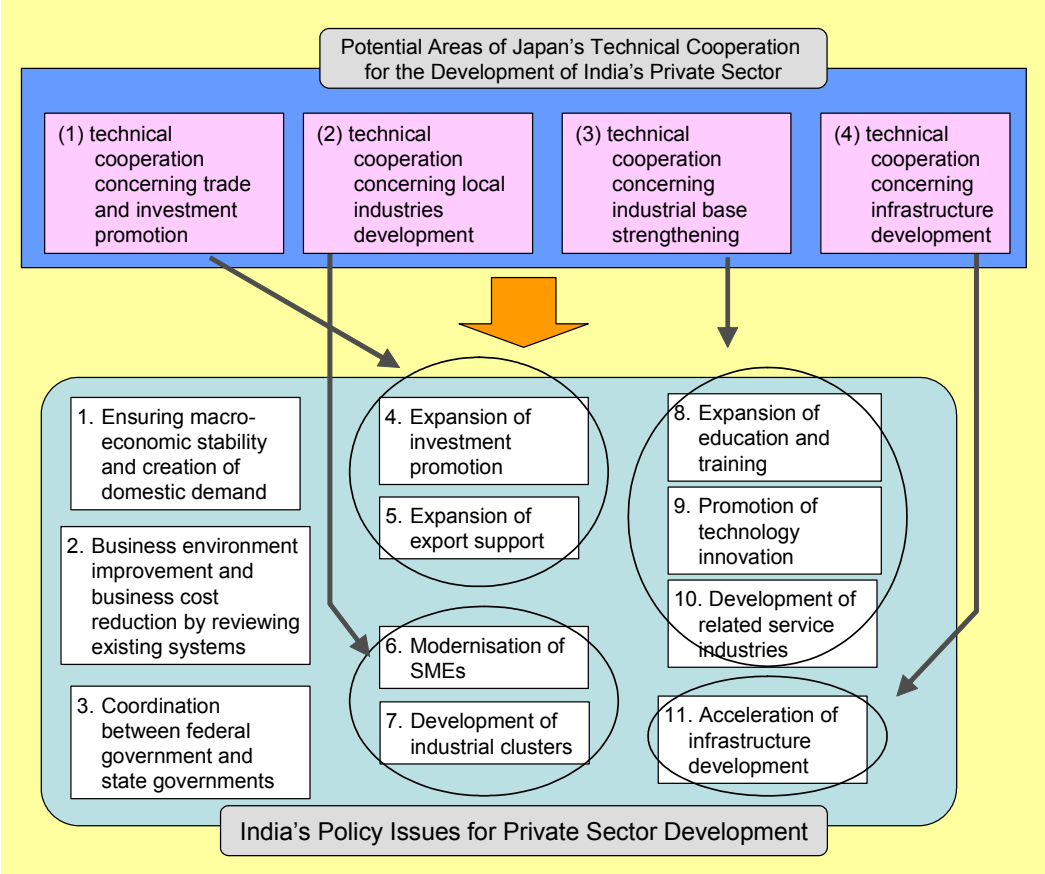
hand, Japan has plentiful experience in technical cooperation and knowledge in SMEs development in many developing countries. Applicable approaches are the supporting industry development with an eye to industrial linkage with Japanese companies, promotion of local export industries, SMEs development targeting employment creation and income growth in rural areas, etc. Meanwhile, as for competitiveness improvement of large scale companies and public enterprises, individual companies are expected to be benefited from various incentives and government supports.

iii) A wide need exists for improving workers' quality and upgrading technology level. Government programmes for education and training and skill acquisition are insufficient. Education and training programmes contribute to employment generation. Japan's technical cooperation can contribute to this area because Japan has similar experiences in other countries.

iv) India's government puts emphasis on PPP as for infrastructure development. There exists not only a need for technical cooperation for Yen-loan project formation, but also a need for feasibility-study-type development studies. Meanwhile, there is a possibility of technical cooperation for logistics system improvement, infrastructure facility management, energy-saving technologies, etc.

For the promotion of economic reform centered on deregulation, it is considered to be an issue which the Japanese government should address at bilateral and multilateral consultations such as EPA discussions.

Fig. 63 Potential Areas of Japan's Technical Cooperation for the Development of India's Private Sector

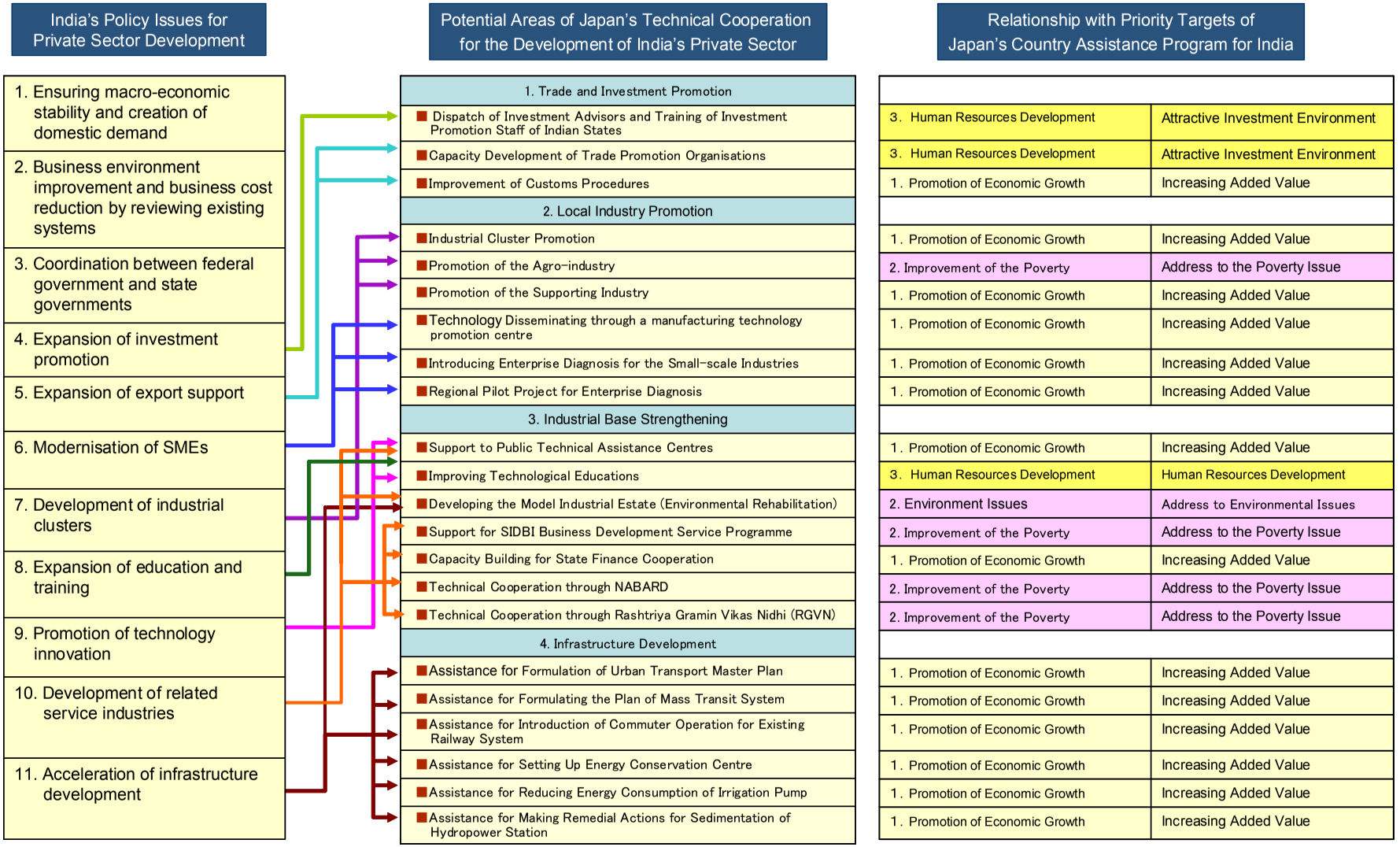


Source: JICA Study Team

The Study Team conducted a field survey on needs for technical cooperation by visiting policy-making government departments and related institutions at central and state level, trade associations, and private companies (see appendix for visiting list). Based upon the development needs identified during the survey, the Study Team considered potential technical cooperation projects by taking into account macro-level development issues and "16.1 Key considerations" mentioned above.

The potential technical cooperation projects can be classified into 4 areas; i) technical cooperation concerning trade and investment promotion; ii) technical cooperation concerning local industries development; iii) technical cooperation concerning industrial base strengthening; and iv) technical cooperation concerning infrastructure development (Details are described in sections after 16.3). The relations among potential technical cooperation projects, policy issues for private sector development and the objectives of Japan's "Country Assistance Program for India" are shown in Fig. 64.

