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Department of Trade and Industry
Republic of the Philippines

THE MASTER PLAN

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September 1995

Nippon Koei Co., Ltd.
Pacific Consultants International

THE MASTER PLAN STUDY FOR CENTRAL LUZON DEVELOPMENT PROGRAM

FINAL REPORT Volume IV
Sector Report 2 Industry, Tourism and Trade

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Japan International Cooperation Agency

Department of Trade and Industry
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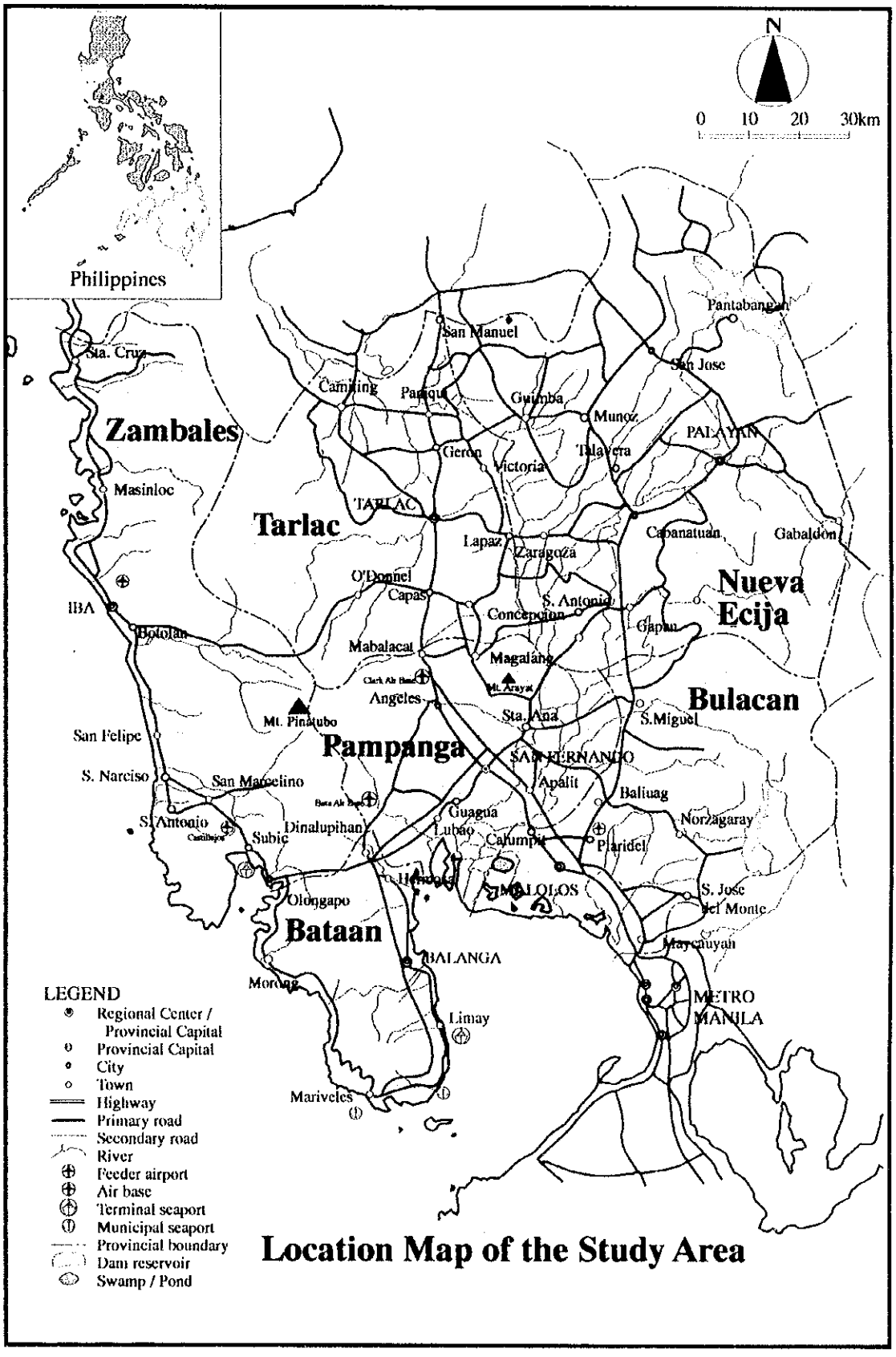

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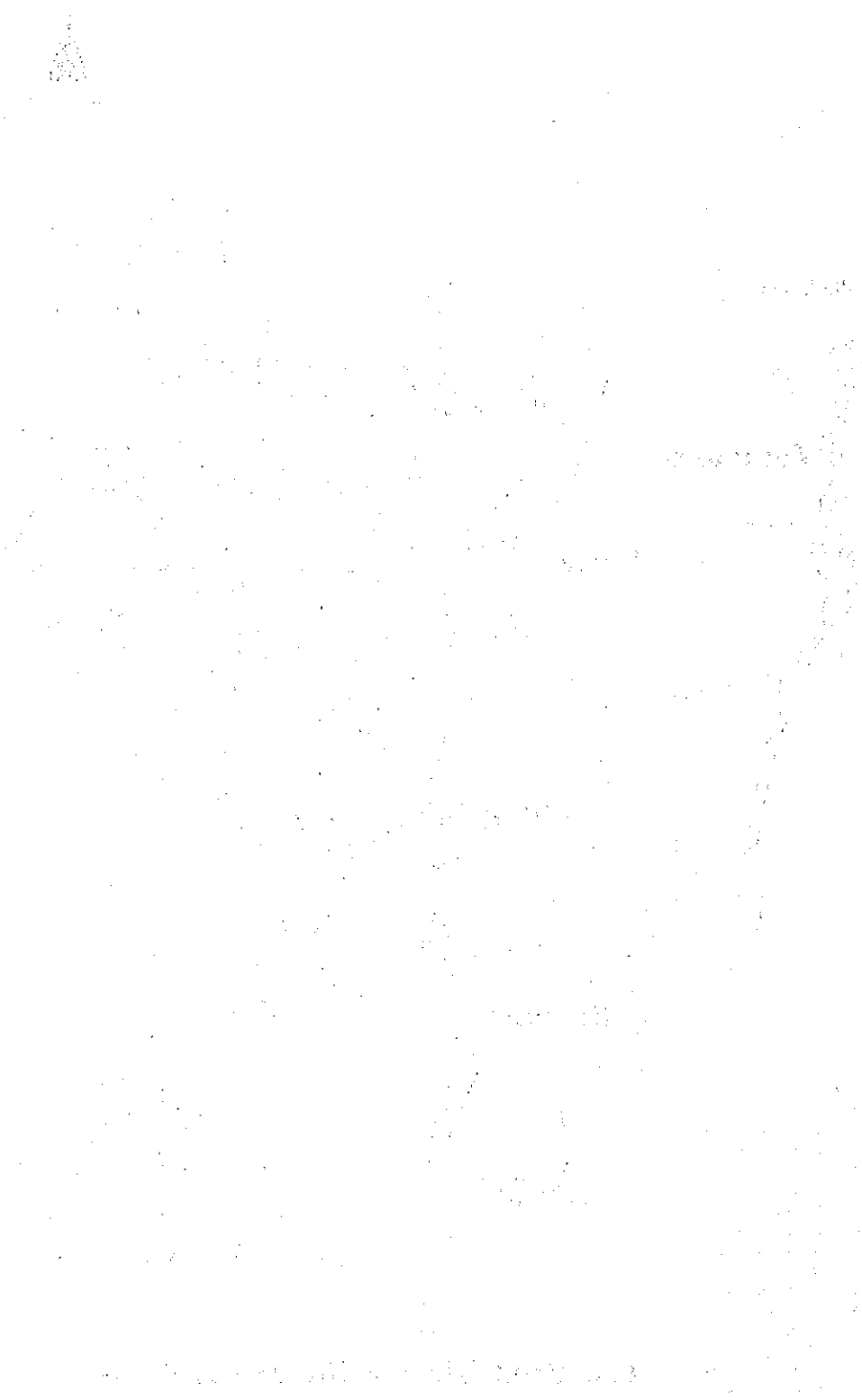

SECTOR REPORT 2
INDUSTRY, TOURISM and TRADE

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List of Abbreviations

AFTA	-	Asean Free Trade Area
APEC	-	Asian Pacific Economic Cooperation
ARCs	-	Agrarian Reform Communities
ASEAN	-	Association of South East Asian Nations
BEPZ	-	Bataan Export Proceesing Zone
BOI	-	Board of Investments
BSWM	-	Bureau of Soil and Water Management
CAR	-	Cordillera Autonomous Region
CDC	-	Clark Development Corporation
CENRO	-	Community Environment and Natural Resources Office
CFPI	-	Cooperative Foundation of the Philippines Inc.
CLDP	-	Central Luzon Development Program
CLSU	-	Central Luzon State University
DA	-	Department of Agriculture
DAR	-	Department of Agrarian Reform
DECS	-	Department of Education, Culture and Sports
DENR	-	Department of Environment and Natural Resources
DILG	-	Department of Interior and Local Government
DOH	-	Department of Health
DOLE	-	Department of Labor and Employment
DOST	-	Department of Science and Technology
DOT	-	Department of Tourism
DOTC	-	Department of Transportation and Communications
DPWH	-	Department of Public Works and Highways
DSWD	-	Department of Social Welfare and Development
DTI	-	Department of Trade and Industry
EIA	-	Environmental Impact Assessment
EPZ	-	Export Processing Zone
EU	-	European Union
GDP	-	Gross Domestic Products
GIS	-	Geographic Information System
GNP	-	Gross National Product
GO	-	Government Organizations
GRDP	-	Gross Regional Domestic Products
GVA	-	Gross Value Added
HAIE	-	Hermosa Agro-Industrial Estate
IAs	-	Industrial Associations
IE	-	Industrial Estate
IRA	-	Internal REvenue Allotment
JICA	-	Japan International Cooperation Agency
LGU	-	Local Government Unit
LMU	-	Land Management Units
LWUA	-	Local Water Utilities Administration
MPC	-	Mount Pinatubo Commission
MSC	-	Manila-Subic-Clark
NAFTA	-	North American Free Trade Area
NCR	-	National Capital Region
NEDA	-	National Economic Development Authority
NFA	-	National Food Authority
NGO	-	Non-Government Organization
NIA	-	National Irrigation Administration
NIC	-	Newly Industrialized Country
NIPAS	-	National Integrated Protected Area System
NSO	-	National Statistics Office

NWRC	-	National Water Resources Council
PENRO	-	Provincial Environment and Natural Resources Office
PO	-	People's Organization
POS	-	Point of Sale
PRRM	-	Philippine Rural Reconstruction Movement
RDC	-	Regional Development Council
RSCs	-	Regional Service Centers
SBMA	-	Subic Bay Metropolitan Authortiy
SEPZ	-	Special Economic and Freeport Zone
SEZ	-	Special Economic Zone
SME	-	Small and Medium Enterprise
SRS	-	Social Reconnaissance Survey

Abbreviations of Measures

Length			Weight		
mm	=	milimrter	mg	=	miligram
cm	=	centimeter	g	=	gram
m	=	meter	kg	=	kilogram
km	=	kilometer	ton (MT)	=	metric ton
mbgs	=	meter below grounf surface	1 cavan	=	50 kilograms
Area			**Volume**		
cm^2	=	square centimeter	cm^3	=	cubic centimeter (cu. m)
m2	=	square meter	lit	=	liter
Km2	=	square kilometer (sq. km)	lb	=	pound
ha	=	hectare	m3	=	cubic meter
			MCM	=	million cubic meter
Other Measures					
%	=	percent	**Money**		
m^3 /s	=	cubic meter per second	P	=	Philippine Peso
lit /s	=	liter per second	¥	=	Japanese Yen
			US$	=	US Dollor

Government of the Philippines Fiscal Year

From January 1 to December 31

Final Report
Volume IV : Sector Report 2

INDUSTRY

1. INDUSTRY

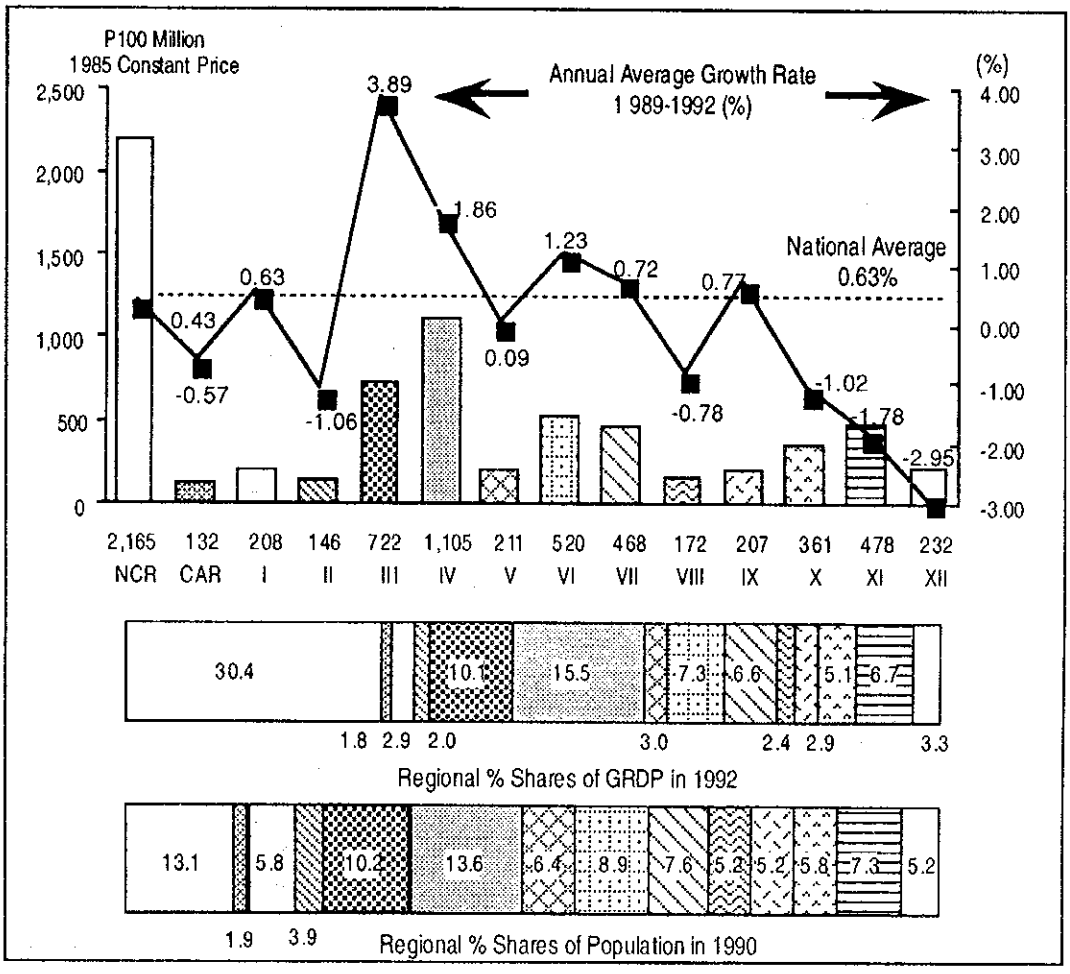
1.1 Background to Sector Study on Industry

1.1.1 Overview of Central Luzon

Central Luzon is socioeconomically a 10% region of the Philippines

Central Luzon corresponds to the entire Region III and comprises the six provinces of Bataan, Bulacan, Nueva Ecija, Pampanga, Tarlac and Zambales. The total area of 18,231 km² and around 6.2 million population in 1990 account for 6.2% and 10.2% of the national total, respectively. The gross regional domestic product (GRDP) was ₱72.2 billion in 1992 or 10.1% of the national total (₱712.7 billion in the 1985 constant price).

GRDP and Its Growth Rate by Region



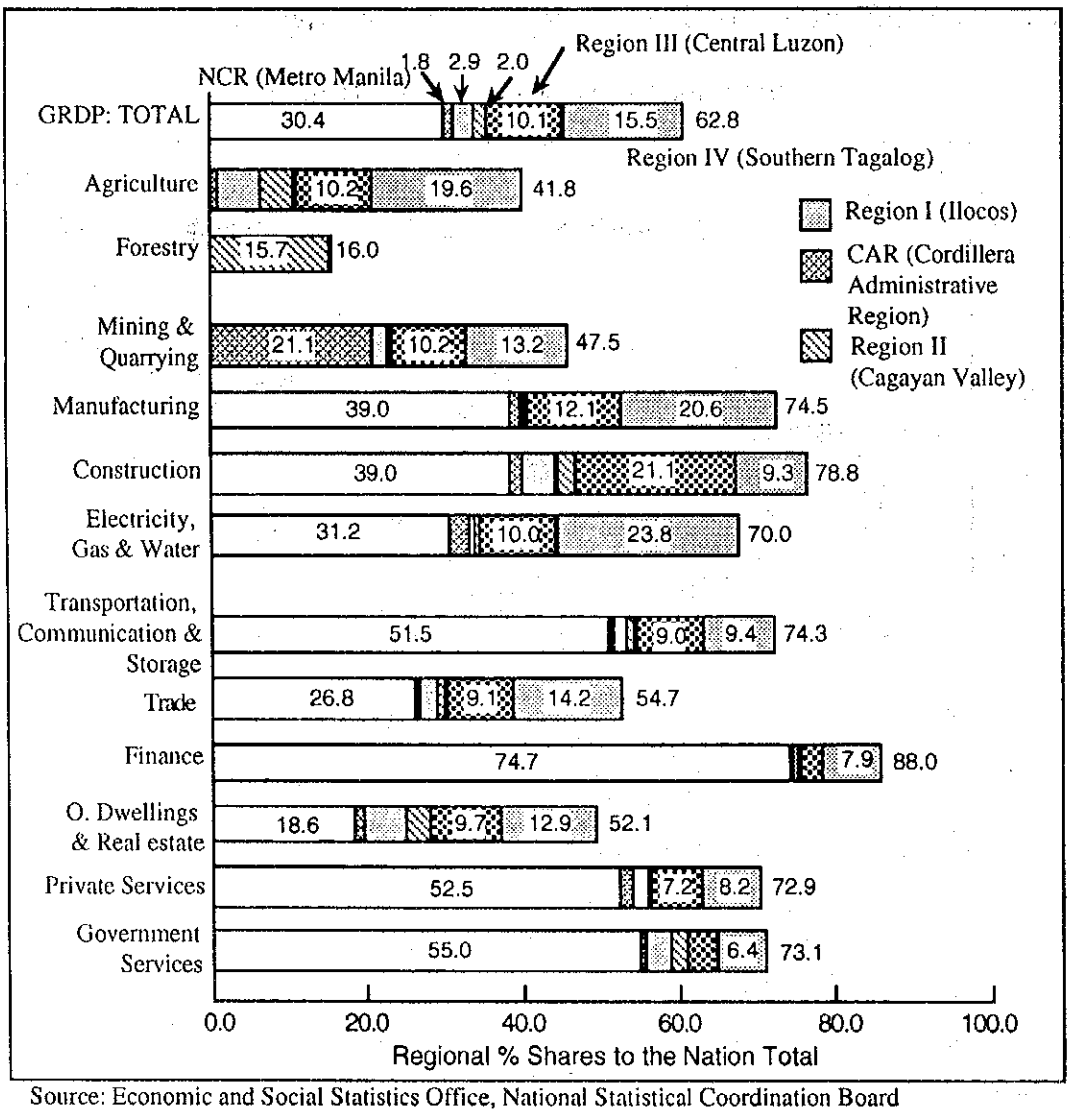
Source: Economic and Social Statistics Office, National Statistical Coordination Board

Central Luzon is a main industrial center and a rice bowl of the Philippines

The industrial sector in Central Luzon constitutes 45.0% of the GRDP (manufacturing 30.1%, construction 10.3% in 1992), 10.3%-points exceeding that of the national average.

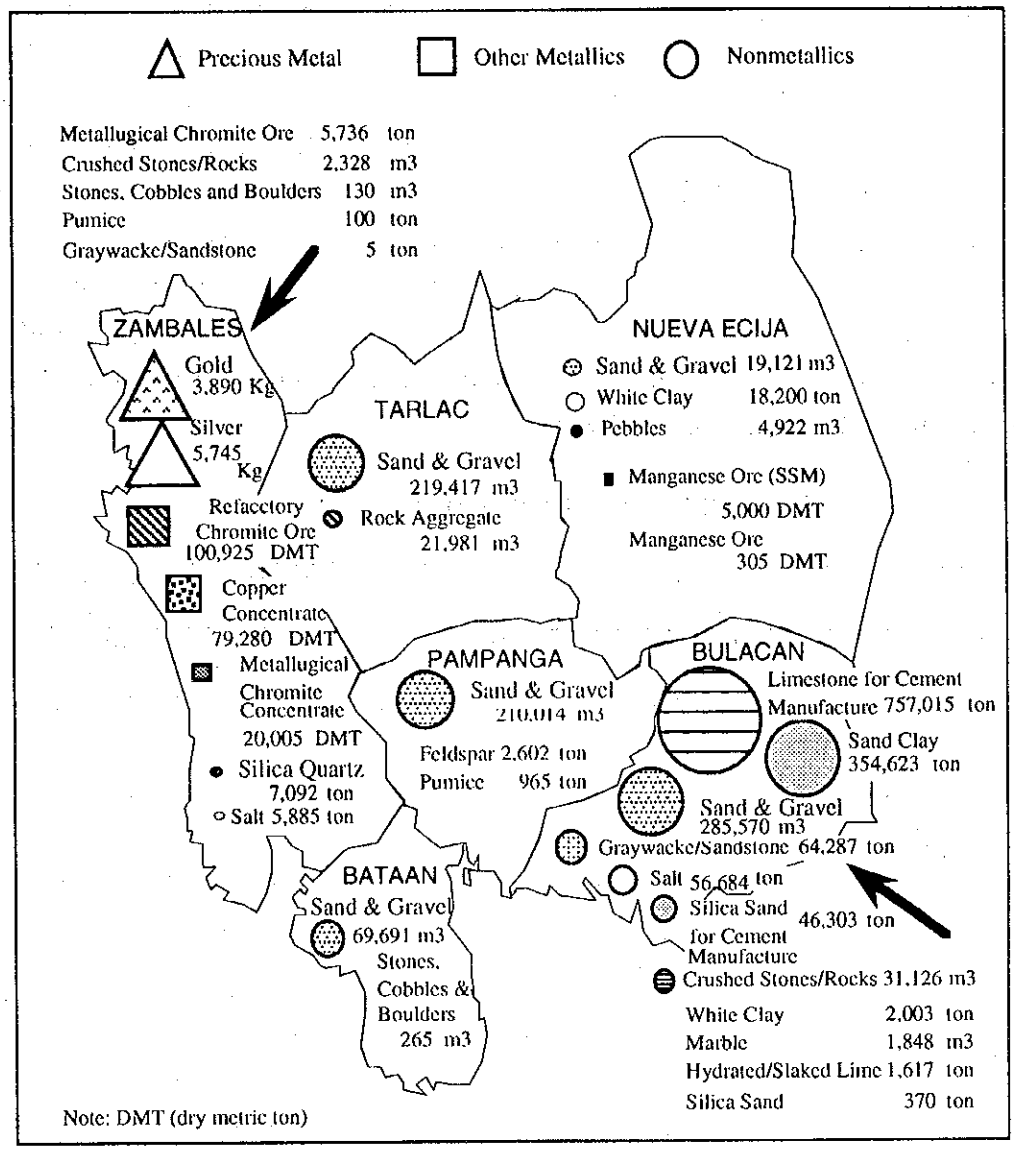
In terms of the region's share to the Country by industry, the construction industry stands out with a share of 21.1% while the manufacturing being 12.1%. The share of mining and quarrying is 10.2%. Central Luzon is the third mineral producers of the Philippines with ₱3.06 billion in 1990 following Central Visayas (₱4.45 billion) and CAR (₱3.86 billion). Gold, silver, chromite, copper, limestone, marble, clay, sand and gravel are the main mineral products of Central Luzon. These indigenous minerals have developed Central Luzon's manufacturing industries such as cement, marble processing, pottery and construction materials.

Regional Distribution of GRDP by Sector: 1992



Source: Economic and Social Statistics Office, National Statistical Coordination Board

Mineral Production by Province: 1990



Source: Mines and Geo-Science Bureau

Central Luzon is also a rice bowl of the Philippines. Agriculture constitutes 22.2% of the GRDP in 1992. The region in fact has highly established agriculture, and its contribution goes beyond rice. Based on the average production over 1988-92, rice production in Central Luzon contributes to 18% of the national production, sugarcane to 10%, mango to 20%, and few vegetables to over 13% of the respective national production such as eggplant (15%), tomato (13%) and mongo (13%). Livestock and poultry inventories in Central Luzon also contribute significantly to the national inventories, led by hog (13%), chicken (15%) and duck (22%). Central Luzon also abounds in fishery resources both in the coastal and inland areas.

