Chapter3 Industrial Sector Analysis

This chapter analyzes the current status and issues for industrial development in Pakistan from the viewpoint of Public-Private Partnership, focusing on organizations involved in industrial development, and relation between private and public sector in the first section, followed by industry wise analysis and issues of area economic development through cluster.

3.1 Current Status and Issues for Industrial Development Framework

3.1.1 Overview of Industrial Development

The table below shows overview of industrial development in Pakistan since 1960s:

Table 3-1 Overview of Industrial Development

	1960	1970	1980	1990	Present
Political Environment	Military rule	Socialist regime, Separation of Bangladesh	Military rule, Soviet invasion to Afghanistan	Democratic rule, Nuclear test, frequent government changes	War on terror Semi-military rule
Industrial Orientation	Import substitution Industrialization	Nationalization	Privatization	Privatization	Privatization. Public-private Partnership
Trade	Protectionism, Export subsidy		Free trade	Free trade, Liberalization	WTO regime
GDP Growth	6.80%	4.80%	6.50%	4.60%	8.4%(04/05)
Manufacturing Sector	9.90%	5.50%	8.20%	4.80%	12.5%(04/05)
Investment ratio as % of		15.90%	17.00%	16.60%	15.3%(04/05)
Of which, Public Investment*1		10.30%	9.20%	7.50%	4.4%(04/05)
Of which, Private Investment*1		5.60%	7.80%	9.10%	10.9%(04/05)

*1 : Government of Pakistan(2005), Economic Survey 2005

Source : JICA Study Team

Orientation of Industrial policy in Pakistan has changed over time, starting from import substitution industrialization after the Independence, via nationalization policy in the 70s and current privatization and Public-private Partnership (PPP). Due to the changes of policy as well as political instability, the growth rates of manufacturing sector were stagnated during the 70s and the 90s, but have changed to upward trend since 2002.

Ministry of Industries, Production and Special Initiatives (herein after called Ministry of Industries) announced a draft report of 'Towards a Prosperous Pakistan: A Strategy for Rapid Industrial Growth' in January 2005, which shows a strategy for rapid industrialization required to achieve 'Vision 2030'.

Ministry of Industries intends to formulate detailed policies based on this paper after obtaining the formal approval of the government.[1]

The paper proposes 'incentive approach' instead of policies to promote specific industries which according to the paper failed to deliver, saying that:
'An old fashioned industrial policy approach, that seeks to promote specific group of industries at the expense of others, is eschewed for the simple reason that it rarely works. On the other hand, the incentives approach is central to the proposed strategy, but with a contemporary slant. A principal objective of the strategy is to get the incentives right for investing in industry by lowering the costs that inhibit potential investors. The strategy leaves it to the wisdom of the private investor as to which specific manufacturing activity he/she is best suited for.' (Government of Pakistan (2005), Executive Summary page 1)

The paper made specific recommendations for the areas of land, tax, regulation, infrastructure and human resources, but no analysis or policy recommendation was made for specific industries.

3.1.2 Government Organizations

(1) Federal Organizations

Since the industrial development involves various policy areas such as sector development, trade, tax, and labor, it is common that industrial policy involves various government organizations. In Pakistan, the following government organizations are involved in industrial development (see 2.2. for those related to human resource development):

Table 3-2 Organizations Related Industrial Development

Organization	Function
Ministry of Industries, Production and Special Initiatives	Industrial development（Under the Ministry, Engineering Development Board（EDB）is responsible for engineering industries, Small and Medium Enterprise Development Authority (SMEDA) is responsible for SMEs）
Ministry of Textile Industry	Development of textile industry
Ministry of Information Technology	Development of IT industry, IT infrastructure development
Ministry of Commerce	Trade and custom（Under the Ministry, Export Promotion Bureau（EPB）is responsible for export promotion）*
Board of Investment	Investment promotion
Central Board of Revenue	Tax administration
Ministry of Labor and Manpower, & Overseas Pakistanis	Labor policy, Labor regulations

*Export Promotion Bureau（EPB）is planned to be restructured to Trade Development Authority of Pakistan(TDAP) as an autonomous body.

Source：Government of Pakistan

The roles and functions of industry related government organizations, namely Ministry of Industry, Ministry of Textile, Ministry of IT, EDB and SMEDA are reviewed below. The focus is placed on demarcation and relations between Ministry of Industries and EDB.

[1] As of August 2006, the paper had not been approved yet.

1) Ministry of Industries, Production and Special Initiatives

The Ministry consists of four wings. Functions and related organizations of respective wings are summarized below:

Table 3-3 Organization and Function of Ministry of Industries

	Investment & Facilitation	Policy & Implementation	Corporate Sector	Special Initiative
Function	・Monitoring of industrial trends ・Investment promotion ・Coordination with the private sector ・Tariff rationalization	・Policy formulation /policy review ・Sectoral study ・Pharmaceutical industry ・Legal issues ・Coordination for Trade/WTO issues ・Coordination with chambers	・Supervision of public sector corporations ・Privatization	・Implementation of Special Projects ・Non-manufacturing, non-traditional industries ・Capacity development of the ministry ・Cross-sectoral issues
Related Organization	SMEDA EDB Patent and Design Office		PIDC EPZA PITAC Other public corporations	TUSDEC NIPDMC Pakistan Dairy Development Company etc.

Source：Ministry of Industries（http://www.pakistan.gov.pk/ministries/index.jsp?MinID=13&cPath=142）

The present Ministry of Industries is an outcome of merger in 1993 between original Ministry of Industries which was responsible for Industrial policy formulation and Industry related regulation, and Ministry of Production which was supervising public industrial units. In 2004, the Ministry was renamed as Ministry of Industries, Production and Special Initiatives, adding Special Initiative Wing which looks after the special assignment by Prime Minister.

As shown above, the organization of the Ministry is divided on the basis of functions and thus is not suitable for promoting respective industries. Although EDB would draft policies for engineering industries, SMEDA for SMEs and others for Ministry of Industries, the authority to approve these draft policies rests with the Minister of Industries. If the policy involves the issues which fall under the other government organizations such as Ministry of Commerce or Central Board of Revenue (CBR), the efforts would be made to involve these organizations from the early stage of policy formulation. After the approval of policies, however, implementing policies are left to the organization in charge, to which the Ministry does not have sufficient leverage, or monitoring mechanism to enforce implementation.

Ministry of Industries is interested in letting a private sector take part in formulating as well as executing the industrial policy. However, there are few private industry associations that have both the ability a capability to be counterparts of the government. Perhaps, APTMA (All Pakistan Textile Mill Association) is one of the few private associations that are able to analyze the business trend and to present concrete policy proposals to the government. Ministry of Industries does not seem to consider that the Chambers of Commerce and Industry are good sources of information and reliable partners, because the Ministry believes that many of their members should be traders and those views of industrialists are not fully represented in the organization. Under these circumstances, the relationship between the Ministry and private industry associations is not very intimate. The Ministry just requests business related data from these associations. For instance, the Ministry has been

monitoring production trend of 32 key products each month, and these production data are mainly provided from industry association concerned. However, the Ministry often finds that these data are not always accurate and consistent. This is another reason why the Ministry does not have confidence that private industry associations would become their reliable partners. The improvement of secretariat of these industry associations should be highly requested. Being frustrated with the industry associations, the Ministry itself has recently established a think tank called Pakistan Business Council, which consists of 18 well-know retired businessmen. The Ministry expects that this council should advise economic policy of the government and act as a bridge builder between the government and the private sector.

It is sometimes necessary for the Ministry to coordinate with other ministries and government agencies, but this coordination is not very frequent. Only when the government discusses the budget or the trade policy, the ministries or agencies concerned should get together and coordinate their views and interests.

Monitoring of policy implementation is within the purview of EDB for engineering industries and SMEDA for SMEs. However coordination with the other government organizations on policy related issues has to go through the Ministry of Industries.

Apart from the above, under the Special Initiative Wing, the Ministry of Industries has three separate development corporations for dairy, marble and gems[2], as well as Technology Up-gradation and Skill Development Company (TUSDEC) which aims to support technology up-gradation of industries.

2) Ministry of Textile Industry

Ministry of Textile Industry is a new ministry established in September 2004, aiming to vitalize textile industry, which is the biggest manufacturing sector in Pakistan. Major functions of the Ministry are as follows:

i) Formulation of textile industry policy
ii) Coordination and liaison with federal agencies/institutions, provincial and local government for facilitation and promotion of the textile sector
iii) Liaison and cooperation with international donor agencies and regulatory organizations
iv) Setting standards and monitoring compliance of the standards
v) Textile related statistics, surveys, dissemination of information

The ministry is working on formulation of textile industry policy and implementation of textile related projects such as Textile City and Garment City.

3) Ministry of Commerce

Ministry of Commerce takes a role as the trading policy making institution. Every year, the Ministry announces its trading policy. The policy includes not only related measures on major industries such as textile, but also includes the export promotion plan and the incentives for new industries. Main functions of the Ministry are i) planning of trading policy, ii) controlling of trade management system, iii) issues of export/import licenses, iv) human resource development for trade promotion (Export Promotion Bureau), etc. Moreover, this Ministry is currently negotiating its FTA agreement with Thailand, Indonesia and Bangladesh.

4) Ministry of Information Technology

Ministry of Information Technology was established in 2002 to strengthen IT industry in Pakistan by

[2] These corporations were established as pilot projects to realize the strategies formulated by SMEDA with the assistance from USAID. Similar plans are in pipeline for sports goods, surgical instruments, leather, and engineering goods.

separating Information Technology/ Telecommunication Division from Ministry of Science and Technology. Main functions of the Ministry include i) standardization of electronic governance within the Government, ii) development of software industry, iii) development of IT infrastructure, iv)human resource development for IT industry.

5) Engineering Development Board（EDB）

The role of EDB is to strengthen the engineering sector and integrate it with the world market to make it the driving force of economic growth. Although main responsibility of EDB used to be supervision of Industry Specific Deletion Program (ISDP) for automobile sector (see also 3.2.1), the expected role of EDB has changed since ISDP ceases to exist in 2006 replaced by tariff based system of indigenization. EDB has gone through fundamental restructuring in 2004 by absorbing Expert Advisory Cell which was a research division of Ministry of Industries. After restructuring, the main function of EDB shifted from that of regulator to 'facilitator' for private sector activities. Currently EDB consists of four departments whose functions are summarized below:

Under the new organization, the Sector Development Group identifies current status and issues for each sector, which will be an input for the Policy Development Group and Tariff Group. The Policy Development Group formulates policies for engineering industries, while the Tariff Group is responsible for tariff rationalization including planning and supervision of automobile indigenization under the tariff based system. The Business Development Group carries out works related to export promotion of engineering goods. Professional staff at EDB is around 40 as of August 2006.

Although drafting of policy for engineering industries is a responsibility of Policy Development Group of EDB, the authority to approve them rests with the Minister of Industries as indicated earlier. While EDB would monitor the implementation of policy, the coordination with other ministries which necessitates from monitoring; have to go through the Ministry of Industries.

Table 3-4 Organization and Functions of EDB

	Policy Development Group	Sector Development Group	Business Development Group	Tariff Group
Function	・Integrate engineering sector development policies with other policies	・Sector analysis	・Facilitate participation of engineering sectors in international/ national exhibitions	・Campaign for anomalies of tariff
	・Work related to WTO, SAFTA	・Establish regional offices	・Creating networking among Pakistani companies	・Indigenization of automobile
	・Coordination with EPB, SMEDA etc	・Formulation of sectoral committees	・Match making with foreign companies	・WTO related activities on tariff
	・Monitoring of policy implementation	・Setting quantitative targets	・Export promotion/ Human resource development	・Liaison with CBR and Associations etc, for tariff rationalization

Source : EDB（http://www.engineeringpakistan.com/EngPak1/index.php）

Although the structural change aiming to facilitate private business is commendable, there is still room for improvement in terms of formulating and implementing industry specific policies due to lack of specialized human resources and authority / mechanism to enforce implementation[3]. Furthermore since

[3] The number of staff at Policy Development Group of EDB is just 4-5 as of August 2006, although the number will be increased in future since EDB has tried to find more professional staffs.

the sectors EDB intends to cover are extensive, it blurs focus and thus feasibility of policies becomes questionable [4]

Business information on each sector is supposed to be collected through Sub Committees that are composed of major members of industry association concerned. This is, however, recently introduced system under the new administration. In 2005 only five Sub Committees were formulated including Sewing machinery, Energy meter, Electrical fitting, Auto parts, Standardization and International Certification. It is said that each Sub Committee comprises of five to ten members, and the number of meetings shall be around three to five times a year. Electrical fitting is a newly born Sub Committee, following the suggestion from EDB. Although EDB covers a wide variety of industrial sectors, its sources of information on these sectors seem rather limited. The effectiveness of its promotion policies would be uncertain.

Moreover, the automobile its parts industries are getting frustrated with the power of influence of EDB. According to the two associations (DAMA&PAAPAM), before the structural change EDB kept consistent attitude of promoting automobile and parts industries. EDB used to be very active in coordinating interests with the federal ministries, government agencies, or even with other industries, by representing the views of the automobile and parts industries. The industries were able to rely on EDB, and they did not have to negotiate with other public or private institutions. However, after the structural change, the associations of automobile and parts industries should contact relevant institutions individually, because they can no longer expect that EDB should represent their interests and coordinate with others. Moreover, these associations, the automobile parts association in particular, felt terribly upset due to the fact that EDB went into the discussion about the import of used cars in the government, without having fully discussed the issue with the association in advance.

5) Small and Medium Enterprise Development Authority（SMEDA）

SMEDA was established in 1998 aiming to formulate SME policy and provide SME related services. The number of staff is around 180; of which 75 are stationed in Lahore headquarter with rest in the field offices. Organization and functions of SMEDA are shown in the table below:

Table 3-5 Organization and Functions of SMEDA

	Policy Planning	Business & Sector Development Service	Out-Reach	Innovation and Competitiveness
Function	・Formulation of SME policy, provision of SME-specific inputs in other policies	・Financial/ legal services	・Outreach through four regional offices, and 20 regional business centers	・Industry-Academia linkages
	・Coordination with related organizations	・Sectoral study/ strategy development	・Cluster development	・Incubation
	・Information dissemination		program	・Innovation
	・Institutional capacity development		・Provision of training	
			・Industry support (textile, automobile, furniture）	

Source：SMEDA（http://www.smeda.org/）

[4] There are 15 target sectors including automobile, Electronics and IT.

As a focal point for SME promotion, SMEDA is making efforts for outreaching. There are 20 regional business support centers where coordinators holding MBA provide consultancies to SME customers. These support centers are basically located within the premises of local chambers or District Government to cater for the needs of SMEs.[5] Functions of SMEDA are discussed in detail in 3.3.

6) Export Promotion Bureau (EPB)

EPB is an organization for export promotion under the Ministry of Commerce and provides manufacturing establishments with the following.

Marketing	Market Research Fairs and Exhibitions - local and international Overseas and local publicity Seminars/Conferences/Workshops, etc.
Facilitation	Counseling Simplification of procedures Establishing buyer-seller contacts Deliver information
Regulatory	Formulation of proposals for the Trade Policy Implementation of Trade Policy Textile Quota Management Registration of Importers/Exporters Registration of Export Contracts Determination of Minimum Export Prices Issuance of GSP Certificates
Service to exporters to strengthen competitiveness	Skill development Establishment of training institutes for textile, leather, surgical goods, gems and jewelry, for training and development of human resources for export-oriented industries (Export Development Fund, which is 0.25 % of the export cess, has been provided to 22 trade associations consisting of seven industries and the total fund is Rs. 2 billion since 1992). Seminar on export related issues Support for obtaining ISO9000 and ISO14000 Awareness raising on social issues such as child labor

Total numbers of employees is about 600. EPB is now in the process of converting it into a semi-autonomous body, Trade Development Authority (TDA). It is expected that TDA will officially start in December 2006. After reforming the bureaucratic organization of EPB, TDA will further promote exports of Pakistan by utilizing the private sectors' skills in a comprehensive manner. TDA will launce on supporting development of export products in addition to export marketing. EPB intends to facilitate a comprehensive supply chain, therefore, it will coordinate various stakeholders such as Ministry of Industries, Production and Special Initiatives, Ministry of Food, Agriculture and Livestock, local governments, the central government and the State bank of Pakistan so that exports can be promoted. After the conversion, TDA will employ experts from the private sector for both management and staff workers.

The Federal Commerce Minister would be the chairman of TDA and it would be run by a chief executive officer (CEO). TDA will organize a policy board to be headed by the Commerce Minister

[5] In reality, however, the study team did not meet SMEDA coordinators in Sialkot, although we visited local chambers several times. Besides no industrialists mentioned existence of coordinators.

with members from the private and the government to regulate the functions of the new authority. CEO of TDA will be recruited from the private sector. Under the CEO, 18 departments will be formulated such as planning, marketing, IT, Research, HRM, Finance & Administration, Export Firm Service. Employees of TDA will be paid in a very moderate manner and according to the demands of the global market. Problems, which cannot be solved by the board, will be dealt with by a Federal Export Promotion Board headed by the prime minister, and the cabinet if the board cannot solve.
TDA will further strengthen and institutionalize the communication with the private sector, which is now conducted personally. It will establish boards for major products and the each board will consist of eight to ten private people and two to three TDA staff members. The board members from the private sector are assumed to be representatives of business/trade associations and legal and financial experts. Regular meetings of the boards will be held in order to discuss infrastructure problems and so on. Chairmen of the board are expected to come from the private sector.

EPB has participated in the UNIDO's "Cluster Development Program" targeted for SME's exports started in 2001, in order to monitor supply chains of exported goods. EPB financed US$ 0.21 million through the Export Development Fund. The government of Punjab used to support seven cluster development programs through Punjab Small Industries Corporation, but it ceased the support. Therefore, EPB is the only institution, which supports cluster development. EPB dispatch experts as Cluster Development Agents to clusters, which EPB has assisted in order to facilitate training programs. However, since EPB's activities are limited to export promotion based on the jurisdiction authority, it mainly provides information and raises awareness regarding exports, and cannot explore domestic markets. It is considered that TDA will promote exports of SMEs by investing small amount of money.

EPB is now considering the following plans.

Names of Plans	Contents
Carpet City Plan	Households make carpets in small villages at present and TDA wants to make a cluster of carpet producers in a certain area. The government of Sindh has already decided to provide land for the purpose.
Warehouse City Plan	There is no appropriate warehouse in Karachi in spite of the fact that it is a port city. TDA plans to establish modern warehouses, which can function as a local hub.
Women Entrepreneurship Plan	TDA plans to provide services for incubation to women entrepreneurs. The government of Singh decided to provide a land and the building for that purpose. Starting costs of each business are to be born by women entrepreneurs.
Gems & Jewelry Plan	A cluster of gems & jewelry producers will be established near the port in Karachi. The land has already prepared.
Overseas Expor Promotion Hubs Plan	Commercial attaché working in embassies in a world have not promoted exports effectively so far. TDA needs to establish its own overseas export promotion hubs.

EPB aims at promoting the following items in addition to the existing export items.

- IT
- Fruits
- Fisheries[6]
- Marble & Granite
- Gems & Jewelry

[6] Frozen shrimp is the major exported item at present. EPB (TDA) plans to conduct a research on possibility of tuna export. It intends to promote shrimp cultivation.

・Chemicals
・Medicine
・Engineering
・Meat
・Services such as construction, accounting and tourism

(2) Relations among Federal, Provincial/ District Government

The table below shows industry related functions of Federal, Provincial and District Government. The table adopts the case of Punjab to explain province.

Table 3-6 Industry Related Functions of Federal/ Provincial / District Government

	Federal	Province（Punjab）	District（Punjab）
Organization	Ministry of Industries	Industries Department	District Officer (Enterprise & Investment Promotion)
Function	・Formulation of Industrial Policy ・Sectoral Study ・Monitoring of industry trend ・Investment promotion ・Public corporation ・Privatization ・Implementation of special projects	・Supporting Investors ・Industrial statistics ・SME assistance/ Establishment of Industrial estate ・Vocational training ・Price control of essential commodities ・Mine Development Management ・Recommendation to Industrial related policies	・Planning and development of cottage /small industries ・Control of prices of essential commodities ・Organizing industrial exhibitions ・Up-dating district pre-investment studies ・Collection of census data ・Preparation of industrial directory ・Registration of firms/ associations ・Feedback to industrial/ trade policies ・Liaison with chambers
Related Organization	EDB、SMEDA、PITAC TUSDEC etc	PSIC、PIEDMC、TEVTA PPSB etc	None

Source: Government of Pakistan、Government of Punjab（http://203.215.180.58/portal//portal/）、

Under the Devolution Plan 2001, District Officers (Enterprise & Invest Promotion) are delegated the functions of price controls of essential commodities, organization of industrial exhibitions and registration of firms and associations in the district, in addition to their original function of collecting industrial statistical data. They are also empowered to propose any plans to promote SMEs in the district. According to this change, District Officers (Enterprise & Invest Promotion) who are deputed from Provincial Industries Department are now under the District Government. Although it is a big step forward for District Governments who have close proximity to local industries to have authority to conduct surveys and make planning from the view point of more localized industrial development, they in reality do not have enough capacity and/or willingness to do so.[7]

[7] One DCO explained to the study team that the industrial related work in District id only statistical data collection.

On the other hand, Provincial Industries Department indicates that District Officers deputed by the Department are more inclined to follow the instruction of District Government and less attention is paid to their original function such as collection of census data, thus causing bottlenecks in the flow of information, which is vital input for formulation of industrial policies.

Foregoing discussion demonstrates gaps and lacks of coordination at various levels of government machineries for industrial development. On the one hand, vertical linkages from District government to Federal government through Province, which channel local demands to the policy makers, seems to become more fragile after devolution since District governments lack capacities to carry out their increased responsibility. On the other hand, at Federal level, Ministry of Industries in parallel with EDB and SMEDA are conducting study and formulating various policies but the mutual coordination among them and the overall framework of industrial development are not necessarily taken into account. Coordination among related government ministries and agencies seems to function at policy formulation stage by involving related organizations in the formulation process. It, however, lacks any meaningful enforcing mechanism at implementation stage. The gap and lack of coordination has resulted in further fragmentation of already scarce government resources.

3.1.3 Current Status of Public-Private Partnership

(1) Business organization

Business organizations in Pakistan are divided into two; namely Chambers of Commerce and Industries set up at Districts and Industry associations for respective industries. There are 48 chambers and 124 industry associations in Pakistan, which are affiliated to Federation of Pakistan Chambers of Commerce & Industry (FPCCI), an apex body of all business organizations in Pakistan. FPCCI is a chief spokesman of private sector in Pakistan against the government as well as foreign countries. All business organizations are supervised by Ministry of Commerce based on the Trade organization Ordinance.[8]The table below summarizes business organizations in Pakistan

In terms of lobbying, there is a tendency for chambers to deal with more area specific issues such as local infrastructure or dispute resolution, while central issues for industry associations are tax-related ones such as custom and sales tax. [9] There are also cases where industry associations become focal points for government assistance and/or management bodies for common facility centers setup with government assistance. While some associations are very active, there seem to be many dormant associations. In some associations, their members have gone directly to the government to negotiate since the associations have failed to deliver the interests of industry. In many cases, leading companies dominate executive committees of the organizations, which may cause politicization of various issues and create a tendency to neglect the interests of SMEs.[10] During company visits, there is criticism towards business organizations as political and closed, while there is also recognition especially among SMEs that the association is an effective tool to negotiate with the government, which is difficult for smaller companies.

On the other hand, the government officials consider business organizations as their counterparts in private sector, but point out that sometimes their demands are excessive and not realistic. Private companies also criticized the approach of association they belong to as not constructive. This suggests that the association may loose the support from its members unless it keeps updating itself to broaden its horizon and act toward the long-term prospect of the industry.

[8] There is a Joint Secretary (Trade organization) at Ministry of Commerce. According to Dawn on 20 August 2006, revision of Business organization Ordinance is under consideration.

[9] The chambers in big cities have a wider scope of activities.

[10] According to Dawn as of 20 August 2006, many business organizations are controlled and politicized by fake members. It also quoted a former president of Karachi Chamber of Commerce and Industry as saying that at least 25 business organizations are fake and bogus. It is indicated that election conflicts and trading of accusations are a routine affair for these organizations.

The budget sizes or institutional capacities of private businesses organizations, such as the chambers of commerce and industry or industry associations, are various. In the case of FPCCI (the Federation of Pakistani Chambers of Commerce and Industry), annual budget is around 25~30 million Rs (about US$ 0.5 million). Twenty percent of the revenue comes from the membership fee of regional chambers of commerce and industry or other industry associations. The other sources of revenue include project incomes, including those generated from the official commendation of the Export Award. FPCCI has 59 Standing Committees, which are composed of seven to 12 members. Some committees organize meetings frequently, but some do not. According to the FPCCI Annual Report 2003, many of the Standing Committees did not held any meeting in the year.

Table 3-7 Business Organizations in Pakistan

	FPCCI	Chamber of Commerce and Industries	Industry association
Level	National level	District level	Individual industry
Location	Karachi, Lahore, Islamabad	District center	Major cities for respective industries. In many cases, associations have offices in both Karachi (South) and Lahore (North)
Aim	・Represent all private sector to the government ・Represent private sector to other countries	・Represent interests of private sector in the District	・Represent interests of specific industries ・In a big industries, there may be separate associations for manufacturers, importer/ exporter, and merchants
Function	・Lobbying(Federal level) ・Information dissemination ・DB, WTO resource center ・Study/ Research ・Delegation	・Lobbying（District/ Province/ Federal） ・Delegation ・Dispute resolution ・Issuance of certificates	・Lobbying（Federal） ・Exhibition/Delegation ・Information dissemination (Newsletters） ・Issuance of certificates

Source: JICA Study Team

The most important role of FPCCI is to present proposals on the government budget as well as on the trade policy. The Annual Report 2003 shows that more than 100 proposals were presented to the government in that year with regard to eight issues, such as tax rate, tariff rate and SME support. Most proposals are concerned with the reduction of tax or tariff rates. No background data or business related information is attached with these proposals. We cannot help having an impression that these proposals are simply composed of the wish lists of interest groups concerned. FPCCI has its own secretariat, with nine professional staff members. Only one director seems to be in charge of research activities. The organizational capacity of FPCCI should be much weaker than that of Federation of Malaysian Manufactures (FMM), which has 150 professional staff members (see BOX 3-1). We cannot expect that FPCCI should presents concrete policy proposals, which are supported by professional analysis of comprehensive business data and information.

Among the regional chambers of commerce and industry, those in large cities such as Lahore and Karachi seem to be active in various fields. According to the Annual Report of Lahore Chamber of Commerce and Industry in 2005, it had 91 Standing Committees, and executed a variety of projects,

including overseas trade missions, fairs and exhibitions, management training programs, in addition to the presentation of policy proposals to the authorities concerned. Lahore Chamber of Commerce and Industry also has its own secretariat, but the number of professional staff is not more than ten. The role of this secretariat in collecting business related information or analyzing data must be rather limited as well.

There are many industry associations in the country. Some associations are large in size, but some are very small. According to the Ministry of Industries, APTMA (All Pakistan Textile Mill Association) should be one of the few associations, which has a professional secretariat and present concrete policy proposals supported by professional analysis of the data and information of the industry. Many of the other industry associations do not even have its own secretariat office. In the case of PAMA (Pakistan Automobile Manufacturers Association), which comprises of relatively large automobile assemblers, the association was able to establish its own secretariat office in 2006 with only five permanent staff members.

BOX3-1: A Vitality of Private Industry Associations in Malaysia

Malaysia has 5 major industry associations. Among them, FMM (Federation of Malaysian Manufacturers) has been deeply involved in the formulation and implementation of the government's industrial policy. FMM was established in 1968, and it has 2,192 members in 2005. This association has 19 Committees, focusing on specific issues, such as IPR, Custom, Energy Management, and Environmental Management, in addition to 26 Industrial Groups by sector, such as Fertilizer, Aluminum, and Automobile. FMM is represented in a number of official committees of the government. In total its members participate over 160 committees of the governments at the federal and the provincial levels. FMM organizes a variety of projects every year, including seminar, fair, exhibition, training programs and publication. In 2005, FMM implemented 1,240 training programs, and about 20,000 persons participated in these programs. FMM's 150 staff member manage these projects. In comparison with other four major industry associations, the size of FMM secretariat is relatively large. The annual budget of FMM is about US$ 3.6 million. Only the half of the revenue comes from the membership fees. The other revenues are generated by the implementation of above-mentioned projects.

According to the CEO of FMM, the capacity of private industry association is largely affected by the capacity of its secretariat. It is extremely important that the secretariat should employ a sufficient number of talented staff, that the secretariat itself is professionally managed. Otherwise, the association cannot figure out rapidly changing business trend in the world, and make timely analysis for the members. Moreover, it is difficult for the association to monitor the implementation of policy measures of the government. The CEO also pointed out that any industry associations need delicate balance between the secretariat and the board members. The important role of the board members is to decide strategic orientation of the association.

The board members should not get involved in day-to-day operation of the secretariat. If the operation of the association is easily influenced by some of the board members, the services provided by the association might be biased, and might not be beneficial to all types of members. It is also very important that the policy proposals to the government by the association should not only reflect the interests of the board members. Therefore, when some board members participate official meetings of the government, the members are always accompanied by a staff member of FMM secretariat, who minutes the meeting. The minute shall be presented to the internal councils of FMM, and circulated to all members in the newsletter. Due to this careful effort, the board members cannot present their selfish interests at the official meetings in the government, and the government can believe that the board members present the interest of the industry as a whole. Due to the CEO of FMM, furthermore, one of the important factors to keep the secretariat professionally managed is its capability to generate own sources of income.

If most of the income of the association comes from the membership fee, the secretariat cannot employ talented and skilled staff and take a firm stand against the board members. It is suggested for industry associations to find out sources of income other than membership fee. Unless the secretariat of industry associations is highly capable and professionally managed, any public-private committees should not generate much benefit as expected. FMM is also very careful to work with the media. Even though the association does not have the same opinion with the government on some policies, it does not openly criticize the government using the media. The association knows that once it uses the media to criticize the government, the attitude of the government would become rather inflexible. Even though we can win the battle, we might loose the war, said the CEO of FMM. FMM consistently maintains the public-private partnership to pursuit its business interest.

Malaysia is regarded as a notable example to make outstanding industrial development based on the public-private partnership. One of the important factors behind this success is the existence of the professionally managed and vigorous industry association such as FMM.

(2) Promotion of Public-Private Partnership

The current government has placed the top priority on economic revival from the beginning and its conviction to maintain consistency of policy and value the dynamism of private sector is highly regarded among private companies. Each policy papers on industrial development carry the word of 'Public-private Partnership' and policy makers are expected to listen the voice of private companies. The industry related government organizations such as Ministry of Industries, EDB and EPB are under restructuring process to change them from supervisor to facilitator with some of their board members from private sector to ensure their voices to be heard. There is a new type of institution, which is owned by the government but managed by private sector such as TUSDEC.

No doubt should these initiatives be highly regarded. In fact, those private businessmen involved in the board of government organizations or public-private projects, support government policies and make efforts to materialize them.[11] Involving private businessmen in this way proves to be effective in terms of both enhancing the effectiveness of policies by taking private views in account and ensuring the proper implementation by inducing them in implementation and monitoring process as well.

However the mechanism to absorb private opinions does not function effectively. Those private businessmen do not necessarily represent their own industry. They often join as individual.[12] Even though those businessmen are excellent managers, they cannot represent the industry if they join as individuals. In fact, there are cases where the association did not know the project planned by a federal institution for its industry, or the government invites only the manager of leading company in the industry but not the representative of industry association.[13] Although it is true that the associations are not always capable enough, efforts are required to establish effective mechanism to collect the voices of industry as a whole.

The negative view of the government officers to private associations that the private sector only presents wish list was influenced by the way how the associations are managed. Although the associations are not always capable enough, efforts are required to establish effective mechanism to collect the voices of industry as a whole.

Another concern is feasibility. Current commendable initiatives should not be retarded or cancelled due to such reasons as governmental changes, transfer of officials and bureaucracy as happened in the past. Many private businessmen think that the government in Pakistan is good at writing policy but not implementing it, saying the government only presents vision or proposal. It is therefore very important to make results as soon as possible to achieve confidence of private sector.

(3) Manufacturing Establishments Views on Industry Association

One of the components of this study was the questionnaire survey of 500 local manufacturing establishments. The Section 2 of this questionnaire survey focused on the membership and role of industry associations. The results of the survey are presented in the following.

A number of establishments responded that they were the members of industry associations. The ratio reached 86% in total (see table 3-8). There is not clear difference in the ratios among sectors. About 10% of the establishments decided not to be the member of any industry associations. These establishments had various reasons to be nonmembers. Half of the respondents replied that they

[11] Private Representative at TUSDEC insists the effectiveness of their approach and supports overall government economic policies.

[12] Board members of TUSDEC and EDB etc.

[13] Surgical instrument of Sialkot was informed by the consultant that TUSDEC is planning some project for their industry. They said that TUSDE had never contacted them as of August 2006. They have also not received any reports from SMEDA on their industry. In addition, a leading vendor not representative of PAAPAM was invited for the meeting where important decision to regulate import of used cars have taken.

themselves did not make any effort. This answer is followed by there is not industry association relevant to our business and the role of the industry association is limited.

Table 3-8 Affiliation of the Surveyed Establishments to Industry Associations

(1) Rate of Affiliation

	Yes (%)	No (%)	Total Answers
Textile Clothing	88	12	211
Food Processing	89	11	71
Automobile & Parts	85	15	39
Electronics	93	7	14
Chemicals	86	14	57
Housing related	80	20	102
IT	50	50	6
Others	75	25	8
Overall	86	14	508

Source: JICA: Pakistan Manufacturing Establishments Survey 2006

(2) Reasons Not be the Members

	Total Answers	%
We ourselves did not make any effort.	59	53
There is no business association relevant to our business.	26	23
The role of the business association is limited.	12	11
The services of the business association are not attractive.	7	6
The membership fee is too high for its service.	1	1
No Research Facilities Available	1	1
Applied for Membership	1	1
Tried to make association	1	1
We have our own strategy & Policies	1	1
Total answers	111	100

Source: JICA: Pakistan Manufacturing Establishments Survey 2006

Services from Industry Associations

The surveyors asked types of services that industry associations provided to their members. Firstly, the surveyors asked the availability of the services from the industry association. Seventy seven percent of the respondents mentioned that they received some kinds of services from their industry association (see Table 3-9). There are some differences among sectors. In the textile sector, 83% of the respondents received the services from the association, while only 70% of them got some service in the automobile and the chemical sectors. A variety of services were provided by the industry association, including those major services such as providing information about domestic policy & regulations, providing domestic market information, delivering your industries collective views on the policy to the government (see Table 3-10). On the other hand, the most requested services from the respondents to the association should be providing overseas market information and providing domestic market information (see Table 3-11). The industry associations should improve their services to provide overseas and domestic market information to their members.

Table 3-9 Availability of Services from the Industry Associations

	Yes (%)	No (%)	Total Answers
Textile Clothing	83	17	186
Food Processing	73	27	63
Automobile & Parts	70	30	33
Electronics	77	23	13
Chemicals	69	31	49
Housing related	73	27	82
IT	100	0	3
Others	50	50	6
Overall	77	23	435

Source: JICA: Pakistan Manufacturing Establishments Survey 2006

Table 3-10 Types of Services Received from the Industry Associations by the Respondents (Multiple answers)

	Total Answers	%
Providing information about domestic policy & regulations	84	19
Providing domestic market information	60	14
Delivering your industry's collective views on the policy to government	57	13
Providing information about international regulations & agreement	56	13
Providing overseas market information	54	12
Arranging business meetings with local business representative	40	9
Delivering industry's collective views to improve the service	39	9
Arranging business meetings with overseas business representative	36	8
Other services	12	3
Total answers	438	100

Source: JICA: Pakistan Manufacturing Establishments Survey 2006

Table 3-11 Types of Services Requested to the Industry Associations from the Respondents (Multiple answers)

	Total Answers	%
Providing information about domestic policy & regulations	33	10
Providing domestic market information	42	13
Delivering your industry's collective views on the policy to government	35	10
Providing information about international regulations & agreement	36	11
Providing overseas market information	46	14
Arranging business meetings with local business representative	36	11
Delivering industry's collective views to improve the service	37	11
Arranging business meetings with overseas business representative	36	11
Other services	35	10
Total answers	336	100

Source: JICA: Pakistan Manufacturing Establishments Survey 2006

Assessment of the Role of Industry Association

The study asked the establishments how they assessed the importance of the industry associations, and how they were satisfied with the services of the associations. Concerning the importance, 72% of the respondents consider it as very important (see table 3-12). Including those answered important, over 90% of the respondents regarded the industry associations as important organizations. Concerning the level of satisfaction, 80% of the respondents mentioned that they were satisfied with the services from the industry association (see Table 3-13).

Table 3-12 Assessment of the Importance of Industry Associations

	%	Total Answers
Very Important	72	240
Important	24	80
Not Important	4	13
Overall	100	333

Source: JICA: Pakistan Manufacturing Establishments Survey 2006

Table 3-13 Satisfaction to the Services of Industry Association

	%	Total Answers
Yes	80	266
No	20	67
Overall	100	333

Source: JICA: Pakistan Manufacturing Establishments Survey 2006

3.1.4 Issues for Industrial Development

The following three issues are identified for present industrial development in Pakistan.

(1) Lack of Focus

The policy framework of current government is not promoting specific industries but providing right sets of incentives for potential investors. However, in the county like Pakistan where the level of industries in terms of capital, labor, and technology is low, it is too optimistic to expect that providing incentives only allow competitive industry to develop. Although it is not realistic to develop respective industries deliberately, at least future structure of industry has to be agreed in the long-tern development plan and strategic policy to achieve this has to be formulated. However, in reality, while no comprehensive policy exists for major industries such as automobile, electronics and chemistry, there are so many policies, incentives and in some cases own development corporations, under the norm of SME promotion for small industries such as gems, marble and dairy. Not only does it contradict to the principle that promoting specific industries is not effective, but also it is questionable in the view of prioritization in industrial promotion. The consensus established among policy makers that promoting specific industry does not work seems to have resulted in negligence of efforts to understand the working of respective industries, to design future industrial structure of the country and to formulate the comprehensive and consistent development policy for respective industries. Calling themselves 'facilitator' seems to give them an excuse for not considering future industrial structure and policies required to achieve this. There should be thorough discussion among all stakeholders on whether right incentives only can achieve industrialization. On the basis of this discussion, priority and focus should be agreed in order to allocate scarce resources of the government more effectively.

(2) Mechanism to Ensure Policy Implementation

Under the current government structure, the emphasis is placed more on formulation than on implementation/monitoring of the policy. Roadmap and implementation mechanism of the policy are not always clear either. There does not seem to be sufficient numbers of officials allocated to

implement the policies. Although policy formulation divisions are supposed to monitor according to the explanation given by the government officials, the number of staffs is limited and it is not realistic to expect that they monitor the implementation while formulating so many policies described above. Furthermore since multiple ministries and agencies are involved in implementation of industrial policies, it is difficult to follow implementation of policies in different areas without effective coordination mechanism. That mechanism does not seem to exist. It should be noted that policy is just a paper if it is not implemented. The government has to strengthen policy implementation/monitoring mechanism including effective coordination mechanism of various ministries and agencies.

(3) Improved Public-private Partnership

Endeavor for Public-private Partnership in real term is still in a preliminary stage in Pakistan. Although the initiative taken by the current government is highly regarded, the relation between public and private has not fully grown in its potential. On the one hand, there is a tendency of private sector to seek for protection from the government, and there is a lack of understanding or indifference of the government side to the real needs or grievances of private sector. Private sector has to stop depending on the government and be more self-reliant to be able to compete in the international market. The government, on the other hand, needs to understand more deeply about the reality of Industrial sectors, especially important ones. Top businessmen only cannot tell you the whole picture of the industry. The government officials themselves have to visit factories to see what is happening on the ground. After both sides making efforts in these directions, fruitful discussions become possible on what both sides should do for the prosperous industrial development in future. Formulation and implementation of policies, which can contribute to industrial development in real terms is possible on the basis of matured relations between public and private.

3.2 Current Status and Issues for Major Industries

3.2.1 Automobile

(1) Overview

1) Contribution to National Economy

The share of automobile industry is 3.5% in value addition of manufacturing sector in Pakistan.[14] In manufacturing sector in Pakistan, resource based industries such as textile and foods retain large shares. Automobile is highest next to electrical machinery among engineering industries.

Table 3-14 Share of Major Manufacturing Industries in Value Addition

Group of Industry	1985/86		1995/96	
Textile	43.2%	15.5%	43.7%	22.3%
Food		17.6%		15.2%
Tobacco		10.1%		6.2%
Industrial Chemical		8.3%		8.5%
Non-metal product		7.4%		7.7%
Electrical Machinery		3.4%		7.7%
Pharmaceutical products		4.3%		4.8%
Iron and Steel		4.0%		4.2%
Automobile		2.5%		3.5%
Petroleum refining		7.5%		3.1%

Source：Government of Pakistan, Economic Survey 2000-2001.

Contribution of automobile industry to national economy is shown below:

Table 3-15 Contribution of Automobile Industry to National Economy

	Assembler	Vendor	Total	Contribution
To GDP (Billion Rs.)	129.08	24.81	153.89	2.8%
To employment*1	11,000	200,000	211,000	3.6%
To revenue （Billion Rs.)	43.50	8.00	.51.5	7.0%
To investment （Billion Rs.)	26.50	72.00	98.50	NA
To forex saving （Billion $)	1.06	0.20	1.26	9.3%
Source: BOI Sector profile, Economic Survey 2004/05, PAAPAM Directory 2006				
*1 Percentage of total manufacturing employment				

Contribution of automobile industry to national economy is not significant with the figures ranging from 3% to 10% at present. It however has wide range of supporting industries such as plastic, electric and machinery and thus potential reverberations in economy is far greater than that the figures in the table suggest. Pakistan Association of Automotive Parts and Accessories Manufacturers (PAAPAM) indicates that one employment in vendor industry create 7 indirect employment elsewhere. Since employment in the automobile industry is 210,000 , which is 3% of total manufacturing employment, adding 1.4million indirect employment in the industry makes it go up to about 24% of total manufacturing employment.