Fig. 64 Potential Technical Cooperation Projects for India's Private Sector Development



India's Policy Issues for Private Sector Development	Potential Areas of Japan's Technical Cooperation for the Development of India's Private Sector	Relationship with Priority Targets of Japan's Country Assistance Program for India	
1. Ensuring macro-economic stability and creation of domestic demand	1. Trade and Investment Promotion		
	■ Dispatch of Investment Advisors and Training of Investment Promotion Staff of Indian States	3. Human Resources Development	Attractive Investment Environment
2. Business environment improvement and business cost reduction by reviewing existing systems	■ Capacity Development of Trade Promotion Organisations	3. Human Resources Development	Attractive Investment Environment
3. Coordination between federal government and state governments	■ Improvement of Customs Procedures	1. Promotion of Economic Growth	Increasing Added Value
	2. Local Industry Promotion		
4. Expansion of investment promotion	■ Industrial Cluster Promotion	1. Promotion of Economic Growth	Increasing Added Value
	■ Promotion of the Agro-industry	2. Improvement of the Poverty	Address to the Poverty Issue
5. Expansion of export support	■ Promotion of the Supporting Industry	1. Promotion of Economic Growth	Increasing Added Value
	■ Technology Disseminating through a manufacturing technology promotion centre	1. Promotion of Economic Growth	Increasing Added Value
6. Modernisation of SMEs	■ Introducing Enterprise Diagnosis for the Small-scale Industries	1. Promotion of Economic Growth	Increasing Added Value
	■ Regional Pilot Project for Enterprise Diagnosis	1. Promotion of Economic Growth	Increasing Added Value
7. Development of industrial clusters	3. Industrial Base Strengthening		
	■ Support to Public Technical Assistance Centres	1. Promotion of Economic Growth	Increasing Added Value
8. Expansion of education and training	■ Improving Technological Educations	3. Human Resources Development	Human Resources Development
	■ Developing the Model Industrial Estate (Environmental Rehabilitation)	2. Environment Issues	Address to Environmental Issues
	■ Support for SIDBI Business Development Service Programme	2. Improvement of the Poverty	Address to the Poverty Issue
	■ Capacity Building for State Finance Cooperation	1. Promotion of Economic Growth	Increasing Added Value
	■ Technical Cooperation through NABARD	2. Improvement of the Poverty	Address to the Poverty Issue
9. Promotion of technology innovation	■ Technical Cooperation through Rashtriya Gramin Vikas Nidhi (RGVN)	2. Improvement of the Poverty	Address to the Poverty Issue
	4. Infrastructure Development		
10. Development of related service industries	■ Assistance for Formulation of Urban Transport Master Plan	1. Promotion of Economic Growth	Increasing Added Value
	■ Assistance for Formulating the Plan of Mass Transit System	1. Promotion of Economic Growth	Increasing Added Value
	■ Assistance for Introduction of Commuter Operation for Existing Railway System	1. Promotion of Economic Growth	Increasing Added Value
11. Acceleration of infrastructure development	■ Assistance for Setting Up Energy Conservation Centre	1. Promotion of Economic Growth	Increasing Added Value
	■ Assistance for Reducing Energy Consumption of Irrigation Pump	1. Promotion of Economic Growth	Increasing Added Value
	■ Assistance for Making Remedial Actions for Sedimentation of Hydropower Station	1. Promotion of Economic Growth	Increasing Added Value

Source: JICA study team

16.3 Recommendations on Technical Cooperation in Trade and Investment Promotion

(1) Needs for Technical Cooperation

Regarding trade and investment promotion, there are many problems in legal and procedural matters from the viewpoint of investors, as mentioned in Chapter 11. The Indian government has pushed forward deregulation in trade and investment, but there still remain fields where deregulation is not sufficient in the eyes of investors. However, concerned issues, such as labour problems, tax regime and investment policy, include many problems that should be treated through administrative and legislative bodies after having discussed trade policy of the country, influence on national economy, and fundamental social policy. Therefore, when tackling these problems, it is necessary to take into consideration the economic and social circumstances of India as well as coordination of opinion among parties interested.

In addition, there are also problems in trade and investment promotion that are appropriate to approach through bilateral discussion between Japan and India, or discussions through international organizations such as WTO and ICO. Reinforcement of global partnerships between Japan and India was agreed upon at the summit meeting of the both countries of April 2005. It is possible to solve problems through discussions for the India - Japan Economic Partnership Agreement.

Considering what was mentioned above, there are two types of technical cooperation in trade and investment; i) direct cooperation in trade and investment promotion activities by the government ("capacity building for trade promotion" and "capacity building for investment promotion") and ii) indirect cooperation through improvement of trade and investment environment ("strengthening responsive capacity for promoting trade and investment within the international framework").

Concerning technical cooperation for trade and investment promotion activity, there exist needs for technical cooperation to the organizations which are engaged in promotional activities. For example, cooperation is needed in such activities as presentation of investment climate of India to Japanese missions visiting India to study the possibility of future business, or provision of information on India to potential Japanese investors.

It seems that there is a comparably higher need for technical cooperation in state governments than in the central government. Each state is in a condition to compete for attracting investment from foreign countries and the expectation for FDI from Japan is rather high. It is quite possible that those states which are strategically planning investment promotion from Japan would be positive in accepting technical cooperation aimed for investment promotion. Another possibility is to identify those states whose system of FDI promotion is not properly functioning, providing insufficient services to investors. These states may have more potential to accept technical cooperation.

As for the second type of technical cooperation, needs for indirect cooperation, or assistance for

improvement of investment environment, are great. There is much need for cooperation in improvement of infrastructure which is a big bottleneck of Indian business environment, strengthening of supporting industries, and strengthening of an export companies. These themes are examined in the sections of "local industries development", "industrial base development", and "infrastructure development".

On the other hand, needs for technical cooperation for policy support, are extremely small at organisations in charge of national trade and investment policy at the central level. Because ownership of the Indian government is very high, planning divisions of central government agencies (e.g. trade -related divisions of the Ministry of Trade and Industry) would have little needs for any assistance from foreign experts in planning and implementing policy measures.

(2) Recommended Subjects for Technical Cooperation

Dispatch of Investment Advisors and Training of Investment Promotion Staff of Indian States

Background

For Japanese companies planning investment in India, especially SMEs, it is essential to obtain correct and detailed information on Indian investment environment, such as investment incentives, condition of industrial estates, and administrative procedures to be required. Consultation service to investors in the process of decision making is also one of the important factors for implementation of investment.

The Indian central and state governments should not only provide Japanese companies with information and services in attracting their investment, but also perform more positive promotional activities, while studying characteristics of behaviours of Japanese companies and Indian business environment that Japanese companies would face.

This activity is relevant to the sub-targets of mid-term objectives of the field of trade and investment promotion "Development of information and services on investment climate" and "Promotion of mutual exchanges of investment", contributing to the development objective "Capacity building for foreign direct investment promotion".

Assumed Content of Technical Cooperation

1) Training of staff of state governments who are in charge of investment promotion

After identifying appropriate Indian states which are actively promoting investment from Japan, their staff in charge of investment promotion are invited to Japan for training on understanding situation and business practice of Japan.

If requested, Japanese long term experts will be dispatched to relevant states as investment advisors

for the purpose of promoting Japanese investments.

2) Dispatch of an investment advisor to the Ministry of Commerce and Industry of the central government

A Japanese investment promotion advisor is sent to the Japan Cell of Ministry of Commerce and Industry, the central government. It is possible to send an advisor to business associations such as FICCI and CCI, as there were examples in the past, in the case that it is difficult for the central government to accept a foreign advisor.

Possible Counterpart Organization

Trade and industry-related departments of state governments, trade and industry-related departments of central government, FICCI, CCI

Possible Type of Technical Cooperation

Dispatch of expert

Capacity Development of Trade Promotion Organisations

Background

The India Trade Promotion Organisation (ITPO) is an organisation established under the purview of the Ministry of Commerce and Industry for the purpose of promoting Indian exports. The ITPO's activities include holding of a trade exhibitions, provision of information to local exporters, and dispatch of export missions to abroad, of which the main activity is the operation of the exhibition centre.

It is expected that expansion of activities by public organizations to promote trade including ITPO and various sectoral export councils, such as identifying new export products and providing correct information and consultation on Japanese market, e.g. standards required by Japanese, will contribute to an increase of Indian exports to Japan.

