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**INDUSTRIAL DEVELOPMENT REVIEW  
SERIES**

**COLOMBIA**

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**Prepared by the  
Regional and Country Studies Branch**

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The views and comments contained in this study do not necessarily reflect those of the Government of Colombia nor do they officially commit UNIDO to any particular course of action.

Preface

This series of industrial development reviews on developing countries is prepared within the framework of UNIDO country studies by the Regional and Country Studies Branch.

The reviews provide a brief survey of the economy and broad analyses of the respective country's industrial sector. While the reviews are comprehensive in nature they are limited in scope and do not represent an in-depth assessment of the industrial development process in the countries concerned. They are intended to serve several purposes: to provide an information service to relevant sections within UNIDO and other international organizations and aid agencies concerned with technical assistance to industry; to serve as a handy, useful information source for policy-makers in developing countries; and to be used as a reference source for industrial entrepreneurs, financiers and economic researchers.

The reviews draw primarily on information and material available at UNIDO headquarters from national and international statistical publications as well as data contained in the UNIDO data base. No specific field survey was undertaken. Since up-to-date national statistical data usually are not complete, it is evident that the reviews will need to be updated periodically. To supplement efforts under way in UNIDO to improve the data base and to monitor industrial progress and changes on a regular basis, it is hoped that the appropriate national authorities and institutions in the respective countries and other readers will provide UNIDO with relevant comments and information. Such response will greatly assist in updating the reviews.

The present Review was prepared on the basis of information available at UNIDO headquarters in mid-1985. It is divided into two rather distinct parts. Chapters 1 and 2 are analytical in character, giving first a brief overview of the country's economy and its manufacturing sector and then a more detailed review of the structure and development of its manufacturing industries. Chapter 3 contains various kinds of reference material on national plans and policy statements relevant to industrial development, on the more important governmental institutions involved in industrial development and on the country's natural, human and financial resources for industrial development. The Review also contains relevant basic indicators and graphical presentation of manufacturing trends as well as statistical and other appendices.

It should be noted that the reviews are not official statements of intention or policy by Governments nor do the views and comments contained therein necessarily reflect those of the Government.

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### EXPLANATORY NOTES

Regional classifications, industrial classifications, trade classifications and symbols used in the statistical tables of this report, unless otherwise indicated, follow those adopted in the United Nations Statistical Yearbook.

Dates divided by a slash (1984/85) indicate a crop year or a financial year. Dates divided by a hyphen (1984-85) indicate the full period, including the beginning and end years.

References to dollars (\$) are to United States dollars, unless otherwise stated.

#### In tables:

Three dots (...) indicate that data are not available or are not separately reported;  
A dash (-) indicates that the amount is nil or negligible;  
A blank indicates that the item is not applicable;  
One dot (.) indicates that there is insufficient data from which to calculate the figure;  
Totals may not add precisely because of rounding.

Basic indicators and graphical illustrations of manufacturing trends contained in this Review are based on data sourced from the UNIDO data base, international organizations, commercial and national sources.

#### The following abbreviations are used in this document:

ANCOM	Andean Common Market
CPDC	Centrally Planned Developed Countries
DANE	National Department of Statistics
EEC	European Economic Community
GDP	gross domestic product
GNP	gross national product
GW	giga watts
IMF	International Monetary Fund
INCOMEX	Institute of Foreign Trade
ISIC	International Standard Industrial Classification
LAIA	Latin American Integration Association
MVA	manufacturing value added
PROEXPO	Export Promotion Fund
RCA	revealed comparative advantage
SITC	Standard International Trade Classification



**BASIC INDICATORS 1**  
**The economy**

---

GDP (1986):	\$38.2 billion (1985) <sup>a/</sup>						
GDP per capita (1985):	\$1,258						
Population (1985):	28.6 million <sup>b/</sup>						
Labour force (1983):	8.3 million						
Average annual growth of population (per cent):	<u>1965-73</u>	<u>1973-84</u>					
	2.5	2.0					
Growth rate of GDP: (per cent)	<u>1966-73</u>	<u>1973-83</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986<sup>a/</sup></u>	
	6.4	3.7	0.9	2.3	3.0	4.5	
Distribution of GDP: (percentage)			<u>1978</u>	<u>1982</u>	<u>1985<sup>b/</sup></u>		
	Agriculture		23.2	22.2	21.9		
	Manufacturing		24.1	23.0	24.2		
	Other		52.7	54.8	53.9		
Average annual rate of inflation (per cent):	<u>1965-73</u>	<u>1973-83</u>	<u>1984</u>	<u>1985</u>	<u>1986<sup>a/</sup></u>		
	10.8	23.8	18.3	22.4	20.0		
Exchange rates: (Peso equivalents to \$1)	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>
	43.3	54.5	64.1	78.9	100.8	139.8	197.4

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a/ Preliminary estimate.

b/ Estimate.

**BASIC INDICATORS 2**  
**Resources and transport infrastructure**

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Major agricultural commodities: (production in '000 tonnes, 1985)	Coffee (678), sugar (1,396), rice (1,748), bananas (1,028), potatoes (1,910), cotton (339)
Fishery production (1983): ( '000 tonnes)	Freshwater and diadrom (45), marine fish (6), shell fish (6)
Forestry production (1983): ( '000 cm)	Industrial roundwood (2,673), sawnwood and panels (844)
Livestock (1984): ( '000)	Cattle (23,960), sheep (2,660), goats (670), pigs (2,360)

**Petroleum, mining and energy (1986):**

Petroleum reserves	1.3 billion barrel <u>a/</u>
Crude oil production	200,000 b/d <u>b/</u>
Coal deposits	18.2 billion tonnes <u>c/</u>
Natural gas reserves	521 million barrels of crude oil equivalent <u>d/</u>
Nickel ore reserves	25 million tonnes
Gold production	730,670 troy ounces <u>a/</u>
Platinum production	10,106 troy ounces <u>a/</u>
Silver production	153,441 tonnes <u>a/</u>
Iron production	443,840 tonnes <u>a/</u>
Salt production	163,771 tonnes <u>e/</u>
Fuel and charcoal ( '000 tonnes)	13,880 <u>d/</u>
Electricity	6 gw <u>f/</u>

**Transport**

Roads:	71,867 km of which 8,732 paved (1978)
Railways:	3,337 km (1982)
Ports:	Barranguilla, Certegena, Coveñas, Mamonal, Tumaco, Turbo, San Andres
Airports:	Bogotá, Medellin, Cali, Cúcuta

- 
- a/ Proven reserves.  
b/ Planned output for 1986.  
c/ Of which 4.4 billion tonnes are proven.  
d/ Reserves at the La Guajira gas field in 1983.  
e/ 1984.  
f/ 1985 output from six national supply corporations.

**BASIC INDICATORS 3**  
**Foreign trade and balance of payments**

---

**EXPORTS:**

Total value:	\$5.42 billion (1986) <u>a/</u>
Main goods (1985) <u>b/</u> : (\$ million)	Coffee (1,809), textiles (171), mineral products (130), metal products (111), food and beverages (98)
Main destination (1984): (percentage)	EEC (36.5), USA (27.6), Federal Republic of Germany (18.4), Italy (5.5), other (12.0)

**IMPORTS:**

Total value:	\$4.27 billion (1986) <u>a/</u>
Main goods (1985):	Machinery and equipment, fuel and oil products, vehicles, iron and steel products
Main origins (1985): (percentage)	USA (35.0), EEC (13.9), Japan (11.0), Venezuela (7.9), other (32.3)
Balance of payments (1986) <u>c/</u> : (current account deficit)	\$930 million
Balance of trade surplus (1986) <u>c/</u> :	\$1.16 billion
International reserves (1986) <u>c/</u> :	\$2,495 million
Total external debt (1986) <u>c/</u> :	\$15.1 billion
Debt service ratio (1986) <u>c/</u> : (per cent of exports)	\$23.4 per cent

- 
- a/ Preliminary estimate.  
b/ Estimated.  
c/ Projected.

**BASIC INDICATORS 4**  
**The manufacturing sector**

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Manufacturing value added:	\$6,131 million (1985) <u>a/</u>			
MVA per capita:	\$213 (1985) <u>a/</u>			
Employment in manufacturing:	785,700 (1985)			
Composition of MVA: (percentage)	<u>1973</u>	<u>1982</u>		
Mainly consumer goods:	52.5	54.5		
Mainly intermediate goods:	29.5	22.2		
Mainly capital goods:	17.9	23.2		
Growth rate of MVA: (per cent)	<u>1966-73</u>	<u>1973-83</u>	<u>1983</u>	<u>1984</u>
	8.8	2.0	0.5	6.3
		<u>1985</u>	<u>1986<sup>b/</sup></u>	
		3.5	6.0	
Trade in manufactures (1984) <u>c/</u> :				
Manufactured exports:	\$531.4 million			
Manufactured imports:	\$3,168 million			
Share of manufactures in total: exports <u>d/</u> :	15.3 per cent			
Share of manufactures in total: imports <u>d/</u> :	70.5 per cent			

---

- a/ Estimate.  
b/ Forecast.  
c/ SITC 5-8 less 68.  
d/ SITC 0-9.

BASIC INDICATORS 5  
Trade in manufactured goods

In 1984

Manufactured exports a/ Total value \$531.4 million

Principal manu- factured exports	Value in \$ million	Developing countries	Destination (in per cent)			
			Developed market countries			Centrally planned developed countries
			EEC	USA	Japan	
Chemicals	106.1	76.7	1.7	19.2	0.2	0.01
Textile yarn, fabrics, made-up articles	73.3	18.1	24.7	52.5	0.0	0.38
Non-metallic mineral manufactures	56.9	39.3	0.4	19.6	40.3	0.00
Clothing	43.4	28.9	3.9	66.2	0.00	0.00

Manufactured imports a/ Total value \$3,168 million

Principal manu- factured imports	Value in \$ million	Developing countries	Origin (in per cent)			
			Developed market countries			Centrally planned developed countries
			EEC	USA	Japan	
Machinery & transport equipment	1,589.3	8.3	22.7	33.7	15.6	2.8
Chemicals	813.1	18.6	22.4	44.7	1.8	1.8
Iron and steel	283.5	22.1	15.4	7.7	46.7	2.9
Paper, paper board, etc.	109.3	3.2	6.7	45.8	1.9	0.17

a/ SITC 5-8 less 68.

BASIC INDICATORS 6  
Inter-country comparison of selected indicators

	Unit	Bolivia	Colombia	Ecuador	Peru	Venezuela
<b>1. Demographic indicators</b>						
Population (mid-1984)	million	6.2	<u>28.4</u>	9.1	18.2	16.8
Population growth (1973-84)	per cent per year	2.6	<u>2.0</u>	2.9	2.4	3.3
Infant mortality (1984)	per 1,000	118	<u>48</u>	67	95	38
Area	Thousands of km <sup>2</sup>	1,099	<u>1,139</u>	284	1,285	912
Density (1984)	Inhabitants per km <sup>2</sup>	6	<u>24</u>	32	14	19
<b>2. Economic indicators</b>						
GDP (1984)	\$ million	3,610	<u>34,400</u>	9,870	18,790	47,500
GDP per capita (1984)	\$	540	<u>1,390</u>	1,150	1,000	3,410
Growth of GDP (1973-84)	per cent per year	0.8	<u>3.7</u>	4.8	1.5	1.9
Agriculture (1984)	per cent of GDP	25	<u>20</u>	14	8	7
Industry (1984)	per cent of GDP	33	<u>30</u>	41	40	43
Manufactures (1984)	per cent of GDP	20	<u>18</u>	19	25	18
Services (1984)	per cent of GDP	40	<u>50</u>	46	51	50
Exports of goods and non-factor services (1984)	per cent of GDP	17	<u>12</u>	27	20	32
Gross domestic investment (1984)	per cent of GDP	18	<u>19</u>	20	14	16
External public debt (1984)	per cent of GNP	98.3	<u>21.8</u>	73.1	59.4	38.3
<b>3. Industrial indicators</b>						
NVA (1982)	\$ millions at constant 1980 prices	646	<u>5,545</u>	2,283	4,435	5,790
NVA share of world NVA (1983)	per cent	0.02	<u>0.18</u>	0.06	0.20	0.26
Share of manufactured exports in total exports (1982) g/	per cent	2.2	<u>15.3</u> b/	2.9	13.9	12.5
Average annual growth of NVA (1973-83)	per cent	0.2	<u>2.1</u>	7.6	-0.1	3.4

g/ SITC 5-8 less 67 + 68.

b/ Share of SITC 5-8 less 68 in SITC 0-9, 1984.

### Executive Summary

With an estimated GDP growth rate of 4.5 per cent in 1986 the Colombian economy continues to sustain the pace of economic recovery that commenced in 1984 after a few years of economic recession. A major source of prolonged economic recovery stems from the country's thriving external sector of non-manufactured goods. This was achieved despite a fall in the international prices of coffee, Colombia's principal export item, in the second half of 1986 and uncertainties surrounding oil and coal export prices. With a forecast increase of 34 per cent in export revenue in 1986 the trade surplus is forecast at \$1.16 billion, the largest surplus in seven years. Net international reserves are projected to increase by \$900 million by the end of 1986.

Although the economic outlook for 1987 is brighter than for many years, the new Government which assumed office in August 1986 is to opt for a more disciplined monetary policy as a 37 per cent increase in government spending in 1986 has resulted in huge fiscal deficit. Public debt is expected to rise from \$15.1 billion in 1986 to \$16.27 billion in 1987. The new Government attempts to reduce the rate of inflation to 20 per cent, well below the projections of 25-28 per cent.

The share of manufacturing in GDP oscillated around 22 per cent during 1978-85. Although the long-term industrialization process has been quite impressive, the manufacturing sector passed through a crucial period in the early 1980s. Some subsectors continued to face sector-specific constraints when the recovery started in 1984.

Around 60 per cent of the industrial output is produced by enterprises engaged in the production of food products, beverages, textiles, clothing, petroleum products and chemicals. The fastest growing industries during 1973-83 were basic chemicals, electrical machinery and transport equipment. Following the discovery of oil reserves, the petroleum industry recorded a high pace of expansion in recent years. While the share of textiles in manufactured exports declined from 11.6 per cent in 1980 to 6.5 per cent in 1984, that of petroleum products increased from 8.4 per cent to 40.3 per cent during the same period.

Labour productivity gains were stronger in the capital goods industries than in consumer goods industries during 1973-78. The competitive level of industrial products has been negatively affected by several factors, notably the high cost of obtaining foreign capital, electricity rationing and shortage of some raw materials.

The textile industry, representing around 11 per cent of MVA in 1982 compared with 15.2 per cent in 1973, is handicapped by soaring labour and input costs, shortage of imported raw materials and components and low productivity levels. Many textile firms faced problems of liquidation in 1983, but the situation improved in 1985 - reflecting overall economic recovery. However, the industry's reliance on outdated technology leads to incompetent cost structure. The situation in 1987 could augur well for the textile industry under relaxed controls on the imports of foreign inputs.

One of the major problems facing the automobile industry is the small size of the domestic market for the locally produced vehicles. The industry

suffered a negative growth rate of 13.6 per cent in 1985. All but essential imports have been prohibited as a step towards reserving the domestic market for local products.

The prevailing uncertainty regarding oil prices has discouraged further expansion of the oil-based industries. Industries operating in oil fields have scaled down new drilling programmes pending recovery of the oil market. In 1986 the output of crude oil is planned to reach 200,000 b/d, with value of exports totalling \$343 million.

The small and medium industries play a pivotal role as they employ about two-fifths of the industrial labour force and produce close to one-fourth of MVA; in most manufacturing branches more than 90 firms were operating in 1983. The general wave of industrial recession affected them during 1982 and 1983. One of the constraints inhibiting the growth of small and medium enterprises is inadequate access to institutional credit. Uncertain supplies of raw materials, limited technical assistance, inappropriate technology and inefficient management systems are other constraints preventing the rapid expansion of these industries.

Having completed a period of straightforward import substitution until 1967, the changing industrialization strategy subsequently encouraged a more ambitious and complex policy of achieving both import substitution and export promotion. Until 1982 the official policy assigned a subsidiary role to foreign participants in the Colombian industrialization process and encouraged national entrepreneurs to seize the opportunities stemming from the enlarged regional market resulting from ANDEAN integration, with priority accorded to non-traditional exports. In recent years the Government has been trying to attract foreign capital with preferential policies. Strategic areas destined for foreign investment are mining and extractive industries, transport machinery and equipment, professional and scientific equipment, electric and electronic equipment, plastic, metal, food products, steel products, marine infrastructural facilities, etc.