2) Automobile Market

The automobile market in Pakistan stagnated during the 90s with average annual production of around 30,000. This trend dramatically changed after 2002 when the domestic economy picked up and new

[14] The data in table are the latest one since the last census of manufacturing sector was conducted in 1995/96.

finance schemes were introduced and the annual growth rates of production now stand between 30 and 60%. The market expanded in four times from 39,000 in 2000/2001 to 126,000 in 2004/05. This trend is expected to continue and the annual production of cars including commercial vehicles is expected to reach 400,000 in 2009/10.

The market of motorcycle has also expanded. The annual production of motorcycle is expected to reach one million in 2009/10.

Table 3-16 Trend of Automobile Production

	1990/91	1995/96	2000/01	2001/02	2002/03	2003/04	2004/05
Cars	25,166	31,079	39,573	40,601	62,893	99,263	126,403
Light Commercial Vehcles	11,882	6,834	6,965	8,491	12,174	14,089	25,177
Trucks	2,059	3,030	952	1,141	1,950	2,022	3,204
Buses	826	438	1,337	1,099	1,346	1,380	1,762
Motorcycles	98,647	121,809	117,858	133,334	176,591	327,446	416,189
(Source: 1990/91-2003/04 Economic Survey 2004/05, 2004/05 Automobile Sector Profile(Board of Investment))							

3) Structure of Industry

At present, there are 47 assemblers in Pakistan for all kinds of automobile, out of which six (three for car, one for bus and two for motorcycle) involve Japanese investment. There are also assemblers with technical collaboration with Korea or Chinese companies.

Table 3-17 Structure of Automobile Industry

Description		Companies
Assembler	Cars	6
	Commercial Vehicles	6
	Buses	5
	Trucks	5
	Tractors	3
	Motorcycle	22
Vendor		1,300

Source：BOI sector profile, PAAPAM Directory 2006

Table 3-18 Assembler Wise Vendor Information

	No. of vendors	Deletion status (%)	No. of localized parts
Indus Motors	61	38-55.5	1,100
Pak Suzuki	180	70	2,800
Honda Atlas Cars	77	60	699
Dewan Farooque Motor	107	37-58	1,311
Total	425	----------	5,910

Source：Industrial Digest 2004

There are 1,300 vendors in Pakistan, out of which around 400 vendors supply their products to assemblers, while other vendors are small units supplying their products to after market. The number of members for PAAPAM is around 300.[15] There is only one vender which is a joint venture project with

[15] According to Japanese assemblers, unlike Japanese vender industry where clear hierarchy exists, Pakistani vendor industry does not have hierarchy. As the market expands, however, hierarchy is supposed to be developed gradually. At present only 30 vendors have capacity which matches with that of the first tier vendors in Japan.

Japanese company.[16]

4) Industry Specific Deletion Program (ISDP)

The inception of current automobile assembly in Pakistan dates back to the early 80s when Japanese automobile assemblers came to Pakistan upon the request from Pakistani government who intended to develop automobile industry in Pakistan.[17] By 1995 all three Japanese assemblers i.e. Suzuki, Toyota and Honda, who dominate the present automobile market, started mass production.

The Government applied protective tariff system to import of automobile components from the outset with the intention of achieving indigenization. In1995, it initiated Industry Specific Deletion Program (ISDP) under which deletion levels of auto parts were increased gradually. ISDP, however, is a violation of WTO TRIMS. Since its agreed exemption period will expire at the end of 2006, ISDP ceased and was replaced by Tariff Based System (TBS) of indigenization from 2006/07 fiscal year.[18] Deletion levels as of December 2005 are 50-60% for cars and 85-90% for motorcycles.

ISDP is not fully successful due to various reasons such as stagnated production during the 90s, prevalent smuggling of auto components and political instability.

(1) Importance of Automobile Industry

1) Wide Range of Supporting Industries/High Labor Absorption Capacity

Production of auto components involves wide range of industries such as steel (body), plastic (steering, interior), electric (Air conditioner, buttery, audio system), machine (engine, radiator, brake), artificial leather (sheet, interior), rubber (hose, tire), glass and chemicals. Indigenization of automobile can contribute greatly to establishing technological foundation for engineering industry, which is a key for industrialization.

Vendor industry has high labor absorption capacity. PAAPAM indicates that one employment in vendor industry create 7 indirect employment elsewhere. Since employment in the automobile industry is 210,000 , which is 3% of total manufacturing employment, adding 1.4million indirect employment in the industry makes it go up to about 24% of total manufacturing employment.

2) Technology –Intensive Industry（typical integral type industry）

Technology required for automobile industry is some of the basics for engineering sector. Besides unlike computers (so-called module products) , which have standardized interfaces for components and are easy to assemble, automobile is an integral product whose interfaces are adjusted to increase the integrity of product (coziness, design etc). Technology or skills required for this kind of product cannot be developed in short time, but require long-term continuous training and accumulation of experiences. As indicated in chapter 1, one of the strategies to compete with Chinese products with high advantage of volume and cost is to develop industry which can compete with high value addition of the product as a whole. In this sense, technological foundation of automobile industry which was developed through the efforts of indigenization in the last thirty years is an extremely valuable asset.

3) Strong Linkage with Foreign Companies

Automobile industry in Pakistan has strong linkage with foreign companies. Industry Digest (2004) indicates that foreign companies have made 1.5 billion dollar investment, which is 60% of total investment of 2.5 billion dollars. All cars made in Pakistan at present are under foreign brand (Japanese and Korea). Japanese assemblers which are subsidiary of Japanese manufacturer or joint ventures with

[16] Sanpak Engineering Industries.

[17] First automobile assembly was attempted in 1950 with trucks. But by the end of 1970, all assemblers ceased.（Digest of Industrial Sector in Pakistan, 2004）

[18] Tariff rate for auto parts produced domestically is 50%. Rate for those not domestically available is 35%.

Pakistani partners, have strong commitment to maintain quality as well as brand.[19] Although there is only one joint venture with foreign companies among vendors, numbers of vendors have made technical collaboration with foreign companies as shown below. There are many cases where assemblers provide technical assistance to vendors in the area of both technology and management, and invite vendors for overseas training;[20] Japanese corporate culture has considerably established itself in vendor companies.[21]

Table3-19 Foreign Technical Collaboration for Vendors

Components	Vendors In Pakistan	Foreign Collaboration
Shock Absorbers	Honda Atals Services	Show Japan
Radiators	Alwin Engg. Industryies	UE Radiators
Car Air Conditioners	Sanpak	Sanden(Honda Atlas Cars), Japan
Shock Absorbers	Agriauto Industries	Kayaba,Japan
Radiators	Loads (Pvt)Ltd	Toyo Radiator, Japan
Radio Cassette Players	Automate Industries	Panasonic, Thailand
Car Air Conditioners	Thal Engineering	Denso, Japan
Glass	EGS Pakistan	NGS, Japan
Lamps	Techno Pack	Koito, Japan (Indus Motor Co.)
Spark Plugs	Shaigan Elect&Engg	NGK, Japan
Shock Absorbers	Agriauto Industries	Kayaba,Japan
Air Conditioners	Thal Engineering	Denso, Japan
Glass	NGS Pakistan	NGS, Japan
Case Set Steering	Polymer&Precision	I.S. Seiseki, Japan
Brake Drum Assy	Alson Autos Ltd	Nissin Kogyo, Japan (Pak Suzuki Motor)
Wining Harness	・Delta Innovations ・Thal Engineering	ⅰ) Yujin Electric System, Korea ⅱ)Prime T&T, Korea ⅲ)Furukawa, Japan

Source：Industrial Digest 2004

Technological up-gradation of labor and its resultant quality improvement is a big challenge for Pakistani manufacturers. Technology transfer from foreign companies is supposed to be the most effective ways of technology up-gradation. In this regard, thirty-year long linkages with foreign companies of the automobile industry are no doubt bog advantages to other industries in Pakistan.

(3) Issues

1) Technology Up-gradation of Vendors

Although it is true that automobile industry does have advantage in terms of technology up-gradation, the biggest issue in the current industry is technology up-gradation. While technical collaboration with foreign companies and technical assistance from assemblers is effective, their level of technology is still behind the international standard. There is not sufficient competition in the domestic market where the number of vendors who can supply specific components is limited, sometimes only one. The reject rate for Pakistani parts is generally high and the quality of products is poorer than that of vendors in other countries.[22] It is also indicated that delivery is often not on time and if assemblers go tenders,

[19] For instance, assemblers provide raw materials to vendors and oblige vendors to submit material certificates in order to ensure quality.

[20] One assembler assigns specific staffs to major vendors who will work thoroughly for those vendors. The assembler and vendors agreed the annual target for improvement program and evaluate results. Several assemblers ask major venders to setup their factories close to assemblers in order to have more effective and efficient communication.

[21] Many vendors informed the study team that they prefer hiring new graduates and train them in their corporate culture, rather than hiring experienced persons. Many also adopt 'KAIZEN' activities.

[22] Some assembler in its headquarter compares the same model of cars manufactured in different countries. The car made in Pakistan was ranked worst 5th.

vendors go into a huddle. Lack of technology and lack of capacity of vendors are main reasons why automobile industry in Pakistan failed to catch up with rapid expansion of market demands.[23]

Although there are various factors such as lack of adequate infrastructure, low level of education and work ethics for labor involve this low level of technology, it is low demand of automobile in the domestic market persisted till 2001.that contributed to it most. The stagnated market prohibited vendors from enjoying benefit of scale economy and thus retarded technology up-gradation.[24] Lack of investment capacity also stagnates new capital investment.

The stagnated market also retarded development of ventures and technical collaboration with foreign companies. Japanese venders will not go into ventures with local vendors until the size of local automobile market reaches to the annual production of 500,000. Coupled with other factors such as Japanese economic slump and the remote image of Pakistan, Japanese vendors were reluctant to collaborate with Pakistani vendors, even for technical collaboration.

Fortunately Pakistani automobile market is expanding rapidly, foreign vendors are expected to enter into Pakistani markets in the future. However, it is too easy to think that the foreign venders would inevitably start investing in Pakistan soon after the number of production reaches a specific volume. The role of the Pakistani government cannot be over emphasized in attracting foreign vendors to the country. Development of industrial infrastructure and improvement of institutional settings for the investors should be given the top priorities. Also, the country's publicity campaign to attract foreign investors has been far from sufficient in comparison with the East Asian competitors.

Moreover, the influence of the tariff policy for auto parts is also considerable. After the tariff starts, it is possible for assemblers to obtain auto parts from around the world as long as they pay customs. The Indian government, for instance, introduced various non-tariff barriers before implementing the tariff of auto parts, and has shown reluctance in opening domestic auto parts market. However, in the case of Pakistan, the government has had no intention to protect domestic market of auto parts by any non-tariff barriers. The auto parts market was opened without any protection. Domestic vendors have been focused to compete in the international market, and foreign vendors have become their competitors, including Japanese, Chinese, or Thai vendors. At present around 200 Pakistani vendors supply auto parts to the local assemblers, but this number is expected to be half in the near future. The domestic vendors feel a sense of crisis, and start making utmost effort to improve their technological capability. In order to meet the technical requirements of the assemblers, they feel it necessary to have their own testing facilities, and purchase high quality machine tools from industrialized countries. So long as the country has fragile and fragmented auto parts industry, the automobile industry would never generate high value added and considerable employment. Strategic and continuous efforts are required for the vendors to improve their technical capability.

Protection of Intellection Property

When we compare Pakistan with India or Thailand, where the automobile industry generates considerable value added and employment, we can easily find several difference in the government policies to promote the industry. One example is the legal protection of IPR (intellectual property right). In India, the rule of law is practically functional, and the IPR is firmly protected. There is no vicious tendency to imitate the others products. Therefore, foreign firms feel secure in investing to

[23] Some assembler frequently has to stop production lines due to late arrival of parts. There are also increased discrepancies of quality of parts as the assembler increased orders to vendors, which resulted in increased defects which are often identified in the final stage, and require longer time to adjust.

[24] The capacity utilization of car assemblers was 25-35% between 98/99 and 2001/02.（BOI/JICA, Feasibility Study on Car Vendor Industry 2004）。 The capacity utilization increased to 84% in 2004/05.（SBP annual report）

the country. If IPR is not practically protected, a number of manufacturers would start producing counterfeit products, and sell them cheaply in the market. The quality of these counterfeit products is lower than the original, but the prices are very attractive. Many consumers prefer to purchase these fake goods, so the original producers face difficulty in the market and have no incentive to elaborate their technological skills. As is well known, about forty manufacturers of motorbike are now producing dead copy motorbikes using imported components. If Pakistan wishes to promote motorbike industry that generate high value added and significant employment, and want to make it export-oriented in the future, the counterfeit production should be strictly prohibited. The protection of IPR should be paid significant attention by the authorities concerned.

2) Credibility Gap between Government and Private Sector

Two policy changes namely relaxation of used car import regulation as well as a special package for new assemblers the government made after the supply-demand gap of automobile became significant in 2005 have given wrong messages to the automobile industry in Pakistan.

Explanation given by the government on these two policy changes is rational. Relaxation of used car import regulations is just a temporally measure until the expansion of production capacity fulfills the supply demand gap of automobile, and the number of imported used cars is within this gap.[25] On the other hand, the special package under which new assemblers will be given three year favorable treatment on component imports aims to promote competition in the domestic automobile market where Japanese assemblers dominate in order to reduce relatively high price of automobile. Aim of policy is rational and the scope of package is deliberately designed to avoid damaging domestic industry.[26]

However within the automobile industry there seemed to be heightening frustration to the government who imposed these policy changes without addressing root-causes of expanding supply-demand gaps and high production cost. On these issues, both business associations such as Pakistan Automobile Manufacturers Association (PAMA), and PAAPAM, and individual companies repeatedly made requests for reconsideration to the government i.e. Ministry of Industries, EDB, Ministry of Commerce and CBR, while the government invited representatives from private sector to the important meetings. What are the reasons of this gap between the government and private sector in spite of considerable number of communication between them? Three reasons can be identified.

Firstly, there is long-standing and strong distrust to the government in private sector. Not only automobile sector, but also Pakistani private sector in general does not trust government. From Nationalization policy in the 70s to ad-hoc populist policy in the 90 private sector used to be at the mercy of the government policies.[27] In addition, corruption and harassment at daily operation level makes private businessmen believe that the government may hinder the business but will never support them. Although generally private businessmen appreciate the current government policy and many leading businessmen are involved in the various committees for industrial development, it is not easy to change the perception of many other businessmen. They could not trust the word of government that the policy change on used car import was just a temporary measure.[28]

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[25] Relaxation of used car import regulation is done by relaxing a part of conditions for private import scheme. However it was misused by importers and the number of used cars imported reached 45,000 in 2005/06. The government tightened regulations on 5 August 2006. According to the government, demand supply gap of automobile is more that 50,000 and thus import of 45,000 cars does not damage local industries.

[26] The government estimates that the first year production of new entrants is around 4000 and it may increase up to10, 000, which according to the government, is well below the supply-demand gap of 50,000, and thus will not affect local industries.

[27] Late 1990s, the government at the time allowed car import under the several schemes such as Yellow Cab Scheme and Transport Scheme.

[28] Since interviews with assemblers and vendors were conducted just before the government decided to

Secondly the response from the government was not very timely. This increased uncertainty within the industry where the feeling of mistrust to the government is prevalent. This slow response seems to be related to the government structure to deal with automobile issues. As indicated in the previous section, although EDB is in charge with policy formulation of engineering industries, the final decision has to be made by Minister of Industries. Many people in the industry mentioned lack of capacity as well as authority of EDB as a counterpart for private industries. On the other hand, the indication given by many interviewees that Minister of Industries does not see the current automobile sector favorably, suggests that there might have been a difference of opinion between the Ministry and EDB on when to tighten the import regulation. The fact that the decision on tightening of used car import regulation was taken at the meeting chaired by Ministry of Planning with the presence of Prime Minister demonstrates the obscure decision making mechanism of automobile issues.

Finally, there are not many government officials who understand the importance of automobile industry and difficulties of technology transfer. Various interviews with government officials and professionals suggest that they think it very easy to manufacture automobiles in the country. It is not at all easy task to develop engineering industry from scratch with very limited resources and technology. It requires long-term and intensive communication of technology and information between assemblers and vendors. Besides technology accumulated through manufacturing automobile can be applied other industries such as electronics, machinery and plastics. In the country like Pakistan where the level of technology is low, one cannot expect to accumulate this kind of technology without deliberate government protection for certain time frame or foreign direct investment. They are indispensable technology for industrialization of Pakistan. Besides it is not the assemblers but vendors who are damaged due to used car import or allowing new entrants favorable import tariff. It is unfortunate that there are some sections of people who put all the blame on the assemblers for the failure of timely expansion of their capacity and neglect the damage these policies could have on the vendors. If the government had shared this understanding, there would not have been an option for expanding used car import and there would have been more consistent and supportive policy to develop vendor industries in the last thirty years in the first place.

It is not only the government but also the industry to be blamed. There is no excuse available to the criticism that it is a failure of the industry that could not succeed in developing competitiveness even after the 30 year protection. Besides lack of capacity of business associations such as PAMA and PAAPAM who failed to deliver the real needs and grievances of the industry to the government caused the third concern.[29] What is necessary at the moment is to establish more forward-looking and matured relations jointly aiming to develop the industry by recognizing respective roles to play.

3.2.2 Electronics/ Electrical Machinery

(1) Overview

As table 3-20 indicates, the share of electronics/electrical machinery in the manufacturing value addition is 7.7% in 1995/96, which is the highest next to industrial chemical among those excluding resource-based industries.

The table below explains GDP, export values, employment, and investment of major engineering industries, which shows that electronics/electrical machinery industry is important engineering industry, together with automobile.

reinforce import regulation, their sense of crisis was even higher.

[29] On the other hand, supporters for import such as importers were said to do aggressive lobbying, involving politicians.

Table 3-20 Major Engineering Industries

	GDP Million $	Export Million $	Employment 000	Investment Million $
Automotives/ Parts	300.0	25.0	100.0	725.0
Steel	221.0	0.0	40.0	1,500.0
TV Set	140.0	0.0	8.0	33.0
Electric Machinery	70.0	7.0	110.0	166.0
Surgical Instruments	62.0	124.0	50.0	200.0
Ceramics	46.0	6.0	17.0	123.0
Electric Fans	25.0	6.0	25.0	58.0
Moulds and Dies	7.0	2.0	15.0	26.0
Engineering Industries Total	771	170	266.0	2,831
Others Total	1,229	101	33.4	1,500
Grand Total	2,000	271	60.0	4,331

Source：Ministry of Planning(2005)

Economic turnaround after 2002 and introduction of new financial credit policy has stimulated market demands for home appliances, communication equipment and computers. The annual growth rates for electronics/electric machinery industry between 2002 and 2005 are 30-40%. The production of TV sets and refrigerator also increased dramatically as shown below:

Table3-21 Production of TV Sets and Refrigerator

（000）

	2002/03	2003/04	2004/05	2005/06*
TV set	764.6	843.0	908.8	730.2
Refrigerator	375.8	617.4	784.6	569.7

*July-March

Source：Economic Survey 2004/05、2005/06

In the supply side, foreign manufacturers such as Haier (China) and Samsung (Korea) have established their assembly lines, while domestic manufacturers such as DAWLANCE, WAVES, PEL are expanding their production capacities. Factor behind this rapid expansion of the industry is reduction in custom on imported components which provided investors with opportunities to import low cost components from China and assemble/sell them domestically. [30]

Domestic demands for personal computers (PCs) and communication equipments are also increasing. The number of PCs sold in Pakistan was 700,000 in 2003/04, which is expected to reach more than 2 million in 2010. Out of 700,000 PCs sold in Pakistan in 2003/04, 300,000 were used systems and 150,000 were locally assembled by small assemblers across the country. There is a great demand for low cost PC models for widespread use in schools, indicating further expansion of the market. As middle class becomes affluent and internet usage increases, the market would further expands and the unit price would increase.[31]

The market for communication equipments also expands due to deregulation. Current telephone density of 2.8% in 2005, which is nearly 4.2 million land lines, will reach to 8 million land lines in

[30] 25% for finished goods and 5% for components. It reduces incentives for smuggling.

[31] Ministry of Planning（2005）

2007.[32] Similarly the number of cell phone holders is expected to reach 6 million in 2006. As broadband services expand, there is a major scope for local hardware manufacturers.[33]

(2) Issues

Except for multinational companies, small enterprises who assemble imported components dominate the industry. Therefore it has not succeeded to exploit the economy of scale and thus the quality of product is still low. Technical management is also shaky. Most business and companies operate as family business and thus lack professional management. There is also a shortage of specialized personnel. Therefore the biggest threat for Pakistani electronics/ electric machinery industry is competition from China or India. Although there is a gap of duty rates between finished products and components at present, if there is some change which causes influx of cheap imports, damage to the local industries would be detrimental. The most effective way of enhancing competitiveness is collaboration with foreign companies. However, as the table below shows that foreign direct investment in electronics industry is significantly lower than that in automobile industry which is also expanding the market.

Table3-22 Foreign Investment in Transport and Electronics

（Million $）

	2001/02	2002/03	2003/04	2004/05	2005/06*
Transport	35.2	114.1	230.7	531.9	1,041.8
Electronics	15.9	6.7	7.5	10.3	15.8

*July-March

Source: Economic Survey 2004/05, 2005/06

This low level of foreign investment indicates that the industry does not have foreign support which is the most effective tool to improve quality and strengthen competitiveness amid increasing competition with imported goods and rapid expansion of markets. This in turn may hinder favorable development of the industry in future.

Behind this low level of foreign investment, there is widely shared perception of Pakistan among potential investors, such as insufficient copy right protection and consequent prevalent copy products, no incentive available for electronics investment, high production cost and inconsistent government economic policies.

The world market size of electronics is 1,500 billion dollars in 2004, which is bigger than automobile of 600 billion dollars.[34] Due to its light weight compared with automobile, foreign investment in electronics responds more to production cost than to market size. This indicates that investment in electronics sector would flow elsewhere if cost advantage diminishes. In view of developing domestic industries, development of vendor industry is vital. However since present dominant mode of production is assembling imported low-cost components, the range of vendors available for electronics is very limited. There should be a comprehensive strategy including regulatory reforms such as copy right, infrastructure, research and development, incentives for investment and human resource development, if Pakistan wants to exploit the potential of industry for its industrialization.

[32] Tele density in china is 43% in urban areas, and 28% for nationwide. Cell phone density in China is 20% compared with 3% in Pakistan. （Ministry of Planning、2005）

[33] Ministry of Panning(2005)

[34] Ministry of Planning(2005)

3.2.3 Textile

(1) Sector Overview

Nobody doubts that Textile and Clothing sector (hereafter Textile sector) is the biggest industry in Pakistan, with regard to its contribution to GDP, export and employment (see Table 3-23). The contribution to the export is particularly large. Nearly 70% of the export income was generated by this sector. Textile sector has supported backbone of the economy, and should keep supporting in the future. The main part of the textile industry is the cotton industry, which produces cotton yarn and cotton fabrics. A number of large-scale cotton estates in the Punjab and the Sindh provinces supply raw cotton to the industry. Pakistan is the forth-largest producer of raw cotton in the world. Cultivating the cotton contributes to 3% of GDP, and occupies 13% of the total agriculture land of the country. However, the current demand for cotton exceeds supply and Pakistan meets a part of its raw cotton requirement through import[35].

Table3-23 Contribution of Textile Industry

GDP	11% of total GDP
Export	68% of total export
Manufacturing	46% of total manufacturing
Employment	38% of total industrial workers
Investment	31% of total investment

Source: Pakistan Investment Guide 2004

Table3-24 Production of Cotton Yarn

(Unit: Thousand Ton)

Year	Production
1998-1999	1,547
1999-2000	1,687
2000-2001	1,729
2001-2002	1,818
2002-2003	1,925
2003-2004	1,938

Source：All Pakistan Textile Mill Association (APTMA)

Unlike neighboring competitors of cotton production, such as China or Uzbekistan, raw cotton in Pakistan is not picked by machinery but by hands. Therefore, it is possible that some kinds of foreign materials could come into the harvested raw cotton. This “contamination” reduces the value of domestically made cotton products. Therefore, the Pakistani cotton products are often priced low at the international market due this contamination.

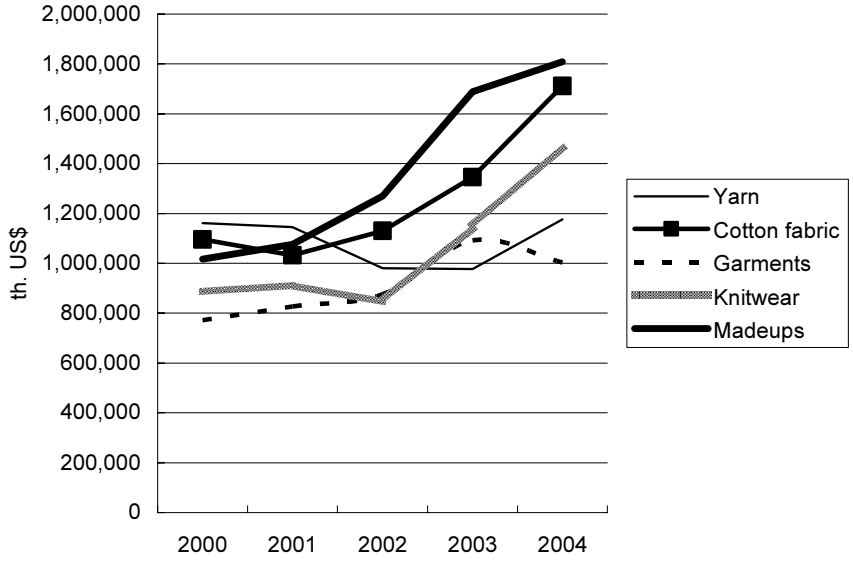
Harvested raw cotton goes to the ginning process. Ginning factories compress raw cotton into a small block called “bale” (=170kg), and deliver to the spinning sector. The role of ginning process in the value chain is critical as it affects the productivity and quality of cotton and more value added products[36]. There are currently around 1,200 ginning unit in the country, and most of them used outdated machinery and equipment based on obsolete technology. The spinning sector is the biggest segment in the value chain. The country has around 450 spinning mills, and produced 2 billion kg of cotton yarn during 2003-04. Due to the availability of cheaper financing, a number of mills have been restructured or revived. Therefore, the amount of production has gradually increased recently (see

35 “Textile Sector Profile” Board of Investment

36 “Textile Sector Profile” Board of Investment

Table3-24). The growth ratio of the production in the last three years was 4% on average.

The current trend of textile export is shown on Figure3-1. Madeups, including bedware or curtain, and knitwear have expanded the value of export in the last few years, while the exports of ready-made garments and yarn have been stagnated. Locally made yarn is thick and short, which is most suitable for madeups but not always fitting for garments. Therefore, it is understandable that the Pakistani madeups are internationally competitive using local yarn, while the Pakistani garments, using imported yarn, need to face severe competition in the world market.



Source: Textile Sector Profile, BOI.

Figure3-1 Export Value of Textile Products

(2) Major Challenges in the Sector

Contamination

Contamination of raw cotton has become the severe problem for the production of cotton yarn and fabrics. Various foreign materials, such as stone, sprig, rubbish, jute or PP (polypropylene) can be mixed with harvested raw cotton. Bags for harvesting are made of PP. If fragments of this bag come into raw cotton, it is extremely difficult to take them out. Therefore, PP remains mixed until the final process of manufacturing cotton fabrics, and PP fibers shall never be dyed. Hence, white lines of PP are clearly shown in the contaminated fabrics, when the fabrics are dyed in dark colors, such as indigo. This surely has a negative impact on the quality of the products, reducing retailing prices.

The main reason for this contamination is because raw cotton is picked up by hands. If raw cotton is harvested by machinery, the industry does not have this contamination problem. Use of PP bags has been prohibited in order to cope with this problem, but this prohibition does lead to significant improvement, because nobody controls harvesting process in the field. The second factor is that the owners of large-scale cotton estates are not very interested in this contamination problem. Most of them are nonresident landlords, who live in major cities such as Lahore or Karachi, and do not pay much attention to the problem in their estates. Furthermore, as harvesting, ginning and spinning business are clearly divided, not only the landlords but also the ginners do not have a reason to care about this contaminating problem. It is reported that some ginners intentionally mix foreign materials into the raw cotton, in order to increase their returns, as their products are priced for their weight. Only spinning business faces severe damage by this contamination, so some spinning factories have started importing contamination free cotton from overseas producers.

It is not until the mid 1990s when the contamination became a serious problem for the spinning industry. Before this period, the mixing of foreign materials was not a big problem. As mentioned, the Pakistani cotton is thick and short, which is suitable for madeups such as bedware. Some level of contamination does not seriously damage the value of these madeups. However, after the mid 1990s, the industry started producing outerwear products, such as blue jeans, in order to raise the value of their products. The fabrics were dyed in dark color, and the contamination of PP became clearly visible. The quality of final products was damaged by this contamination, and the products were priced very low at the international market.

In order to cope with this contamination problem, the government introduced preferential tax system for contamination free cotton. Moreover, some spinning factories have made their own efforts to eliminate foreign materials at various production processes. However, the contamination problem cannot be completely solved unless picking workers are property supervised at the estates, the landlords become fully aware of the problem and ginning process is closely monitored.

Government Assistance in the Neighboring Countries

Another problem is the difference in the level of government involvement in supporting textile industries between Pakistan and its neighboring countries. The Pakistani government's support to the industry is relatively weak in comparison with the supports from the governments of India, Bangladesh and Sri Lanka. In January 2005, MFA (Multi Fibre Agreement) was expired, and the export quota system was abolished. Under this new business environment, Pakistan increased its export of intermediate products such as cotton yarn and fabrics. However, the export of final products, which could enjoy bigger benefit from the abolition of quota system, did not increase as expected. The export of Indian, Bangladeshi and Sri Lankan final products has a higher growth rate than that of Pakistani products. Fiscal incentives in the neighboring countries and strongly competitive production costs in these countries are regarded as the main factors to explain the difference in their export performance.

In November 2005, the Beware Exporters Association of Pakistan (BEAP) made a study tour to Bangladesh to examine the business environment of its textile industry. One of the members of this mission pointed out the significant difference of the business environment of the two countries, and summarized the findings in Table 3-25. If the two countries keep having such difference, he expected that the Bangladesh textile industry should soon have a larger production capacity than the Pakistani industry in the near future despite the fact that Bangladesh is a non-cotton producing country. The Pakistani government should urgently consider the possibility to introduce any counter measures to alleviate the handicaps of the local textile manufacturers.

Table3-25 Difference in Business Environment between the Bangladeshi and Pakistani Textile Industries

	Bangladesh	Pakistan
Tariff benefits	・As "low income" country, the exports of yarn and value added goods to EU and US are not taxed and no import duty is levied .	・EU and US tax and levy import duties on Pakistani yarn and value added goods. Even Pakistani government is taxing exports at the same time.
Tax incentives for investment	・No custom duty or any tax on import of industrial machinery and spare parts.	・Machinery is not only taxed but the custom duty is also imposed. Import duty is up to 20% on industrial machinery & spare parts.
Electricity cost	・Captive power plants based on gas costs 1.81 Pak Rupees including financial depreciation and cost of gas.	・Cost of captive power plant based on gas costs 3.50 Pak Rupees.
Water cost	・Water is abundantly available without any cost from own deep tube well.	-
Labour cost	・Average monthly wage is between 860 to 1300 Pak Rupees ・Abundant female workers work shoulder to shoulder besides male workers ・No tax levy like education cess, social security, old age benefit, etc.	・Women are restricted to work outside their houses except some major cities. ・In addition to 7% social security cost, employers have to make various payments such as EOBI (6%), Education cess (Rs.100/person/year), Workers profit participation Fund on net profit (5%), etc.

Source: Letter to the JICA study team from a mission member of BEAP.（July, 5th, 2006）

HRD for Higher Valued Production

As previously pointed out, the export of intermediate products has increased, but that of high valued final products has stagnated despite the abolition of the quota system. One of the reasons why the high valued final products of Pakistan are not competitive at the international market should be the lack of skilled workers. In the spinning industry, which manufactures an intermediate product of cotton yarn, a small number of engineers or technicians are needed for the operation and maintenance of machinery and equipment. A majority of labor forces are just engaged in very simple works. A high level of educational background is not required for such simple works, so their educational background is usually less than 5th grade. On the other hand, in the garment industry, which manufactures final products for consumers, the workers should have a certain level of skill and experience. The export oriented garment manufacturers, in particular, require their workers to complete at least Matric education. In order to manufacture internationally competitive and high valued final products, it is necessary to expand and improve general education and supply sufficiently educated labor forces to the industry.

Moreover, in order to cope with intense competition with the Chinese and other manufacturers of final products, Pakistani manufacturers should develop its own design based on its indigenous cultural background. The export of madeups, such as bedware, is increasing, but foreign buyers usually supply the designs. Few manufactures have a capacity to develop its own design. It is much needed

to extend the value chain of the production toward the forward direction (designing and R&D), as well as the backward direction (distribution and marketing) so as to add more value to the final products. Highly educated and professionally trained human resources are needed for this extension in the value chain. As it is difficult for individual manufactures to develop such human resources, the government agencies or the business associations should take the initiatives to supply these workforces. For instance, Pakistan Bedware Exporters Association established the Pakistan Bedware Designing & Training Institute at Karachi in 1992, and has cultivated human resources capable for industrial designing, merchandizing, marketing and so on. According to the Institute, the Pakistani textile industry needs about 600 industrial designers every year, but the institute can only supply 100 designers annually. The expansion of the facilities is urgently needed but currently difficult due to the increased land price at the Karachi area. In order to promote high valued production in the textile industry, the government should support this type of HRD.

3.2.4 Housing Related (Cement and Furniture)

Last a couple of years a construction boom has been taken place in Pakistan. The construction sector is estimated to grow by 9.2% in year 2005-06 as following extra ordinary growth of 18.6% in last year[37]. Among construction sub-sectors, housing construction comes under the spotlight. According to a paper[38] presented by SMEDA, the hosing backlog which stood 4.30 million in 1998 has been currently projected at 6.19 million. It is estimated that the overall housing construction has to be increased to 500,000 housing units annually in the next 20 years. Furthermore, the present housing stock is rapidly aging and indicates that more than 50% stock is over 50 years old. It assumes that these aging units need to be re-built or rehabilitated.

On macro economy, the construction and housing industry account for 10 – 12% of GDP and 7% of employment. It is one of major sectors in Pakistan's economy. The housing and construction industry has large forward and backward industrial linkages. According to modest estimate, 35 – 40 industries move in tandem with this sector. Therefore, growth of this industry gives the great number of employment opportunities in many sectors[39]. For this reason, the government has identified this sector as one of the major sectors in Pakistan, and it is reflected in the National Housing Policy 2001 and the Prime Minister's Initiatives under the "Housing for All" program.

Followings are brief analysis on cement industry and furniture manufacturing industry which are both essential for the construction sector.

(1) Cement Industry

During the five year period (1999/00 – 2003/04), the cement production has been increasing, especially the last two years show remarkable increment (see Table3-26). Currently, there are 24 cement units in Pakistan in which 2 units are in the public sector and 22 units are in the private sector. The private sector produces 92.7% of the total. In terms of the area wise cement production capacity, 15 units in the northern area (Punjab Province and NWFP) hold more than 70% of the total capacity (see

Table3-26 Domestic Cement Production and its Growth

Year	Domestic Cement Production (tons)	Growth Rate
1999-00	9,314,000	–
2000-01	9,674,000	3.9%
2001-02	9,935,000	2.7%
2002-03	10,845,000	9.2%
2003-04 (Feb.)	12,595,000	16.1%

Source: Board of Investment

37 Pakistan Economic Survey 2005-6

38 Pre-Feasibility Study on CAD for Furniture Design, June 2006, Small and Medium Enterprise Development Authority (SMEDA)

39 According to the SMEDA paper, employment elasticity of the construction and housing industry is 0.8.

Table3-27).

Table3-27 Area-wise Cement Production Capacity

Province	No. of Units	Clinker*	Cement	% of Total
North	15	12,324,000	12,937,050	73.3%
Punjab	8	6,660,000	7,487,550	42.4%
NWFP	7	5,664,000	5449,500	30.9%
South	9	4,478,000	4,701,900	26.7%
Sindh	8	3,758,000	3,945,900	22.4%
Balochistan	1	720,000	756,000	4.3%
Total	24	16,802,000	17,638,950	

*: Clinker is a kilned then quenched product

Source: Investor's Information Guide, BOI

Issues on Cement Industry

The over supply structure of Pakistani cement industry became larger in the mid 1990s when several new plants joined (Lucky, Bestway, Fauji, etc.), combined with expansions by existing plants (DG Khan, Maple Leaf, etc.). Since then, the installed capacity of cement in Pakistan has been at 15 – 17 million tons/annum, while demand stagnated between 9 – 10 million tons/annum. Having said that, the recent construction boom will push demand for cement. In addition to this, cement price declines due to phased central excise duty reduction. Because of these factors, the over supply structure was supposed to be over soon. However, just recently, the Pakistani Government reduced the customs duty on imported cement from 40% to 0%. Now the Pakistani cement industry must face the reality and compete against imported cement. In another word, the Pakistani cement companies urgently need to make a big effort to reduce production costs at any price. It seems that the government finally got tired of waiting for price down of domestic cement after a long period of discussion with the cement industry. The government has realized that the cement price in Pakistan is much higher than that of other countries. If they cannot reduce the price, the construction boom may slow down, which affects many other related industries, then ultimately impedes the growth of Pakistan's economy. Therefore, reducing costs of producing cement is a big issue for the cement industry.

(2) Furniture Manufacturing

According to Pakistan Economic Survey 2005-06, the annual population growth at the year 2005-06 is around 2.25%. Pakistan's population will be double in less than 32 years. In many areas like Karachi and Lahore where their population density is so high and other big cities, the volume of urban population will be twice in the next 20 years. Keeping in view the growth rate of population of Pakistan, it is very likely that housing requirements will enhance, and automatically demand for home furniture will be increase. Demand for office furniture is also rising these days. Furthermore, people's life style especially in big cities is changing, and there will be a new market for modern style furniture. According to a report by SMEDA, imported furniture is becoming popular among upper-middle and upper income households. A large volume of imported furniture from Italy, Spain and Malaysia has already entered the Pakistan's furniture market. These factors create a new domestic market which encourages Pakistani manufacturers to design and produce modern, European style and office furniture.

Following is one of very important issues which show a gateway to increasing efficiency of furniture production to fulfill increasing demand for furniture.

Computer Aided Design for Furniture Design

Most furniture manufacturers in Pakistan are based on cottage industry. They are artisans and basically using manual and traditional methods of designing. For example, the majority keeps design resources in paper patterns, and some firms take a reference from foreign interior magazines or pictures

down loaded from websites for designing. Focal points of furniture industry are big cities including Karachi, Lahore, Rawalpindi, Peshawar, Multan and Faisalabad. In highly competitive market, furniture manufacturers and traders are developing and searching more value added products and more differentiated products from others.

A new business scene identified in the furniture manufacturing sector is a computerized furniture designing. There are many computer software (Computer-aided design application: CAD) available in the market, and a few firms in Pakistan started using software to produce stylish products in Lahore and Karachi. CAD system can replace traditional designing system like using paper patterns, set a database and input all design data into a computer. The CAD system has a wide range of application which suits to customization of fixing different parts of furniture with defined styles. When the JICA Study Team interviewed a firm in Peshawar, the owner stressed the importance of design, while admitted that his firm have not trained designers although 70% of his firm products are exported abroad.

Using computer designing system can also expand market, e.g. foreign market. The export of wooden furniture from Pakistan has jumped from US$ 1.89 million in 1996-97 to US$ 4.34 million in 2000-01. The major buyers of the Pakistani furniture are the UK, U.S., Sri Lanka, Dubai, Saudi Arabia, Oman, Kuwait, etc. Applying computer applications for designing furniture can be a very powerful tool to capture a bigger market abroad.

It must be realized that introducing computerized designing is impossible for cottage based manufactures. However, it can be applied and appealed to medium or big scale companies including furniture traders (there are 700 registered companies) which sub contract cottage type furniture firms.

Issues

Companies which are planning to introduce computer designing system need qualified furniture designers who can operate CAD system. Currently there are 20 fashion design schools including institutes in Pakistan, where a new course such as computer aided designing should be established for new demand for furniture industrial designers.

(3) Government Measures for Housing and Construction Sector

The Government has taken several measures for reviving the housing and construction sector. The government has announced various incentives in the National Housing Policy. These include the reduction in interest rates at commercial banks from 17-18% to 7.5-8.5%, the maximum housing loans per party limit increased from Rs. 5 million to Rs. 10 million, the maximum loan tenure for housing finance increased from 15 years to 20 years, the enhancement of tax credits on borrowing under housing loans from financial institutions, and others for fiscal area.

On the other hand, the government is also required to have a housing development action plan and take measures for acquisition and development of new housing lands with basic infrastructures such as roads, electricity, gas, water, schools, hospitals, etc. In housing and construction sector point of view, the sector needs to keep more skilled workers. Construction business needs different types of workers like civil engineering workers, carpenters, tile setters, plasterers, ironworkers, machine tool operators, and mechanics and so on. The government has already set up a number of training centers and vocational centers. However, quality of lecturers, courses (curricula) and management are not sometimes fitted to requirements from the housing construction sector. On this matter, SMEDA （Small and Medium Enterprise Development Authority）can be the most applicable player to facilitate stakeholders and develop human resources in the sector.