This activity is relevant i to the response to the sub-targets of the mid-term objectives of the field of trade and investment promotion "Human resources development", "Information provision on overseas trade-related procedures and domestic procedures and preferential measures" and "Overseas market development", contributing to the development objectives "Strengthening responsive capacity for promoting trade and investment within the international framework and "Capacity building for trade promotion".

Assumed Content of Technical Cooperation

Technical cooperation is desired to strengthen the institutional capacity of Indian trade investment organizations such as ITPO and Export Councils.

Technical cooperation projects or dispatch of experts is suitable as modalities of cooperation. Activities at the counterpart organisation will aim at i) improvement of capability of market research, ii) expansion of information services, iii) improvement of ability to provide guidance to exporters, and iv) improvement of ability to identify new export products. In the technical cooperation, export promotion to Japan, including marketing for Japanese markets, should be emphasized.

However, it should be noted that business associations in the private sector like FIEO, FICCI, CII, and ASSOCHAM also widely perform activities such as export-related seminars and training for SMEs, dispatch/acceptance of trade and investment missions. It is necessary to examine the most suitable counterpart from the viewpoint of effectiveness and efficiency. The FIEO (Federation of Indian Export Organisations), an apex agency of export promotion organizations of various industries, extensively carries out activities for export promotion.

Possible Counterpart Organization

ITPO, FIEO, FICCI, CII, ASSOCHAM, etc.

Possible Type of Technical Cooperation

Dispatch of expert, technical cooperation project

Improvement of Customs Procedures

Background

Many foreign investors, including Japanese, are dissatisfied with the Indian customs system/procedures. It is pointed out that customs clearance is a lengthy process, various customs procedures are complicated, and distribution infrastructure maintenance is insufficient

There are several routes to smooth trade procedures: bilateral talks, regional discussions, consultations through international organizations such as WTO and WCO. However, it is possible that within the framework of the existing trade procedure rules, acceleration of procedures can be achieved by realising modernisation of port procedures, quarantine procedures, standard certification procedures, and customs procedures.

This activity is relevant in response to the sub-target of mid-term objectives of the field of trade and

investment promotion "Simplification and appropriate enforcement of trade-related procedures", contributing to the development objective "Capacity building for trade promotion".

Assumed Content of Technical Cooperation

The environment for international trade, including customs procedures, should be improved through implementation of analysis of trade procedural systems, development and guidance of system improvement, training of administrative personnel on trade procedures. For modality of cooperation, any one method or combination of methods among development study, technical cooperation project and dispatch of experts is to be adopted by examining the validity of each method of cooperation. Furthermore, in some cases technical cooperation could be combined with grants of equipment and facilities.

In an attempt to improve efficiency and transparency of the customs clearance system, attention should be given to i) institutional problems arising from legal systems and related organisations, ii) an agreement with trade union of port workers, iii) the possibility of political resistance from interested parties, etc. According to a document from the Ministry of Economy, Trade and Industry of Japan, although Japan's technical cooperation project to improve trade procedures in Indonesia is underway, the difficulty of institutional building is delaying the process of the project despite the fact that there is a huge need for one stop service in customs clearance procedures[37].

It is essential to study the customs clearance system of India and identify the problems at the stage of project formulation.

Possible Counterpart Organization

The Ministry of Finance, state governments

Possible Type of Technical Cooperation

Development study, technical cooperation project, dispatch of expert

16.4 Recommendation on Technical Cooperation in Local Industry Promotion

(1) Needs for the technical cooperation

The following explains the needs for technical cooperation in reflection to the current status of the manufacturing sector and issues faced by the individual manufacturers including those by the

[37] Ministry of Economy, Trade and Industry, Japan, "Basic Policy for Technical Cooperation in Economy and Industry, FY2006", April 2006.

small-scale industry.

Current status and issues relating to the internal environment of enterprises

Variances in competitiveness of the local enterprises are anticipated to be widened due to entry of the foreign companies and imported products in the markets and establishment of venture businesses. Namely, these are i.) FDI companies, ii.) local enterprise which have direct channels with the FDI companies, iii.) a portion of the local enterprises targeting at the foreign markets especially in IT, ITES and bio and iv.) traditional local enterprises targeting at the local markets. There is a flock of companies which are strengthening their competitiveness in terms of management, technology and capital while another flock of companies are losing relative competitiveness. Such diversification in internal competitiveness of enterprises is suspected to become clearer.

Strengthening of Industrial Linkage

As for the automotive and electronics sub-sectors, FDI companies demand high quality and technology standards towards the local suppliers for their products and services and sometimes provide direct supervision and trainings. Through the process, the spilling over in management and production technologies is expected to influence upgrading internal competitiveness among the local suppliers. Yet, such spill over effect is probably limited to a small portion of the local enterprises while the majority of others shall remain devoid of their internal competitiveness.

Therefore, the following development needs can be observed.

India is considered to have the basis for forming a "full-set type" industrial structure because it is equipped with fundamental factors such as large markets, available resources and abundant human resources. On the other hand, India needs to reinforce the supply chain throughout to further strengthen its industrial competitiveness. Specifically, the small scale industry with its low competitiveness has development needs in the area of supporting industries, strengthening industrial linkages and acquisition of R&D.

Management and Technology Innovation of Small Scale Enterprises

Many small-scale enterprises are yet to have peculiar interests in upgrading management and technology skills because of their high rate of operation and profit, which are benefited by the buoyant economy and growth of the domestic markets. On the other hand, there are some small-scale enterprises which are willing to innovate in their management and technology in various ways in order to cope with the external changes affected by opening and globalisation of the markets.

Therefore, the following development needs can be observed.

Available management and technology information and training opportunities are too small to cope with changes affected by the global economy. Opportunities for improving awareness in management

and technology are even more limited to the small-scale enterprises because their number is so great and their locations are scattered in the vast area. There are development needs for raising awareness and disseminating management and technology upgrade in addition to the improvement in specific production techniques.

Current status and issues relating to the external environment of enterprises

Small Scale Enterprises

Although it is generally regarded that the investment climate in India is not at an optimum level, the Japanese firms interviewed in this study do not see major obstacles to investment motivation. This may be due to the fact that India has a "full-set" type industrial structure and that the policies and institutions are readily available and are being implemented in support of such industrial structure.

As for small scale industry development, the government's basic policy has had a characteristic of relief of the weak, in other words, to protect small scale enterprises from the competition. The Indian government has not introduced a policy of improving internal competitiveness of small scale enterprises based on the principle of market mechanism. In addition, there are various organisations in charge of industrial promotion and support at the central government level and state government level. They are managed in a vertically-segmented administrative system.

The departments for industry and small scale industries of the state governments have established institutions assisting hard and soft infrastructure for industrial development based on the market principle such as State Industrial Development Corporation and Small Industries Development Corporation. In such institutions, the top civil servants, called "IAS", implement top-down policies based on the market principle.

Considering the above, there are development needs concerning small scale enterprise policies as follows:

Although the needs for developing the overall policy and technology transfer for promoting the industry and the small-scale industries may not be high, information delivery and strengthening the policies and institutions targeting at upgrading internal competitiveness of the small-scale industries is considered potentially high.

In addition, there are potential needs of organizational and civil service reforms in order to attain an efficient industrial promotion. However, considering the historical, social, and political background of India, such institutional reforms are probably difficult to receive a request for assistance from the government.

Use of Private Industrial Organisations such as Trade Associations

Reflecting historical socialism and closed economy, India has a vast number of industrial associations,

which are devoting specific sub-sectors, areas or specific company scales. Many of the industrial associations have been in operation for a long time. Yet, they are active not only in lobbying and protecting the interests of the members but also in exchanging information and upgrading the businesses of the members. Some of the industrial associations require information on new technology and global markets as well as technology transfer and investment promotion. In addition, these industrial associations closely communicate with the relevant departments in the central and the state governments and cooperate in some operations.

Accordingly, the use of private industrial organisations should be examined as follows.

It is considered effective to assist the individual enterprises through the industrial associations by delivering information, building institutional capacity and developing human resource. It is probably plausible to set an implementation frame of assistance with having the government institution as a counterpart while involving the industrial associations and member enterprises.

(2) Assumed technical cooperation schemes

The following are recommended for technical cooperation schemes that are demanded and are also executable in the area of local industry promotion based on the analysis of the business trend. The following fields are also considered that the technical cooperation of Japan works effectively.

Industrial Cluster Promotion

Background

According to the survey by UNIDO in 1996, India has approximately 400 industrial clusters. The sub-sectors of the cluster vary from handicraft to automotive parts.