Central Luzon is divided into urban and rural provinces

The region is divided into two groups of provinces: the urbanized provinces of Bataan, Bulacan, Pampanga and Zambales, and the rural provinces of Nueva Ecija and Tarlac. Of the total population in 1990, Pampanga is the largest with 1.53 million followed by Bulacan with 1.51 million. Both of these are neighboring provinces of NCR (Metro Manila) and their urban population ratios are 68.7% and 79.9%, respectively. The urban population ratio of Bataan is also high at 74.5% in 1990. In these highly urbanized provinces, industrial workers such as craftsmen, plant and machine operators, and assemblers concentrate and have a significant share in the total workers: 11% in Bataan, 13% in Pampanga and 18% in Bulacan. On the other hand, workers of agriculture, forestry and fishery constitute 51% and 33% of the total in Nueva Ecija and Tarlac, respectively.

Population by Province: 1990

	Central Luzon	Bataan	Bulacan	Nueva Ecija	Pampanga	Tarlac	Zambales
(1) Total Population	6,199,107	425,803	1,505,219	1,312,680	1,532,615	859,708	562,992
% Shares to Region	100.0	6.9	24.3	21.2	24.7	13.9	9.1
(2) Urban Population	3,705,258	317,246	1,202,022	513,054	1,052,204	254,784	365,948
Urban Population Ratio(2/1:%)	59.8	74.5	79.9	39.1	68.7	29.6	65.0
(3) 15 Years and Over	3,835,454	258,925	939,510	806,132	945,004	530,084	355,799
15 Years and Over Ratio(3/1:%)	61.9	60.8	62.4	61.4	61.7	61.7	63.2
(4) Non-Gainful Occupations	1,762,351	111,821	439,675	392,993	453,455	209,892	154,515
(5) Working Population (3-4)	2,073,103	147,104	499,835	413,139	491,549	320,192	201,284
Working Population Ratio(5/1:%)	33.4	34.5	33.2	31.5	32.1	37.2	35.8

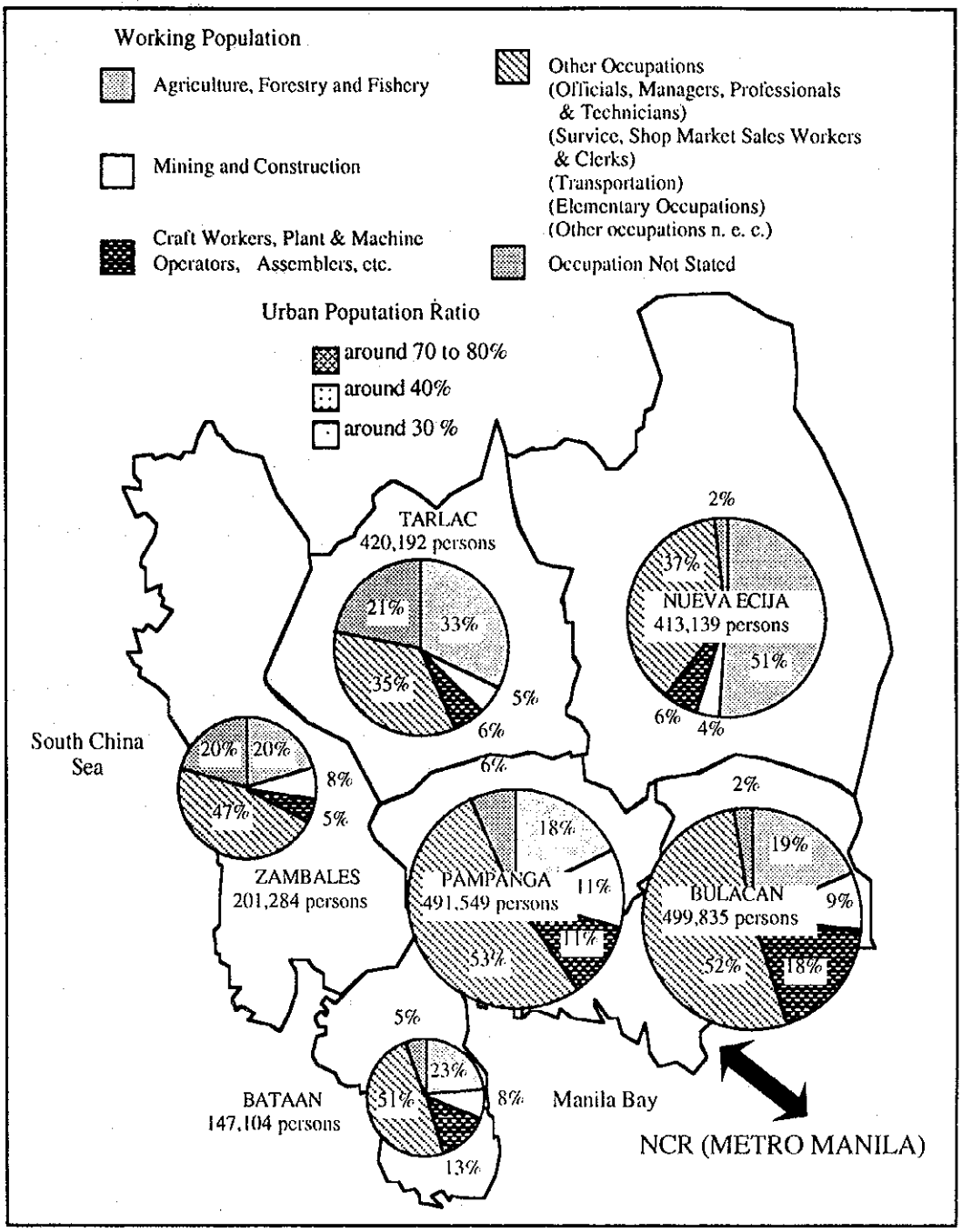
Source : 1990 Census of Population and Housing (National Statistics Office)

Central Luzon is the area affected by the eruption of Mt. Pinatubo in 1991

The eruption has affected seriously the provinces of Zambales, Pampanga, Tarlac and Bataan. Physical damages to the industrial sector amounted to ₱529.6 million or 19.7% of the total (2,688 million) broken down as follows: ₱258.8 million damages to buildings, ₱80.2 million to machines and equipment and ₱190.5 million losses to inventory. Twelve firms stopped their production while five firms moved to other regions from Central Luzon.

Central Luzon, however, recorded a good economic performance during 1989-1992 and posted the highest annual average growth among all the regions, recording 3.89% per annum. The construction industry led this growth at 31.3% growth rate per annum, mainly due to the special procurements caused by the Mt. Pinatubo eruption.

Working Population by Province and by Type of Occupation: 1990



Source : 1990 Census of Population and Housing (National Statistics Office)

The June 1991 eruption of Mt. Pinatubo deposited an estimated 300 million m^3 of lahar or pyroclastic materials that have caused the aftermath damages with rainfalls. However, the Pinatubo ash is used for the production of new products such as tableware, ornament, novelty and the like as well as construction materials.

1.1.2 Evolving conditions surrounding industrial sector

The growth and development of Central Luzon will proceed inevitably in line with the progress of the global economy directly or indirectly resulting in optimum or near optimum allotment of scarce resources among nations. The following trends are going to create new circumstances that will direct the economic and developmental activities in the Philippines.

(1) Agreement of GATT Urguay Round and CEPT of AFTA

The Philippines is a member country of the General Agreements on Tariff and Trade (GATT) and the ASEAN Free Trade Area (AFTA), both of which pursue in principle "Free Trade" among member countries.

Ratification of the Final Act of GATT Uruguay Round

The Philippines will become a member country of the World Trade Organization (WTO) replacing GATT in January 1995 automatically by ratifying the agreement of the GATT Uruguay Round, the principal components of which are as follows.

1) Industrial goods

- Overall tariff cut of at least 33% of the 1986 level,
- Scrap of tariffs by industrial countries (over the next 5-10 years),
  - pharmaceuticals, medical equipment, steel, paper, furniture, toys, beer, distilled spirits
- Tariff reduction by developing countries,
  - semiconductors, computer parts, chipmaking equipment to fall by 50-100%,
  - tariffs on chemicals at 6.5%, and
- Phasing-out of the Multifiber Arrangement (MFA) on quotas of textiles and garments by the year 2005 (a 10 year period) through four stages.

2) Agriculture

- "Tariffication" of all quotas and other quantitative restrictions (QRs),
  - lift of rice import ban: Japan in 6 years, Korea in 10 years,
  - phasing-out of import quotas in US: sugar, dairy products, peanut,

- phasing-out of import ban in the Philippines: corn, coffee, cabbages, onions, potatoes, garlic, feed substitutes, certain meat products, certain species of seeds in commercial quantities,
- phasing-out of quantitative restrictions in the Philippines: all agricultural products except for rice,

- Tariff reduction: by 36% in 6 years (industrial countries), by 24% in 6 years (developing countries),
- Domestic subsidies reduction: by 21% over 6 years (industrial countries), by 13% over 10 years (developing countries: except for irrigation, fertilizer subsidies, credit support and the like)

In addition, the new WTO will promote further decrease in non-tariff barriers to trade, protection of trade-related intellectual rights, streamlining of trade-related investment measures and expansion of service trade.

CEPT program of AFTA

The main mechanism of AFTA is the Common Effective Preferential Tariff (CEPT) program that claims an across-the-board reduction of tariffs on all the industrial and agricultural processed products among member countries. The program in the Philippines covering 4,122 items out of a total of 5,561 items will set to start its implementation from 1996 to 2008 and is outlined as follows:

1) Fast-track program in 15 sectors consisting of 862 items in the Philippines

- 15 sectors: vegetable oil, cement, chemicals, pharmaceuticals, fertilizer, plastics, rubber products, leather products, pulp, textiles, ceramic-glass products, jewelry, copper cathodes, electronic products, and rattan and wooden furniture,
- reduction to 0-5% within 10 years for items (A) currently subject to tariffs of more than 20%
- reduction to 0-5% within 7 years for items (B) currently subject to tariffs of 20% or less.

2) Normal-track program in other sectors consisting of 3,250 items in the Philippines

- reduction to 20% within 5-8 years, 0-5% in the following 7 years for items (A),
- reduction to 0-5% in 15 years for items (B).

In addition to the above CEPT program, AFTA sets some regulations governing the agreement which include the following:

- quantitative import restrictions and non-tariff barriers are to be abolished for items involved,
- member countries may designate some sensitive items and exclude them from the CEPT program for a specified period of time,
- "ASEAN products" are defined as those of which 40% and more value is added within the region, and
- countries where excluded items are designated are not eligible for preferential tariffs on such items.

These recent developments in international trade may have both positive and negative impacts: positive impacts for both importers and exporters depending on imported materials because of "cost-down" and negative impacts for domestic market-oriented agriculture and industries due to the penetration of imported products. It is imperative, therefore, for the Philippines economic sectors as a whole to become competitive both in the domestic and international markets for sustainable growth.

(2) Other institutional changes

Deregulation of foreign exchange rules

The foreign exchange regulation was liberalized almost completely by Circular No. 1389 of the Bangko Sentral ng Pilipinas (BSP) on 13 April 1993. The main changes in business concerns are : free purchase of foreign exchange by non-residents, free buying and selling of foreign exchange by residents outside the banking system, free foreign exchange of export-related receipts, acquisitions or earnings by residents to pesos, unlimited use of foreign currency accounts, and full and immediate repatriation of capital and remittance of dividends, profits and earnings from foreign investments.

Entry of foreign banks

The entry of foreign banks are liberalized by RA 7721 on 18 May 1994. In addition to the four existing banks, new foreign banks will be established by adopting one of the following: 1) by acquiring, purchasing or owning up to 60% of the stock of a local existing bank, 2) by investing up to 60% of the stock of a new banking subsidiary incorporated under laws of the Philippines, or 3) by establishing branches with full banking authority. As of the beginning of July 1994, 26 foreign banks are reported to have submitted applications. The entry of foreign banks will be conducive to increasing in financial resources and improving banking services.

Revival of the Philippine Postal Savings Bank (PPSB)

PPSB has restarted its operation on 21 July 1994 at around 2,000 post offices throughout the Country after more than twenty years. It is expected to contribute to local financing in the countryside especially for farmers and small enterprises.

New Negative List of the Foreign Investment Act (FIA) of 1991

The Foreign Investment Act (FIA) was enacted in 1991 aiming at adjusting the existing Omnibus Investment Code (OIC) of 1987 to make the domestic market open to foreign investments that are not entitled to any preferential measures by the OIC. In the FIA, 100% foreign ownership is permitted not only for "export enterprises" but also for "domestic market enterprises" except for areas included in the Negative List (NL). Recently, an amendment of the FIA is under discussion in the Congress. This amendment is deemed to further accelerate foreign investments in the Country. Major issues contained in the existing FIA are as follows :

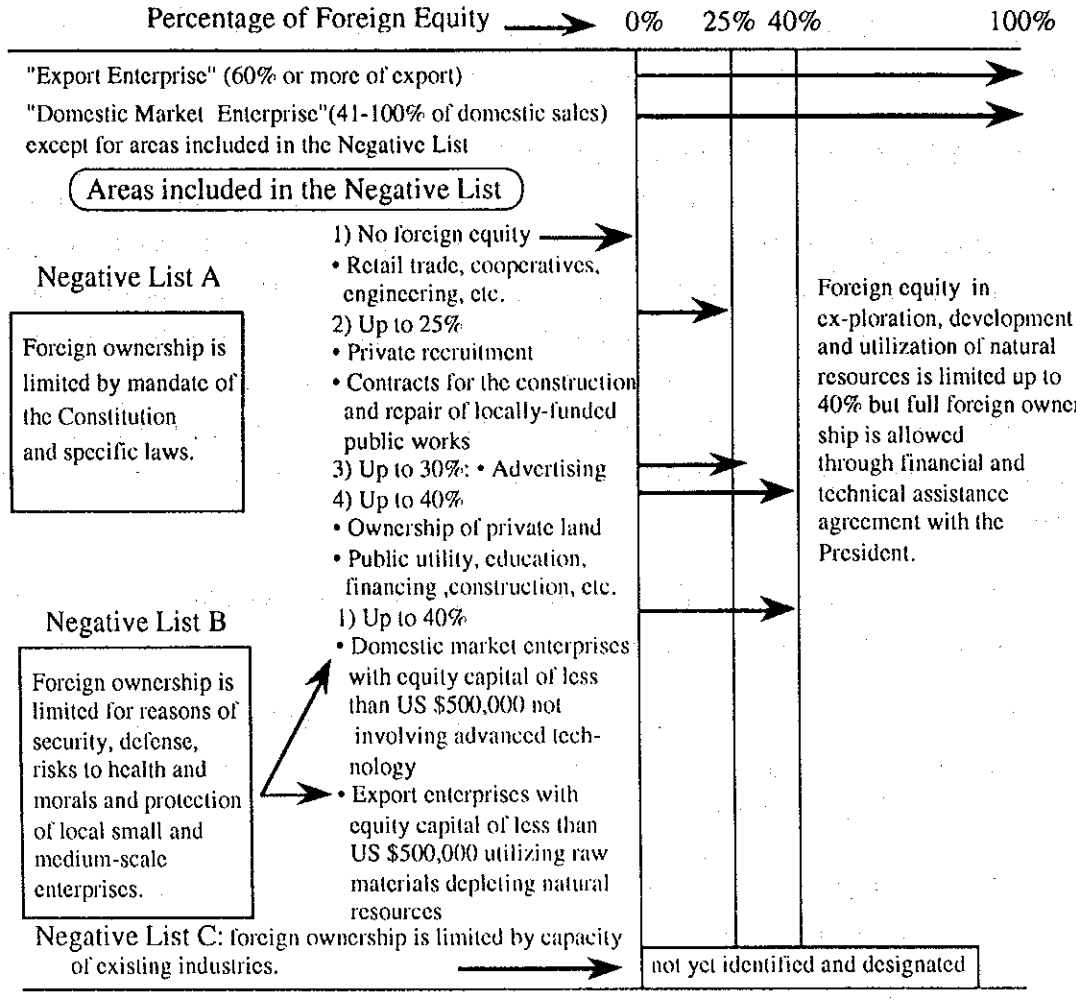
1) deletion of three-year requirement before a domestic market enterprise may change its status into an export enterprise,

2) lowering to US$150,000 from US$500,000 of the minimum equity requirement or foreign-owned domestic market enterprises and export enterprises which utilize local raw materials from depleting resources,

3) deletion of FIA Negative List C which identifies local industries where foreign investors are not allowed to invest or are limited to 40% if allowed , and

4) repeal of provisions pertaining to "strategic industries" which will be included in Investment Priorities Plan (IPP).

Outline of Foreign Investment Act as of 24 October 1994 (partly amended)



Local Government Code of 1991 (LGC 1991): devolution

The LGC 1991 took effect on 1 January 1992. The ultimate objective lies in the transformation of local government units (LGUs) into self-reliant entities and active partners in the attainment of national goals through a more responsive and accountable local government structure instituted through a system of decentralization. Accordingly, not only specified public services and regulatory powers were devolved to LGUs from nine national government agencies (NGAs), but also some powers of LGUs were enhanced. The financial resources of LGUs comprise mainly shares from the national wealth, internal revenue allotment from the national government, locally generated taxes and public investments financed by LGUs. New autonomous LGUs are responsible for their own territorial development, and civil sectors including NGOs are members of the Regional Development Council together with LGUs, NGAs and representations from the Lower House of Congress.

Perspectives of Devolution by the Local Government Code of 1991 (Decentralization)

National Government → DEVOLUTION

Major Responsibilities of the National Government (NG)

- -Formulation of policies and setting of standards and guidelines
- -Provision of technical assistance to LGUs
- -Coordination with LGUs on the discharge of NGA (National Government Agencies) functions
- -Ensuring the participation of LGUs in the planning and implementation of national projects
- -Provision of funding support

Revenue Allotment to LGUs

(1) Shares from National Wealth

- •Mining Taxes, Royalties, Forestry and Fishery Charges
- •Proceeds of the Government-Owned/Controlled Corporations (GOCCs)

(2) Internal Revenue Allotment (IRA)

The IRA after 1995 will be determined in a new law now under discussion in the Congress.

Gross Collection of the Bureau of Internal Revenue (BIR) → in 1994 → 60% for NG, 40% for LGUs

23% Provinces	23% Cities	34% Municipalities	20% Barangay

Ratio of Further Allotment

-Population 50%
-Land area 25%
-Equal sharing 25%

•with 100 or more of inhabitants
-Population 60%
-Equal sharing 40%

•Other Barangay
-a minimum of P80,000 per year

Revenue of LGUs

Locally Generated Taxes

- •Real Property Tax, Business Tax, Forest Products Tax ,Mine Products Tax
- *LGU authority may grant tax exemption privileges.

Services and Powers devolved to LGUs

- DA → -Agricultural extension and on-site research
  -Inspection of food products
- DAR → -Reclassification of agricultural land
- DECS → -School building program
- DENR → -Community-based forestry projects
  -Enforcement of environmental laws
- DOH → -Field health and hospital services
  -Quarantine
- DOT → -Tourism facilities and tourism promotion and development
- DOTC → -Telecommunication services for provinces and cities
- DPWH → -Public works and infrastructure projects funded out of local funds
- DSWD → -Social welfare services
  -Housing projects for provinces and cities
  -Other services e.g. investment support, industrial R&D, etc.

Newly Enhanced LGUs' Powers

- -Full autonomy in the exercise of proprietary rights and management of economic enterprises
- -Authority to secure domestic or foreign grants and ODA without need of NEDA's approval
- -Cooperative undertaking among LGUs
- -Exemption from payment of customs duties for imported heavy equipment

Expenditure of LGUs

Public Investment Finance by LGUs

1) finance capital investment through borrowings,
2) secure credit lines from private banks and lending institutions,
3) issue bonds to finance self-liquidating and income-producing development projects or livelihood projects, and
4) enter into BOT contracts.

(3) Recovery and expansion of the Philippine economy

At the beginning of the Aquino administration in 1986, the Philippine economy started to recover steadily until 1989. However, a series of events which happened during her term resulted in a major setback in the Country's economy. There were coup attempts, the Gulf war in 1990, a drought, a big earthquake and power shortages. It was aggravated by the eruption of Mt. Pinatubo in 1991 and the withdrawal of the US Military Bases. Political stability has been restored under the Ramos administration, and the policy environment of the Philippines in the field of the trade and industry has improved and well placed in the past few years. As a result, the Philippine economy has recovered and is showing signs of further growth.

Recent Macro Economy Indices in the Philippines

		1989	1990	1991	1992	1993	1994 (1st Qtr)
1) Population	thousand	60,100	61,480	62,870	64,250	65,649	
Growth rate	%; p.a.	-	2.35	2.26	2.20	2.18	
2) GRDP Growth rate (1985 constant price)	%; p.a.	6.21	3:04	-0.58	0.34	1.97	3.77
3) Per Capita GNP	US$	700	715	734	847	844	
4) Export	US$, mil.	7,821	8,186	8,840	9,824	11,270	4,960
Growth rate	%; p.a.	10.6	4.7	8.0	11.1	14.7	16.1
5) Import	US$, mil.	10,419	12,206	12,051	14,520	17,625	
Growth rate	%; p.a.	27.7	17.2	-1.3	20.5	21.3	24.6
6) Foreign investment	US$, mil.	1,022	732	507	219	485	556
Growth rate	%; p.a.	-	-28.4	-30.7	-56.8	121.5	195.7
7) International Revenue	US$, mil.	1,417	924	3,246	4,403	5,801	7150 (Apr.)
8) Foreign Exchange Rate		21.72	24.81	27.71	25.51	27.1	26.46 (Jul.8)
9) CPI (1985=100) Inflation		127.6	145.7	172.9	188.3	202.6	
Growth rate	%; p.a.	12.2	14.2	18.7	8.9	7.6	9.8

Major source: Philippine Statistical Yearbook (NSCB for 1989-1992)
International Financial Statistics (IMF)
Other Sources: The Philippine National Accunt CY 1991-1993 and First Quarter (NSCB)
Philippine Economic and Trade Statistics 1993-1994 (BOI), JETRO Monitor May 1994
Key Indicators of Developing Asia and Pacific Countries 1993 (ADB)
Notes: 4) Total for January-May 1994 for "1st Qtr. 1994."
6) Total equity investment based onBOI data.
7) Total reserve minus gold except 1993; data at the end of the year.

According to the latest public release, the Philippine economy registered a rapid expansion in the first quarter of 1994 compared to periods of 1993; GDP grew by 3.8%, exports by 16% (from January to May), foreign investments by 196%. International reserves accompanied

by the increase in exports and remittance inflows from overseas contract workers reached a historical high of US$7,150 million in April 1994. The probable GDP growth of more than 4.5% targeted by the government is being expected for 1994.

1.1.3 Study scope and emphasis

(1) Philippines 2000

The Philippines is gearing up toward becoming a newly industrialized country (NIC) by the year 2000. The "Philippines 2000" or the Medium-Term Philippine Development Plan 1993-98 spells out policies and strategies along this line and sets various targets. In terms of growth, the Plan envisions the following targets, among others.

GDP	7.4% during 1993-98 (at the average annual rate)
GNP per capita	6.7% during 1992-98 (at the average annual rate)
GNP per capita	US$1,500 by the year 2000 (extrapolating the growth rates toward the end of the Plan period, an 80% increase from the present level)

Comparison of Philippines and NICs/ASEAN for Factors Affecting Industrialization

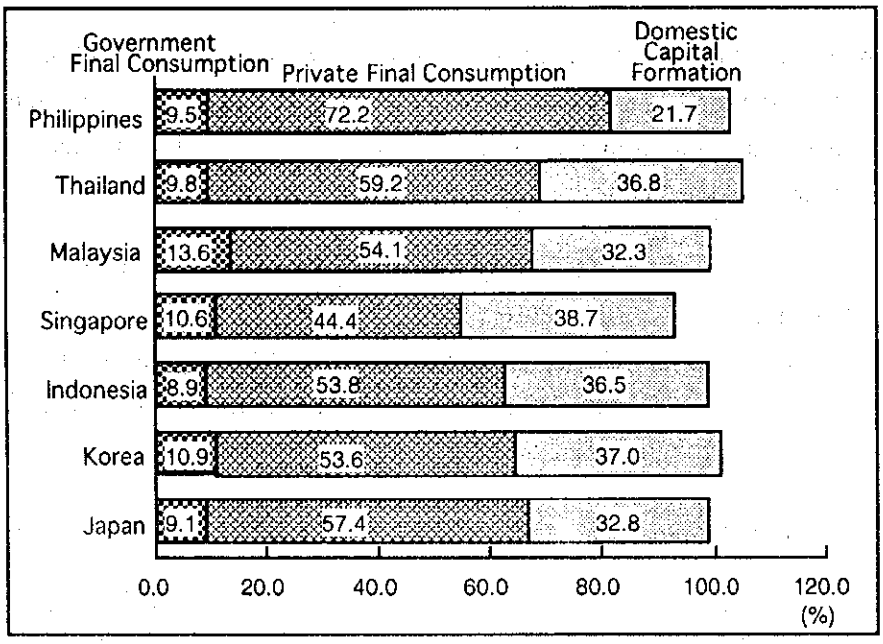
Growth factors in NICs and some ASEAN countries	Recent experiences and trends in the Philippines or Central Luzon
1) Relatively strong government initiative	Decentralization and people-oriented and region-initiative development
2) Effective use of foreign capital including ODA	BOT promotion and insufficient manufacturing reinvestment and technology transfer
3) Promotion of export industry or foreign currency acquisition industry	Weakness in market channel, product competitiveness, and tourism with small market
4) Positive allowance of dual structure such as "Free Zones"	Still insufficient despite the existence of EPZ and SEZF (Special Economic Zone and Freeport)
5) Acceleration of urbanization or urban economy-led development	Overconcentration in Metro Manila but potential area of Subic Bay and Clark Field
6) Stable growth of agriculture and utilization of local resources	Stronger agricultural and possible eco-system approach but low productivity and lack of incentives due to the land tenure situations
7) Strong human resource development	Also strong but more development is needed
8) Overseas Chinese network and relatively common culture	Capital flight especially to the main land China is sighted.