3.2.5 Food Processing

The food processing industry covers various sub-sectors like sea food, livestock & poultry, fruits & vegetables, beverages, confectionary and biscuits & breads. In addition to these, there are dairy, sugar,

grains, flour mills, vegetable oils and etc. In this section, meat processing and fruits & vegetables processing are focuses because these two sub-sectors have not been fully developed and have a lot of potential in Pakistan.

(1) Foreign Firms Entering the Pakistani Market

Several foreign firms have already entered the Pakistan food processing market, and have been expanding their shares. The following table shows several major foreign companies which have established either their own manufacturers or has formed joint ventures with local firms.

Table3-28 Major Foreign Food Processing Companies in Pakistan

Names of Companies	Outlines
ARTAL	Belgian company. Integrated poultry project with breeding and hatchery facilities, feed mill, slaughter house, rendering plant, a processing plant and cold storage facility.
NESTLE	Swiss company. Joint venture with Milkpak Limited Lahore producing UHT milk, butter, cream, orange juice, fruit drinks, milk powder, infant cereals, infant milk, dairy whiteners, pre-cooked noodles and confectionery.
BEST FOODS OF U.S.A	(Rafhan Food), a joint venture producing bouillon cubes, soups & noodles, mayonnaise & salad dressings, canola & sunflower oils, custard, jellies, corn flour and dextrose based energy drinks.
UNILEVER PAKISTAN	A subsidiary of Unilever producing ice cream, processed dates and blended tea & cooking oils. Continental Biscuits and Dane Foods Limited having joint ventures with European firm producing biscuits.

According to the JICA Study Team's interview with NESTLE, NESTLE has established the largest milk collection network in Pakistan. The NESTLE's village milk collection centers (VMCs) are equipped with computers and e-mail facility. Farmers deliver milk in the morning and the evening, and trained milk collection agents test and record every supply for quality and fat contents. After that, this milk is transported to the nearest sub-centers for mechanical chilling and then to the main centers where is consolidated and chilled further. According to the interview, there are 3,000 VMCs in Punjab Province where NESTLE established an extension service, staffing it with qualified veterinarians, who provides farmers an advisory service on ways to improve milk quality and output through good animal husbandry practices, provides free consultation on diagnosis and treatment of their livestock and undertakes vaccination at cost.

It is generally said that dairy business in Pakistan is difficult as data shows that only about 2.5-3.0% of the traded milk is currently processed by the dairy industry in Pakistan. However, NESTLE is exceptionally successful on dairy business by investing a quite large amount of capital and applying a scale of economy. At present, there are about 12 diary firms in Pakistan. They may also follow the NESTLE's strategy to expand their business, however local firms usually do not have such a large capital to invest at a time. Therefore, they need to search other strategies to overcome obstacles in the dairy business.

(2) Meat Processing

Table3-29 shows estimated meat and poultry production in Pakistan from year 2000-01 to year 2004-05[40]. The annual production has constantly been increasing with the growth rates ranging from

[40] Pakistan has ten semi-automated slaughterhouse and one meat processing plant which processes both chickens and beef.

2.4% to 3.0%.

Table3-29 Estimated Meat and Poultry Production

(000 tons)

	2000-01	2001-02	2002-03	2003-04	2004-05*
BEEF					
Cattle	476	486	495	505	515
Buffaloes	533	549	565	582	600
Sub-total	1,009	1,035	1,060	1,087	1,115
Growth	2.4%	2.6%	2.4%	2.5%	2.6%
MUTTON					
Sheep	220	221	223	224	225
Goats	446	462	479	496	514
Sub-total	666	683	702	720	739
Growth	2.6%	2.6%	2.8%	2.6%	2.6%
Poultry	339	355	372	378	384
Growth	5.3%	4.7%	4.8%	1.6%	1.6%
Total	2,014	2,073	2,134	2,185	2,238
Growth	3.0%	2.9%	2.9%	2.4%	2.4%

*: Estimated

Sources： Agricultural Statistics of Pakistan 2004-05

Table3-30 Annual per Capita Meat Consumption

	2000-01	2001-02	2002-03	2003-04	2004-05
Annual Per Capita Meat Consumption	14.42 kg	14.50 kg	14.65 kg	14.74 kg	14.84 kg
Growth	1.6%	0.6%	1.0%	0.6%	0.7%

Sources： Agricultural Statistics of Pakistan 2004-05

Table3-30 shows annual per capita meat consumption in Pakistan during the last five years. The growth rate is more or less 1%. Although it is not a significant number, steady growth is identified in meat consumption[41]

In a general term with much evidence, it is likely that amount of meat consumption at household increases when its income increases in developing countries. This case must be applied to Pakistan with assumption that the economy constantly grows further in the long term. In this case, the meat processing sector in Pakistan will enter a new development stage, and it is worthwhile taking notice of the development. According to an interview by the JICA Study Team, CEO at a meat processing company in Peshawar answered that they import 'Halal' beef from India and 'Halal' chicken meat from Brazil, then process them including sausages and smoked meat. The company sells their products wholesale to high-grade supermarkets at Lahore and Karachi. Their targeting costumers are high-income households. Because of the customers and high prices of their products, quality control including packaging is very important at the company. According to the CEO, the majority of meat processing in Pakistan is operating with low quality control, which cannot guarantee their products to be safe enough.

[41] Japanese annual per capita meat consumption is 11.45 kg in 2005, while American annual per capita meat consumption is 99.3 kg in 2002.

(3) Fruits and Vegetables

Pakistan produces a wide variety and a good taste of fruits including citruses, mangoes, apples, grapes, apricots and dates. Pakistan also produces many different kinds of vegetables like tomatoes, potatoes, onions, etc. On the other hand, the fruit and vegetable processing industry has been poorly developed. Some processed food is identified such as producing jam, fruit juice, ketchup, pickles and chutney. However, the volumes of production are quite small, and these items are mainly sold domestically. Regarding fruit and vegetable export, it is also remained at a low level although demand for these items from abroad is high, and these items are abundant in Pakistan (see Table3-31 and 3-32).

Table3-31 Production and Export of Fruits

Year	Total Production (000 tons)	Export in Quantity (000 tons)	Export in Value (Million Rs)	% of Export/Total
2001-02	5,901.6	296.4	5,327.1	5.0%
2002-03	5,741.7	271.8	5,154.0	4.7%
2003-04	5,691.7	364.7	6,236.4	6.4%
2004-05	6,636.6	303.2	6,233.9	4.6%

Sources: Agricultural Statistics of Pakistan 2004-05

Table3-32 Production and Export of Vegetables

Year	Total Production (000 tons)	Export in Quantity (000 tons)	Export in Value (Million Rs)	% of Export/Total
2001-02	4,604.4	130.4	1164.8	2.8%
2002-03	4,826.6	186.3	1542.0	3.9%
2003-04	4,966.5	162.5	1478.5	3.3%
2004-05	5,073.3	85.5	1245.8	1.7%

Sources: Agricultural Statistics of Pakistan 2004-05

For exporting fruits and vegetables, a process of washing & cleaning, grading, sizing, sorting and shipping is taken place. Because this process is not well organized in Pakistan, prices are usually lower than those from other countries. Items of exporting fruits are mainly citruses and mangoes, while items of exporting vegetables are mainly potatoes, onions and mushrooms, and main exporting countries of Pakistani fruits and vegetable are the Middle East, Singapore and Malaysia.

Focusing on processed fruits, there are five major companies[42] that annually produce 2,000 tons of jam & marmalade, 10,000 tons of pickles & chutney, 10,000 tons of tomato ketchup and 1,800 bottles of syrup & juice. On the other hand, there are a few large scaled vegetable processed food companies in Pakistan. A famous one is Icepak Limited in Lahore where they equip with cutting, peeling and freezing of peas, carrots, cauliflowers, broccolis, horse beans, haricots and lemons. Their annual production is around 1,800-2,000 tons, and about 40% of them are for export.

Challenges to Develop Food Processing

There are many reasons that the food processing industry in Pakistan has not developed yet. Followings are several major explanations of causes.

- Consumer Preference: Pakistani consumers usually prefer to have fresh fruits and vegetables

[42] These companies are Shezan, Mitchell's, Ahmad Food, National Food and Benz & Tops.

instead of processed ones.

- Prices: Prices of processed food are generally higher than fresh food in Pakistan. Majority of Pakistani people are not wealthy enough to afford to buy processed food.
- Lack of Investment: Small and medium sized companies usually do not have large capital to invest in procuring food processing equipment and establishing factories. Receiving commercial loans is not so easy due to various reasons in Pakistan.
- Seasonal Products: Fruits and vegetables are seasonal products. They are not constantly available through a year. This uneven supply of raw materials causes higher costs in factory operation.

In case of fruit and vegetable sales, poor condition of shipping, storage and inventory control causes about 45% loss of the total production. Pakistan needs to develop the distribution industry with improving infrastructure of transportation.

Following is rough work schedule of mango export. It is easily observed that there are many processes which required different techniques and equipment, even this is a case of exporting raw mangoes.

At each step as shown in Figure3-2, workers are required different skills. For example, workers must harvest mangoes by cutting the stem 1 to 2 centimeters away from the fruit. This technique reduces latex exudation and staining. The fruit can be placed into ventilated field crate. The crate should not contain more than three layers of fruit. At sizing and sorting stage, fruit handlers must wear soft white cotton gloves handling of fruit that involves sorting, hand wiping and cleaning. These processes seem to be small details. However, if there is even one defective, the price of mangoes would be reduced or discounted at the time of reaching a foreign market.

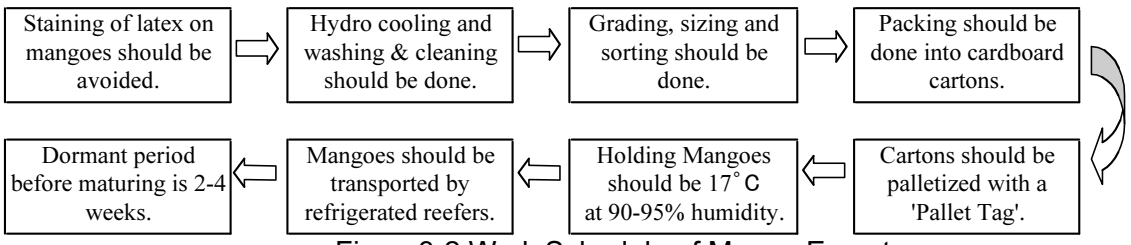


Figure3-2 Work Schedule of Mango Export

At the stage of shipping, for example, exporters from Multan and other areas of Southern Punjab Province found it difficult to export without direct flights and adequate cargo space. The absence of cold chain infrastructure for air cargo also adds to difficulties. On the other hand, the mode of transportation by sea is another possibility for exporting mangoes. For instance, it takes about 18 to 20 days[43] for a shipment via sea to arrive at London from Karachi. However, there are several cases that customs procedures at Karachi were delayed, and then all mangoes at a cargo became rotten.

Agricultural Policy in Pakistan

Agriculture is the main industry of Pakistan's economy contributing 23% of the GDP and 42% of the total employment. Furthermore, 67.5% of the total population live in agricultural and livestock farming areas. Given this situation, activating and establishing the food processing industry can directly contribute to increase job opportunities and household incomes in these areas. Until today, the Pakistani government has applied various kinds of agricultural policies and measures to increase agricultural production, especially for wheat, cotton and sugarcane. These supports are on supply-side. On the other hand, the government supports for increasing fruit and vegetable production, distribution system, food processing and marketing have not been adequate. Compared to wheat, cotton or

[43] The un-ripened mangoes have storage life of about 25 days.

sugarcane, fruits and vegetable can be easily handled to add more value by processing. Value added products, e.g. processed food has a lot of potential for export. There are many business chances in the food processing industry, which also create many jobs to eradicate poverty in rural areas. Learning from other country's experience, Taiwan, Thailand, the Philippines, Indonesia and Malaysia have selectively developed their food processing industry. As a result, these countries' export of processed food becomes large and contributes to increase their GDPs as well as reduce poverty. Pakistan has large potential for food processing development. It is strongly recommended that the concerned ministries and the provincial governments work together with the food processing business people to establish a food processing association or Board. Because of agricultural products, there must be regional characteristics and indigenous products at each area. Therefore, the association (or Board) must develop their own unique policy and apply strategies to activate the industry.

3.2.6 Chemical

(1) Background of Chemical Industry in Pakistan

The history of Pakistan's chemical industry is not so long. It starts around 1950s. In early 1950s, Pakistan Industrial Development Corporation (PIDC)[44] was set up by the government. As a result, a large chemical industry estate comprising Pak American Fertilizers, Maple Leaf Cement, Antibiotics (Penicillin), Pak Dyes & Chemicals was established at Iskanderabad in Mianwali District, Punjab Province. This estate played an important role and contributed to an early stage of chemical industry development in Pakistan. After that, in 1960s, another chemical industry complex was established in private sector in Lahore, Punjab Province. Following this, chemical factories also started emerging at Karachi due to the investment friendly policies to the private sector in chemical industry. However, in early 1970s, the private chemical companies were nationalized. As a consequence, the speed of growing the industry stated declining.

(2) Present Situation of Chemical Industry

Pakistan has locally available resources of natural gas, petroleum and coal. They are used mainly to meet the energy requirement of the country, not having been utilized for manufacturing of chemicals where value addition can be nearly ten fold in some cases. The only exception is the use of natural gas to produce fertilizers.

Table3-33 Import of Chemicals in Pakistan

Year	Total Imports (000 Rs.)	Import of Chemicals (000 Rs.)	Chemicals/ Total in %
1994-95	320,891,962	48,975,094	15.3%
1995-96	397,574,876	73,653,204	18.5%
1996-97	465,001,242	77,020,378	16.6%
1997-98	436,338,153	77,498,337	17.8%
1998-99	465,963,979	90,485,239	19.4%
1999-00	533,791,524	103,402,103	19.4%
2000-01	627,000,041	111,258,552	17.7%
2001-02	634,630,297	114,930,393	18.1%
2002-03	714,371,855	126,404,295	17.7%
2003-04	897,824,639	161,118,425	17.9%

Source： Federal Bureau of Statistics

Pakistan made a considerable progress in basic inorganic chemicals like Soda Ash, Caustic Soda, Sulphuric Acid & Chlorine, and sufficient production capacity of these chemicals is available to cater the needs of the local industry. However, Pakistan's organic chemical industry could not flourish due to unavailability of basic building blocks such as Ethylene, Propylene, Butylenes & BTX (Benzene, Toluene, and Xylene)[45]. These materials are called specialty chemicals and used for the

[44] PIDC became privatized in 1985.

[45] Ethylene, Propylene, Butylenes & BTX are raw materials for producing pharmaceuticals, pesticides, dyes &

productions of most of organic chemicals that become raw materials for pharmaceuticals, dyes and pigments and other valued added products. Because Pakistan does not produce these raw materials and intermediates, development of the whole chemical industry has not been so significant until today.

As Table3-34 shows, the import value of chemicals remained more or less 18% of the total imports during the last 9 years. It is also noted in Table3-34 that five top imports of the major chemical categories during the period of 2000-2002 are of organic chemicals (including petrochemicals)[46], plastics & resins, pharmaceuticals, pesticides and fertilizers. Among the five imports, organic chemical especially stands out. A representative of a chemical company in Lahore answered the JICA Study Team's interview that the company imported the latest model of a large plant from Germany for producing phthalic anhydride and maleic anhydride for production of dyes and polyester resin, while the raw materials are entirely imported from Malaysia and Singapore. According to the interview, the company monopolizes the market of phthalic anhydride and maleic anhydride in Pakistan, because there are no other companies that can produce the 'specialty chemicals'.

Table3-34 Chemical Related Group Imports

(Million Rs.)

Chemical Groups	Imports 2000-2001	Imports 2001-2002
Organic Chemicals	38,150	58,271
Plastics & Resins	20,743	13,559
Pharmaceuticals	13,965	5,670
Pesticides & others	11,448	6,790
Fertilizers	9,842	9,672
Paper & Paper Board	9,061	7,035
Dyeing & Tanning Chemicals	7,346	10,176
Inorganic Chemicals	5,364	5,083
Synthetic Fibers	4,543	3,522
Essential Oils	39	36
Glass	1,190	1,935
Total	121,691	121,749

Source: Digest of Industrial Sectors in Pakistan, July 2004, Ministry of Industries and Production

(2) Key Factors for Chemical Industry Development

Challenges for future development of chemical industry in Pakistan is to change the structure of the industry, shifting from importing raw and intermediate materials to producing them domestically. It is fine that the chemical industry in Pakistan may follow the strategy of the Japan chemical industry development where there are few natural resources for chemical production. However, Pakistan is endowed with minerals including coals, petroleum products (gas and oil) and agricultural products which are resources for producing raw materials. If Pakistan will persist in the present chemical industry structure for future, the expansion and development of the industry will be limited. The government has already reduced the tariff to 5% on importing raw and intermediate chemical materials. Strategies for giving impetus to the sector without changing the structure of the chemical industry in Pakistan are not easily found. If Pakistan can develop to produce raw and intermediate materials and replace imported materials, a market for export will come to their view. According to interviews by the JICA Study Team, several companies which export their products revealed that production costs of chemical products in Pakistan are comparatively higher than those in other countries because of imports of raw and intermediate materials. The Pakistan government should reexamine chemical related imports constituting about 18% of the total import bill, and face the matter squarely. The Pakistan has large potential for expansion of the chemical industry. The government needs to find out

pigments, soaps & detergents, pints & varnishes, synthetic fiber, plastics & resins, rubber tires & tubes, textiles auxiliaries and essential oils & perfumes.

[46] Organic chemicals are raw materials for bonding agents, dyes & pigments, rubber, antiseptics, perfumes, pharmaceuticals (pneumonia and antipyretics), germicides, cleansers for industries and tooth powders.

and intensively support priority sectors that can lead to change the current chemical industry structure.

Agro Based Raw Materials

One of suggestions that guides a direction to newly develop the chemical industry in Pakistan is agro based chemical development and production. For example, agricultural products and livestock are used to produce alcohols, organic acids, edible oils, inedible fats, glycerin, gelatin, etc. Pakistan is an agricultural country. Agricultural related materials are abundant and immediately available. However, these have been hardly utilized effectively. Followings are available for conversion to chemicals in Pakistan.

Molasses	Starches	Bagasse
Cotton linters	Rice husk	Wheat straw
Vegetable seeds	Wood	Animal fats and bones

A representative of a sugar mill company in Lahore answered an interview by the JICA Study Team that the company exports molasses to Britain and other European countries for livestock feed, use bagasse for fuel of steam turbines, and sell bagasse for organic fertilizers and raw materials of paper mills. Regarding molasses, the sugar mill industry has big potential of value addition through conversion of molasses to alcohol and ultimately to ethylene and polyethylene or production of gasohol.

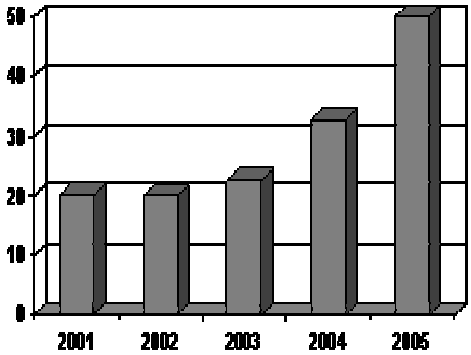
Interview with a Chemical Company

The company is located in Lahore and produces lubricating oils for boring machines at oil and gas wells The company is basically run by family, and the CEO sen all their sons to England for studying chemistry (one sor is getting PhD). The company invests in R&D by themselves. The CEO said that the government services for the chemical industry is poor, therefore, they rely al R&D on themselves. Recently the company spent Rs 500,000 on purchasing technical books which are no available at public or university libraries in Pakistan. Las year, the company developed a new product and asked Pakistan Council for Scientific and Industrial Research (PCSIR) and several technical universities fo componential analysis. However, none of them gave positive answers. Moreover, none of them could not ever understand the product. The CEO admitted that this is the current situation of the government services ir Pakistan.

Government Supports

The chemical industry has very wide inter-industrial relationship from up-stream to down-stream sectors, while it is a capital-intensive industry. In order to encourage investors to come forward in various sectors in this industry, the government should necessarily provide tax benefits, low interest loans, good infrastructure and others. Furthermore, the government should invest more in chemical laboratories, R&D and joint researches between universities and private companies. It is strongly recommended that the government carefully listens to chemical companies' needs and identify areas where the government can support with a long-term and consistent strategy.

Figure3-3 IT Exports (US$ Interview with a chemical company)



3.2.7 Information and Technology

Information and Technology (IT) industry in Pakistan has shown signs of growth since 2003. For example, the IT export in year 2005-06 went up to US$ 72 million from US$ 46 million in year 2004-05[47] (see Figure 3-3. The major export items in year 2005-06 were hardware consultancy services, software consultancy services, maintenance or

[47] On July 24th, 2006, State Bank of Pakistan informed Pakistan Software Export Board that there was an overall 56% annual increase in IT exports by Pakistani IT companies from year 2004 to year 2005.

repair of computers and export of computer software. The maximum contribution in these items has come from computer software export, which contributed 63% of the total export.

On the other hand, domestic market has also been expanding. For example, the banking sector in particular has dramatically increased its dependence on the use of IT, as evidence by the number of automated teller machines (ATM). During fiscal year 2003-04, over US$ 200 million was invested by the financial services sector into information and technology products and services. Within the industrial sector, large companies such as Pakistan Tobacco, Honda Atlas and KSB Pumps and others have deployed high-end Enterprise Resource Planning (ERP) solutions. The textile sector is investing heavily into specialized software and IT solution, and the airline industry sector has already introduced IT technology such as e-ticket services.

(1) Policy on IT Industry Development

The Pakistan Software Export Board (PSEB) has decided to set up Software Technology Parks (STPs) in Islamabad, Karachi and Lahore to facilitate the IT and IT-enabled Services companies operating in Pakistan. These parks provide working environment, office spaces, high-speed international data connectivity and uninterrupted power supply and others. They are also designed with a view to getting business ventures up and running in the shortest possible time. The government has also hammered out strategy of moving call centre[48] companies into Pakistan. Growth rate in call centre business is rapid with around 1,800 individuals employed in the sub-sector servicing international clients and another 2,500 providing call centre services to domestic customers. The growth is expected to be as high as 60% per annum for the next two years.

In terms of government deregulation policy, a few of incentives offered are tax exemption until June 30th, 2016, establishment of IT parks with low rent, foreign investors allowed 100% ownership of equity in IT companies and 100% repatriation of profit allowed to IT companies.

(2) IT Human Resource Development

According to a PSEB paper[49], current number of IT professionals in the industry is estimated at 46,000, and another 42,000 are estimated to be employed Defense, Government and Private Limited companies.

Table3-35 Projected Demand for New IT employees

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
IT	13,000	15,000	18,000	21,000	24,000	27,000	30,000	33,000	36,000	39,000
Non IT	2,000	2,000	2,000	2,000	2,000	3,000	3,000	3,000	4,000	4,000
University	1,000	1,000	1,000	1,000	1,000	2,000	2,000	2,000	2,000	3,000
Total	1,000	18,000	22,000	25,000	28,000	31,000	35,000	38,000	42,000	45,000

Note: These figures are rounded off to nearest 000

Source: Pakistan Software Export Board

The new job positions in the industry and in each category (IT companies, Non IT companies and universities) for year 2006 to 2015 are summarized in Table3-29 As the table shows, after 10 years the new employees numbers only in year 2015 reach to 45,000 which is roughly same numbers as the current IT professionals (e.g. 46,000). A rapid growth is expected in the IT industry within 10 years.

[48] Main jobs of Call Centre are usually booking and confirmation of air tickets, telephone services for industrial products and insurance companies, banking operations, hotel booking, data entry of medical prescription, data entry for companies, etc.

[49] IT Human Resource Need Assessment Study, March 2006, Pakistan Software Export Board

In the view of supply side of IT professionals, the current supply of IT professional numbers exceed the number of demand. As of 2005, totally 110 IT relating universities and institutes are there in Pakistan (Public Sector: 56, Private Sector 54). A projection shows that the demand for IT professionals in year 2006 remains at around 60% of the supply of IT professionals. After 10 years, the gap will be still there, however, the demand will increase to around 80% of the supply[50].

The PSEB paper indicated that the quality of fresh graduates entering the industry is not to the market standards, and the industry incurs heavy cost on job training. In addition to this, the retention of trained professionals is not so high.

(3) Public Private Partnership

As mentioned previously, IT companies invest in training new graduates to meet their standards. However, because their turnover rate is high, it is a great loss for small and medium size IT companies. These companies also suffer shortage of IT professionals. The IT industry desires the government to share the cost of training through either sponsorships or by setting up executive development centers. At this stage, it is important to say that the government's role is not to design curriculum or recruit computer science lecturers, but invite representatives[51] of various sectors in the IT industry and listen to their opinions and ideas. The government officials will facilitate discussions at a committee where the main actors must be those representatives. The government strategy is to make the IT industry stakeholders to involve the process of decision-making and implementation from the beginning.

According to the result of a study[52] done by Pakistan Software Export Board (PSEB), it is important to put in place a public - private partnership framework based on consistent commitments of the two parties and governed by a transparent performance-based assessment framework. The paper also says that it is very fine to learn India's or Israel's experience of IT industry development, but it would not be a wise idea to bring a coping package which just try to follow strategy of IT development in India or Israel. For example, developing country packaged software exports of the software exports business are minimal in the 5-10% range from even the best of the software exporters like India, Secondly, majority of the work done by the developing countries consist of low-skilled programming or coding services and while some countries, notably India, might have done well in this type of activity, it seriously suffers from issues of value-addition and scalability. What would the Pakistani IT industry do in the future? Do they follow the same steps that the Indian IT industry has taken? If so, do the Pakistani IT industry have enough manpower?

The Pakistani IT industry has shown rapid growth for last 3 - 4 years, and it is a right time that the two parties of the government and IT companies together examine the industry in terms of strength, comparative advantage, and perspective. They need intensive discussions and associate on equal terms to build a practical cooperation system. If they do not develop a strategy derived from mutual cooperation between the government and the IT business sector, effects of the government's tactics such as deregulation, tax benefits, improving infrastructure, and IT human resource development would be down by half, which can be interpreted that the Pakistani IT sector will not be able to compete competitors in other nations. At the same time, universities need to revise their curriculum along with the changing needs of the industry to make sure that optimal results can be achieved in the future.

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[50] IT Human Resource Need Assessment Study, March 2006, Pakistan Software Export Board

[51] The IT industry in Pakistan has already established an association called Pakistan Software Houses Association (PASHA) which has about 200 members.

[52] Pakistan's Software Industry - Best Practices & Strategic Challenges, February 2005, PSEB

3.3 Current Status and Issues for Area Economic Development through Clusters

Although section 3.1 points out the necessity of a strategic industrial policy that identifies the leading industries for achieving the goal of evolvement into an industrial society, it is neither realistic nor appropriate to expect the government to develop all of these industries. While it is necessary to have a comprehensive strategy for the leading industries, for other industries, the policy should support those industries that can survive international competition. From this perspective, this section examines the potential of promoting export-oriented clusters that have the potential to compete in the international marketplace and can contribute to developing regional economic centers, while sustaining the values and cultures of the area.

3.3.1 What is a Cluster?

Michael Porter has developed a commonly used definition that defines a cluster as a geographic concentration of interconnected companies and institutions in a particular field, encompassing linked industries and other entities important for competition.[53] Table3-36 below shows the advantages that a geographic agglomeration of industries is supposed to produce.

Table3-36 Advantages of Industrial Clustering

Forward Linkage	Backward Linkage	Information/Technology Spillover	Collective Action
-Easier access to markets -PR effects on potential buyers	-Availability of specialized labor -Availability of specialized materials and services	-Dissemination of information on new markets, new technologies and new products	-Joint participation in exhibitions -Joint marketing -Joint material procurement -Common facilities/ training centers

Source: JICA (2002)

In clusters, the entry barrier for new entrepreneurs is usually low, since specialized suppliers and labor are easily available. In addition, high trust developed over the years among people working in the cluster reduces transaction costs. Moreover, if each specialized unit effectively collaborates with other units, the cluster units can quickly adjust themselves to changing market demands and thus will be able to compete with large companies.

The concept of clustering came into the limelight in the 1970s, when small industrial cities in central as well as northeast Italy, where small and medium enterprises (SMEs) established close-knit networks and developed strong international competitiveness, achieved rapid growth without any intervention from major companies. This success story of the so-called 'Third Italy' stimulated researchers and academics in various fields, and the concept of clustering became one of the effective tools for SME promotion.[54] The further recent advancement of module production, as well as the combination of multiple technologies, sheds more light on the concept of clusters, as the cases in Silicon Valley in the United States and Oulu in Finland show, and formal as well as informal interactions among various stakeholders within the clusters can lead to technological innovation and continuous productivity enhancement.[55]

In developing countries like Pakistan, however, the realities prevalent in SME clusters are totally different from those in advanced countries as discussed below, and thus it is not realistic to expect technological innovation by promoting clusters. Nevertheless, promoting clusters can serve to

[53] Ishikura et al. (2003)
[54] JICA(2002)
[55] Ishikura et al.(2003)

strengthen SME competitiveness and thus promote economic prosperity in the area.

This study proposes the promotion of export-oriented SME clusters since they are the most efficient way to upgrade SMEs in Pakistan. Firstly, producing highly sophisticated products, even if the level of required technology is low, seems to be the only way for Pakistani SMEs to compete with Chinese products, which have strong advantages in both cost and volume. Since the domestic markets in Pakistan are still largely price-driven and there are so many impediments that distort market mechanisms, the markets for sophisticated products made in Pakistan have to be sought outside of the country, namely export markets. Secondly, due to the huge technology gap existing between advanced countries and Pakistan, the best way for Pakistani companies to catch up is to collaborate with companies with high technology levels in advanced countries. Companies producing products for export are in a better position to develop linkages with foreign companies.

The following sections will discuss the current status and issues of SMEs/clusters in Pakistan, possible ways of assisting clusters, and review the current status and issues of government strategy for assisting SMEs / clusters.

3.3.2 Current Status and Issues of Clusters in Pakistan

(1) SMEs in Pakistan

1) Overview

SMEs with less than 100 employees account for 99% of the 3.2 million companies operating in Pakistan. As shown in Table3-37below, SMEs dominate in major industries in terms of both the number of companies and employees. It should also be noted that micro enterprises with less than 10 employees have the biggest shares.

Table3-37 Firm-size Distribution in Major Industries

	% of units in a sector					% of employment in a sector				
Firm-size	Micro	Small	Medium		Large	Micro	Small	Medium		Large
No. of Employees	0-9	10-19	20-49	50-99	100-	0-9	10-19	20-49	50-99	100-
Food	94.9	3.6	1	0.2	0.3	44.9	11.1	7	3.2	33.8
Textile	92.7	5.1	1.5	0.3	0.4	41.6	10.8	7.2	3.4	37
Apparel	86.9	8.5	3	0.8	0.8	30.9	16.6	12.8	8.9	30.8
Footwear	96.9	2.4	0.3	0.1	0.3	79.8	12.7	3.2	1.5	2.8
Metal Products	93.3	5.5	0.8	0.1	0.3	60.6	17	5.7	2.5	14.2
Sports Goods	92.7	5.9	0.9	0.3	0.2	61.5	20.3	7.1	4.7	6.4

Source: Government of Pakistan (2005)

What is more important is that firm-size distribution has not changed in the last two decades. Table 3-38 below compares the distribution of employment by firm size in 1987-88 with that in 1996-97. It clearly shows that the basic structure of industries where there is massive concentration of SMEs on the one hand and a considerable proportion of very large firms on the other remain unchanged. This suggests that it is not at all easy for SMEs, especially micro enterprises, to grow.

Table3-38 Distribution of Employment by Firm Size in Manufacturing Sector

	Large firms		SMEs	
No. of Employees	1987/88	1996/97	1987/88	1996/97
1-5			83.0(	86.0(
6-9			17.00	14.00
9-99	18.14	16.55		
100-499	26.11	30.43		
500 and above	55.7[illegible]	53.0[illegible]		
Total	100.00	100.00	100.00	100.00

Source: ADB (2005)

Moreover, the line of products made by Pakistani companies remains largely the same over the last two decades. The following table shows changes in the percentage of value addition by major manufacturing sectors. The level of value additions in the manufacturing sector is generally low in Pakistan. The table shows that the smaller the firm size, the lower the level of technology utilized. Products made by SMEs are largely hand-made. Although there is some indication that large firms have shifted toward sectors with higher value addition such as electrical machinery over the decade, there is little change observed for SMEs.

Table 3-39 Composition of Value Addition by Major Manufacturing Sectors (%)

	Large firm (100 workers and over)			SME (Less than 100 workers)	
	1987/88	1996/97		1987/88	1996/97
Textile	17.35	22.3[illegible]	Cotton Weaving	13.19	11.16
Food & Beverages	15.95	15.19	Silk and Art Silk	5.11	6.9[illegible]
Electrical Machinery	3.27	7.6[illegible]	Jewelry	7.65	5.95
Industrial Chemical	6.98	8.5[illegible]	Wooden Furniture	5.96	6.1[illegible]
Nonmetallic Mineral	7.69	7.15	Leather Footwear	4.11	3.65
Tobacco	10.08	6.18	Structural Products	3.26	5.0[illegible]
Total	61.32	67.03	Total	39.28	38.98

Highlighted cells indicate where percentage increased.

Source: ADB (2005)

The above description suggests that it is extremely difficult for SMEs, which dominate in the manufacturing sector of Pakistan, to grow and increase value addition. Why is it so difficult? What prevents SMEs from growing? The next section will examine the difficulties of SMEs in Pakistan.

2) Issues for SMEs in Pakistan

(i) Low capability of SMEs

Most of the SMEs in Pakistan operate on a very weak foundation. They lack almost all the necessary resources to grow. They lack human resources, capital and knowledge. This weak foundation of SMEs

prevents their growth. Table 3-40 below clearly shows that very few SMEs are formalized.[56] Sole enterprises and Partnership operations are the dominant style of business in Pakistan. This indicates that transactions of SMEs are largely informal and undocumented without any specified rules of business, which are required if they want to expand their business.[57]

Table3-40 Type of Business Arrangement (%)

Size	Sole	Partnership (family)	Partnership (non-family)	Private Limited
7-10	69.1	23.2	6.4	1.2
11-25	59.8	32.1	5.5	2
26-96	35.6	40.2	9.2	14.9
Average	61.6	28.7	6.5	3.7

Source：Government of Pakistan (2005)

Table 3-41 shows the educational levels of owners of different sized companies. The larger the company is, the higher the education level of the owner is. There is a considerable percentage difference for the category 'Below Matriculation' between companies with ten workers or less and those with eleven workers or more. This suggests that the owners who did not complete their education have difficulties expanding their companies. It can be assumed that acquiring managerial skills necessary for operation of a company with more than ten workers requires an educational level of at least graduation from a college or university?

Table 3-41 Education of Owners/Entrepreneurs (2003)

No. of workers	7-10	11-25	26-96
No schooling	8.9	8.1	2.4
Below Matriculation	32.5	20.0	14.1
Matriculation	21.5	23.0	17.6
Intermediate and above	37.1	48.9	65.8

Source: Government of Pakistan (2005)

The foregoing discussion demonstrates that SMEs, which dominate the manufacturing sector in Pakistan, are mostly family businesses relying on informal transactions and often lack the institutional capacity, as well as knowledge, to expand their operations.

(ii) Institutional deficiencies

What, however, impede the growth of SMEs which do have the capacity and resources to grow? There have been a number of studies to examine bottlenecks for SME growth, such as studies by the World Bank (2003), ADB (2005) and the Government of Pakistan (2005). These studies have drawn similar conclusions. The bottlenecks identified and recommendations made in these studies are summarized below.

[56] However, there are systemic deficiencies which discourage corporatization of SMEs. The Government of Pakistan (2005) has recognized that the limited liability aspect of companies has been diluted in Pakistan due to the prevalent commercial banking practice of requiring personal guarantees from companies borrowing funds. In addition, tax [?] rates and the number of taxes companies are subject to increase after corporatization.

[57] A manager of one of the lease companies the study team visited cited the fact that SMEs do not normally prepare their own balance sheets, and these balance sheets are not reliable even if available. He also indicated that SMEs do not register themselves with the relevant authorities to avoid taxation.

Table3-42 Bottlenecks and Recommendations for SME Growth

	Bottleneck	Recommendation
Finance	Lack of access to credit[58][59] Stringent collateral requirements[60] Procedural delays in loan disbursement[61] Corruption High interest rates	Simplifying lending procedures Enforcing creditor's rights Credit registry and credit reporting Development of private long-term credit market Rationalizing taxes on financial institutions
Human Resource	Lack of trained middle management[62] Lack of qualified technicians[63] Inadequate vocational training[64] Workforce with low levels of skill and education	Credit market for training loans Creating sector-specific incubators
Regulation	Bureaucratic burden[65] High tax rates and frequent tax audits[66] Time and cost of resolving tax disputes[67] Frequent government inspections (labor, pension, social security)[68]	Reforming procedures from direct assessment to self-assessment backed by selective auditing Standardizing audit procedures and disseminating audit information Tax payer education

[58] ADB(2005) indicates that there is no access to credit for micro enterprises with 10 workers or less and small enterprises with 11-49 workers which have operated for less than five years. There is also a difficulty of access to export financing, which requires the submission of export letters of credit, since many SMEs are indirect exporters and do not have letters of credit.

[59] A World Bank study (2003) shows that only 51% of SMEs who need loans actually were able to borrow funds. The same ratio in China is 76%. Reasons for not obtaining loans include high rates of interest, time consuming and complicated procedures and stringent collateral requirements.

[60] According to ADB(2005), the maximum amount of collateral required by financial institutions is around 120-130% of the amount to be borrowed.

[61] According to ADB(2005), it normally takes 2-10 months until the loan is approved.

[62] ADB(2005) indicates that although the number of training institutes and training courses targeted to middle management has dramatically increased in recent years, the costs of this training are too expensive for SMEs; moreover, SMEs are often unable to afford the high salaries for those trained in these institutions.

[63] According to ADB (2005), only 2.6% of Pakistan's population between the ages of 17 and 23 is enrolled in institutions of higher learning. This proportion is one of the lowest in the world.

[64] The quality of education in public schools has deteriorated. According to ADB (2005), 75% of of all university students are enrolled in public universities. There are few private engineering universities.

[65] ADB (2005) indicates that management in Pakistani companies spends 17% of its working time dealing with the regulatory and administrative burden, compared with 11% in China and 6% in OECD countries.

[66] World Bank (2003) indicates that the biggest constraints to business expansions in Pakistan are tax administration followed by onerous tax rates. Around 60% of the visits by government officials are from the Central Board of Revenue (CBR). In addition, among companies surveyed, 40% of SMEs and 70% of large firms had had tax audits in the previous three years. As a result, 20% of companies saw their tax liabilities increased.

[67] According to the World Bank (2003), more than half of tax-related appeals require more than one year to resolve.

[68] According to the World Bank(2003), the number of inspections and visits by government officials in Pakistan is 35.64 per year, which is much higher than for India (10.43) and Bangladesh（16.39, and is almost same level for China (36.19). ADB (2005) indicates that micro companies can evade

	High tariff rates and delays in receiving duty drawbacks[69] Delays in receiving sales tax refunds[70] Delays in and uncertainty of custom clearance[71]	Improving sales tax refund/duty drawback system Reducing the number of regulations
Market	High cost of inputs Lack of high quality raw materials/ intermediate goods Lack of reliable supply chain Lack of contract enforcement Prolonged commercial disputes Competition from smuggled/ counterfeit goods	Reducing import tariffs on raw materials/intermediate goods Strengthening commercial dispute resolution（judicial watch project by NGOs, accountability and judicial incentives） Forming specialized courts

Source：ADB (2005), World Bank (2003)

As the table above clearly shows, bottlenecks in the finance, education, tax and trade systems increase the cost of business for SMEs in various ways. In addition, political instability, inconsistent policies, and lack of adequate infrastructure further exacerbate the miseries of SMEs. What is more serious is the fact that the government officials who control the system become the biggest constraints for SMEs. Frequent and often harassing inspections by government officials not only waste the precious time of company management, but also add to the cost of business because of their requests for bribes. This, in turn, may encourage SMEs to opt for 'Stay Small'.

Table 3-43 below shows the average amount of official fines imposed by government officials on different sized companies. What is distinctive in the table is that the companies with 10-19 workers have relatively heavier burdens than others.

ADB (2005) also indicates that while micro enterprises that have more flexibility and can enjoy exemptions are able to evade taxation and audit, it becomes difficult for medium-sized enterprises that have more visibility at this stage of growth. Consequently, medium-sized enterprises have to bear much higher tax burdens, more frequent audits and higher costs for tax dispute resolution than small enterprises.

In order to expand their business, micro enterprises have to clear a number of hurdles. The number of hurdles increases as the company grows. It is the government regulations and government officials who implement them that actually become the biggest burdens for SMEs.

A draft paper issued by the Ministry of Industry, titled 'Toward a Prosperous Pakistan' is meant to address these issues, and its recommendations are well founded. The study team earnestly hopes that based on these recommendations, the bottlenecks described above will be removed as soon as possible. Otherwise, the public-private partnerships advocated in the policy papers elsewhere will not be achieved since the confidence of the private sector in the government will never be improved until government officials at every tier change their attitude from one of harassing people to a desire to serve the needs of people in the country .

government inspections by hiring contract/seasonal labor, which are outside of labor regulations.

[69] According to the World Bank (2003), the maximum delay observed in receiving duty drawbacks is four months. 12.6% of companies surveyed admitted paying for speedier processing.

[70] According to the World Bank (2003), the maximum delay observed in receiving sales tax refunds is 4.7 months. 19.4% of companies surveyed admitted paying for speedier processing.

[71] According to the World bank(2003), the average time to clear customs is 17.34 days, which is much longer than in China (6.73), India（10.58）, and Bangladesh（11.57）. This also increases the cost of production.