The government of India is shifting its emphasis on assistance from the individual enterprises to the cluster. The cluster promotion policies are implemented by the central government including Ministry of Commerce and Industry, Ministry of Small Scale Industries and the state governments. "The National Strategy for Manufacturing" drafted by the National Manufacturing Competitiveness Council under the Ministry of Commerce and Industry also takes importance on the cluster development for promoting the small-scale industries. International organisations such as UNIDO and ADB support the cluster development of India. Nonetheless, the needs of technical cooperation are great because the number of the targeted clusters is large.

The cluster development policy symbolises a change from the conservative, protective policy for the small-scale industries. The cluster development attempts to intensify synergetic effect through promoting interaction among the companies operating in the same sub-sector and those with the supporting and related industries. The supporting institutions share understanding that the

industrial cluster development is a measure for the local industrial promotion. Thus, the technical cooperation for the cluster development can easily receive understanding from the counterparts.

In the cluster development, the government agencies such as SISI and the industrial associations play the role of the cluster agent, or the cluster facilitator. The cluster agent functions as a mediator to promote the cooperation among the cluster enterprises and those with the stakeholders in order to solve problems associated with the cluster development. Moreover, business development service (BDS) providers give the cluster enterprises various supports including the technical guidance.

Possible Content of Cooperation

A target area, either a state or a region spread over several states, shall be selected for assistance. Then assistance is extended to the priority clusters in the selected area.

The industrial cluster assistance is executed in the following steps:

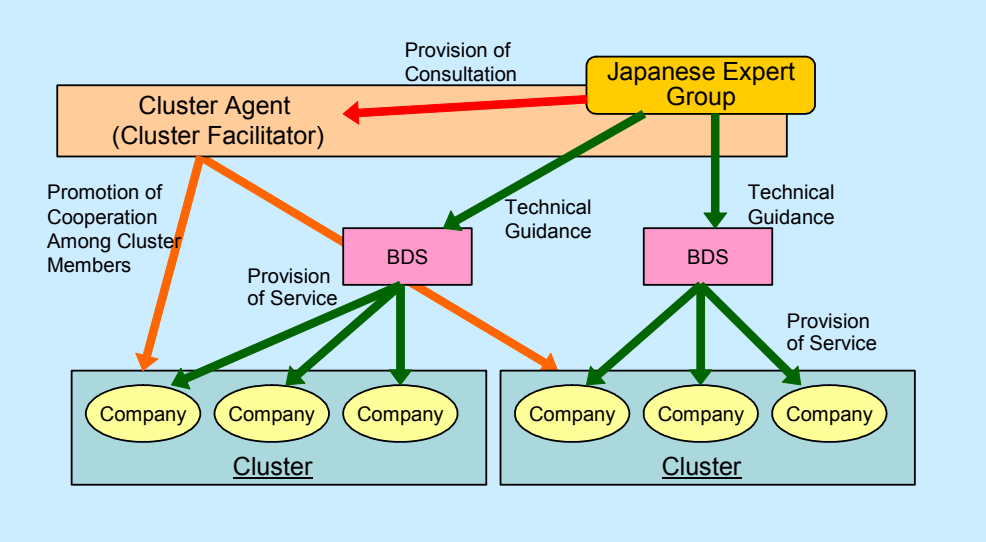
i. The cluster agent specifies the technical fields that are necessary for solving problems that a cluster has through a thorough discussion with the cluster enterprises.

ii. Based on the recommendations of the cluster agent, the government of India requests the dispatch of Japanese experts who can offer the identified technical assistance.

iii. The counterpart shall be the public agencies or the industrial associations which take role of the cluster agent. In case the Japanese experts are assisting multiple clusters, a governmental agency, which is an upper organisation of the cluster agent such as a state government shall be the counterpart. The latter formation enables the widening of the beneficiaries of the technical cooperation.

iv. The Japanese expert shall cooperate with the cluster agent in assisting the growth of the cluster. Its assistance is geared toward capacity building of the BDS providers and strengthening linkages with the stakeholders in the area.

Fig. 65 Conceptual Formation of the Cluster Development Cooperation



Source: JICA Study Team

JICA has executed "Strengthening Capacity of SME Clusters in Indonesia" (2001-2004) and "The Study on Development of Consulting Services to Promote SME Cluster and Regional Development in the Kingdom of Thailand" (2004-2005). In these studies, the study team identified the development issues of the clusters in the early phase. However, the cluster agents in India are considered to be equipped with the capacity of identifying the development issues of the cluster. Thus, it is assumed that the development issues of the clusters are identified by the cluster agents before the initiation of the technical cooperation.

The development issues in a cluster are usually varied, and they change the nature as the cluster develops. Consequently, it may be necessary to dispatch several Japanese experts in order to respond to various technical issues. The Japanese experts will not necessarily stay in the field for a long term. It can be more effective for the Japanese experts to provide technological assistance in a short term and then go back to the field to confirm implementation status after a few months.

In selecting the clusters for assistance, it is necessary to confirm that the required assistance is relevant to the technological components and marketing knowledge that Japan has comparative advantages in.

Possible Counterpart Organisation

The ministries in the central government (ex. Ministry of Commerce and Industry, Ministry of Heavy Ministry & Public Enterprises, Ministry of Food Processing Industries and Ministry of Small Scale Industries) or the state governments

Possible Type of Technical Cooperation

Dispatching of experts, technical cooperation project

Promotion of the Agro-industry

Background

It is said that the processing rate of the domestic agro-products is minimum in India. In contrast, the disposal rate of the agro-products is said to be large because of the fluctuation of the market prices, lack of the storage places and underdevelopment of the distribution system. Promotion of agro-industry is also considered important for rectifying the regional income gap through increasing the income of the farmers.

Assumed Context of Assistance

The technical cooperation of the agro-industry is recommended to be executed. The overall goal is set at rectifying the regional gap through the promotion of agro-industry and generating the income of the villages.

The target beneficiary is the agro-industrial cluster in a wide region. The technical assistance is geared towards solving the bottlenecks of the supply-chain spread over the agro-industrial cluster.

Dispatch of the Japanese experts is assumed. The Japanese experts need to cover the skills both in making the overall planning and in transferring specific technological components. Consequently, it is probably appropriate to dispatch a multiple number of Japanese experts.

Assistant components include i) promoting joint actions through institutionalising villagers; ii) stabilising supply of raw material from established village institutions; iii) facilitating investment through lending from the financial sector; iv) developing physical distribution system including the cold chain and v) marketing assistance.

The supported state should be selected on the basis of having stable supply of agro-products; yet the low processing rate. Moreover the state should have strong willingness for development of agro-industry. Among the states visited during this study, Karnataka State and Tamil Nadu State are implementing the agro-industry promotion policies: the former plans to develop the physical distribution system while the latter plans to provide subsidies with the agro-processing enterprises for their investment.

Possible Counterpart Organisation

Ministry of Food Processing Industries, Ministry of Agro and Rural Industries, Ministry of Small

Scale Industries or the state governments

Possible Type of Technical Cooperation

Dispatch of expert, technical cooperation project

Promotion of the Supporting Industry

Background

The supporting industry indicates the suppliers of certain sub-sectors such as automotive and electric industries. The growth of the supporting industries is an important agenda for strengthening industrial competitiveness in India. JETRO and AOTS already provide technical cooperation for developing the supporting industries. On the other hand, JICA has ample experiences in assisting the supporting industries through studies and projects.

The automotive and motor vehicle sub-sectors in India are expanding their production volume in response to the rapid expansion of the domestic demand. The foreign suppliers are increasing their investment, following investment by their assemblers from Japan, Korea, Europe and USA in the 1990s. It is expected that India shall increase its role in the supply chain of the car components within Asia. The assemblers and the Automotive Component Manufacturers Association of India (ACMA) cooperate in upgrading the skills of the suppliers targeting at acquiring the global standard. As for the electronics industry, there is heavy competition among the large-scale domestic, European, American and Korean assemblers. Yet, the supporting industry of the electronic industry is yet to be fully developed. In general, skills in supplying various materials starting from formed and fabricated materials to electronic components need to be upgraded. Therefore, promotion of the supporting industry is an important issue for strengthening industrial competitiveness of India.

Assumed Context of Technical Cooperation

The range of possible technical cooperation for the supporting industry is wide. For example;

- upgrading skills in specific technological components such as those associated with formed and fabricated materials;
- subcontracting arrangement between the assemblers and the suppliers;
- improving business environment to increase investment from the foreign suppliers;
- capacity building of R&D institutions;
- human resource development of engineers and skilled workers and

- transferring processing techniques and production management techniques.