Remark: Asian NICs (Korea, Taiwan, Hong Kong and Singapore), some ASEAN countries (Thailand, Malaysia, Indonesia)

In order to attain these targets, however, the Philippines will take some different ways from those of Asian NICs and some other ASEAN countries. For example, "Peoples Empowerment" is one component of the "Philippines 2000" strategy, institutionally also ensured by the Local Government Code of 1991. Meanwhile, the Philippines has unique status with a large share of 72.2% for the private final consumption and a small share of

21.7% for the domestic capital formation in the composition of the national expenditure. This does not necessarily mean high consumption or high income but rather small capital formation or limited investments, and therefore capital formation including foreign capital is very important for the sustainable industrial development in the Philippines.

Composition of National Expenditure among Selected Countries: 1990



Source: National Accounts Statistics (United Nations)

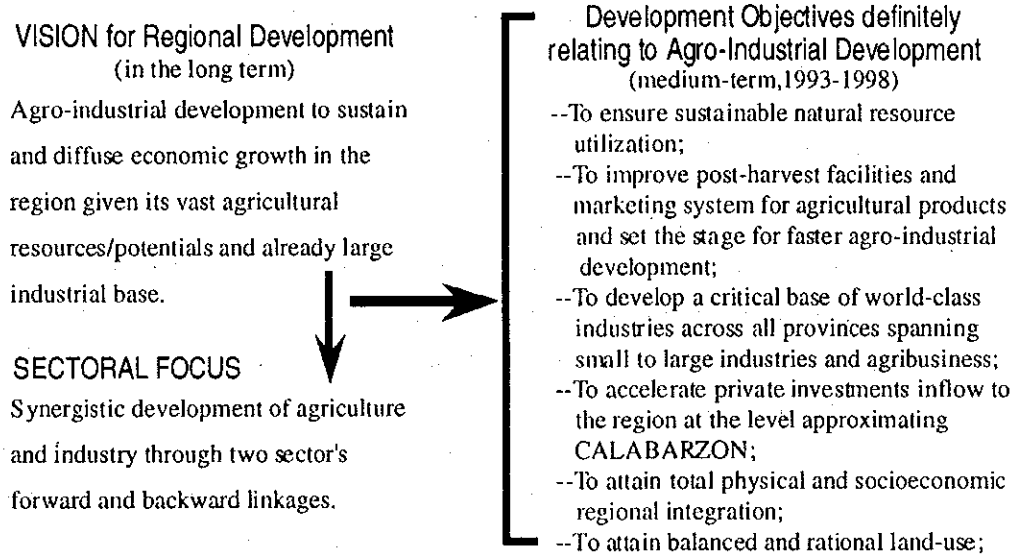
(2) Medium-Term Central Luzon Regional Development Plan (MTCLRDP)

The MTCLRDP (1993-1998) indicated the region's long-term vision for development: namely "Agro-Industrial Development" (AID). This AID aims at synergistic development of agriculture and industry through strengthening of both sectors' forward and backward linkages.

Central Luzon is expected to grow faster than the national average as one of the most prospective regions in the Philippines. The MTCLRDP sets the growth target for the gross regional domestic product (GRDP) of Central Luzon at 8.5% per annum on the average during 1993-98, accelerating from 6.8% in 1994 to 12.3% in 1998. All the economic sectors, including agriculture, industry and services, are expected to grow at rates higher than the respective national averages.

Vision and Objectives of Agro-Industrial Development

REGION III (Central Luzon)



Source: Medium-Term Central Luzon Regional Development Plan 1993-1998

(3) Study scope and emphasis

Objectives of the study

This sector study covers the long-term industrial development focusing on the manufacturing sector in Central Luzon with the target year 2010. The objectives of the study are the following:

1) to prepare an integrated and action-oriented development plan with components of priority projects or programs strategically important for realization of the region's development vision and objectives; and

2) to make recommendations necessary for the effective implementation of the development plan, including investment promotion measures and organizational or institutional arrangements.

Study emphasis is placed on reflecting the regional characteristics and SMEs

The regional characteristics of Central Luzon could be categorized as follows.

1) Geographical position and potentials

- potential heartland of the South East Asia as well as of the Philippines, being situated in the central part of the both;

- area qualified to share the roles already played by NCR (Metro Manila: the comprehensive center of the Philippines), being contiguously located to it; and
- area suitable for the development of process and distribution industries, being located between NCR and the Northern Luzon which are abundant in natural resources.

2) Socio-economic position and potentials

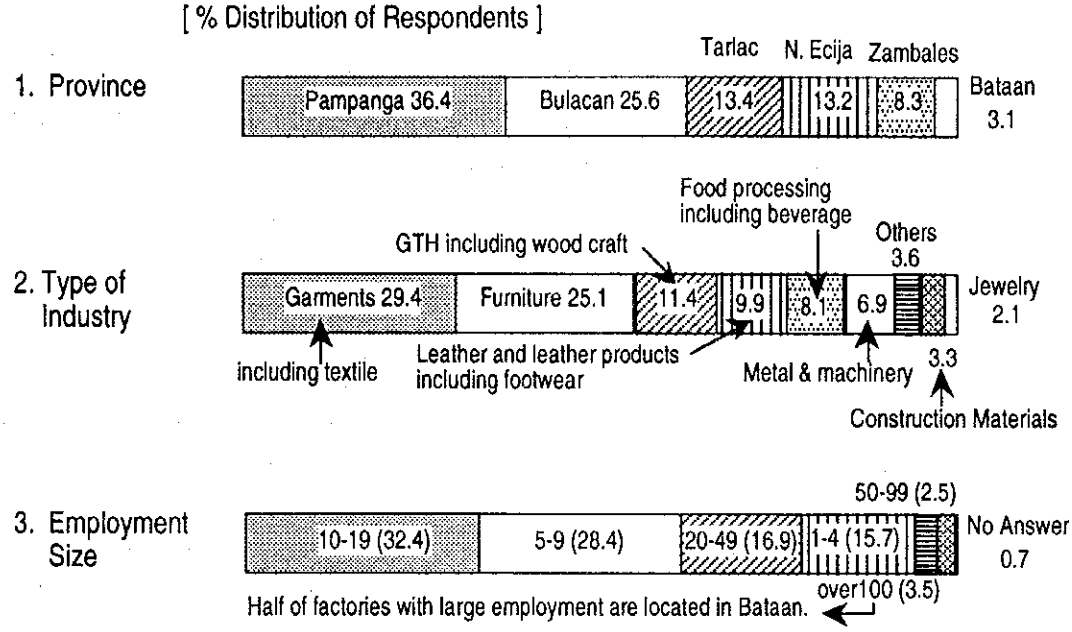
- 10% region of the Philippines comprising the urban and rural provinces;
- 56% area of GRDP in the Philippines along with NCR and Region IV;
- area rich in agricultural and mineral resources;
- main industrial center and a rice bowl in the Philippines, supported also by rich human resources;
- area with two substantial sites suitable for the planned development, namely Subic Bay and Clark Field, former US military bases, being not applicable for the Agrarian Reform Program (land tenure improvement); and
- area affected by the Mt. Pinatubo eruption where rehabilitation and resettlement are urgent issues especially in the short- and medium-term.

The study gives an emphasis also on the small and medium enterprises (SMEs) that need more developmental supports than "large enterprises" and are expected to lead the region's growth as "endogenous or grass-rooted enterprises."

Industrial questionnaire survey

A survey named the "Industrial Questionnaire Survey in Region III" (IQSR3) was conducted as a part of this study from December 1993 to January 1994. The objectives of IQSR3 were to collect basic information concerning actual production activities at the local level and to reflect or incorporate the critical needs/demands presented by the manufacturers into this study and the Master Plan process. The respondents totaled 605 enterprises consisting mostly of SMEs.

Outline of Responded 605 Enterprises to IQSR3



Consultative meetings

Consultative meetings were held over four manufacturing subsectors consisting of garments, gifts, toys and housewares (GTH), leather goods and furniture in June 1994 so as to clarify their problems and effective policy measures between the manufacturers and the Study Team.

1.2 Existing Conditions of Manufacturing in Central Luzon

The performance of the manufacturing sector in Central Luzon has been relatively good with an annual growth rate of 3.15% (1985 constant price) during 1989-1992, compared to the growth rate at the national level (0.17%) and in NCR (Metro Manila: 2.1%). This chapter will clarify the present conditions of the manufacturing sector in terms of spatial distribution and major subsectors, production and export, productivity and structure of value-added generation, regional linkages and factors of industrial agglomeration, technology development and transfer, investment trends, and organizational aspects.

1.2.1 Spatial and subsectors structures

According to the "1988 Census of Establishments," manufacturing in Central Luzon employed a total of 99,904 workers, broken down by province as follows: 44,711 in Bulacan, 20,489 in Bataan, 16,153 in Pampanga, 7,980 in Nueva Ecija, 7,648 in Tarlac and 2,923 in Zambales. The top ten subsectors of Central Luzon in terms of workers are as follows.

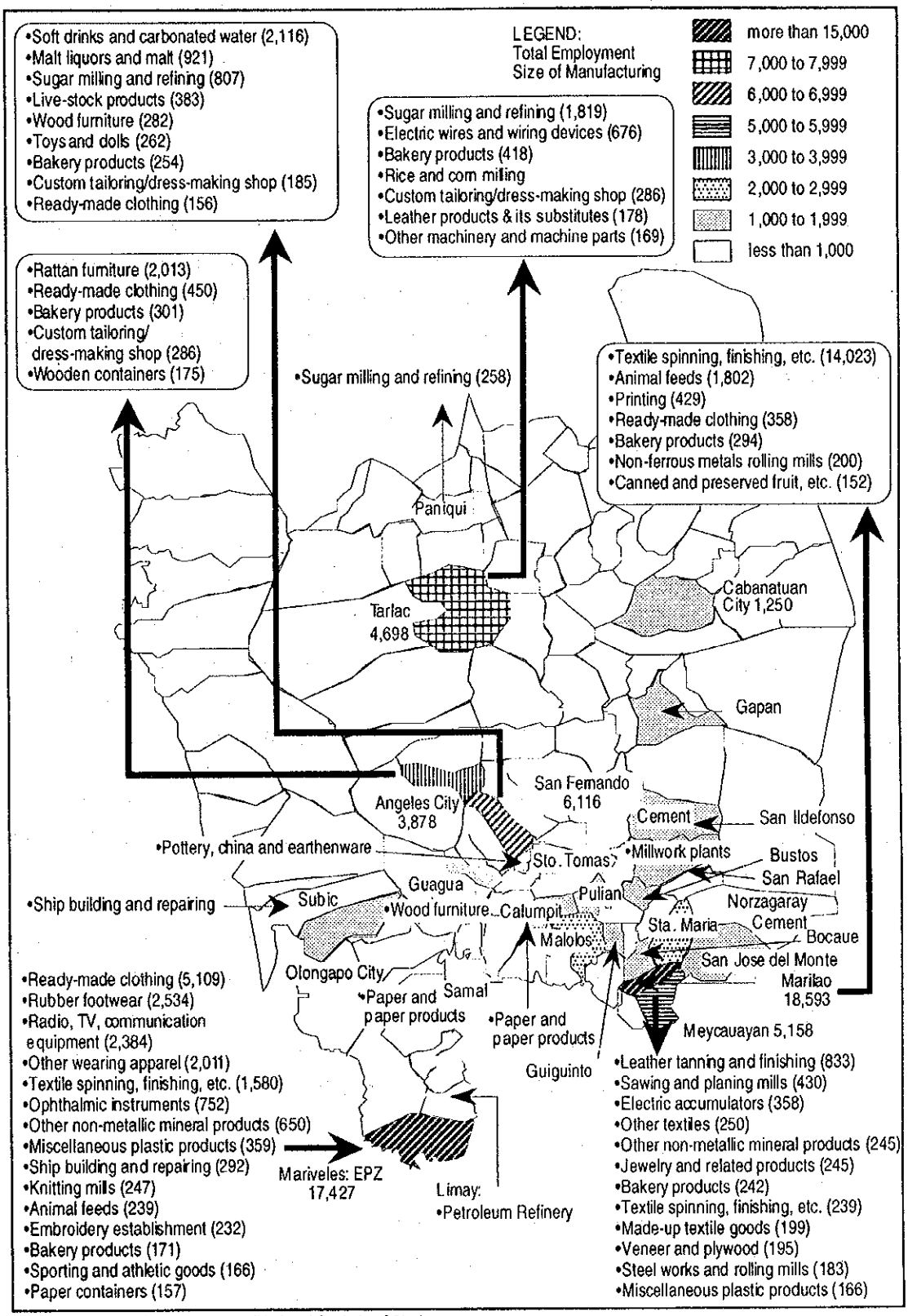
1) Textile spinning, finishing, etc.(16,559): big factories located in Bulacan (14,973)

2) Ready-made clothing (10,624): outstanding in Bataan (5,441) and Bulacan (4,095)
3) Rice and corn milling (7,286): scattered throughout the region but largest in N. Ecija
4) Bakery products (6,970): scattered throughout the region
5) Sugar milling and refining (3,467): largest in Tarlac (2,114) and Pampanga (1,353)
6) Animal feed (2,958): outstanding in Bataan (2,493)
7) Rattan furniture (2,938): concentrated in Pampanga (2,360)
8) Custom tailoring/dress-making shop (2,677): scattered throughout the region
9) Radio, TV, communication equipment (2,676): concentrated in Bataan (2,534)
10) Wood furniture (2,629): outstanding in Pampanga (1,055)

In addition to these subsectotrs, there are big factories or industrial clusters located in Central Luzon as follows (Figure 1.1)

1) Paper and paper products in Samal and Orani-Bataan and in Calumpit-Bulacan
2) Petroleum refinery in Limay-Bataan
3) Cement in Norzagaray and San Ildefonso-Bulacan
4) Steel-rolling mills and electric accumulators in Meycauayan-Bulacan
5) Metal craft in Pampanga
6) Electric wiring devices in Tarlac-Tarlac
7) Ship repairing in Mriveles -Bataan and in Subic-Zambales
8) Soft drinks in San Fernand Pampanga
9) Leather goods, jewelry and marble processing in Meycauayan-Bulacan
10) Pottery, china and earthenware in Sto. Tomas-Pampanga
11) Gift, toys and housewares (GTH) including lantern, fireworks, etc.

Figure 1.1 Spatial Distribution of Manufacturing Subsectors in Central Luzon: 1988



Source: Census of Establishment (National Statistics Office)

Gifts, toys and housewares (GTH) is also one of the major subsectors in Central Luzon, although GTH is not statistically an independent industry as its products are diversified and produced by different industries such as wood products, paper products and miscellaneous products.

1.2.2 Production and export

(1) Production and employment

Table 1.1 shows the manufacturing sector data (all establishment basis but not including informal sector or non-registered enterprises) in Central Luzon compiled from the "1989 Annual Survey of Establishments." The region's manufacturing sector comprised 7,705 establishments that employed 94,681 workers, produced the output value of ₱37.6 billion and generated the value-added of ₱12.78 billion. The region's shares to the national total are as follows: number of establishments 9.9%, workers 7.8%, output value 7.8%, and value-added 7.6%. These data imply that small size factories are relatively dominant in Central Luzon.

By subsector, food and beverage is the top industry in any of these terms, and especially outstanding in value-added generation. Its value-added amounts to ₱7.26 billion or 56.8% of the manufacturing total, some significant portion of which is generated from big soft drinks factories located in San Fernando, Pampanga. Petroleum products are due to a refinery in Limay, Bataan whose actual data are suppressed as it is the only factory. However, its output value is estimated at around ₱11 billion or about 30% of the manufacturing total.

Textiles industry constitutes around 5-10% of the region's manufacturing total in terms of workers, output value (₱1.81 billion) and value-added. There are eleven large establishments of textiles including spinning and finishing plants located in Central Luzon .

Wearing apparel, mainly comprising custom tailoring/dress-making and ready-made clothing or garments that are also major subsectors in Central Luzon, constitutes 19% of the manufacturing total in terms of the number of establishments and workers, more or less 3.5% (₱1.32 billion) for the output value and 5.5% of the value-added.
The other major subsectors in Central Luzon are classified by the output value as follows:

less than ₱10 million	:	footwear (except for rubber footwear)
less than ₱100 million	:	pottery, china and earthenware
Less than ₱1 billion	:	leather goods, furniture.
₱1 - 2 billion	:	paper and paper products, cement

Table 1.1 Manufacturing Subsectors in Central Luzon: 1989

	Establi-shment	Workers	Value of Output (in million pesos)	Value Added	% Shares to Nation: Establi-shment	Workers	Value of Output	Value Added
ALL INDUSTRIES	7,705	94,681	37,617	12,780	9.9	7.8	7.8	7.6
311-314 Food & Beverage	3,145	26,742	13,742	7,259	9.2	8.1	9.6	13.9
321 Textiles	63	9,047	1,810	620	3.5	8.7	7.3	7.9
322 Wearing Apparel except Footwear	1,505	17,853	1,322	697	10.8	8.0	5.0	4.9
323 Leather & Leather Products	145	2,084	169	75	44.6	21.8	19.9	16.7
324 Footwear	37	238	8	4	1.7	1.1	0.6	0.7
331 Wood Products	307	5,687	1,168	494	11.3	9.1	9.9	10.6
332 Furniture & Fixtures	616	6,308	637	224	13.2	10.6	11.9	9.6
341 Paper and Paper Products	10	1,890	2,019	590	3.2	11.5	17.4	15.2
342 Printing and Publishing	123	1,062	76	34	5.8	3.3	1.2	1.2
351 Industrial Chemicals	6	119	284	57	3.7	1.1	1.8	1.2
355-6 Rubber & Plastic Products	34	3,319	616	225	4.6	6.9	3.9	4.3
361 Pottery, China and Earthenware	71	473	12	8	9.6	7.4	1.3	1.4
363 Cement	4	1,193	1,276	437	23.5	19.8	17.7	14.1
362 & 369 Other Non-Metallic Mineral Products including Glass Products	346	4,975	875	570	15.4	17.3	12.3	14.1
372 Non-Ferrous Metal Basic Industries								
381 & 386 Fabricated Metal Products including Metal Furniture & Fixtures	807	2,046	100	49	12.4	4.5	1.0	1.3
382, 383 & 385 General & Electrical Machinery and Precision Instruments	202	5,947	1,128	674	9.7	6.7	2.9	5.1
384 Transportation Equipment	33	903	247	139	6.7	4.8	1.3	3.1
390 Other Manufacturing Industries	218	3,386	472	263	11.9	12.8	13.1	17.0
314, 352-354, 371 Tobacco, Other Chemical & Petroleum Products, and Iron and Steel Basic Industries	33	1,409	11,657	361	5.1	2.1	9.4	1.0

	% Shares by Type of Subsectors: Establi-shment	Workers	Value of Output	Value Added	% Shares of Small Establishment: Establi-shment	Workers	Value of Output	Value Added
ALL INDUSTRIES	100.0	100.0	100.0	100.0	87.6	29.4	9.0	12.8
311-314 Food & Beverage	40.8	28.2	36.5	56.8	89.9	40.9	13.2	10.4
321 Textiles	0.8	9.6	4.8	4.9	57.1	2.0	0.3	0.5
322 Wearing Apparel except Footwear	19.5	18.9	3.5	5.5	87.6	20.6	16.6	15.5
323 Leather & Leather Products	1.9	2.2	0.4	0.6	69.0	35.2	23.2	23.2
324 Footwear	0.5	0.3	0.0	0.0	78.4	31.1	21.3	11.5
331 Wood Products	4.0	6.0	3.1	3.9	74.6	19.2	8.9	10.8
332 Furniture & Fixtures	8.0	6.7	1.7	1.8	87.3	43.8	46.7	41.2
341 Paper and Paper Products	0.1	2.0	5.4	4.6	30.0	0.6	0.0	0.0
342 Printing and Publishing	1.6	1.1	0.2	0.3	81.3	57.5	23.4	28.2
351 Industrial Chemicals	0.1	0.1	0.8	0.4				
355-6 Rubber & Plastic Products	0.4	3.5	1.6	1.8	55.9	2.1	0.2	0.2
361 Pottery, China and Earthenware	0.9	0.5	0.0	0.1	87.3	78.6	87.0	86.8
363 Cement	0.1	1.3	3.4	3.4				
362 & 369 Other Non-Metallic Mineral Products including Glass Products	4.5	5.3	2.3	4.5	85.0	73.5	79.9	85.5
372 Non-Ferrous Metal Basic Industries								
381 & 386 Fabricated Metal Products including Metal Furniture & Fixtures	10.5	2.2	0.3	0.4	98.1	87.7	80.0	82.4
382, 383 & 385 General & Electrical Machinery and Precision Instruments	2.6	6.3	3.0	5.3	84.7	13.8	3.9	3.2
384 Transportation Equipment	0.4	1.0	0.7	1.1	81.8	12.1	1.0	1.1
390 Other Manufacturing Industries	2.8	3.6	1.3	2.1	86.2	25.8	12.3	13.9
314, 352-354, 371 Tobacco, Other Chemical & Petroleum Products, and Iron and Steel Basic Industries	0.4	1.5	31.0	2.8	42.4	6.2	0.0	0.5

Source: 1989 Annual Survey of Establishments (National Statistics Office)
Note: Small establishment is one with average employment of less than 10 workers.
Some of manufacturing are integrated because of the suppressed data.

(2) Export

The Philippine exports have grown steadily during recent years which amounted to US$8.84 billion in 1991, US$9.82billion in 1992 and US$11.27 billion in 1993. Exports from Central Luzon in 1993 excluding traditional exports amounted to $438 million or 3.9% of the national total. The region's share of exports is smaller than those of GRDP (10.1%) and the output value of the manufacturing (7.8%) (Table 1.2)

By province , Bataan is the top exporter of non-traditional products with US$201 million exports in 1993. The second is Bulacan with US$132 million followed by Pampanga with US$57 million (Table 1.3). The principal export goods by province are the following:

Bataan	:	knitting, wearing apparel/garments, leather products, rubber footwear, sporting goods, fiberglass and fiberglass furniture, electronic components, yacht, accessories, explosives, hair wigs, petroleum products;
Bulacan:	:	textiles, wearing apparel/garments, leather products, jewelry;
Nueva Ecija	:	wearing apparel/garments;
Pampanga	:	wearing apparel/garments, GTH, furniture, wooden carving, metal products, semi-conductors, processed food;
Tarlac	:	wearing apparel/garments, GTH, wire harness; and
Zambales	:	processed food, GTH.

Table 1.2 Exports from Central Luzon

[Real Number: US$ million]	1988	1989	1990	1991	1992	1993
Total	208.0	426.7	677.3	426.1	408.8	438.8
Garments	43.7	43.2	66.1	77.6	79.0	110.7
Gifts-Toys-Housewares	20.6	17.7	68.2	54.0	67.9	95.5
Furniture	18.2	33.3	44.1	22.1	27.1	34.2
Semi-Conductor/Electronics	9.3	36.6	25.6	18.8	18.9	51.7
Marine/Aquaculture	6.0	5.5	19.5		0.0	0.2
Processed Food and Beverage		4.8	1.5		0.0	0.2
Ceramics	0.1	0.2	0.4	0.0	0.7	1.9
Steel and Metal Products				0.1		
Paper and Paper Products	52.3	86.6	236.1	5.8	6.1	
Industrial Manufactures	1.0	3.6	1.9	2.1	36.4	
Other Consumer Manufactures	16.1	33.8	34.1	100.8	112.6	144.1
Traditional Exports	40.9	161.4	179.7	144.7	60.1	

[% Shares to the Total]	1988	1989	1990	1991	1992	1993
Total	100.0	100.0	100.0	100.0	100.0	100.0
Garments	21.0	10.1	9.8	18.2	19.3	25.3
Gifts-Toys-Housewares	9.9	4.1	10.1	12.7	16.6	21.8
Furniture	8.8	7.8	6.5	5.2	6.6	7.8
Semi-Conductor/Electronics	4.5	8.6	3.8	4.4	4.6	11.8
Marine/Aquaculture	2.9	1.3	2.9		0.0	0.0
Processed Food and Beverage		1.1	0.2		0.0	0.0
Ceramics	0.0	0.0	0.1	0.0	0.2	0.4
Steel and Metal Products				0.0		
Paper and Paper Products	25.1	20.3	34.9	1.4	1.5	
Industrial Manufactures	0.5	0.8	0.3	0.5	8.9	
Other Consumer Manufactures	7.7	7.9	5.0	23.7	27.5	32.9
Traditional Exports	19.7	37.8	26.5	34.0	14.7	

Source: Department of Industry (DTI)

Table 1.3 Exports from the Provinces of Central Luzon

[Real Number: US$ million]	1988	1989	1990	1991	1992	1993
Total	208.0	426.7	677.3	426.1	408.8	438.3
Bataan	124.3	169.7	319.8	127.3	216.2	200.8
Bulacan	9.7	46.3	93.7	56.2	72.2	131.7
Nueva Ecija	2.7	0.8	0.7	0.3	1.1	2.8
Pampanga	29.5	42.5	69.0	46.3	45.9	57.1
Tarlac	0.7	1.8	4.5	3.1	2.1	41.2
Zambales	0.2	4.3	9.9	48.2	11.1	4.8
Traditional Exports	40.9	161.4	179.7	144.7	60.1	

[% Shares to the Total]	1988	1989	1990	1991	1992	1992
Total	100.0	100.0	100.0	100.0	100.0	100.0
Bataan	59.8	39.8	47.2	29.9	52.9	45.8
Bulacan	4.7	10.8	13.8	13.2	17.7	30.1
Nueva Ecija	1.3	0.2	0.1	0.1	0.3	0.6
Pampanga	14.2	10.0	10.2	10.9	11.2	13.0
Tarlac	0.3	0.4	0.7	0.7	0.5	9.4
Zambales	0.1	1.0	1.5	11.3	2.7	1.1
Traditional Exports	19.7	37.8	26.5	34.0	14.7	1.1

Source: Department of Industry (DTI)

1.2.3 Productivity and structure of value-added generation

Productivity is an equivocal term regarding the degree of competitiveness, profit making, cost-efficiency and the like. The value-added ratio is one of the indicators representing productivity and is the difference between the output value and the total cost for production as shown below. This value added is the gross value added not taking depreciation of fixed assets into account as a cost element except for land.