Colombia's challenge for the rest of the decade is how to combine the reduction of high level of unemployment and inflation and to increase the international competitiveness of non-coffee products. This challenge has to be seen within the framework of realistic macroeconomic policy adjustment. The estimated 6 per cent growth achieved by the manufacturing sector in 1986 could be sustained during the rest of the decade provided that adequate institutional and technological aid can be provided in support of the new industrialization strategy.

To achieve the twin objectives of export promotion and import substitution envisaged in the present industrial strategy, the manufacturing sector could embark upon a higher degree of industrial processing of agricultural raw materials and mineral resources. Further industrial processing of traditional exports, currently exported in unprocessed or semi-processed form, would warrant profitable manufacturing activities and accelerate the export drive. Improvements in coffee processing could result in higher quality and utilization of by-products. A higher degree of industrial processing of sugar could lead to the production of molasses as feeding-stuff for animals, distilled alcohol, industrial alcohol, gasohol, alcoholic beverages, sugar syrups, confectionery products. Improvements in the production of meat could be in terms of frozen and processed products.



Among the traditional crops, cocoa offers the potential for processing into processed cocoa products such as cocoa butter, cocoa powder, chocolates, etc. Apart from processing of traditional exports, further industrial processing of products for import substitution include oil and fats, feeding-stuff for animals, dairy products, cereal preparation, beverages, tobacco manufactures, and fish preparation. Intensive investigations and pilot operation work could be undertaken by the national experimental and research stations, with technical co-operation from bilateral and multilateral sources, to seize the existing opportunities for producing processed final products to substitute for imports and possibly also for enhancing exports.

### Resumen

La economía colombiana experimentará, según las previsiones, una tasa de crecimiento del PIB del 4,5% en 1986, manteniendo así el ritmo de recuperación que se inició en 1984 tras algunos años de recesión económica. Una de las fuentes más importantes de la prolongada recuperación económica ha sido el próspero sector externo del país, que sigue progresando pese a la caída de los precios internacionales del café, el principal rubro de exportación de Colombia, registrada en el segundo semestre de 1986 y a la incertidumbre reinante en los precios de exportación del petróleo y el carbón. Se estima que, dado el incremento previsto del 34% en los ingresos de exportación en 1986, el superávit comercial alcanzará los 1.160 millones de dólares, la cifra más alta de los últimos siete años. Se prevé que para finales de 1986 las reservas internacionales netas habrán aumentado en 900 millones de dólares.

Aunque no han sido las perspectivas económicas en muchos años tan halagüeñas como lo son para 1987, el nuevo Gobierno que tomó posesión en agosto de 1986 optará por una política monetaria más disciplinada, ya que el aumento del 37% en el gasto público durante 1986 se tradujo en un enorme déficit fiscal. Se prevé que la deuda pública aumentará de 15.100 millones de dólares en 1986 a 16.270 millones en 1987. El nuevo equipo gubernamental se propone reducir la tasa de inflación al 20%, muy por debajo de las proyecciones del 25% al 28%.

La participación de las manufacturas en el PIB osciló en torno al 22% durante el período 1978-1985. Si bien el proceso de industrialización a largo plazo ha sido realmente impresionante, el sector manufacturero atravesó por una situación crítica a principios del decenio de 1980 y algunos subsectores seguían afrontando las limitaciones peculiares de cada sector en el momento de iniciarse la recuperación en 1984.

Cerca del 60% de la producción industrial se genera en empresas que fabrican productos alimenticios, bebidas, textiles, prendas de vestir, productos derivados del petróleo y sustancias químicas. Las industrias que experimentaron un crecimiento más rápido durante 1973-1983 fueron las de productos químicos básicos, maquinaria agrícola y equipo de transporte. A raíz del descubrimiento de reservas de petróleo, la industria petrolera registró un elevado ritmo de expansión en los últimos años. Mientras que la participación de los textiles en las exportaciones de manufacturas disminuyó del 11,6% en 1980 al 6,5% en 1984, la de los productos derivados del petróleo aumentó del 8,4% al 40,3% durante el mismo período.

Durante 1973-1978, el incremento de la productividad del trabajo fue más acusado en las industrias de bienes de capital que en las industrias de bienes de consumo. El nivel de competitividad de los productos industriales se ha visto afectado negativamente por distintos factores, especialmente el elevado costo del capital extranjero, el racionamiento de la electricidad y la escasez de materias primas.

La industria textil, que representaba cerca del 11% del valor agregado industrial (VAI) en 1982, frente al 15,2% en 1973, se ve obstaculizada por el desmesurado aumento de los costos de la mano de obra y los insumos, la escasez

de materias primas y componentes importados y los bajos niveles de productividad. Aunque muchas empresas textiles hicieron frente a problemas de liquidación en 1983, la situación mejoró en 1985, como reflejo de la recuperación económica general. No obstante, el hecho de que la industria dependa de tecnologías obsoletas deriva en una estructura de costos poco competitiva. La situación en 1987 puede ser muy prometedora para la industria textil, en vista de la atenuación de los controles sobre las importaciones de insumos del extranjero.

Uno de los principales problemas a que se enfrenta la industria automotriz es el reducido mercado nacional para los vehículos fabricados en el país. Esta industria experimentó una tasa de crecimiento negativa del 13,6% en 1985. Todas las importaciones, salvo las esenciales, han sido prohibidas en un intento por reservar el mercado interno a los productos de fabricación nacional.

La incertidumbre reinante en relación con los precios del petróleo ha desalentado una mayor expansión de las industrias que se basan en el petróleo. Las empresas que explotan los campos petrolíferos han reducido sus nuevos programas de perforación en espera de que se recupere el mercado del petróleo. La producción de petróleo bruto prevista para 1986 alcanzará los 200.000 barriles diarios, con un valor de exportación de 343 millones de dólares.

Las industrias pequeñas y medianas desempeñan una función crucial, ya que emplean a cerca de las dos quintas partes de la mano de obra industrial y producen aproximadamente una cuarta parte del VAI; en 1983, en la mayoría de las ramas manufactureras se encontraban en funcionamiento más de 90 empresas. La oleada general de recesión industrial afectó a dichas empresas durante 1982 y 1983. Uno de los factores limitativos que inhiben el crecimiento de la pequeña y la mediana empresa es el acceso insuficiente al crédito institucional. La incertidumbre en el abastecimiento de materias primas, la asistencia técnica limitada, la tecnología inadecuada y los sistemas de gestión ineficientes son otras tantas limitaciones que impiden la rápida expansión de esas industrias.

Al término de un período de abierta sustitución de importaciones que se prolongó hasta 1967, la cambiante estrategia de industrialización vino a alentar ulteriormente una política más ambiciosa y compleja tendiente tanto a la sustitución de importaciones como a la promoción de las exportaciones. Hasta 1982, en la política oficial se asignaba un papel subsidiario a la participación extranjera en el proceso de industrialización colombiano y se alentaba a los empresarios nacionales a aprovechar las oportunidades que brindaba la ampliación del mercado regional como consecuencia de la integración andina, otorgándose prioridad a las exportaciones no tradicionales. En años recientes el Gobierno ha estado procurando atraer capital extranjero mediante políticas preferenciales. Los sectores estratégicos seleccionados para la inversión extranjera son las industrias de minería y extracción, maquinaria y equipo de transporte, equipo profesional y científico, equipo eléctrico y electrónico, plásticos, metalurgia, productos alimenticios, productos siderúrgicos, instalaciones de infraestructura marina, etc.

El desafío que se plantea a Colombia para el resto del decenio consiste en encontrar la forma de reducir el alto nivel de desempleo e inflación, y aumentar al mismo tiempo la competitividad internacional de los productos distintos del café. Ese desafío ha de contemplarse en el contexto de un

ajuste realista de la política macroeconómica. La tasa estimada de crecimiento del 6% obtenida por el sector manufacturero en 1936 podrá mantenerse durante el resto del decenio, siempre que sea posible proporcionar ayuda institucional y técnica adecuada en apoyo de la nueva estrategia de industrialización.

Para alcanzar el doble objetivo de promoción de las exportaciones y sustitución de las importaciones previsto en la actual estrategia industrial, el sector manufacturero podría intensificar la transformación industrial de materias primas agrícolas y recursos minerales. Una mayor transformación industrial de las exportaciones tradicionales, que en la actualidad salen del país sin elaborar o en forma semielaborada, garantizaría actividades manufactureras lucrativas y aceleraría el impulso exportador. Las mejoras en la elaboración del café podrían redundar en una calidad superior y en una mayor utilización de los subproductos. Un mayor grado de elaboración industrial del azúcar posibilitaría la producción de molasas como alimento para animales y de alcohol destilado, alcohol industrial, gasol, bebidas alcohólicas, jarabes de azúcar y productos de confitería. Cabría mejorar la producción de carnes mediante la elaboración de productos tratados y congelados. Entre los cultivos tradicionales, el cacao ofrece posibilidades para la fabricación de productos elaborados como manteca de cacao, cacao en polvo, chocolates, etc. Aparte de la elaboración de productos destinados tradicionalmente a la exportación, la transformación industrial con miras a la sustitución de importaciones incluye aceite y grasas, alimentos para animales, productos lácteos, preparación de cereales, bebidas, manufacturas de tabaco y preparación de pescado. Cabría la posibilidad de que los centros nacionales de investigación y experimentación emprendieran intensas investigaciones y actividades piloto, con la cooperación técnica de fuentes bilaterales y multilaterales, para aprovechar las oportunidades existentes para la producción de bienes elaborados finales a fin de sustituir las importaciones y, posiblemente, fomentar también las exportaciones.

## 1. THE ECONOMY OF COLOMBIA

### 1.1 Recent economic trends

The Colombian economy is well on the path of sustained recovery. Despite the unexpected drop in the international price of coffee,<sup>1/</sup> Colombia's principal export item, and the slump in the coal and oil prices, GDP is expected to record a growth rate of 4.5 per cent in 1986. This compares favourably with the growth rates of 2.3 per cent and 3.0 per cent registered in 1984 and 1985 respectively following two years of stagnating growth rates at about 1 per cent during 1982-83.

The sluggish growth trends during 1982-83 culminated in a financial crisis in September 1984, and major international banks froze credit to Colombia at a time when the country's foreign debt had increased from \$10.7 billion to \$12 billion - a per capita debt of around \$400. Faced with the credit cut-off, the Government initiated an austerity programme in early 1985 - raising the price of government-distributed gasoline, holding down wage increases to 10 per cent, accelerating the peso's devaluation from 27 per cent in 1984 to 45 per cent in 1985 and reducing government spending. For the first time in several years the country recorded a surplus in trade balance during 1985. The decline in Colombia's foreign reserves was also arrested in 1985.

The new Government, which assumed office in August 1986, attempts to maintain fiscal equilibrium in the economy. Inflation in 1986 could be held to 20 per cent, well below the projections of 25-28 per cent. Assuming annual inflation rate of 20 per cent, the exchange rate is expected to reach P206 per \$1 by the end of 1986. Net international reserves began to recover in the first quarter of 1986, and are projected to increase by \$900 million at the end of the year. The public sector deficit, which has been declining steadily, is forecast at 2 per cent of GDP for 1986. Colombia seems to have satisfied the latest IMF conditions for economic performance. However, it is uncertain whether the new Government is to continue the prevailing arrangements with the IMF. Official projections indicate that public debt will rise from \$15.1 billion in 1986 to \$16.27 billion in 1987. Debt service will reach \$1.27 billion in 1986, leading to a fall in the balance of payments (current account) by \$930 million in 1986.

The 1986 trade surplus is expected to reach \$1.16 billion, the largest surplus in seven years, despite weaker prices of coffee and continuing low coal and petroleum prices. Total exports revenue is expected to record a 34 per cent increase in 1986 over the previous year, while imports will remain at approximately the same level.

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<sup>1/</sup> The highly optimistic outlook at the beginning of 1986 stemmed mainly from rising coffee prices. The country became the major beneficiary of coffee harvest failure in Brazil as it had enough stocks to make good the Brazilian shortfall. Despite the drop in the international price of coffee from \$2.25/lb at the beginning of 1986 to about \$1.60/lb in September 1986, coffee earnings would reach at least \$3.6 billion by December 1986; it will rise higher if the price of coffee averages over \$2.20/lb.

Although the economic outlook today is brighter than for many years, economic expansion and high public spending are likely to increase pressure on prices by mid-1987. Government spending outlays have risen by about 37 per cent in 1986. The consolidated fiscal deficit is around 4.5 per cent of GDP, significantly above original projections. Over the past years, the bulk of public investment has gone to petroleum, coal and nickel projects, with the expectation that these would become important sources of economic growth and foreign exchange through 1990. The oil price fall affected the world demand for coal. The falling oil and coal prices coupled with the weak coffee price made Colombia revise rather hastily the original assumptions of growth forecasts for 1987. Assuming that strong government spending would have favourable effects on purchasing power and employment, GDP would expand by 4 per cent in 1987. The economic outlook for 1987 continues to remain healthy mainly because of the country's thriving external sector.

### 1.2 Economic structure

The Colombian economy grew at an average annual rate of 6.4 per cent during 1966-73 and 3.7 per cent during 1973-83. With a population growth varying from 2.6 per cent per annum in 1965-72 to 2 per cent in 1973-83, GNP per capita is estimated to have grown at 3 per cent during 1965-83, reaching \$1,390 in 1984. In 1985 the population was estimated at 28.62 million.

Table 1 shows that the share of agriculture in GDP declined marginally from 23.2 per cent in 1978 to 21.9 per cent in 1985. After two years of declining growth agricultural production (excluding coffee) increased by 3.9 per cent in 1985. Currently agriculture contributes around 22 per cent of GDP. Coffee continues to be the most important cash crop, contributing about half of export earnings. Despite a fall in output by 2 per cent coffee export earnings rose significantly in 1985 due to a sharp rise in the price of coffee on the world market. Output of cotton rose during the past two years, with a 94 per cent increase in the area under cultivation in 1984. A major problem facing local non-coffee food crop producers is stiff competition from massive quantities of food contraband coming from Venezuela and Ecuador. The acreage sown for major food crops is expected to be reduced by 10-15 per cent in the second half of 1986.

Table 1. Distribution of GDP by sector of origin, 1978-85  
(percentage)

Sector	1978	1979	1982	1984	1985 <sup>a/</sup>
Agriculture	23.2	23.1	22.2	22.2	21.9
Mining	1.2	1.1	1.3	1.6	2.3
Manufacturing	22.9	23.0	20.7	21.4	21.9
Other	52.7	52.8	55.8	54.8	53.9
Total	100.0	100.0	100.0	100.0	100.0

Source: Banco de la República.

<sup>a/</sup> Estimate.

The remarkable growth in the construction sector is revealed by its increasing share of GDP. Under the 1983-86 National Development Plan, housing construction has been accorded priority because of its expected multiplier effect on employment and manufacturing.

The fastest growing sectors are those whose contributions to GDP are relatively low. Mining is estimated to have grown more than four-fold during 1978-83 and recorded a high pace of expansion in recent years growing at 14.8 per cent and 17 per cent in 1984 and 1985 respectively. However, its share of GDP was around 2.3 per cent in 1985. With the discovery of Crano Norte, Colombia's petroleum reserves rose significantly. Following an increase of 36 per cent during 1980-84 crude oil production reached 197,404 barrels a day (b/d) in 1985. In 1986 the output is scheduled to reach 200,000 b/d, with value of exports totalling \$343 million. The slump in petroleum prices has resulted in a sharp reduction in oil exploration activities in Colombia, where multinationals have scaled down new drilling programmes pending a market recovery. Though the high quality and low cost of Colombian coal has sharpened the competitive edge in world markets, the extraction and processing of nickel at the Cerromatoso mine is substantially below maximum capacity.

The aggregate demand trends in Colombia have been similar to other middle-income countries. The demand generated by the private sector is currently about 70 per cent of GDP, while government consumption is close to 11 per cent. The share of investment in GDP rose from 16 per cent in 1965 to 19 per cent in 1983, while the export share is now in the range of 12 per cent. The share of food consumption in total demand has remained over 40 per cent given the rising demand sustained by the income growth of the country. In many Latin American countries this share has declined with higher rates of economic growth.