Table3-43 Average Amount of Official Fines by Firm Size & Regulations

（Rs.）

Firm Size (No. 0f Employees)	Micro 1-9	Small 10-19	Middle 20-99	Large 100 and over	Average
CBR					
Income Tax	2,160	3,884	3,452	5,393	3,800
Sales Tax	763	4,403	1,477	8,194	4,042
Customs	0	512	2,250	3,110	1,054
Labor and Social Security					
EOBI	215	829	608	1,762	841
Welfare	211	373	159	2,743	635
Fire and Building Safety	18	92	60	555	139
EPA	22	29	44	196	52
All others	60	55	32	290	83

Acronyms: CBR: Central Board of Revenue; EOBI: Employees Old-age Benefits Institution; EPA: Environment Protection Agency

Source：SMEDA (2006)

(2) Current Status of Clusters in Pakistan

As indicated in 3.3.1, clusters have advantages of forward linkages, backward linkages, technological/information spillover and collective actions. This section reviews the current status as well as issues related to clusters in Pakistan, and examines what sort of support is necessary to strengthen the competitiveness of clusters.

1) Major Clusters in Pakistan

In Pakistan, there are a number of cities where similar kinds of industries are geographically agglomerated, as shown below.

Table 3-44 Major Clusters in Pakistan

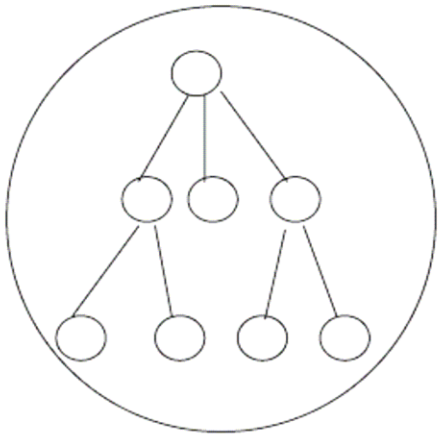
City	Industry	No. of unit and employment
Sialkot	Surgical Goods	2500units, 60,000
	Sports Goods	300,000
Karachi	Leather	170units, 5000
	Gems and Jewelry	8000units, 250,000
Gujrat	Electric Fan	400units, 50,000
Wazirabad	Cutlery	300units, 25,000
Faisalabad	Textile	7700units, 100,000
Chiniot	Wooden Furniture	3000-4000units, 25,000

Source: SMEDA、UNIDO

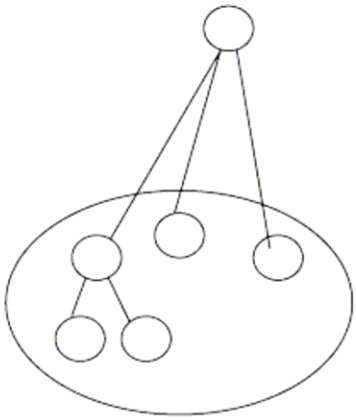
However, clusters have several stages of development. If the cluster does not reach the stage where it can enjoy the agglomeration effects indicated in 3.3.1, it is just an assembly of individual enterprises, and thus it is not very meaningful to support it as a cluster. The following section discusses the features of Pakistani clusters after examining the various cluster models and implications of them to Pakistani clusters.

2) Features of Clusters in Pakistan

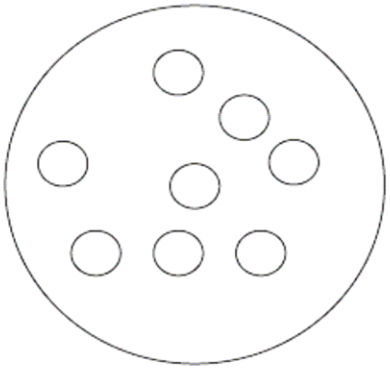
JICA (2002) classifies clusters into the following four models according to the types of network: Marshall Model, Italian model, Hub and Spokes model and Satellite model, as shown below.



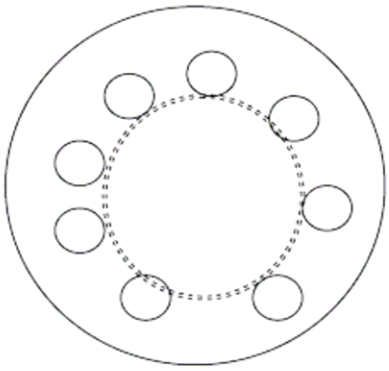
<Hub and Spoke model>
-Several leading companies with groups of vendors constitute hierarchical networks within the cluster



<Sate lite model>
-Leading companies outside the cluster subcontract to vendors in the cluster



<Marshall model>
-Assembly of companies without hierarchy, often without sub-contracting



<Italian model>
-SMEs constitute a network without hierarchy

Figure3-4 Classification of Clusters by Network-type

Source: JICA Study Team

The company visits and interviews conducted during the study revealed that there are hub and spoke models, satellite models and combinations of these two models of clusters in Pakistan, while the majority of the so-called clusters remain along the lines of the Marshall model with no diversification nor hierarchy involved. The Marshall model of clusters is just a congregation of companies in the area, which has the potential to be developed into other cluster models but does not demonstrate any advantages of clusters as such.

Furthermore, even hub and spoke model or satellite model clusters in Pakistan are significantly different from those in more advanced countries, if one looks at the two most important aspects of clusters in the advanced countries, namely, specialization and collaboration, and technological innovation, as shown in the table below:

Table 3-45 Differences of Clusters between Advanced Countries and Pakistan

	Clusters in advanced countries	Clusters in Pakistan
Specialization and collaboration	Highly specialized companies are effectively linked with each other to adjust to changing demands in the market and to compete with major companies.	Due to poor trust among companies in the cluster, there is a tendency for big companies to increase proportion of in-house production. Most of vendors are micro enterprises with very low level of technology.
Technological Innovation	Interactions among various stakeholders such as individual companies and research institutions facilitate technological innovation.	Technology level adopted in the cluster is too low to lead to technological innovation.

Source: JICA Study Team

Only 20% of Pakistani companies outsource production of parts. The main reason for outsourcing is to save labor costs.[72] It is totally different from the case in advanced countries where the company outsources because of the specialization and high level of technology of vender companies, which enhance the competitiveness of products.

One reason behind this low level of vertical linkage is weak contract enforcement.[73] Contracts are regularly breached. There are prevalent delays of delivery and payment. These kinds of practices significantly erode trust among companies. To reduce the risk of default, companies in Pakistan are inclined to enter into long-term transactions with only selected customers or maintain excessive in-house production. In the long run, such measures as judicial reform can strengthen contract enforcement and enable companies to maximize efficiency of resource allocation, which facilitates the deepening of vertical linkages of the companies. Nevertheless, assisting clusters can contribute to the enhancement of the competitiveness of SMEs in clusters, as well as clusters as a whole, since clusters in Pakistan do have advantages of agglomeration such as easy availability of raw materials and labor, and technology/information spill over.

3) Analysis of Clusters

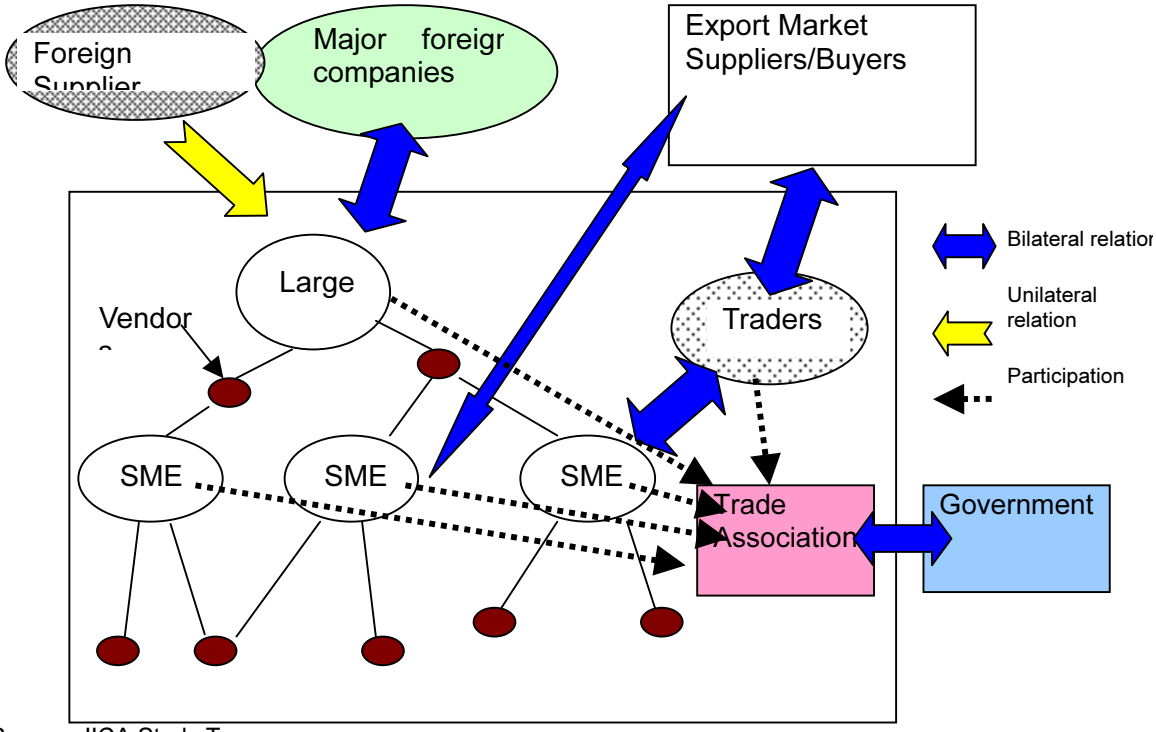
The major objective in assisting SMEs through clusters is that this is a more efficient way of strengthening the competitiveness of SMEs that have the potential to produce highly sophisticated products for international markets. Collaboration with foreign companies with high levels of technology is the most effective way to achieve this objective. This study classifies Pakistani clusters into three categories according to their level of linkages with foreign markets as well as the type of relationships among the SMEs in the cluster. The three categories, called 'export-oriented', 'domestic-centered' and 'under-developed' clusters, are explained in detail below.

i) Export-oriented Cluster（Surgical goods and sports goods in Sialkot）

The configuration of this cluster is shown in the diagram below.

[72] Government of Pakistan (2005)

[73] Government of Pakistan (2005) indicates that the average time required for solving legal disputes over payment is about 400 days in Pakistan, compared with 250 days in China and 30 days in Tunisia.



Source: JICA Study Team

Figure3-5 Configuration of Export-oriented Cluster

a) Major Features of Cluster

Major features of Sialkot cluster are as follows:

Table3-46 Features of Sialkot Cluster

Forward Linkage	Backward Linkage	Information/Technology Spillover	Collective Action
・Large companies subcontracted by major foreign companies. - SMEs also have direct linkages with foreign markets.	・Local labor is available although skilled labor is in short supply. ・Large companies have more in-house production. ・Large companies directly import raw materials. Local importers are also used.	・There is no collaboration among manufacturers in terms of production. ・Information can be shared through vendors working for several companies. ・Latest information on new technology and markets is obtained from foreign partners.	・Local chambers of commerce and business associations are involved. All are very active. ・Functions of these associations include lobbying, joint participation in exhibitions, operation of common facility centers.

Source: JICA Study Team

Sialkot is no doubt the most successful cluster in Pakistan. Its distinctive features are a strong export orientation and the depth and extent of collective action by local chambers of commerce and business associations.

Unlike SMEs elsewhere Pakistan, SMEs in Sialkot are export-oriented.[74] Ghani (1998) notes that per capita exports in Sialkot are twenty times the country average and ten times the urban city average. During our visits to Sialkot, we encountered many company owners who said they went abroad to market their products. The linkages with their foreign partners developed over time are major strengths of the Sialkot cluster. Many companies obtain the latest information on new technology, products, and markets from their foreign partners. Finding good customers often triggers the expansion of their business.

The Sialkot Chamber of Commerce and Industry[75] has successfully provided the impetus to major projects such as the construction of a dry port and export processing zone, rehabilitation of major district roads and child-labor elimination programs. The construction of a new international airport, which has also been initiated by the local chamber of commerce, is under way.[76] Factors which made this magnitude of collective action possible include: the relative negligence of public investment in the area and a spirit of self-reliance as a result; a high degree of exposure to the international market, which facilitated cooperation among local competitors since they recognized that cooperation within the cluster helps them to compete outside; successful construction of the Dry Port in 1985, which gave confidence to entrepreneurs in Sialkot and encouraged them to do more. Although there is a strong feeling of self- reliance in Sialkot, it does not mean that owners totally exclude government from all the affairs of their business; they involve the government whenever necessary. For instance, CBR is a part of the operational body of the Sialkot Dry Port. As owners recognize the importance of political representation, several politicians have been elected from the Sialkot business community, and they are playing an important role for effectively communicating the interests of the Sialkot business community to policy makers.[77][78] As a result, government attention toward Sialkot has been growing in recent years.[79]

b) Challenges and Support Options

There is a gap between large companies that have foreign linkages and many SMEs in Sialkot.[80] Although there is occasional collaboration by sharing raw materials and labor among them on the basis of trust, technological secrets and information are strictly guarded inside the company. Therefore, challenges and problems that companies in Sialkot are facing differ, depending on whether they have direct linkages with foreign companies or not. For those who have collaborative relationships with foreign companies, the most serious issues is that they do not have control over marketing and new product development, which hinders their growth above a certain level. This also means that if they

[74] SMEDA Quetta office mentioned that SMEs in Balochistan are normally inward looking and hesitate to enter foreign markets.

[75] In addition to the chamber of commerce, there are three national-level business associations (sports goods, surgical instruments and gloves) in Sialkot, which also provide the environment for facilitating collective action by companies.

[76] The Chamber is not the only player for active collective action. According to the District Coordination Officer in Sialkot, utilization of Citizens Community Board (CCB) budget, which supports the projects proposed by CCB, is much higher in Sialkot than other districts.

[77] Punjab Minister of Industry, Nazims in Sialkot District and City are industrialists in Sialkot. There is one representative in Punjab Provincial Assembly.

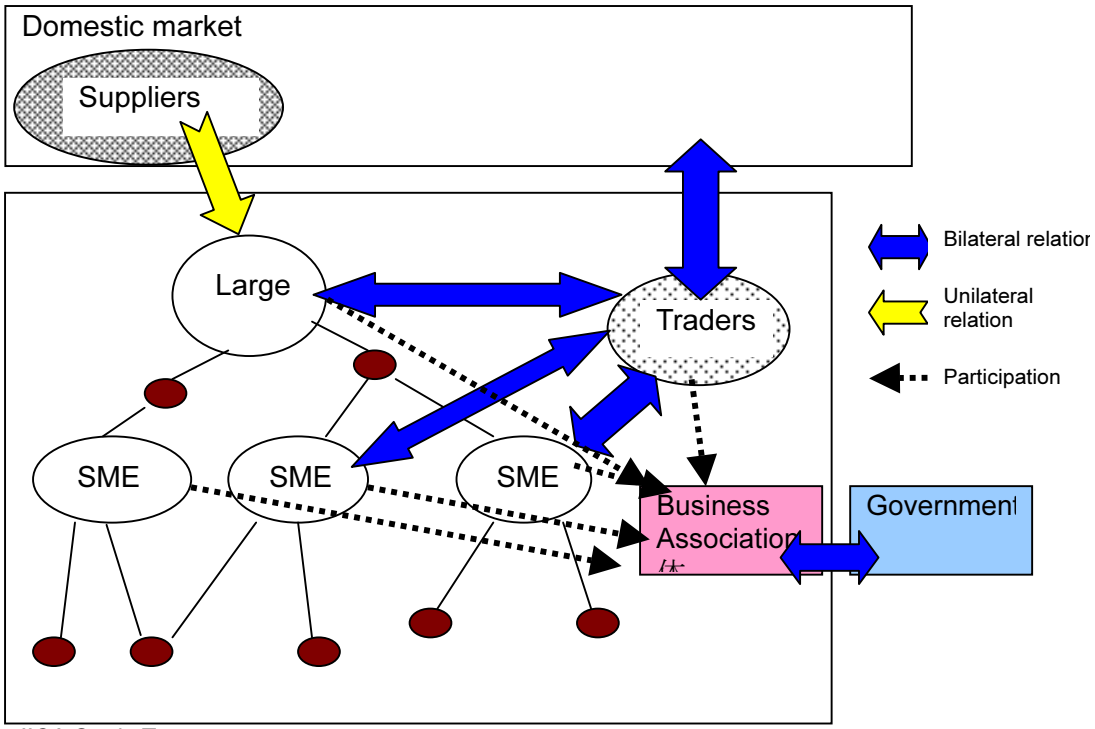
[78] Islam(2006) argues that business associations in the cluster provide a political platform for the members and having political representation can induce more public investments, which benefit not only powerful members but also other smaller members who provide political support for their representation. However, he also noted the negative side of political representation, such as corruption.

[79] The Government of Punjab is planning to construct an eight-lane provincial highway between Lahore and Sialkot, an industrial estate along the highway, an engineering university and a technology park in Sialkot.

[80] Ghani (1998) notes that 'a radius of trust, which is limited to the extended family, prevents medium-sized companies from growing further'.

lose their foreign partners, they also lose their main or entire market.[81] Since the main products produced in Sialkot, namely surgical instruments and sports goods, are 100% for export markets, there are no end-users within Pakistan, which makes it difficult for companies to collect updated information on the needs of markets.[82] In this regard, support for the expenses incurred by the companies for marketing and research and development, as well as the establishment of common facility centers equipped with the latest machinery, would greatly contribute to helping these companies explore new avenues of business.[83] On the other hand, for those companies that do not have strong linkages with foreign companies, the biggest challenge is the upgrading of technology. The best way to upgrade technology is to make subcontracting agreements with foreign companies with high levels of technology. Therefore, assisting the efforts of individual companies in this direction with necessary information and financial support, in addition to providing common facility/training centers to complement these efforts, would have great impact on the cluster.

ii) Domestic–centered Clusters (Electric fans in Gujrat)
The configuration of this cluster is shown below.



Source: JICA Study Team

Figure3-6 Concept of Domestic-centered Cluster

[81] *Surgical News*, published by the Surgical Instruments Manufacturers Association of Pakistan, pointed out that due to excessive competition among Sialkot manufacturers, the unit value of their exports decreased sharply in recent years. In order to regain better pricing, it is necessary for them to introduce their own brands and diversify product lines.

[82] Nadbi and Halder (2002) point out that leading firms in Tuttlingen, Germany, that are major foreign partners for Sialkot surgical instrument companies have close collaboration with surgeons in Germany and have started joint venture projects with specialized firms in the field of new material technology like optical lenses from outside the cluster in order to develop new products in line with end-users' needs.

[83] The sports goods association informed the study team that they had already started discussion with the Government on financial assistance for R&D and establishment of a common facility center with the latest machinery. The surgical instrument association is planning to hire a medical consultant with the help of USAID.

a) Major Features of Cluster

Major features of Gujrat cluster are shown in the table below.

Table3-47 Features of Gujrat Cluster

Forward Linkage	Backward Linkage	Information/Technology Spillover	Collective Action
・Most products are sold domestically. ・Manufacturers sell their products to traders.	・ Local labor is available although skilled labor is in short supply. ・Large companies have more in-house production. - Raw materials are locally procured.	・ There is no collaboration among manufacturers in terms of production. ・ Information can be shared through labor exchanges, but in a very limited way. ・ Prevalent copying of products.	・ Functions of business associations include lobbying, joint participation in exhibitions, operation of common facility centers. ・Large companies sometimes make agreements on the minimum sales price and wage.

Source: JICA Study Team

Table 3-48 Structure of Gujrat Fan Industry

	Large	Medium	Small
No. of firms	4	20	200
No. of employees	300-450(including 200-300 seasonal workers)	30-60（including 15-35 seasonal workers）	1-15 (all seasonal workers）
Fan price	Rs.1,000-1,100	Rs.700-800	Rs.650
Market	Affluent areas of larger cities	Small cities and non-affluent areas of larger cities	Rural areas
Branding	Well-known brand names	Lesser known brand names or names that are look-alikes of well-known brands	No brand names or names that are look-alikes of known brands
Design changes	At least one new design every year	Copy successful designs of premium fans	Made to order for well-established designs
Production capacity	Over 400,000 units/year	30-150,000 units/year	Less than 10,000 units/year
Core competence	Technology acquisition, brand equity, distribution	Ability to rapidly copy designs and selectively outsource	Low cost and low overhead
% production in-house	75%	20%	0%（assembly only）

Source : Rana and Ghani (2004)

The major difference between Gujrat and Sialkot is the extent and nature of their linkages with foreign companies. Although exports of electric fans from Pakistan have dramatically increased in recent years, the domestic market remains the main market. In addition, since electric fan companies

enjoy no technical collaboration with foreign companies, there is much room for improvement in quality and production management. The business association for electric fans in Gujrat[84] is quite active in lobbying and the management of a common facility center. Unlike its counterpart in Sialkot, however, it does not go beyond the traditional role of a business promotion association. The fact that large companies sometimes make agreements on the minimum sales price or minimum wages for labor suggests that cooperation among companies in the cluster is largely defensive, not progressive. Rana and Ghani (2004) summarized the structure of the fan industry as shown in Table 3-42 . The table shows the differences of price, market, and percentage of in-house production, according to the size of companies.

b) Challenges and Support Options

What is most necessary to upgrade this type of cluster to an export-oriented cluster is technology to produce high quality products. The best way to achieve this is to collaborate with foreign companies with high levels of technology, preferably as a sub-contractor. Shifting to an export-oriented cluster by acquiring and improving technology as a subcontractor for foreign companies will be the key for sustainable development of this type of cluster. In order to make this shift possible, assisting leading companies in the cluster in finding good partners for collaboration by providing necessary information and financial assistance would be the first step.

In parallel with this, setting up of common facility centers and training facilities for those below-middle-range companies should have significant effects. However, it should be noted that the role of a business association as a focal point for public assistance is extremely important. It must develop the capacity to communicate the needs of the business community more effectively and to manage facilities in a more efficient and sustainable way. Accordingly, training to change the mindset of the business association in this direction would also be effective.

iii) Under-developed Cluster

The configuration of this cluster is shown below.

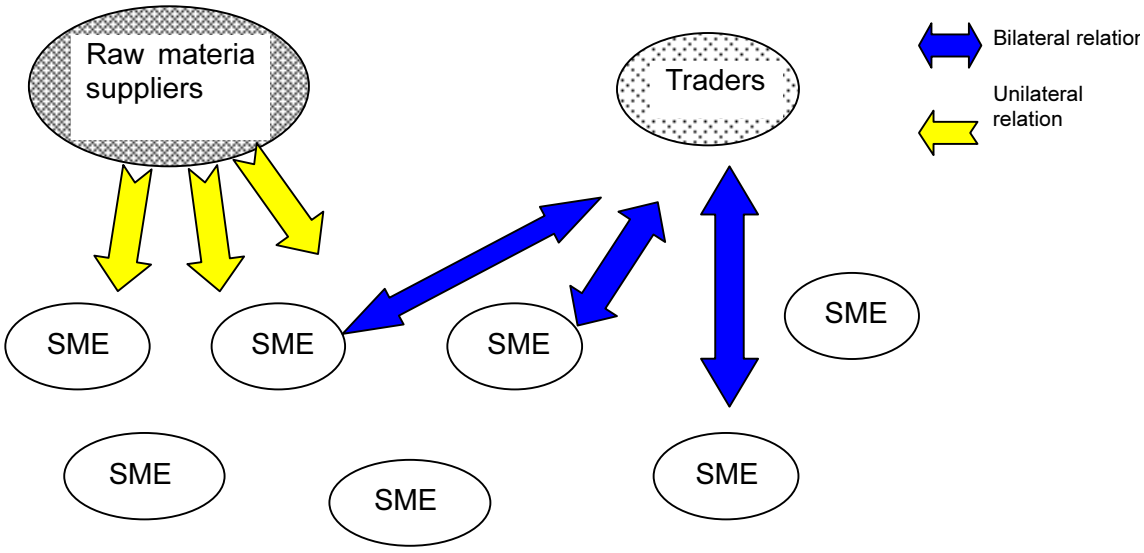


Figure3-7 Configuration of Under-developed Cluster

Source: JICA Study Team

[84] Since Gujrat is not the center city of District, it does not have own chamber. However it has Pakistan Electric Fan Manufacturing Association (PEFMA) due to high concentration of fan industries.

a) Major Features of Cluster

The table below shows the major features of under-developed clusters.

Table 3-49 Features of Under-developed Clusters

Forward Linkage	Backward Linkage	Information/Technology Spillover	Collective Action
-Most products are sold domestically. -Manufacturers sell their products to traders outside the cluster.	-Availability of local labor -No vertical linkage -Procurement of raw materials from suppliers in big cities	-No linkages among companies -Lack of awareness for quality/market	-No chamber of commerce/ business association。

Source: JICA Study team

The clusters of this type are just groupings of individual companies, and thus assisting them as cluster cannot be very effective. The capacity of individual companies within the cluster has to be strengthened and upgraded first.

4) Summary

The table below summarizes the features, challenges and support options of each model of clusters.

Table3-50 Comparison of Cluster Models

Model	Export-oriented	Domestic-centered	Under-developed
Example	Sialkot	Gujrat	Quetta
Linkage with foreign companies	Strong	Weak	None
Internal linkage	Depth of vertical linkage is not significant.	Depth of vertical linkage is not significant.	None
Challenges	-New product development and marketing for leading companies -Technological upgrading for others	-Collaboration with foreign companies for leading companies -Technological upgrading for others	-Lack of capacity of individual companies -Lack of linkages within the cluster
Support options	-Support for R&D and marketing -Provision of information on collaboration with foreign companies -Setting up common facility centers equipped with latest machinery -Common facility center for material testing -Common training facility	-Provision of information on collaboration with foreign companies -Setting up common facility centers equipped with latest machinery -Common facility center for material testing -Common training facility	-Strengthening capacity of individual companies

Source: JICA Study Team

As described below, there have been numerous programs to assist clusters undertaken by the government in Pakistan. These programs, however, do not seem to prioritize the clusters according to their potential for growth. From the perspective of strengthening SMEs which can compete in the international markets, the study proposes focusing on export-oriented clusters for assistance.

3.3.3 Current Status of and Issues for Government Strategy to Assist SMEs/Clusters

This section reviews and evaluates government organizations and assistance programs for SMEs and clusters.

(1) Government Organizations

Government organizations dealing with SMEs/clusters at the local level are summarized below.

Table 3-51 Government Institutions Dealing with SMEs/Clusters

	SMEDA	EPB	District Government*
Function	Formulation of SME policy, provision of SME-specific inputs in other policies ・Financial/legal services ・Sectoral study/ strategy development ・Cluster development program ・Outreach through four regional offices, and 20 regional business centers ・Provision of training ・Industry support	・Regional trade promotion ・Marketing（exhibition、delegations） ・Export Supply Management (cluster development program) ・Export facilitation ・PR ・Quota & regulatory management	・Planning and development of cottage/small industries ・Control of prices of essential commodities ・Organizing industrial exhibitions ・Up-dating district pre-investment studies - Collection of census data - Preparation of industrial directory ・Registration of firms/ associations ・Feedback to industrial/ trade policies ・Liaison with chambers of commerce

* Functions of District Officer (Enterprise & Invest Promotion)

Highlights indicate duplication

Source : SMEDA (http://www.smeda.gov.pk), EPB(http://www.epb.gov.pk). Documents obtained from the government of Punjab.

Of the three organizations designated in the table above, the District Government seems to have an advantage in terms of close proximity to SMEs in the areas. Under the Devolution Plan 2001, District Officers (Enterprise & Invest Promotion) are delegated the functions of price controls of essential commodities, organization of industrial exhibitions and registration of firms and associations in the district, in addition to the original function of collecting industrial statistical data. They are also empowered to propose any plans to promote SMEs in the district. As indicated in 3.1.2, however, the district governments, at least in Punjab, do not have sufficient capability to carry out all those functions delegated to them. They still have difficulties conducting data collections for industrial statistics, a task which existed before devolution, due to their lack of capability and the change of the command line from the Provincial Department of Industries to the District Coordination Officers (DCOs). Moreover, the District Governments at present do not have close links with the other two organizations dealing with SMEs.

SMEDA and EPB are federal organizations. SMEDA is in charge of SME promotion, while EPB is

responsible for export promotion. Since there are many SME exporters, parts of their functions duplicate as described below.
Partly because these two organizations are federal organizations, they have limited access to their target clients.[85] Both organizations try to overcome this limitation by setting up offices in major cities in the country as shown below.

Table3-52 Office Network of SMEDA and EPB

	SMEDA（22 offices）	EPB（14 offices）
Punjab	Lahore（Headquarters, Regional Office, Regional Business Center）, Sargodha, Gujrat, Gujranwala, Sialkot, Rawalpindi, Multan, Faisalabad, Rahim Yar Khan	Islamabad, Lahore, Faisalabad, Multan, Sargodha, Gujranwala, Sialkot
Sindh	Karachi (Regional Office）, Hyderabad, Sukkur, Larkana, Dadu	Karachi（Headquarters）, Hyderabad, Larkana
NWFP	Peshawar（Regional Office, Regional Business Center）, Abbotabad, Mingora	Peshawar, Abbotabad, Mingora
Balochistan	Quetta（Regional Office）, Gwadar	Quetta

Highlights indicate the offices without duplication
Source: SMEDA(http://www.smeda.gov.pk), EPB(http://www.epb.gov.pk)

As shown above, both organizations have offices in almost the same cities, but their locations within the cities are different. Since both organizations provide services to SMEs, it would be much more convenient for clients if their offices are located in the same place.

Nevertheless it should be noted that SMEDA has the commendable policy of setting up their regional business centers within the premises of local chambers of commerce or district governments in order to facilitate accessibility for SMEs. More efforts should be made in this direction to lead to 'one-window' services for SMEs, where all SME-related organizations are located in the same place.

Table3-53 Location of SMEDA Regional Business Centers

Within the premises of local chambers of commerce (11 centers)	Within the premises of District Government (2 centers)	Others (4 centers)
Gwadar, Abbodabad, Peshawar, Lahore, Gujrat, Gujranwala, Sialkot, Rawalpindi, Faisalabad, Hyderabad, Sukkur	Multan, Rahim Yar Khan	Sargodha, Mingora, Larkana, Dadu

Source：SMEDA

[85] A study by the World Bank (2003) shows that among 965 companies surveyed, 76.1% of the companies answered that they knew SMEDA while only 10.1% of them used their services. Similarly, although 84.0% of the companies answered that they knew EPB, only 17.7% responded that they used their services.

(2) SME Promotion

Services provided by SMEDA and EPB to SMEs are summarized below.

Table 3-54 Services Provided by SMEDA and EPB

	SMEDA	EPB
Helpdesk	・Business plan development（Rs.10,000/plan） ・Financial consulting ・Legal services	・Counseling for export procedures and other issues
Collective Events	・Seminars ・Training（copyrights, technical specialties etc）	・Seminars
Internet service	Business guide (copyrights, custom clearance, export/import procedures, obtaining financing, company registration) Sectoral pre-feasibility studies Regulatory procedures	DB for exporter/importers Products market information Trade policy Export-related regulations/ procedures Visa policy
Linkage	None (although there is a link to the Industrial Information Network, this site does not have links to related organizations, either)	Federal/Provincial government, trade organizations, SMEDA, WTO, international trade–related organizations like JETRO, Pakistan Export Finance Guarantee

Source: SMEDA, EPB

As SMEDA is dealing with all aspects of SMEs, it provides a greater variety of services than does EPB, which specializes in export promotion. However, only limited services, namely various training courses for specific skills or technology, are available at SMEDA for technology upgrading, the lack of which is a major bottleneck for export-oriented SMEs. Since manufacturing-related technology spreads over a wide-range of areas, it is not realistic for SMEDA to cover everything. However, it would be very much helpful if the information on R&D or training institutes is provided on its website, with links to those institutions. The small number of links to related institutions provided on SMEDA's website limits to a great extent its usefulness for its clients.

(3) Cluster Assistance Programs

Cluster assistance programs provided by the Government can be divided into two types: 1) those programs aiming to strengthen the competitiveness of clusters through networking or the strengthening of linkages within the cluster; 2) those programs only setting up common facility centers in the cities with a high concentration of specific industries.

1) Assistance aiming to strengthen competitiveness of clusters

The United Nation Industrial Development Organization (UNIDO) has rich experience in the field of providing assistance for strengthening cluster competitiveness. In 2001, UNIDO initiated a 'Cluster Development Program,' the first one of which was started in India and was completed successfully, in Pakistan in collaboration with SMEDA and EPB.

The focal point of the program is the Cluster Development Agency (CDA), which facilitates networking and the strengthening of linkages among stakeholders in the cluster. Under the program, CDAs will analyze the sector, make action plans and facilitate their implementation. The action plans may include those aiming to strengthen the institutional capacity of the cluster—such as the networking of companies with similar difficulties, and collective actions such as joint procurement of raw materials and joint marketing through established networks—and those aiming to upgrade the technology level

of the cluster by setting up common facility centers.
The table below summarizes sectors and industries for which SMEDA and EPB provide assistance.

Table 3-55 Cluster Development Program of SMEDA and EPB

	SMEDA	EPB
Sector （City）	Ceramic pottery (Gujrat)*, Electric appliances (Gujrat, Gujranwala)*, Leather goods (Sialkot)*, Ginning (Rahim Yar Khan)*, Handloom(Multan)*, Textile machinery (Faisalabad)*, Sports wear (Sialkot), Marble & Granite (Rawalpindi), PVC and plastic products (Lahore), Auto parts (Lahore)	Gems & Jewelry (Karachi), Leather (Karachi), Garments (Lahore), Fans (Gujrat), Cutlery (Wazirabad), Knitwear (Karachi, Lahore), Auto parts (Karachi), Electric appliances (Karachi, Lahore), Surgical instruments (Sialkot), Sports goods (Sialkot)

*In collaboration with Punjab Small Industries Corporation
Source：SMEDA、EPB

Although there is clear indication of the export-orientation of clusters assisted by EPB, clusters assisted by SMEDA do not seem to have been selected according to any clear criteria, and the required level of technology in these clusters appears to be lower than those in clusters assisted by EPB. There are several clusters selected by SMEDA which do not seem to contribute to exports or the competitiveness of the industries.
Several networks have already been established, and their collective actions have started in the clusters assisted by EPB, namely in Gujrat, Wazirabad and Lahore (Garment).[86]

Strengthening linkages within clusters by using CDA as a facilitator seems to be one option for overcoming the weakness of clusters in Pakistan. The approach adopted by UNIDO is also a unique one in that it targets not large companies within the cluster but also companies at the middle stratum which have more desire to improve and expand their business.[87] This approach can address the problems caused by the big gap between large companies and smaller companies, which is common in the Pakistani clusters. However, it has some limitations in mobilizing necessary resources for collective activities by networks since it does not have close linkages with relevant organizations which have required resources.[88]

2) Establishment of Common Facility Center

The common facility centers are mainly established by SMEDA, EPB, and TUSDEC.

In addition to those mentioned above, there are common facility centers set up by other institutions such as Pakistan Industrial Technical Assistance Center (PITAC) in Lahore, which duplicates the function of the auto parts design/inspection center (Lahore) by SMEDA, and the tool, die and mould centers for all industries（Karachi, Gujranwala）by TUSDEC. The Technical Education and Vocational Training Authority (TEVTA) also has numerous common facility centers, and Development Companies recently established under the Ministry of Industries have plans to set up common facility centers in such sectors as dairy products, marble and gems.

[86] Representatives of one of the networks established in Wazirabad visited Sweden, and this network successfully explored new channels of sales. (http://www.delegation2sweden.com/)
[87] In one cluster the study team visited, executives of business associations were against the program. They told the study team that the program did not function well.
[88] One network the study team interviewed needed new machines for expansion of their production, but they did not have any information on bank borrowing.

However, although these centers are supposed to be managed through private initiatives, their operations are not always successful.[89] Regardless of whether private-sector involvement is present, what is important is the mechanism that enables timely adjustments to the changing needs of industries and ensures financial sustainability. Without this, management of the facility is not possible. In this regard, the capacity development of trade associations that will be responsible for the operation and management of these facilities is extremely important.

Table3-56 Common Facility Centers (CFC) Assisted by Different Government Agencies

	SMEDA	EPB	TUSDEC
CFC	-Computer pattern designing for leather sector* (Sialkot) -Material testing center for light engineering sector (Gujranwala) -Auto parts design/ inspection center* (Lahore) -Wooden furniture support center* (Chiniot)	-Combined effluent treatment plant for tannery (Kasur, Karachi) -Common facility center for leather sector (Kasur) -Material Testing Laboratory for surgical instruments (Sialkot) -Cutlery* (Wazirabad)	-Tool, die and mould centers for all industries* (Karachi, Gujranwala) -Skill development centers for furniture/ construction/ hospitality* (4 in earthquake-affected area)
Training	-Artificial insemination for dairy sector (Lahore)	-Textile-related (7 in Karachi, 3 in Lahore, 1 in Multan) -Leather-related (Karachi, Sialkot) -Gems and Jewelry (Peshawar) -Footwear (Peshawar)	- 8 CAD/CAM centers

* With provision of training

Source: SMEDA, EPB and TUSDEC

(3) Issues to be Tackled

The study team identified the following three issues that need to be addressed in the government assistance programs for SMEs/clusters.

1) Lack of Focus/Priority

Multiple organizations assist cluster development programs and the establishment of common facility centers. Although the exact duplication has been avoided, the programs are loosely focused. It may be too optimistic to assume the common facility centers will be effective merely if they are located in the middle of a concentration of the same industries. There should be careful analysis of the cluster structure before the program is designed. The study team proposes that focus should be placed on the export-oriented clusters because they have more potential to catch up to international standards than any other types of clusters.

[89] The Cutlery Institute in Wazirabad managed by a business association was almost deserted when the study team visited it due to the lack of utilization because of excessive facilities which did not match the needs of industries and lack of financial sustainability. The Wood-working Service Center in Gujrat was successfully operated by a manager who had private-sector experience, although it is a public sector institute under TEVTA.

2) Low Utilization of Services

As indicated in 3.2.3, utilization ratios of SMEDA and EPB are not satisfactory in spite of their efforts to improve their accessibility through their websites and the setting up of regional offices. What is lacking, however, is a better consideration of the needs of their clients, i.e. SMEs. Although there are full sets of service menu available, it is not very clear whom each service targets and how each service can solve the problem of SMEs. There should be a change of mindset and attitude to listen more to the voices of SMEs.

3) Lack of Sustainability

The institutions set up by public-private partnership are not always successfully operated. The study team encountered several institutions which seemed to function at the outset of their operations but lost their momentum and thus value with the passage of time, due to the lack of a sustainable management system. The involvement of the private sector is not a panacea for sustainable management. Relevant government organizations should have a clearer focus of the area of assistance, as stressed in 1) above, and they should then analyze the sustainability of the facility more carefully in the planning stage. In the cases when business associations are responsible for management, they have to make detailed proposals, which should include needs assessments, forecasts of future prospects, operating plans, and financial plans. The feasibility of proposed institutions has to be examined thoroughly in advance.

3.4 Selection of Leading Industries in Light of Manufacturing Establishment

In this section, the current status of the Pakistani manufacturing industries is revealed and the Leading Industries that are capable of driving the country's economy on a long run basis are selected on the basis of the data obtained through the survey made from June to September, 2006. To begin with, the sampled enterprises are profiled, and then future growth prospects of the sampled sectors are examined from such viewpoints as linkages with foreign markets and technology, learning through R&D and leveraging impact on local economies.

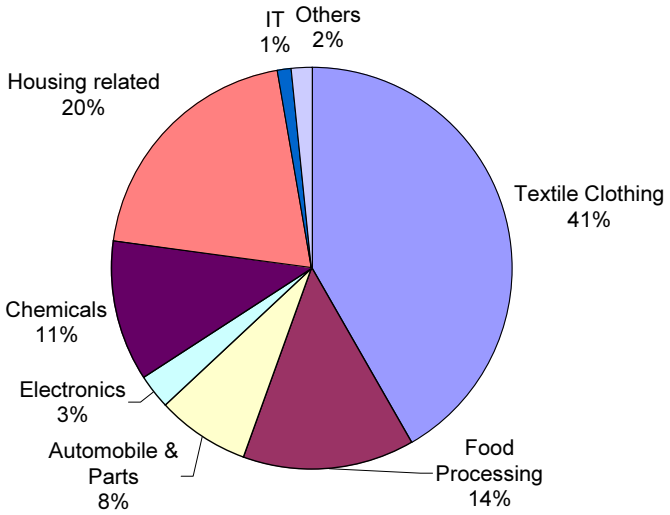
3.4.1 Profile of Surveyed Establishment

At the outset, the surveyed firms are profiled in Table 3-57 and Figure 3-8, which breakdown the surveyed firms in accordance with the sectors and locations. The samples were taken out of 9 cities and 7 sectors. Sampling was made in reflection of the actual distribution of companies in the sectors and cities to be represented. As a result, regarding the location, companies in Karachi in Sindh Province account for 40 % of all the samples, followed by those in Lahore in Punjab Province occupying 29 % and those in Peshawar accounting for 8 %. Among the sampled firms, Textiles/Clothing makers account for 41 %, followed by Housing-related makers, 20 %, and Food Processors, 14 %. As IT firms are seldom engaged in manufacturing, the IT sector accounts for only 1 % of all the surveyed firms[90]. Other establishments include those which produce 'packing materials', 'gold leaf', 'sport goods', sugar mill plant' and some others.