OUTPUT VALUE

Gross Value Added (G V A)	Total Cost • materials and supplies consumed • fuels and electricity purchased • industrial services done by others • goods purchased and resold

This value-added ratio of the manufacturing in Central Luzon was 34.0% in 1989, smaller than 34.7% of the national average and 38.5% of NCR (Metro Manila). This is mainly due to the small amounts of petroleum refinery in Central Luzon. The labor-fixed assets ratio in Central Luzon is 16.3 workers per ₱1 million, lower than 23.7 workers per ₱1 million in NCR. This means that the manufacturing in Central Luzon is relatively less labor-intensive as a whole including petroleum refinery that is one of the typical capital-intensive industries (Table 1.4).

It is a theory that the value-added ratio is higher in manufacturing with high labor-fixed assets ratio: i.e. high labor-intensiveness. This means that labor or humanware is the main factor of value added generation in certain types of industries. In this context, manpower training is effective, and transfer from "labor-intensive" to "skill-intensive" or "intelligence-intensive" is critically important for improving productivity.

This relationship is illustrated in Figure 1.2 and substantiated by selected industries of NCR (Metro Manila) except for footwear. In case of Central Luzon, such relationship is not clear, especially in the food and beverage and transport equipment due to the existence of big soft drinks factories in San Fernando and the large assembly plant of vehicles located in Pampanga. "Industrial service" of the transportation equipment for others constitutes 92.5% of the output value. This implies that transportation equipment of Central Luzon includes "capital-intensive" industry such as ship repairing.

Table 1.4 Indicators Representing the Generating Structure of Value-Added in 1989 (All Industries)

	All Industries			(Comment)
	Nation	NCR	Central Luzon	
(1) Value-Added Ratio (VAR)	34.7%	38.5%	34.0%	VAR of all industries in Central Luzon
(2) Labor-Fixed Assets Ratio	15.2	23.7	16.3	is lower mainly due to the small
(3) Equipment Circulation Ratio	6.1	9.2	6.5	amounts of the value-added of the
(4) Compensation to Value Added	8.9%	10.6%	7.1%	region's petroleum refinery.
(5) Compensation per worker	P35,626	P41,377	P28,103	
(6) Main Components of Value of Output				Non-industrial service to cost is high
Product	91.7%	88.8%	93.1%	in NCR. It seems to give some positive
Industrial Service	4.7%	6.0%	5.3%	effects on the value-added generation.
(7) Main Components of Cost				Its components are rental expenses,
Materials & Supplies	89.3%	88.3%	92.1%	bank charges excluding interest,
Fuels	2.3%	1.5%	2.6%	insurance expenses, commissions,
Electricity	2.9%	2.8%	3.3%	communications expenses, professional
Industrial Service	2.8%	3.3%	1.8%	, business and other service fees,
(8) Non-Industrial Service to Cost	6.5%	7.9%	3.5%	representation, entertainment, freight
(9) Interest to Cost	3.5%	3.1%	1.9%	services, and storage and warehousing
(10) Subsidies to Value Added	0.42%	0.64%	0.00%	expenses.
(11) Book Value Distribution				
Land	6.2%	10.7%	7.3%	Subsidies to value added is high in NCR.
Building, Other Structures, etc.	26.7%	23.5%	30.3%	NCR occupied 83% of the national total
Transport Equipment	4.8%	6.3%	7.2%	subsidies, amounting to P582 million
Machinery	49.4%	55.1%	53.3%	in 1989.
Other Fixed Assets	13.0%	4.5%	1.9%	

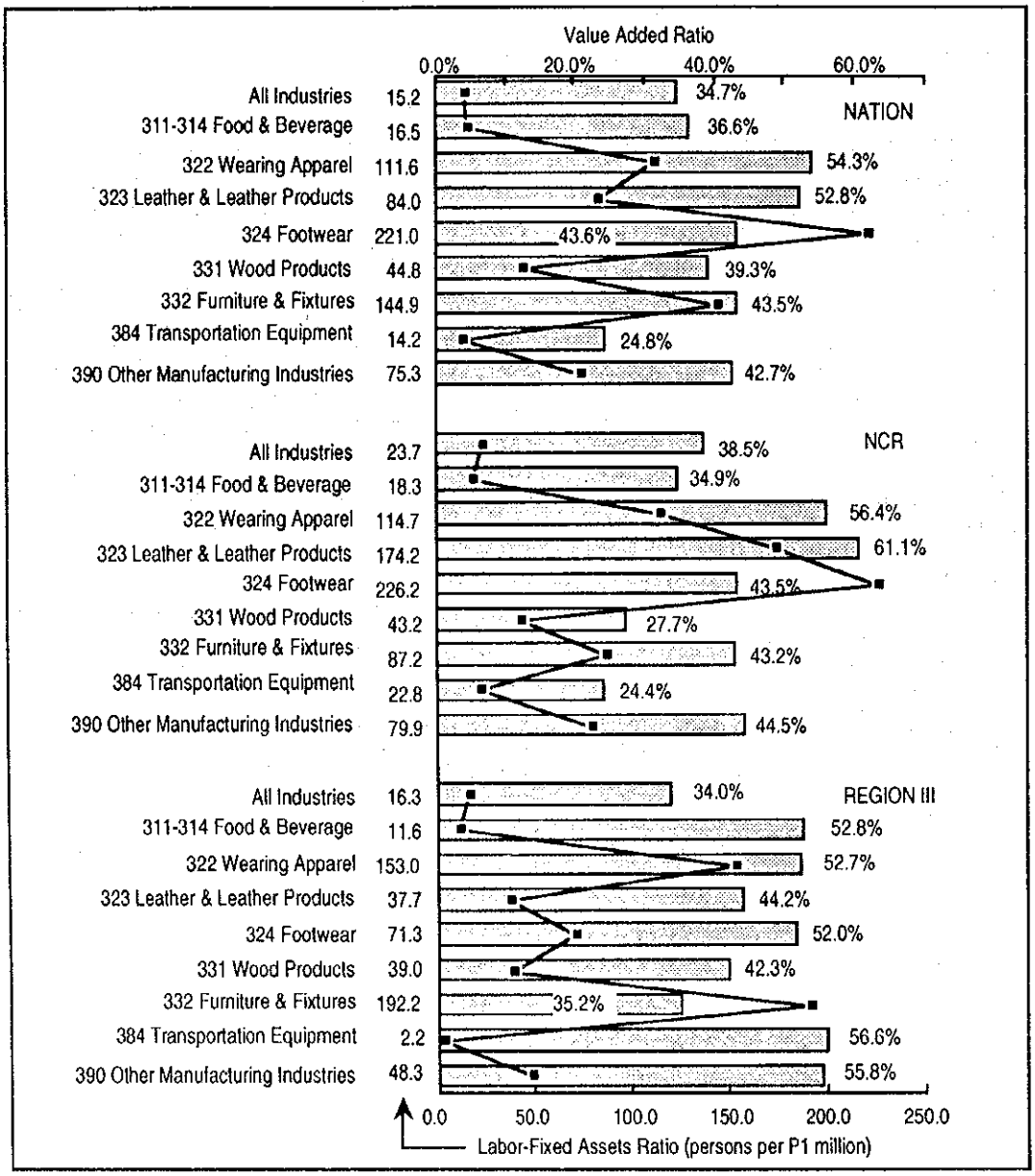
Source: 1989 Annual Survey of Establishments (National Statistics Office)

Note: Value Added Ratio = (value added) / (value of output) x 100

Labor-Fixed Assets Ratio = (workers) / (book value of machinery, transport equip. and other fixed assets) per P1 million

Equipment Circulation Ratio =(value of output) / (book value of machinery, transport equip. and other fixed)

Figure 1.2 Value-Added Ratio and Labor-Fixed Assets Ratio: 1989



Source: 1989 Annual Survey of Establishments (National Statistics Office)

The value added in the "Industrial Survey" of the Philippines is the gross value added (GVA) and not the net value-added (NVA) taking depreciation of fixed assets into account as a cost element. In order to address "total productivity," other costs should also be counted such as labor cost, storage and transportation cost, communication cost, advertising cost, R&D and design cost, sales cost, management cost and others.

There are two ways to increase the value-added or productivity. One way is to increase the price mainly by improving the quality, by developing proper markets including subcontracting and by establishing a brand name. The other is to decrease the cost mainly by

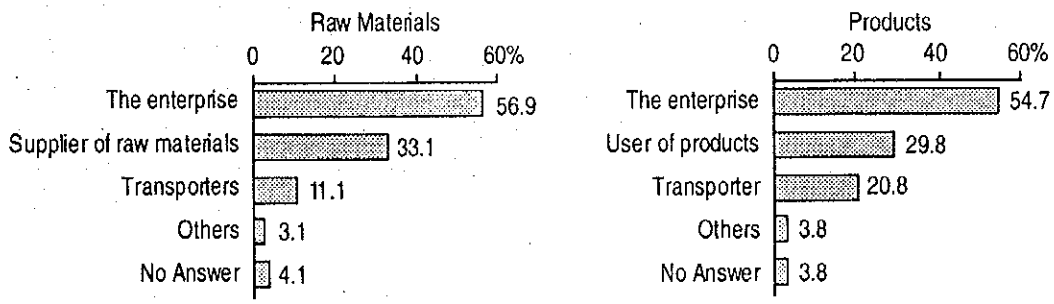
decreasing material losses, by purchasing raw materials and other inputs at reasonable prices, and by saving the cost through introducing mechanized production system to replace workers with high cost or through consigned works. This consigned or subcontract works represent a sort of division of works, of which style has been diversified according to stages of economic development. "Industrial service" mentioned previously corresponds to the subcontract works among manufacturers while "non-industrial service" refers to relationships between the manufacturing and the service sector.

Some non-industrial services seem to give the following positive effects to productivity:

- rental expenses effective to decreasing the initial cost of fixed assets,
- communications, representation and entertainment, probably effective to expanding the market, and
- commissions, professional, business and other services, freight services and storage and warehousing services, probably effective to decreasing the cost comparing to doing it by self-service of manufacturers.

It is possible for manufacturers in Central Luzon to increase productivity by decreasing costs through utilizing freight services instead of holding their own transport equipment. According to the IQSR3, of a total of 605 respondents, 56.9% use their own trucks for transport of raw materials and 54.7% for transporting their own products. The percentage of transport equipment in the total book value of manufacturing is relatively high or 7.2% in Central Luzon indicating that the transport industry of industrial goods/freight service is not yet developed.

Figure 1.3 Owner of Equipment by Land Transport



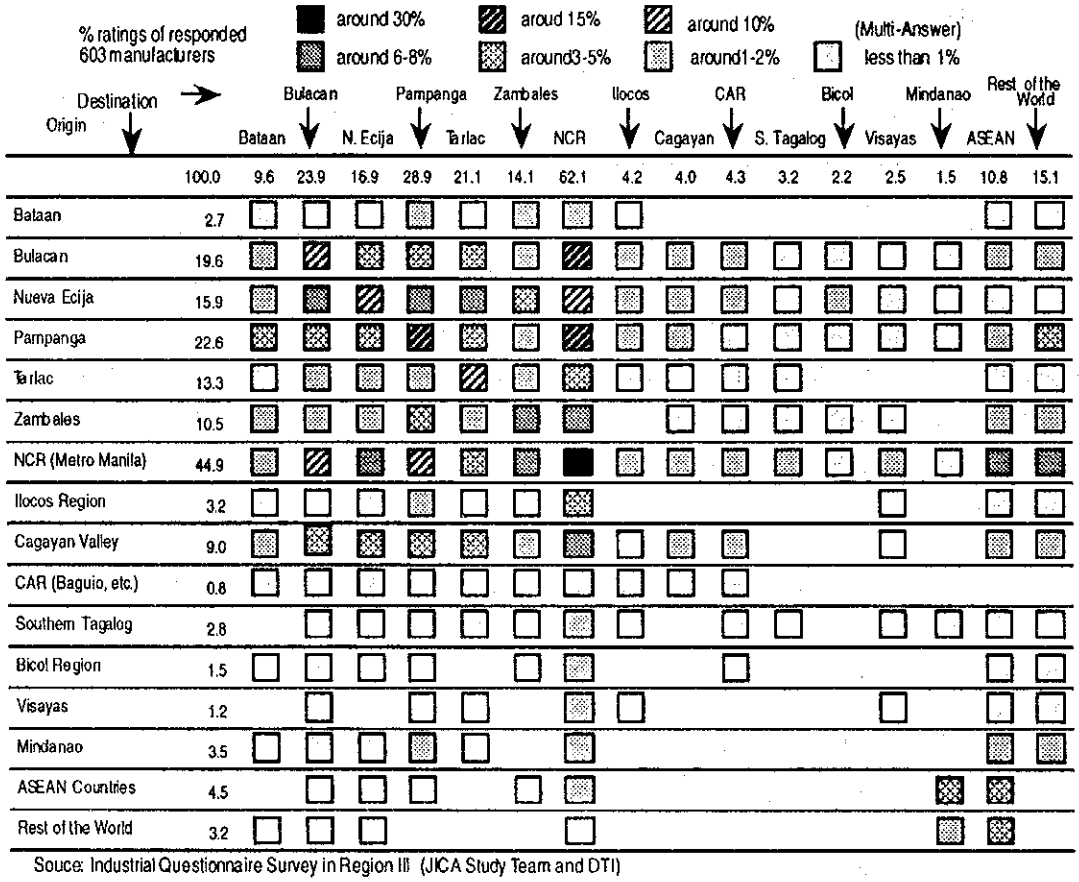
Source: Industrial Questionnaire Survey in Region III (JICA Study Team and DTI)

1.2.4 Regional linkages and factors of industrial agglomeration

(1) Regional linkages

Industrial production has generally extensive regional linkages, both in supply of raw materials and shipment of products. Figure 1.4 illustrates the regional linkages of manufacturing production in Central Luzon based on the results of the IQSR3. The following characteristics have surfaced from the survey.

Figure 1.4 Regional Linkages of Manufacturing Production in Central Luzon



Souce: Industrial Questionnaire Survey in Region III (JICA Study Team and DTI)

Strong linkages with NCR both in raw materials supply and products marketing

Manufacturing firms in Central Luzon are strongly linked with NCR (Metro Manila). Of 602 total respondents, 270 firms or 44.9% sourced their raw materials from NCR, and 374 firms or 62.1% supplying their products to NCR. Divisoria is a supply center of garments related materials such as textiles, thread and zipper.

Intra-regional linkages (1): close within the province but strong with neighboring areas

These linkages are naturally strong with neighboring provinces: Bataan-Nueva Ecija and Pampanga, Bulacan-Nueva Ecija and Pampanga, Nueva Ecija-Bulacan and Pampanga, Pampanga-Bataan, Bulacan and Tarlac, Tarlac-Nueva Ecija and Pampanga, and Zambales-Bataan and Pampanga.

Inter-regional linkages (2): Cagayan Valley is a significant supplier for the region

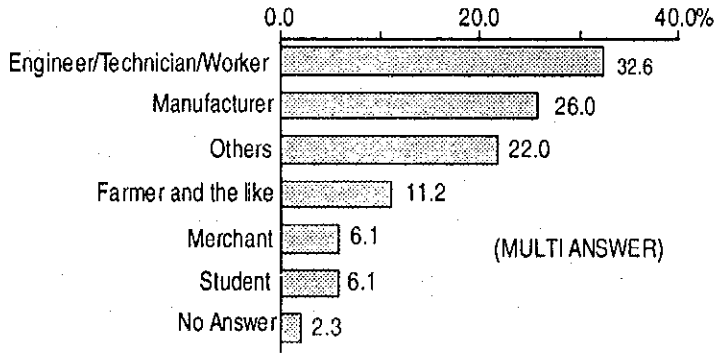
Cagayan Valley supplies raw materials mainly on wood resources (buri, mahogany, narra, rattan and tanguile) to 54 firms or 9.0% of the total respondents in Central Luzon. Some wood processing firms including furniture and wood carving makers in the region also import raw wood from Malaysia, New Zealand and other countries.

(2) Industrial agglomeration

Various factors for industrial agglomeration or industrial location interact such as market, raw materials including indigenous resources, transportation cost, labor cost, conditions of infrastructure such as land and land price, road, port, electricity and water, personal and local connections, and political factors. In addition, traditional factors, entrepreneurship and availability of skills or technology are likewise important.

Former occupations of presidents or executives in manufacturing firms in Central Luzon are illustrated in Figure 1.5. According to the IQSR3, presidents or executives of manufacturing firms in Central Luzon were formerly engineers/technicians/workers, either promoted from the ranks or from outside. This accounts for one-third of total respondents. Some former US base workers entered into manufacturing using their separation payments. Former manufacturers, constituting 26.0% of the total, may have entered into new areas of business. Central Luzon has also produced many big businessmen who succeeded in Metro Manila. Central Luzon, therefore, can boast of the presence of active entrepreneurs and strong entrepreneurship.

Figure 1.5 Former Occupation of Presidents or Executives of Manufacturing Firms in Central Luzon

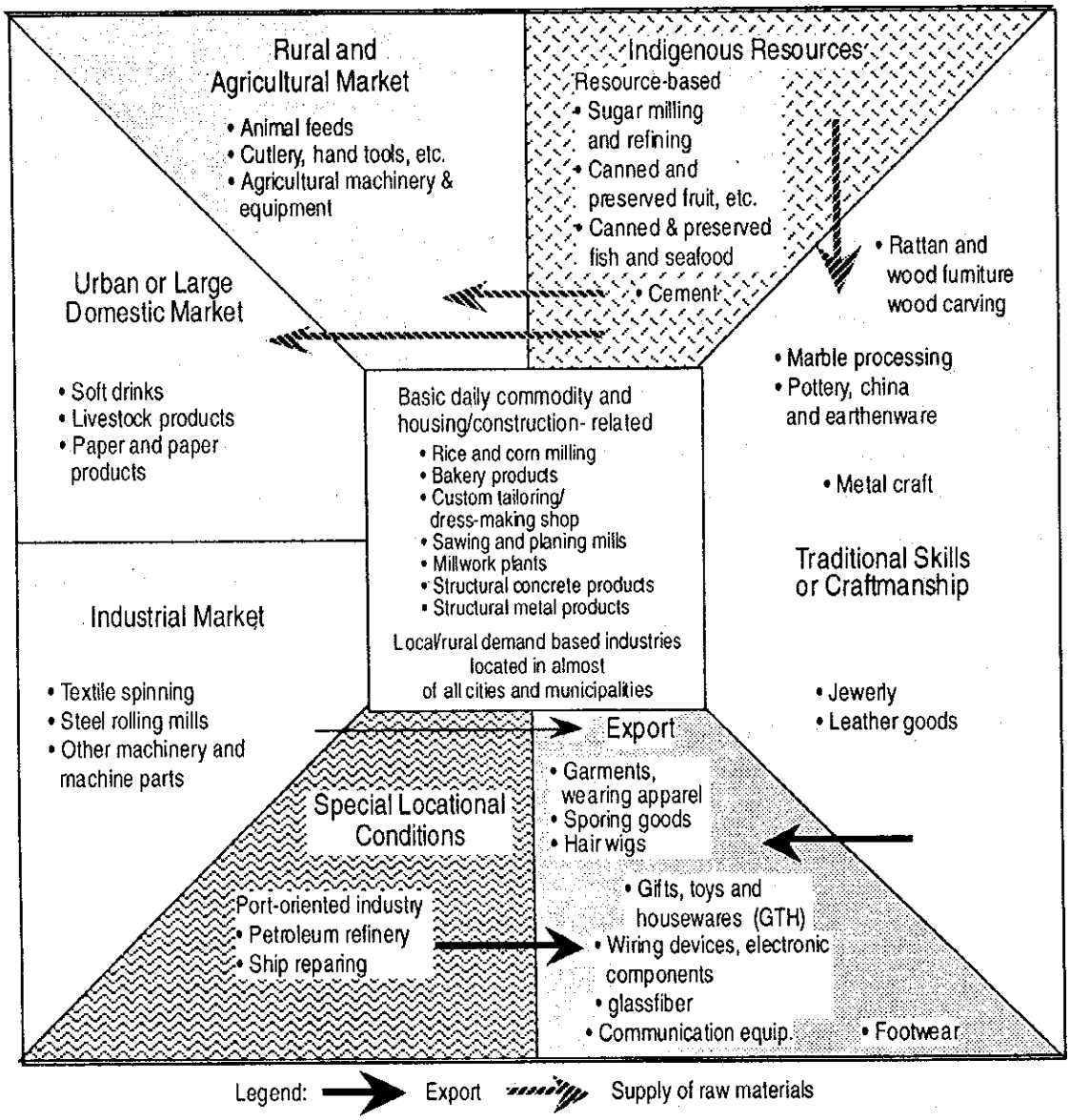


Source: Industrial Questionnaire Survey in Region III (JICA Study Team and DTI)

Topology of industrial agglomeration or location in Central Luzon

There is an agglomeration of manufacturing subsector industries in Central Luzon based on the region's "comparative advantages." However as shown in Figure 1.6, there is a basic unit of industries to satisfy the needs for basic daily commodities and housing/construction located almost throughout the region. The growth of these industries depends on the region's growth: i.e. increase in population or income. Indigenous resource-based industries have great advantages in terms of value of resources and lower transportation cost if the raw material are bulky. Rural and agricultural market-oriented industries grow in accordance with the development of agriculture and related activities.

Figure 1.6 Topological Positions of Major Manufacturing Subsectors in Central Luzon



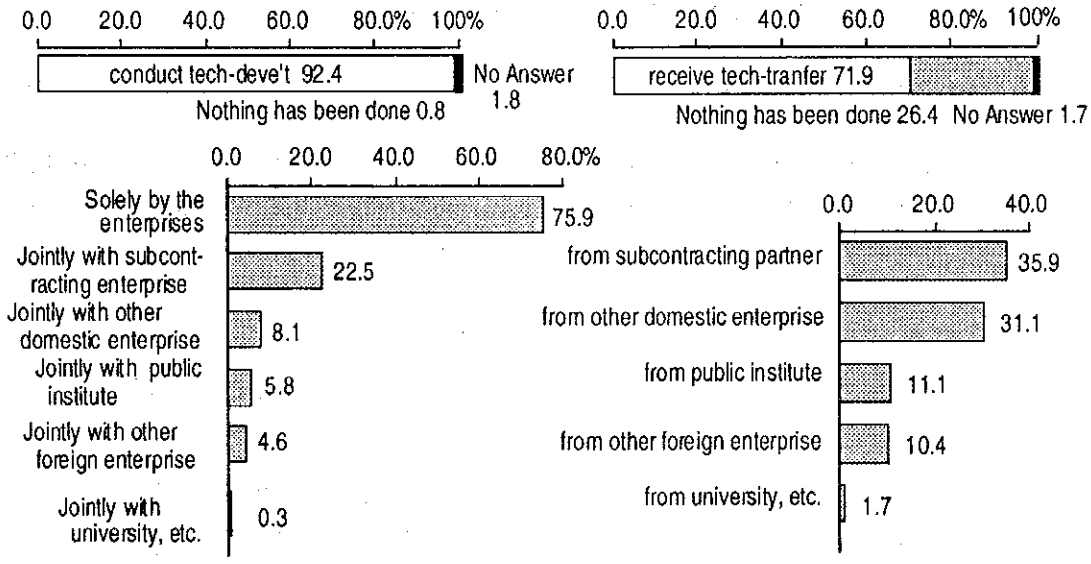
As a matter of fact, it is very important to make the maximum use of the region's comparative advantages for the further growth and development of manufacturing. In addition to more effective use of the region's indigenous resources, traditional skills and excellent craftsmanship should be mobilized for new products, good design and high value added generation. The contiguity to the largest market, Metro Manila should be utilized effectively by improved access. With respect to the region's special locational conditions, sea port and air port-oriented industries should be more encouraged. Rich human resources should be conducive to expanding product exports with higher quality. Inter-industry linkages and agro-industry are not yet fully developed and should be expanded for the region's further growth.