### 1.3 Overview of the manufacturing sector

The share of manufacturing in GDP has oscillated around 22 per cent during 1978-85. Over 60 per cent of the industrial output is generated by five subsectors: food products, beverages, textiles and clothing, petroleum refining and chemicals. Transport equipment, paper and paper products, non-metallic mineral products (mainly cement), metal products, machinery and scientific equipment account for 21 per cent of industrial output, while smaller industrial enterprises in metallurgy, printing, rubber products, plastics and tobacco make up the remainder (around 19 per cent).

The growth rates recorded by both petroleum refining and scientific instrument industries surpassed that of the average annual growth rate registered by the industrial sector during 1973-83. Other fast-growing industries were basic chemicals, electrical machinery and transport equipment. Industries engaged in the production of beverages, paper, food products and cement grew modestly, while the textile, clothing and the non-electrical machinery industries registered growth rates that were below the average annual growth rate recorded by many subsectors of manufacturing.

Available data on the number of industrial enterprises indicate that of the nearly 6,800 industrial enterprises in operation in the early 1980s, some 1,332 units representing nearly 20 per cent were in the food and beverages production. Another 20 per cent numbering 1,783 enterprises were in the textile and clothing sector, while 4,083 enterprises were found in 25 various industrial branches. In the early 1980s nearly half a million persons were

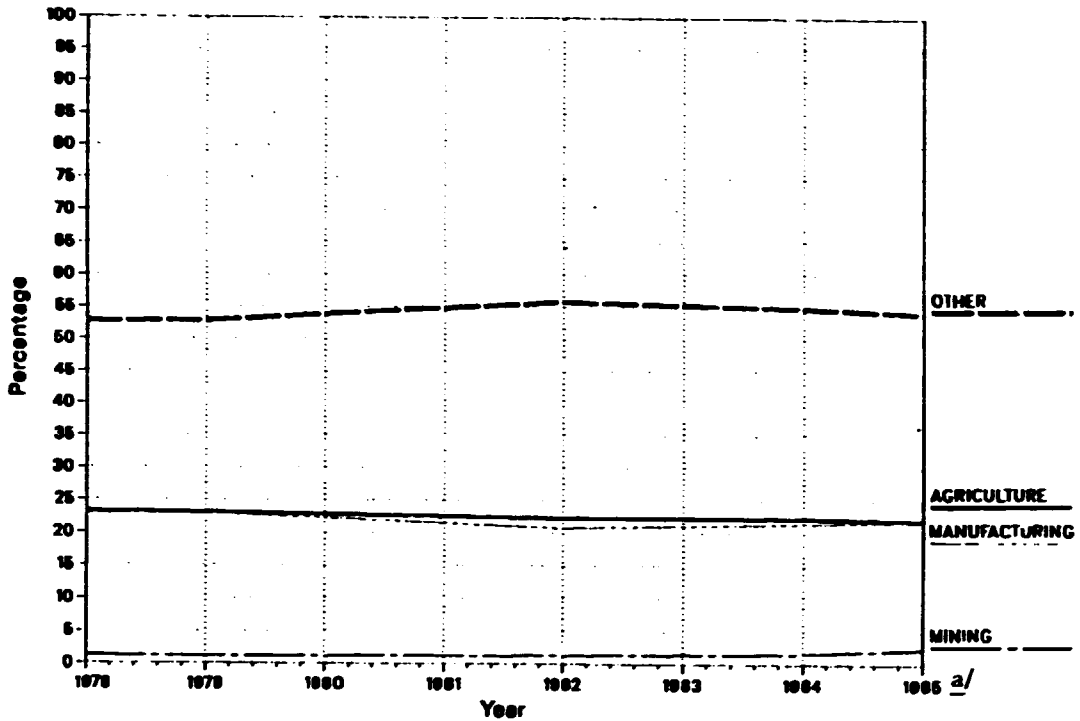
employed in the Colombian manufacturing industries, with 44 per cent working in the food, beverages, textiles and clothing industries.

The main concern for the next few years in Colombia's adjustment from recession to a sustained recovery is the high level of unemployment. Almost all sectors which had recovered in the last year at an average rate of 10 per cent demanded almost 2 per cent less labour than the previous year. The reduction in labour demand even in a period of recovery is as follows: 6 per cent employment reduction in made-up textile goods and wearing apparel, 1.4 per cent in food processing, 5.4 per cent in paper products, 10.7 per cent for industrial chemical products, 4.2 per cent in rubber, 4.8 per cent in ceramics, 3.4 per cent in metallic products. Only the mechanical machinery and the car industry have shown increases in employment. The new Government attempts to reduce the rate of unemployment from 15 per cent in 1986 to 13.5 per cent in 1987. The employment programme will include fiscal and financial incentives for labour-intensive operations in manufacturing.



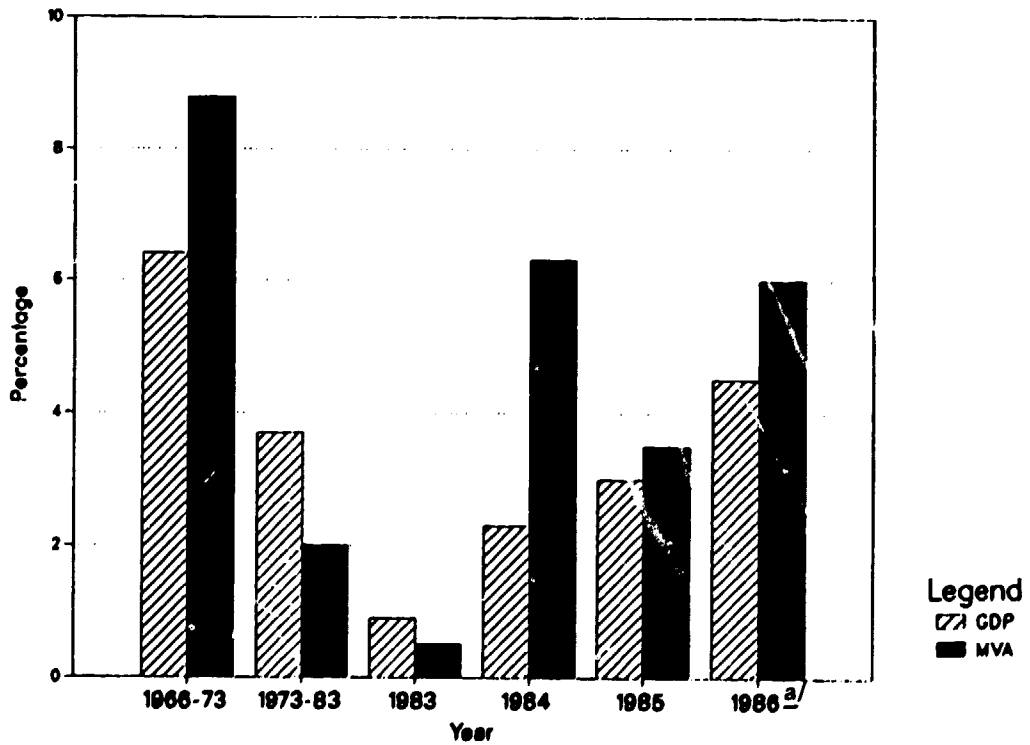
# MANUFACTURING TRENDS

## DISTRIBUTION OF GDP BY SECTOR OF ORIGIN, 1978-85



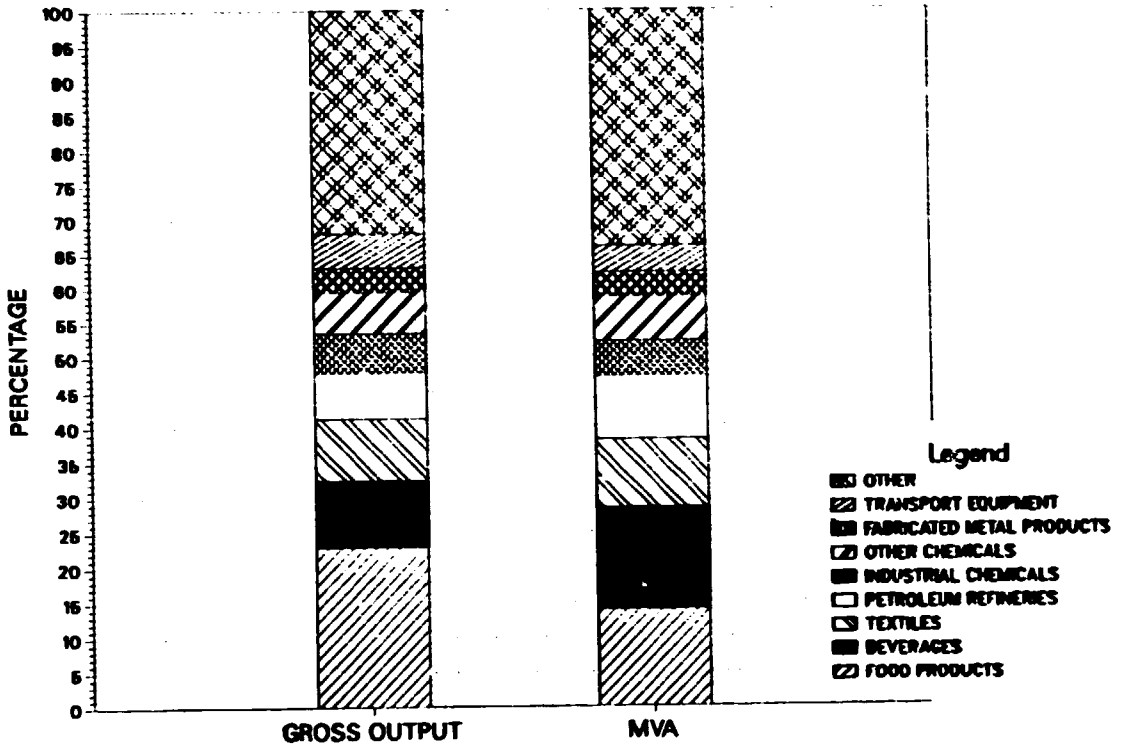
a/ Estimate.

## REAL GROWTH RATES OF GDP AND MVA, 1966-86

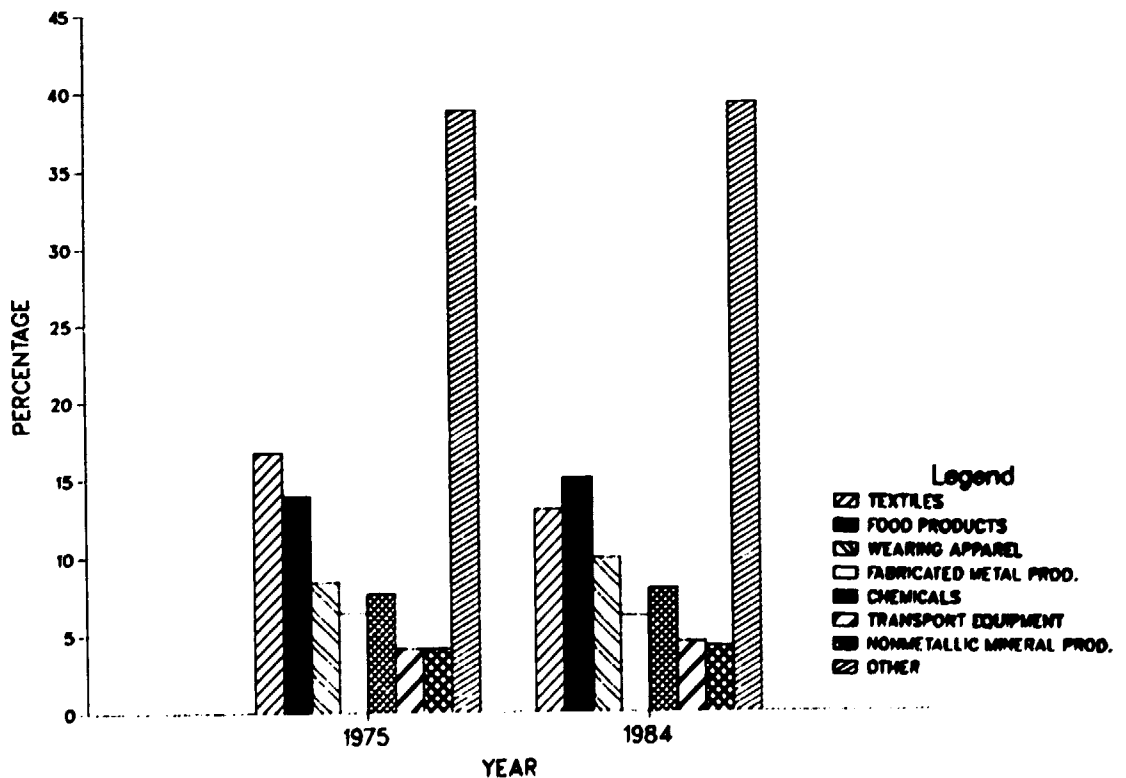


a/ Forecast.

### COMPOSITION OF GROSS OUTPUT AND MVA, 1984

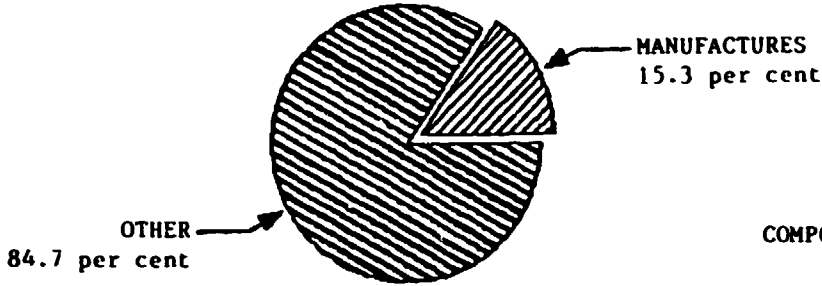


### STRUCTURE OF MANUFACTURING EMPLOYMENT, 1975 AND 1984

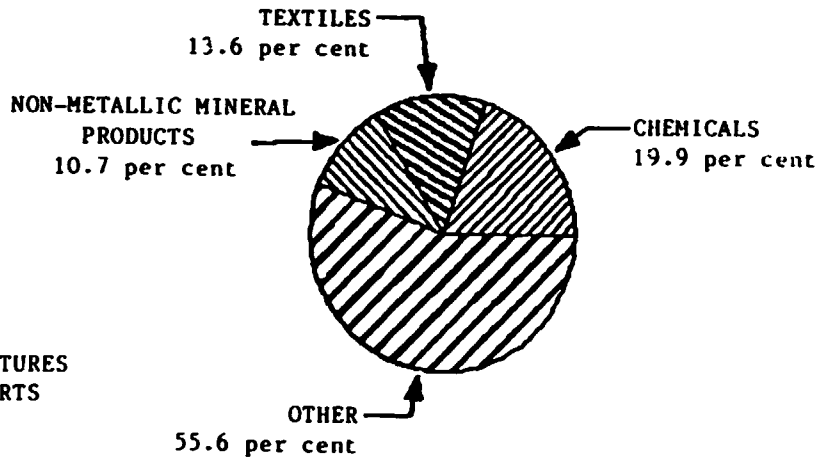


# MANUFACTURED EXPORTS AND IMPORTS IN 1984

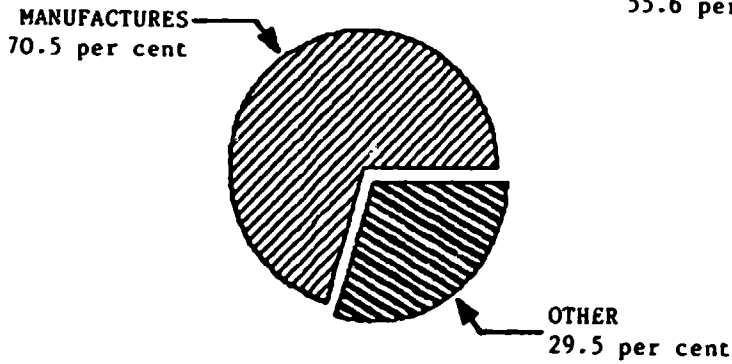
SHARE OF MANUFACTURES  
IN TOTAL EXPORTS