Table 3-57 Surveyed Firms by Cities and Sectors

	Daska	Faisalbad	Gujranwala	Hyderabad	Karachi	Lahore	Peshawar	Sargodha	Wazirabad	All cities	(numbers)
Textile Clothing	0%	18%	9%	5%	43%	22%	2%	1%	0%	100%	211
Food Processing	3%	4%	0%	10%	28%	23%	18%	10%	4%	100%	71
Automobile & Parts	5%	0%	5%	0%	54%	36%	0%	0%	0%	100%	39
Electronics	0%	0%	14%	0%	43%	36%	7%	0%	0%	100%	14
Chemicals	0%	0%	0%	2%	49%	33%	14%	2%	0%	100%	57
Housing related	0%	0%	2%	5%	34%	38%	14%	1%	6%	100%	102
Information Technology	0%	17%	0%	0%	50%	0%	33%	0%	0%	100%	6
Others	0%	0%	0%	0%	13%	88%	0%	0%	0%	100%	8
All sectors	1%	8%	5%	5%	40%	29%	8%	2%	2%	100%	508

Source: JICA Study Team



Source: JICA Study Team

Figure 3-8 Breakdown of Surveyed Firms into Sectors

[90] It is said that there are a number of IT firms in large cities, such as Karachi, which engage in software development. Since the questionnaire of this survey was designed for manufacturing establishments, the study team was not able to include these software houses in the sample. This is the reason why only few IT establishments are in the sample.

The ownership of the surveyed firms is listed in Table 3-58, which shows that Private Domestic Firms account for 89 %, followed by Private Foreign Firms, 5 %, and Government Enterprises, 1 %.

Table 3-58 Ownership of Surveyed Firms

	%
Private Domestic	89
Private Foreign	5
Government	1
Other	5
Total answers	100
Total answers (number)	508

Source: JICA Study Team

Table 3-59 lists past carriers of founders of the surveyed firms (or establishments). (More than one carrier could be reported by the same founder.) According to their responses, the largest percentage, 28 %, of them were Owner of other manufacturing industries, followed by Trade/Commission agent, 13 %, and Employee of the same industry, 10 %.

Table 3-59 Past Carrier of Founders of Surveyed Firms (Multiple answers)

	%
Owner of other manufacturing industries	28
Trader/commission agent	13
Employee of the same industry	10
Landlord / farmer	9
Industrialist	8
Engineer	7
Business Man	7
Employee of other comp. not belonging to the same industry	6
Don't Know	5
Any other	5
Banker / financier	4
Returnee from abroad	3
Government official	2
Family Business	2
Owner of the same industry	1
Total answers (%)	100
Total answers (number)	483

Source: JICA Study Team

Table 3-60 shows average annual sales value of the surveyed firms in 2005. Many of them are relatively small-sized: 33 % of them sell up to Rs.100 million, and 31 % sell between Rs.100 and Rs.500 million. As a result, the firms in these two brackets account for 60 % of all the surveyed firms, while large firms selling R. 10 billion or more account for 4 %.

Table 3-60 Average Annual Sales (All Sectors 2005)

(million Rupees)	%
Up to 100	33
100 to 500	31
500 to 1,000	13
1,000 to 5,000	17
5,000 to 10,000	3
Above 10,000	4
Total answers	100
Total answers (number)	449

Source: JICA Study Team

The average and total annual sales value of the surveyed firms belonging to each sector is listed in Table 3-61. With the exception of IT and Others whose sample sizes are very small, the Housing-related sector records the largest amount of sales on average in the amount of Rs.2 billion, followed by Chemicals, Rs.1, 800 million, and Textiles/Clothing, Rs. 1,600 million. Electronics makers

sell the smallest amount, less than Rs. 300 million. Concerning the amount of the total sales, Textiles/Clothing records the largest share of 41.4%, which is followed by Housing related (25.5%), Chemicals (12.4%) and Food Processing (10.3%). These shares of total sales reflect the composition of the number of establishments on Figure 3.8.

Table 3-61 Average Annual Sales by Sector (2005)

	Average sales	Total sales		Total answers (number)
	mil. Rs.	mil. Rs.	%	
Textile Clothing	1,621	341,982	41.4%	211
Food Processing	1,198	85,049	10.3%	71
Automobile & Part	1,060	41,325	5.0%	39
Electronics	291	4,068	0.5%	14
Chemicals	1,804	102,850	12.4%	57
Housing related	2,062	210,306	25.5%	102
Information Techn	3,534	21,205	2.6%	6
Others	2,942	23,539	2.8%	8
All sectors	1,626	826,239	100.0%	508

Source: JICA Study Team

Table 3-62 Average / Total Number of Employees per Firm (2005)

	Average number of employees	Total number of employees		Total answers (number)
	persons	persons	%	
Textile Clothing	964	171,592	60.1%	178
Food Processing	543	35,838	12.6%	66
Automobile & Part	432	15,552	5.4%	36
Electronics	271	3,252	1.1%	12
Chemicals	376	19,928	7.0%	53
Housing related	351	32,292	11.3%	92
Information Techn	198	594	0.2%	3
Others	298	2,384	0.8%	8
All sectors	637	285,376	100.0%	448

Source: JICA Study Team

The average and total numbers of employees per firm[91] in 2005 are shown in Table 3-62. Textiles/Clothing makers employ the largest number of people, 964 per firm on average, followed by Food Processors, 543, and Automobiles/Parts, 432. With the exception of IT and Others for the same reason said before, Electronics makers employ the least, 271 per firm on average. As explained, Electronics makers sell the smallest amount and are small-scaled in other respects. Concerning the share in the total employment, Textiles/Clothing has the largest share of 60.1%. The share of Textiles/Clothing sector in employment is much larger than the sector's share in the total sales. The second largest sector is Food Processing sector, employing 12. 6% of all, followed by Housing related sector (11.3%).

3.4.2 Connection with Foreign Markets

The first criteria for judging future potentiality of each sector is to see how the sector is connected with foreign markets. If its products are being actively exported, the sector is probably facing tough international competition respecting price and quality. Conversely, the sector that heavily depends on domestic markets may not continue to grow in the face of globalization in future when foreign products, especially Chinese products, are imported in large amounts.

The first question asked to the surveyed firms was how much they depended on export. The export dependence ratios listed in Table 3-63 are divided into 6 brackets, whose percentage shares in terms of the corresponding number of firms are tabled. For example, 40 % of Textiles/Clothing makers reported

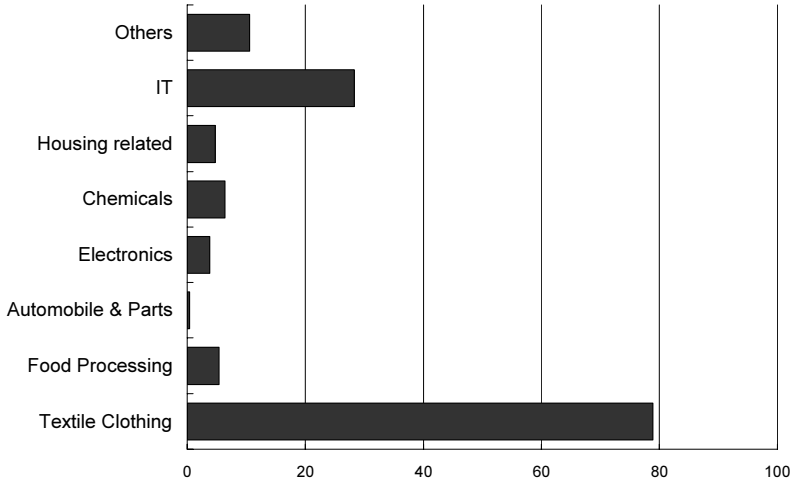
[91] The figures are based on the total number of workers at the end of 2005, including casual or contract workers (see Question 6.7 in the annexed Questionnaire).

their export dependency at 100 %, and 11 % of them at 76-99 %. As is analogous from the dominant share at 70 % of Textiles/Clothing in Pakistan's total exports, many Textiles/Clothing makers heavily depend on export. In the sectors other than Textiles/Clothing, most firms report low dependency; many of them even completely depend on domestic markets, while 79 % of Automobiles/Parts makers sell their products only in domestic markets, and so do most of Housing-related makers.

Table 3-63 Export Dependency (2005)

Export rate	100%	76-99%	51-75%	26-50%	1-26%	0%	Total answers	Total answers (numbers)
Textile Clothing	40%	11%	12%	9%	9%	19%	100%	211
Food Processing	6%	6%	7%	6%	25%	51%	100%	71
Automobile & Parts	0%	0%	0%	0%	21%	79%	100%	39
Electronics	0%	7%	0%	7%	29%	57%	100%	14
Chemicals	0%	4%	2%	12%	35%	47%	100%	57
Housing related	1%	2%	4%	7%	20%	66%	100%	100
IT	0%	0%	0%	17%	0%	83%	100%	6
Others	13%	13%	25%	0%	13%	38%	100%	8
All sectors	18%	7%	8%	8%	18%	43%	100%	506

Source: JICA Study Team



Note: The export dependency of the sector is an average dependency ratio computed for firms belonging to each sector, by weighting with sales values of each firm.
Source: JICA Study Team

Figure 3-9 Export Dependency of Each Sector (2005)

Figure 3-9 shows an average percentage-wise export dependency of each sector, which has been computed by weighting with sales value in FY2005 of each firm. As expected, the Textiles/Clothing sector depends on export most heavily, nearly 80 %. With the exception of IT and Others for the already repeated reason, all the sectors other than Textiles/Clothing report very low export dependency at less than 10 %: in other words, very heavy dependency on domestic markets. In short, the survey reconfirms that Pakistan's export is dominated by Textiles/Clothing.

Did foreign buyers visit the surveyed firm in 2005? The answers to this question are summarized in Figure 3-10, though the answer is an indirect indication of how closely the surveyed firm is connected with foreign markets. Here, too, as expected, more than 70 % of Textiles/Clothing makers were visited by foreign buyers, the highest ratio among all the surveyed sectors. More than a half of Chemicals and Electronics makers were also visited by foreign buyers.

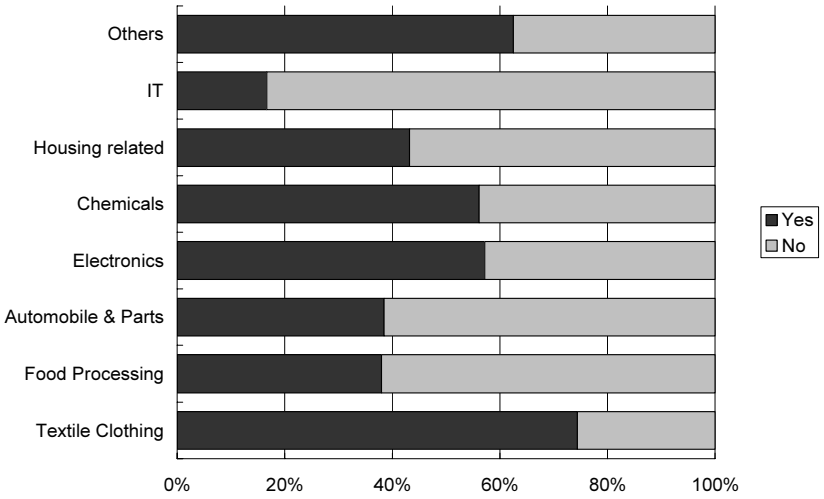


Figure 3-10 Visits by Foreign Buyers (2005)
Source: JICA Study Team

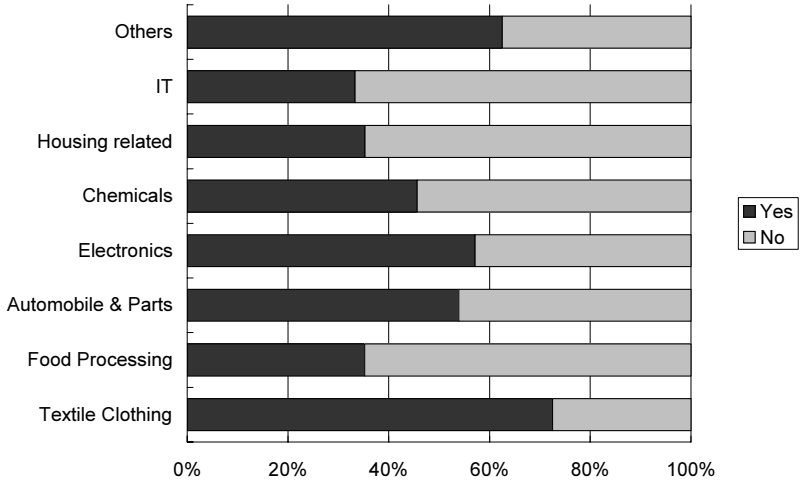


Figure 3-11 Market-Investigating Trip Abroad (2005)
Source: JICA Study Team

Another indirect indicator of connection with foreign markets is whether management of the surveyed firms made trips abroad in 2005 for the purpose of marketing (see figure 3-11). As expected again, most of Textiles/Clothing makers answered Yes with the largest ratio followed by Electronics, Automobiles/Parts and Chemicals makers.

To sum up, Textiles/Clothing makers have by far the closest link with foreign markets, as evidenced by, among other things, their heavy dependency on export, demonstrating a sharp contrast with other inward-looking sectors. As far as foreign buyers' visits are concerned, however, non-Textiles/Clothing makers such as Electronics and Chemicals makers also demonstrated their fairly close international connections in that they attracted considerable attention of foreign buyers.

3.4.3 Linkage with Foreign Technology

The second yardstick used to predict future prosperity is how each sector has to do with foreign technology. The sector that is actively introducing foreign technology through hand-on coaching by foreign experts or using foreign-made machinery is likely to acquire or maintain international

competitiveness. Conversely, the sector that is slow to use foreign technology is unlikely to grow fast unless it has uniquely prominent technology of its own.

In the beginning, a question was asked whether each firm delivered its products to foreign-affiliated customers located in Pakistan in 2005. Table 3-64 shows their answers. The highest percentage among the surveyed sectors, 40 %, of Automobiles/Parts makers replied affirmatively, followed by 43 % by Electronics makers. The next question was: Did the surveyed firm receive technical support from foreign firms including foreign-affiliated firms in Pakistan? Table 3-65 outlines the answers. In the Electronics sector, the highest portion, 64 %, replied 'Yes', followed by the Automobiles/Parts sector, 54 %.

Table 3-64 Did Surveyed Firms Deliver Their Products to Foreign Customers? (2005)

%	Yes	No	Total answers	Total answers (number)
Textile Clothing	13	87	100	210
Food Processing	21	79	100	71
Automobile & Parts	46	54	100	39
Electronics	43	57	100	14
Chemicals	26	74	100	57
Housing related	40	60	100	102
IT	17	83	100	6
Others	38	63	100	8
All sectors	25	75	100	507

Source: JICA Study Team

Table 3-65 Did Surveyed Firms Receive Technical Support from Foreign Companies? (2005)

%	Yes	No	Total answers	Total answers (number)
Textile Clothing	43	57	100	211
Food Processing	34	66	100	71
Automobile & Parts	54	46	100	39
Electronics	64	36	100	14
Chemicals	42	58	100	57
Housing related	44	56	100	102
IT	33	67	100	6
Others	0	100	100	8
All sectors	43	57	100	508

Source: JICA Study Team

The next question was: Did the surveyed firm enter into technical licensing arrangements with foreign firms for manufacturing? The highest percentage of affirmative replies, 36 %, is reported in the Electronics sector, and the second highest in the Automobiles/Parts sector, 23 %, as shown in Table 3-66. Meanwhile, as to whether they imported foreign machinery/equipment, no significant difference is observed among the surveyed sectors (see Table 3-67). In every sector, nearly 60 to 70 % of the firms imported foreign equipment/machinery of one kind or another in the last two years, provided that only in the Food Processing sector, only 46 % did so. The relatively low percentage observed in this sector suggests that apparently its equipment/machinery is not being renewed adequately.

To sum up, as far as linkages with foreign technology are concerned, the Electronics and Automobiles/Parts sectors are going ahead of the others. Because technological progress is rapid in these sectors, constant introduction of foreign technology appears essential for maintaining an international competitive edge.

Table 3-66 Have Surveyed Firms Been Licensed by Foreign Firms?

%	Yes	No	Total answers	Total answers (number)
Textile Clothing	8	92	100	211
Food Processing	4	96	100	71
Automobile & Parts	23	77	100	38
Electronics	36	64	100	14
Chemicals	19	81	100	57
Housing related	7	93	100	102
IT	0	100	100	6
Others	0	100	100	8
All sectors	10	90	100	507

Source: JICA Study Team

Table 3-67 Did Surveyed Firms Import Foreign Equipment in the Last 2 Years?

%	Yes	No	Total answers	Total answers (number)
Textile Clothing	72	28	100	211
Food Processing	46	54	100	71
Automobile & Parts	74	26	100	39
Electronics	71	29	100	14
Chemicals	77	23	100	57
Housing related	61	39	100	102
IT	50	50	100	6
Others	75	25	100	8
All sectors	67	33	100	508

Source: JICA Study Team

The firms that have received foreign technical support were then asked: about professional fields of the supporting experts, and about the content of their support. The dominant portion of the supporting experts, nearly 80 %, was technical experts: either technicians or engineers, as Table 3-68 shows. Meanwhile, in reflection of the reported professional fields of the experts, their support mostly concerned: upgrading of production processes, improvement of quality control systems, and maintenance/repairing of machinery/equipment. Development of new products and marketing were of minor interest. The result suggests that, for foreign firms, Pakistan is regarded as a manufacturing base (see Table 3-69).

Table 3-68 Expertise of Foreign Advisors (Multiple answers)

	%
Technician	79
Engineer	79
Management consultant	20
Marketing advisor	10
Other suport	3

Source: JICA Study Team

Table 3-69 Contents of Technical Support Provided by Foreign Firms (Multiple answers)

	%
Up gradation of production process	75
Improvement of quality control system	69
Maintenance or repairing of machinery and equipment	68
Development of new products	50
Elaboration of marketing skill	21
Other suport	6

Source: JICA Study Team

3.4.4 Learning through R&D

The third viewpoint to be considered is how eagerly the surveyed firms are trying to learn by means of R&D. In order to remain competitive, they need to have long term perspectives and make arduous efforts in R&D.

Do the surveyed firms have their own R&D organization? Table 3-70 lists their replies. Throughout the all industries, 45 % of the firms have such organizations, while the ratio differs from sector to sector. The Electronics sector reports the largest ratio, 64 %, followed by the Chemicals sector, 60 %, and by the Automobiles/Parts sector, 56%.

Table 3-70 Do the Surveyed Firms Have R&D Organizations?

%	Yes	No	Total answers	Total answers (number)
Textile Clothing	46	54	100	211
Food Processing	37	63	100	71
Automobile & Parts	56	44	100	39
Electronics	64	36	100	14
Chemicals	60	40	100	57
Housing related	34	66	100	102
IT	0	100	100	6
Others	38	63	100	8
All sectors	45	55	100	508

Source: JICA Study Team

Then, a question was asked how many R&D staff they had and how much was spent on R&D (see Table 3-71). The Textiles/Clothing makers have the largest number of research staff, 12, as shown in Table 3-69. With the exception of IT and others, the average number stays between 6 and 9 without wide deviations from sector to sector. Their annual outlays for R&D, however, differ from sector to sector (see Table 3-72). The Chemical sector is the largest spender, R.15,870 thousand, followed by the Textiles/Clothing sector, R.10,350 thousand, while the other sectors spend somewhere between R.1 and R.3 million. As was explained earlier, Chemicals and Automobiles/Parts makers sell relatively large amounts. The difference in R&D budget appears to reflect characteristics of each sector and difference in their corporate size.

Table 3-71 How Many R&D Staff Did the Surveyed Firm Employ?

	(persons)
Textile Clothing	12
Food Processing	9
Automobile & Parts	6
Electronics	8
Chemicals	7
Housing related	7
IT	0
Others	3
All sectors	10

Source: JICA Study Team

Table 3-72 How Much Was Spent on R&D Annually?

	(1,000 Rupees)
Textile Clothing	10,358
Food Processing	1,664
Automobile & Parts	2,317
Electronics	3,602
Chemicals	15,877
Housing related	2,597
IT	0
Others	2,055
All sectors	7,835

Source: JICA Study Team

Pakistan has a variety of public R&D institutions belonging to RCSIR Laboratories or universities. Did the surveyed firm use such institutions? As shown in Table 3-73, only 17 % of them answered 'Yes'. Exceptionally, 43 % of Electronics makers used such institutions. The reason for this exception is unknown.

3-73 Were Public R&D Institutions Used?

%	Yes	No	Total answers	Total answers (number)
Textile Clothing	14	86	100	211
Food Processing	20	80	100	71
Automobile & Parts	15	85	100	39
Electronics	43	57	100	14
Chemicals	23	77	100	57
Housing related	20	80	100	102
IT	0	100	100	6
Others	0	100	100	8
All sectors	17	83	100	508

Source: JICA Study Team

Why do they not use public research institutions? Answers are summarized in Table 3-74, where the reason cited most frequently was, We ourselves did not make any efforts, accounting for 57 % of all the reasons given; followed by, there is no R&D organizations relevant to our business, 23 %; and, The role of the R&D organizations is limited, 7 %. With the exception of Electronics, public research institutions do not seem to be offering services relevant to private companies needs.

Table 3-74 Why Were Public R&D Organizations Not Used?

	%	Total answers (number)
We ourselves did not make any effort	57	223
There is no R&D organizations relevant to our business.	23	91
The role of the R&D organizations are limited.	7	29
The services of the R&D organizationos are not attractive	4	15
Good inhouse Setup	2	7
Others	7	25
Total	100	390

Source: JICA Study Team

From the viewpoints of learning through R&D, the Electronics sector appears the most promising, followed by Chemicals and Automobiles/Parts.

3.4.5 Leverage on Local Economies

The fourth yardstick to judge industry's future course is to see how much leverage each sector provides for the local economy. As industrial products are used for many purposes, forward linkage effects are generated. As industries buy materials and intermediate goods, backward linkage effects are generated. The larger are linkage effects, the larger are the leverage effects. The industries that provide large impact on the economy are qualified as future leading industries on this account. Theoretically, the linkage effects should be measured on the basis of an input-output table. In Pakistan, however, the input-output table is not updated

Consequently, each CEO of the surveyed firm was asked to provide his judgment, though possibly subjective, on which sectors his products made forward/backward linkage impact. Before asking the question, the concept of the linkage was explained to the CEO. CEO's replies are summarized, sector by sector, in Table 3-75 and Table 3-76, suggesting the extensiveness of such linkage effects. For example, the largest portion of Textiles/Clothing makers, 39 %, gave forward linkage effects to Manufacturing large, followed by Wholesale & trade, 37 %. Because the number of surveyed firms differs from sector to sector, the number of firms claiming their linkage effects does not necessarily reflect the magnitude of the effects. These data, however, can be judged to show a general picture on

which industries a particular sector makes forward/backward impact.

Regarding the forward linkage, many firms in every sector pointed to their link with Manufacturing large, while many Textiles/Clothing makers and Food Processors mentioned their linkage with Wholesale & trade. Automobiles/Parts makers claimed their linkage with Agriculture, perhaps because the farm tractor is one of their main product lines. As expected, 67 % of IT firms mentioned their linkage with the Communication sector.

Table 3-75 Where Does the Surveyed Firm Make Forward Linkage Impact?

(Multiple answers.)

	Agricul-ture	Mining and quarrying	Manufactu ring (large)	Manufactu ring (small)	Construc-tion	Electricity and gas	Transport and storage	Communi cation (telephon e, IT)	Whole-sale and trade	Total answers %	Total answers (number)
Textile Clothing	9%	1%	39%	9%	1%	0%	2%	0%	37%	100%	209
Food Processing	3%	0%	34%	10%	0%	0%	3%	0%	50%	100%	70
Automobile & Parts	33%	8%	31%	5%	0%	0%	10%	0%	13%	100%	39
Electronics	29%	0%	50%	0%	7%	7%	0%	0%	7%	100%	14
Chemicals	21%	4%	36%	4%	5%	0%	4%	0%	27%	100%	56
Housing related	16%	7%	39%	4%	21%	3%	0%	0%	11%	100%	102
IT	17%	0%	17%	0%	0%	0%	0%	67%	0%	100%	6
Others	13%	13%	50%	13%	0%	0%	0%	0%	13%	100%	8

Source: JICA Study Team

Table 3-76 Where Does the Surveyed Firm Make Backward Linkage Impact? (Multiple answers.)

	Agricul-ture	Mining and quarrying	Manufactu ring (large)	Manufactu ring (small)	Construc-tion	Electricity and gas	Transport and storage	Communi cation (telephon e, IT)	Whole-sale and trade	Finance and insurance	Chemical	Import	Cattle Farming	Total answers %	Total answers (number)
Textile Clothing	64%	1%	25%	7%	0%	0%	0%	0%	2%	0%	0%	0%	0%	100%	211
Food Processing	79%	0%	10%	8%	0%	0%	0%	0%	3%	0%	0%	0%	0%	100%	71
Automobile & Parts	5%	26%	44%	13%	0%	0%	0%	0%	10%	0%	3%	0%	0%	100%	39
Electronics	29%	7%	29%	21%	0%	7%	0%	0%	0%	0%	0%	7%	0%	100%	14
Chemicals	20%	11%	36%	13%	4%	5%	4%	2%	5%	0%	2%	0%	0%	100%	56
Housing related	18%	31%	28%	13%	5%	2%	0%	0%	3%	1%	0%	0%	0%	100%	101
IT	17%	0%	33%	0%	0%	17%	0%	33%	0%	0%	0%	0%	0%	100%	6
Others	38%	0%	25%	13%	13%	13%	0%	0%	0%	0%	0%	0%	0%	100%	8

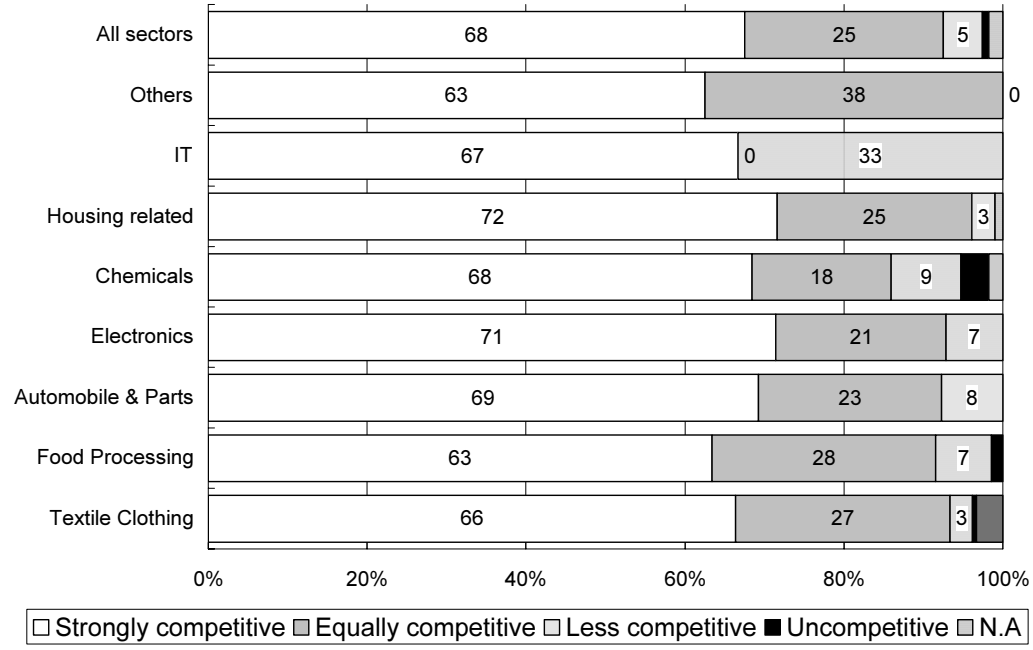
Source: JICA Study Team

Reportedly, Textiles/Clothing makers and Food Processors are closely linked backward with Agriculture, as 64 % of the former and 79 % of the latter claim. Automobiles/Parts makers are closely linked with manufacturing large, perhaps because they buy materials like steel and glass from large makers. The similar observation was made by Chemicals makers. Many Housing-related makers point to their linkages with Mining & Quarrying, perhaps they procure construction materials such as lime stone and marble.

3.4.6 Evaluation of Status of Competition and Competitive Edges

Questions were asked from several angles to know how the surveyed firm assesses its own competitiveness. First, each firm was asked to choose from among the following self-assessments: strongly competitive, competitive, equally competitive, less competitive, and uncompetitive. Figure 3-12 lists the aggregated replies, according to which about 70 % of all judge themselves strongly competitive in every sector, provided that slightly less Food Processors, 63 %, do so. Setting aside IT, Chemicals makers are more pessimistic than others, as a larger portion of them than in the other sectors, 13%, assess themselves as either less competitive or uncompetitive.

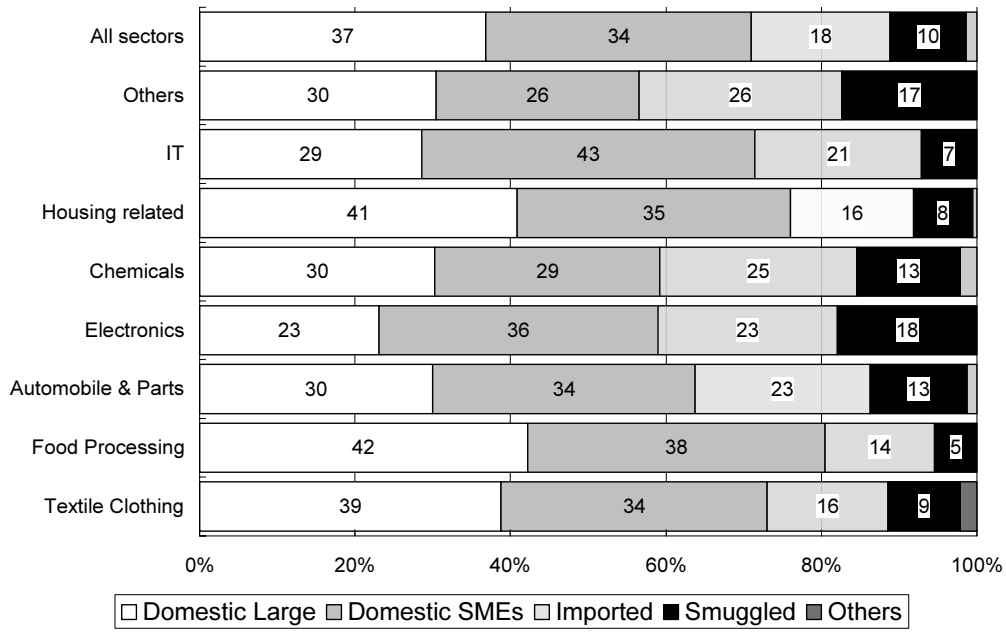
It is somehow implausible that around 70% of the respondents consider that they are "strongly competitive" despite the fact that a number of imported or smuggled commodities flood the domestic market, and that some manufacturers have been forced to close down the business. How should we interpret the result of these responses? In identifying the leading industries of the country, we should carefully look into this result.



Source: JICA Study Team

Figure 3-12 Is the Surveyed Firm Competitive?

One of the clues for this interpretation is the question about the types of main competitors for each establishment. We asked the respondents to specify the types of main competitors among the four alternatives (see Figure 3-13). In all sectors, domestic large enterprises and domestic SMEs are regarded as the main competitors. On average, 71% of the establishments in all sectors consider that they are mainly competing with domestic (large or small) manufacturers. Only 18% and 10% of the respondents mention that their main competitors are imported or smuggled products, respectively. This suggests that many of the respondents are competing with domestic manufacturers in the same business. It might be appropriate to consider that those establishments, which consider them as "strongly competitive", should have presented their views about their competitiveness against domestic competitors. It seems that these establishments might have not presented their views on the competitiveness of their products against imported or smuggled products.



Source: JICA Study Team

Figure 3-13 Who Are Main Competitors? (Multiple answers)

Moreover, it is possible that these establishments choose to avoid direct competition with imported or smuggled products, and manufacture less tradable commodities on purpose. To examine this possibility, the types of products of the Electronics/Electrical establishments in the sample are looked into (see Table 3-77). As expected, many establishments produce components, fans or so-called white goods, which are less likely to be traded. Few of them manufacture audio and visual equipments, which are frequently smuggled. In interpreting the responses about competitiveness, we need to pay a close attention to such aspects in the domestic industry.

Table 3-77 Main Products of Electronic/Electrical Establishments in the Sample (Multiple answers)

	Total answers
Electrical/electronic parts	26
Fan	14
White goods	11
AV equipments	7
Others	12

Source: JICA Study Team

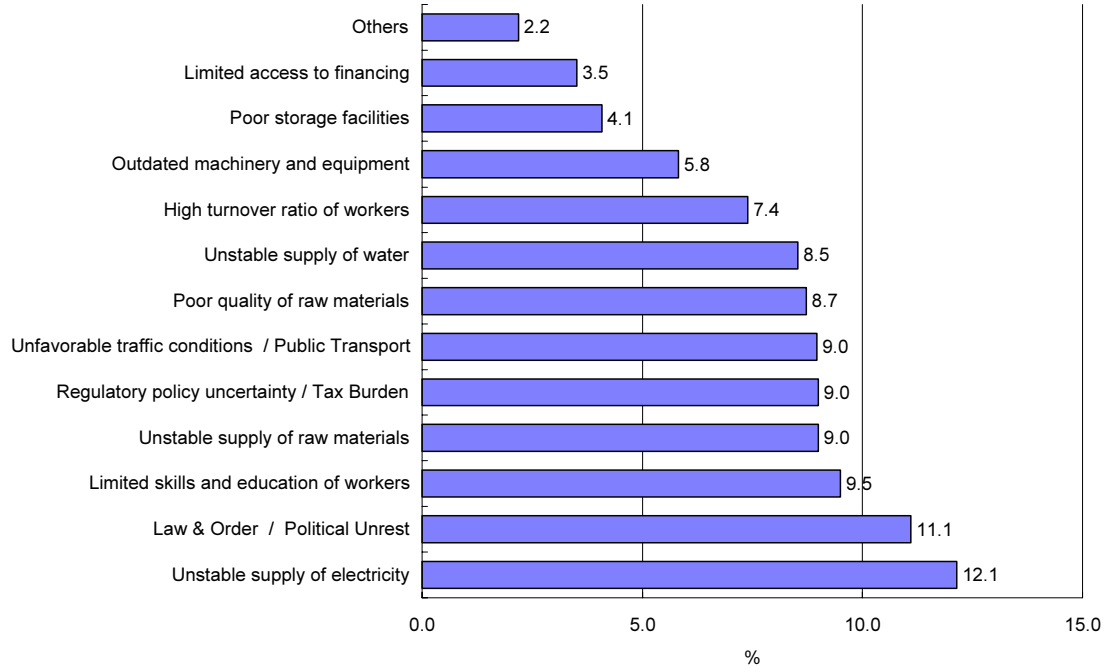
Table 3-78 Factors Deciding Competitiveness Self-Assessment (Multiple answers; The percentage is a share in the total number of factors mentioned.)

%	Quality	Price	Marketing strategy advertise-ment	Designing packaging	After service network	Others	Total answers
Textile Clothing	31	31	13	14	8	3	100
Food Processing	34	30	17	11	5	2	100
Automobile & Parts	29	33	14	11	13	0	100
Electronics	26	28	16	16	14	0	100
Chemicals	27	28	20	15	8	3	100
Housing related	30	29	18	14	8	1	100
IT	25	31	19	6	19	0	100
Others	30	30	15	15	10	0	100
All sectors	30	30	16	14	8	2	100

Source: JICA Study Team

What factors decide competitiveness? The answers are listed in Table 3-78. The surveyed firm was asked to choose among: Quality, Price, Marketing strategy/advertisement, Design/packaging, After-service network and Others. In most sectors, Quality and Price account for about 30 % respectively of all the factors mentioned. Particularly, in Food Processing, Quality accounts for 34 %, the highest ratio among all the sectors. According to Automobiles/Parts makers, Price is the most important, accounting for 33 %. Compared with makers in other sectors, relatively many Chemicals makers consider Marketing/advertising important, as 20 % of them mention this factor. Design/packaging is valued more highly by Electronics makers than by others. After-service network is considered important by more Electronics and Automobiles/Parts makers than by others.

Lastly, what are factors weakening competitiveness? Please look at Figure3-14 for the answers. The most serious impediment is Unstable supply of electricity, which account for 12 %of all the mentioned factors. The second most serious is Law and order, political unrest, 11 %. These two factors are followed by: Limited skills and education of workers, 9.5 %; Unstable supply of raw materials, 9 %; Regulatory policy and uncertain tax burden, 9 %; and Unfavorable traffic condition/public transport, 9 %.



Source: JICA Study Team

Figure 3-14 Factors Weakening Competitiveness--Self-Assessment (multple answers; the percentage is a share in the total number of factors mentioned.)

3.4.7 Capacity Utilization and Investment in Equipment

The last question concerns capacity utilization and investment in equipment. Table 3-79 lists facility utilization ratios in FY2004 and FY2005 of each sector. The reported ratios are grouped into: 1-60 %, 61-70 %, 71-80 %, 81-90 %, 91-100 %, and over 100 %. For each bracket, its frequency distribution is listed. With the exception of IT and Others, at least some companies operate at utilization ratio over 100 % in the Automobiles/Parts, Chemicals and Housing-related sectors, where, if firms operating at 90 % or more are added, about 30 % of all the firms enjoy very high utilization. Conversely, Electronics makers operate at low utilization below 60 %, where 43 % of the firms in FY2004 and 36 % in FY2005 operated at such low utilization ratios. Electronics makers' low utilization is also evidenced by average operating hours per week in FY2005. Table 3-80 lists the distribution by sector

of average weekly operating hours in 4 brackets: 1-50 hours, 51-100 hours, 102-150 hours, and 151-168 hours. Sixty-four percent of Electronics makers operate less than 50 hours per week. This percentage, 64 %, is the largest among all the surveyed sectors, indicating their business is slow. On the other hand, 32 % of Textiles/Clothing makers and 26 % of Chemicals makers are working at full capacity, for nearly 168 ours a week. Such high utilization ratios are not observed in the other sectors. Whether such high utilization has been caused by favorable business climate is not obvious, but it could be due to the capital-intensive nature of these sectors.

Table 3-79 Operating Rate

(1) 2005

%	1-60%	61-70%	71-80%	81-90%	91-100%	over 100%	Total answers	Total answers (number)
Textile Clothing	10%	10%	23%	28%	29%	0%	100%	206
Food Processing	31%	13%	19%	15%	22%	0%	100%	68
Automobile & Parts	24%	11%	16%	18%	29%	3%	100%	38
Electronics	36%	21%	14%	14%	14%	0%	100%	14
Chemicals	14%	14%	23%	20%	25%	4%	100%	56
Housing Related	23%	7%	23%	18%	27%	2%	100%	96
Information Technology	50%	0%	17%	17%	17%	0%	100%	6
Others	13%	0%	0%	13%	75%	0%	100%	8
All Sectors	18%	11%	21%	22%	27%	1%	100%	492

(2) 2004

%	1-60%	61-70%	71-80%	81-90%	91-100%	over 100%	Total answers	Total answers (number)
Textile Clothing	15%	10%	29%	21%	24%	0%	100%	204
Food Processing	29%	26%	14%	11%	20%	0%	100%	65
Automobile & Parts	22%	14%	22%	14%	25%	3%	100%	36
Electronics	43%	14%	14%	21%	7%	0%	100%	14
Chemicals	15%	27%	20%	11%	25%	2%	100%	55
Housing Related	27%	15%	18%	15%	22%	2%	100%	92
Information Technology	67%	0%	17%	0%	17%	0%	100%	6
Others	25%	0%	0%	38%	38%	0%	100%	8
All Sectors	21%	15%	23%	17%	23%	1%	100%	480

Source: JICA Study Team

Table 3-80 Average Weekly Operating Hours (2005)

hours	1-50	51-100	101-150	151-168	Total answers	Total answers (number)
Textile Clothing	20%	35%	13%	32%	100%	199
Food Processing	43%	31%	9%	18%	100%	68
Automobile & Parts	49%	33%	13%	5%	100%	39
Electronics	64%	14%	14%	7%	100%	14
Chemicals	40%	21%	12%	26%	100%	57
Housing Related	32%	29%	20%	19%	100%	96
Information Technology	50%	0%	17%	33%	100%	6
Others	38%	50%	13%	0%	100%	8
All Sectors	32%	31%	14%	23%	100%	487

Source: JICA Study Team

Then, questions were asked about investment in equipment/facilities in the last 2 years. Table 3-81 summarizes the responses, listing each sectors percentage of firms replying 'Yes' to the following questions: (a) Did you develop an important new product line? (b) Did you upgrade an existing product

line with improved/new technology? (c) Did you discontinue at least one product line? (d) Did you agree to a new joint venture with a foreign partner? (e) Did you obtain a new licensing agreement?

Regarding question (a) about development of a new product line, Electronics and Automobiles/Parts makers gave affirmative replies in large percentages than other makers. Meanwhile, a high percentage of Electronics makers, 29 %, discontinued at least one product line, and a considerably large portion of them, 36 %, entered into a new licensing agreement. These results suggest that, in this sector, situations are rapidly changing in relation to equipment investment.

In the Textile/Clothing sector, only 52% of the respondents replied that they have developed important new product lines in the last two years. This rate is slightly less than the averaged rate of all sectors. However, 61% of the respondents in the sector mentioned that they have upgraded an existing production line. The Textile/Clothing is the largest sector in the sample, whose amount of annual sales is 40% of all. It is therefore expected that the total volume of investment in the Textile/Clothing sector should be significant. In fact, according to the statistics of the Ministry of Finance, the amount of investment in the Textile/Clothing sector was US$ 6 billion in the last 6 years. Over US$ 650 million was invested in 2005/06 only[92]. For the reference, Table 3-82 shows the types of products, which are manufactured by the respondents in the Textile/Clothing sector. The shares of establishments producing Knitwear & Garment, as well as Made ups seem to be larger than those engage in spinning, weaving and textile processing.