1.2.5 Technology development and transfer

SMEs in Central Luzon are very active in technology development.

Technology development itself is not the final goal. Without proper application, it will not result in upgrading of product quality, improvement of productivity and the like. According to the IQSR3, majority of the respondent firms conduct technology development as shown in Figure 1.7, even if the degree and extent vary among them. Conducting technology development by themselves accounts for 75.9% of the total, while 22.5% undertake jointly with subcontracting enterprises or consignors, and 8.1% with other domestic enterprises other than consignors. Consignors are main partners of joint technology development.

Figure 1.7 Technology Development and Transfer in Manufacturing Firms in Central Luzon



Source: Industrial Questionnaire Survey in Region III (JICA Study Team and DTI)

Inter-enterprise relationships provide main channels of technology transfer

Technology transfer is an effective means to save cost, avoid risks on technology development, and maitain the product quality for subcontract production. According to the IQSR3, 71.9% of the respondents receive technology transfer from the outside: 35.9% from subcontracting partner/consignors, 31.1% from other domestic enterprises other than consignors, 11.1% from public institutes and 10.4% from other foreign enterprises other than consignors. As such, inter-enterprise relationships provide main channels of technology transfer, and therefore organizing enterprises through subcontracting or industrial associations is important for effective technology transfer as there will be sharing of information among them.

Technology development progresses through the product price support by the market

In many developing countries, product prices are generally low mainly due to consumers' small purchasing power closely connected with low income. Prices of local-made products tend to be undervalued, even if the same amount had been invested for technology and product development for good quality products. This often discourages manufacturers.

On the other hand, importers in a developed country generally appreciate products with higher prices but high quality . Because of this, the export encourages technology development and may bring about a multiplier effect since local people will also appreciate and want to buy goods successful in the export market.

In sum, technology development progresses through the product price support by the market. In this regard, not only enhancement of export but also development of the so-called middle class is essential for further growth of Central Luzon's manufacturers.

1.2.6 Investment trends

In recent years, the peak of investments (the BOI approved project cost) in the Philippines was ₱97.9 billion in 1990. In 1991, investments decreased to ₱78.2 billion but recovered in 1992 reaching ₱99.1 billion and drastically increased in 1994 as shown below.

Table 1.5 BOI Approved Project Cost

[in billion pesos]	1990	1991	1992	1993	Oct., 1994
The Philippines	108.4	84.3	99.1	95.9	347.6
Central Luzon	6.0	6.2	2.9	4.5	47.2
NCR (Metro Manila)	23.2	4.7	3.5	8.3	41.5
Region IV	36.2	31.9	16.7	21.6	55.2
[% Shares to the Nation]					
Central Luzon	5.5	7.4	2.9	4.7	13.6
NCR (Metro Manila)	21.4	5.6	3.6	8.7	11.9
Region IV	33.4	37.8	16.9	22.5	15.9

Investments in Central Luzon were affected by the Mt. Pinatubo eruption but leaped in 1994.

Investments (project cost basis) in Central Luzon are relatively small compared to its potentials. The value of project costs amounted to ₱6.2 billion in 1991 but decreased to ₱2.9 billion in 1992 declining to 2.9% share to the national total. The decline could be attributed to the Mt. Pinatubo eruption and the energy crisis.

However, the investments leaped in 1994 and the value of project costs during January-October in 1994 amounted to ₱47.2 billion, about a ten-fold increase against the total in the last year. This is due mainly to a large scale of investments in petrochemicals, cement, textile yarn and power generation plant. Meanwhile, two petrochemicals complexes are planned, one in Limay-Bataan by the Philippine National Oil Corporation (PNOC), and another in Morong-Bataan by another group.

Investments for manufacturing concentrate in Bulacan, Bataan and Pampanga.

Table 1.6 shows the distribution of the BOI approved project costs by province. Bataan registered the highest industrial investments among the provinces of Central Luzon with investments value amounting to ₱20.1 billion followed by Bulacan's ₱17.6 billion and Pampanga's ₱2.8 billion during the period 1990-October 1994. Some significant investments are the following:

Bataan	industrial chemicals (₱18.8 billion: petrochemical), iron and steel basic industries (₱2.0 billion)
Bulacan	cement (₱8.7 billion), textiles (₱3.6 billion), garments (₱225 million), gifts, toys and housewares (GTH: ₱239 million)
Pampanga	iron and steel basic industries (₱1.85 billi0n), fabricated metal products (₱363 million)

Among other provinces, Tarlac is notable for relatively large amount of investments in the electrical/electronic products and transport equipment. With respect to investments other than for manufacturing, power plant projects concentrate in Nueva Ecija and agriculture in Zambales.

Investments in Subic Bay and Clark Field: active and diverse

The BOI approved projects are selectively granted some incentives by the government. Investments in Subic Bay and Clark Field, each being the Special Economic and Freeport Zone (SEFZ), are independently given incentives as well as Export Processing Zones (EPZs).

Subic Bay attained 73 projects with estimated project costs amounting to US$486 million (about ₱12.1 billion) as of 1 September 1994 while 40 projects with total investments of

₱5.66 billion (within 5 years) are for Clark Field as of 31 August 1994. These investments are significant as compared to the BOI approved project costs in Central Luzon.

Table 1.6 Project Cost Approved by BOI: 1990-October 1994

	Project Cost (in million pesos)							% Shares to the Region					
	Total	Bataan	Bulacan	Nueva Ecija	Pampa-nga	Tarlac	Zam-bales	Bata-an	Bula-can	N. Ecija	Pam-panga	Tar-lac	Zam-bales
0. Grand Total	66,792	31,206	18,996	10,739	3,537	2,078	235	46.7	28.4	16.1	5.3	3.1	0.4
1. Agriculture Total	570		303	31	26	12	199		53.1	5.5	4.5	2.1	34.9
Food Crop	86		70	11	3	2			81.3	12.7	3.6	2.4	
Aquaculture	27		27						100.0				
Poultry	430		206		23	2	199		47.9		5.3	0.6	46.2
Agricultural Services	28			20		7				73.6		26.4	
2. Mining/Quarrying Total	95	0		57		17	20	0.3		60.3		18.3	21.0
3. Manufacturing Total	42,730	21,001	17,597	8	2,768	1,352	3	49.1	41.2	0.0	6.5	3.2	0.0
Food Processing	321		70		67	184			21.8		20.8	57.4	
Feeds	246		192		32	22			78.0		13.0	8.9	
Tobacco Manufacturing	80		80						100.0				
Textiles	3,646		3,609		27	9	1		99.0		0.7	0.2	0.0
Garments	306	17	225		21	42	2	5.5	73.6		6.9	13.6	0.5
Other Wearing Apparel	40		40						100.0				
Bags & Luggages	19		14			5			74.6			25.4	
Footwear\	122		122						100.0				
Leather Goods	98		84		14				85.8		14.2		
Wood Products	237		230		7				97.0		3.0		
Furniture & Fixtures	29	6		2	21			20.5		8.1	71.5		
Paper and Paper Products	774		506		268				65.4		34.6		
Printing	209		209						100.0				
Industrial Chemicals	19,071	18,798	273					98.6	1.4				
Other Chemical Products	148		148						100.0				
Rubber & Plastic Products	724		724						100.0				
Pottery, China, etc.	12		2			10			14.4			85.6	
Glass Products	115		115						100.0				
Cement	8,738		8,738						100.0				
Other Non-Metallic Mineral Prd.	601	140	444		13	4		23.3	73.9		2.1	0.7	
Iron and Steel Basic Industries	4,207	2,040	307	6	1,854			48.5	7.3	0.1	44.1		
Non-Ferrous Metal Basic Industries	100		100						100.0				
Fabricated Metal Products	602		239		363				39.7		60.3		
General Machinery	147		97		18	33			65.7		11.9	22.4	
Electrical/Electrotic Products	1,405		640		8	757			45.6		0.6	53.9	
Transportation Equipment	310		75		6	229			24.2		2.0	73.9	
Other Manufacturing Industries	83		56		20	7			67.4		23.8	8.7	
Gifts, Toys and Housewares	320	1	239		30	50		0.2	74.6		9.5	15.7	
Jewelry	15		15						100.0				
R&D Activities	3		3						100.0				
4. Other Projects Total	23,396	10,204	1,097	10,642	743	697	14	43.6	4.7	45.5	3.2	3.0	0.1
Power Plant	14,975	3,252	215	10,630	644	235		21.7	1.4	71.0	4.3	1.6	
Power Generation-related	246	4	146	12	70	10	4	1.8	59.2	5.1	28.4	4.0	1.5
Energy-related	63	63						100.0					
IE Development	6,890	6,736	70			85		97.8	1.0			1.2	
Infrastructure/Service Facilities	29				29						100.0		
Telecommunication	24	24						100.0					
Tourism-oriented	156	95				62		60.5				39.5	
Transportation	1,013	31	666			306	10	3.0	65.8			30.2	1.0

Source: Board of Investments (BOI)

Projects in Subic Bay include banking/insurance services, power generation, telecommunications, hotel, restaurant, tourism, retailing, duty free shop, courier/transport/transshipment services, and warehousing. There are also manufacturing companies such as machine/equipment assembly, electronics, boat building, garments, textiles, leather goods, and novelties. In Clark Field, investments in the manufacturing sector include garments, leather goods, furniture, and assemblies of golf-related cars, colored TV/VTR and audio equipment. In addition, the following projects are already signed or operated:

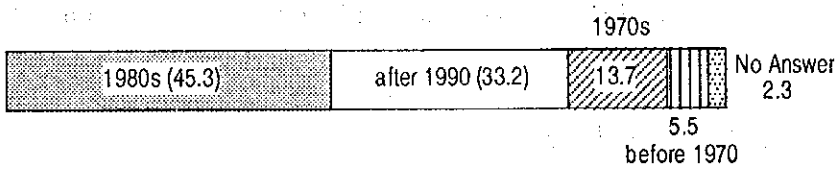
- Commercial project: duty free shop, shopping mall, trading, warehousing;
- Aviation-related: cargo terminal, aero club operation; and
- Others: banking service, tourism estate.

Establishment of self-employed SMEs is recently active in Central Luzon.
According to the IQSR3, the respondents have the following characteristics.

- almost all self-employed (84.8%)
- small capital (less than P100,000: 90.1%)

The respondents who established their firms before 1970 are not many and account only for 13.7% of a total of 605 respondents whereas 33.2% were sestablished during1990-1994.

Figure 1.8 Year of Establishment of Manufacturing Firms in Central Luzon



Source: Industrial Questionnaire Survey in Region III (JICA Study Team and DTI)

The firms newly established during 1990-1994 have large shares in such subsectors as GTH (40.6%), construction materials (40.0%) and other industry (54.5%). By province, they are outstanding in Pampanga and Zambales where the Mt. Pinatubo eruption caused serious damages and where two US bases were withdrawn. This suggests that these events were looked upon as opportunities to start or restart business, or in some cases former US base workers put up their own business utilizing their separation payments (₱200,000 in a case), and manufacturers or people affected by the eruption took advantage of government assistance for livelihood projects. This strong resiliency is a notable characteristics of people in Central Luzon.

Most recent trends in investments: bright and prospective in Central Luzon

The total BOI approved project cost amounted to ₱27.1 billion for the first semester (January-June) of 1994. These investments surpassed the ₱24.8 billion target for the whole year of 1994.

In addition, several big projects are underway as follows: solar system plant in Tarlac by a Japanese company, two petrochemicals complexes (one in Limay-Bataan by the Philippine National Oil Corporation (PNOC), and another in Morong-Bataan by another group). These big projects will lead the increasing number of investments along with the development of Subic Bay and Clark Field.

1.2.7 Organizational aspects

The size of dominant private manufacturing enterprises is generally classified as follows.

- by amount of paid-up capital
  large: ₱40,000,000 and over; medium: ₱10,000,000-₱40,000,000;
  small: ₱1,000,000-₱10,000,000; cottage: ₱100,000-₱1,000,000;
  micro or house:₱100,000 and bwlow,
- by number of employment.
  large: 200 and over; medium: 100-199; small: 10-99; cottage and micro: 1-9

Government-Owned/Controlled Corporations (GOCCs) operate in such production areas as tobacco, petroleum products, iron and steel, ship repairing and others. The privatization of GOCCs has proceeded and PHILSECO, a ship repairing in Central Luzon has already been privatized.

Cooperatives: strong in Central Luzon

There are 2,985 cooperatives in Central Luzon (28, 277 in the Philippines) as of March 1994. It is the second largest following Region IV(3,473) and broken down as follows: 2,715 multi-purpose (agriculture 2,109, non-agriculture 606), 92 credit, 62 producers, 52 federation, 36 service,17 marketing, and 10 consumers. Producers' cooperatives in Central Luzon rank the highest in number among all regions.

One of the advantages of Central Luzon over other regions is the presence of strong cooperatives and various types of NGOs. They assume some roles of government partners serving as alternative delivery mechanisms, either as financial conduits or implementors of government projects. They can also be used for mobilizing community resources and enjoining active participation of community members in undertaking priority economic activities needed to increase family income. These cooperatives develop discipline, community values and individual responsibilities as well as identify and enhance leadership

and managerial capabilities of community members. They also mobilize small savings and generate initial capital needed for livelihood projects. These activities and roles are very important factors to spur the development of micro and cottage enterprises and SMEs.

Industrial associations (IAs): active in Central Luzon

An industrial association is a group of people consisting of industrialists with common interests. The Chamber of Commerce and Industry (CCI) is playing the comprehensive role including recommendation of industrial policies. The sectoral and subsectoral IAs have more immediate objectives and common interests such as allotment of import quota to the US.

There exist a total of thirty-seven industrial associations (IAs) in Central Luzon, mostly subsectoral as shown in Table 1.7. Many of them were established in the last several years. These IAs function not only for promoting common interests of respective members but also as conduits of government policies. Based on this rationale, some Central Luzon's IAs are actively undertaking such projects as common facility development, relending, training and the like.

Table 1.7 Industrial Associations (IAs) in Central Luzon (as of June, 1994)

Province	Industrial associations	Year Estb.	No. of Members
Bataan	Export Processing Zone Chamber of Exporters & Manufacturers (EPZCEM)	1974	31
	Bataan Chamber of Commerce & Industry, Inc.(BACCII)	1991	38
	Bataan Hardware & Lumber Assn., Inc. (BATHALA) •••trading	1991	
	Bataan Handicraft Manufacturers Assn.,Inc. (BAHAMAS)	1993	28
	Bataan Garments Manufacturers Assn., Inc. (BAGAMI)	1993	30
Bulacan	Meycauayan Jewelry Industry Assn. Inc.	1985	62
	Garment Business Assn., of Bulacan/GBAP MPCI	1986	74
	Bulacan Chamber of Commerce & Industry, Inc.	1988	162
	Bulacan Livelihood & Handicraft Assn. Inc./Buhay MPCI •••GTH	1990	14
	Chamber of Furniture Ind. of Phils (CFIP)-Bulacan Chapter	1991	35
	Obando Garment MPCI Inc.	1991	65
	North East Multi Purpose Garment Inc.	1992	35
Nueva Ecija	Gabaldon Farm Producers Assn., Inc.•••furniture	1983	14
	Cabanatuan City Chamber of Commerce & Industry	1989	25
	Nueva Ecija GTH Manufacturers Assn., Inc.	1989	5
	Mangino Industrial Producers Coop. & Allied Services, Inc.•••slippers	1989	35
	Shoes & Footwear Manufacturers Assn. of Gapan Inc. (SFMAGI)	1989	25
	Nueva Ecija Garment Producers Assn., Inc.	1989	23
	Cabanatuan City Garments Assn., Inc.	1990	25
	Social Action for Rural & Urban Development, Inc.•••GTH	1991	
Pampamga	Angeles City Chamber of Commerce & Industry, Inc.	1964	150
	Chamber of Furniture Ind. of Phils (CFIP)-Pampanga Chapter	1971	34
	Betis Woodcraft Producers Assn., Inc.	1980	15
	Pampanga Assn. of Garment Producers, Inc.	1988	150
	Pampanga GTH manufacturers Assn., Inc.	1990	108
	Pottery Exporters & Manufacturers Assn., of Pampanga, Inc.	1991	8
	Angeles City Furniture Association	-	6
Tarlac	Tarlac Foundation of GTH Manufacturers & Exporters, Inc.	1991	15
	Tarlagueno Furniture makers Foundation, Inc.	1992	20
Zambales	San Vicente Brickmmakers Assn., Inc.•••clay-bricks	1989	15
	Chamber of Furniture Ind. of Phils (CFIP)-Zambales Chapter	1990	15
	Phil-Export Region III •••furniture, GTH	1990	88
	Olongapo City Chamber of Commerce & Industry, Inc.	1990	251
	Tropical Handcrafters Association, Inc•••baskets.	1992	5
	Food Processing Association of Zambales, Inc.	1992	18
	Zambales Chamber of Gifts, Toys & Housewares (GTH), Inc.	1992	29
	Green & Bloom Multi Purpose Coop., Inc.•••cutflowers	1992	50

Source: DTI-Region III

1.3. Existing Constraints and Policy Responses

In order to develop effectively the manufacturing sector in Central Luzon, constraints to development should be overcome properly as much as possible. In view of this, this chapter will evaluate constraints facing the region's SMEs based on their strength and weakness, and assess at the same time how existing policy measures have addressed them.

1.3.1 Strength and weakness of manufacturing sector in Central Luzon

"Competitiveness" is critically inportant for manufacturers in order to survive in both domestic and foreign markets. They will not be able to succeed without knowing their own strength and weakness and also those of their competitors. According to the Industrial Questionnaire Survey in Region III (IQSR3), the respondents mostly consisting of SMEs evaluate themselves in comparison to general situations of industries in the Philippines.

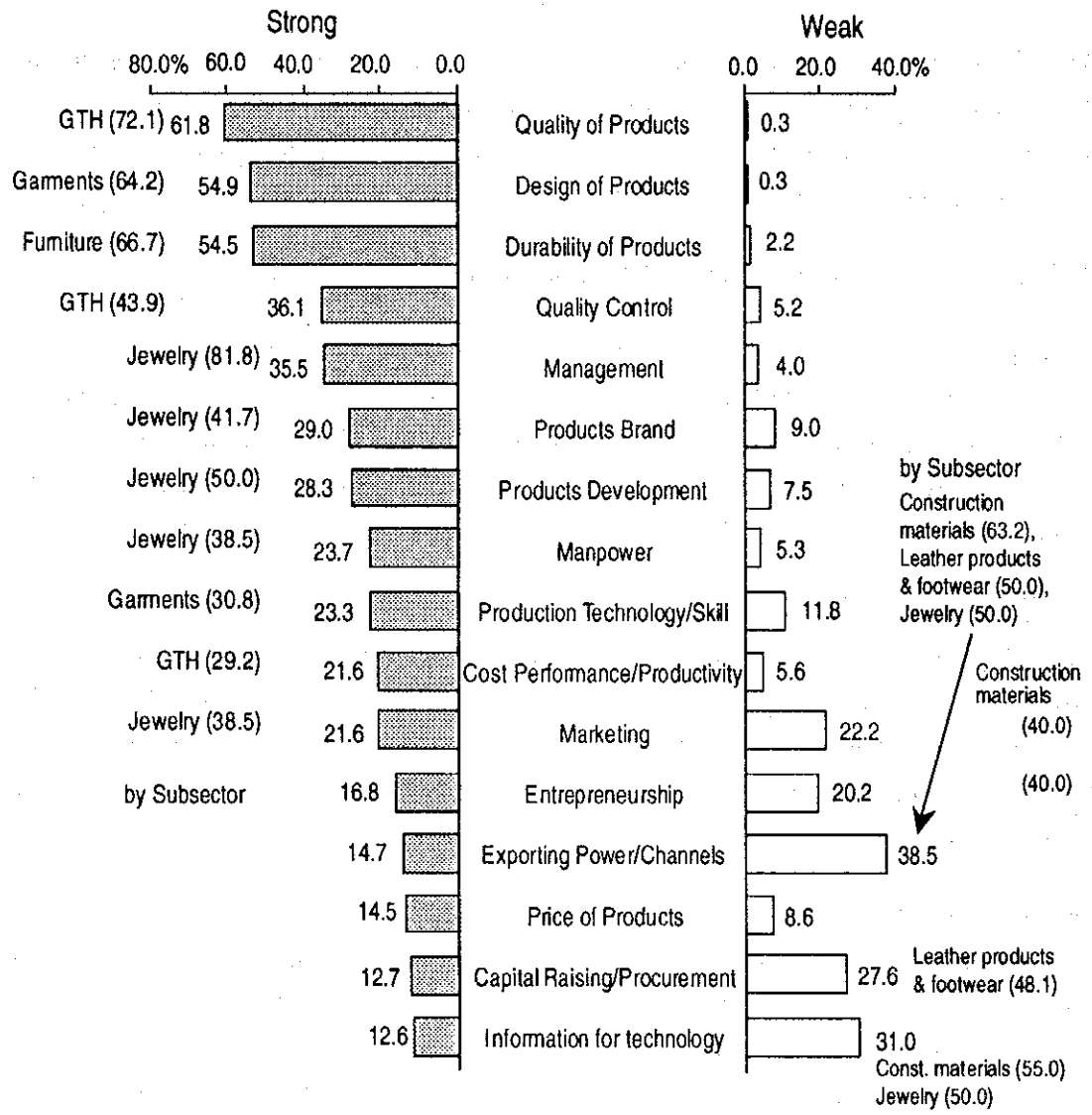
Self-diagnosis by SMEs in Central Luzon

More than 50% of the total respondents evaluate the quality, design and durability of their products as strong. By subsector, 72.1% of gifts, toys and housewares (GTH) repondents consider their products strong in quality, 64.2% of garments in design and 66.7% of furniture in durability. In sum, Central Luzon SMEs are mostly confident in manufacturing per se (Figure 1.9).

On the other hand, Central Luzon SMEs are less confident in marketing with only 21.6% of the total respondents evaluating themselves as strong in marketing. In terms of exporting power/channels, 14.7% consider themselves strong in this area. This figure includes other subsectors such as construction materials and jewelry, of which the market is mainly domestic. With respect to information for technology and capital raising, SMEs in Central Luzon are also less confident.

Moreover, with regards to manpower, production technology/skills and cost performance or productivity, most respondents consider themselves only "at par," in spite of the strength of quality, design and durability of their products. This suggests that quality, design and production itself depend on limited persons. In other words, the production in quite a few SMEs in Central Luzon is not yet so industrialized, considering that technique or skill is "personal" and "not socialized inside the enterprise" or "not systematized as technology." Consequently, it may be a issue how to develop and industrialize techniques abundant in Central Luzon.

Figure 1.9 Self-Diagnosis by SMEs in Central Luzon

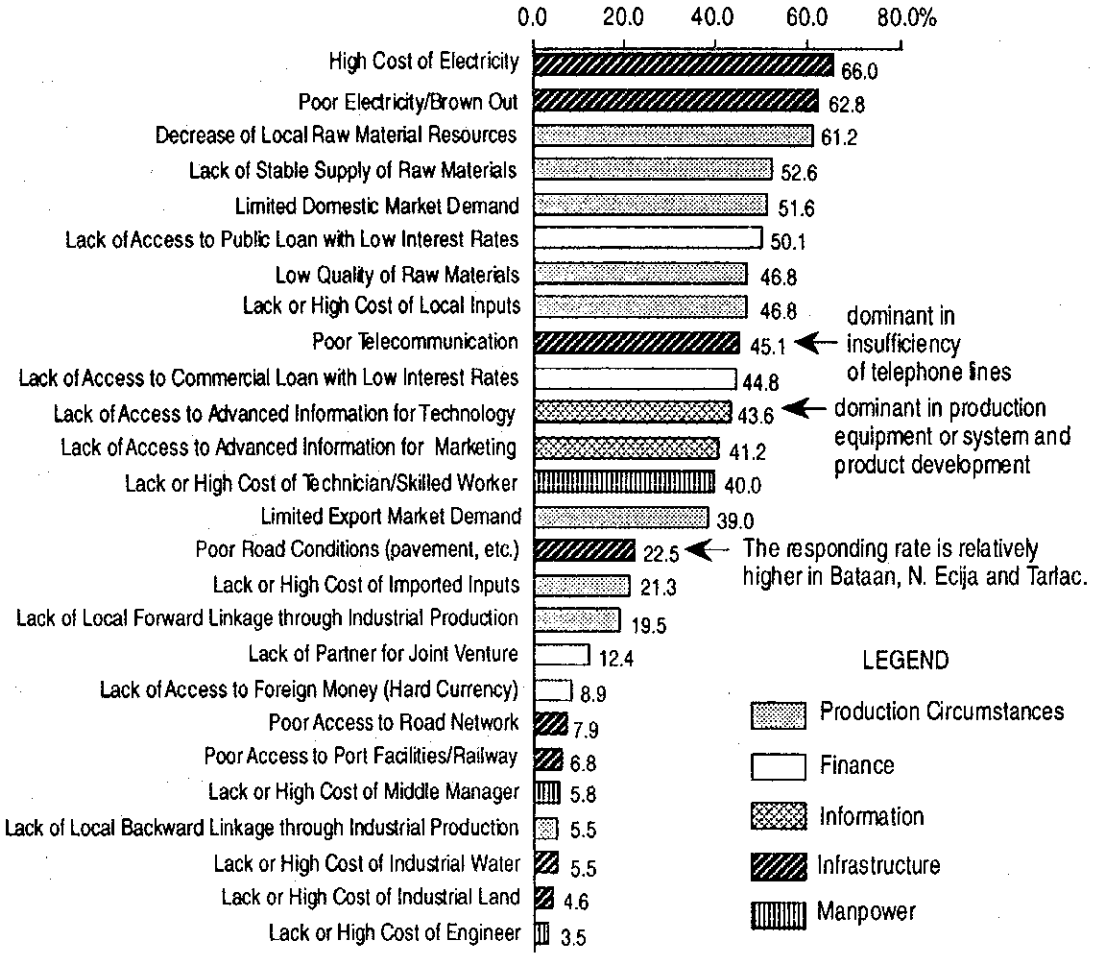


Source: Industrial Questionnaire Survey in Region III (JICA Study Team and DTI)

1.3.2 Constraints to manufacturing sector in Central Luzon

While "strength or weakness" refers to the internal conditions of enterprises, constraints are relatively external factors/conditions that affect their production activities. They include production circumstances (supply conditions of raw materials and market demand), finance (access to loan), information (for technology, market, etc.), infrastructure (transportation, land, water, electricity, etc.) and manpower recruitment. According to the IQSR3 and interview surveys conducted by the Study Team, many SMEs in Central Luzon are facing constraints or problems which need to be addressed for their further growth and development.