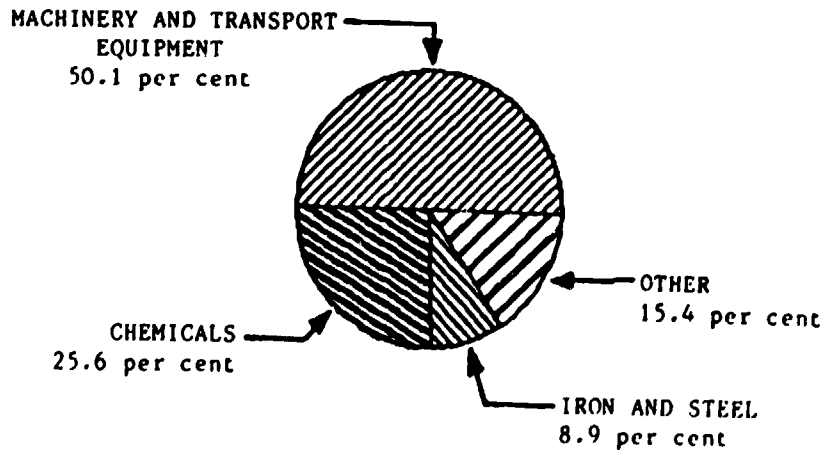
COMPOSITION OF MANUFACTURED  
EXPORTS



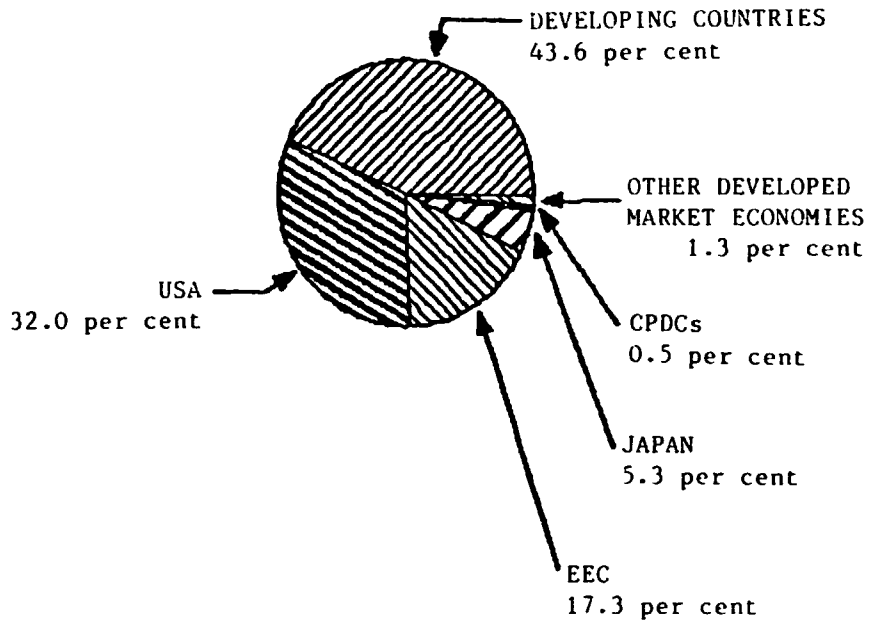
SHARE OF MANUFACTURES  
IN TOTAL IMPORTS



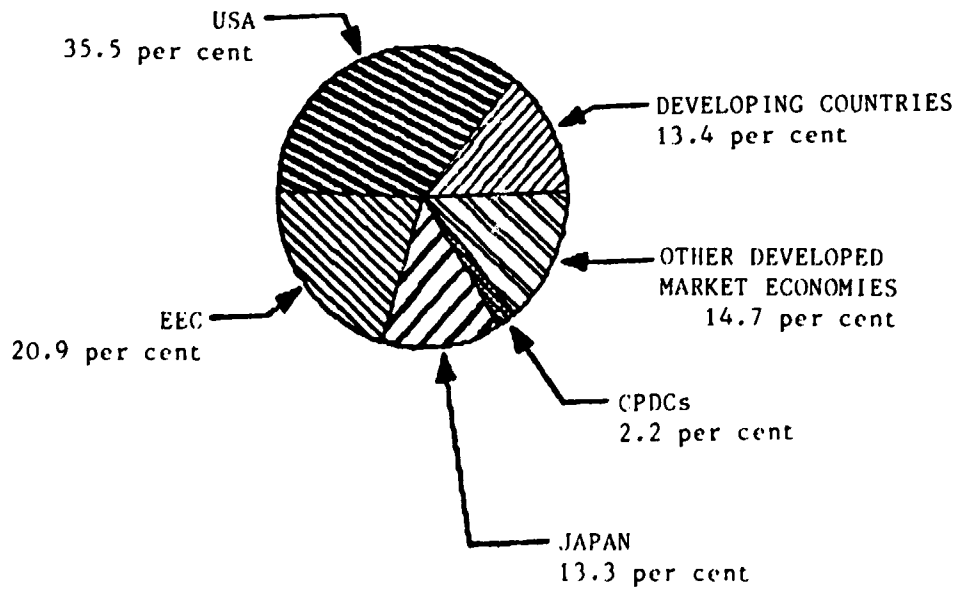
COMPOSITION OF MANUFACTURED  
IMPORTS



DESTINATION OF MANUFACTURED EXPORTS



ORIGIN OF MANUFACTURED IMPORTS



## 2. STRUCTURE AND PERFORMANCE OF THE MANUFACTURING SECTOR

### 2.1 Growth and structural change

The growth of the manufacturing sector has been quite impressive in a long-term perspective. While its performance deteriorated rapidly in the early 1980s, a marked recovery occurred in 1984 and 1985 mainly as a result of favourable growth in the food, tobacco, paper and chemical industries and industries engaged in the production of machinery and equipment. In addition, output of petroleum derivatives, rubber and beverages as well as furniture industry also improved.

The average annual rate of growth of MVA varied from 8.8 per cent during 1966-73 to 2 per cent during 1973-83. After two consecutive years of declining growth rates, the manufacturing sector registered a sluggish growth rate of 0.5 per cent in 1983. The industrial crisis during these years was largely due to structural problems and macroeconomic policy framework which was generally unfavourable to industrial development.<sup>1/</sup> The manufacturing sector is expected to grow at 6.0 per cent in 1986, compared with 3.5 per cent in 1985 and 6.3 per cent in 1984. The share of the manufacturing sector in GDP was around 22 per cent in 1985, compared to 22.9 per cent in 1978.

Appendix Table A-1 highlights the findings on sources of growth in manufacturing. During 1958-80 89.4 per cent of manufacturing growth was stimulated by domestic demand against 7.8 per cent by export demand and 2.9 per cent by import substitution. Within domestic demand final consumption constituted a basic component in determining manufacturing performance; though the share of industrial goods in final consumption declined from 36.1 per cent in 1970-71 to 35.7 per cent in 1975-76 and to 33.5 per cent in 1982-83. The Table suggests that the importance of import substitution as a source of growth was gradually exhausted during the 1970s. From 1977 onwards its contribution to growth became negative. The reduction in tariffs, the liberalization of the import regime, the use of licences and the revaluation of the peso diminished the effective protection which industry had enjoyed for more than three decades. Combined with slow growth of investment, stagnation of technological transfer and the general vulnerability of enterprises to increased debt brought industry to a virtual stagnation in the face of legal and contraband imports. Exports were a relatively modest factor in stimulating growth. In the best years exports accounted for only around 10 per cent of growth. The branches which responded favourably to export promotion policies were those branches for which there was a major degree of import substitution. This emphasizes the importance of "infant industry protection" in facilitating a switch from import substitution to export promotion.

The changing structure of manufacturing value added is shown in Appendix Table A-2. The share of consumer goods industry in MVA increased from 52.5 per cent in 1973 to 54.5 per cent in 1982. The share of food products and beverages rose significantly, while the share of textile industry, which ranks first in terms of employment, salaries and value added, declined sharply from 15.2 per cent in 1973 to 11.4 per cent in 1982. In the early 1980s the textile industry was estimated to operate about one million spindles, 17,000

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<sup>1/</sup> For a more detailed analysis see, Nueva Colombia Industrial: Possibilidades de impulsar una nueva estrategia de industrialización para Colombia, Bogotá, D.E. Septiembre 15/1986.

looms and about 2,000 knitting machines. The importance of the textile industry is also revealed by its economic linkages with other sectors of the economy, as a consumer of domestically produced cotton and synthetic fibres and as a supplier of yarn and fabrics for the garment industry. However, the performance of the textile industry in the last two decades has not been impressive and there has been a steady decline in capacity utilization and employment. Thus, the textile industry has fallen short of its potential, leading to a drastic fall in its share of MVA.

During 1973-82 the MVA share of capital goods increased significantly from 17.9 per cent to 23.2 per cent. The metal and mechanical industries increased their contribution significantly as a result of a 15 per cent average annual growth rate generated by these industries in the last two decades. The emergence of the automobile industry is the most noteworthy development in the country's metal and mechanical industries. By 1980 transport equipment, 90 per cent of which is automobile assembly, occupied the first place of those industries. It contributed around 26 per cent to total value added generated by metal and mechanical industries. However, these industries suffered during the periods of industrial recession in 1982-83. As against the marked rise in the share of capital goods industries in MVA, the share of intermediate goods fell from 29.5 per cent in 1973 to 22.2 per cent in 1982.

The recovery in manufacturing activity that commenced in 1984 has resulted in a higher demand for electrical power for industry, certain raw materials as cotton, steel, soda, paper, and sulfuric acid, and non-traditional exports. The production of final goods could cope with the increasing aggregate and effective demand during the recovery phase. This was facilitated by the country's ability to produce intermediate goods required for production of final goods. Particularly interesting has been a 11.8 per cent increase of the food processing industry in 1984: canning, preserving of fruits and vegetables, manufacture of dairy products, slaughtering, preparing and preserving meat, manufacture of bakery products, cocoa, chocolate and sugar confectionery, fats and oils, processed cereal products and manufacture of prepared animal feeds. Sugar factories and oil refineries are an exception to this recovery given the depressed state in international markets.

Soft drinks, malt and malt liquors have shown an increase of 5 per cent in 1984 compared with the previous year. A particularly good performance is seen in tobacco manufactures with a production increase of 26.8 per cent in 1983 and with a 4 per cent employment increase.

Textile industries - mainly the larger manufacturing enterprises - were in deep recession in the early 1980s. In 1984 production increased by 12 per cent compared with 1983. The manufacturing of made-up textile goods, wearing apparel and knitting mills grew by 10.5 per cent in 1984. This branch has faced depressed productivity levels. It is important to recall that it is a very labour-intensive branch which some time ago was an important industrial branch.

The manufacture of furniture and fixtures has not been of considerable importance in Colombia, and it was not affected so much by the recession as other branches. Its growth rate for 1984 was 3.8 per cent facilitated by the national policy of replanting and conservation of forests, as well as on the improvement of the wood industry and wood products.

Production of paper, paper products, printing and publishing had a dynamic recovery of 13.8 per cent in 1984. Containers and boxes of paper and

paperboard and other intermediate and final products were the main products. The prospects for corrugated boxes, soft paper, and news print are very favourable, mainly due to new projects of considerable scale. A large investment in the north of Cauca is taking place to produce printing paper from bagasse of cane.

The manufacture of leather products is a small sector not adversely affected by the recession but with less significant recovery than other manufacturers. In 1984 its growth was in the range of 7 per cent compared with 1983. Internal demand grows slowly but exports remain steady with a stable market share despite protectionist measures in foreign markets.

Rubber products are manufactured by a small group of big firms producing tyres in Bogota and Cali and by a large group of medium-sized enterprises which produce rubber products except tyres and tubes. The rate of growth was 8.7 per cent in 1984.

The petrochemical industry survived quite well the economic downturn, increasing production by 12.5 per cent in 1984. The branch offers good perspectives for the future with the discovery of crude oil in Arauca. Inorganic and organic chemical products increased in 1984, up by 27.9 per cent from the previous year.

The cement industry comprises big firms located in different cities. Its production has been more related to the general demand of the construction of private and public buildings than to the aggregate trends of the domestic economy. New investments have generated excess capacity but demand grew steadily over the years. Its future prospects are good even for exports by the Atlantic coast industries. A new important investment is being carried out in Rio Claro (Antioquia).

Pottery and ceramic is intimately related to the construction industry, its growth for 1984 being 4 per cent. Prospects for steady growth depend on the fluctuations of the housing industry. Its comparative advantage with other sectors is given by the low cost of inputs which are all available in Colombia's soil. Imports are not competitive given the high costs of transport of such heavy items.

The glass industry was affected by the recession and by imports. But with new protectionist measures and by an increased demand for bottling, important improvements were achieved in productivity, quality and diversification. All raw materials and fuel required are available domestically. The industry grew by 10 per cent in 1984.

Iron and steel metallurgy have shown considerable improvement in production and sales, and in diversifying products. Its five main industries depend on the local supply of scrap iron, where local supply is static and inelastic. The main problem of the only integrated firm of Paz del Rio is connected with the high cost and insufficient quantity of raw material inputs, given that there is only one national deposit of iron. Therefore, there is a need to import scrap iron, which is a constraint due to import restrictions. The branch grew by 8 per cent in 1984 and demand seems to be on the increase for the future.

The demand for metal mechanic product industry seems to have remained steady due to the protection granted to the car industry, and the increasing production of and demand for metallic products such as metallic furniture,

tools, industrial and domestic machines, favoured by import restrictions. The mechanical machines, transport equipment and scientific and professional equipment recorded two-digit growth rates in 1984. Manufacture of electrical machinery apparatus appliances and supplies remained low due to the strong competition from imports.

Assembly of automobiles and motor vehicle parts grew considerably as did capital goods in general, such as agricultural machinery, electric motors and metallic structures. All of these benefitted by the import substitution and growing domestic demand.

Table 2 presents physical output volumes of selected products during 1980-85. With the exception of sugar production, the industrial products listed in the Table achieved a marked recovery in 1984. The 1985 data on physical output is incomplete and hence it does not reveal the sustained pace of expansion.

Table 2. Physical output of selected industrial products, 1980-85

Year	Sugar (tons)	Cement (tons)	Steel billets (tons)	Total number	Vehicles	
					Cars	Industrial vehicles
1980	1,247,631	4,355,828	262,875	42,834	32,281	10,553
1981	1,212,377	4,453,382	217,095	35,171	24,732	10,439
1982	1,318,048	4,720,792	215,052	35,567	26,515	9,052
1983	1,347,445	3,721,024	271,733	28,576	21,552	7,024
1984	1,177,167	5,276,445	285,663	46,723	35,514	11,209
1985 <sup>a/</sup>	1,071,167	4,094,352	184,237	28,840	25,182	3,558

Source: ASOCANA, DANE, Superintendencia de Industria Y Comercio, 1985.

<sup>a/</sup> Preliminary estimates for the first two quarters in 1985.

## 2.2 Performance and efficiency

During the 1960s, only small advances were made in employment generation while labour productivity (value added per worker) rose by nearly 5 per cent per annum. During the first half of the 1970s there was considerable growth in manufacturing employment, generating 12,000 to around 24,000 jobs a year. Employment growth fell to the levels of the 1960s towards end of the 1970s and in the first half of the 1980s industrial employment declined in absolute terms, resulting in a loss of 75,000 jobs between 1980-84 which corresponded to 30 per cent more than total employment generated by industry between 1975 and 1980. At present, therefore, industry not only lacks employment generating capacity, but has contributed in absolute figures to the high level of unemployment currently facing the Colombian economy.

Productivity gains were strong in the capital goods sector but rather small in the consumer goods industries. The intermediate industrial goods



industries suffered a decline in labour productivity after advances had been made earlier in the decade. In the 1970s the skill-intensive sectors seemed to have increased their competitiveness substantially. The slowdown in domestic economic activity combined with high inflation and interest rates and the resultant contraction in domestic demand created a sluggish industrial environment during periods of recession in the early 1980s. In addition, the deteriorating economic conditions in Latin America affected the external demand for Colombian products and depressed industrial activity.

The competitive level of industrial products in foreign markets has been negatively affected by several factors. The high cost of obtaining working capital is a frequently noted problem. The growing fiscal deficit combined with financial restrictions has constrained credit availability to the private sector and adversely affected industrial investment and growth. On the other hand short-term production costs have also been affected by electricity rationing and by a shortage of raw materials in some cases like in food processing and basic metal industries.