Prior to the commencement of the technical cooperation, it is important to clarify the exact fields of the technical cooperation. As a precondition, it is necessary to identify a group of the beneficiaries including those which are candidates to become the suppliers. The beneficiaries are those who have willingness to upgrading QCD (quality, cost and delivery) so that they can join in the supporting industry. A cluster of such beneficiaries has to be identified beforehand. Then it is necessary to specify a counterpart which can coordinate these beneficiaries.

The government of India has set a policy to transfer the main actor of the industrial promotion from the public agencies to the private agencies. Therefore, in providing technical cooperation, it is necessary to involve industrial associations such as ACMA, which is collaborating with UNIDO and JETRO in upgrading production management skills[38]. ACMA has also established ACMA Centre for Technology (ACT) and delivers information on the benchmark in an effort to disseminate the production management techniques.

Some possible areas of technical cooperation are:

- providing the suppliers with "enterprise diagnosis", analysed by the Japanese experts;
- offering seminars to the potential suppliers in raising awareness of their entrepreneurships;
- setting a pilot project in which some enterprises are assisted in management as a model;
- assisting in subcontracting arrangement and
- a master plan study to identify the details of above action plans.

Possible Counterpart Organisation

Ministry of Commerce and Industry, Ministry of Heavy Ministry of Heavy Industry or the state governments

Possible Type of Technical Cooperation

Development study, dispatch of expert, technical cooperation project

[38] For example, in UNIDO assistance project, the local experts provide guidance to a group of ACMA members. Then they go around the member factories of the group to evaluate the implementation status.

Disseminating the Japanese Production Technologies through Establishing a Manufacturing Technology Promotion Centre

Background

Some Indian enterprises which are conscious of improving productivity have already adopted measures such as ISO, TQC, "Kaizen", lean production and six sigma. Some small-scale enterprises also try to improve the production management and productivity; especially those supplying to the assemblers such as in automotive sub-sector.

The National Productivity Council (NPC) under the Ministry of Trade and Industry provides trainings, consulting and dissemination activities. NPC has a training institution called Dr. Ambedkar Institute of Productivity (AIP) in Chennai. Moreover, Confederation of Indian Industry (CII) set up Total Productive Maintenance Club (TPM Club) in collaboration with Japan Institute of Plant Maintenance (JIPM). There are also many private firms which provide consultation and training services on quality management, TQM, six sigma and lean production. Furthermore, public agencies under the state government offer seminars on productivity improvement to the local enterprises.

Assumed Content of Technical Cooperation

A "production technology promotion centre" is proposed to be established. Japanese experts are dispatched to the centre where the Japanese industrial and production management techniques are disseminated in the forms of trainings, consultation and seminars. This centre anticipates holding the same function as "the Japanese human resource development centres", which JICA have established in other countries. The centre is expected to promote technological exchanges between India and Japan in the areas of production and quality management.

The aims of the activities of the centre are not only to disseminate the Japanese production and quality techniques to the Indian enterprises but also to promote interactions between Indian and the Japanese enterprises; thus strengthening the industrial linkages between the two countries. The tasks of the Japanese experts include

- providing trainers trainings;
- disseminating production and quality management techniques and
- raising awareness of strengthening linkages among the domestic enterprises and with the foreign enterprises.

A candidate of the counterpart can be selected among the institutions under the central government such as NPC. Yet, it may be also plausible that a state government agency is selected as a

counterpart in an area where a concentration of the Japanese manufacturers exists as a pilot.

Possible Counterpart Organisation

Agencies under the central government (ex. NPC and the National Manufacturing Competitiveness Council) or the state governments

Possible Type of Technical Cooperation

Development study, technical cooperation project, dispatch of expert

Introducing Enterprise Diagnosis for the Small-scale Industries

Background

Agencies under the central and the state government provide management and technological assistances to the small-scale industries. It is an important that the capacity of personnel in such agencies is strengthened. Introducing a system of providing training on the enterprise diagnosis ("shindan"[39]) can develop the human resource of the consultants working in the public agencies.

Assumed Content of Technical Cooperation

The central government shall be assisted in designing introduction of the enterprise diagnosis based on the experiences in Japan and in South East Asia. The institutional design includes provision of the trainings for the enterprise diagnosis and trainings of the trainers.

The Japanese experts extend improved services based on the information and opinions on the designing and operation of the enterprise diagnosis in Japan and South East Asia. The technical cooperation in the forms of a study or a project is necessary according to the phases from designing, initiation to implementation.

The counterpart agencies can be selected from the Ministry of Small Scale Industries, Ministry of Commerce and Industry or a sector specific ministry. Otherwise, the National Manufacturing Competitiveness Council can be consulted in selecting a counterpart, which deals with designing and capacity building.

Possible Counterpart Organisation

The ministries in the central government (ex. Ministry of Commerce and Industry and the National

[39] "Shindan" is a Japanese term for "diagnosis". Enterprise diagnosis is commonly known as "shindan" in Thailand where the Japanese assistance has extended to transfer the know-how.

Manufacturing Competitiveness Council) or the state governments

Possible Type of Technical Cooperation

Development study, technical cooperation project, dispatch of expert

Regional Pilot Project for Enterprise Diagnosis

Background

Each state has many industrial estates designed for the small-scale industries. Many enterprises in these industrial estates operate under the obsolete facility and production technologies. These enterprises have certain demands for upgrading production technologies.

In some cases, a state institution, established nearby a state-owned industrial estate, provides technological guidance to the enterprises in the estate. In other cases, an industrial association, formed by enterprises in an industrial estate, takes a leading role of developing capacity of its members. Among the industrial estates visited during this study, an industrial association was actively playing the role of setting seminars for technological upgrade.

Possible Content of Technical Cooperation

This technological cooperation aims to transfer know-how of enterprise diagnosis ("shindan"), to consultants of the public institutions, which assist in the enterprises development in states. The counterpart shall be these public institutions either owned by the central or the state government. It may be also plausible to have industrial associations dedicated for the small-scale industrial estates as the counterpart.

The dispatched Japanese experts shall cover the areas of production, quality, environment and safety management. The experts first transfer the methodologies of enterprise diagnosis to the consultants working in the counterpart; then they practice the diagnoses on the local enterprises together with the trained local consultants who are to clarify the management issues of the small-scale industries in the area.

It is expected that this cooperation scheme shall develop the capacity of the local consultants and that they derive the policy directions for the small-scale industrial development in the state.

Possible Counterpart Organisation

Institutions assisting in enterprise development under the central or the state government

Possible Type of Technical Cooperation

Dispatching of experts, technical cooperation project

16.5 Recommendation on Technical Cooperation in Industrial Base Strengthening

(1) Needs for the technical cooperation

Technology Upgrading through the Strengthening of Public Technology Support Institutions and Human Resource Development

The management and production techniques among the small-scale industries are generally at a preliminary level, and they lack in internal competitiveness. In particular, enterprises engaging in basic production techniques such as sewing, casting, forging, metalwork and plastic molding show delay in their capacity development. The lack of management and production techniques among the suppliers results in a high defection rate and low quality of services in dealing with the assemblers. Consequently, opportunities for strengthening industrial linkages are reduced. Technological weaknesses are due to not only the facility and production techniques but also fundamental factors such as morals and working attitudes among the factory workers and lack of operational standards.

There are development needs towards strengthening manufacturing technologies; namely, strengthening capacity of vocational trainings aiming at improving basic knowledge, techniques and awareness among the factory workers; establishing and supporting a technology centre which plays a role of soft-oriented industrial infrastructure with human resource which can undertake enterprise diagnosis and provide,advise, and support the industry's efforts to upgrade technology level.

Improvement of Technology of Environment and Energy Management

The small-scale enterprises, in particular, reveal low level of safety, sanitary, energy and environment management. For upgrading energy efficiency and environmental protection, there is a high demand for institutionalising operation of such management skills targeting at individual enterprises and the industrial estates.

There are needs for improving awareness and developing skills for energy conservation and environmental protection that are linked to cost reduction and skills for safety and sanitary management. It is considered necessary to follow up identifying the support needs and exact counterparts for assisting environmental and energy conservation management. It is also plausible to stimulate awareness by implementing pilot projects.

Expansion of Industrial Finance

In response to India's development needs, such as SMEs development, rural/agriculture development

and expansion of microfinance, the government has set up a specialized development bank for each specific financial need. These development banks are not only providing long-term loans but actively leading and implementing development projects with government's support.

During this Study, JICA study team held discussion with SIDBI (SMEs), NABARD (rural/agriculture), and RGVN (microfinance) regarding their current needs for assistance[40]. Although technical cooperation is not the best scheme to support their needs, there are certain areas where JICA's TA will be able to contribute together with other ODA schemes (grant, yen loan etc). In particular, project formulation support, capacity building of governmental agency and human resource development will be the key areas of potential cooperation.