Figure 1.10 The Most Crucial External Problems or Constraints to Production Activities in Central Luzon



Source: Industrial Questionnaire Survey in Region III (JICA Study Team and DTI)

Major external constraints

Results of the IQSR3 are illustrated in Figure 1.10. The most crucial constraints pointed out by respondents are "high cost of electricity" and "poor electricity supply or brown outs." "Brown out", however, is now very rare except for some parts of the region.

Raw material- or resource-related constraints are critical for substantiating "Agro-Industrial Development", the Central Luzon's vision. Forest resources are depleting and unstable supply of agri-products could be attributed in part to lack of post harvest facilities. In addition, low quality of local materials forces Central Luzon exporters to use imported ones resulting in small net foreign currency earnings. These facts will require well synchronized development efforts among the related sectors including all concerned government agencies.

Limited domestic market demand is basically due to the low income or small purchasing power of consumers, but in some cases products do not fit to needs of the market. In the

latter case, marketing research and other related measures will be necessary for expanding market demand. In addition, Filipino's strong bias for imported goods has limited the market for local-made products.

Constraint on finance is another weak point of SMEs in Central Luzon. This is the limited ability for capital raising or procurement. High interest rates decrease competitiveness of SMEs products in the world market and may be a factor to increase in imports. In addition, high interest rates and short term repayment schemes may discourage entrepreneurs to enter into the manufacturing business considering that it takes generally a long time for this type of business to obtain substantial returns.

Lack of access to information for market not only results sometimes in losing business opportunities but also makes it difficult for manufacturers to identify market needs. Lack of information for advanced technology will delay technological improvement. In relation to this, poor telecommunication is crucial. The telephone density in Central Luzon is low at 0.70 mainlines per 100 people (1.40 in the Philippines). Quite a few respondents to the IQSR3 are doing business without a telephone.

Lack or high cost of skilled workers is a complicated constraint. For example, workers consider factories in Central Luzon as " training ground" for them to break into other places. After acquiring necessary skills, they leave their factories where they have been properly trained and find jobs in Metro Manila or foreign countries such as Korea and Taiwan. There are many overseas workers originated from Central Luzon and as a matter of fact it may be one of the reasons for high costs of skilled workers.

The respondent's concerns are generally on matters related directly to production activity and management as seen above. Constraints on road conditions are not considered very critical by many SMEs in Central Luzon. However, this is critical in Bataan and the rural provinces of Nueva Ecija and Tarlac, especially poor access to road network and port facilities in Bataan.

Constraints derived from threat of natural calamities

It is reported that Mt. Pinatubo will not have another major eruption similiar to that experienced in 1991 in the coming 300 years or more. However, fear is still felt by some people. Also continuous lahar is still damaging certain parts of Central Luzon. For these, some manufacturers hesitate to expand their operations in Central Luzon.

Institutional constraints: minimum wages, collateral and SGS

In a sense, constraints to enterprises are comparative matters and depend on their capability. SMEs have very limited capability and have great difficulty in institutional regulations and procedures.

Although minimum wages should be paid, workers fresh from training centers often cannot work to cover their minimum wages. This could be a constraint to SMEs. Also, many training centers have very low stardards. Financing requires in general a collateral of upto at least 70% of the loanable amount. This is a burden to SMEs.

Complicated administrative procedures are also a burden to SMEs and sometimes costly. Societe General de Surveillance (SGS) is one case. SGS is a third party, the world's largest trade supervision organization founded in 1878 and has headquarters in Geneva-Switzerland providing services including the Comprehensive Import Supervision Service (CISS) in 140 countries. The Philippines is one of the 24 countries entrusting it with the verification of the Country's imports resulting in the prevention of smuggling. The SGS fees under CISS, equivalent to less than 1% of the declared value of goods inspected, are paid by the government. However, some importers or exporters dependent on imported raw materials in Central Luzon find the system to be too costly and cumbersome.

Meanwhile, there are two types of smuggling: physical through unofficial landing points and technical through official ports of entry but goods are mis-declared, under-valued and/or mis-classified in order to evade import regulations and/or customs duties and taxes. Smuggling distorts price mechanism in a market economy, brings about unfair competitive conditions among industrialists and therefore should be prevented for healthy development of industry.

Constraints on SGS are not limited to Central Luzon. However, there exist only two SGS countries in Asia: the Philippines and Indonesia. To be a SGS country is not so honorable. Complaints from industrialists may also take this point into consideration.

Constraint in maintenance of facilities

Lack of machines/equipment for manufacturing is one of the problems in the Philippines along with lack of domestic-made basic and intermediate materials. In order to address the problems, the government have taken initiatives for the development of iron and steel basic industry and petrochemical complexes. As for production facilities such as machines/ equipment industry, it is not easy for developing countries to catch up with front runners in a short time.

As a matter of fact, many SMEs in Central Luzon depend on imported production facilities and have a difficulty in the maintenance. Especially, the maintenance of imported second-hand machine is generally not supported by manufacturers. In case of brand new ones, the makers or their agents concentrate in Metro Manila areas. In either case, the maintenance is costly and time-comsuming, not to mention the losses which may be incurred in the event the factory stops operations.

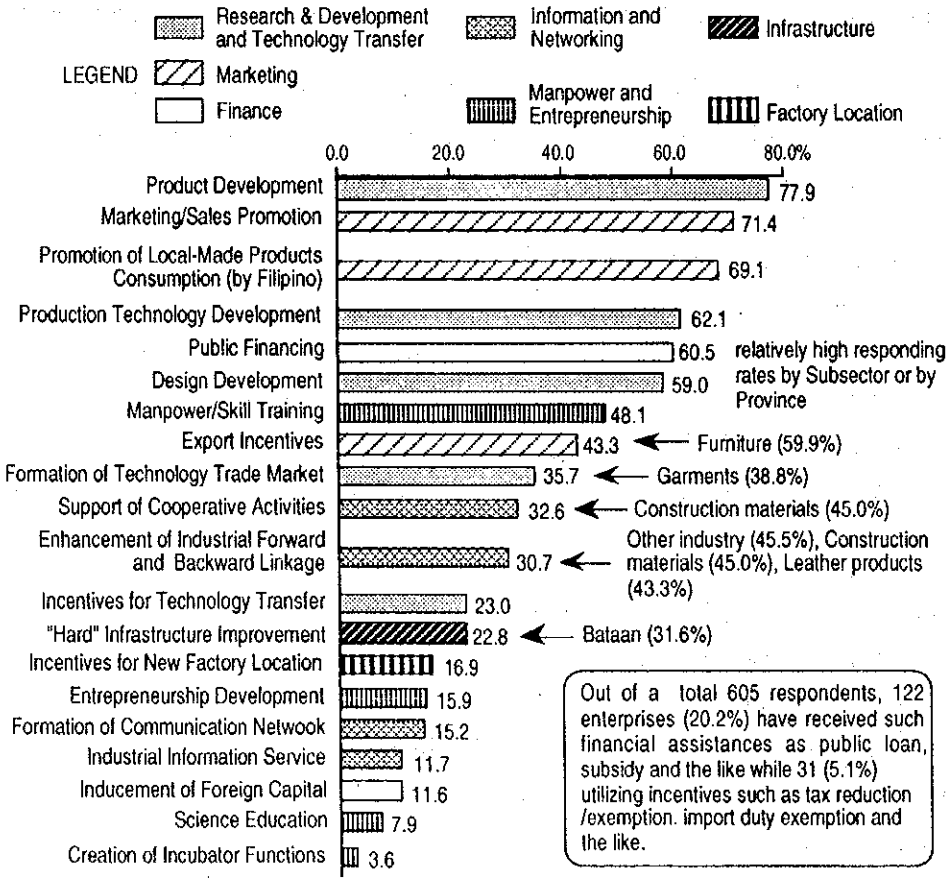
1.3.3 Existing policy measures

"Self-Reliance" or "Self-Help" of the private manufacturing sector is a principle to be observed in the market economy and therefore not all the constraints/problems faced by SMEs in Central Luzon need to be addressed by the government. However, the government is expected to improve the conditions crucial for business activities to support SMEs and to promote investments and industrial land development.

(1) Support measures for SMEs

According to the IQSR3, Central Luzon's manufacturers need various policy measures as illustrated Figure 1.11. These policy measures are proposed based on survey results regarding their strength and weakness and what they consider crucial constraints to them. Out of 20 measures, seven regarded most important have been chosen. The survey results reveal that respondent's needs are mostly on product development, marketing/sales promotion, "by Filipino," production technology development, public financing and design development, accounting for over 50%, respectively.

Figure 1.11 Policy Measures of Great Strategic Importance for Central Luzon Industry Development



Source: Industrial Questionnaire Survey in Region III (JICA Study Team and DTI)

In recent years, policy measures for SMEs development have been strengthened and expanded substantially. The efforts have been led by such basic strategies as expansion of export, utilization of indigenous resources, and development of human resources, all targeting toward a newly industrialized country (NIC) by the year 2000.

1) Product/design and quality development

According to the IQSR3, many SMEs in Central Luzon are confident in the quality, design and durability of their products, and the need to support product development of SMEs is most acute. This reflects the strong and active intention of SMEs to address the following situation.

Background: product and quality standards

Establishing product/quality standards is prerequisite for penetrating into the world markets. The Bureau of Product Standards (BPS)-DTI is mandated to serve standards development, quality management system certification (ISO 9000/PNS1000), product certification and testing, technical information and training, and laboratory accreditation. There are two kinds of standards: mandatory (Philippine National Standards: PNS) and voluntary (PNS based on the international classification of standards (ICS) field).

International Organization on Standardization 9000 (ISO 9000)

This is a series of five standards (9000 to 9004) that sets the basic guidelines for the establishment of quality systems for any product or service. This ISO 9000 is initiated by the former EC. After EC's integration into EU, it has become popular worldwide because of attraction of a huge single market.

DTI-Region III: Regional Products Development (PRODEV) Program

Manufacturers with PNS product standards licenses in Central Luzon are twenty-four, comprising construction materials, air conditioners, and others. A total of four applications for the standards are pending for release and five are under processing. There is only one ISO accredited firm in Central Luzon while there are twenty-one in the Country. In view of this, there is a need for further development of technology and products.

DTI-Region III undertakes an on-going campaign for ISO 9000 accreditation not limiting to specific industry firms but open to any company. In addition, DTI-Region III adopts the following components under its 1994 Regional Product Development (PRODEV) Program:

(a) product development information awareness program (symposia and seminars);
(b) product development technical assistance program (PRODEV workshops/clinics per identified industry sector as well as client visits/consultation of firms classified as regional export winners);
(c) data base build-up (putting up of a mini-design library at Region III office);
(d) market exposure program (for the export-oriented and potential export industries) consisting of:

- local study missions (LSMs) to leading exporting firms in the Philippines,
- National Trade Fairs and Exhibitions, trade houses and centers,
- The Manila Fame Market Weeks,
- organizing of foreign missions among each group of export winners,
- expositions such as a design exhibit and forum, and
- awards and recognition (as part of the motivational process to enhance productivity and quality).

The Product Development of the Design Center of the Philippines (PDDCP) is tapped as a DTI's extension arm for pipeline PRODEV activities. One of its facilities, the PDDCP Design Mobile, will be strategically utilized in regional promotional activities to give local industries a macro perspective via a capsualized module of trends, technology, updates and quality designs.

2) Technology development and transfer

The Department of Science and Technology (DOST) is the premiere science and technology (S&T) agency in the Country having the following councils and institutes, among others:

- Philippine Council For Industry & Energy Research & Development (PCIERD),
- Philippine Council for Agriculture, Forestry and National Resources Research and Development (PCARRD),
- Philippine Council for Health Research and Development (PCHRD),
- Philippine Council for Aquatic and Marine Research and Development (PCAMRD),
- Philippine Council for Advanced Science and Technology Research and Development (PCASTRD),
- Industrial Technology Development Institute (ITDI),
- Philippine Nuclear Research Institute (PNRI),
- Food and Nutrition Research Institute (FNRI),

- Forest Products Research and Development (FPRDI),
- Philippine Textile Research Institute (PTRI),
- Metals Industry Research and Development Center (MIRDC), and
- Advanced Science and Technology Institute (ASTI).

DOST-Region III: 1994 Action Plan

DOST Region III is active in commercialization of matured and appropriate technologies especially for resource-based industries, manpower development and provision of scientific and technical answers to S&T issues. It accomplished 134 projects in 1993 through the above councils or institutes as follows:

ITDI: brick plant, ceramic production, pottery plant, food processing, soap and shampoo production, essential oil, ash (Pinatubo) artware, mushroom, plastic waste recycling-floor wax, and candle production;

FPRDI: lumber kiln dryer, onion dryer, biomass, pyrolizer, fluidized bed, combustor, handmade paper, gmelina pilot production as substitute for wood board, and model house using wood-wool cement board;

PCAMRD: tilapia culture, grouper, crab fattening, upgrading Red Tide Testing Center, fish processing;

PCARRD: small farm reservoir, compost production units, fruit tree nursery, silage development, mango development, improved garlic development, and upgrading of native chicken; and

MIRDC: soil preparation device and cutlery.

DOST-Region III has an action plan in 1994 targeting at such areas as precious jewelry, mango, cutflower, forest-based furniture and gifts, toys and housewares (GTH) with export potentials along with essential oil, organic fertilizer, rootcrop processing, grouper, mushroom, handmade paper, bricks, tiles, and pottery for domestic needs.

Central Luzon State University and UP-Cnetral Luzon: Public initiative

The Central Luzon State University in Munoz, Nueva Ecija leads the research and development for agro-industrial development. It has four divisions: rural development studies, agricultural technology research, technology dissemination and utilization system, and research extension and training. Under these divisions, four centers operate: Freshwater Aquaculture Center, Philippine Carabao R&D Center, Food Processing Center, and Feed/Grains Processing Center.

The University of Philippines has a plan to put up a University of the Philippines in Central Luzon in the near future to address the future needs of the region in the light

of the opening of Subic and Clark. They are targeting 1996 for the start of operations with the following courses: entrepreneurship, environmental studies, information technology, manufacturing engineering, and industrial medicine. The existing UP San Fernando with courses of arts in economics, psychology, business management and a few graduate studies shall be integrated into the program of UP Central Luzon.

The exact location of the UP Central Luzon Branch is not yet determined. Clark was one of the sites eyed, but negotiations were called off due to budgetary constraints. CDC would like UP to lease the land but since UP does not have the financial capability, they are now pushing for the free use of the land or a donation. However, there are many competitors to the land: (1) a Singaporean investor who would want to put up a World University on Information Technology in the same site and (2) Ateneo and (3) De la Salle which are both eyeing the site as possible branch sites.

Meanwhile, these projects will strongly support the development of Central Luzon. The manufacturing sector is expected not only to receive the technologies developed by the universities but also to develop new products or new technology utilization to be done jointly .

3) Marketing and subcontracting

Results of the IQSR3 show that marketing is one of the weak points of Central Luzon SMEs who ranked the supporting measures for their marketing/sales promotion as the second for development (Figure 1.11).

DTI-Region III promotes participation in trade fairs or selling missions, market matching based on trade opportunities or referrals, linkages with buying agents or exporters and marketing consultancy, among others. Marketing consultancy is conducted by giving emphasis on requirements of product quality and design, the latest market trends, costing and pricing, and efficient distribution channels.

Subcontracting is important not only in terms of product market but also in terms of channels of technology transfer. According to the IQSR3, technology transfer from subcontracting partners accounts for 35.9% of the total respondents (605 firms). DTI-Region III and other related agencies including the Export Processing Zone Authority (EPZA) intermediate subcontracting.

Promotion of local-made products consumption or "by Filipino" is important and ranked as the third based on the IQSR3. It is reported that Filipino's strong

inclination to imported goods has decreased in view of the improved quality of local-made products. Further, such mass markets or outlets as school, company, military, governmental offices among others are expected to be expanded. So-called opinion leaders may also be influential in the promotion of Philippine-made products.

4) Raw material sourcing and bulk-buying

Lack or high cost of local raw materials is the critical problem that some subsectors like furniture, GTH, etc. in Central Luzon have faced. DTI-Region III and DOST-Region III support raw material sourcing and identifying substitute materials in the furniture industry. These agencies also pursue bulk-buying of raw wood. Also, some active NGOs have played an important role in sourcing of indigenous raw materials.

5) Manpower and entrepreneurship development

DTI-Region III prepares a full line-up of manpower development focusing on training on skills upgrading including furniture design and finishing, management, costing and pricing, basics of export among others. Entrepreneurial trainings or seminars are also held. In addition, there are training centers specific to industry and the government agencies.

According to the IQSR3, of the total respondents, 77 enterprises (12.7% of the total) have used a Manpower Training Center or similar facilities. They include 20.0% of firms in leather products and footwear and 19.1% in garments. Ratios are relatively high in Bataan (36.8%), Nueva Ecija (21.3%) and Bulacan (14.2%). A "QC Circle" is organized in 131 enterprises (21.7%). Such circles are active in jewelry (46.2%), food processing (40.8%) and GTH (26.1%).

As seen above, policy measures regarding manpower training is relatively well utilized by SMEs in Central Luzon. However, a mismatch between the needs of SMEs and the quality of training is pointed out by some SMEs. In addition to addressing identified needs, support measures to "on the job training" are expected to be examined.

6) Institution-building and modernization of facilities

Institution-building is very effective to strengthen SMEs capability as a whole. There is a total of thirty-seven industrial associations (IAs) in Central Luzon (Table 1.7).

These IAs function not only in promoting common interests of members but also as conduits of government assistance. Along this rationale, some Central Luzon's IAs are undertaking the following projects:

- Marble Common Service Polishing Facility for tiles and slabs in Bulacan,
- Furniture Production Center in Pampanga,
- Multi-level training center, common production center with common facilities (testing, showcase, etc.), information services, and trade consultation, and
- Jewelry Center in Meycauayan-Bulacan: continuous skills upgrading training-program, common service facilities/equipment, product design center and business support center including a showroom.

The Furniture Industry Board Foundation (FIB) will oversee the operation of the Furniture Production Center in Pampanga (RFCP) to be housed in the Don Honorio Ventura College of Arts and Trade in Bacolor . A government counter fund shall be provided to meet machinery and equipment requirements and finance, maintenance, and other operating costs for one year. Subsequent financing may come from fees from services rendered by the Center. DTI will manage the Center until such time that DTI decides to turn over the machinery and equipment to the proponent sectoral association in accordance with existing government regulations.

IAs management is very vital in developing the industrial sector of each province, particularly those producing export winners. The one industry - one vision policy of DTI is being pursued and efforts are directed to make the existing IAs sectoral/industry real partners in development. Sectoral general assemblies were instituted beginning in the first quarter of 1994 where all entrepreneurs belonging to a sector assembled together, with leaders in the industry reporting to everybody, and DTI-Region III giving them insights and direction on the industry they are engaged in.

7) Financing

SMEs are mostly weak in capital raising, and suffer particularly from lack of working capital mainly due to the delay in cash payments from sales. High interest rates, ranging from 15% per annum for private loans to more than 30% for informal loans pose critical problems for SMEs. The need for public finance is likewise strong. However, the public finance programs have been increasing recently. According to the IQSR3, 122 enterprises (20.2% of the total respondents) have received financial assistance in terms of public loans, subsidies and the like.

Export finance

Existing government and private sector-supported financing programs are designed to strengthen the foundation and pave the way for entry of the local manufacturing sector into the export market. Specific programs supportive to these needs are:

- Industrial Guarantee and Loan Fund (IGLF): for collateral-deficient SMEs (already phased out),
- Guarantee Fund for Small and Medium Enterprises (GFSME): directly lending to entrepreneurs,
- Pre-Shipment Export Finance Guarantee Program (PEFG): for creditworthy but collateral-deficient SMEs exporters,
- Export Industry Modernization Program (EIMP): for non-traditional export-oriented, SMEs for the modernization of their production facilities, technologies and services,
- Packing Credit by the Central Bank: qualified banks against letter of credit (L/Cs), purchase orders (POs), sales contracts (SCs) from foreign markets in implementation of the Export Development Program of the government,
- The Philippine International Trading Corp. (PITC) P10 Million Financing Facility: for small exporters,
- PNB's International Trade Financing Program (FXT Fund),
- Kabalikat Sa Pagpapaunlad Ng Industriya (KASAPI): for long term financing to entrepreneurs engaged in small and medium industries,
- Export Credit Guarantee For Small an Medium Industries (ECGP-SMI),
- Philippine Export and Foreign Loan Guarantee Corporation (PHILGUARANTEE) General Guarantee Facility Program: for larger exporters,
- "Tulong Sa Tao" Subcontracting Financing Program: a package of assistance to labor-intensive micro, cottage, small and medium scale businesses including subcontracting inancing component,
- Urban Livelihood Financing Program (ULFP): for cottage, small and medium enterprises-direct financial assistance to identified priority industries, extension of financial assistance for special projects of trade association, cooperatives or non-government associations, and
- Export Development Financing Program: for comprehensive financial support to direct exporters and indirect exporters including subcontracting.

Industry financing program

Aside from IGLF and GFSME, the following programs are pursued for SMEs in Central Luzon:

- Small Business Guarantee and Finance Corporation (SBGFC): for SMEs engaged in agri-business (except for farm level agricultural production), services (except trading), manufacturing, mining and quarrying and for general engineering contracting,
- Guarantee Opportunities for Light Industries (GOLD) Program: for existing projects,
- DBP Omnibus Financing Program for New Entrepreneurs: for entrepreneurs in their start-up projects, and
- BAP Credit Guaranty Corporation (BCGC) Financing Programs: for general use.

Country Wide Industrialization Fund (CIF)

This is a new fund to promote country wide industrialization through the establishment of manufacturing, processing and related industries by providing financial assistance to enterprises in every town and city not exceeding ₱30 million and ₱40 million respectively, authorizing the appropriation therefore in the amount of ₱10 billion per year for the next five years as initial capital, and for other purposes.

This financial assistance is unique in terms of investment on equity by CIF in enterprises, which shall be subject to a stock purchase agreement within a ten-year period of book value and the project owners will be the priority buyers. Soft or concessional loans with a reasonable grace period are also prepared with interest rate not exceeding 11% or 7% above CIF's or the National Government's true borrowing rate from bilateral or multilateral lenders whichever is lower.

Micro Enterprise Development Program - Countryside Development Fund (MEDP-CDF)

This aims at increasing the income and improving the living conditions of families preferably in low-income municipalities and generating employment through livelihood project financing. Under the program, each Congressman was allotted ₱1 million for his respective district. The amount earmarked for each low-income municipality was lent to organization- borrowers at a maximum of ₱250,000 per NGO/cooperative with 7% interest rate per annum.

Micro Credit Project (MCP) Locally Funded

This project aims at increasing the income and improving the living conditions of families in specific areas nationwide by making available direct financial assistance with annual interest rate of 7% and a six months grace period. The assistance is in

the form of soft loans which will be used by organizations-borrowers to relend to micro-entrepreneurs for their income generating activities. This can be used for working capital, purchase of equipment and other capital outlay except for land acquisition.

Livelihood Assistance for Victims Affected by Mt. Pinatubo Eruption (LAVA)

This financing program is the centerpiece of the Mt. Pinatubo Program of DTI under the Task Force Pinatubo. Beneficiaries are those residing in affected areas and resettlement sites, belonging to the low income category and are engaged in viable projects on the bases of technical, financial, managerial and marketing considerations. Loans are extended to NGOs/cooperatives at a rate of 6% per annum, payable in three years, with a maximum grace period of six months.

LAVA has three structures with separate implementation requirements: LAVA I for NGOs/ cooperatives with track records, LAVA II for those relatively new or not having any lending experience, and LAVA III exclusively for resettlement areas. Over the past two years, a total of ₱97 million had been released under the program. This loan exposures were made to community- and resettlement-based projects, mostly by NGOs serving the communities.