Indicators of industrial performance are presented in Table 3. Figures however are not always strictly comparable as growth rate figures pertaining to value added, employment and labour productivity are available only for different periods. Of the 28 subsectors of manufacturing 10 subsectors recorded negative growth rates of employment in 1975-84, with sharp declines recorded in textiles (-2.6 per cent), wood products, except furniture (-2.9 per cent) and non-ferrous metals (-2.2 per cent). Industries engaged in the production of miscellaneous petroleum and coal products registered the highest rate of employment growth (7.4 per cent) in 1975-84.

An increase of 4.7 per cent in value added per employee recorded by the textile industry in 1975-82 (Table 3) is applicable only to ISIC 321 category of the industry. The clothing and footwear industries suffered from declines in labour productivity between 1972 and 1976, recovering in the late 1970s. Real wages fell simultaneously, but less than labour productivity up to 1977, then increased to over 10 per cent per year between 1978 and 1980. The comparative advantage which the textile industry held during the 1950s and 1960s was lost in recent years. Technological change did not develop with the necessary speed and characteristics required by an increasing competition from the newly industrializing countries of East Asia.

The problems of textile factories have been aggravated by escalating labour and input costs, shortages of imported raw materials and components, and low productivity of obsolete plants. By 1983 many firms were facing problems of liquidation. Fabricato, the major Medellín company, was saved from liquidation after public appeal was launched to rescue the firm. However, the company recorded a net profit of nearly \$11 million in 1985. It is a reflection on the overall economic recovery under way and the Government's ban on imported textiles. Problems, however, still persist. Colombian labour costs are substantially higher than those of its East Asian textile competitors. The firms that have recovered from the 1982-83 recession lack finance to modernize plants. The productivity of most factories remains low, and several companies, with their non-competitive costs, have been priced out of many overseas markets. The Government's attempt to force down interest rates might reduce financing costs. In 1987 factories could experience fewer problems in securing foreign inputs due to the relaxed import controls.

Machinery and transport equipment witnessed an increase in the level of productivity in the 1970s. The performance of the automobile assembly

Table 3. Indicators of industrial performance, 1975-84  
(percentage)

Description (ISIC)	Growth of	Growth of	Growth of
	value added at <u>1980 prices</u> 1975-1984	<u>employment</u> 1975-1984	value added <u>per employee</u> 1975-1984
Food products(311)	3.58 <sup>a/</sup>	2.55	0.37 <sup>a/</sup>
Beverages(313)	6.47 <sup>a/</sup>	3.56	1.91 <sup>a/</sup>
Tobacco(314)	4.24 <sup>a/</sup>	-0.15	6.11 <sup>a/</sup>
Textiles(321)	1.08 <sup>a/</sup>	-2.58	4.75 <sup>a/</sup>
Wearing apparel, except footwear(322)	2.45 <sup>a/</sup>	2.53	-0.66 <sup>a/</sup>
Leather products(323)	2.84 <sup>a/</sup>	-0.75	4.07 <sup>a/</sup>
Footwear, except rubber or plastic(324)	4.17 <sup>a/</sup>	2.80	0.82 <sup>a/</sup>
Wood products, except furniture(331)	3.20 <sup>a/</sup>	-2.97	8.24 <sup>a/</sup>
Furniture, except metal(332)	8.00 <sup>a/</sup>	-0.18	8.38 <sup>a/</sup>
Paper and products(341)	2.79 <sup>a/</sup>	0.26	2.64 <sup>a/</sup>
Printing and publishing(342)	0.52 <sup>a/</sup>	1.82	-1.53 <sup>a/</sup>
Industrial chemicals(351)	1.92 <sup>a/</sup>	4.34	-2.93 <sup>a/</sup>
Other chemicals(352)	2.44 <sup>a/</sup>	0.82	1.43 <sup>a/</sup>
Petroleum refineries(353)	1.74 <sup>a/</sup>	4.44	-3.64 <sup>a/</sup>
Misc. petroleum and coal products(354)	1.74 <sup>a/</sup>	7.36	-6.94 <sup>a/</sup>
Rubber products(355)	5.03 <sup>a/</sup>	1.44	3.18 <sup>a/</sup>
Plastic products(356)	5.87 <sup>b/</sup>	4.61	-2.33 <sup>b/</sup>
Pottery, china, earthenware(361)	7.32 <sup>c/</sup>	-0.17	6.33 <sup>c/</sup>
Glass and products(362)	9.41 <sup>c/</sup>	-0.86	8.43 <sup>c/</sup>
Other non-metallic mineral prod.(369)	2.45 <sup>c/</sup>	1.60	0.45 <sup>c/</sup>
Iron and steel(371)	0.70 <sup>a/</sup>	0.66	0.25 <sup>a/</sup>
Non-ferrous metals(372)	1.12 <sup>a/</sup>	-2.15	3.93 <sup>a/</sup>
Fabricated metal products(381)	6.69 <sup>a/</sup>	0.66	5.82 <sup>a/</sup>
Machinery, except electrical(382)	8.28 <sup>a/</sup>	-0.79	9.41 <sup>a/</sup>
Machinery electric(383)	6.51 <sup>a/</sup>	2.47	3.05 <sup>a/</sup>
Transport equipment(384)	7.11 <sup>a/</sup>	1.53	4.89 <sup>a/</sup>
Professional & scientific equipment(385)	1.89 <sup>a/</sup>	1.30	0.97 <sup>a/</sup>
Other manufactured products(390)	-4.76 <sup>a/</sup>	-2.42	-1.78 <sup>a/</sup>

Source: Statistics and Survey Unit, UNIDO. Based on data supplied by the UN Statistical Office, with estimates by the UNIDO Secretariat.

<sup>a/</sup> 1975-1982.

<sup>b/</sup> 1975-1980.

<sup>c/</sup> 1975-1981.

companies<sup>1/</sup> has been affected by the lack of a clear policy towards the sector in recent years. One of the major problems facing the industry is the

<sup>1/</sup> For details on the reorganization of automobile industry in Latin America and its impact on Colombia, see UNIDO, Reestructuración de la Industria Automotriz Mundial y Perspectivas para la América Latina, 1986, PPD.8.

diminutive size of the Colombian market. Overall output fell by 13.6 per cent in 1985, primarily due to financial problems of the General Motors subsidiary collaborators. To protect the sector, all but essential vehicle imports have been prohibited. The new Government may ease the controls in the jeep subsector. Attempts to expand the auto market by the introduction of a low-priced "economic car" have met with little success. It is unable to keep down prices because of the rising unit production cost.

The energy-based industrial enterprises are passing through a crucial stage due to the slump in petroleum and coal prices. The continuing insecurity has discouraged further expansion of the oil-based industries. The development of a coal complex generated a large flow of foreign exchange when the country's international reserves were falling. But the completion of El Cerrejón's has coincided with cheap oil and coal prices which are far below expectations. It appears that profitability could be improved by raising the output to 25 million tonnes a year as the additional investment would be relatively small.

### 2.3 Manufactured exports and imports

Manufactured exports (SITC 5-8 less 68) rose from \$305 million in 1975 to \$531 million in 1984. Rapid growth of manufactured exports occurred during the high industrial growth period between 1967 and 1974. Export expansion after 1974 has been slow. Between 1979 and 1984, the value of manufactured exports hardly changed in nominal terms, implying a 15 per cent decline in real terms. Thus in 1981, the share of exports in production was only 7 per cent and the share of manufactured exports in total exports was around 15 per cent in 1984. Manufactured exports have been projected to grow by 0.5 per cent in real terms during 1986.

The composition of manufactured exports has undergone a significant change. Historically clothing and textiles were the most important category; recently these and chemicals have declined sharply which has been partly offset by increases in the export of glass, paper and paper products and leather, all of them requiring processing of raw materials which Colombia is endowed with. Since 1984 exports of chemicals grew significantly, but prospects are constrained by uncertainties in the international market. Table 4 shows that by 1984 the share of petroleum refineries accounted for 40.3 per cent of manufactured exports by all branches of manufacturing (ISIC 311-390).

A shift in the policy of the Government from import substitution to export promotion in the late 1960s resulted in the creation of various incentives including tax rebates, import drawbacks, low interest rate credit and a crawling peg system for the exchange rate. The tax rebate is a tax certificate valued at a given percentage of the value of exports that is issued to the exporter who may sell it at a market-determined discount rate on the stock exchange or use it to pay domestic taxes and duties at maturity. In 1974 this incentive was curtailed and the supply of subsidized export credit was expanded.

Trade performance and comparative advantage can be measured by using a form of revealed comparative advantage (RCA) indices for manufacturing

Table 4. Composition of manufactured exports, 1980-84  
(percentage)

ISIC	Categories	1980	1981	1982	1983	1984
311	Food products	26.0	22.7	15.9	16.4	13.2
313	Beverages		0.1	0.1	0.1	0.2
314	Tobacco	0.1	1.3	0.2	0.2	0.1
321	Textiles	11.6	10.2	7.8	5.9	6.5
322	Wearing apparel	9.5	10.3	11.4	5.0	3.3
323	Leather products	2.0	2.5	2.8	2.1	2.1
324	Footwear	1.1	1.4	1.7	0.6	0.6
331	Wood products	0.9	1.3	1.5	0.8	0.5
332	Furniture	0.3	0.4	0.3	0.1	0.1
341	Paper and products	2.7	4.1	2.7	1.9	3.0
342	Printing and publishing	3.3	4.2	3.8	2.9	3.0
351	Industrial chemicals	5.5	5.3	5.6	6.3	6.2
352	Other chemicals	2.3	2.8	2.6	2.5	2.7
353	Petroleum refineries	8.4	3.0	18.5	36.7	40.3
354	Misc. petroleum and coal products	0.5	0.5	0.4	0.2	0.4
355	Rubber products	0.5	0.5	0.3	0.2	0.3
356	Plastic products	0.9	1.1	0.8	1.1	0.9
361	Pottery	0.7	1.2	0.5	0.2	0.2
362	Glass	1.4	1.2	1.0	0.7	0.7
369	Other non-metallic	3.8	4.0	4.0	1.9	2.0
371	Iron and steel	0.2	0.1	0.3	4.1	5.6
372	Non-ferrous metals	0.2	0.1	-	0.2	0.8
381	Fabricated metal products	3.8	4.7	4.9	2.4	1.9
382	Machinery, except electrical	3.3	3.4	3.2	1.6	1.0
383	Electrical machinery	1.4	2.4	2.4	1.0	0.6
384	Transport equipment	2.2	2.8	1.5	0.9	0.7
385	Professional and scientific equipment	0.8	0.9	0.7	0.5	0.4
390	Other manufactured products	6.6	7.7	5.0	3.5	2.5
<b>Total manufacturing</b>		<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: DANE, 1985.

activities (SITC 0-8).<sup>1/</sup> RCA indices presented in Appendix Table A-4 compare the export performance of manufactured goods in terms of underlying

<sup>1/</sup> For empirical findings concerning international comparative advantage in manufactured exports and policy implications, see UNIDO, International Comparative Advantage in Manufacturing: Changing Profiles of Resources and Trade, Vienna, 1986.

The following indicator of RCA is used in the above study:

$$RCA_{ij} = (X_{ij} - M_{ij}) / (T_{ij} - T_{iw} / T_{iw} - T_{iw} / T_{iw})$$

where X = exports; M = imports; i = product; j = country; . = total manufactures, defined in a broad sense as industrially processed goods and intermediates; w = world; T = (X + M)/2

comparative advantages. High values of RCA indices indicate the respective products' superior trade performance in relation to other products. From Appendix Table A-4 it can be seen that the range of products with positive RCA indices was fewer than the number of manufactured exports with negative RCA indices (products with positive RCA indices) in the early 1970s and 1980s. Manufactured products with high positive RCA indices were coffee extracts and similar preparations (+14.9) and animal oils and fats (+14.9). RCA indices of textile yarn and thread declined from 0.82 in 1970-72 to 0.10 in 1981-83 and that of cotton fabrics and woven fell from 3.38 to 1.99 during the same period, while textile fabrics and other cotton products revealed negative RCA indices showing poor export performance.

In the changing pattern and destination of manufactured exports, Venezuela emerged as an important market for Colombia's manufactured exports. In the early 1980s around 50 per cent of manufactured exports was destined for Venezuela, with textiles and clothing, metal manufactures, transport equipment and cement making up about half of these exports. The main reason behind the growth of manufactured exports to Venezuela was the rapid rise of Venezuela's oil income. The slump in petroleum prices has already affected this trend. However, manufactured exports, which were adversely affected by the 1982-83 recession, are now recovering some of the lost ground.

Table 5 shows that machinery and transport equipment accounted for 41.4 per cent of manufactured imports in 1984. Of the total manufactured imports industrial chemicals constituted 18.5 per cent in the same year. Imports of iron or steel bars and rods are expected to reach 60,000 tons by 1987, compared with 56,000 tons in 1985. The shortfall in local production is expected to continue in 1986 and 1987. In 1983 imports of sheets and plates of iron or steel reached \$21 million of which \$1.5 million was supplied by developing countries. The country's imports of general industrial machinery amounted to \$320 million in 1983, of which \$22 million originated from developing countries. The main competitors among the other supplying countries were the US (55.7 per cent), Japan (10.3 per cent), the Federal Republic of Germany (63 per cent), France (5.7 per cent) and Italy (4.4 per cent). The main developing country suppliers were Brazil and Panama. Colombian imports of food processing machinery reached a value of around \$13.5 million in 1983, with 45 per cent of it originating from developing countries. The main developing country suppliers were Bahamas (20.8 per cent) and Mexico (22.2 per cent).

The Colombian Institute of Foreign Trade (INCOMEX) administers the import and export regulations. Imports are classified into two major categories: those requiring a prior import licence and those on the free list. As a member of the Andean Common Market (ANCOM) and the Latin American Integration Association (LAIA), Colombia maintains a system of preferential tariff rates for eligible imports from member countries. The country also has bilateral counter trade (barter) agreements with Spain and several Eastern European countries with which it exchanges products such as coffee and textiles for vehicles and industrial equipment.

Table 5. Composition of manufactured imports, 1980-84  
(percentage)

ISIC	Categories	1980	1981	1982	1983	1984
311/12	Food products	5.6	6.7	5.6	4.6	5.5
313	Beverages	0.6	0.6	0.7	0.8	0.5
314	Tobacco	0.6	0.5	0.5	0.5	0.2
321	Textiles	1.4	1.2	1.0	0.8	0.8
322	Wearing apparel	0.3	0.3	0.2	0.4	0.4
323	Leather products	0.1	0.1	0.1	0.1	-
324	Footwear	-	-	-	-	-
331	Wood products	0.2	0.2	0.2	0.4	0.2
332	Furniture	-	-	-	-	-
341	Paper and products	3.0	3.3	3.3	3.0	3.8
342	Printing and publishing	1.2	1.1	1.1	1.4	1.2
351	Industrial chemicals	15.0	13.7	13.5	14.4	18.5
352	Other chemicals	3.9	4.0	4.1	4.6	5.2
353	Petroleum refineries	10.0	9.0	8.8	6.3	4.9
354	Misc. petroleum and coal products	0.1	0.1	0.1	0.1	0.1
355	Rubber products	0.9	1.0	1.0	0.9	0.7
356	Plastic products	0.2	0.2	0.3	0.3	0.3
361	Pottery	0.1	0.1	0.1	0.1	0.1
362	Glass	0.4	0.5	0.4	0.3	0.3
369	Other non-metallic	0.4	0.4	0.4	0.5	0.4
371	Iron and steel	6.7	7.1	7.6	6.1	7.4
372	Non-ferrous metals	2.4	2.2	1.8	2.1	2.6
381	Fabricated metal products	2.8	3.4	3.6	4.4	3.1
382	Machinery, except electrical	18.4	19.6	18.4	20.0	19.4
383	Electrical machinery	8.5	8.0	8.8	9.5	9.7
384	Transport equipment	15.0	14.0	15.8	15.1	12.3
385	Professional and scientific equipment	1.9	2.2	2.1	2.8	2.1
390	Other manufactured products	0.4	0.5	0.5	0.4	0.4
Total manufacturing		100.0	100.0	100.0	100.0	100.0

Sources: UNIDO, Statistical and Survey Unit, 1982; DANE, 1985.

#### 2.4 Ownership and investment patterns

The low rate of industrial investment during the 1970s was partly related to the oligopolistic structure of a part of industry, through barriers of entry, which kept many branches of industry from responding to the requirements of domestic demand and international competition. The belated awareness of the importance of technological renewal on the part of some branches like textiles implied that Colombian enterprises were unable to take advantage of important markets.