The main areas of possible technical cooperation are considered to be project formulation, capacity development of related organizations, and human resource development.

(2) Assumed technical cooperation schemes

Support to Public Technical Assistance Centres

Background

India has various types of technical assistance centres owned by the central or the state government. For example, Small Industries Development Organisation (SIDO) under the Ministry of Small Scale Industries has 15 types of technical assistance centres. Among them is the Small Industries Service Institutes (SISIs), located in the major cities all over in India and offering various technological services to the small scale industries. In general, public institutions tend to be behind the latest technologies and leave some unsatisfied areas to meet the needs of the local enterprise.

Public technical assistance centres' potential needs for Japan's technical cooperation are considered to be high. However, providers of technical services to enterprises have been shifting from public institutions to private institutions in India. When a technical cooperation in this field is considered, it is necessary to identify a field where public technical services to enterprises have significance of existence. Public technical services' role of supplementing private services is considered to be high in such services as are targeting backward regions and small scale enterprises.

Assumed Content of Assistance

The Japanese experts are dispatched in an aim of transferring the latest technologies, which are

[40] JICA study team had a discussion with SIDBI□NABARD in January and March 2006 and received their concrete request for cooperation to JICA. The team also had a meeting with RGVN, a microfinance agency, in January 2006.

required by the public technical assistance centres. The Japanese experts shall train the trainers rather than extending the direct assistance to the enterprises. At the same time, the assistant to the technical centres shall be combined with the schemes of inviting the trainers from the local public institutions and studying tours and sending interns to the private enterprises.

Many public technical assistance centres have issues on organisational structures, operational capacity and adjusting the needs of the local enterprises. Prior to the technological cooperation, it is necessary to identify the capacity and potentials of the target centres and to clarify the technological components to be transferred.

When a decrease in the private sector's needs for a relevant public technical assistance centre arises from management issues, technical assistance to improve the management of centre is also required. When the significance of relevant centre's existence itself is questioned, technical assistance is required to include the reviews of assistance service areas, subject industries, type of services, etc.

Possible Counterpart Organisation

Public technical assistance centres either owned by the central or the local governments

Possible Type of Technical Cooperation

Dispatch of expert[41]

Improving Technological Educations

Background

India requires larger supply of trained workers who satisfy the needs of the industry. The National Council for Vocational Training (NCVT) under the Ministry of Labour and Employment is responsible for accrediting the vocational institutions, setting the curriculum and providing the certificates of vocational skills. It is quite difficult for NCVT to keeping up with the new technological demands from the private sector. The development of new curriculum that meets the industrial changes is required.

India has 1,883 Industrial Training Institutes (ITIs) run by the government. It is expected that the training quality of ITI is improved through strengthening cooperation with the private sector. This

[41] It is also plausible to dispatch the Japanese Overseas Cooperation Volunteers (JOCV) if the technical cooperation is targeted at the basic vocational trainings such as repairing or sewing. Although the transferred technologies remain basics, JOCV can contribute to strengthen the relationship between India and Japan. The Indian society has strong interest towards the Japanese technologies and cultures, but they lack in information. The dispatched young volunteers are expected to strengthen the international understanding between the two countries.

includes promotion of the public private partnership (PPP). The government of India has a plan to upgrade 100 ITIs to R&D institutions. These institutions shall be operated under PPP and be granted the autonomous status in setting curriculum, providing on the job training (OJT) and granting qualification certificates.

The National Manufacturing Competitiveness Council under the Ministry of Commerce and Industry requests for changes in the vocational curriculum; namely, developing the curriculum which fits the needs of the industry, simplifying the approval process and transferring the authority to approve the curriculum to other relevant institutions.

The scope of reviewing the curriculum should include improvement in facility, teaching skills and qualification certificates. The qualification certificate is a national testing on techniques and knowledge of certain vocational skills. Improvement in the qualification certificate system can stimulate the willingness of the labours for upgrading their job status and to develop their capacity.

NCVT carries out All India Trade Test every year mainly for the graduates of ITIs and Industrial Training Centres (ITCs). There are the National Trade Certificates and the National Apprenticeship Certificates. The latter is for those who have received apprenticeship trainings. Those who have not attended ITI or ITC can also apply for the All India Trade Test with minimum 5 year of experience. These certificates are widely acknowledged by both domestic and abroad. On the other hand, Japan also has a qualification testing system, which started in 1959 and now conducts testing on 137 job categories.

Assumed Content of Technical Cooperation

(1) Capacity development of ITIs

A specific state is selected for assistance. Some ITIs in the state shall be selected for a model institute. Technical cooperation shall be extended in an aim to develop the capacity of the model ITIs.

The activities include reviewing the curriculum in order to fit to the needs of the local industry. It is necessary to clarify the needs through discussion with various stakeholders such as the representatives of industrial associations, enterprises and the lecturers at the universities. The Japanese experts provide technological advises in the process. Internship at the factories should be incorporated in the revised curriculum. The Japanese experts provide inputs to the technological components, which are identified to be strengthened. At the same time, they provide the trainings to the trainers at ITIs.

(2) Review of qualification certification system

It is necessary to reflect the needs of revising curriculum to the national education policy.

Accordingly, the technological standards for the All India Trade Test also need to be reflected of the revision.

In a long run, it is necessary to review the context of qualification certificates in order to meet the changes of needs from the industrial side. The qualification certificates should be targeted at not only the students but also the general labourers to stimulate their motivation for upgrading their skills and job status.

The scope of technological cooperation for the reviewing of the qualification certificates can include:

- studying on the overall industrial training system;
- studying needs of the private sector towards the industrial trainings;
- studying the technological levels for the qualification;
- reviewing the context of the testing;
- identifying the new testing elements that are needed by the industry;
- identifying the most effective way of testing and
- studying the introduction of degrees in the certificates (ex. 1st, 2nd and 3rd degrees).

Possible Counterpart Organisation

NCVT, Directorate General of Employment and Training (Ministry of Labour and Employment) or a state government

Possible Type of Technical Cooperation

Development study, technical cooperation project, dispatch of expert

Developing the Model Industrial Estate (Environmental Rehabilitation)

Background

Preventing environmental deterioration such as water and waste treatment is an important part of the agenda of the industrial estates particularly those for the small scale industries, which bear the cost of the outdated treatment system. Some state governments visited during this study expressed their willingness for modernising the treatment system in the industrial estates.

Possible Content of Cooperation

This assistance aims to rehabilitate environment of the selected industrial estates for the small scale industries as a model. Water and waste treatment and air purifying systems are introduced to the model industrial estates, and policies on operational standards and environmental regulations are derived from the result.

Dispatch of experts or technical cooperation project is considered to be a possible type of cooperation. Either industrial department of the state government or an agency dedicated for industrial estate development under the department is a possible counterpart.

It is considered that technical cooperation will include technical guidance in the area of methodologies to minimise the yield loss and recycling of the waste material, management of solid wastes, and designing & control common infrastructures such as environmental management centre.

Possible Counterpart Organisation

Industrial department of the state government or an agency dedicated for industrial estate development under the department

Possible Type of Technical Cooperation

Dispatch of experts, technical cooperation project

Support for SIDBI Business Development Service Programme

Background

SIDBI (Small Industries Development Bank of India) is expecting JICA's external assistance on three on-going activities which they particularly emphasize; 1) set up of 'risk sharing facility' [42], 2) business development service program, and 3) capacity building of state finance cooperation.

Business development service program is the second phase of SIDBI's rural industrialisation program for employment generation in poverty region which started in 1994. This program will first identify 10 districts in each four selected states (Jharkhand, Andhra Pradesh, and Uttaranchal. Chattisgarh). Then it will choose responsible NGOs as implementing agencies which are

[42] SIDBI is considering setting up this agency to enhance SMEs access to finance. The required funds for the set up for RSF is estimated at a total of Rs 270 million (approx. US$6 mil.) which consists of 1) seed money, 2) system investment for risk sharing system, 3) due diligence for candidate projects. The source of the fund is Rs 225 mil. from match contribution, institutional building consultancy fee of Rs 5 million, and operation cost of Rs 40 million (due diligence Rs 20 mil.-10 project, other cost Rs 20 mil.)

responsible for developing potential industry/entrepreneur in each area. The service menu for rural companies are formulation of investment projects, business plans, purchasing / set up / maintenance of machines, market research, marketing, accounting support etc.

The overall target of this program is to support total 12,000 units of business start-up (300 units per district) in 5 years. Total expenditure is estimated as Rs 94.7 million (approx. US$2.1 million).