Table 3-81 Investment in Equipment in the Last 2 Years

%	Developed an important new product line	Upgraded an existing product line with improved/ new technology	Dis-continueed at least one product line	Agreed to a new joint venture with foreign partner	Obtained a new licensing agreement	Total answers	Total answers (number)
Textile Clothing	52%	61%	10%	24%	14%	100%	211
Food Processing	37%	45%	11%	6%	1%	100%	71
Automobile & Parts	69%	64%	10%	10%	10%	100%	39
Electronics	71%	64%	29%	14%	36%	100%	14
Chemicals	61%	56%	18%	12%	21%	100%	57
Housing Related	56%	66%	10%	11%	4%	100%	102
Information Technology	67%	50%	17%	0%	17%	100%	6
Others	63%	25%	25%	38%	13%	100%	8
All Sectors	54%	59%	12%	16%	11%	100%	508

Source: JICA Study Team

Then, the plan for equipment investment for the coming 2 years was looked at, and Table 3-81 lists the outcome. Does the surveyed firm plan to expand their capacity, maintain it, or reduce it. Electronics makers are the most active investors, in that all the 13 surveyed firms plan expansion. Conversely, Textiles/Clothing makers and Food Processors are the most passive investors, in that 34 % in each sector plan to maintain the existing capacity. Despite their recent low plant utilization, Electronics makers plan to invest actively. Do they hope for new business chances as a result of changing business climate in recent years? More information is needed to answer this question.

[92] Economic Survey (http://www.finance.gov.pk/survey/sur_chap_05-06/03-Manufacturing.PDF)

Table 3-82 Plan of Investment in Equipment for 2 Years to Come

%	Expand capacity	Maintain existing capacity	Reduce capacity	Total answers	Total answers (number)
Textile Clothing	65%	34%	1%	100%	188
Food Processing	66%	34%	0%	100%	64
Automobile & Parts	77%	23%	0%	100%	35
Electronics	100%	0%	0%	100%	13
Chemicals	86%	14%	0%	100%	50
Housing Related	86%	14%	0%	100%	94
Information Technology	63%	38%	0%	101%	8
Others	100%	0%	0%	100%	5
All Sectors	74%	25%	0%	99%	457

Source: JICA Study Team

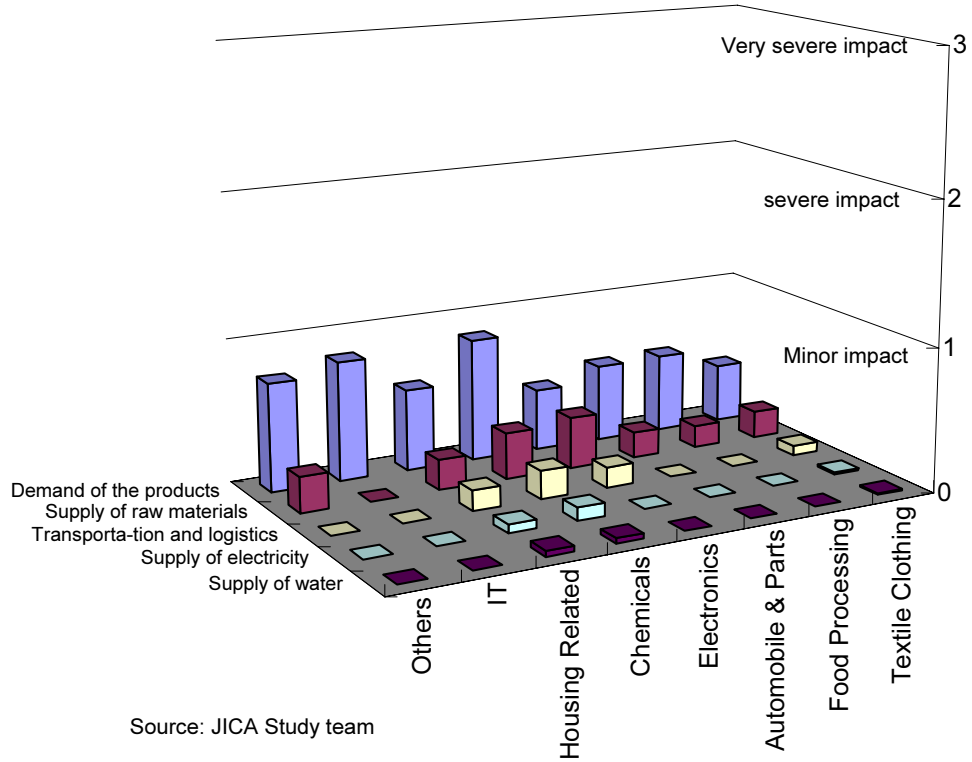


Figure 3-15 Impact of the Earthquake in the Northern Area in October 2006

Lastly, how were the surveyed firms affected by the recent earthquake in northern Pakistan in October, 2005? Figure 3-15 sums up their information. Respecting (a) demand of products, (b) supply of raw materials, (c) transport and logistics, (d) supply of electricity, and (e) water supply, the surveyed form was asked to assess the impact .in three stages: very severe, severe, or minor.

According to the replies by 485 firms, some impact was felt respecting demand, but they were affected only in a minor degree in the other respects. Significant difference was not observed among the sectors.

3.4.8 Selection of Leading Industries

In this section, attempts are made to select Leading Industries, which will drive the whole economy, on the basis of the survey of more than 500 firms, as well as from viewpoints of, among others, their linkage with foreign markets/technology, learning through R&D, and leveraging impact on local economies. On the basis of the analyses made so far, each industry's merits and demerits are evaluated

below.

Textiles/Clothing: The export ratio is high and the sector is linked with foreign markets most closely among all the sectors. After the removal of MFA, the export of denim and made ups are particularly considerable. Moreover, the magnitude of its value added and employment is so large, that it will certainly continue to form a backbone of the country's economy. Compared with the other sectors, however, the Textiles/Clothing sector does not seem eager to introduce new foreign technology or carry out in-house R&D. It is expected that the sector should produce more high valued goods in order to remain competitive in the international market. For this purpose, the sector should make much effort to introduce new foreign technology or to increase in-house R&D activities, so that it could develop new materials or design as well as strengthen the marketing capability.

Food Processing: Oriented to domestic markets, this sector is not closely linked with foreign markets: only a few firms receive foreign technical support or import foreign equipment. R&D is not being eagerly carried out. Most firms are passive investors, and appear inclined to maintain status quo. The Food Processing sector has a close link with agriculture, and the sector is expected to play an important role in generating employment. However, from the viewpoint of 3L in this study, the Food Processing sector is less likely to be the leading industry, which drives the rapid economic growth in the country.

Automobiles/Parts: The sector is not closely inked with foreign markets, due to the large domestic demand. Exporting very little, the sector is not closely inked with foreign markets. Automobiles/Parts makers, however, are actively introducing foreign technology, and transacting with foreign or foreign-affiliated firms, which provide technical support on many occasions. Foreign equipment is being imported actively. Recently, the plant utilization is high and therefore equipment investment is being made actively. As the analysis of the input-output tables of Japan, Korea and Thailand was outlined in Chapter 1, the auto industry in every country is supported by wide-ranging industries enjoying substantial backward linkage effects. The sector consequently is likely to develop into a leading sector that will serve as an engine of the entire economy.

Electronics: Though oriented to domestic markets like the Automobiles/Parts sector, the Electronics sector often enjoys chances to transact with foreign-affiliated firms in Pakistan, and to enter into a licensing agreement directly with foreign firms. Notably, R&D is being actively conducted and public R&D institutions are used frequently. Though adverse effects of smuggled electric appliances for home uses have been a cause of concern, the impact appears less serious than on other sectors. Investment in equipment is also being made actively. The sector, however, suffers low plant utilization in recent years, and firms in this sector are much smaller than in the other sectors. Beside, apart from a small number of large enterprises, manufacturing establishments in this sector are much smaller than those in the other sectors. The Electronics sector may not be able to develop into a growth-driving leading sector, but its future expansion may be hoped for.

Chemicals: Being oriented domestically, the sector has only a weak linkage with foreign markets, having limited chances to receive technical support from foreign firms. Meanwhile, R&D is being carried out actively as R&D outlays per firm are in by far the largest amount among all the sectors. The sector's plant utilization is high in recent years. The sector may be expected to lead the economy, if active liaison is pursued with foreign-affiliated firms covering technology introduction, taking advantage of the globalization trend in future.

Housing-related: Being inward-looking by nature, the sector has a weak linkage with foreign markets. Chances to receive technical support from foreign firms appear limited. The companies in the sector are not active in R&D, either: their R&D budget is limited in consideration of their large amounts of sales. As expected, the backward linkages with mining and forward linkages with the construction sector are strong, while the linkages with other manufacturing sectors also appear strong. In recent years, their plant utilization is high. Though hopefully the sector may lead the economy as a leading sector, a concern is felt whether it will be able to maintain its competitive edges when a great deal of foreign competitors' products flow into the country or the current construction boom come to an end in

the future.

IT: For this survey, IT sample size was very small, and was not enough for detailed examination of the sector's future. To begin with, however, there are only a very few firms belonging to the sector, and this was the reason why only a few samples were taken. It therefore appears safe to assume at this stage that this sector is unlikely to lead the country's growth in future.

Chapter 4

Industrial Development Strategy and Its Policy Options

Chapter4 Industrial Development Strategies and their Policy Options

4.1 Industrial Development Strategies

The current industrial development policy of the government might not focus on promoting some specific groups of the industry, but on constructing a framework of incentive for all sectors of the industry. It was pointed out that "An old fashioned industrial policy approach, that seeks to promote a specific group of industries at the expenses of others, is eschewed for the simple reason that it rarely works" in the paper presented by the Ministry of Industries in 2005[1]. It seems widely recognized in the government that promotion of specific sectors does not work. Therefore, the government officers might have made little incentive to look at the features of specific sectors in detail, and to examine the possible industrial structure of the country in the future. Moreover, as being a "facilitator", the government officers seem to abandon the idea to seriously consider the direction of industrial development. It is surely an appropriate and valid approach to rely on the function the market economy to allocate economic resources. This should be one of the alternatives for Pakistan to adopt, as the country had a bad experience that the government was deeply involved in the management of the industrial sector, by nationalizing private establishments for instance, and that the economy faced severe recession afterward. However, this experience does not conclude that the government has no role in promoting specific groups of the industry by introducing policy measures. In all of the East Asian countries, including Japan, which achieved rapid industrial development, the government has played an active role in promoting specific groups of industry with a market friendly approach. Malaysia, for example, which made fast-growing industrial development for the last twenty years, has fully realized the necessity of concentrating economic resources to specific sectors of the industry. In the IMP3 (Industrial Master Plan 3), the country designated twelve strategic industries from the points of view of 'high value added', 'knowledge intensity', 'export contribution', 'linkage effect', 'integration for global economy'. Then, the country shows determination to accelerate industrial development based on the principle of Public-Private partnership.

With globalization, the manufacturing industry in the world is going to be reorganized. If Pakistan takes easy way to rely on the principle of the free trade and does nothing active to promote the local industry, the country might miss the bus and become an orphan in the middle of the global competition. The country might face the following two alternatives in enhancing industrial development:

i) To construct the framework of incentives for all groups of industry, and rely on the principle of the free market economy or free trade in allocating economic resources of the country.
ii) To prioritize the importance of the industrial sectors for the country and concentrate economic resources to promote these sectors in order to effectively utilize the limited resources of the country.

Between the two, which should be the appropriate strategy for the country to adopt in the coming decade? Decision makers in both private and public sectors should make intensive discussion on these alternatives. After the discussion, these decision makers should decide which ways the government takes to promote industrial development. At least, they need to look into the experience of the East Asian countries and examine the reason for their rapid industrialization, before reaching their decision about the Pakistani way for industrial development.

In the following section of this chapter, we suggest two strategies in order to enhance industrial development of the country, which are

i) Promoting high valued manufacturing
ii) Ensuring effective implementing of industrial policy

[1] "Toward a Prosperous Pakistan: A Strategy for Rapid Industrial Growth", January 2005, Ministry of Industries, Production and Special Initiatives.

These strategies are based on the Japanese experience in the post war period as well as the experience of rapid industrialization in Thailand and Malaysia after the mid 1980s. In the international trend of globalization, we believe that Pakistan should take these two strategies to achieve the target of rapid economic growth anticipated in the Vision 2030. Moreover, we have reached conclusion that the country is somehow suitable to adopt these strategies from our comprehensive survey of local manufacturing industries. We hope that our suggestion would be useful for the decision makers to examine the Pakistani way of industrial development.

4.1.1 Promotion of Highly Valued Manufacturing

(1) Integral Manufacturing

Many segments of the Pakistani market are already full of competitive and attractive Chinese products. When the trade with China expands in the process of globalization, it is unavoidable that Pakistani products should face severe competition with Chinese ones in the domestic market. The Pakistani consumers are attracted to Chinese products due to their low prices. Even though the quality of these Chinese products is not fully satisfactory, it is expected that the demand for these cheap Chinese products might gradually expand in the future. If the Pakistani manufacturers also produce cheap and low quality products to compete with the Chinese ones, these Pakistani might not able to survive in the market. In fact, some Pakistani producers have already started making cheap and low quality goods by imitating the Chinese strategy or even by getting components from China. We do not consider that this is an appropriate strategy for the Pakistani manufacturers. It is needed to avoid direct competition with Chinese products. If cheap, low quality and counterfeit products are easily available in the market, it is very difficult to promote high-valued, high tech, and internationally competitive manufacturing in the domestic industry. The Pakistani should better introduce the strategy to focus on manufacturing highly valued, high quality products, and making its own brand recognized in the market.

One of the ways to realize this strategy is to strengthen the basis of so called "integral type production" for assembly-type manufacturing such as motorbikes, automobiles and electronics, in which product quality heavily depends on intimate coordination of each production process or component designing (see 1.2.2). The relationship between functions and components of the integral manufacturing is highly intricate. Each component affects each other and determines the quality of final products. Automobile is a typical example. One of the important functions of the automobile is concerned with ride quality, such as noise or vibration. However, no specific components are designed for ride quality. Mutual and very subtle coordination among various components, such as tires, suspension, shock absorbers, chassis, bodies, engines and transmissions, etc. affects the ride quality. Moreover, one module usually has many functions in the automobile. The body, for example, has multiple functions of safety, dwelling ability, designing, and aero-dynamical stability. This means that the relationship between the function and the component is not one to one but many to many. Therefore, the designers of each module (component) need to make subtle coordination and frequent cooperation. This is how the integral manufacturing works[2].

Thus, long-term collaboration among assemblers and vendors is indispensable for this integral manufacturing, because the combination of uniquely designed components/considerably affects the quality of final products. When consumers want "product integrity" in the manufactured goods, or the competitiveness of the products depends on their compactness or weightlessness, in particular, the integral manufacturing is more appropriate[3]. The institutional requirements for

[2] Page 5, "Business Architecture (in Japanese)", 2001, Takahiro Fujimoto, etc., Yuhikaku, Tokyo.

[3] Page 11, "Business Architecture (in Japanese)", 2001, Takahiro Fujimoto, etc., Yuhikaku, Tokyo.

the integral manufacturing include 'subtle coordination of component designing', 'consistent control of production process', 'intimate coordination among sections in the company', 'close communication with customers', 'solid and stable interaction with customers', and 'support of multi skilled workers'.

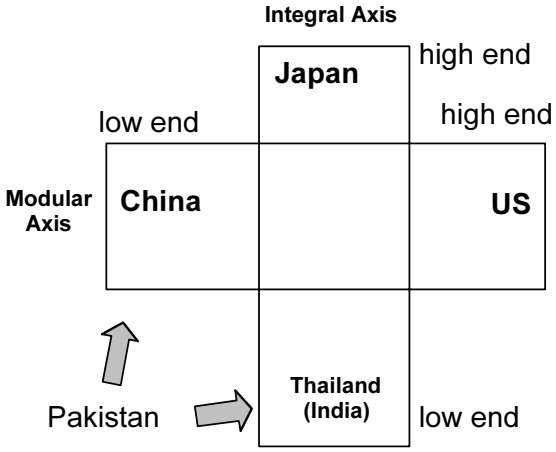
The other type of manufacturing is the modular-type manufacturing. The characteristic of the modular-type products is that the relationship between the function and the component (module) is simple and close to one to one. Each component has it self-contained module, which has a rather independent function. Therefore, the exchange of signals among components is not often required, which means that the interface of production is relatively straightforward. In case one product has ten sets of functions, it is possible to manufacture the product by combining ten self-contained components, corresponding to the ten sets of functions. The designers of each module (component) do not worry about the designing of the other components and freely design their own products, so long as they understand the rule of designing upon the interface. The typical module-type products include personal computers, package software and bicycles. For instance, we can produce a good bicycle, if we just combine components made by various independent producers. In fact, the gear produced by Shimano is widely used by many bicycle manufactures in the world. Automobiles or motorbikes, on the other hand, hardly have such kind of common components. Nobody equips the Toyota cars with the Nissan engine[4].

Japan has an advantage in integral manufacturing, so their automobiles and motorbikes are much competitive internationally, while the US has an advantage in module manufacturing, so their personal computers have sweeping competitiveness in the world market. China is relatively good at modular type manufacturing, and the Chinese manufacturers are producing labor-intensive modular products by mobilizing cheap labor force. In fact, China is becoming the production base of personal computers. China has rapidly expanded the production of automobiles and motorbikes as well. However, many of these products are made up with a variety of counterfeit and unoriginal components, without intimate and frequent coordination among component designers. Therefore, the quality of these products cannot be very high. In India, on the other hand, these counterfeit automobiles and motorbikes are not likely to be accepted in the market. Several homegrown manufacturers of automobiles have developed indigenous products with intimate and frequent coordination among stakeholders. Integral manufacturing seems to be suitable for the country. Moreover, the East Asian countries, such as Thailand or Malaysia, carefully avoided direct competition with China and achieved rapid industrial growth, by introducing the integral type manufacturing from the Japanese manufacturers.

Which ways does the Pakistani choose as the model of her manufacturing? Would the modular-type manufacturing of the Chinese model be selected, or the integral-type manufacturing of the Indian or the East Asian models be selected? One possibility is that Pakistani industry would decide to become a subcontractor of the Chinese industry, by introducing the same modular-type manufacturing. On the other hand, it is also possible to promote the integral type manufacturing in order to avoid direct competition with the Chinese industry. Considering the intense competition with the Chinese products in the domestic market, and the experience of rapid industrialization in the East Asian countries, we believe that the integral type manufacturing should be the appropriate choice for Pakistan so that she could

[4] Page 5,, "Business Architecture (in Japanese)", 2001, Takahiro Fujimoto, etc., Yuhikaku, Tokyo.

promote high-valued manufacturing.



Source; Based on Fujimoto (2001)

Figure4-1 Where Each Country Fits in the Integral and Modular Axis?

In Pakistan, Japanese automobile firms have assembles cars and motorbikes for over 25 years. These assemblers have made significant effort to develop human resources suitable for integral manufacturing. In one of the Japanese assemblers, for example, around 400 senior technical staff workers out of 2,000 had opportunities to be trained at one of the Suzuki's Japanese assembling plants to learn the root of integral manufacturing. The employees tend to stay long in the firm, and the seniors, who started working at the factory in the 1980s, occasionally instruct the younger staff about the integral manufacturing. Furthermore, these assemblers have kept steady and intimate relationship with domestic vendors for a long period. It is said that around 200 vendors are able to supply parts and components directly to the assembler. Out of these 200, 20% to 30% are regarded as "Tier 1", which could participate in the development process of the final products with the assemblers[5]. For Pakistan, the accumulation of human resources who understand the integral manufacturing should be the outstanding asset. The automobile industry can be the model case for the country to learn the integral manufacturing. The other sectors should possibly learn the fundamental nature of this integral manufacturing by examining the experience of the automobile industry.
One of such examples would be the textile industry. The integral type manufacturing should considerably improve the international competitiveness of the Pakistani textile industry, by developing so-called 'new synthetic fiber'. 'New synthetic fiber' is produced by adjusting the designing of yarn with the function of fabric. The style of the integral manufacturing should be suitable for producing this kind of fiber. The integral manufacturing should be a key to make the textile industry generate high valued products.

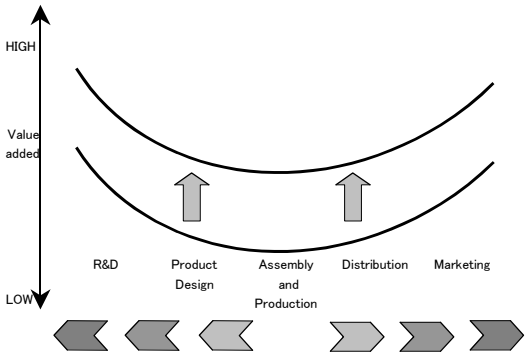
(2) Forward and Backward Extension of the Manufacturing Value Chain

The second way to realize the strategy is to extend the value chain of production toward the forward and the backward directions. The technical improvement in the whole part of the value chain is also required. Pakistan has a number of export-oriented SMEs producing a variety of products such as sport goods, surgical instruments, cutlery, bed wear and so on. As the subcontractor of European firms, many of these SMEs are only in charge of simple processing work, or producing low-valued commodities, such as disposable surgical equipments. Product design is usually supplied by European firms, so the potentiality of local Pakistani designers cannot be fully realized. Moreover,

[5] Based on the information from the CEO of a Japanese assembler in Karachi (14 September, 2006)

these SMEs find it difficult to explore new business opportunities as the European firms control the marketing of the products.

Malaysia had a keen interest in extending the value chain toward the forward and the backward, and improving technical level of the production. So the Malaysia government and presented the direction of the local manufacturing industry using the catch phrase of "Manufacturing Plus Plus" in the Second Industrial Master Plan (1996-2005). Pakistan should also transform its labor-intensive and simple processing manufacturing into high-valued, productive and efficient manufacturing, by extending the production value chain toward forward, backward as well as upward. In some sectors of the industry, such as textile and clothing, the industry associations have led the effort to establish the institutions to develop human resources for industrial designing or marketing. The government should support such effort so as to make full use of the talented and highly motivated young staff in the country.



Source: Malaysian Industrial Master Plan 2

Figure4-2 Concept of *Manufacturing Plus Plus*

4.1.2 Ensuring Effectiveness of the Industrial Policy

As previously mentioned, the basic principle of the current industrial policy is being a "facilitator", which might mean that the government constructs the framework of incentives for all groups of industry so that each of them can equally gets benefits from the government policy. Due to this principle, the government officers are declined to introduce any policy measures to support specific sectors of the industry. In addition, the government officers might consider it unnecessary to understand the unique features of each manufacturing sector. Occasionally, several CEOs of major firms are invited by the government to attend meetings, and required to comments on the government policies from the sectoral view points. The government officers might be pleased with themselves in such way of "public-private partnership", but these CEO's comments do not necessary reflect views of the whole segment of the industry, and could mislead the direction of the government policy. Moreover, even though the government officers formulate some industrial policies on their own, their effective implementation and useful monitoring can no longer be realized without pervasive participation and cooperation of the private entrepreneurs. It is useless to have a policy without clear road maps and effective implementing measures. The private sector's view that "the government only presents proposal or vision" could be reflected on such feeble institutional settings.

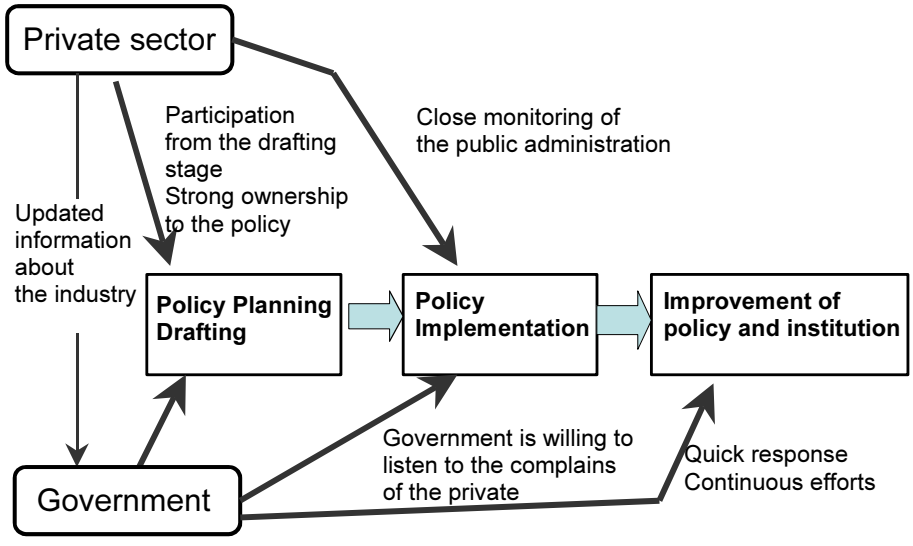
In the first place, the government officers alone can no longer grasp the realities of business in the manufacturing sectors, which are rapidly changing in the trend of globalization. Unless the frequently updated business information is available, the officers are not able to formulate any appropriate policies. Moreover, unless the wide segment of the private entrepreneurs recognize and support the policies, they cannot be effectively implemented. It is indispensable for the Ministry of Industries to have intimate relationship with the private sector, and to ask the private sector to cooperate in collecting business information, implementing policies as well as monitoring the government programs.

Furthermore, industrial promotion is deeply related to other policy issues, including trade policy, HRD policy, environmental policy, urban development policy as well as infrastructure policy. So, it is also needed for Ministry of Industries to closely coordinate their programs with programs of the other government institutions in charge of those issues. Therefore, in the following section of this chapter, we would suggest how to ensure effective implementation of industrial policy from the following two viewpoints;

i) Promotion of public-private partnership
ii) Promotion of intra government coordination.

(1) Promotion of Public-Private partnership

It seems that the public-private partnership in Pakistan has already been the basis of economic management. The initiative of the current government is positively perceived, even though this partnership has not been fully matured yet. The private sector tends to depend on the government support, while the government hardly understands the realities of private business. The government usually considers that "the private sector just presents its wish list", while the private people often criticize that "the government only presents proposal or vision (without any road map of implementation)." The private entrepreneurs should make much effort to be self-reliant and become capable of competing in the market on their own without asking for the government support. The government officers, on the other hand, should make considerable effort to understand the realities of business. Occasional meetings with CEOs of major entrepreneurs do not provide precise and comprehensive information about the domestic manufacturing business in the field. After the both private entrepreneurs and government officers make these efforts, they are able to discuss the way to promote industrial development in the country. Following these matured and intimate relationship between the private and the public, it is possible to formulate and implement industrial policies that should truly contribute to the growth of local manufacturing industry.



Source: JICA study team

Figure4-3 How the Private and the Public Collaborate to Formulate and Implement Industrial Policy

In the East Asian countries, highly intimate and frequent cooperation between the private and the

public has been institutionalized which resulted in substantial industrial development in the last few decades. In fact, public-private partnership is rather broad concept, having a variety of forms. For instance, we find a simple and one-way partnership form, in which representatives of the private sector, usually CEOs of large firms, made comments on the policy documents drafted by the government officials. On the other hand, we can also find more deeply rooted and complex forms of private pubic partnership, in which the private sector participates in the formulation of the industrial policy from the drafting stage, or the whole exercise is even initiated by the private sector. The public-private partnership, which has been observed in the East Asian countries, is the latter form. The involvement of private sector has been very significant, in each stage of drafting, implementing and monitoring the industrial development policy.

In East Asian, moreover, the private business organizations, such as industrial associations or chambers/of commerce, have significantly developed their institutional capability. They have developed highly sophisticated system to deliver information to the member companies as well as to collect and analyze domestic and overseas business information. They can provide the most updated business information to the counterpart division in the Ministry concerned, and the private and the public closely collaborate to formulate the industrial development policy. As the private sector has been involved in formulating the industrial policy from the beginning, the private has a strong ownership to the policy. Due to this strong ownership, the private also has a keen interest in the implementation of the policy, and closely watches the performance of implementing agencies. When the private watchdogs find any problems, they have no hesitation to report the problems to the government. The government authorities are willing to receive to any suggestions or complaints from the private businessmen, and immediately cope with these problems to improve business environment (see Figure 4-3). It is necessary for the government to keep listening what the private sector says. If only the government officers initiates the drafting of industrial policy and private involvement remains very limited, such policy cannot be effectively implemented, because the private sector does not show much interest in the policy.

BOX 4-1: History of Public-Private Partnership in Thailand and Malaysia

In Malaysia, public-private Partnership began in 1983. Before then, the government had tended to direct the private sectors unilaterally regarding their future course. Then functioning on the basis of the British bureaucracy, the Malaysian government relied on too formal and bureaucratic ways. The industries considered the government too inflexible, while the government blamed business people for their habit of cheating. In 1983, the public-private relations started to change for the better, when Prime Minister Dr. Mahathir initiated his "Look East Policy." According to the policy, Malaysia could learn from experiences of Japan and Korea. In the context of this policy, the concept of "Malaysia Inc." was proposed so that the government and industry would closely collaborate, aiming at industrial development. In accordance with this new idea, the government attempted to play strictly catalyst's role, paying due respect to judgment of the private sector. Though the business people were at the outset skeptical of such new policy, they gradually became accommodating to the government as their opinions were accepted in the course of high-level consultation with the government.

Likewise in Thailand, public-private collaboration was not satisfactory during the country's early period of industrialization. The collaboration began in the 1980's when the Thai economy started to undergo structural changes by replacing the import substitution policy with export- oriented policy. Since, in Thailand, export business is carried out mainly by private sector, the government had to promote private investment in order to accelerate export-led economic growth. Consequently, the government was willing to listen to opinions of industrial circles in order to design effective promotional policies. At this time, a general consensus was formed that the private sector should propose what the government should do. Although the Thai administration has since then been succeeded by one after another and a number of politicians became active, the fundamental philosophy of policy making has been kept consistent, sustained by able bureaucrats dealing with economic policies as well as by business associations staffed by capable professionals. Both politicians and high-ranking bureaucrats were prepared to listen to business people.

Though Thai civil servants' salaries are not as good as comparable industry employees, their total compensations are not necessarily poorer than private sector employees in consideration of their better fringe benefits. For this reason, the government has managed to recruit able people. In addition, because the administrative rules are firmly established and procedures are made transparent, civil servant's corruption is not a serious problem.

In both Malaysia and Thailand, it was initially by no means easy to establish collaborative relationship between the private and public. Business people are always busy and are mainly interested in money making, while the government is concerned with planning. The government therefore made considerable efforts to convince business people that the government and the private sector are partners on the same boat. The more prosperous is the private sector, the more tax revenues flow into the treasury: namely, a win-win relationship dominates. The government is nothing but a catalyst, while the economy is mainly driven by the private sector, whose prosperity is essential to economic growth. According to the view now prevailing in these countries, the government's responsibility is to create business-stimulating climate. Since the mid-1980's, business people have actively asked the government to give them more chances for dialogue. Whenever the business society faced problems, it expected the government to find a solution. Meanwhile, the government has always been prepared to listen to business people's complaints and advice.

As previously mentioned, the relationship between the private and the public sectors is rather weak in Pakistan. The private businessmen generally have a sense of mistrust, and this sense could be deeply rooted. This sense of mistrust might have been generated when the government confiscated private business in the 1970s, and this suspiciousness has not been completely wiped out. The subsequent lacks of consistency in the economic policies and the frequent changes in the policies have failed to build trust to the policy among the private businessmen. At the same time, the government does not have a full confidence in working with private business associations. It sometimes happened that the representatives of major business associations were not invited to the meeting that discuss the critical economic policy that severely affected the sector concerted[6]. They could be rather isolated cases of the mutual mistrust between the private and the public. However, such a deep-rooted private mistrust to the government should not generate any benefit to achieve the target of rapid industrialization.

In order to improve the relationship between the private and the public, the attitude of the government officials toward the private sector should be reconsidered. In addition to this, the private sector, the private business organizations in particular, should make utmost effort to develop their capability. There are a variety of business associations or chambers of commerce in the country, but most of them are not equipped with highly sophisticated system to collect and analyze business information, to propose practical policy suggestions to the government and to deliver business and policy information to the member firms. These associations just have engaged in some sorts of shortsighted lobbying or rent-seeking activities. Few of them have developed a long-term strategy to nurture their industry as a whole in the trend of globalization. It is extremely important to enhance the capability of business associations, so that the government can recognize them as fully reliable partners.

Particularly, a large business association like FPCCI needs to have a professional secretariat hiring numerous professionals who will carry out research by means of specialized expertise. As FMM (Federation of Malaysian Manufacturers) is aware, any respectable business association should not be dominated by a small number of its Board members if it intends to fairly represent interest of its constituent industry (Please refer to 3.1.3). Unless the business association acts in proper reflection of the industry's interest, it can neither satisfy its members nor be trusted by the government as its reliable partner. In Pakistan, too, business associations that are equipped with a professional secretariat should be fostered. A meeting between such trustworthy associations, the government agencies and other stakeholders would lead to formation of concrete government proposals and visions, discouraging private associations to stick to their egoistic wish list. Earnest public-private discussions are now essential in order to design strategies and policies that would prevent Pakistan from becoming isolated in global competition, which is restructuring manufacturing sectors of the world.

(3) Promotion of Intra Government Coordination

A variety of government institutions are directly or indirectly related to the implementation of any industrial promotion programs. Without an effective mechanism of coordination among these institutions, it is difficult to implement industrial promotion programs, which should cover a variety of issues. Pakistan does not seem to have such an effective mechanism. No policy is meaningful, unless it is effectively implemented. The government should make much effort to develop mechanisms to coordinate public programs to support local industry, and to strengthen its capacity to implement and monitor such programs. It is said that the President and the Prime Minister invite the head of relevant ministries and agencies for every two months and discuss critical economic issues and policies in order to coordinate their strategies and activities. Moreover, Planning Commission should

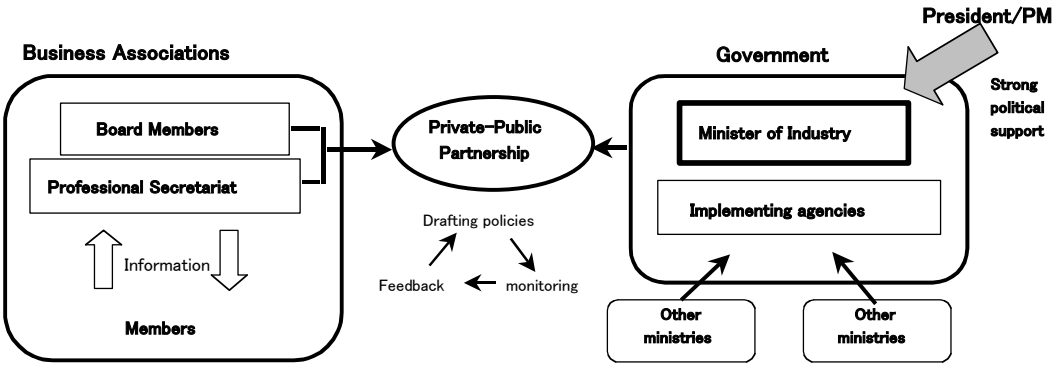
[6] For instance, the study team was informed that the tariff reduction of imported cement was announced without prior notice to the business association concerned (APCMA). Moreover, automobile vendor association (PAAPAM) and its member firms, which should be most severely affected by the import of second hand vehicles, were not fully informed about the government views and directions on this issue, and have grown impatient with the government.

also be responsible for promoting coordination among ministries in charge of economic development. However, a number of private entrepreneurs as well as representatives of foreign donor agencies pointed out that the activities of various ministries are not still well coordinated.

Success in industrial promotion hinges on a variety of policies and permit granting administration consisting of encouragement of, among others, incoming foreign direct investment, SME promotion, urban development, road building, environmental protection, industrial standardization and protection of intellectual properties. Pakistan lacks a strong policy-making body that integrates formulation of such a variety of policies. With strong leadership of the President and Prime Minister, inter-ministerial rivalry should be eliminated and policy-making should be concerted for the purpose of industrial promotion.

In this connection, we should look at the strong leadership of the Malaysian Minister of International Trade & Industry that has effectively facilitated intra-government coordination in the fields of trade, investment promotion and industrial promotion, contributing to efficient management of the Malaysia Industrial Development Agency (MIDA) and other policy execution (Please refer to BOX 4-2). Taking into account such success stories in East Asia, Pakistan is advised to form an effective framework of intra-government coordination.

In order to formulate appropriate industrial policies, to execute them efficiently and to monitor them closely, both public-private partnership and intra government coordination should be promoted. Effectiveness of industrial policy is ensured by both business associations armed with capable professionals and the government using decisive leadership (See Figure 4-4). This is a lesson learned through experiences in such East Asian countries as Thailand, Malaysia and Japan, which succeeded in industrialization. Pakistan is not necessarily advised to copy entire track records of these countries because its social and historical background differs from other countries. Pakistan, however, is at least recommended to take into consideration experiences of these already industrialized countries in order to build her own systems that would match her situations.

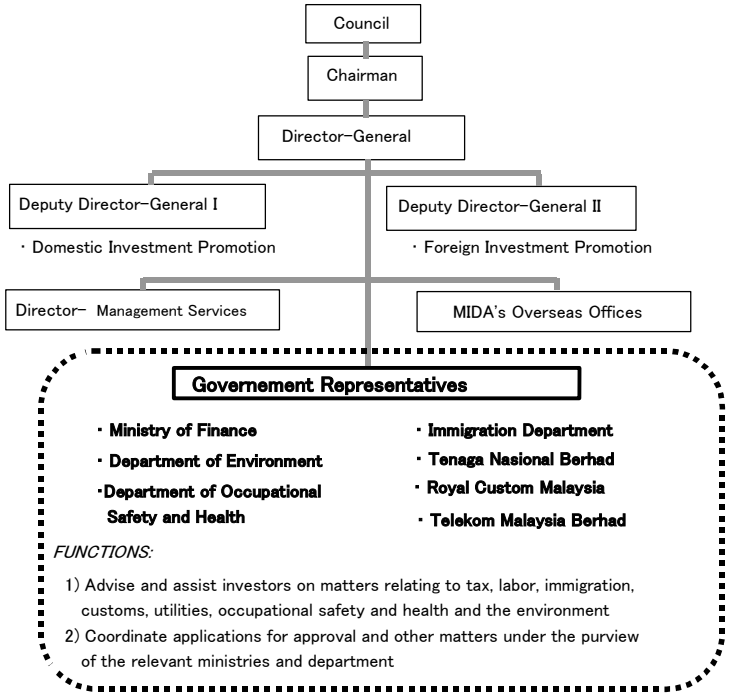


Source: JICA study team

Figure 4-4 Institutional Framework for Effective Implementation of Industrial Policy

BOX4-2: Examples of Intra-Government Coordination in Malaysia

As typified by the process of formation of the Industrial Master Plan, inter-Ministerial coordination needed for policy planning and implementation has apparently been relatively successful in Malaysia. In particular, in such fields as trade, investment promotion and industrial promotion, decisive political leadership is the major cause of efficient coordination. In Malaysia, Ms. Datuk Seri Rafidah Aziz has been the Minister of International Trade & Industry for 18 years since the period of the former Prime Minister. Nicknamed “Iron Lady”, she maintains strong influence in the government. Fully trusted by the former Prime Minister, she made successful efforts to coordinate opinions of the Ministries concerned. Such effective leadership focused on industrial promotion as well as other policy making has led to successful coordination. For example, in Malaysia Industrial Development Agency (MIDA), which is under the Ministry of International Trade & Industry and is engaged in promotion of incoming FDI and domestic investment, various ministries and agencies that are dealing with investment affairs have standing representatives’ offices. The represented organizations are: the Ministry of Finance, the Ministry of Natural Resources and Environment, the Ministry of Human Resources, the Department of Occupational Safety and Health, the Immigration Department, Tenga Nasional Berhad (dealing with electric power), the Royal Customs Malaysia, and Telekom Malaysia Berhad. These representatives provide MIDA with advice and support regarding procedures for the tax scheme, labor relations, immigration control, customs clearance procedures, occupational safety/health and environmental protection. Though they are not entitled to make a decision whether to grant any permission, their presence in MIDA gives the investor considerable benefits and convenience.



Source: www.mida.gov.my

Organizational Structure of MIDA

In addition, every Thursday, Special Committee meeting is held in MIDA attended by representatives of the Ministry of International Trade & Industry, the Ministry of Finance and the Immigration Department. Presided by MIDA’s chairperson, the meeting discusses financial incentives and other matters relevant to major investment applications. Even though the meeting does not come to a conclusion as to particular incentives, investment permission is normally granted in 8 weeks. Another reason for such smooth intra-government coordination is that administrative procedures concerning financial incentives and other execution are carried out on the basis of clear guidelines designed to ensure transparency.

4.2 Policy Options

These two industrial development strategies should be applied to a wide segment of manufacturing industry in order to strengthen international competitiveness and to achieve high industrial growth. It is practically feasible to realize these strategies using specific groups of the industry as role models in order to demonstrate the effectiveness of the strategies. Therefore, the study team presents the following three policy options as the role models, which are "promotion of automobile industry", "export-oriented SME cluster production", and "strengthening of industrial design and marketing capability".

4.2.1 Promotion of Automobile Industry

The automobile industry[7] is qualified as a leading sector endowed with a potentiality to activate the country's whole private sector and to strengthen industrial competitiveness. The industry is expected to develop into a major engine of the economic growth, due to the following reasons.

- Automobile manufacturing requires a number of parts and components, which suggest that automobile industry needs a wide variety of supporting industries and that it has large spillover effects to the other segments of the industry (See 1.2.1).
- Automobile should be a dynamic industry, with the largest and increasing share in the export market in the world.（See 1.2.1）.
- Automobile industry is a typical example of integral manufacturing, which generates high value added (See 1.2.2).
- Automobile industry has recently expanded considerably due to the increasing purchasing power of domestic consumers (See 3.2.1).
- Automobile industry has attracted several foreign investors for over two decades, resulted in rich accumulation of technological know-how (See 3.2.1).
- Automobile industry is the representative of domestic engineering industries (See 3.2.1).
- The Government of Pakistan, Ministry of Industries in particular, places emphasis on the promotion of automobile industry.