Between 1959-68 investment in production equipment grew 5.8 times, but declined to 1.5 times during 1968-80. This decline was aggravated by the weak

integration of new technology which resulted in a significant fall in the growth of productivity.

It appears that Colombia did not cope with the technological advance which had benefitted industry in other countries. The low cost of manpower, which has formed part of the Colombian development strategy, has now been partly replaced by comparative disadvantages in technology. However, Colombian industry faced reduced investment growth and did not adequately follow international trends in technology modernization of machinery and equipment. One reason for this trend was the excess of installed capacity prior to 1968 which permitted a rapid increase in the production until 1974. With the large revenues following the coffee bonanza since mid-1970s, there was a possibility of expanding investment, but the recession of 1975 and competition from foreign manufactures prevented an increase in industrial investment.

The industrialization process achieved under import-substitution strategy did not reduce the external dependence of the sector. The share of foreign investments in infrastructure declined and gradually shifted to the manufacturing sector (see Appendix Table A-9) as a result of various incentives given to the foreign firms to provide foreign capital and know-how. Although transnationals represent only a fraction of total investments their importance is enhanced by their dominance in key sectors. Table 6 shows that foreign investments accounted for 34.7 per cent of total investments in chemicals and petroleum products, 20.6 per cent in fabricated metal products and 13.8 per cent in food, beverages and tobacco in 1985. Appendix Table A-10 presents recent information on foreign investment by country of origin. The United States accounted for around 65 per cent of foreign investment in 1985.

Appendix Table A-11 shows the pattern of manufacturing investment by foreign firms, joint ventures and Colombian firms. A recent trend, which may result in a different role for foreign firms in Colombia, in relation to ownership, is the rise of joint ventures between national State companies and private transnationals. There are advantages to both Colombia and foreign firms in such ownership pattern. First, the majority State-owned company will be less exposed to nationalistic pressures than the fully-owned transnational subsidiary. Second, the Government may have more influence in the operation of such a firm with regard to technology or transfer pricing.

In the 1980s the leading foreign investments have been shifting to chemicals, pharmaceuticals, transport equipment and machinery, metal products, electrical machinery, mining and food processing. Although key sectors of Colombia's industry are dominated by transnationals and decisions are thus made abroad, they have collaborated with the Government's policies of export diversification, as a growing percentage of their output is being exported. They were amply rewarded through the export incentive programme. During recession periods some transnationals have substantially increased their exports to compensate for local market declines.

In 1984 total direct foreign investment in Colombia was over \$1,731 million excluding investments in petroleum. To reactivate the national economy the Government is trying to attract foreign capital with preferential policies. These incentives include tax reductions to certain industries, increased foreign ownership of up to 49 per cent in banks, insurance and leasing companies, higher profit remittance allowances, increasing foreign registered capital base using unremittable profits, removal of geographic restrictions on investment in larger cities, a willingness to consider a

Table 6. Foreign investment by sector, 1985

ISIC	Sector	Total US\$	Per cent
0	Activities non-identified	110,500	0.13
10	Agriculture, hunting and fishing	1,516,203	1.75
20	Mining and quarrying	3,279,498	3.79
31	Food, beverages and tobacco	11,949,234	13.82
32	Textile, wearing apparel	692,786	0.80
33	Wood products	100,000	0.12
34	Paper products	9,590,000	11.09
35	Chemicals and petroleum products	30,005,081	34.71
36	Non-metallic mineral products	1,028,139	1.19
38	Fabricated metal products	17,834,512	20.63
39	Other manufacturing industries	2,066,962	2.39
61	Wholesale trade	659,839	0.76
62	Retail trade	4,014,069	4.64
63	Restaurants and hotels	56,114	0.06
70	Transport, storage and communication	1,206,967	1.40
81	Financial institutions	315,848	0.37
82	Insurance	17,162	0.02
83	Business services	1,895,342	2.19
90	Community, and personal services	113,830	0.13
	<b>Total</b>	<b>86,452,086</b>	<b>100.00</b>

Source: Departamento Nacional de Planeación, 1985.

variety of types of foreign involvement in mining projects, suspension of required conversion of wholly owned foreign companies to mixed companies for those purchasing at least 50 per cent of their raw materials, and exporting at least 25 per cent of their finished goods.

The Colombian Government has identified strategic areas for foreign capital in the fields of mining and extractive industries, transportation machinery and equipment, professional and scientific equipment, electrical and electronic equipment, plastic, metal, food and steel products, tourism services and marine fishing infrastructure. Appendix D presents a list of manufacturing projects and domestic companies seeking different types of foreign assistance.

A bilateral agreement with the Overseas Private Investment Corporation (OPIC) aims at increasing private US investment by offering OPIC insurance against the political risks of inconvertibility, expropriation and war, revolution, insurrection or civil strife, and financing through direct loans, loan guarantees and pre-investment surveys. OPIC also offers insurance coverages to protect US construction and service contractors and exporters against the arbitrary drawing of bid, performance, or advance payment guaranties. The National Planning Department, the Colombian entity which approves most foreign investment, has opened a foreign information office to deal with the concerns of potential investors.



## 2.5 Size and geographical distribution

In the late 1970s large industrial enterprises (100 workers and more) and small and medium industries (5-99 workers) had equal shares of 28 per cent in the distribution of industrial employment, while cottage industries (5 workers and less) accounted for 43 per cent of total employment. While the contribution of cottage industries to employment declined from 51 per cent in 1964 to 43 per cent in 1978, that of small and medium industries increased from 26 per cent to 28 per cent during the same period.

Employing about two-fifths of industrial labour force and producing close to one-fourth of MVA, the small and medium industries play a pivotal role in Colombia's industrial development process. Table 7 suggests that small and medium industries are evenly distributed among the subsectors of manufacturing. In most of the subsectors of manufacturing, more than 90 firms were operating in 1983. These industries are less dependent upon imported inputs. During the mid-1970s small and medium industries grew at an average annual rate of 6.6 per cent, compared with around 5 per cent growth rate generated by the manufacturing sector. With a sales growth of only 1.3 per cent reported in 1982 these industries suffered from the general wave of industrial recession during 1982-83. However, employment in small and medium industries recorded a positive growth rate, while the larger firms had to dismiss workers.

One of the consistent constraints inhibiting the growth of small and medium industries is inadequate access to institutional credit. Owing to reasons of higher risk and administrative costs the commercial banks seem to be reluctant to provide financial assistance for the industries. Insecure supplies of raw materials, limited technical assistance, inappropriate technology and inappropriate management systems are other constraints influencing the expansion and performance of small and medium industries.

Urban growth has been influenced by the growth of the four largest cities: Barranquilla, Cali, Medellín, and Bogotá -- all of which were already large metropolitan areas. The share of total population in these four cities nearly quintupled from 5 per cent in 1951 to 25 per cent in 1973 -- compared to an increase in the total urban share of less than 50 per cent during the same period. In 1977 industrial employment in the above four main cities was 73.6 per cent of total employment and their value added of the industrial sector was 66.1 per cent; 46 per cent of industrial production is concentrated in Bogotá and Medellín.

Table 7. Small- and medium-scale enterprise participation in manufacturing sector, 1976 and 1983  
(percentage)

ISIC subsectors	No. of enterprises		Employment as per cent of total		Subsectoral employment shares	
	1976	1983	1976	1983	1976	1983
Food	92	94	49	53	15.5	14.5
Beverages	54	55	12	12	1.0	3.9
Tobacco	69	78	18	19	.2	.4
Textiles	81	84	16	23	6.7	9.7
Clothing/Shoes	94	96	52	67	17.6	15.5
Wood/Cork	97	98	57	70	3.1	1.5
Furniture	98	98	77	83	10.9	2.9
Paper	84	87	33	36	2.1	1.6
Printing	95	96	52	60	4.5	4.7
Leather	90	94	50	52	1.5	2.0
Rubber	90	95	28	57	1.1	1.2
Chemicals	81	87	32	35	5.2	6.4
Oil & coal derivatives	85	96	9	43		.3
Non-metallic minerals	92	92	42	44	12.2	5.9
Basic metals	91	95	36	47	4.4	2.6
Metal products	93	94	52	57	9.5	10.1
Non-electrical machinery	96	96	67	61	5.8	2.1
Electrical machinery	94	96	51	59	2.7	4.9
Transport	91	98	...	69	4.3	4.5
Other	92	94	51	57	5.8	5.6
Total	92	94	42	52	100.0	100.0

Source: Instituto de Seguro Social, Anuario 1976, and unpublished statistics.

### **3. POLICIES, PLANS, INSTITUTIONS AND RESOURCES FOR INDUSTRIAL DEVELOPMENT**

#### **3.1 Industrial development policies and plans**

The two main policy objectives pertaining to industrial growth have been first the import substitution strategy and second the export promotion alternative. Both strategies coexist with different emphasis according to the short-term policy targets and with different levels of success.

Until 1963 industrial growth attributable to import substitution strategy stemmed from increased local production in traditional import substitutes. The production of import substitutes, particularly steel and chemicals, came on stream in the protected domestic economy. During 1963-67 import substitution slowed down, and low rate of industrial growth coincided with the foreign exchange crises of 1965 and 1967, leading to quantitative restrictions on imports. Foreign exchange scarcity adversely affected the capital-intensive and import-dependent sectors next in line for substitution. By 1967 the phase of straightforward import substitution ended.

Decree number 444 of 1967 was the first step enacted in pursuit of replacing the inward-oriented growth model. The Decree and its complementary norms defined a coherent pattern of development towards export promotion. Fixed nominal exchange rates were abandoned and periodic readjustments made in line with the evolution of internal and external prices were implemented. A direct subsidy mechanism for exports was also created in addition to the Export Promotion Fund (PROEXPO) providing technical, professional and credit assistance to exporters. The high pace of economic expansion during 1967-74 was largely due to favourable world demand for Colombian commodities as well as supporting measures, notably export incentives and a more realistic exchange rate. Thus, commodity exports represented a major source of growth and employment generation.

By 1982 Colombian industrial policy became more complex, simultaneously promoting import substitution in technically more complex industries such as motor vehicles, petrochemicals, machinery, etc., and exports of manufactures. Incentives to exporters were strengthened through increased tax rebates.

In 1985 Colombia launched a major reform of its import and export regulations. The fall in average export subsidies and import tariffs will be compensated by the acceleration in peso devaluation. The adjustment should go more smoothly and rapidly with regard to exports, while fiscal pressures in terms of reduced public deficit may delay planned changes for imports. The thrust of the policy reform will be to reorient the economy toward export promotion.

On the import side the changes include:

- a) Overall reduction of import controls. A plan to liberalize imports of spare parts and for maintenance of existing productive machinery and equipment is being implemented.
- b) Lower import tariff level and dispersion. On the upper side, tariffs have already fallen from 200 per cent to a maximum 80 per cent. Authorities are eliminating tariff exemptions whenever possible, except for those under special trade agreements.

The changes in export rules include:

- a) Elimination of export restrictions on 725 products. The Department of Foreign Trade (Incomex) has already eliminated 81 products and put 149 as conditional on Incomex approval (flour, oil seeds, cement, specific textiles, etc.);
- b) Unification of the temporary import facilities for exporters;
- c) Exemption from minimum-term requirements on export loans for some exporters;
- d) Reduction in the dispersion and level of export tax rebates (CERTs);
- e) Preferential export financing from PROEXPO;
- f) Simplification and integration of operational procedures for exporters, e.g., obtaining export clearance, quarantees, ensuring complementation of external financing with PROEXPO peso financing;
- g) Changes in the role of PROEXPO in export promotion strategy, promotion of trading companies, assistance for product design and quality.

Colombia's adherence as a charter member to the Andean group means a commitment to a common external tariff and industrial programming system (oriented towards regional import substitution albeit in a multicountry market), the gradual freeing of intra-ANDEAN trade and the harmonization of various policies beginning with a common treatment of direct foreign investment. Colombia's adherence to the Andean group policies also presents some interesting complexities; some of the Andean group's policies have come into conflict with Colombia's own policies and goals. For instance a major element of the Andean group policy is regional import substitution just when Colombia's new strategy is attuned largely to export promotion. The National Plan for Exports, 1984-1990, describes the possibilities for export promotion.

#### National Plan for Exports 1984-1990

The Plan aims at:

- a) Using productive resources for higher degree of processing;
- b) Reducing excess and unused productive capacity through economies of scale of the export industries;
- c) Making each sector and each project self-finance its growth and expansions through its own resources;
- d) Using unemployed skilled and unskilled labour from rural and urban areas in export-oriented activities;
- e) Improving productivity, innovation and quality to compete internationally;
- f) Creating backward and forward linkages within the industrial sector and regions which supply raw materials for the manufacturing sector; and

- g) Producing labour-intensive products with a new profile of non-standardized products to developing countries.

The non-traditional agro-industrial raw materials to be promoted following the "National Plan for Exports 1984-1990" comprise:

- Basic products of animal origin: cattle, white fish, shrimps, crustacea and honey;
- Basic products of vegetable origin: tropical fruits, garden vegetables, white rice, cocoa grain, tobacco, black kidney beans and sesame;
- Agro-industry: bakery products, chocolate, tropical fruit drinks, cocoa butter, canned asparagus and yuca flour;
- Manufacture of leather, footwear and wearing apparel;
- Manufacture of wood and wood products;
- Chemicals, such as citric acid and refined glycerine.

In respect of foreign participation in the Colombian industrialization process, Decree 444 of 1967 imposed limits on the activities of enterprises with foreign participation in order to favour national enterprises to seize the opportunities resulting from ANDEAN integration. In essence, the official policy assigned a subsidiary role to foreign companies to achieve specific objectives: channelling foreign investment towards substitution in the technologically more complex industries; promoting exports of manufactures; and increasing the share of local capital in industries. There was a striking absence of a consistent policy towards foreign participation and the industrial impetus for foreign firms declined. Currently the Government is trying to attract new foreign investment by changing its investment policies (see section 2.4).

The priority of government policies is towards restoring the rate of growth of the economy to its longer-term average of 6 per cent per annum, to expand employment opportunities for the growing labour force, while avoiding balance of payment difficulties.

Important targets are to stimulate domestic demand, regain international competitiveness and to create a proper institutional environment for industrial development.<sup>1/</sup>

#### Towards a new industrial strategy<sup>2/</sup>

A new industrial strategy for Colombia could be viewed in the context of current economic outlook. Colombia's recent economic performance is basically export-led and underpinned by a 70 per cent increase in earnings from coffee

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<sup>1/</sup> For details on institutional framework for industrial development, see Appendix B.

<sup>2/</sup> For a more detailed analysis, see Posibilidades de impulsar una nueva estrategia de industrialización para Colombia, Bogotá, D.E. Septiembre 15/1986.

in the first half of 1986. The original assumptions of growth have been revised in the face of downward trend in coffee prices in the third and fourth quarters of 1986, and falling prices of coal and oil. A possible reorientation may involve the development and marketing of products, hitherto exported in unprocessed or semi-processed form. The production of manufactures is likely to be complemented by the new policy of selective import restrictions that attempt to reserve at least a part of the domestic market for some locally produced manufactures. The new Government's efforts to stimulate domestic demand could provide an impetus for continued growth.

Local industry is expected to reap the benefits of growth in domestic demand and is likely to record a sustained growth rate of 4 per cent in 1987. The manufacturing subsectors that are likely to register the strongest growth are textiles, processed food, pharmaceuticals and industrial chemicals. However, activities would remain sluggish in capital goods, excepting agricultural machinery, and oil-based industries. The new Government seems to favour the redirection of spending towards the agricultural sector, with a view to generating employment in rural areas. Consequently, demand for machinery and agricultural tools and implements will be considerably stronger. The country would also need to develop a wide range of mass consumption goods catering to the needs of the section of population which is at a disadvantage in the domain of income structure.

Industrial policy formulation in Colombia could be directed towards achieving specific objectives assigned to the subsectors of manufacturing to overcome structural and cyclical problems. One of the principal objectives of industrial policy is to absorb the growing labour force and to reduce the rate of unemployment. According to the Employment Mission (Chenery) a 4 per cent sustained industrial expansion is a prerequisite for averting cyclical unemployment in the urban areas. With an estimated average annual economic growth of 5 per cent in the next four years, the rate of unemployment is expected to be reduced to 11.4 per cent in 1990. However, the actual number of unemployed persons would remain constant. A 6.2 per cent growth during 1987-90 could possibly lead to a fall in the number of unemployed below a million persons. A high and sustained pace of industrial expansion requires the implementation of measures to correct the structural weaknesses of domestic demand resulting from unequal distribution of income in Colombia.