Assumed Content of Technical Cooperation

Capacity building of NGOs to improve its business development service which will contribute to effective implementation of SIDBI's BDS program.

Possible Counterpart Organisation

SIDBI

Possible Type of Technical Cooperation

Technical cooperation project, dispatch of expert

Capacity Building for State Finance Cooperation

Background

State Finance Cooperation (SFC) exists in each Indian state. Their main activity is to provide mid-to-long term loans to SMEs. During the 1970-80s, SFC has expanded its business by utilizing its underlying asset funded by SIDBI's refinancing. Recently, however, due to low accessibility for equity capital in addition to lowering market interest rate, SFC's financial position has considerably worsened now that they are even unable to enter India's expanding SMEs lending market.

To reform the current condition of SFC, SIDBI, as the major fund supplier, started to implement three measures such as 1) improvement of risk management system, 2) implementation of loan crediting model, and 3) improvement of project management system. SIDBI is considering whether to combine all SFCs in 10 states together or to select one model state to implement as a pilot project before expanding to other states. According to IDBI estimate, the cost of this program will be Rs 250 mil. (Approx. US$5 mil).

Assumed Content of Technical Cooperation

Technical cooperation to SFCs to support implementing three activities of SIDBI's business management reform program: 1) improvement of risk management system, 2) implementation of

loan crediting model, and 3) improvement of project management system.

Possible Counterpart Organisation

State Finance Corporation or SIDBI

Possible Type of Technical Cooperation

Technical cooperation project, dispatch of expert

Technical Cooperation through NABARD

Background

NABARD (National Bank for Agriculture and Rural Development) is responsible for rural development[43]. Needs for technical cooperation are expressed in the following five areas, 1) natural resource management for sustainable livelihood, 2) creation of carbon credit, 3) development of small companies via microfinance development, 4) rural development, and 5) rural finance institution building via technical cooperation. By region, NABARD is interested in North-Eastern states where poverty is most serious. Thus, it is possible for JICA to select particular field, area of interest for future cooperation. From the above 5 fields, NABARD has shown particular interest towards support for their on-going 'Rural non-farm sector development' project.

1) Lending support

The purpose is to support the fund of financial institutions which is refinanced by NABARD. Target lending customers include micro enterprises, NGPs, infrastructure projects.

2) Capacity building

The target will be i) borrower of loans; companies, workers, ii) lender of loans; financial institutions (commercial banks, regional rural banks, and co-operative banks) and NABARD itself, and iii) organisations in between such as NGOs, implementing organisation of clusters.

3) Technology development

Total 6 components, e.g. establishment of design center, support for academic-industrial cooperation, and horizontal cooperation within the same industry etc.

[43] One successful example of TA by foreign donors will be 'Watershed Development Programme' in Maharastra state supported by KfW since 1992. This plan aims improvement of groundwater, drinking water, agriculture productivity, and prevention of population drain. The government of India established a fund ('Watershed Development Fund') to expand this model project, and promoting development of watersheds in other regions. Also, the proportion of German consultants in this project was limited to approx. 20%.

4) Marketing support

A total of 7 components: e.g. marketing scheme, matching service, application for trade fairs, promotion activity of companies to clusters etc.

Assumed Content of Technical Cooperation

Technical assistance project and/or dispatch of expert should be considered in order to promote the food processing industry in rural areas by providing assistance in the above-mentioned 4 areas.

Possible Counterpart Organization

NABARD

Possible Type of Technical Cooperation

Technical assistance project, dispatch of expert

Technical Cooperation through Rashtriya Gramin Vikas Nidhi (RGVN)

Background

RGVN is a microfinance institution established in 1990 with the support of IDBI□IFCI□NABARD based in North-Eastern states. They have been supporting 1,200 NGOs and 2,500 SHG (Self Help Group) in the most deprived area of India. 1) provision of fund, 2) improvement of financial access to end-users via loan/saving program, 3) housing program, and recently important 4) capacity building of NGOs. They also support various projects such as cluster development, and promotion of industry-academic cooperation. They are expecting US$30 million which one-third will be used to set up 'Capacity Building Fund'.

Microfinance in the North-Eastern states are backward in many aspects, but in particular project formulation ability and implementation capacity of related organizations. Thus they are expecting JICA's assistance in these areas.

Assumed Content of Technical Cooperation

Improving project formulation/finding and implementing capability in microfinance will be the possible area of Japan's technical cooperation. Promotion of microfinance in the North-Eastern region, backward region in India, is expected to contribute the development of local industry in this region.

Possible Counterpart Organization

RGVN

Possible Type of Technical Cooperation

Technical assistance project□dispatch of expert

16.6 Recommendations for Technical Assistance for Infrastructure Development

(1) Needs for Technical Assistance

In the case of East Asian and South-eastern Asian countries, Japanese ODA loans and technical assistance have been utilised for developing infrastructure. Such assistance was considered to be promoted Japanese and other foreign direct investments in these countries, and then, which resulted in rapid economic growth and subsequent poverty alleviation. However, India is an immense nation, and thus, is not comparable with these countries in terms of population, gross domestic products, and national budget. So, it is quite difficult to contribute in India through the assistance in quantitative aspects.

Given conditions, execution of lot of feasibility studies on individual infrastructure projects are considered to be inefficient. India has enough capability to execute a feasibility study on conventional infrastructure projects. In addition, since recently private participation is accelerated on infrastructure sector, needs to conduct a feasibility study on infrastructure sector from the government side is limited.

On the other hand, as mentioned, although they have adequate capacity to execute individual projects, individual projects are sometimes executed without consistency with other projects because of absence of a comprehensive and integrated plan. Accordingly, technical assistance for formulation of upper level cross sectoral plan, such as urban traffic master plan to alleviate traffic congestion, is deemed necessary.

It is also necessary and efficient to provide technical assistance for creating best practices on problematic issues (e.g. urban traffic project, and energy conservation project) though implementation of a pilot project. And, after the pilot project, it is important to disseminate and realize the best practice to other areas.

Technical assistance concentrated on certain areas/ states should be considered instead of distributing assistance to nation wide. It is important to provide assistance intensively in the states where Japanese investment is concentrated.

(2) Anticipated Technical Assistance Programs

Further suggestions about technical assistance for transportation and power sectors are made in the

following part.

Formulate Urban Transport Master Plan to Avoid Further Traffic Congestion

Background

A good network of roads and an efficient mass urban transport system make a substantial contribution to the working efficiency of a large city for its economic and promote foreign direct investment. In order to coordinate development plans prepared by each concerned agencies, Metropolitan Development Authorities (MDA) were established in several metropolitan cities including Delhi, Mumbai, Chennai, and Bangalore. However, in reality, each transport project is examined individually. MDAs are generally just compiling each project and preparing entire plans without coordinating each project. Except for the Mumbai Urban Transport Project financially/ technically assisted by the World Bank, there are no comprehensive urban transport plans in most cities.

Mid-term Appraisal of the 10th Five-Year Plan (Planning Commission, 2005) also mentioned about the problem. Accordingly, it is recommended that million plus cities draw up urban transport master plans by studying various modes of public transport.

When the study team visited Chennai Metropolitan Development Authority and Hyderabad Urban Development Authority, they expected to formulate a transport master plan with technical assistance from the Japanese Government[*44].

Assumed Content of Technical Cooperation

Recommended options of technical assistance are as follows; i) traffic demand forecast by mode and by road/ rail section, ii) re-examination of existing bus route, iii) capacity building for traffic related agencies, iv) formulation of traffic regulation plan and improvement plan of traffic sign and traffic control signal, iv) establishment of trans-modal transportation plan, v) implementation of feasibility study on bypass load and grade separation, and vi) formulating relocation plan of bus terminal/ freight terminal from city center to suburban. Ministry of Urban Development and/or Metropolitan Development Authority of major cities will be suitable counterpart agencies of the program.

Possible Counterpart Organisation

Ministry of Urban Development, Metropolitan Development Authority of major cities, etc.

[44] The World Bank is already committed urban transport project in Chennai and Bangalore. Thus, when formulating the plan, close communication with World Bank is needed.

Possible Type of Technical Cooperation

Development study

Assistance for Formulating the Plan of Mass Transit System

Background

The Japanese Government has been assisting metro-railway projects in Delhi and Kolkata. Such cooperation seems highly appreciated by Indian side. In addition, similar projects will be implemented in Bangalore in the near future. Several metropolitan cities are also expecting assistance from the Japanese Government.

Generally speaking, in developed countries, cities start planning and building a Mass Rapid Transit System (MRTS) when they reach a population level of one million and start operating MRTS by the time they are exceeding two million.