Distribution of public loan and availing by enterprises in Central Luzon

A total of ₱2.56 billion of public loans was released in the Philippines during 1987-1992. The number of approved projects totaled 13,889 and an average amount per project was ₱184,758 (Table 1.8).

The Urban Livelihood Financing Program was released to 8,455 projects, the largest number among 15 public loan programs. In terms of loan amount per project, the Agro-Industry Technology Transfer Program (AITTP) was the biggest with ₱6.83 million. The AITTP is a program of the government managed by the Technology Livelihood Resource Center (TLRC) and funded by the Japan Overseas Economic Cooperation Fund (OECF). It has three windows, among which are window 1 for anchor project financing, 2 for pioneer technology commercialization.

Central Luzon's SMEs are active in availing of public finance. According to the IQSR3, respondent manufacturers availed of such programs as LAVA II by DTI, IGLF, and PNB's International Trade Financing Program, although there are more popular commercial bank loans or loans from credit cooperatives and private lending companies. The AITTP has supported 11 projects with a total of ₱104 million as of 31 December 1993, but all of them are agro-projects for corn, onion, asparagus, livestock breeding and aquaculture of prawn.

Table 1.8 Distribution of Public Loan and Amount per Project in the Philippines (for SMEs including micro, cottage level: 1987-1992)

	(A) No. of Project	(B) Amount Approved (in thousand pesos)	% Shares (A)	% Shares (B)	Amount per Project (pesos)
TOTAL	13,889	2,566,100	100.0	100.0	184,758
01. Industrial Guarantee and Loan Fund (IGLF)	146	17,800	1.1	0.7	121,918
02. IGLF-Special Financing Program for Micro enterprises (IGLF-SFPME)	316	600	2.3	0.0	1,899
03. Agro-Industry Technology Transfer Program (AITTP)	103	703,000	0.7	27.4	6,825,243
04. Urban Livelihood Financing Program (ULFP)	8,455	372,001	60.9	14.5	43,998
05. Export Industry Modernization Program (EIMP)	161	844,000	1.2	32.9	5,242,236
06. Guarantee Fund for Small and Medium Enterprises (GFSME)	150	288,100	1.1	11.2	1,920,667
07. Philippine Export and Foreign Loan Guarantee Corporation (PHILGURANTEE)	33	77,309	0.2	3.0	2,342,697
08. Small Business Guarantee and Finance Corporation (SBGFC)	7	5,400	0.1	0.2	771,429
09. NGO-Microcredit Project (NGO-MCP)	197	96,900	1.4	3.8	491,878
10. Micro enterprises Development Project (MEFP)	409	39,700	2.9	1.5	97,066
11. Tulong Pangkabuhayan ng DTI (TUNGKOD)	349	1,900	2.5	0.1	5,444
12. Livelihood Assistance for Victims affected by Eruption of Mt. Pinatubo (LAVA)	1,962	85,400	14.1	3.3	43,527
13. Cottage Enterprise Finance Project (CEFP)	10	31,100	0.1	1.2	3,110,000
14. Kabalikat sa Pagpapaunlad ng Industriya (KASAPI)	1,016	2,800	7.3	0.1	2,756
15. Member's Assistance for the Development of Entrepreneurs (MADE) of SSS	575	100	4.1	0.0	174

Source: Philippine Development Report, 1987-1992 (NEDA)

Cooperatives and NGOs as a conduit or relending tool of public finance

In case of the Asian Development Bank, Non Government Organization Micro Credit Program (ADB-NGO MCP), there are a total of 82 cooperatives/NGOs used as conduits for relending. They are scattered throughout the six provinces, mostly located in the provinces of Bulacan, Nueva Ecija and Pampanga. The loans extended for the period 1988 up to the end of 1993 already amounted to ₱103.22 million, with Bulacan obtaining ₱54.25 million and Pampanga with a total loan availment of ₱20.06 million. The large share of Bulacan in loan availments is a consequence of the province having the biggest number of cooperatives/NGOs accredited with the Micro Credit Program among all the provinces in the region. Throughout the period since the MCP started in Central Luzon, the repayment rate has been high at 95.3% by the end of 1992.

LAVA by DTI provided a total of ₱97 million over the past two years, and this loan exposures were made to community- and resettlement-based projects, mostly by

NGOs serving the communities. In terms of loan distribution by province, Pampanga obtained the bulk of the loan amounting to ₱47.4 million, which represents almost half of the total cumulative loan releases. This could be attributed to the largest number of NGOs in the province which qualified for loan assistance under LAVA I. Zambales accounted only for ₱19.6 million of the total loan releases.

The Countrywide Development Fund (MEDP-CDF) disbursed a total of ₱20.9 million as of October 1993. A total of 120 cooperatives/NGOs conduits had already been served, Pampanga having the largest number of conduits with 32 followed by Nueva Ecija with 26.

The Micro Credit Project-Locally Funded, barely six months after its implementation, approved a total of ₱2.265 million representing 25 cooperatives/NGOs under the program. Nueva Ecija accounted for the most number of approved projects, followed by Pampanga.

8) Foreign assistance

Financial and technical assistance

One of the focal points in Central Luzon's industrial development is how to utilize foreign assistance. The World Bank provides the Fourth Small and Medium Industry Development Project with a grant of US$ 5.6 million and Cottage Enterprise Finance Projects with a loan of US$1.5 million as of March 1994. The grant is for the Product Specialist Project which includes a market study for furniture and GTH, study tour, merchandise expert training, and business consultancy. The United States Agency for International Development (USAID) provides an US$11 million fund for private sector pre-investment studies.

The Asian Development Bank's NGO Micro Credit Project is a loan or grant of US$33 million provided in Central Luzon as mentioned previously. Japan's OECF supports the TLRC -Agro-Industry Technology Transfer Program in addition to financing infrastructure improvement, while the Japan International Cooperation Agency focused on technical cooperation. UNIDO prepares the Asean Handicrafts Project targeted to innovation through image building and entrepreneurship development, among others.

The grant-in-aid projects also play a vital role in the Philippine science and technology development of DOST. The Indian government established the RP-India Handtool Center in Angeles City, Pampanga in 1994. This ₱6.0 million handtool center is expected to upgrade the technology of metalcraft industry and to

be a model for self-reliance in the countryside. In the private sector for example, the European Chamber of Commerce of the Philippines, Inc. assists a feasibility study for furniture-joint venture arrangements.

Application of the Center-Satellite Factory System (C-S System) in Taiwan

The Taiwanese Government is active in the formation of inter-industry and forword-backward linkages. It introduced the Center-Satellite Factory System (C-S System) to the Philippines, providing an initial US$10 million, of which US$9.5 million will be used for lending to SMEs and the remaining US$500,000 will be set aside for the C-S Program which will provide technical assistance to SMEs, through the Development Bank of the Philippines (DBP). Loans will be connected in pesos with an interest rate of 2% lower than the market based rate at variable or fixed rate option. The C-S System consists of three types based on the enterprises' mutual business relationship as follows:

	Center factories and the like	Satellite factories
Type 1	assembly factory	direct parts supplier
Type 2	upstream raw material supplier	receiver of the materials
Type 3	professional trading company or turn-key exporting company	entrusted manufacturer

For the efficient implementation of the C-S Program, a C-S Advisory Committee will be formed with DTI as the lead agency. The program will be initially implemented in Metro Manila, CALABARZON and Subic for targeting industries such as garments, electric and electronics, metal working, machinery and GTH.

(2) Investment promotion

Investment incentives

The Philippines has lined up incentives attractive to investors as follows.

1) Incentives for BOI approved enterprises

- income tax holiday of 4 to 6 years, duty-free importation of capital equipment (otherwise tax credits on domestic capital equipment),
- tax credit for taxes and duties in raw materials used in the manufacture, processing or production of exports product, tax-deduction for additional direct labor expenses, and
- non-fiscal incentives such as simplified customs procedures, unrestricted use of consigned equipment, employment of foreign nationals and special investor's resident visa.

2) Incentives for Export Processing Zone (EPZ) enterprises

In addition to all BOI incentives, the following are provided.

- duty-free importation of capital goods, machinery, raw materials, supplies and finished goods,
- exemption from local taxes, licenses and fees; exemption from real estate taxes on production equipment and machinery (for the first 3 years of operations); exemption from the 15% branch profits remittance tax, and
- 100% foreign ownership; simplified import and export procedure; exemption from SGS inspection.

3) Incentives for Special Economic Zone and Freeport (Subic and Clark) enterprises

- tax and duty-free importation of capital goods, machinery, raw materials, supplies and finished goods,
- no local and national taxes except for final 5% corporate tax on gross income earned, and
- tax holiday of 4 to 6 years (limited to the Clark Field).

Aside from these, other incentives are still under discussion in the Congress. They include :

- an application of Condominium Law to industrial estate,
  According to this application, foreign investors will be able to own 40% of the unit in industrial estate,
- extension of land lease period from 50 years to 75 years, and
- an accelerated depreciation of fixed assets.

Investment promotion

DTI-Region III has extended its promotional activities to attract investments from not only foreigners but also Filipinos as follows:

1) Investment promotion targeted at foreign investors

- data base build-up: investor's profile and skills inventory,
- technology transfer program through training programs,
- assistance/facilitation/coordination of investment mission or promotion,
- familiarization program on SBMA, Clark Field and Bataan EPZ, and
- world class promotion collaterals.

2) Investment promotion targeted at Filipino investors

- investment forum focusing on activation of inter-regional flows of investment,
- investment opportunities exhibits, and
- Central Luzon Investor's Council (CLIC).

CLIC aims to encourage advocacy among top investors and businessmen in Central Luzon particularly on the development of the local investment climate vis-a-vis the existing policy structure of the national government. Another objective of CLIC is to establish and strengthen institutional linkages between the private and the government sectors for joint resolutions to ensure the effectiveness of existing policies or programs on the basis of evaluations undertaken.

Promotion of spillover from Metro Manila

Central Luzon is one of the sites suitable for absorbing spillover of Manila based industries. The Investment Priorities Plan (IPP) is an annual list that identifies the investment areas entitled to the so-called "BOI approved incentives." The 1994 IPP lists industries whose plants are expected to be relocated and modernized outside Metro Manila as follows:

- meat processing to include dressing plant, fish canning/processing, vegetable oil,
- textile, paper mills, paints, cocochemicals, soap, detergents and personal beauty care products,
- construction ceramics, marble processing, refactory bricks, flat glass, glass container plans; vinyl tile, plastic pipe, and
- rolling mills, G.I. sheets.

These industries for relocation shall be entitled to capital equipment incentives of duty free importation only, without income tax holiday. The 1994 IPP grants incentives to 100% export enterprises in Metro Manila with expansion investment.

(3) Industrial land development

Changes in developmental situation

Industrial land development in the Philippines takes the following forms: Export Processing Zone (EPZ) by the Export Processing Zone Authority (EPZA), and General Industrial Estates (GIEs) by the public and private sector. GIEs were developed mostly by the private sector.

The situation has changed recently. First, EPZA gives permission for a certain portion of private IEs to enjoy the same incentives and duty free importation as EPZ. This is the Special Export Processing Zone (SEPZ). Second, the US bases conversion makes the provision of industrial land by the newly established public sector possible. Subic Bay and Clark Field

are good examples, both of which are designated as the Special Economic and Freeport Zones (SEFZs). The SEFZs are granted with the autonomous rights and exclusive incentives. The Subic Bay Metropolitan Authority (SBMA) and the Clark Development Corporation (CDC) are organized under the Office of President, and their jurisdictions laid over cities and municipalities where these two are located. Third, the eruption of Mt. Pinatubo has forced industrial land development by the public sector. The Productivity Centers (PCs) have been developed by the Mt. Pinatubo Commission (MPC) and DPWH (responsible for construction). Fourth, by the Local Government Code of 1991, local government units (LGUs) can provide an industrial land . People's Industrial Enterprises (PIEs) represent the cases. In sum, the public sector's initiative in industrial land development has become stronger.

Existing EPZ, IEs and SEZF

There already are developed in Central Luzon thirteen industrial lands consisting of one EPZ (Bataan EPZ: BEPZ), nine IEs including one IE containing SEPZ (Luisita Industrial Park), two SEFZ (Subic and Clark) (Table 1.9).

BEPZ has recovered its investment having at present 48 factories and 19,000 workers, but a total of 82.8ha is still available. Bulacan has six IEs with a total available land of 142.3ha while two IEs in Pampanga have 22.0 ha still available. In Tarlac, a total of 14.9 ha is still available.

A vast area is available in Subic Bay (792.1 ha) and Clark Field (4,100.4 ha) including lands to be used for other purposes than industrial use. In Subic Bay, the Taiwan International Economic Cooperation and Development Fund agreed to develop an industrial estate (300 ha) jointly with SBMA to be provided for potential Taiwanese investors, and a Japanese corporation agreed to develop a total area of 40 ha for an IE. In both Subic and Clark, land and facilities already built are available solely by leasehold because they are national property. The Philippine Shipyard & Engineering Corporation in Zambales, or the former PHILSECO, one of the Government-Owned/Controlled Corporations and already privatized, opens a portion of its site (77.0 ha) to the outside.

Rates of leasing or selling land and building in IEs are: ₱2.75-50 monthly per m^2 for land lease, ₱400-2,500 per m^2 for land selling, ₱36.3-55 monthly per m^2 for the standard factory building (SFB) and likewise 1,000-5,000 per m^2 for selling.

Proposed/planned IEs

Among the six projects including two petrochemical complexes, the Hermosa Agro-Industrial Center (HAIC) in Bataan is one of the Regional Agro-Industrial Centers (RAICs) designated by the government. The location of the HAIC is very strategic on a regional perspective as it

is on the cross road of Pampanga, Zambales and Bataan, the end link to the proposed Manila-Bataan Coastal road and part of SBMA. It lies at the center of the triad composed of Metro Manila, Subic and Clark. Meanwhile, one IE planned in Pampanga is the second Taiwanese project following the Subic project intended for Taiwanese investors to relocate from Taiwan.

Productivity Centers (PCs)

This Mt. Pinatubo-related project has developed seven Productivity Centers with 36 building units (floor area: 1,260 m² per unit) in areas seriously affected by the eruption : three in Pampanga, two in Tarlac, one each in Bataan and Zambales. Of the existing 36 units, 17 units are already occupied or have approved leasehold contracts. However, MPC who is the management body and developer of PCs is planning to make some PCs with no locators converted to post harvest facilities. The lack of locators is mainly due to poor road accessibility to PCs due to lahar hazards and lack of promotional campaigns to attract investors.

The PC in the Pandacaqui Resettlement site in Mexico-Pampanga is one of the successful cases of productivity centers accommodating 2,395 housing units, 14 school units including ones for primary and secondary school, 10 bed clinics, day care center, town hall and police station, recreational center, training center and community library and public market. This is literally a new town. The PC has six buildings, of which four are already occupied by two enterprises: garments and stuffed toys with more than 400 workers, and the remaining two buildings having approved leasehold contracts for lantern and leather goods.

The share of resettlers to the total existing workers in Pandacaqui PC is around 50% and resettlers are mostly important. This success is attributed mainly to the following: good access condition to San Fernand and Metro Manila without lahar threat, abundant trainable workers, no safety problems and active investment promotion, among others. Meanwhile, MPC has a plan to develop 12 PCs (ten in Tarlac, one each in Pampanga and Zambales) in addition to the existing seven PCs.

People's Industrial Estates (PIEs)

The development of PIEs is focused on providing agro-based small and medium industries with industrial land. There are 19 candidate sites of PIEs but all of them have not been implemented and are still proposals. This is mainly due to unestablished feasibility of the candidate sites and budget constraints of the concerned local governments.

Table 1.9 Industrial Land Development in Central Luzon (EPZ, GIEs and SEZF)

	PRO-VINCE	NAME	LOCATION	Total Area	Deve-loped	Occu-pied	Avai-lable	Developper
Existing	Bataan	Bataan EPZ	Mariveles	1,600.0	480.7	83.6	82.8	EPZA
	Bulacan	Intercity Industrial Estate	Bocaue	10.0	10.0	4.2	5.8	Vervo Reality & Dev't Corp.
		Bulacan Agro-industrial Subdivision	Calumpit	95.0	95.0	6.0	89.0	LEXBER, Inc.
		First Bulacan Industrial Estate	Malolos	51.7	31.6	16.0	22.7	Fil-Star Market-ing & Dev't Corp.
		Meycauayan Industrial Subd.	Maycauayan	24.4	24.4	16.6	7.8	Stateland Inv't Corp.
		Merdian Industrial Park	Meycauayan	7.0	7.0	5.0	2.0	MDJ Reality
		Sapang Palay Industrial Estate	San Jose del Monte	19.7	16.8	4.7	15.0	NHA
		Subtotal		207.8	184.8	52.5	142.3	
	Pam-panga	Clark Field	Angeles City	4,440.0	4,440.0	339.6	4,100.4	CDC
		Angeles Livelihood Village	Angeles City	33.0	20.0	6.0	10.0	LIVECOR
		Holy Angel Industrial Estate	Bacolor	52.0	32.0	20.0	12.0	
		Subtotal		4,525.0	4,492.0	365.6	4,122.4	
	Tarlac	Luisita Indutrial Park	Tarlac	120.0	63.0	63.9	14.9	Luisita Reality Corp.
	Zam-bales	Subic Bay Meropolital Area (SBMA)	Olongapo City	6,658.0	979.5	187.4	792.1	SBMA
		PHILSECO	Subic	77.0	77.0		77.0	Taiwanese PHILSECO
		Subtotal		6,735.0	1,056.5	187.4	869.1	
		TOTAL		13,187.8	6,277.0	753.0	5,231.5	
Proposed /Planned	Bataan	Hermosa Agro-Industrial Estate	Hermosa	115.0				Land by AFP
		Petrochemical Complex	Limay	500.0				PNOC
		Petrochemical Complex	Morong					
		Subtotal		615.0				
	Pam-panga	Timog Park Industrial Estate	Angeles City	70.0				Family Corp.
		FK. Industrial Complex Inc.	San Fernando	71.0				Korean-Fil. Corp.
		(Not Specified)	-	150.0				Taiwanese
		Subtotal		291.0				
		TOTAL		906.0				
GRAND TOTAL				14093.8	6,277.0	753.0	5,231.5	

Note: 1) Clark Field as of 31 July 1994, Subic as of 01 September 1994, Others as of April 1994
2) Occupied Area includes that already reserved.
3) Available Area = Developed - Occupied + Some allowance included in Total Area
4) In case of Luisita, Occupied Area is Larger than Developed Area du to a big area reserved.

Source: Department of Trade and Industry (DTI), JICA Study Team

1.4 Vision, Objectives and Strategy for Industrial Development in Central Luzon

1.4.1 Vision: Central Luzon as an Industrial Heartland in the Philippines and the Asia-Pacific Region

"One Region-One Vision" is a leading concept of the Central Luzon Development Program (CLDP). It embodies the concern to integrate potentials and prospects not only among the six provinces but also among industries.

The Medium-Term Central Luzon Regional Development Plan (1993-1998) places the agro-industrial development (AID) as the region's long-term vision for development. This vision is relatively domestic-oriented. To the year 2010, global-orientation is added to make Central Luzon an industrial heartland in the Philippines and the Asia-Pacific Region. This vision represents a challenge by Central Luzon. The external and internal circumstances are supportive of it, however, as illustrated in Figure 1.12.

(1) International context of industrial development

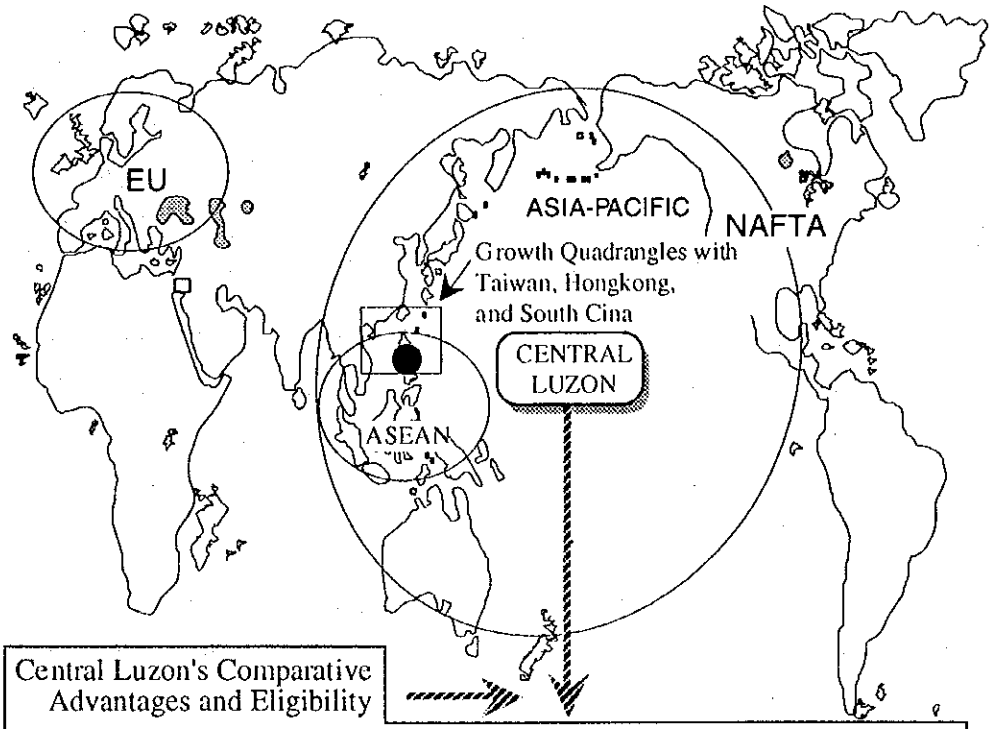
Globalization and economic area integration : AFTA

Globalization of the economy is a logical outcome of efficient capital investments by multi-nationals, which operate in a borderless and self-multiplying manner promoting the formation of single markets. The World Trade Organization (WTO), in place of GATT, will prepare a comprehensive framework for the globalization as mentioned earlier.

Also regional integration of economic areas has been in progress. In addition to the European Union (EU), the North American Free Trade Area (NAFTA) and the Asean Free Trade Area (AFTA), among others, have already started, These economic areas are hybrids of free trade among themselves which pose a survival problem for weaker economies within the respective integrated areas and a protectionist shield against the outside. The Asian-Pacific Economic Cooperation (APEC) organized in 1989 may integrate NAFTA and AFTA into one.

AFTA which is strategically meaningful to the Philippines given her "open policy", should be maintained and further strengthened. AFTA, after completion by the year 2008 will give the Philippines access to a larger combined market, benefit from the investment pull that results from the investment boom in the ASEAN countries, and provide the safety net for the Philippines improving overdependence on two major markets of USA and Japan.

Figure 1.12 Vision and Global Perspectives of Industrial Development in Central Luzon



Central Luzon's Comparative Advantages and Eligibility

Transshipment Hub Functions
- international free seaport and airport (Subic Bay, Clark Field)
- free banking system
- reasonable business cost including low income tax and incentives

Industrial and Urban Functions
- proximity to domestic mass market and information center of Metro Manila
- agglomeration of diversified industries/manufacturing
- availability of rich human resource/manpower
- good residential environments including amenity and entertainment
- peace and order

Agro-Industrialization (Localization) → ← Globalization Glocalization

Central Luzon: AGLOCALZON 2010

Industrial Heartland in the Philippines and Asia-Pacific
- Free Trade Zone with business chances and amenity
- Agro-industrial rurban community
- World class "Industrial Capital" of fashion and interior goods/material industries
- Cometitive edge of electronics, design, computer softwear, and engineering industries including aviation and shipbuilding
- Supply base of new materials (petrochemicals, etc)

Strategic subregional alliance: subregional economic zone

Strategic subregional alliances have been leading a border-less economy among the Southeast Asian nations. This is a growth strategy to pursue an optimum allotment of development resources among member subregions. In case of the alliance between Hongkong and Guangdong, the former provides capital and technology to the latter whose comparative advantages are labor and land. The complemental linkage is conducive to a successful experiment of market economy in China and has produced "Miracles of Shenzhen." The alliance between Taiwan and Fujian in China has also been sought. These linkages are the driving forces/engines for the formation of the South China Economic Zone.

In the ASEAN countries, Singapore initiated a "Golden Triangle" along with Johor in Malaysia and Riau in Indonesia. Another triangle formation is proposed by Singapore, Thailand and Malaysia. In addition, North Western Japan, Russian Far East, North Eastern China and Korea including the north are going to strengthen the economic linkages toward the formation of Japan Sea Rim Economic Zone.

The Philippines has a favourable condition for a hub of subregional economic zones, geographically situated in the center of ASEAN or South East Asia and socio-economically abundant in human and natural resources.

Central Luzon alliances

The Philippines seeks and envisions strategic subregional alliance of a "Growth Crescent" among Southern Mindanao, Sabah in Malaysia, Brunei and parts of Indonesia. Also, a "Growth Quadrangle" is envisioned for Central Luzon to forge with Taiwan, Hongkong and South China.