External demand for manufactures has not been an important source of growth. Colombia's current endeavour to embark upon higher degree of industrial processing of agricultural and mineral resources to boost manufactured exports calls for determined efforts to market its products. If at all opportunities stem from ANDEAN integration, they seem to be restricted to a limited framework of regional import substitution. While seizing all possible opportunities within the ANDEAN group, Colombia's attempts to accelerate the new export drive are to be steered towards new destinations beyond the sub-regional markets.

The principal mechanisms and policies are to be directed towards the removal of financial and input constraints at the enterprise level as well as problems pertaining to the adaptation of the existing industrial structure to new technology in productive processes. Such innovations should aim at creating an industrial structure that meets the national aspirations. There is a pivotal need to strengthen the capital goods industry with the aid of advanced technology, with particular emphasis accorded to the modernization of iron and steel industry. The industrial modernization process seems to offer scope for the development of electronic industry in Colombia.

A new policy framework underlines the need for institutional and financial support at the enterprise level. In the sphere of institutional and financial reforms, the following framework may be considered:

- a) The National Programme of Capital Goods (PROGRAMA NACIONAL DE BIENES DE CAPITAL) requires support at all pertinent institutional and private levels and could constitute the key element of a new industrial policy. This sector represents important potential through its economic linkages within industry, agriculture and services.
- b) The creation of an Industrial Policy Council (CONSEJO DE POLITICA INDUSTRIAL) to facilitate the promotion, co-ordination and execution of a new industrial policy, ensuring efficiency in inter-institutional and inter-sectoral, public and private activities, and the promotion of industrial programmes.
- c) The Industrial Financing Fund (FFI) (Fondo Financiero Industrial) could be dedicating its resources to development and promotion of a more broad-based industrialization strategy, by means of its traditional means of credit and investment and other measures such as technology promotion and development of industrial inputs.
- d) The general industrial framework and institutional arrangements would need to be clearly defined for supporting the informal part of Colombian manufacturing sector.

In sum, the country requires an explicit industrial policy with defined means of achieving sector-specific goals for transforming the industrial structure into a strong industrial base for self-sustained growth.

### 3.2 Resources for industrial development

#### Human resources

Of the estimated population of 28.6 million in 1985, 9.7 million (34 per cent) was included in the labour force. Although nationwide labour statistics are rarely published, the National Department of Statistics (DANE) frequently produces detailed data on the work force in the seven major cities: Bogotá, Medellín, Cali, Barranquilla, Bucaramanga, Manizales and Pasto. Approximately 52 per cent of the 8.5 million people of working age in these cities are economically active. Unemployment in these cities fluctuates as follows: 11 per cent in 1979, 12 per cent in 1980, 11.2 per cent in 1981, 10.9 per cent in 1982, 12 per cent in 1983 and 13.1 per cent in 1984. In 1985, around 1.1 million persons were in the state of joblessness in Colombian cities. Present unemployment is estimated at 14 per cent.

The factors relating to economic growth in the 1970s and an expansion of employment were the following:

- a) strong growth in labour-intensive manufacturing production especially in smaller and non-urban establishments, destined to exports as well as the domestic market;
- b) significant expansion in agricultural labour demand as sectoral output increased vigorously without excessive mechanization. Massive replanting of coffee trees with a new variety seems to have accounted for an important part of the share of additional employment; and

- c) much of the income gains arising from higher production in manufacturing and agriculture was spent on services, particularly commerce, and social and personal services, which vigorously increased its output and contributed decisively to the aggregate employment boom.

The educational system emphasized the academic over vocational training. The most important vocational courses are taught at business schools in the urban centres. Some secondary schools are combining academic work with vocational planning and training. The higher skilled workers are trained within the firm but recently industrial schools have increased their enrollment. The Government is responding to the shortfall of skilled workers with on-the-job training programmes. Since 1957 the Servicio Nacional de Aprendizaje (National Apprenticeship Service) follows an apprenticeship programme for young persons and adult workers already on the job.

The Labor Code (Código Laboral) details working conditions such as loans, wages, vacations, and supplemental benefits. The code also deals with labour law, covering worker and employer organizations, and collective bargaining. It recognized four types of unions: enterprise, industrial, craft and mixed industrial associations.

The employees of most major industries are unionized. The four labour confederations legally recognized in the country are the CTC (Confederation of Colombian Workers), UTC (Union of Colombian Workers), CSTC (Trade Union Confederation of Colombia), and CGL (General Confederation of Labor). They are concerned with national social and economic issues.

#### Raw material resources

##### Agriculture

Agriculture currently contributes around 22 per cent to GDP. Its labour force is 32 per cent of total. Livestock and crops account for 36 per cent and 52 per cent respectively of value added. The balance is provided by forestry, fishing, hunting and others activities. Permanent crops in order of importance are coffee, sugar cane and bananas, and seasonal crops include rice, maize and cotton. Seven staples - rice, cassava, plantains, potatoes, maize, sugar cane for panela (non-centrifugal sugar) and beans - represent one-half of crop production.

The export share of agriculture is estimated to be 80 per cent of total exports (excluding illegal exports) in recent years. Agriculture expanded faster than the growth in population, and its contribution to growing GDP has been roughly one-fifth of the total. Increasing yields have been positively associated with technological progress through increased availability of farm machinery, new seeds, fertilizer, pesticides, research and extension service.

Close to 90 per cent of the increase in coffee production during 1970-81 is estimated to have been obtained through yield increases, while for the other crops, roughly 56 per cent of increased production was derived from area expansion and about 44 per cent was based on yield improvement. Future increases in non-coffee output could be obtained from a combination of acreage expansion and productivity gains. Around 6.6 million ha. of land is suitable for more mechanized cultivation, although a part of its utilization would require varying degrees of investment in land development, irrigation, drainage and flood control. Table 8 shows the production trends of non-coffee crops and area under cultivation during 1982-85.



Table 8. Trends in the production of major agricultural crops (excl. coffee), 1982-85

	Area under cultivation ( <sup>'000</sup> Hectares)				Production ( <sup>'000</sup> metric tons)				
	1982	1983	1984	1985	1982	1983	1984	1985	(Per cent)
<b>Cereals</b>	<u>1,453.4</u>	<u>1,314.6</u>	<u>1,017.4</u>	<u>1,098.4</u>	<u>3,611.4</u>	<u>3,344.8</u>	<u>2,647.6</u>	<u>2,637.0</u>	<u>17.3</u>
Rice	446.0	376.5	364.1	386.4	2,018.2	1,780.3	1,695.8	1,748.0	11.4
Barley	34.7	17.6	17.4	26.9	55.6	27.8	28.2	50.3	0.3
Corn	636.1	582.3	543.0	540.6	898.5	863.8	864.3	762.6	5.0
Wheat	45.3	46.3	42.9	44.5	70.7	77.8	59.3	76.1	0.6
<b>Oilseeds</b>	<u>192.5</u>	<u>180.6</u>	<u>238.0</u>	<u>319.8</u>	<u>344.8</u>	<u>359.6</u>	<u>460.5</u>	<u>583.3</u>	<u>3.8</u>
Sesame	12.3	9.0	8.3	27.4	7.2	4.9	4.9	15.6	0.1
Cotton	99.2	76.7	140.8	196.0	153.6	130.4	243.3	339.5	2.2
Soybeans	49.4	59.5	50.6	54.4	98.8	122.4	94.1	104.1	0.7
African palm oil	31.6	35.4	38.3	42.0	85.2	101.9	118.2	126.1	0.8
<b>Foods</b>	<u>1,107.0</u>	<u>1,109.8</u>	<u>1,137.5</u>	<u>1,125.7</u>	<u>7,808.4</u>	<u>8,152.2</u>	<u>8,726.8</u>	<u>8,264.1</u>	<u>54.1</u>
Beans	112.2	112.5	109.6	131.8	72.9	81.8	80.1	99.5	0.6
Potatoes	165.2	160.5	160.7	139.1	2,149.0	2,186.7	2,462.9	1,910.0	12.5
Panela	170.7	176.5	186.2	208.8	734.8	779.6	824.6	987.8	6.5
Platano	358.2	359.8	366.9	353.6	1,993.0	2,247.4	2,277.4	2,189.0	14.3
Yuca	170.9	172.7	183.0	156.8	1,552.3	1,554.8	1,674.5	1,434.5	9.4
Yam	10.6	13.9	14.3	12.6	76.4	96.3	103.3	97.2	0.6
Garden vegetables	119.2	113.9	116.8	123.0	1,230.0	1,205.6	1,304.0	1,550.2	10.2
<b>Special crops</b>	<u>245.0</u>	<u>252.2</u>	<u>253.7</u>	<u>270.0</u>	<u>2,566.1</u>	<u>2,665.8</u>	<u>2,393.0</u>	<u>2,521.8</u>	<u>16.5</u>
Sugar cane	92.9	98.5	93.4	112.9	1,302.9	1,379.4	1,177.6	1,396	9.1
Cacao	77.3	79.2	89.3	94.1	39.4	37.0	41.6	43.9	0.3
Bananas	21.8	22.5	23.1	23.1	1,146.6	1,173.0	1,106.1	1,028.0	6.7
Fique	22.1	21.9	20.6	19.9	28.5	26.9	23.9	24.4	0.2
Tobacco	30.9	30.1	27.3	20.0	48.7	49.5	43.8	29.2	0.2
<b>Other</b>	<u>47.1</u>	<u>49.4</u>	<u>285.8</u>	<u>248.3</u>	<u>642.8</u>	<u>690.2</u>	<u>1,399.0</u>	<u>1,258.8</u>	<u>8.3</u>
<b>Total</b>	<b>3,045.0</b>	<b>2,906.6</b>	<b>2,932.4</b>	<b>3,062.2</b>	<b>14,973.5</b>	<b>15,212.6</b>	<b>15,626.9</b>	<b>15,267.0</b>	<b>100.0</b>

Source: Ministerio de Agricultura - 1985.

Some of the constraints for further development of the agricultural sector are related to sluggish external and internal demand while others to trade and incentive policies. Yet others are related to high input costs, particularly for fertilizers, and transport and marketing constraints are significant. The fluctuating world demand for coffee, and the depressed market for cotton and sugar suggest the need for diversification.

Sugar is one of the most important agro-industries in Colombia with modern and updated technologies. The harvest lasts the whole year and its domestic prospects for expansion are good, though current international prices are not very encouraging. A joint regional effort and studies on production of alcohol and chemicals industries from sugar are needed.

Forestry, logging, wood products, furniture and fixtures have not been an important traditional industry. In 1977 employment in this sector was not more than 18,000 workers, its power consumption was in the same year 45 million kWh. Colombia is an important exporter of wood but mainly as timber, or with little value added. This sector offers good opportunities for processing, but if an urgent and strong policy is not implemented for replanting and conservation of the national forest, Colombia can lose all its productive forest in less than 30 years. Currently it has 40 million hectares of natural forests and 60,000 hectares of artificial plantations. While the average growth period for a forest is 60 years in Sweden or Norway, it is only 20 years in Colombia. To face the domestic demand of wood and pulp for the 1990s, with national wood, it would require replanting of a minimum of 20,000 hectares annually of industrial forests.

Paper, pulp, paper products and paperboards have been a very dynamic industry in the last 20 years. Almost all the pulp and fibre needed by the paper, printing and publishing industry is supplied domestically. Newspaper pulp and mechanical pulp is imported. In 1977 Colombia exported printing paper, industrial paper and paperboard boxes to Central America, Venezuela and the US for an amount of \$10 million. The per capita consumption, however, is still very low. Important investment projects related to this industry are being implemented in the last years.

A subregional plan within the framework of the Andean Group towards a national food security scheme is presently at the planning stage.<sup>1/</sup> The indicative plan would identify priority food sectors in each country. This would lead to complementation of food production based on respective countries' factor endowments and demand within the subregion.

Manufacturing implications of agricultural raw materials could be analyzed with a view to highlighting the scope for import substitution and export promotion through higher degree of processing:<sup>2/</sup>

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<sup>1/</sup> For further details, see Acuerdo de Cartagena (Junta), Formacion de los Sistemas Nacionales de Seguridad Alimentaria y del Sistema Andino, Novena Reunión del Consejo Agropecuario 07 al 09 de noviembre de 1984, Lima, Peru, C.AGR/IX/dt 2, 11 de octubre de 1984.

<sup>2/</sup> This section is based on a study entitled "Preliminary assessment of broad development prospects for industrial processing and export of agricultural materials". Prepared by the Regional and Country Studies Branch of UNIDO, 8 May 1986 (unpublished internal document).

### Oils and fats

The most important group of import substitution products remains with animal and vegetable oils, and fats. The development of the production of cottonseed will depend on the possibilities, hence export price, of cotton fibres (about \$23.2 million in 1983). Promotion of cottonseed production can probably be assisted by securing minimum prices to farmers both for cotton and cottonseed. Increase of soybean production could be of great interest also because of the associated production of the respective oilcake to be used as feeding-stuff for animals. The continuous increase in the production of African palm oil should be maintained. Increased production of other oilseeds such as sesame, ground nuts, sunflower, safflower, rape, etc. should be examined, experimented and developed giving priority to the high value oilseeds that can be oriented to export.

### Feeding-stuff for animals

In Colombia, cattle raising for beef is practiced on a rather extensive basis. Import of feeding-stuff for animals partly blended with local feeding-stuff is principally done for the raising of pigs and poultry for eggs and meat production. Special attention should be given to the recovery of by-products and waste utilization of the different agro-industrial plants and of post harvest operations and their transformation into valuable feeding-stuffs for animals.

### Dairy products and eggs

In 1983, the import of dairy products and eggs reached the value of about \$15.0 million, most probably attributable to dairy products. Dairy cattle raising has been based, in the past, on feeding the born calves until weaning with mother cow milk. With this system the bull calves were slaughtered at the age of several days, to save cow milk, while the raising of cow calves took place with the use of several hundred litres of cow milk until weaning. About ten years ago a recommendation was made to the Cattle Growers Association and the Ministry of Agriculture of Colombia for the introduction of a milk substitute, to be produced in Colombia, to use for calf-feeding. This measure would aim at increased production of cow milk for the local dairy industry and the avoidance of bull calf slaughtering, hence increasing meat production.

### Meat and meat products

The livestock herds in Colombia consisted of about 23.96 million head of cattle and 2.6 million head of sheep in 1984. Most of the cattle is raised for beef under free pasture grazing. Sheep are raised for meat and wool also by extensive methods. Raising of dairy cattle for milk and dairy products is more established around Bogotá and other urban centres.

Production and export of meat is an established traditional activity. In 1983 the export of meat reached the level of about \$30.6 million. Improvements in this sector may probably be considered in the following directions:

- a) Production of frozen and processed selected cuts of high quality meat for export, leaving the less noble parts and the outcoming by-products for consumption and processing in the country;

- b) Full utilization of the slaughterhouses and meat processing by-products such as blood, fat, tendons, bones, glands, horns and hoofs, internal parts, etc. and their transformation by processing into end products to be used locally and possibly also for export;
- c) Co-ordination of the refrigeration chain employed in the export of frozen meat products with the production and export of other products for which a similar refrigeration chain will be needed (export of fishery products, frozen fruit and vegetable products, etc.);
- d) Production of wool and wool-containing articles.

#### Fish and fish preparations

Colombia, with its extended seashores and seaports on the Atlantic and Pacific Oceans, has important potential for the development of a wide-scale fishing fleet and industry, a fact considered in the "Plan Nacional de Exportaciones 1984-1990". The economy of the fishing industry and activities can be linked to the economy of cattle and sheep raising for beef to be considered in the following directions:

- a) Improve nutrition by the addition of more fish (proteins and fats) to the present diet;
- b) Substitute fish products for other products in the domestic market with a view to increasing the exports for fish substitutes;
- c) Process prawns, crustaceans and noble types of fish (tuna, etc.) for export and use the more common fish for domestic consumption;
- d) Recycle the by-products of the fish industry (fish meal, fish oil, etc.) as feeding-stuffs for animals and other uses;
- e) Co-ordinate the refrigeration chain (transportation, storage, etc.) of the meat industry with the needs for refrigeration for the fishing industry.