According to the 2001 Census, there are 35 metropolitan cities with a million plus population. However, except for Kolkata, Chennai and Delhi, none of the Indian cities has a MRTS. And, only Mumbai, Bangalore, and Hyderabad have concrete MRTS plan.

Since introduction of MRTS needs huge amount of cost and long development period, a development plan of MRTS in million plus cities is highly recommended at an early date.

Assumed Content of Technical Cooperation

It is envisaged that i) determination of suitable technological option for mass transit system (e.g. metro railway, monorail, and bus transit system), ii) traffic demand forecast by traffic mode and rail/ road section, iii) preparation of facilities plan of transfer terminal station, are suitable for technical assistance from Japanese Government. Ministry of Railways, Metropolitan Development Authority, and/or newly-established metro railway corporation will be suitable counterpart agencies of the program.

Possible Counterpart Organisation

Ministry of Railways, Metropolitan Development Authority, newly-established metro railway corporation, etc.

Possible Type of Technical Cooperation

Development study

Assistance for Introduction of Commuter Operation for Existing Railway System

Background

Although the railway network in India is one of the biggest in the world, except for Mumbai, there are almost no existing railway sections coping with commuter operation. In the case of Bangalore and Chennai, while railways are passing through the city, they are not utilised for commuters. Since railways in Bangalore and Chennai have no adequate facilities and operation plan for commuter operation, operation intervals are too long to cope with commuters demand. For this reason, existing railway networks in both cities cannot contribute to reduce traffic congestion in urban areas.

In this regard, technical assistance for making existing railway networks operational for commuters is considered to be important.

Assumed Content of Technical Cooperation

It is envisaged that i) training for officials and working staff, ii) establishment of an introduction plan of facilities for commuter operation, such as traffic signals and SCADA system, iii) preparation of a commuter operation plan, and iv) renovation and improvement of rail trucks and station houses, are suitable for technical assistance from the Japanese Government. The Ministry of Railways and/or Indian Railway will be suitable counterpart agencies of the program.

Possible Counterpart Organisation

Ministry of Railways, Indian Railway, etc.

Possible Type of Technical Cooperation

Development study

Assistance for Setting Up Energy Conservation Centre

Background

Since Japan has no energy resources and has experienced two-time Oil Shock (energy crisis), the Japanese society has a lot of knowledge and technology about energy conservation. During the survey in India, Central Electricity Authority (CEA), Energy Efficiency Bureau, and some of the state owned distribution companies exhibited a keen interest in technology transfer about energy conservation from Japan.

Expected Assistance

Establishment of energy conservation center for disseminating of knowledge and technology of energy conservation to domestic and industrial consumers is one of the suitable technical assistance from Japan to India. Particularly, JICA has several experiences in the field, including Poland, Philippines and Turkey. Bureau of Energy Efficiency under Ministry of Power and state power distribution corporations will be suitable counterpart agencies of the program.

Possible Counterpart Organisation

The Bureau of Energy Efficiency under the Ministry of Power, state power distribution corporations, etc.

Possible Type of Technical Cooperation

Technical cooperation project, dispatch of expert

Assistance for Reducing Energy Consumption of Irrigation Pump

Background

Energy consumption of irrigation pumps accounted for more than one-fourth of total energy consumption in the country. In some states, energy consumption of irrigation pumps occupied almost half of total energy consumption. Overdraft from ground water resulted in a decrease of ground water level. Such excessive energy consumption for irrigation is mainly caused by heavily subsidized electricity tariff for irrigation. However, there are ample rooms for reducing its consumption by adopting technical and institutional efforts.

Assumed Content of Technical Cooperation

a) Execution Pilot Project on Energy Conservation

It is recommended that a pilot project be implemented in order to reduce energy consumption of irrigation. The pilot project includes replacement of degraded and inefficient irrigation pumps, awareness campaign for energy/ water conservation, limitation of load and supply hours using SCADA system. It is important to prove effectiveness of the pilot project in reducing energy consumption. Then, after the pilot project, technical assistance for dissemination of the outcome of the pilot project to other areas is also deemed necessary. The Bureau of Energy Efficiency under the Ministry of Power and/or a state-owned distribution company will be suitable counterpart agencies of the program.

b) Assistance for Manufacturing Technology Upgrading of Irrigation Pump

The Indian side has also focused attention on technical amelioration of inefficient irrigation pump,

which is prevailing to domestic market. They are only considering approving the irrigation pumps which have achieved certain electric efficiency, and putting counter stamps on them. And in installing new irrigation pump, they intend only to authorize pumps with counter stamps. Given this situation, there are needs from the Indian side for technical assistance for manufacturers of irrigation pumps. The Bureau of Energy Efficiency under the Ministry of Power etc will be suitable counterpart agencies of the program.

Possible Counterpart Organisation

Bureau of Energy Efficiency under Ministry of Power.

Possible Type of Technical Cooperation

Technical cooperation project, development study

Assistance for Making Remedial Actions for Sedimentation of Hydropower Station

Background

Introduction of private finance for the power generation sector is currently accelerating in India, particularly for coal and gas fired thermal power stations. However, most of these thermal power projects encounter considerable delay due to lack of adequate fuel supply and surge in the fuel price. To ameliorate the peak supply balance, and to strengthen energy security in the country, the Government of India intends to promote the development of large-scale hydropower station. Although the north-western and north-eastern part of county is rich in water resources, existing dams and planned sites have problems with sedimentation.

Expected Assistance Program

In order to solve sedimentation problems in reservoir of hydropower stations, it is recommended to provide technical assistance for establishing a comprehensive watershed/ sedimentation management plan, and for formulating countermeasures to alleviate problems at the existing hydropower stations which are already suffering from extensive sedimentation. National Hydro Power Corporation (NHPC), North Eastern Electric Power Corporation, and/or state-owned generation company will be suitable counterpart agencies of the program.

Possible Counterpart Organisation

National Hydro Power Corporation (NHPC), North Eastern Electric Power Corporation, state-owned generation companies.

Possible Type of Technical Cooperation

Development study

16.7 Priority List of Candidate Projects for Technical Cooperation

Table 45 shows the evaluation of priority for the proposed technical cooperation projects. The evaluation was made by considering such factors as maturity (readiness) on the India side, easiness (expertise) of implementation on Japan side, importance of the issue, urgency of the issue, and relationship with India's mid-to-long term objectives[45];

[45] Since the prority list is not based on numerical datas, the result is not necessarily accurate.

Table 45 Priority of Proposed Technical Cooperation Projects

	Degree of Priority	Evaluation Factor				
		Maturity on India side	Easiness of implementation on Japan side	Importance of the issue	Urgency	Mid-to-long term
1. Trade and Investment Promotion						
■ Dispatch of Investment Advisors and Training of Investment Promotion Staff of Indian States	Medium		○			
■Capacity Development of Trade Promotion Organisations	Medium			○		○
■ Improvement of Customs Procedures	Medium		○			
■ Dispatch of Investment Advisors and Training of Investment Promotion Staff of Indian States	Low			○	○	
2. Local Industry Promotion						
■ Industrial Cluster Promotion	High	○	○	○		○
■ Promotion of the Agro-industry	Low			○		○
■ Promotion of the Supporting Industry	Medium		○	○		○
■ Technology Disseminating through a manufacturing technology promotion centre	High		○	○		○
■ Introducing Enterprise Diagnosis for the Small-scale Industries	Medium		○			○
■ Regional Pilot Project for Enterprise Diagnosis	Medium		○			
3. Industrial Base Strengthening						
■ Support to Public Technical Assistance Centres	High	○	○	○		○
■ Improving Technological Educations	Low					○
■ Developing the Model Industrial Estate (Environmental Rehabilitation)	Medium	○			○	
■ Support for SIDBI Business Development Service Programme	High	○	○		○	
■ Capacity Building for State Finance Cooperation	Low			○	○	
■ Technical Cooperation through NABARD	High	○	○		○	
■ Technical Cooperation through Rashtriya Gramin Vikas Nidhi (RGVN)	Medium	○			○	
4. Infrastructure Development						
■ Assistance for Formulation of Urban Transport Master Plan	Middle		○	○		○
■ Assistance for Formulating the Plan of Mass Transit System	Middle		○			○
■ Assistance for Introduction of Commuter Operation for Existing Railway System	Low		○			
■ Assistance for Setting Up Energy Conservation Centre	High	○	○		○	
■ Assistance for Reducing Energy Consumption of Irrigation Pump	Medium			○	○	
■ Assistance for Making Remedial Actions for Sedimentation of Hydropower Station	Low	○	○		○	

Note: The mark "○" denotes that a relevant project fits a factor.
Source: JICA study team