It would therefore be wise to designate the automobile industry as a "model sector", which would be designed to demonstrate rationale of Pakistan's industrial strategies.
Ministry of Industries as well as EDB plans to expand motorbike's outputs up to a million units and cars' outputs up to half a million units by 2010. They are of the view that production of these magnitudes would be enough to induce foreign vendors including Japanese vendors to invest more in Pakistan to accelerate development of auto-linked supporting industries. However, it is too optimistic to assume that the automobile production will increase without concrete policy support. Furthermore, even if the targeted production should be achieved, foreign vendors would not necessarily make desired investment. What should be done to enable the automobile industry to grow rapidly in the face of tough international competition? For the purpose of promoting "high value-added manufacturing industries" and formulating "effective industrial policy", the following concrete policy proposals are made:

(1) To create an Automobile Division under the Ministry of Industries
(2) To strengthen business associations
(3) To upgrade technical expertise of vendors
(4) To improve industrial infrastructure

(1) To Create an Automobile Division under the Ministry of Industries

Pakistan suffers shortage of professional bureaucrats who have hand-on knowledge in automobile manufacturing and the world trend of the industry. As the Ministry of Industries is organized in

[7] The automobile industry is composed of manufacturing of cars, motorbike, trucks, tractors, and their parts.

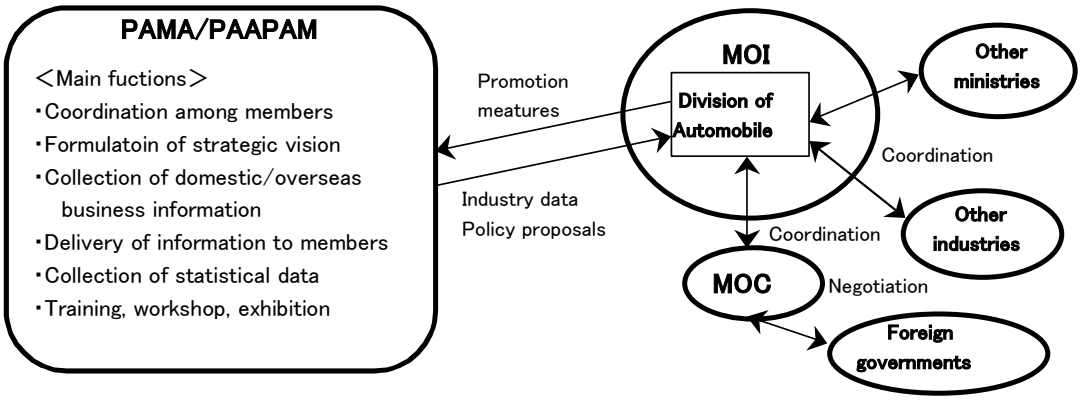
accordance with across-the-board functions, no organization specializes in any individual industry. (Please refer to 3.1.2). EDB under the Ministry of Industries is engaged in promotion of engineering industries including the automobile industry, and, according to EDB, 15 to 20 staff members assigned to jobs related to automobiles virtually act as the industry's spokesperson at inter-Ministerial meetings and on other occasions[8]. For effective promotion, however, the government needs to have not just engineering viewpoints but a variety of other perspectives in relation to inducement of foreign direct investment, trade, marketing, recycling, road networking, urban development, SME promotion, industrial clusters, protection of intellectual properties, industrial standardization and many others. The government therefore needs bureaucrats who understand these tasks comprehensively and interact with related organizations to iron out differences of opinions and interest. Otherwise, industrial promotion would be inconsistent because of undue disturbance caused by cabinet reshuffle and other political incidences. Without consistent policy making, neither an assembler nor a parts vendor would be able to make an investment plan with 3 to 5 year perspectives. The government consequently is advised to create an Automobile Division under the Ministry of Industries, which is expected to know major tasks faced by the industry, share such knowledge with the industry circle, and draw up a road map for the industry's promotion based on a long run prospect. Policies proposed in the map should be put into practice steadily in collaboration with other agencies concerned. This is the way to ensure consistent policy formulation[9].

(2) To Strengthen Business Associations

In the automobile industry, two associations have been founded: PAMA organized by assemblers and PAAPAM by vendors. PAMA has its head office in Karachi, while PAAPAM has offices in Karachi and Lahore.

PAMA is a small organization established by 6 car makers, 6 motorbike makers, 5 truck makers and 3 tractor makers. It used to be merely a socializing forum, and the members often chose to directly deal with the government without asking PAMA to act for them. Since the current Prime Minister was appointed, PAMA has been asked to act on behalf of its members instead of letting each member talk to the government. As a result, PAMA is now in a position to play a larger role. Being large firms, the members pay a relatively large amount of a membership fee: 300,000 Rupees annually. Though the secretariat used to occupy an office space in the chairman's company, it now has its exclusive permanent office space in Karachi. At present, the secretariat is led by CEO, and staffed by 2 analysts and 2 officers. Their duties are to collect industry information, to make a strategic plan, to supply information to the government, and to compile statistics. Among these duties, statistics compilation is of the most urgent needs, because PAMA does not even know exactly how many units of cars are being sold in the country. PAMA is now expected to strengthen manpower of its secretariat and to act as the reliable partner of the government, supplying useful information and helping the government execute its policy.

[5] The industry circle, however, is dissatisfied with the recent change in EDB's role in the automobile industry's promotion.
[6] Since funds are needed for effective execution of the proposed policy, it is suggested that every automobile purchaser be required to buy a stamp equivalent to about 1,000 Rupees so that the revenue could be spent on promotion of the automobile industry on the assumption that the annual sales would amount to 200,000 units, the revenue would total 200 million Rupees. For the sake of transparency in use of the collected funds and accountability, an ombudsman scheme or similar mechanisms may be desirable.



MOI: Ministry of Industries
MOC: Ministry of Commerce

Source: Study Team

Figure 4-5 Expected Roles of Division of Automobile and PAMA/PAAPAM

Meanwhile, PAAPAM is a large organization whose members totaling about 300 are mostly SMEs. Its members' products are auto parts, which have a wide variety, ranging from electronic products and car's interior goods to cast parts. Corresponding to individual lines of products and tasks, PAAPAM has formed 14 task forces, which report to the Managing Committee attended by, among others, the chairman and vice-chairman of the association. Each task force attempts to arrive at a consensus among its members, and comes up with its proposal to be presented to the Committee. Though the secretariat is to assist the task forces, it has only 2 fulltime employees in Karachi and Lahore respectively, who are not enough to make a substantive contribution. Though PAAPAM has a relatively large number of members, the annual membership fee amounts to only 5,000 Rupees per member, which is not enough to form a solid financial basis. Its operations are therefore financed through donations by a few large member companies. Because, generally speaking, the quality of the business association's performance depends on its financial capability, the chairman once made a proposal to raise the membership fee but it was turned down by some members of the Managing Committee. An option to be considered may be to divide the current members into full members who are entitled to vote and quasi-members who are not, in order to enable PAAPAM to collect a larger amount of fees from relatively wealthy companies. In this connection, JETRO and IFC of the World Bank Group are jointly attempting to strengthen PAAPAM's secretariat. Assisted by these organizations, PAAPAM plans to train its members' employees, draft the industry's strategic vision, issue newsletters, arrange product expositions, organize investigation tours abroad and so forth. In future, PAAPAM as well as PAMA is expected to play a more important role to build a consensus among the members and to furnish the government with pertinent information. In liaison with the established Automobile Division, the associations strengthened by such support would realize closer government-industry collaboration in a way that would facilitate drawing-up of the auto industry's promotion policy and its effective execution. Figure 4-4 depicts the roles of the government and the two associations as well as the relationship between them.

(3) To Upgrade Technical Expertise of Vendors

Protected by the Deletion Program in the last three decades, vendors are not eager enough to improve their product quality and delivery accuracy and to cut costs, while they often merely plead assemblers and the government to protect and support them. A few of them, however, have achieved the world class manufacturing standards thanks to a technical tie-up with foreign vendors. Decisive difference is observed respecting mind-set of management and factory technicians as well as skills in their process control between makers with technical support of foreign makers and those without such support. For the purpose of upgrading of technical levels of parts makers, hand-on support by foreign

makers would be most effective. Among manners of such support, formation of a joint venture company with foreign firms would be the best, as a joint venture arrangement leads to both capital contribution and technical support. Pending expanded direct investment by foreign vendors, however, the second best arrangement would be to receive technical support under a tie-up contract. Because such an arrangement is costly and SMEs could not afford, the government is advised to introduce a cost-subsidizing scheme in one way or another in consideration of benefits of such arrangement.

Furthermore, under an ODA program, foreign experts could be sent on a rotation/circuit basis to under-funded firms that could not afford to pay for such a tie-up scheme. Among a variety of ODA programs, JETRO's JEXSA scheme, under which Japanese experts are sent, or JICA's AT&TC program would be so useful that a large number of vendors would benefit from the technical support. Investigation tours by vendors to Thailand or Japan, which JETRO arranges and finances, would also be fruitful. Vendors who have participated in such tours come to fully realize necessity of improving product quality and wish to introduce testing equipment or Japan-made high precision machinery in order to meet assembler's demand. For such a purchase, when necessary, non-ODA financial facilities like supplier's credit may be available.

Moreover, new technical training institutions, such as TMD and TUSDEC, have been established in the country to promote engineering industry under the initiative of the Ministry of Industries. It is expected that these new institutions should be managed as if they were private companies with private management. If this new exercise becomes successful, the possibility to provide donor-funded financial or technical assistance could be considered.

(4) To Improve Industrial Infrastructure

Industrial infrastructure of the country is far less developed than that of the East Asian competitors. Poor infrastructure is the severe bottleneck for the promotion of automobile industry. The supply of electricity in Karachi is particularly unstable. Even inside the industrial estate the manufacturers suffer from the frequent blackout. It is extremely necessary to improve the condition of the power supply at the industrial estate immediately. Moreover, in order to attract foreign investors in the automobile industry, the development of fully serviced industrial estates should be taken into consideration.

4.2.2 Export-oriented SME Cluster Promotion

As indicated in the previous chapter, SMEs account for 99% of total enterprises in Pakistan. Therefore, vitalizing SMEs has prime importance for the industrial development of Pakistan. Considering the fact that most major companies are located in big cities such as Karachi and Lahore, it becomes an even more important task to strengthen SMEs as a means to develop regional economies while sustaining the values and cultures in those areas. Compared with SMEs in advanced countries, however, Pakistani SMEs have much lower levels of capacity in terms of technology, finance, and operational and production management, which makes it difficult to raise the overall level of SME capacity. With this background, the study proposes to focus on 'Export-oriented SME clusters' for the reasons given below.

i) Export orientation

In order for Pakistani products to compete with very strong cost-competitive Chinese products, Pakistani products have to differentiate themselves from Chinese products by their high value or high sophistication. Even though the level of technology is low, value can be added to the product by its better design or quality. However, since the Pakistani domestic market has predominantly been price-driven with little attention paid to quality, more sophisticated markets have to be sought outside of the country, namely export markets. In addition, due to the huge gap in technology levels between Pakistan and advanced countries, collaboration with foreign companies with higher levels of technology is the most efficient way of catching up with and upgrading the technology level of Pakistani SMEs.

ii) Clusters

Clusters have the advantage of economic externality, such as the availability of specialized suppliers

and labor, as well as technology and information spill-overs from new technologies or markets. Collective actions can easily be taken to improve the industry. Since companies are inter-connected and geographically concentrated, public assistance such as the setting up of common facility centers can have more impact than that in non-cluster areas. In the long-run, there is the possibility that SMEs will be able to develop their ability to compete with major companies by effectively and flexibly collaborating with each other. Moreover, 'Export-oriented SMEs' do not need to fight over pieces of pie among enterprises in the same business, so long as Pakistan is regarded as "a small country" defined in the theory of international trade. Each of the fellow manufacturers is theoretically able to increase volume of sales, resulted in win-win situation for all.

There are export-oriented SME clusters in Pakistan such as those in Sialkot and Wazirabad. The government has provided assistance to SMEs and clusters in those areas through various programs. The study does not see any need to propose additional programs. If, however, we evaluate the present programs in terms of promoting export-oriented SME clusters, there are several weaknesses in the programs' direction, as well as impediments in implementation mechanisms. Taking these weaknesses and impediments into account, the study would like to propose the following policy options and future vision for promoting export-oriented SME clusters.

(1) Fostering a favorable environment for SME growth
- ・Removing bottlenecks which hinder SME growth
- ・Strengthening SME support channels

(2) Strengthening Trade Associations
(3) Enhancing the competitiveness of clusters
- ・Assisting individual SME upgrading
- ・Assisting high value addition/innovation

(4) Establishing comprehensive frameworks for regional economic promotion through clusters

(1) Fostering a Favorable Environment for SME Growth

In order for clusters to develop, there should be a sound foundation on which the respective SMEs can grow. From this point of view, the study proposes the following two measures which will benefit not only clusters but also respective SMEs.

Removing Bottlenecks which hinder SME Growth

As indicated in 3.3.2, SMEs face various bottlenecks hindering growth in terms of finance, human resources, government regulations, market distortions and infrastructure. Especially the lack of contract enforcement has resulted in compelling SMEs to resort to excessive self-production or long-term transactions with only limited trusted customers, which weakens linkages within the cluster and thus significantly erodes its competitiveness.

In addition to institutional deficiencies, bottlenecks caused from bureaucratic burdens, such as corruption, frequent and often multiple inspections, and delayed procedures, heavily undermine SMEs' potential for growth. It should also be noted that these burdens are heaviest for middle-sized enterprises, which may cause SME to choose to stay small.

No SME assistance programs can be fully effective unless these bottlenecks are removed. Since there have already been comprehensive policy recommendations made through other studies,[10] these recommendations should be implemented in a timely manner.

Strengthening SME Support Channels

Various institutions exist, both public and private, for offering SME assistance, such as SMEDA, EPB, SME Bank and Provincial Small Industries Corporation. However, utilization of their services has not been satisfactory. One of the reasons for low utilization is that these institutions have limited branch networks, and SMEs have difficulties accessing their services. In addition, the fact that these institutions have specific functions but do not have any linkages with each other discourages SMEs

[10] See World Bank (2003), ADB (2005), Ministry of Industries, Government of Pakistan (2005) 'SME Policy 2006'

from approaching these institutions.

It would be desirable in the long run if these services could be integrated into 'one window' for SME users. In the short term, the study proposes that the following steps be taken to improve accessibility for SMEs[11]:

STEP1: Networking of Relevant Institutions
- Through seminars and workshops, officials from SME-related institutions at different levels are provided with opportunities to understand the roles and functions of different institutions and establish personal linkages with each other.
- Officials dealing with SME customers at SME-related institutions are trained to learn the roles and functions of other institutions.
- A kind of referral system is established to refer SME customers to the relevant institutions according to their needs.
- Websites of SME-related institutions are linked to each other, with these websites providing descriptions of the roles and functions of the respective institutions.

STEP2: One-window for Integrated SME Services[12]
- Following the example of SMEDA, whose regional business centers are located within the premises of local chambers of commerce and industries, other institutions also make efforts to locate their branch or station officials in the local chambers of commerce.
- If the institutions are unable to station officials, information will be provided through brochures and other documents, which will be kept at chambers of commerce for distribution; institutions will also appoint officials to respective chambers of commerce and have them hold regular meetings with the chambers of commerce in charge.
- Portal-sites for SMEs where SMEs can access any information related to SME assistance and regulations will be developed as a cyber 'one-window for SMEs'.[13]

The study proposes that SMEDA should take the initiative in implementing these steps as SMEDA is a main body responsible for SME promotion and has already established the SME Networking Group (SMENG), which can easily be upgraded to implement these steps.

(2) Strengthening Business Associations

Business associations can play a pivotal role in strengthening the competitiveness of both SMEs and clusters, since they are in the best position to identify the exact needs and real views of SMEs in the cluster.

As indicated in 3.1.3, however, the functions of business associations at present are more inclined toward lobbying, especially regarding tax or subsidy issues aiming at favorable treatment. Associations have to develop the capacity to make more concrete and constructive proposals to the Government for their future development based on their study of their own industries and member companies.[14] In addition they have to have the capacity to lead activities for enhancing the competitiveness of their industries by communicating with such organizations as research institutes or other relevant organizations, both domestic and foreign, in order to collect the latest information on markets and technology, and disseminating it thorough seminars or newsletters to their members.

As these associations are supposed to be focal points or operational and management bodies for this proposed assistance and also facilities to strengthen cluster competitiveness, as mentioned below, they

[11] The author got this idea from a discussion with Mr. David Monkman, Chief Executive Officer, Business Support Fund.

[12] In case of Japan, under the Small and Medium Enterprise Agency, there are 9 high-level SME assistance centers, 60 regional SME assistance centers and 106 local SME centers within local chambers of commerce. (http://www.chusho.meti.go.jp/soudan)

[13] There is an official website called 'Industrial Information Network' launched in 2005 by Ministry of Industries in collaboration with Ministry of Science and Technology, SMEDA and UNIDO as business portal site. Although information provided is comprehensive, there are few linkages with other institution. There is no information on technology up-gradation which SMEs are much in need. Besides language used is English and information provided are more intended for potential foreign investors and not for SMEs in Pakistan.

[14] SMEDA (2004) also indicates the necessity of capacity development of trade organization in terms of collecting and providing industry specific information.

have to strengthen their capacity for operation and management.
In order to achieve the above-mentioned objectives, the management of these associations has to be modernized by hiring professional managers to oversee daily operations and ensure financial sustainability. Other options are to set up separate research sections and member-supporting sections.

The principle of competition should be adhered to as the methodology for selecting appropriate candidates for any assistance by the government to the private sector. For instance, the government can support the modernization of business associations by selecting the best proposal through competition. The modernized association under this scheme can be a model for other associations. The government can also facilitate the networking of associations, including model associations, to encourage modernization as well as promote information sharing and mutual learning.

(3) Enhancing the Competitiveness of Clusters

As indicated in 3.3.3, government assistance to clusters lacks focus. In order to strengthen the competitiveness of SMEs, assisting export-oriented clusters whose SMEs have a certain level of competitiveness is effective. For clusters not reaching this level, capacity development of respective SMEs is more important. From this point of view, the study recommends some redirection of assistance policy, focusing specifically on export-oriented SMEs for cluster assistance, while remaining resources should be diverted to capacity development and support for individual SMEs. The policy options proposed below are aimed at export-oriented clusters or clusters with the potential to upgrade to such a state, as explained in 3.3.2.

The principle of competition should be inherent in the selection of SMEs for assistance, with clear and transparent selection criteria established and followed.

Assisting Individual SME Upgrading
For companies at the middle strata and below in those export-oriented clusters where leading companies have the top share in the export market, as in Sialkot, and most companies in other export-oriented clusters, the biggest need is increasing competitiveness in terms of technology upgrading and scale expansion.

Due to the huge technology gap between advanced countries and Pakistan, collaboration with foreign companies with high technology levels is the most effective way of achieving technology upgrading. Providing information on joint ventures or technical collaboration with foreign companies, hiring foreign experts and overseas training[15] should be considered in addition to financial support (subsidies or soft loans) for these kinds of activities.[16] Setting up of common facility centers is also important for complementing the individual efforts.

As for the expansion of scale, financial assistance for new machinery and marketing should be considered. In addition, it is also worthwhile to promote networking within the clusters and encourage joint activities such as joint procurement of machinery and raw materials, joint product development and joint marketing, as UNIDO has already initiated these activities in some clusters. To make these initiatives more sustainable, having a kind of forum where all stakeholders in the cluster can communicate informally would be effective. In this regard, the awareness of stakeholders has to be developed, while the capacity of associations should also be strengthened.

Assisting High Value Addition/Innovation
For those large companies that are subcontracted by foreign companies in export-oriented clusters

[15] TUSDEC is planning to provide 'Senior Experts Advisory Services', which will develop networks of overseas as well as resident Pakistani consultants in various fields to provide consultancy services through the Internet.
[16] The Business Support Fund assisted by ADB intends to address these kinds of SME needs. The Fund will provide assistance to cover half of the expenses required for technology upgrading. TUSDEC is also planning to set up a Technology Development Fund for similar purposes.

such as in Sialkot, the most urgent need is up-to-date information on new products, new technology and new markets. Although these companies have achieved higher technological levels in collaboration with their foreign partners, they do not have control over marketing and new product development, which hinders them from growing further. Since introducing new technology involves risks, newly introduced machinery and equipment are managed under the common facility centers at the beginning and then transferred to training centers after the targeted technology becomes common. Hiring marketing consultants (surgeons for surgical instruments and sports players for sports goods,[17] setting up of R&D institutes for new material and new product development, and collaborating closely with academia are greatly required. Financial support for these kinds of activities should be considered.[18]

SME policy approved in May 2006 does contain various highly commendable policy options for technology upgrading as well as human resource development.[19] The study hopes these policy options will be implemented as effective and promptly as possible.

(4) Establishing Comprehensive Frameworks for Regional Economic Promotion Through Clusters

Many successful clusters in advanced countries have the active involvement of local government. For instance, in Emilia Romagna, Italy, which is famous as the 'Third Italy', a provincial industrial promotion body and its subsidiaries played a pivotal role in the growth of the cluster by providing information for both buyers and cluster companies, and providing technical assistance.20 In Sumida City in Tokyo, local government officials conducted inventory surveys of all SMEs to understand their difficulties and needs when growth of its industries became stagnated.21 This attempt fundamentally changed the mindsets of local government officials and established strong confidence between local industries and government, which became the basis of present comprehensive industrial promotion activities in the City. At present the Industrial Promotion Committee consisting of industrialists, academics and the city governments are regularly discussing industrial issues and future direction of industrial promotion of the city, and Sumida Small and Medium Enterprises Center as well as Sumida Industrial Hall set up by the city government takes the responsibility for implementing industrial promotion policies formulated by the city government.[22]

Local governments have the advantage of close proximity to the companies operating in the area and thus are in a good position to find out the real needs of SMEs. In addition, since they are responsible for the betterment of the living environment for workers, the improvement of education and health services for their families and the improvement of infrastructure, they can incorporate these functions into an industrial promotion strategy in order to achieve comprehensive regional development. With the view of developing regional economic centers which sustain their own value and cultures, social-sector development should be incorporated with economic development.
The role played by District governments in industrial development is minimal at present. They do not have enough capacity to carry out all the necessary functions for industrial development either. In the long run, however, it is desirable for District governments to take a leading role in industrial development. For this purpose, the District governments should develop capacities and strengthen linkages with relevant organizations such as Provincial governments, SMEDA and EPB through existing frameworks to prepare themselves fully for their future role in industrial development.

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[17] For surgical instruments, the employment of medical consultants is planned with assistance from USAID.
[18] There is a 6% subsidy for R&D expenses for textiles and footwear.
[19] The establishment of the Technology Innovation Center as an R&D institutes for SMEs, and the introduction of SME-specific research projects supporting R&D and University and Industry liaison programs under the Ministry of Science and Technology and Higher Education Commission have been proposed. In addition, a part of the training expenses for the acquisition of technology, product, process and managerial skills will be supported if improvement is confirmed. It has also been proposed that power tariffs and tax rates should be reduced if the joint venture projects with foreign companies achieve the set targets.
[20] JICA (2002)
[21] Kamakura (2002)
[22] Ota City Industrial Promotion Organization (http://www.pio.or.jp)

4.2.3 Strengthening Industrial Design and Marketing Capabilities

As discussed in the previous section, it would be the right strategy that industries in Pakistan will focus on producing value added and high quality products to have comparative advantage against products in other countries and to differentiate their product from others, rather than producing low value goods and products. Given this factor, the previous section proposed to have 'Integral' type of production structure instead of 'Module' type. In this context, this section will further discuss value addition and differentiation by strengthening 'Design and Marketing' capabilities of industries. In order to improve the capabilities, public-private partnership approach (PPP) is worth considering adopting.

(1) Strengthening Industrial Designing Capabilities

As we discussed in 2-2, industries, which are facing with sever competition in the world markets such as textile, bedware and apparel, fully recognize the limited potential of developing their products as far as they produce foreign braded products. Therefore, with the strong initiative of business associations, various vocational institutes were established. These institutes formulated the curriculum in response to private industrial sectors' demand and hence, designing become one of the major courses in these PPP based institutes.

The term people in U.S. already knew 'Industrial Design' during 1920s. People in U.S. became aware that good designed products were sold more than bad ones although these are almost same quality. When U.S. entered the era of mass production and mass consumption, manufacturers kept changing product design and bringing out a now model to attract customers in a short period. In order to do this, manufacturers made contracts with graduates from schools of fine arts, architects and craftsmen. This was the first step of exploring industrial design.

In case of Japan, manufacturers already recognized the importance of industrial design during 1950s. The forerunner of Japanese 'Good Design Awards' first started in 1969, and they have given tremendous influence on Japanese industrial design development. The forerunner of Japanese 'Good Design Awards' was set by the Ministry of International Trade and Industry (the former Ministry of Economy, Trade and Industry), and called 'Good Design Product Selecting Institution'. The background was that many Japanese illegal copies of foreign goods and products flew into markets, which consequently became foreign affairs. To prevent these illegal copies, the Ministry started giving incentive to Japanese manufacturers to produce their original design and models and not to copy foreign made goods and products. This product selecting institution called 'G-Mark Institution' covered a certain group of industries at the beginning. Then it has covered all industry sectors including building and public sectors since 1984. In 1998 the G-Mark Institution became privatized, and its name was changed to the 'Good Design Awards'. Promotion of industrial design has permeated not only in U.S., Japan and European countries but also in Korea, Taiwan, Singapore, China[23], South East Asian countries and India. Table 4-1 shows associations and related agencies or projects, which established industrial design associations under concerned ministries in those countries. They are very active doing many different kinds of activities including coordination with other related parties.

In Pakistan, Ministry of Commerce through, Export Promotion Bureau (EPB), established the Pakistan School of Fashion Design (PSFD) in 1995. A famous French designer school helped in setting up PSFD. PSFD introduced curricula of the French designer school, and it has 11 subjects of study; Fashion Design, Draping, Pattern-Making, Sewing, Textile Designing, Computer Aided Designing, Foundation Drawing, Marketing and Merchandising, History of Costume & Fashion, Design Theory, and Textile Technology. The PSFD graduates can easily find jobs after completing the course every

[23] China has already set up three industrial design associations in three different places; China Design Association; Guangzhou Industrial Design Promotion Association and Shanghai Industrial Design Association.

year[24]. It has got good reputation from textile companies. Besides PSFD, There are totally more or less 20 schools in Pakistan related to textile design including the department of textile design technology at Textile Institute of Pakistan.

PSFD has a plan to introduce a furniture design course from 2008. This is due to strong and longtime request from furniture manufacturing factories and companies in Lahore and its suburbs. Lacking of furniture designers is not only a case of Lahore, but it is also there in Peshawar. When the JICA Study Team visited a furniture-manufacturing factory in Peshawar, the owner stressed that they need furniture designers as soon as possible. Moreover, a PSFD lecturer informed the JICA Study Team that they receive many inquiries from companies regarding designers of making posters, brochures and bulletins of companies as well as interior designers for decollating exclusive residences.

Table 4-1 Industrial Design Associations in other Countries

Names	Authorities Concerned	Related Agencies or Projects
China Industrial Design Association	Ministry of Science and technology	Projects: China Industrial Design Weeks / Magazine "Design" / Newsletters "Design Communication" / Design Competition / Design Awards
Shanghai Industrial Design Association	Shanghai Economic Committee	Projects: Members' Training / Negotiation / Communication and Cooperation / Exhibition
National Institute of Design	Ministry of Commerce and Industry	Related Agencies: Industrial Design Centre, Indian Institute of Technology, Mumbai /Industrial Design Centre-Indian Institute of Technology, Delhi / Industrial Design Centre-Indian Institute of Technology, Guwahati
Indonesia Design Center	Ministry of Industry	Related Agencies: Association of Indonesian Graphic Designers /Association of Indonesian Product Designers /Indonesian Society of Interior Designers / Indonesian Fashion Designers Association / Indonesian Packaging Federation
Office of Product Development for Export	Ministry of Commerce	Projects: Seminar on Furniture Design for Export (Furniture, Ornaments for home, Fashion, Toys) / Design Competition/ Design Workshop / Web Magazine of Design
Product Development and Design Center of the Philippines	Department of Trade and Industry	Projects: Product Design and Development (Product Design and Label Design) / Research on Design (Presentation on Product Technology) / Design Promotion (Seminars and Presentations, Exhibition and Dissemination of Design Information)
Malaysia Design Council	Ministry of Science, Technology and Innovations	Projects: Design Awareness Program (Good Design Trademarks and Young Designer's Awards) / Design Learning (Seminar on Design, Design Workshop, Design Exhibition, National Design Conference, Display of Graduates' Products) / Designers' Cooperation (Asian Design Network, International Designers Exchange Program) / Design Forum (MRM Public Relations, Yearbook of Good Design Trademark)

Source: Japan Design Foundation

Thus, Pakistan immediately needs to set out policy of industrial design promotion. The policy must reflect high demand for domestic industrial design development and a situation where Pakistani

[24] Contents of lessons at PSFD are advanced and exams for moving up to the senior class are very tough (PSFD applies French curricula and exam system). Because of these facts, the numbers of graduates are around 25 out of 60 at the entrance.

industries are exposed to severe world competition. The policy must show a way to compete rivals. As shown in Table 4-1, China, South East Asia and India now have associations for advancing industrial design, and organize much different type of projects annually. Pakistan can afford no further delay.

The first industry group to examine and improve their design can be textile industry, especially cloths design, curtain and bed sheets. Probably design of furniture, leather products, residential interiors and computer graphics can be another group of good candidates. Design for domestic products or export products is another important issue where strategies and approaches of design development can be completely different.

(2) Strengthening Marketing Capabilities

The more an industry faces sever competition in global markets, the more it needs to increase the values of the products through improving designs and to improve marketing capabilities of the products. Some industries have already launched on strengthening marketing capabilities. For example, in the case of textile industry, APTMA, which traditionally supported human resource development in the fields of production technology such as processing, engineering and mechanical, established Textile Institute of Pakistan (TIP) in 1999 in order to provide training courses on product development, marketing and designing. TIP has gradually increased the courses and now two courses named "Textile Management and Marketing" and "Apparel Manufacturing and Merchandizing" are organized. In order to train students to be future professionals at the middle management level, "Textile Management and Marketing" course provides a unique blend of courses in business management and textile processes, material and equipment. "Apparel Manufacturing and Merchandizing" provides a combination of business and apparel courses: namely, procurement; quality; production; product development; marketing; management; merchandizing; finance; resource management and sales.

In order to meet the need of Pakistan Bedware Exporters Association, Pakistan Bedware Designing & Training Institute has strengthened marketing courses as well. The institute provides basic knowledge about conversion of units and European markets where different sizes of fabrics require different type of designing. Institute has also strengthened the foreign language courses so that graduate students can directly negotiate with foreign buyers in the future.

(3) Strengthening Public-Private Partnership (PPP)

While industrialists' strong demand for designing and marketing specialists exists, it is costly to train such people in a way that vocational institutions provide students with appropriate teachers/experts who fully understand current market situation, and well maintained, not outdated facilities that are presently utilized by private firms. Under such a situation, it is rather difficult for public vocational schools, which receive nominal tuitions fees and limited budgets, to cope with such strong industrialists' demand. Therefore, it is highly recommended to consider the possibility of adopting the PPP approach to strengthen any private initiatives that try to train necessary people by themselves.

At first step of industrial design promotion, careful study is required to identify what kind of design is premature in which industry. After identification, the study must explore what kind of approaches should be taken. It is strongly stressed there is no easy package type of assistance for supporting industrial design. Government officials must sincerely learn facts from people working at a particular industry. This will be second step. The experiences in Japan, U.S. and Europe clearly show that top-down strategy by government for developing industrial design will be failure. People at the industry know requirement and shortage of design much more and better than government officials. When the Pakistani government plans to establish an industrial design association, some of executive members must be coming from industry sector to directly reflect their needs. In this context, the

government officials pay a lot of attention to the fact that no particular company or group can only get benefit for their decision. Here, the government officials are not decision makers, but must be good facilitators to stop any company searching for its own profit. In this way, public-private partnership can benefit the private sector.

Some PPP based vocational institutions funded by the Export Promotion Bureau and respective business associations give people an impetus for maintaining vocational institutions in a proper manner so that not only students but also industrialists can benefit from the services. These institutions set tuitions fees that are significantly higher than those of government vocational schools in order to cover the operation costs as much as possible. One of the cases is observed in Textile Institute of Pakistan (TIP). TIP facilitates various types of machinery and equipment which are actually used by private firms and employ practitioners/experts who understand the present market situations quite well, by setting significantly higher tuitions fees compared with those of government vocational schools and receiving appropriate financial support from the founder and supporting business association APTMA when it is necessary. Students can utilize these facilities and learn both practical production technology and designing and marketing issues. As this example shows proper collaboration between the government (EPB in this case) and the private sector (APTMA in this case) enables vocational institutions to cope with the changing demand of industrialists and hence to provide skilled human resources to the private sectors in the long run.

Chapter 5

How Should Japan Support Pakistan?

Chapter 5 How Should Japan Support Pakistan?

Located at the western end of South Asia, Pakistan is far from Japan from viewpoints of both geography and feeling of Japanese people. Though the Japanese business circle is somewhat interested in Pakistan because of its neighbor of developing India, there are not many development projects that are hopeful in the eyes of the Japanese. Pakistan is considered by people in the world as a politically risky country. Because Pakistan shares a border with Afghanistan, there is a rumor that Taliban dissidents are still hiding there. Though Pakistan is adamantly engaged in anti-terrorism campaigns in collaboration with the United States, Pakistan tends to be associated with terrorism as exemplified by the suspected terrorist who allegedly attempted to explode an airplane in London. In the past, Pakistan was subject to international economic sanctions because of its nuclear tests, and leaked information on nuclear technology to North Korea. In consideration of such complicated international climate surrounding Pakistan, what should be Japan's strategies and principles in carrying out its ODA programs?

There are three reasons for Japan to support Pakistan's economic development. First, Pakistan potentially offers large markets. Reportedly, Pakistan's population is 160 millions, whose purchasing ability is rising due to the recent steady economic growth. As a number of Japanese companies including auto makers have invested there for the purpose of production targeting its domestic markets, it would be beneficial to both Japan and Pakistan to help Pakistani industries develop by fostering human resources and transferring technology through these Japanese investors. Fortunately, since the current Pakistani administration has continued pro-US foreign policy and consistently market-oriented economic policy, the country's macro-economy has been managed better than under the previous administrations. Consequently, Pakistan is expected to grow steadily and even faster than now thanks to increased investment by foreign-affiliated firms including Japanese makers and make progress in further industrialization.

The second reason is a potentiality of Pakistani entrepreneurs. Pakistan's educational indicators are as bad as the Sub-Sahara regions: the adult literacy rate is only about 40 percent, while university graduates are in short supply. However, the private sector's entrepreneurship is notable in that even SMEs are making international business transactions actively. The domestic business is thriving despite the low literacy rate at 40 percent. As exemplified by the Citizen's Foundation, which is an NPO founded by volunteering business owners/managers, Pakistan and foreign, who have been successful in business. Its objective is to fund primary/secondary schools for low-income people in remote areas. The spirit of self-help evidenced by this Foundation is noteworthy as it demonstrates Pakistani's willingness to bring up human resources, who are to lead the next generation, without relying on foreign donors and aid organizations. Such attitude is greatly conducive to the country's future development. In the context of globalization, international competition will be tougher and Pakistani entrepreneurs will face severer reality. However, if policy is formulated effectively and investment climate including industrial infrastructure turns better, international competition is likely to materialize entrepreneur's potentiality, leading to much faster growth.

The third reason is the geo-political importance of Pakistan. After the 9.11 terrorist attach, the country has become geo-politically important in the world economy. The neighboring two countries, China and India, have achieved rapid economic growth, and the relationship between Pakistan and these two countries becomes ever more intimate. Due to the rapid economic growth, the two countries are increasingly dependent on energy and mineral resources in the Middle East. From the viewpoint of the two countries, Pakistan is located just on the way to the Middle East, which inevitably increases the geo-political importance of the country. The FTA negotiation between Japan and India shall start in January 2007. India is becoming an important economic partner of Japan. In this context, Japan should also pay much attention to the relationship between India and Pakistan. We need to support Pakistan in considering the importance of Japanese connection to India.

As pointed out in Chapter 1, the shortcomings of the Pakistani industrial structure are: (a) its excessive

dependence on textiles/clothing and food processing, as the famous phrase goes, “Food & Fiber System”, and (b) its concentration in low technological and low value adding production. To overcome these problems and to achieve the targets declared in the “Vision 2030”, as was discussed in the previous chapters, the country needs to adopt two industrial strategies: to promote high value adding manufacturing, and to ensure effectiveness of industrial policy. As for more concrete policy measures to help Pakistan step up in these directions, three proposals have been made: (a) to promote the automobiles industry, (b) to build clusters of export-oriented SMEs, and (c) to encourage designing and marketing functions.

These policy measures should be put into practice in order to encourage FDI targeting expanding domestic markets, to accelerate industrialization and economic growth, and to make full use of Pakistani entrepreneur’s potentiality. For these objectives, Japan is in a position to provide a variety of ODA programs for Pakistan. In the terminology used by the ODA Task Force stationed in Pakistan for managing ongoing ODA programs for Pakistan, Japan’s support for economic development is categorized as “Investment”, which is further divided into “Diversification of Manufacturing, Strengthening Competitiveness and Promotion of SMEs” and “Improvement of Investment Climate”. Consequently, Japanese ODA’s future paths are proposed below for each of these two categories.

5.1 Support to Promote Automobiles Industry

(1) Diversification of Manufacturing, Strengthening Competitiveness and SME Promotion

Orientation of the Assistance

Dissemination and strengthening of the integral type manufacturing

In order for Pakistan to succeed in promotion of high value adding manufacturing, the country needs to introduce manufacturing methods of an integral type, encourage their dissemination among a number of makers. The auto industry is a typical sector where which such methods are effective for strengthening competitiveness. The industry can have chances to learn these methods, taking advantage of transactions with Japan-affiliated firms operating in Pakistan. It should be confirmed as an objective of industrial promotion to disseminate manufacturing methods of an integral type, on which various kinds of support should be focused

The technical support for Pakistani automobile parts makers, mainly for mold manufacturing, is currently implemented through their industrial association. In addition to this support, these automobile parts makers have received technical consultancy from the senior volunteer based in the AT&TC (Automotive Testing & Training Center). In order to upgrade technical capability of the parts makers, this direct technical assistance should be kept implemented or even expanded.

Moreover, the transfer of know-how of SME promotion policy of Japan to the staff of SMEDA and automobile parts manufacturers should be beneficial. Especially, using the auto industry as an example, Japan’s experience in forming close linkages between large firms and subcontracting SMEs should be looked into. Japanese experience of public-private partnership in formulating and implementing industrial policies should also be examined.

Preconditions for the Assistance

Rising interest in the integral type manufacturing from the Pakistani side

The business culture of Pakistan should have been based on that of the UK, not on the Japanese one. Unless the Pakistani side get interested in the integral type manufacturing, in which the Japanese are good at, the assistance to disseminate and strengthen this type of manufacturing cannot be effective. If the Pakistani manufacturers prefers the modular type manufacturing, and becomes partners of the Chinese manufacturers, the impact of the above-mentioned assistance should be very limited.

Improvement of Investment Climate

Orientation of the Assistance

Promotion of investment in Pakistan by Japanese automobile parts makers

While a variety of problems stands in the way of promotion of high value adding manufacturing

industries, the most important tasks are to encourage FDI and to improve infrastructure for this purpose. Overcoming these hurdles would smoothly pave the way to solution of other problems. For promotion of automobiles industries, in particular, increased investment by Japanese automobiles makers would be the most effective means, because the industry will generate more value added and economic linkages effects and facilitate technology transfer to local vendors. For the objective titled above, various aid schemes should be synchronized.

Currently, a technical assistance project has been implemented to empower the Pakistan Automobile Parts Manufactures Association and its secretariat. Enhanced ability of the Association to collect information and to propose policies would help promote private-public collaboration in the process of government's formulation and implementation of industrial policy for the automobiles industry. Closer private-public collaboration would hopefully lead to better investment climate by identifying impediment to automobiles industry's investment and finding other useful things.

Furthermore, it is often pointed out that a major hurdle inhibiting FDI by the automobiles industry is inconsistency and unpredictability of policy implementation. Though the Ministry of Industries and EDB need to formulate long-term strategies to promote the automobiles industry, capable human resources and necessary know-how are scarce, and the industrial associations, which should supply relevant information, are not reliable. The government should take advantage of the current increase in demand for automobiles to induce FDI in the automobiles sector. The government is advised to make a clear-cut master plan to regain foreign investors' confidence. Technical assistance is expected to serve this purpose.

Poor industrial infrastructure is another bottleneck to attract investment. In Karachi, where Japanese four-wheeled automobiles makers have made considerable amounts of investment, basic infrastructures such as electricity, water and transportation are inadequate. Because of recent speculative buying, land available for industrial sites has become too expensive and scarce in large cities. To encourage investment by Japanese auto parts makers, construction of industrial estates with good infrastructure is of the most urgent needs. Their construction should promptly be planned.

Preconditions for the Assistance

Stability in politics and public security

Pakistan is considered by people in the world as a politically risky country. Because Pakistan shares a border with Afghanistan, there is a rumor that a number of refugees come into the country with weapons. Public security in large cities, such as Karachi, is not in a good condition. It seems that armed guards are indispensable in shopping as well as good residential areas. In fact, it is reported that armed robber attacked an executive of a Japanese automobile manufacturer. Even the president of the country survived an assassination attempt in December 2003. Poor condition of the public security is surely a very negative factor to attract foreign investment. Moreover, if the country faces political unrest with the demise of the present administration, any promotional activities of foreign investment come to nothing. It is an important requirement that the country should have the political stability and that the condition of the public security should improve.