In this context, Hongkong's return to the mainland China in 1997 is the crucial point. Hongkong has been economically a gateway or a conduit of flow of goods, capital, human and information between China and Taiwan. These transshipment hub functions will not work after 1997 since diplomatic barriers shall remain between China and Taiwan. They could be replaced by Central Luzon capitalizing on the existence of the Special Economic Zones and Freeports in Subic Bay and Clark Field.

(2) Industrial heartland

An industrial heartland (IH) is a global center attracting mass flow of goods, capital or investments, human resources, information and technology. Central Luzon is envisioned to be an IH in the Philippines and Asia-Pacific by the maximum use of its existing functions as follows.

(a) Transshipment hub functions

- international free seaport and airport (Subic Bay, Clark Field),
- free banking system, and
- reasonable business cost including low income tax and incentives.

(b) Industrial and urban functions

- proximity to domestic mass market and information center of Metro Manila,
- agglomeration of diversified industries/manufacturing,
- availability of rich human resource/manpower,
- good residential environment including amenity and entertainment, and
- peace and order.

For transshipment hub functions, Subic Bay has an area of 6,000 hectares, deep sea ports and an airport with 2.7-km runway. The world's largest express delivery company, the Federal Express Corporation has decided to put up the hub of its regional operations in Asia and will start operation in 1995. This hub operation is expected to attract more investments not only from USA but also from the rest of the world. Already 73 firms have obtained SBMA approvals as of September 1994. Clark Field with a total of 28,041 ha has already 40 locators signed lease agreements. It is designed to be an international hub airport based on two 3.2-km runways. Free banking system is available both in Subic and Clark where business cost is low mainly due to the use of transferred national assets from USA and a privilege of tax exemption except the final 5% gross income tax.

Central Luzon's port complex (airports and seaports) is a definite magnet for investments because air transport accounted for P4.27 billion or 20.4% of the Philippine foreign trade (export and import) while 79.6% is water-borne. Exporters and importers in Central Luzon can enjoy the convenience for alternative or optimum combined use of ports according to the extent of their delivery needs such as emergency/high-speed, safety and cost. As a reference, Table 1.10 shows air transport ratios in Japan's foreign trade by commodity (value basis) in 1992. The average ratio was 18.0% corresponding to Y1,325.6 billion and a high ratio (over 40%) group comprises precious metal/goods, aircraft, fur skins or leather products, pharmaceuticals, special transactions (consigned works of electronic devices, etc.) and precision instruments. These commodity industries are called "Gram Industry" whose value per weight is very high and the transport cost is minimal against total cost. The so-called "Kilogram Industry" is also a good user of air transport, such as electrical or electronic equipment, wearing apparel, some quality textiles and ceramics, organic chemicals and toys. These industries are prospective locators in the Central Luzon port complex and its surrounding areas.

Table 1.10 Air-Transport Ratio in Japan's International Trade in 1992

All Commodities	18.0				
Pearles, precious stone/metal products, etc.	93.3	Fish, crustaceans, molluse, etc.	12.9	Dairy product, bird's eggs, etc.	2.3
Works of art, collector's pieces	92.2	Raw hides and skins	12.3	Copper and copper products	2.3
Live animals	89.5	Other made yp textiles, etc.	12.1	Meat and edible meat offal	1.9
Aircaraft, spacecraft and parts thereof	79.9	Products of stone, plaster, cement, etc.	11.8	Oil seeds, feeding stuff, etc.	1.9
Furskins/artificial fur and their products	77.2	Musical instruments and parts, etc.	11.6	Straw/plaiting products, basketware, etc.	1.8
Pharmaceutical products	74.1	Glass and glassware	11.2	Aluminum and aluminum products	1.8
Clocks, watches and parts thereof	72.6	Miscellaneous base metal products	10.7	Beverages, spirits and vinegar	1.8
Live tree, other plant, etc.	71.7	Arms and ammunitions and parts, etc.	10.6	Cofee, tea, mate and spices	1.7
Special transactions, etc.	60.2	Knitted/crocheted fabrics	10.2	Transport equipment: railway	1.6
Leather goods, etc.	48.3	Furniture, bedding, cushions, lamps, etc.	9.8	Tin and tin products	1.5
Printing book, typescripts, plans, etc.	43.5	Inorganic chemicals, compounds of rare metal, etc.	9.5	Other vegetable products, plaiting materials	1.4
Precision instruments	42.1	Tanning or dying extracts, paint, ink, etc.	8.8	Preparations of cereals, flour, milk, etc.	1.1
Electrical/electronic machinery and equipment and parts	35.0	Other vegetable textiles	8.8	Tobacco and its substitutes	0.7
Wearing apparel and clothing accessories	32.2	Man-made filaments	8.7	Animal and vegetable fats and oils, etc.	0.6
Preparation of feather and down, etc.	32.2	Other animal origin products	7.9	Preparations of vegetables, fruits, etc.	0.6
Special woven fabrics, lace, embroidery, etc.	31.0	Photographic and cinematographic goods	7.9	Motor vehicles and parts	0.6
Ceramic products	29.1	Edible fruit and nuts, melon, etc.	7.2	Residues and waste from food processing	0.4
Essential oils, perfumery, cosmetics, etc.	28.8	Plastics and plastic products	7.1	Wood and wood products, wood charcoal	0.4
Organic chemicals	27.8	Felt, nonwovens, cordage, ropes, etc.	6.2	Sugars and sugar confectionary	0.3
Silk, silk yarn/fabrics, etc.	24.0	Explosives, matches, fireworks, etc.	5.7	Zinc and zinc products	0.2
Toys, games, sporting goods	23.5	Man-made staple fibers	4.5	Iron and steel	0.2
General machinery, computers, etc.	23.1	Iron and steel products	4.5	Salt, sulphur, stone, lime, cement, etc.	0.1
Tools, implements, cutlery, spoons, etc.	22.7	Lac, other vegetable saps, etc.	4.4	Wheat flour, starches, gluten, etc.	0.1
Wearing apparel, etc. (knitted/crocheted)	22.4	Umbrellas, walking-sticks, etc.	4.2	Fertilizers	0.0
Miscellaneous chemical products	21.1	Cocoa and cocoa preparations	4.0	Ores, slag and ash	0.0
Other base metals and products thereof	20.9	Cotton, cotton yarn/fabrics, etc.	4.0	Ships, boats and floating structures	0.0
Miscellaneous manufactured goods	19.6	Nickel and nickel products	3.6	Mineral fuels and oils, their distillation, etc.	0.0
Edible vegetables, roots and tubers	19.3	Miscellaneous edible preparations	3.6	Pulp of wood, waste/scrap of paper/board	0.0
Albuminoidal substructs, gules, enzymes, etc.	19.2	Preparations of meat, fish, etc.	3.5	Cereals	0.0
Headgear and parts thereof	17.4	Soap, surface-active agents, wax, etc.	3.3		
Coated textile fabrics, etc. for industrial use	14.4	Rubber and rubber products	3.3		
Footwear and the like	14.2	Paper and paper products	3.2		
Carpets and the like	14.0	Lead and lead products	2.5		
Wool, wool yarn/fabrics, etc.	13.2	Cork and cork products	2.4		

Source: Calcurated from computer output data by the Ministry of Finance, Japan

For industrial and urban functions, proximity to domestic mass market and information center of Metro Manila will support Central Luzon to become an "industrial heartland" (IH) in the Philippines and the Asia-Pacific. Central Luzon has an agglomeration of diversified industries/manufacturing necessary for active international business activities, such as food processing, garments, furniture, leather goods, jewelry, metal processing and semiconductors. As for another necessity for an IH, Central Luzon has good residential environment with amenity, entertainment, and peace and order

Component of "industrial heartland"

The "Central Luzon Industrial Heartland" is viable as mentioned above and mainly composed of the following:

- Free Trade Zone with business chances and amenity leading Central Luzon's globalization of the economy,
- Agro-industrial rurban community as a result of localization of the economy with strengthened linkages between agriculture and industry conducive to rural area's harmonized urbanization with natural environment,
- World class "Industrial Capital" of fashion and interior goods/material industries, based on the existing agglomeration and supported by urban business functions,
- Competitive edge of electronics, design, computer software, and engineering industries including aviation and shipbuilding to be developed with effective use of Central Luzon's locational conditions, and
- Supply base of new materials (petrochemicals, etc.) already developed or planned.

1.4.2 Objectives

Objectives of industrial development in Central Luzon are established in line with its vision as an industrial heartland.

1) To establish industrial niches within the globalizing economies with free trade zones and other supportive facilities and functions, using Central Luzon's locational advantages, existing agglomeration of various industries and indigenous resources;

2) To promote agro-industrial rurban (rural urban) communities through localization of the economy with strengthened linkages between agriculture and industry; and

3) To substantiate impacts of globalization and localization of the economy and establish firm foundation for the further growth of Central Luzon through promoting the formation of "Industrial Capital" and "Rurban Community".

1.4.3 Spatial development strategy

Spatial strategy for industry development has three dimensions: international, inter-regional and intra-regional. They would enforce one another toward the formation of the Central Luzon's industrial heartland.

(1) International strategic linkages

A recent development in the globalization process is for foreign direct investments to be devoted to exclusive industrial land development for the origin country's firms. Korea has developed an industrial estate (IE) in China's Shandong Province, and has a plan to develop another in Russian Far East. Japan developed an IE with the same nature not only in Cavite, Philippines but also in Dalian City in China through the partnership between the government and the private sector .

The Subic Bay Metropolitan Authority (SBMA) and the Taiwanese Government agreed on developing 300 ha industrial estate for Taiwanese firms. This may be a step to form a "Growth Quadrangle." Further linkages with Hongkong and South China should be sought. Among others, linkages with the ASEAN countries, USA, Japan and Australia are also strategically important and will be strengthened toward the formation of the Central Luzon's industrial heartland (IH), a global center attracting mass flow of goods, capital or investments, human, information and technology. Subic Bay, Clark Field, Bataan Export Processing Zones and others are cores for such international linkages.

(2) Inter-regional strategy

The first priorities in this dimension are regional integration with Metro Manila and formation of MSC Triad (Metro Manila-Subic-Clark) or the National Growth Triad. For Central Luzon's industrial development, the former is strategically important in receiving spillover from Metro Manila. Bulacan has been the main receiver. Metro Manila is being paralyzed with overconcentration and overcongestion. This trend will be inevitable due to the economic growth and the spillover will expand along the Manila North Road and the North Luzon Expressway upto San Fernando and Angeles City. For the latter, formation of the MSC Triad would strengthen a complementary linkage to multiply their functions. Metro Manila's transshipment functions will be shouldered significantly by Subic Bay and Clark Field, while Metro Manila will specialize in higher order urban functions. Subsequently, the MSC Triad will attract more investments in Central Luzon.

Linkage with Northern Luzon is also important. Central Luzon's location situated between Northern Luzon as a major primary products supplier and Metro Manila with a mass market is attractive for inter-regional distribution/delivery center project.

As for land development for inter-regional linkages, developed IEs in the area along the Manila North Road and the North Luzon Expressway are suitable sites for receiving spillover from Metro Manila and inter-regional distribution/delivery center projects.

(3) Intra-regional strategy

Figure 1.13 illustrates the spatial distribution of manufacturing by employment size in 1988 and the present location of industrial lands in Central Luzon. Existing IEs concentrate in the area along the Manila North Road and the North Luzon Expressway where manufacturers agglomerate densely and proposed/planned IEs are also located, apart from the IEs in Bataan.

Existing spatial distribution of industrial lands including those proposed/planned is reasonable on the whole because of the following.

(a) Balanced land development for employment generation/absorbing unemployment

This is addressed by developing People's Industrial Enterprises (PIEs) in rural areas almost throughout the region, Productivity Centers (PCs) for the areas affected by the eruption of Mt. Pinatubo and conversion into industrial use of the former US bases of Subic Bay and Clark Field.

In short- and medium-terms, industrial land demand will be absorbed by these existing and proposed/planned estates that can provide an aggregate area of about 3,000 ha. Aside from the land demand itself, the following should be strategically pursued.

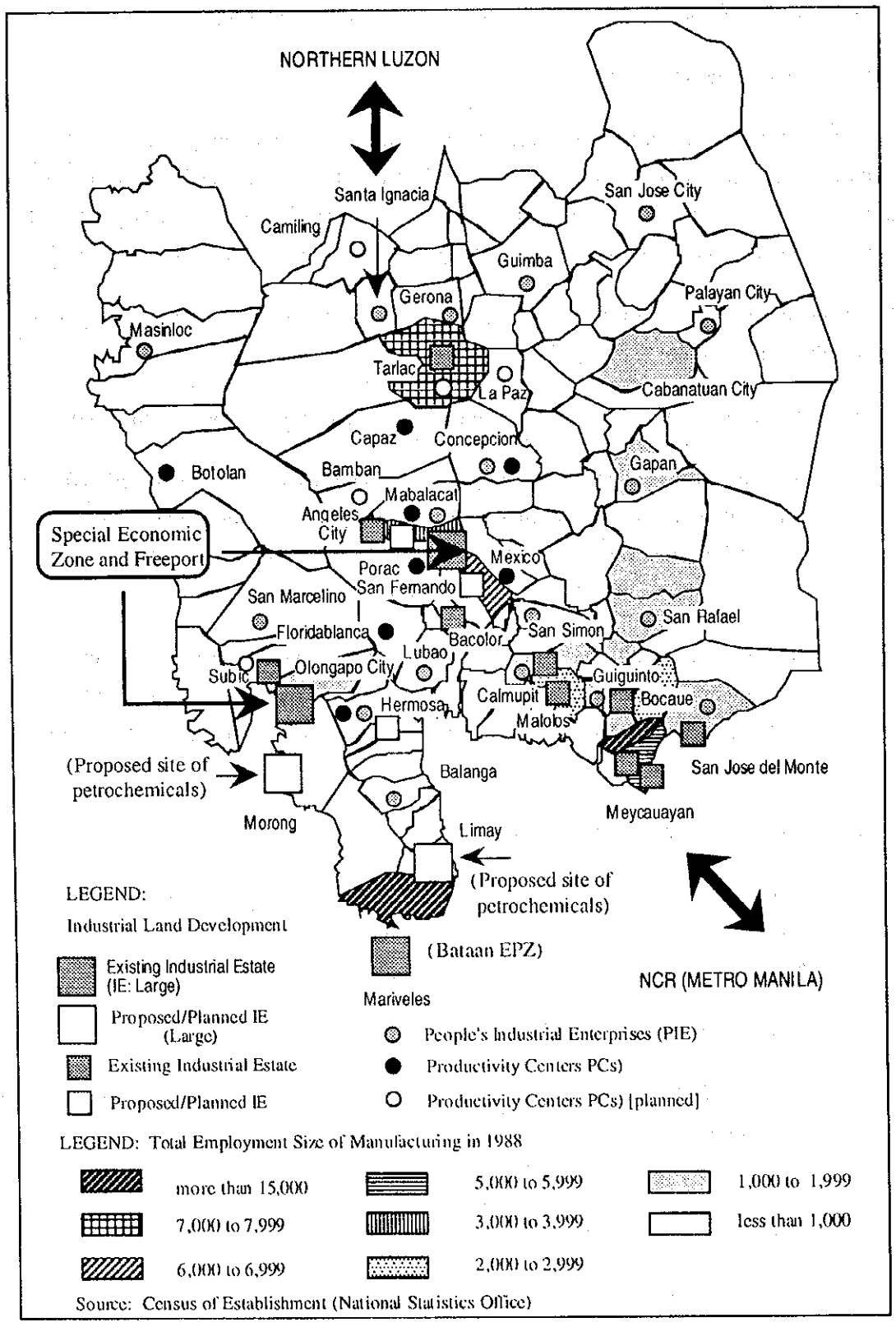
(b) Land development for the regional integration

Central Luzon's regional integration is a prerequisite to "One Region-One Vision" policy. To this end, proposed PIEs in areas outside MSC Triad in Tarlac and Nueva Ecija should be realized considering the future road network.

(c) Land development for urban renewal and industry modernization

Aside from IEs, factories in existing agglomerated areas such as Meycauayan, Bulacan will soon face lack of land for expansion. In this case, land development will be strategically implemented along with urban renewal and industry modernization.

Figure 1.13 Spatial Distribution of Industrial Lands and Manufacturing in Central Luzon



1.4.4 Sector development strategy

(1) General directions and strategy

In line with agro-industrialization and formation of an industrial heartland, industrial development in Central Luzon should be pursued along with the following:

- open policy-based development toward globalization,
- people-oriented and indigenous resource-based development toward localization, and
- global-local (glocal) mix-oriented development.

These directions may be symbolized by the term AGLOCALZON signifying agro-industrial development, glocalization and Luzon to counter a strong competitor of CALABARZON. General strategy for the further growth of Central Luzon's manufacturing sector is composed of higher competitiveness, better marketability, higher productivity/lower cost, and stronger linkages.

(2) Specific strategy

In order to address globalization of the economy, country-and product-specific export expansion is pursued. The Medium-Term Philippine Export Development Plan (MTP-PEDP:1993-1998) sets the priority products and target markets as follows.

(a) Agro- and resource-based products

Carrageenan and seaweed	Europe, USA, South America
Shrimps and prawns	European Union (EU), Japan, USA
Processed tropical fruits	
Dried	EU, USA, Asia Pacific
Preserved	EU, Middle East, Japan/EU
Juice	Asia Pacific, EU, USA
Marble	Japan, USA, Asia Pacific

(b) Consumer Products

Garments	USA, EU, Canada
Furniture	USA, Japan, Germany
Gifts and housewares	
Christmas decor	USA, Italy, Germany
Basketware	USA, Japan, England
Ceramics	Germany, USA
Jewelry	USA, Japan

(c) Industrial Products

Subcontracted:	
electronic products	USA, Japan, Germany
metal component and parts	USA, Hongkong, Japan
Computer Software	USA, EU, Japan

These "export winners" are mostly the main export industries in Central Luzon: marble and garments in Bulacan and furniture, gifts and housewares, ceramics and metal products (metal craft) in Pampanga. Central Luzon has a big potential for not only agro-industries of food processing but also more foreign and domestic investments in areas of electronic products and computer software on the basis of the region's rich human resources. In addition to these, jewelry and leather goods industries intensively located in Meycauayan, Bulacan have the potential of an "export winner" due to the strength of quality.

Indigenous agro-processing expansion is a strategy directed towards localization and addressed to external problems. According to the IQRS3, of a total of 605 respondents, the top five external constraints encountered by subsector are identified below (Table 1.11).

Table 1.11 Severe Constraints by Subsector Aide from Infrastructure Concern (Top 5 Problems)

	Food processing		Leather products		GTH	Construction materials		
(Responding rate: %)		Garments		Furniture		Jewelry		Metal & machinery
Decrease of Local Raw Material Resources	57.1	57.3		69.1	63.8	53.3	75.0	73.8
Lack of Sable Supply of Raw Materials	57.1	43.8		64.5	58.0	53.8		50.0
Limited Domestic Market Demand	49.0	55.1	55.0	48.0	50.7	61.5	60.0	47.6
Lack of Access to Public Loan with Low Interest Rates				58.6	58.0		60.0	54.8
Low Quality of Raw Materials		53.4	60.0					
Lack or High Cost of Local Inputs	46.9		73.3		50.7	75.0		
Lack of Access to Commercial Loan with Low Interest Rates	55.1		46.7	46.7			55.0	64.3
Lack of Access to Advanced Information for Technology		48.9	46.7			61.5	50.0	
Lack of Access to Advanced Information for Marketing			46.7					
Lack or High Cost of Technician/Skilled Worker					50.7	75.0		

Source: Industrial Questionnaire Survey in Region III (JICA Study Team and DTI)

Local raw material availability and procurement are critical for pursuing agro-industrial development in Central Luzon avoiding overdependence on imported materials. Therefore, indigenous agro-processing should be strategically expanded. In addition, resource recycling or ecological manufacturing, a sort of indigenous resource processing is expected to be pursued in Central Luzon.

Creation of domestic market is to develop the market for products in line with tourism development. According to the IQRS3, limited domestic market demand is one of the crucial problems for further growth. Linkage with tourism development will serve the market for a

variety of food products and souvenirs. Central Luzon's food processing, gifts, toys and housewares (GTH), garments and metal craft industries have advantages. Around Subic Bay, there are newly established food processing, GTH and the like, also utilizing the US base separation payments as start-up capital.

Inter-industry linkaging, specialization and subcontracting can lead to the formation of integrated industrial clusters with high productivity. Inter-industry linkaging aims at domestic multiplier effect of production by decreasing overdependence on imported raw and intermediate materials. Table 1.12 shows inter-industry input-output relationships of the Philippines in 1988. Import dependence ratio (IDR: imported inputs per total inputs) is 21.8% for the industry total and 26.2% for the manufacturing sector total. Among the manufacturing subsectors and aside from petroleum refineries, IDR is very high and over 50% in wearing apparel and footwear, leather and leather products, electrical machinery and transportation equipment. These industries' raw materials, parts and components could be target areas for new investments and subcontracting.

Specialization and subcontracting is a strategic solution for high productivity. Central Luzon's manufacturing, especially SMEs are not so specialized and tend to internalize all functions and processes of production. Cost reduction will be realized through specializing in specific processes of production, structurizing subcontracting, externalizing such functions as transportation and business service and thereby forming integrated industrial clusters. This strategy, however, is not applicable to all manufacturing, but garments, GTH, furniture, leather goods and metal craft in Central Luzon are viable components of subcontracting structured.

Priority development of SMEs is a fundamental strategy. SMEs including micro and cottage industries are sources of livelihood, mainstay of employment generation, component of subcontracting, main actor of industrial cluster, and platform of spin-off ventures. Strong SMEs show one of the evidences of the nation's vitality.

Effective institution-building is a strategy to be pursued to strengthen SME's through the promotion of cooperatives and roles of NGOs in industrialization. Establishment of industrial associations by SMEs and by specified groups has become popular recently and has contributed in making their capability stronger, specifically in addressing their common problems. Cooperatives are instruments to promote equity, social justice and people's empowerment for economic development. Cooperatives are granted with a wide range of privileges and have their own distribution systems, which would be conducive particularly to supporting agro-industries. NGOs are also active in assisting micro, cottage, small and medium enterprises (MCSMEs) activities for raw materials sourcing, marketing and

rural/livelihood development projects. It is expected that effective institution-building will significantly contribute to the enhancement of Central Luzon's development as a whole.

Table 1.12 Import Dependence Ratio in the Philippines: 1988

	(A) Output Value	(B) Export	(C) Total Inputs (Cost)	(D) Imported Inputs	(A/B) Export Ratio (%)	(D/C) Import Ratio (%)	(B--D) Export Import Balance
	(in billion pesos)						
TOTAL	1,475.9	226.4	699.7	152.6	15.3	21.8	73.8
Primary Sector	229.9	16.6	59.1	6.6	7.2	11.2	10.0
Agriculture	171.6	6.1	45.5	5.6	3.5	12.2	0.5
Fishery	40.0	10.5	9.9	0.8	26.1	8.1	9.7
Forestry & logging	18.3	0.1	3.7	0.3	0.4	7.2	-0.2
Secondary Sector	725.3	122.3	472.2	120.9	16.9	25.6	1.5
Mining	29.6	16.6	11.8	3.8	56.1	32.3	12.8
Construction, electricity, etc.	114.6	0.4	53.1	8.2	0.4	15.4	-7.8
Manufacturing	581.1	105.3	407.3	108.9	18.1	26.7	-3.6
Food manufacturing	251.0	26.7	170.1	12.0	10.6	7.0	14.7
Beverage industries	21.0	0.3	11.1	0.5	1.4	4.9	-0.2
Tobacco manufactures	18.2	0.5	11.4	3.0	2.6	26.7	-2.6
Textiles, textile goods	24.2	9.9	18.2	6.9	41.1	38.1	3.0
Wearing apparel and footwear	25.2	16.5	19.0	10.7	65.2	56.6	5.7
Leather and leather products	0.6	0.1	0.3	0.2	16.5	61.8	-0.1
Wood and cork products	18.3	5.7	15.0	0.5	31.0	3.7	5.1
Furniture & fixtures	7.5	3.0	4.4	0.2	40.3	3.6	2.9
Paper and paper products	10.6	0.7	6.5	2.6	6.8	39.3	-1.8
Publishing & printing	6.8	0.3	5.1	1.2	4.3	23.8	-0.9
Rubber products	7.7	1.6	5.7	2.2	20.6	38.3	-0.6
Chemical and chemical products	41.9	5.9	29.1	13.4	14.2	46.1	-7.5
Petroleum refineries	50.9	3.7	37.6	24.7	7.3	65.8	-21.0
Non-metallic mineral products	12.3	0.5	8.0	1.1	4.4	14.3	-0.6
Basic metal industries	24.8	5.9	25.3	8.0	23.6	31.6	-2.1
Fabricated metal products	12.2	0.5	7.6	2.6	4.3	34.7	-2.1
Machinery exc. electrical	2.5	1.0	1.7	0.6	38.7	35.2	0.3
Electrical machinery	29.4	17.8	22.2	13.9	60.4	62.7	3.8
Transport equipment	6.9	0.8	5.7	3.8	12.1	65.7	-2.9
Miscellaneous manufactures	8.9	3.8	3.2	0.6	42.8	17.3	3.2
Tertiary Sector	520.6	87.5	168.5	25.1	16.8	14.9	62.4

Source: 1988 I/O Table