5.2 Support to Form Export-oriented SME Clusters

Diversification of Manufacturing, Strengthening of Competitiveness and SME Promotion Orientation of the Assistance

Establishment of systems to support export-oriented SMEs

In the Pakistan, export-oriented firms have formed several clusters. Especially, SME owners in Sialkot are traditionally endowed with uniquely innovative entrepreneurship, which has been demonstrated in operation of a dry port, an international airport nearing completion and progress in road network improvement. Because the spirit of collaboration, however, has not been fully materialized in the forms of inter-firm horizontal collaboration or long term subcontracting contracts, industrial cluster's merits have not been fully realized. A variety of promotional policy measures that have targeted SMEs in these regions have not led to formation of industrial clusters, because SME's mutual linkages are

loose. What is to be done in future is to establish systems to execute SME-supporting policy measures in order to sharpen competitive edges of export-oriented SMEs.

Thanks to geographical proximity to industrial sites, the Provincial government is in a vantage position to accommodate industry's needs and implement comprehensive development policy covering its entire territory. At present, the Provincial government does not play an important role for industrial promotion, and is not capable of doing so. The Provincial government, however, is recommended to bridge between local industries and the main policy makers such as SMEDA, EPB and other central/Provincial government agencies.

Moreover, the Chamber of Commerce & Industries as well as other industrial associations should play important roles, because such organizations should represent industry circle and interact with the government in an attempt to strengthen competitiveness of SMEs and their clusters. These organizations are expected to effectively identify member companies' needs and make concrete and constructive recommendation to the government respecting future courses to be taken by the region and industries. Besides, on their initiative, they should collect information, both in Pakistan and abroad, supply the collected information to member companies and carry out activities that will lead to enhanced competitiveness of the whole industries. Consequently, it would be very useful empower the secretariats of these organizations.

Besides, training in SME promotion policy targeting SMEDA's staff and entrepreneurs of export-oriented SMEs should be helpful. The training is designed to educate trainees in situations of industrial clusters and cluster-promoting policy in Japan, and to look into inter-company horizontal collaboration and vertical collaboration such as long-term subcontracting. Moreover, training is provided concerning roles to be played by technical training organizations like industrial technical universities that are carrying out, for example, industry- university-government collaboration to promote clusters.

Preconditions for the Assistance

Institutional improvement in program implementation

The government implements a variety of programs to support export-oriented SME clusters. Their programs, however, do not have a clear focus, and the collaboration among implementing agencies are weak. In order to make the Japanese assistance effective, the institutional settings in implementing support programs need to be improved. Overlapping of programs or lack of accountability should also be avoided.

Improvement of Investment Climate

Orientation of the Assistance

Removal of impediment to SME's growth

In Pakistan, there is a variety of impediment to SME's growth, respecting financing, human resources, government regulations, markets and infrastructure. Among them, failure to perform contracts or make promised payments is adding to transaction costs, because SMEs tend to deal with a small number of reliable partners. Such a non-performing habit constitutes serious impediment to expansion of business by barring closer inter-firm linkages like industrial clusters. Furthermore, the larger grows a company, notably the more damage is likely to be suffered through abuses of discretionary powers or even corruption by civil servants. In order to sharpen export-oriented SME's competitive edges, such impediment must be removed promptly.

Training in SME promotion policy should be useful to remove the impediment. Targeting officers of SMEDA and export-oriented SME's entrepreneurs, training is provided concerning Japan's SME promotion policy. In particular, training is given on SME policy designed to protect SMEs handicapped in business transactions with large firms like the Law to Prevent Delayed Payments for Subcontracting Fees, and their applicability in Pakistan is discussed.

Preconditions for the Assistance

Strong political will for good governance

So long as SMEs suffer from abuses of discretionary powers or corruption by civil servants, any assistance to support SMEs cannot be fully effective. It is highly needed to keep the administrative procedure transparent and to make the administrative discretion minimum. Strong political wills is needed to achieve good governance in the public administration, so that the Japanese assistance could be effectively implemented.

5.3 Empowering in Designing and Marketing
Diversification of Manufacturing, Strengthening of Competitiveness and SME Promotion

Orientation of the Assistance

Generation of more value added through forward/backward application to value chains

Not only export-oriented SMEs described above but also other manufacturers such as makers of bed sheets for industrial use, curtain and other textiles products are also outstandingly export-oriented. Most of them, however, generate only a small amount of value added through processing, making their products with medium-end technology. In order to increase value added, they should carry out not only processing but forward parts of the value chain like designing and R&D as well as its backward parts like marketing. To this end, human resources must be developed with long-term perspectives, but such efforts are often beyond the capability of individual firms. A few industrial associations are developing human resources for this purpose subsidized by the Export Promotion Bureau. Such development activities to be initiated by private industrial associations deserve technical and financial supports.

Besides, system building should be supported for new vocational schools, for which industrial associations have used their initiatives to support their foundation. Checking-and-balancing systems for budget implementation and system building for decision making for school management are particularly important.

Preconditions for the Assistance

Change in the mentality of private entrepreneurs

In the trend of globalization, we cannot expect significant growth in simple processing work based on medium-end technology. However, limited numbers of private entrepreneurs do understand the necessity to increase the value added of their production. Unless private entrepreneurs should be fully aware about this, any support to strengthen designing or marketing capabilities could not make much benefit. Moreover, private entrepreneurs are requested to look for the development of the whole industry from the long-term perspective, instead of the shortsighted self-centered interest.

Annex

Survey Questionnaire

City Code			Sector Code			Company No.		
		-			-			

Japan International Cooperation Agency

PAKISTAN – 2006

MANUFACTURING ESTABLISHMENTS SURVEY

SURVEY QUESTIONNAIRE

2006

Conducted By:

AASA Consulting

Instruction for Enumerator

Introduction & Consent:

Good Morning / Afternoon,

My name is _____ and I am working for AASA Consulting, which is a management consulting firm engaged in conducting social policy and management research for policy-makers. We are currently conducting **a survey of 500 manufacturing units across Pakistan**. Your company has also been selected for this survey.

This questionnaire will take around 45 minutes.

Confidentiality:

Information provided by you will be kept strictly confidential and will be used only for research purposes. Since information provided by you is very important for this study, we hope that you will participate in this study and help us fill this questionnaire. However the participation in this study is voluntary.

At this point, do you have any questions about the survey?

May I begin the interview now?

Signature of Interviewer:_____ **Date:** _____ /____ /_____
(Day) (Month) (Year)

Starting Time: _____
(In 24 Hours)

Note:

1.4 ***Squared No. means to show relevant card to the respondent / interviewee.***

Use the name of establishment wherever in the question found the word establishment

Avoid making blank space in the answer sheets.

The following three-digit codes should be used when the respondents do not provide answers to the relevant questions.

- *DK (don't know): 666*
- *NA (not applicable): 777*
- *REF (refuse to answer): 888*

CONTROL DATA

0

0.1 Name of the firm/establishment: _____

0.2 Name of Company's Head _____

0.3 Name of Contact Person(s)/ Respondent (s)

Interviewee Name(s)	Designation
i. _____	_____
ii. _____	_____
iii. _____	_____

Note: Please take the respondent's visiting card and attach it with the filled questionnaire

0.4 Registered Office Address _____

_____

City _____

Telephone No(s) _____

Fax No(s) _____

Email Address _____

0.5 Site / Other Office Address _____
(If different from Registered Address)

_____

City _____

Telephone No(s) _____

Fax No(s) _____

0.6 Name of Interviewer(s) _____

No. Visits made to acquire complete information _____

Date of Visit(s) i. _____ /_____ /_____ (Day) (Month) (Year) ii. _____ /_____ /_____ (Day) (Month) (Year)

iii. _____ /_____ /_____ (Day) (Month) (Year) iv. _____ /_____ /_____ (Day) (Month) (Year)

0.7 Name of Supervisor _____

GENERAL INFORMATION

1

1.1 Does (name of the establishment visited) belong to any group or group of companies?

1. Yes **2.** No **(If No go to Q 1.6)**

1.2 If yes, which group does (name of the establishment) belong to?

Name of the group / group of companies _____

1.3 Since when has this group been operating in Pakistan?

Year **[__][__][__][__]**

1.4 What is the background of the founder of the group or group of companies?
(Encircle the appropriate answer(s), multiple answers possible)

1. Employee of the same industry
2. Owner of other manufacturing industries
3. Employee of other companies not belonging to the same industry
4. Government official
5. Ex-military official
6. Engineer
7. Banker / financier
8. Landlord / farmer
9. Trader/commission agent
10. Returnee from abroad

Others (Specify: _____)

1.5 What other establishment(s) belong to this group? Where are they located, how many employees does each have, and what are their main product(s)/business?

S #	Name of Establishment(s)	Location	No. of Employees #	Main Product(s)/Business
1.				
2.				
3.				
4.				
5.				

GENERAL INFORMATION

1

1.6 In which year did this establishment start operating in this country?

Year **[__][__][__][__]**

1.7 What is the background of the founder of this establishment?
(Encircle the appropriate answer(s), multiple answers possible)

1. Employee of the same industry
2. Owner of other manufacturing industries
3. Employee of other companies not belonging to the same industry
4. Government official
5. Ex-military official
6. Engineer
7. Banker / financier
8. Landlord / farmer
9. Trader/commission agent
10. Returnee from abroad

Others (Specify: _____)

1.8 What percentage of your establishment is owned by:

a. Private :	i. Domestic	_____%
	ii Foreign	_____%
b. Government		_____%
c. Other (Specify:_____)		_____%
TOTAL		**100%**

1.9 What was the approximate value of total sales of your establishment in 2005?

_____ *thousand Rupees*

1.10 What are your establishment's three main products? And what percentage of your establishment's total sales is represented by each of these main product lines?
(Ask for description and code. For ' code', show lists of ISIC-rev3 4 digits- codes of the corresponding sector where the establishment belongs).

S #	Description	Codes	% of Total Sales
1.			%
2.			%
3.			%

BUSINESS ASSOCIATION(S) — 2

2.1 Are you a member of any of the local business association(s)?
(Encircle the appropriate answer)

1. Yes **2.** No ***(if No, go to 2.12)***

2.2 If yes, please provide the name of business association(s) that you belong to.

2.3 When did you join this association?

2.4 What is the annual membership fee?

2.5 How often do they organize meetings in a year?

S #	Q 2.2	Q 2.3	Q 2.4	Q 2.5
	Name of Business Association(s)	**Join Year**	**Annual Member Ship Fee** (thousand Rs.)	**Meetings in a year** (In Nos)
1.		[__][__][__][__]		
2.		[__][__][__][__]		
3.		[__][__][__][__]		
4.		[__][__][__][__]		
5.		[__][__][__][__]		

2.6 Do you receive any kind of service(s) from these association(s)?
(Encircle the appropriate answer)

1. Yes **2.** No ***(if No, go to 2.10)***

BUSINESS ASSOCIATION(S)

2

2.7 If yes, what kind of service(s) do you RECEIVE from the business association(s)?
(Encircle the appropriate answer(s), multiple answers possible)

2.8 How important are the service(s) you receive from the business association(s)?
1. Very Important **2..** Important **3.** Not Important

2.9 Are you satisfied with the service(s) you receive from the business association(s)?
1. Yes **2.** No

S #	Q 2.7	Q 2.8	Q 2.9
	Service(s) Received	**Importance**	**Satisfied Yes/No**
1.	Providing information about domestic policy and regulations		
2.	Providing information about international regulations and agreements		
3.	Providing domestic market information		
4.	Providing overseas market information		
5.	Delivering your industry's collective views on the policy to the government		
6.	Delivering your industry's collective views to improving the service delivery of public institutions (e.g. utilities, vocational training, R&D)		
7.	Arranging business meetings with local business representatives		
8.	Arranging business meetings with overseas business representative		
	Others (Specify _____)		
	Others (Specify _____)		

2.10 Do you expect any / other service(s) from these (mentioned) business association(s)?
(Encircle the appropriate answer)

1. Yes **2.** No ***(if No, go to 2.13)***

BUSINESS ASSOCIATION(S)

Section 2

2.11 If yes, what kind of service do you EXPECT from the business association(s)
(Encircle the appropriate answer(s), multiple answers possible)

S #	Q 2.11 Service(s) Expected from Business Association(s)
1.	Providing information about domestic policy and regulations
2.	Providing information about international regulations and agreements
3.	Providing domestic market information
4.	Providing overseas market information
5.	Delivering your industry's collective views on the policy to the government
6.	Delivering your industry's collective views to improving the service delivery of public institutions (e.g. utilities, vocational training, R&D)
7.	Arranging business meetings with local business representatives
8.	Arranging business meetings with overseas business representative
	Others (Specify _____)
	Others (Specify _____)

Note: go to 2.13

2.12 If No, why are you not a member of any business association(s)?
(Encircle the appropriate answer(s), multiple answers possible)

1. There is no business association relevant to our business.
2. The services of the business association are not attractive.
3. The role of the business association is limited.
4. The membership fee is too high for its service.
5. We ourselves did not make any effort.

Others (Specify _____)

2.13 Did you contact any Foreign BUSINESS ASSOCIATION(S) in the last two years?
(Encircle the appropriate answer)

1. Yes **2.** No **(if No, go to 3.1)**

2.14 If yes, what are the names of the Foreign Business Association(s) that you contacted and which countries do they belong to?

S #	Name of Foreign Business Association(s)	Country
1.		
2.		
3.		

2.15 Why did you contact foreign business association(s)?
(Encircle the appropriate answer(s), multiple answers possible

S #	Q 2.16
	Reasons for Contacting Foreign Business Association(s)
1.	To obtain market information in these countries
2.	To obtain technological information in these countries
3.	To contact sales agents in these countries
4.	To contact suppliers of raw materials or intermediate inputs in these countries
5.	To find out sources of finance in these countries
6.	To contact potential Joint Venture partners in these countries
7.	To contact potential partner of consigned production in these countries
	Others (Specify _____)
	Others (Specify _____)

2.16 Did you receive any services from the foreign business association(s) you contacted?
(Encircle the appropriate answer)

1. Yes **2.** No **(if No, go to 3.1)**

2.17 Were the services received from the foreign business association(s) effective?
(Encircle the appropriate answer)

1. Yes **2.** No

LINKING TO FOREIGN MARKET

3

3.1 In 2005, what percentages of your establishment's products were:

S #	Sales	%
1.	Sold Domestically	%
2.	Exported Directly	%
3.	Indirectly Exported	%
TOTAL		**100 %**

Note: if No direct export, go to 3.4

3.2 When did you start directly exporting your products? **[__][__][__][__]** year

3.3 Please name three major destinations (includes region(s) / countries) of your direct exports along with their percentage shares in 2005.

S #	Name of Countries	% of Total Export
1.		**%**
2.		**%**
3.		**%**

3.4 Has your establishment received any internationally recognized quality certification (e.g. ISO 9000, 9002, 14,000, CE or sectors specific certifications such as HACCP for food, AATCC for textiles,…, etc.) ? *(Encircle the appropriate answer)*

1. Yes **2.** No **3.** Application is in Process

3.5 Do you receive any services from organizations that promote export?
(Encircle the appropriate answer)

1. Yes **2.** No **(if No, go to 3.12)**

3.6 If yes, from which organization(s) do you receive service(s)?
(Encircle the appropriate answer(s), multiple answers possible)

1. Export Promotion Bureau
2. Export Advisory Cell
3. Export Processing Zone Authority
4. Small & Medium Enterprises Development (SMEDA)

Others (Specify _____)

Others (Specify _____)

LINKING TO FOREIGN MARKET

3

3.7 If yes, what kind of service(s) do you RECEIVE from the above-mentioned organization(s)? *(Encircle the appropriate answer(s), multiple answers possible)*

3.8 How important are the service(s) you receive from the above mentioned organization(s)?
1. Very Important **2.** Important **3.** Not Important

3.9 Are you satisfied with the service(s) you receive from the above mentioned organization(s)?
1. Yes **2.** No

S #	Q 3.7	Q 3.8	Q 3.9
	Service(s) Received	**Importance**	**Satisfied Yes/No**
1.	To obtain market information in foreign countries		
2.	To obtain information about foreign trade fair or exhibition		
3.	To contact sales agents in foreign countries		
4.	To contact potential business partners in these countries		
5.	To seek assistance to prepare the necessary documents for exporting		
6.	To seek advise on custom procedures		
	Others (Specify _____)		

3.10 Do you expect to receive any / other kind of service(s) from the organizations that promote exports?
1. Yes **2.** No **(if No, go to 3.13)**

3.11 What kind of other service(s) do you EXPECT from the organization(s) that promote export? *(Encircle the appropriate answer(s), multiple answers possible)*

S #	Service(s) Expected
1.	To obtain market information in foreign countries
2.	To obtain information about foreign trade fair or exhibition
3.	To contact sales agents in foreign countries
4.	To contact potential business partners in these countries
5.	To seek assistance to prepare the necessary documents for exporting
6.	To seek advise on custom procedures
	Others (Specify _____)

Note: Go to 3.13

3.12 If No, why have you not used any service(s) of organization(s) that promote export?
(Encircle the appropriate answer(s), multiple answers possible)

1. There is no such organization relevant to our business.
2. The services of the organization are not attractive.
3. The role of the organization is limited.
4. The administrative procedures to receive the services are complicated.
5. These organizations are inefficient.
6. We ourselves did not make any effort

Others (Specify_____)

3.13 Do foreign buyers visit your establishment? *(Encircle the appropriate answer)*

1. Yes **2.** No ***(If No, go to Q. 3.15)***

3.14 If yes, how many times in 2005 did foreign buyers visit your establishment and from which countries?

S #	Name of Countries	No. of Visit #
1.		#
2.		#
3.		#
4.		#

3.15 Did your management make overseas business trips for marketing purposes?
(Encircle the appropriate answer)

1. Yes **2.** No ***(If No, go to Q. 4.1)***

3.16 If yes, how many times in 2005 did your management make overseas business trips for marketing purposes and to which countries?

S #	Name of Countries	No. of Visit #
1.		#
2.		#
3.		#
4.		#

LINKING TO FOREIGN TECHNOLOGY

4

4.1 Did you supply your product(s) to foreign firm(s) (JVs, MNCs etc.) in Pakistan in 2005?
(Encircle the appropriate answer)

1. Yes **2.** No ***(if No, go to 4.3)***

4.2 If yes, what percentage of your product(s) has been supplied to the foreign firm(s) in 2005?

_____ % of the total sales

4.3 Have you received any technical support from foreign firm(s)?
(Encircle the appropriate answer)

1. Yes **2.** No ***(if No, go to 4.8)***

4.4 If yes, what kind of support(s) have you received from foreign firm(s)?
(Encircle the appropriate answer(s), multiple answers possible)

1. Up gradation of production process
2. Improvement of quality control system
3. Development of new products
4. Maintenance or repairing of machinery and equipment
5. Elaboration of marketing skill

Others (Specify _____)

4.5 How have you received this assistance?
(Encircle the appropriate answer(s), multiple answers possible)

1. Foreign experts stationed in your establishment.
2. Foreign experts regularly visited your establishment.
3. Foreign experts sometimes visited your establishment (less than 3 times a year).

Other (*Specify*:_____)

4.6 What kind of professional expertise did the foreign expert(s) have (those who visited the establishment)?
(Encircle the appropriate answer(s), multiple answers possible)

1. Engineer
2. Technician
3. Management consultant
4. Marketing advisor

Other (*Specify*:_____)

4.7 How do you view the technical support(s) you received from the foreign firm?
(Encircle the appropriate answer)

1: very useful, **2:** useful, **3:** useless,

4.8 Do you have any technical production license from the original companies?
(Encircle the appropriate answer)

1. Yes **2.** No **(if No, go to 4.11)**

4.9 If yes, which countries have given you the license?

1. _____

2. _____

3. _____

4. _____

5. _____

4.10 What was the royalty payment in 2005?

_____ *thousand Rupees*

4.11 Did you buy any imported machinery or equipment in the last two years?
(Encircle the appropriate answer)

1. Yes **2.** No ***(if No, go to 4.14)***

4.12 If yes, approximately what was the value of these newly imported machinery or equipment?

_____ *thousand Rupees*

4.13 From which countries have you bought these machineries / equipment

S #	Name of Countries
1.	
2.	
3.	
4.	
5.	

4.14 Approximately, what was the total value of your machinery and equipment?

_____ *thousand Rupees*

LEARNING THROUGH RESEARCH & DEVELOPMENT

5

5.1 Does your establishment have any research and development (R&D) department?
(Encircle the appropriate answer)

1. Yes **2.** No **(if No, go to 5.4)**

5.2 If yes, how many staff members currently work for your R&D?

_____ Number of Staff Members

5.3 What was the total expenditure you incurred on R&D in 2005, including staff salaries and other research related expenses?

_____ *thousand Rupees*

5.4 Have you received any technical support from external R&D organization(s) in the last two years? *(Encircle the appropriate answer)*

1. Yes **2.** No **(if No, go to 5.11)**

5.5 If yes, which of the following organization(s) have you collaborated with on R&D?
(Encircle the appropriate answer(s), multiple answers possible)

1. Pakistan Standards & Quality Control Authority
2. PCSIR Laboratories
3. Universities / research centers
4. Institutions established by the business association
Other research institutes (Specify_____)
Other research institutes (Specify_____)
Other research institutes (Specify_____)

LEARNING THROUGH RESEARCH & DEVELOPMENT

5

5.6 If yes, what kind of technical support(s) have you received from the above-mentioned organization(s)? *(Encircle the appropriate answer(s), multiple answers possible)*

5.7 How important were the technical support(s) you received from the above mentioned organizations?
1. Very Important **2.** Important **3.** Not Important

5.8 Are you satisfied with the technical support(s) you received from the above mentioned organization(s)?
1. Yes **2.** No

S #	Q 5.6	Q 5.7	Q 5.8
	Technical Support(s) Received	**Importance**	**Satisfied Yes/No**
1.	Up gradation of production process		
2.	Improvement of quality control system		
3.	Development of new products		
4.	Maintenance or repairing of machinery and equipment		
5.	Elaboration of marketing skill		
6.	Acquisition of internationally recognized quality standards		
	Others (Specify _____)		
	Others (Specify _____)		

Note: If respondent is not satisfied with any of the supports then ask Q. 5.9 else go to 5.10

5.9 If No, what were the reasons for your dissatisfaction?
(Encircle the appropriate answer(s), multiple answers possible)

1. The level of technology is outdated.
2. The level of technology is far advanced.
3. The technical advice is neither practical nor useful for our production.
4. The service is too expensive.
5. The administrative procedures to seek their assistance are too complicated.
6. The institution does not have appropriate technical expertise that meets the requirements of our business

Others (Specify_____)

Others (Specify_____)

LEARNING THROUGH RESEARCH & DEVELOPMENT

5

5.10 Do you expect any / other kinds of technical support(s) from the organization(s) that promote R&D? *(Encircle the appropriate answer(s), multiple answers possible)*

S #	Q 5.10
	Expect to Receive Technical Support(s)
1.	Up gradation of production process
2.	Improvement of quality control system
3.	Development of new products
4.	Maintenance or repairing of machinery and equipment
5.	Elaboration of marketing skill
6.	Acquisition of internationally recognized quality standards
	Others (Specify _____)
	Others (Specify _____)
	Others (Specify _____)

Note: go to 6.1

5.11 If No, why have you not used any organization(s) that support R&D?
(Encircle the appropriate answer(s), multiple answers possible)

1. There is no such organization relevant to our business.
2. The services of the organization are not attractive.
3. The role of the organization is limited.
4. The administrative procedures to receive the services are complicated.
5. These organizations are inefficient.
6. We ourselves did not make any effort

Others (Specify_____)

Others (Specify_____)

Others (Specify_____)

LEARNING THROUGH TRAINING

6

6.1 What is the highest level of education of your top manager?
(Encircle the appropriate answer)

1. Post-graduate degrees
2. BA/BSc (14 or 15th grade)
3. Intermediate FA/FSc (12th grade)
4. Matric (10th grade)
5. Middle (8th grade)
6. Primary (5th grade)
7. Less than the 5th grade

Others (Specify _____)

6.2 What are the percentages of your labor force according to the following education levels?

S #	Education Levels	%
1.	Post-graduate degrees	**%**
2.	BA/BSc (14 or 15th grade)	**%**
3.	Intermediate FA/FSc (12th grade)	**%**
4.	Matric (10th grade)	**%**
5.	Middle (8th grade)	**%**
6.	Primary (5th grade)	**%**
7.	Less than the 5th grade	**%**
TOTAL		**100 %**

6.3 In 2005, how many new permanent employees did your establishment hire?

_____ No. of Employees

6.4 In 2005, how many permanent employees from your establishment left?

_____ No. of Employees

6.5 In 2005, how many casual/contract workers did your establishment hire?

_____ No. of Casual/Contract Workers

6.6 In 2005, how many casual/contract workers from your establishment left?

_____ No. of Casual/Contract Workers

LEARNING THROUGH TRAINING

Section 6

6.7 Please describe your workforce using the following definitions:

Professionals:	Trained and certified specialists outside of management such as CA, MBA, ICMA, engineers, accountants, lawyers, chemists, scientists, software programmers. Generally, Professionals hold a University-level degree. Includes managers (persons making management decisions), but exclude supervisors.
Skilled worker:	Skilled workers lower than management (such as technicians or supervisors)
Unskilled worker:	Persons involved in non technical jobs

		Total	Professionals	Skilled Workers	Unskilled Workers
Total number of workers at the end of 2005					
Of which	**% of female**				
	% of casual/contract				

6.8 Normally, how do you recruit your employees?
(Encircle the appropriate answer(s), multiple answers possible)

1) Professional _____, _____, _____

2) Skilled workers _____, _____, _____

3) Unskilled workers _____, _____, _____

1. Public advertisement (news paper, website, etc.)
2. Executive search firms / head-hunting firms
3. Billboard or other notice boards of the establishment
4. Introduced by schools (including universities, vocational schools, TTC)
5. Through a public employment agency (including NILAT and others)
6. Through a private contractor
7. Through a family connection to this establishment

Others (Specify _____)

Others (Specify _____)

Others (Specify _____)

6.9 On which criteria(s) do you hire your employees?
(Encircle the appropriate answer(s), multiple answers possible)

1) Professional _____, _____, _____

2) Skilled workers _____, _____, _____

3) Unskilled workers _____, _____, _____

1. Educational background
2. Skills obtain through vocational training
3. Skills obtained through previous working experiences
4. Experience
5. Family or other private connection
6. Recommendation from a school
7. Recommendation form a public employment agency
8. Arrangement of private contractors

Others (Specify _____)

6.10 In the last two years, how many weeks did it take to fill your most recent vacancy through external recruitment. *(From identification of need to the joining of person for the position)*

1) Professional _____ (In Weeks)

2) Skilled workers _____ (In Weeks)

3) Unskilled workers _____ (In Weeks)

6.11 In 2005, did you offer any kinds of training (excluding "on the job") to your permanent employees? *(Encircle the appropriate answer)*

1. Yes **2.** No **(if No, go to 6.22)**

6.12 What are the most frequently offered training subject(s)?
(Encircle the appropriate answer(s), multiple answers possible)

1. Technical upgrading
2. Quality control
3. Production management
4. Human resource management (HRM)
5. Marketing
6. Financial management

Others (Specify_____)

LEARNING THROUGH TRAINING

6

6.13 In 2005:

a. What percentage of your total permanent **PROFESSIONAL/SKILLED** employees received in-class (excluding "on the job") training?

_____ %

b. What was the average number of weeks of training for each **PROFESSIONAL / SKILLED** employee?

_____ weeks

c. What percentage of your total permanent **UNSKILLED** employees received in-class (excluding "on the job") training?

_____ %

d. What was the average number of weeks of training for each **UNSKILLED** employee?

_____ weeks

6.14 Have you received any support from vocational or technical training organization(s) in the last two years?

1. Yes **2.** No **(if No, go to 6.21)**

6.15 If yes, which of the following organization(s) have you collaborated with to train your employees? *(Encircle the appropriate answer)*

1. Provincial vocational training schools
2. Technical schools under TEVTA
3. Technical schools under TUSDEC
4. Vocational training schools established by business associations
5. Other private vocational training schools

Other organizations (Specify_____)

Other organizations (Specify_____)

Other organizations (Specify_____)

LEARNING THROUGH TRAINING

6.16 If yes, what kinds of support(s) have you RECEIVED from the above-mentioned organization(s)? *(Encircle the appropriate answer(s), multiple answers possible)*

6.17 How important are the support(s) you received from the organization(s)?
1. Very Important **2.** Important **3.** Not Important

6.18 Are you satisfied with the support(s) you received from the organization(s)?
1. Yes **2.** No

S #	Q 6.16	Q 6.17	Q 6.18
	Support(s) Received	**Importance**	**Satisfied Yes / No**
1.	Retraining of your skilled workers		
2.	Retraining of your unskilled workers		
3.	Elaboration of training system in your establishment		
	Others (Specify _____)		
	Others (Specify _____)		
	Others (Specify _____)		

Note: If respondent is not satisfied with any of the supports then ask Q. 6.19 else go to 6.20

6.19 If not satisfied, what are the reason(s) for dissatisfaction?
(Encircle the appropriate answer(s), multiple answers possible)

1. The level of technology is outdated.
2. The level of technology is far advanced.
3. Their vocational or technical training is neither practical nor useful for our production.
4. Their service is too expensive.
5. The administrative procedures to seek their assistance are too complicated.
6. The organization does not have appropriate technical expertise that meets the requirements of our business

Others (Specify_____)

Others (Specify_____)

Others (Specify_____)

LEARNING THROUGH TRAINING

Section 6

6.20 What kinds of supports do you EXPECT from the vocational or technical training organization(s)? *(Encircle the appropriate answer(s), multiple answers possible)*

S #	Q 6.20
	Support(s) Expected
1.	Retraining of your skilled workers
2.	Retraining of your unskilled workers
3.	Elaboration of training system in your establishment
	Others (Specify _____)
	Others (Specify _____)
	Others (Specify _____)
	Others (Specify _____)

Note: go to Q 6.22

6.21 If No, why you have not used any vocational or technical training organization(s)? *(Encircle the appropriate answer(s), multiple answers possible)*

1. There is no such organization relevant to our business.
2. The services of the organization are not attractive.
3. The role of the organization is limited.
4. The administrative procedures to receive the services are complicated.
5. These organizations are inefficient.
6. We ourselves did not make any effort.

Others (Specify_____)

6.22 In 2005, did your employees have an opportunity to participate in any overseas training program(s)? *(Encircle the appropriate answer)*

1. Yes **2.** No

LEARNING THROUGH TRAINING

6

6.23 Do you have any criteria based on which you promote or increase wages of your employees?
(Encircle the appropriate answer)

1. Yes **2.** No **(if No, go to 7.1)**

6.24 If yes, what are the criteria(s) to promote or increase wages of your employees?
(Encircle the appropriate answer(s), multiple answers possible)

6.25 Please rank in order of importance

1. being the most important

3. being the least important

S #	Q 6.24	Q 6.25
	Criteria	**Rank (Order of Importance)**
1.	Duration of continuous service	
2.	Age	
3.	Educational Background	
4.	Skill	
5.	Performance / Work Results	
	Others (Specify _____)	
	Others (Specify _____)	
	Others (Specify _____)	

LINKING TO LOCAL ECONOMY

7

7.1 How do you consider the FORWARD linkage(s) of your production to the other sectors of the economy? *(Encircle the appropriate answer(s), multiple answers possible)*

7.2 Please rate your views with the following scales.
1: very strong, **2**: strong, **3**: very weak,

S #	Q 7.1	Q 7.2
	Linkage with	**Rate your views**
1.	Agriculture	
2.	Mining and quarrying	
3.	Manufacturing (large)	
4.	Manufacturing (small)	
5.	Construction	
6.	Electricity and gas	
7.	Transport and storage	
8.	Communication (telephone, IT)	
9.	Wholesale and trade	
10.	Finance and insurance	
	Others (Specify _____)	

7.3 What are the main bi-product(s) of your output?

S #	Bi-Product(s)
1.	
2.	
3.	
4.	
5.	

LINKING TO LOCAL ECONOMY

7.4 How do you consider the BACKWARD linkage (of your production to the other sectors of the economy? *(Encircle the appropriate answer(s), multiple answers possible)*

7.5 Please rate your views with the following scales.
1: very strong, **2**: strong, **3**: very weak,

S #	Q 7.4	Q 7.5
	Linkage with	**Rate your views**
1.	Agriculture	
2.	Mining and quarrying	
3.	Manufacturing (large)	
4.	Manufacturing (small)	
5.	Construction	
6.	Electricity and gas	
7.	Transport and storage	
8.	Communication (telephone, IT)	
9.	Wholesale and trade	
10.	Finance and insurance	
	Others (Specify _____)	

7.6 What are the main raw material(s) for your production?

S #	Main Raw Material(s)
1.	
2.	
3.	
4.	
5.	

COMPETITION AND COMPETITVENESS

Section 8

8.1 Who are your competitor(s)? *(Encircle the appropriate answer(s), multiple answers possible)*

8.2 How important are the competitors?

1. Very Important **2.** Important **3.** Not Important

S #	Q 8.1	Q 8.2
	Competitor(s)	**How Important**
1.	Pakistani products made by small and medium enterprises	
2.	Pakistani products made by large enterprises	
3.	Imported products	
4.	Smuggled products	
	Others (Specify _____)	

8.3 How competitive are your products in comparison with those products made by your competitors? Your products are: *(Encircle the appropriate answer)*

1. Strongly competitive
2. Equally competitive
3. Less competitive
4. Uncompetitive

8.4 What are the factor(s) that affect your competitiveness?
(Encircle the appropriate answer(s), multiple answers possible)

8.5 How important are the factors affecting competition?

1. Very Important **2.** Important **3.** Not Important

S #	Q 8.4	Q 8.5
	Factor(s)	**How Important**
1.	Price	
2.	Quality	
3.	Designing / packaging	
4.	Marketing strategy / advertisement	
5.	After service network	
	Others (Specify _____)	

COMPETITION AND COMPETITVENESS

8

8.6 Please Specify if any of the following issues affect the competitiveness of your products.
(Encircle the appropriate answer(s), multiple answers possible)

8.7 If an issue has an impact, please judge its severity as an obstacle on a four-point scale where:
0 = No obstacle **1** = Minor obstacle **2** = Major obstacle
3= Very Severe Obstacle

S #	Q 8.6 Issues	Q 8.7 Degree of Obstacles
1.	Law & Order / Political Unrest	
2.	Poor quality of raw materials	
3.	Unstable supply of raw materials	
4.	Unstable supply of electricity	
5.	Unstable supply of water	
6.	Unfavorable traffic conditions / Public Transport	
7.	Limited skills and education of workers	
8.	High turnover ratio of workers	
9.	Outdated machinery and equipment	
10.	Poor storage facilities	
11.	Limited access to financing	
12.	Regulatory policy uncertainty / Tax Burden	
	Others (*Specify:*_____)	
	Others (*Specify:*_____)	
	Others (*Specify:*_____)	

8.8 How significant is the competition with domestic or foreign competitors?
(Encircle the appropriate answer)

	Not at all significant	significant	Very significant	Don't know	NA
a. Competition with domestic competitors	**1**	**2**	**3**	**666**	**777**
b. Competition with foreign competitors	**1**	**2**	**3**	**666**	**777**
Others (Specify: _____ _____)	**1**	**2**	**3**	**666**	**777**

8.9 How important are each of the following influences on your establishment to improve the competitiveness of your products? *(Encircle the appropriate answer)*

	Not at all important	important	Very important	Don't know	NA
a. Pressure from domestic competitors	**1**	**2**	**3**	**666**	**777**
b. Pressure from foreign competitors	**1**	**2**	**3**	**666**	**777**
Others (Specify: _____ _____)	**1**	**2**	**3**	**666**	**777**

CAPACITY UTILIZATION AND FINANCE

9

9.1 What was this establishment's average capacity utilization over in:
(Capacity utilization is the amount of output actually produced relative to the maximum amount that could be produced with your existing machinery and equipment and regular shifts.)

In 2005: _____ %

In 2004: _____ %

9.2 In 2005, how many hours per week, on average, did your establishment operate?

_____ *(hours/week)*

9.3 What are your establishment's intentions over the next two years?_____

1. Expand capacity. *If expand*, by what percent? _____ %
2. Maintain existing capacity
3. Reduce capacity. *If reduce*, by what percent? _____ %
4. Diversify to some other business (Specify _____)

9.4 Has your establishment undertaken any of the following initiatives in the last two years?
(Encircle the appropriate answer of each option)

	Undertaken	
	Yes	**No**
1. Developed an important new product line	**1**	**2**
2. Upgraded an existing product line with improved/new technology	**1**	**2**
3. Expanded an existing product line with the same technology	**1**	**2**
4. Discontinued at least one product (not production) line	**1**	**2**
5. Agreed to a new joint venture with foreign partner	**1**	**2**
6. Obtained a new licensing agreement	**1**	**2**

9.5 Did you borrow money from financial institutions in the last two years?
(Encircle the appropriate answer)

1. Yes **2.** No **(if No, go to 9.10)**

CAPACITY UTILIZATION AND FINANCE

9

Note: Please select the financial institutions, the purposes, the lending period, and the type of required collateral for each source of your finance from the following alternatives.

9.6 Which financial institutions did you borrow money in the last two years.
(Encircle the appropriate answer(s), multiple answers possible)

1. Banks
2. Non bank financing such as leasing, factoring, venture capital
3. Issue bonds and/or stocks in the stock exchange
4. Informal lenders
Others (Specify_____)

9.7 Purpose of Financing

1. Capital Investment, **2.** Working Capital, Other(Specify _____)

9.8 Lending Period

1. Up to 6 months, **2.** 6 months to 1 year **3.** 1 year to 3 years
4. More than 3 years

9.9 Required Collateral

1. Not required, **2.** Machineries / equipments **3.** Land
4. Building/premises **5.** Corporate guarantee
6. Personal guarantee of CEO / Managing Director
7. Stocks such as raw material, finalized goods etc.
Others (Specify_____)

S #	Q 9.6	Q 9.7	Q 9.8	Q 9.9
	Sources of Finance	**Purposes**	**Lending Period**	**Required Collateral**
1.				
2.				
3.				
4.				
5.				

Note go to Q 9.11

9.10 If you have not borrowed any money from financial institutions then how did you fulfill your financial needs in the last two years?
(Encircle the appropriate answer(s), multiple answers possible)

1. Using retained earnings

2. Borrowing from friends or relatives

Others (Specify_____)

9.11 What were the problems you faced in borrowing money?
(Encircle the appropriate answer(s), multiple answers possible)

9.12 Please highlight the two main problems:

S #	Q 9.11	Q 9.12
	Problems of Borrowing Money	**Two Main Problems**
1.	No institution(s) lend money	
2.	High interest rates	
3.	Not timely lending	
4.	Inadequate lending amount	
5.	Strong pressure to repayment	
6.	Heavy collateral burden	
7.	Combursement / Complicated procedures	
	Others (Specify_____)	
	Others (Specify_____)	
	Others (Specify_____)	
	Others (Specify_____)	

9.13 Please tell us the impact of the earthquake in October 2005 on your business. If any of the following issues are a problem for the operation and growth of your business,

9.14 Please judge its severity on a four-point scale where:
0=*No impact* ***1***=*Minor impact* ***2***=*Major impact* ***3***=*Very Severe impact*

S #	Q 9.13	Q 9.14
	Problems of Borrowing Money	**Two Main Problems**
1.	Demand of the products	
2.	Supply of raw materials or components	
3.	Transportation and logistics	
4.	Supply of electricity	
5.	Supply of water	
	Others (Specify_____)	
	Others (Specify_____)	
	Others (Specify_____)	
	Others (Specify_____)	

End Time: _____
(In 24 Hours)

THE SURVEY ENDS HERE
THANK YOU VERY MUCH FOR YOUR COOPERATION

PRESS RELEASE

The Nation, Islamabad
Tuesday June 6, 2006

JICA to start industrial uplift project

BY OUR STAFF REPORTER

ISLAMABAD - Intending to examine the international competitiveness of the selected manufacturing industries and identify the leading manufacturing sectors, Japan International Cooperation Agency (JICA) has started a new research project "Towards a vision 2030: direction of Industrial development in Pakistan."

The survey shall start in early June and will be completed in two months. "The final report of the study shall be submitted by the consulting team of JICA in mid of October 2006," said a press release issued from JICA.

The study was initiated by Pakistani government's strong intention to accelerate industrial development of the country in the coming decades, which was expressed in "A Vision 2030." One of the important components of the study is comprehensive survey of local manufacturing establishments.

In total, 500 medium and large scale manufacturing establishments in seven major sectors including textiles, clothing, food processing, automobile and its parts, electronics, chemical, construction material and IT) in industrial areas are randomly selected as samples. Then, face-to-face interviews shall be professionally and systematically conducted with CEOs of the establishments.

The focus of the survey includes the establishment of links with foreign capital, technology and market, the level of research and development as well as their economic linkages with other economics sectors.

JICA considers that the survey should be an exemplary valuable source of information to understand the current situation of local manufacturing industries and prospects of Pakistan's industrial development towards 2030.

Dawn, Islamabad
Tuesday June 6, 2006

JICA starts industrial growth research

By Our Reporter

ISLAMABAD, June 5: The Japan International Cooperation Agency (JICA) has launched a new research project to help the government accelerate industrial development in the country.

The study titled "Towards a vision 2030: direction of industrial development in Pakistan" was initiated due to the Pakistani government's strong intention expressed in the Vision-2030, says a press release.

The study intends to examine the international competitiveness of selected manufacturing industries and identify the leading manufacturing sectors that should drive the rapid economic growth.

One of the important components of the study is a comprehensive survey of local manufacturing establishments.

Business Recorder, Islamabad
Tuesday June 6, 2006

JICA starts industrial research project

ISLAMABAD: Japan International Cooperation Agency (JICA) has started a new research project to accelerate industrial development in Pakistan in the coming decades.

According to a statement issued here on Monday that the new research project "Towards a Vision 2030: Direction of Industrial Development in Pakistan" was initiated by JICA on the strong intention of Pakistani government to accelerate industrial development of the country in the coming decades. The study intends to examine the international competitiveness of selected manufacturing industries and identify the leading manufacturing sectors that should drive the rapid economic growth.

Besides, one of the important features of the study is a comprehensive survey of local manufacturing establishment.—PR