#### Sugar, sugar preparations

Development prospects for this group of products may probably take place in the following directions:

- a) Improvement of the use of molasses as feeding-stuff for animals;
- b) Fermentation of molasses into distilled alcohol, industrial alcohol and gasohol (alcohol for fuel);
- c) Production of alcoholic beverages (rum and others);
- d) Production of sugar syrups for the confectionery industry;
- e) Production of confectionery products, chocolates and other sweets from local raw materials.

#### Coffee

The export of coffee is generally linked to quotas, and an increase of exports therefore implies changes in quotas to Colombian coffee growers.

Processing of coffee products is a well-established industry in Colombia familiar with the different production and marketing problems and issues of this sector. With this industry the spreading of the "roja" disease in coffee plantation may cause serious problems to the country's economy and the individual coffee-growers affected by it.

Improvements in this sector should be considered to enhance productivity and efficiency to reduce production costs and be more competitive in the export markets, in association with improvements in quality, diversification and utilization of by-products.

### Cocoa

Cocoa is probably the most important raw material among the remaining traditional crops that might have increased potential for processing into different cocoa products such as cocoa butter, cocoa powder, chocolates, etc. Many of these products will also refer to the development of the sugar and confectionery industries.

### Non-traditional raw materials

The geographic, topographic, soil and climatic conditions prevailing in Colombia and the vast area of land not under cultivation (around 6.6 million hectares) facilitate the increase and diversification of agricultural production for a wide range of non-traditional raw materials and their processing for export and the domestic markets. Many of these raw materials can be started on a smaller scale or as cottage industries in rural areas distant from urban centres, and their production will contribute to improved employment in these rural areas and consequently to reduced migration to urban centres. Examples of these additional activities may comprise:

- Extraction products such as essential oils, perfumes and medical plants;
- Drying and extraction of spices and natural coloring products;
- Processing of nuts (e.g. cashew, macadamia);
- Production of honey;
- Processing by canning, freezing, dehydration and other technologies of specific fruits, vegetables, roots, meat and fishery products;
- Recovery of specific forestry and wildlife products;
- Miscellaneous processed foods and products.

The development of the production and processing of the above-indicated groups of products and their adaptability to the different production and marketing areas will require an intensive investigation and pilot operation work to be undertaken by the national experimental, investigation and research stations and bodies in collaboration and assistance of the Government, very possibly with the assistance of technical co-operation from bilateral and multilateral sources.

**Energy resources**

The incentives that were granted to private petroleum producers during 1980-81 have resulted in rising foreign investment in oil and gas maintenance, rehabilitation, exploration and development. The full realization of Colombia's energy potential (hydropower, oil, coal and gas) continues to depend critically on adopting a comprehensive energy pricing policy, in a well thought-out investment effort based on least-cost solutions. Over the medium term this implies rapid development of energy and mineral resources.

Table 9 reveals the rapid expansion in the level of investment in the oil sector during 1978-84, growing at an average annual rate of 9.7 per cent. The number of wells increased from 26 in 1978 to 43 in 1984, while crude oil production increased at 4.3 per cent per annum during the same period. Assuming that new operations will cease to exist during 1988-92, in the face of uncertainties surrounding around the oil market, Table A-12 projects modest estimates of production levels until 1992.

**Table 9. Expansion of oil-related activities and oil production, 1978-84**

	1978	1979	1980	1981	1982	1983	1984
Investment in exploration (\$m)	71.5	139.1	182.2	272.7	281.6	107.6	124.0
No. of exploratory wells drilled	26	29	36	61	73	35	43
No. of development wells drilled	59	65	82	111	151	213	230
Crude oil production ('000 b/d)	129.7	123.4	124.6	133.8	141.6	152.1	167.1
Crude oil processed in Colombian refineries ('000 b/d)	152.6	151.9	161.3	171.0	165.1	185.6	188.3

Source: Financial Times, "Colombia: Energy Resources, Discovering a Silver Lining", August 22, 1985.

Colombia has rich hydro-electric potential, but the variable rains and bad droughts sometimes reduce the generating power. Hydro-electric power scheme accounts for about two-thirds of Colombia's electricity generating capacity (6,000 megawatts). This proportion will continue to rise towards the end of the century as new schemes coming into operation over the next four years would add nearly 1,000 megawatts. The Government is considering the construction of smaller thermal plants. These could play an important role when reservoirs are low. The Government is also encouraging the development of alternative energy sources.

Mining is expected to become more important as a consequence of expanded nickel and coal production, increases in petroleum production and, by the late 1980s, as a consequence of rapidly expanding coal production (Table 10). Petroleum and natural gas production is expected to increase sharply in the latter part of the decade as major projects come on stream.

Table 10. Estimates of Colombian coal exports, 1984-90

	1984	1985	1986	1987	1988	1989	1990
Cerrejon Norte (m tons)	0	2.30	6.16	9.00	12.00	15.00	15.00
Carbocol	0	1.15	3.08	4.50	6.00	7.50	7.50
Intercor	0	1.15	3.08	4.50	6.00	7.50	7.50
Cerrejon Central (m tons) <sup>a/</sup>	0.35	0.72	0.00	0.00	3.00	4.00	5.00
Other projects (m tons) <sup>b/</sup>		0.32	0.80	1.10	1.10	1.10	1.10
Total (m tons)		3.34	6.96	10.10	16.10	20.10	21.10
Price (\$/ton)	41.5	39.2	42.0	44.9	48.1	51.5	55.1
Exports value (\$/m)	34	131	292	454	774	1,034	1,162
Remittances (\$m) <sup>c/</sup>		2.2	5.3	12.1	83.9	113.5	131.7

Source: Financial Times, "Colombia: Energy Resources, Discovering a Silver Lining", August 22, 1985.

<sup>a/</sup> This project may be suspended for two years. Consequently, these projections conservatively assume that no production occurs in 1986-87.

<sup>b/</sup> These projects include Proceso and Carbones del Caribe.

<sup>c/</sup> Remittances of Intercor.

Colombia is the largest producer of gold and platinum in Latin America. Table 11 reveals that production of gold increased significantly during 1980-85 and that of platinum fell sharply from 14,345 troy ounces in 1980 to 10,106 in 1984. Current production of precious metals is mainly from small alluvial operations, but new gold veins have been discovered in Naviño.

Table 11. Production of selected minerals, 1980-85

Year	Gold	Platinum (troy ounces)	Silver	Iron (tons)	Salt (tons)	
					From sea	From earth
1980	497,028	14,345	140,476	491,288	717,917	169,157
1981	516,804	14,804	133,342	410,584	582,254	134,020
1982	459,559	11,886	124,222	445,434	293,752	130,175
1983	426,517	10,301	132,392	436,068	423,441	115,239
1984	730,670	10,106	153,441	443,840	528,962	110,909
1985	817,630	8,298	160,609	321,189	396,593	74,886
Sept.						

Source: Banco de la República, casas de fundición y ensaye, Acerías Paz del Río e Instituto de Fomento Municipal, 1985.

## Financial resources

The most important credit institutions are the Central Bank (Banco de la República) and 26 commercial banks. Five of these banks are official entities engaged mainly in development operations. There are also 13 private local banks and eight which are mixed corporations (with foreign capital up to a maximum of 49 per cent). The Banking Superintendency (Superintendencia Bancaria) also has registered with it the following institutions: 28 financial corporations; 10 savings and housing corporations (Corporaciones de Ahorro y Vivienda); 31 Commercial Financial Corporations (Compañías de Financiamiento Comercial); 34 general insurance companies, 24 life insurance firms, 4 reinsurance and 10 capitalization enterprises; 13 bonded warehouses (all of them owned by Financial Institutions); 31 leasing firms; 7 trustee (fiduciary) corporations and 10 factoring firms.

Over the last decade, the ratio of total saving to GDP in current prices has remained largely constant on average, rising slightly from 20 per cent to 22 per cent, despite the doubling of the average rate of inflation between the 1967-74 and 1975-80 periods. While the overall, nominal savings rate increased by about 10 per cent and the personal savings rate by even more (averaging slightly over 6 per cent of GDP during 1978-80), the real investment rate declined slightly. Business saving has been the main source of investment finance during both periods, averaging about 50 per cent of total investment.

The most important government financial institutions are the following:

The Export Promotion Fund (Fondo de Promoción de Exportaciones-PROEXPO) which offers credit to finance Colombian exports or projects aimed mainly at producing goods for export.

The Industrial Financing Fund (Fondo Financiero Industrial FFI), which charges an annual 24 to 26 per cent with repayment terms of 1 to 5 years.

The Industrial Development Institute (Instituto de Fomento Industrial) finances new industries, expansion of existing ones and acquisition of capital goods.

The Popular Financing Corporation (Corporación Financiera Popular) finances development projects for small- and medium-sized industries, and other financial corporations.

For the Agricultural sector the most important institution is the Agriculture Financing Fund (Fondo Financiero Agrario) which offers interest rates ranging from 15 to 21 per cent with maximum repayment terms of 10 years.

Credits for the housing and urban development sectors are channelled through different entities. Most credits from the Banco Central Hipotecario (Central Mortgage Bank) and the Savings and Housing Corporations are channelled through the Constant Value Purchasing Unit (Unidad Adquisitiva de Valor Constante - UPAC). UPAC loans are charged an interest rate which compensates for the rate of inflation (corrección monetaria), for which the Government sets by Decree a maximum limit (currently 23 per cent a year) and also with a rate of interest which ranges between 6 per cent and 11 per cent, depending on the amount of the loan and its purpose (house or land acquisition, improvement construction, etc.).



Other important financial entities are: the Special Financing Funds (7) which finance exports, agricultural and industrial activities, and urban development; the livestock financing funds (24); the commercial consortia which finance the acquisition of vehicles (8); 25 mutual investment funds; and 5 local credit card institutions.

The availability of credit varies greatly, depending on government programmes and economic policies. In 1978 the Government made gradual adjustments in its financial sector policy, in the light of changing external and domestic economic developments, generally easing restrictions. The net effect of the measures has been to increase real returns to depositors and ultimately resource mobilization. In addition, the measures have improved the competitiveness of the regulated market relative to the unregulated one.

The Government has been more concerned with the question of interest rates than with the orderly development of the institutional structure and regulatory framework of the financial system. In late 1983 a government Commission emphasized the need to define more clearly the respective role and areas of competence of the commercial banks and other financial institutions, to strengthen effective regulation of the financial system and to open up the commercial banking system to foreign participation.

### 3.3 The role of technical co-operation in industrial development

External technical assistance to the industrial sector in Colombia has been rather modest compared with assistance to other sectors. In 1985 external assistance to industry amounted to \$367 million,<sup>1/</sup> the equivalent of 1.7 per cent of total external assistance to Colombia. Assistance was mainly provided by UNDP (\$148 million), other UN organizations (\$129 million), bilateral assistance from Italy and the Federal Republic of Germany, and others (\$90 million). (See Appendix Table A-13 and A-14.)

UNIDO currently provides assistance in the field of planning for development of a capital goods industry, and in the construction of wooden bridges (see Appendix E). Other external assistance projects during 1985 involved assistance to: small industry development; women enterprises; industrial property system; science and technology; machinery and tools; ceramics; metrology and quality control; and enterprise-to-enterprise co-operation (see Appendix Table A-15). The Inter-American Development Bank announced in December 1985 the approval of a financing equivalent to \$200,000 to continue a programme of training, technical assistance and credit for micro-enterprises in the region of Popayán, Colombia.

To improve the innovative and technological capacity of the productive sector, an initiative is being taken under a scheme entitled "Plan de Concertación Nacional en Ciencia y Tecnología para el desarrollo 1983-86". Its purpose is to design a policy for technological co-operation in industrial development. This is to be done through Centros de Investigación Tecnológica (Centers for Technological Research) specialized in each particular industrial sector. The Fondo Colombiano de Investigaciones Científicas y Proyectos Especiales "Francisco José de Caldas" has shown special interest on this project. The main idea is to link the industrial sector with the Government

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<sup>1/</sup> This figure does not include assistance provided by Italy and the Federal Republic of Germany for which no detailed figures are available.

and the scientific and technological resources and to improve the technological transfer, adaptation and modification of foreign and national technologies.

As mentioned before, Colombia as a member of the Acuerdo de Cartagena and the Andean Pact is attempting common technological policies in the areas of transfer of technology, adaptation and innovation. Some of these strategies are related to scientific and technological integration towards fostering industrialization. Common transfer of technology projects on the exploitation and manufacturing of copper, forestry and capital goods are being implemented among its members.

The main economic challenge facing Colombian industry in the late 1980s and beyond is how to combine a reduction of the high levels of unemployment and inflation with an improvement in the international competitiveness of non-coffee products. Technical co-operation can play an important role in assisting the Government's efforts to meet this challenge. To be effective such external technical assistance must address the key problems currently facing the industrial sector in general and specific branches in particular. Labour productivity and international competitiveness could be improved by reducing the high cost of obtaining foreign capital, and by removing industrial input constraints. Small- and medium-scale industries can be further expanded by provision of adequate institutional credit, raw material supplies, and improved technology and management systems. By seizing the industrial opportunities stemming from ANDEAN integration, foreign capital and technology can contribute to further growth and development of Colombian industry. Technical co-operation could also support the country's endeavour to achieve a higher degree of industrial processing of a wide range of agricultural raw materials and minerals in pursuit of substituting for imports, and increasing the volume of processed final goods for exports. This would substitute for raw materials currently being exported in unprocessed or semi-processed form.

During the next few years a favourable trend is expected in industrial production due to international economic recovery and increase in domestic demand following higher coffee earnings. It is probable, however, that industry will continue to grow below its potential in the absence of general economic policy instruments and coherent industrial policies aimed at overcoming current constraints of the manufacturing sector. The current pace of sustained recovery could be further strengthened by policies aiming at modifications in the industrial structure, introduction of advanced technologies, modernization of institutional infrastructure and reactivation of industrial investment.

**Appendix A**

**Statistical Tables**

Table A-1. Sources of growth in manufacturing, 1958-80

	Domestic Demand (DD)	Import substitution (IS)	Exports (X)
<b>Total industry</b>			
1958 - 1967	0.860	0.102	0.037
67 - 77	0.844	0.045	0.109
77 - 80	1.143	-0.202	0.059
67 - 74	0.877	0.035	0.086
74 - 80	1.048	-0.145	0.096
74 - 82	1.264	-0.376	0.112
58 - 80	0.893	0.028	0.077
<b>Light consumer goods</b>			
1958 - 1967	0.939	0.013	0.047
67 - 77	0.880	-0.039	0.158
77 - 80	0.944	-0.010	0.065
67 - 74	0.920	-0.034	0.113
74 - 80	0.895	-0.024	0.128
74 - 82	0.918	-0.046	0.127
58 - 80	0.912	-0.015	0.102
<b>Durable consumer goods</b>			
1958 - 1967	0.924	0.072	0.003
67 - 77	0.661	0.208	0.129
77 - 80	1.007	-0.073	0.066
67 - 74	0.673	0.258	0.068
74 - 80	1.130	-0.258	0.128
74 - 82	1.609	-0.814	0.205
58 - 80	0.828	0.097	0.073
<b>Intermediate goods</b>			
1958 - 1967	0.760	0.203	0.036
67 - 77	0.884	0.034	0.081
77 - 80	1.200	-0.259	0.058
67 - 74	0.943	-0.026	0.083
74 - 80	1.018	-0.073	0.055
74 - 82	1.342	-0.403	0.060
58 - 80	0.860	0.074	0.064
<b>Capital goods</b>			
1958 - 1967	0.671	0.293	0.035
67 - 77	0.544	0.256	0.099
77 - 80	1.388	-0.424	0.035
67 - 74	0.583	0.351	0.064
74 - 80	1.376	-0.478	0.101
74 - 82	1.793	-0.910	0.117
58 - 80	0.719	0.211	0.069

(DD) =  $\bar{i}\Delta D/\Delta P$  : Relative contribution of domestic demand to total industrial growth.

(IS) =  $\bar{D}\Delta i/\Delta P$  : Relative contribution of import substitution to total industrial growth.

(X) =  $\Delta X/\Delta P$  : Relative contribution of exports to total industrial growth.

Source: EVOLUCION Y ESTRUCTURA DE LA INDUSTRIA MANUFACTURERA COLOMBIANA 1.958 - 1.982 Y MARCO ANALITICO GENERAL (con referencias generales a 1.983-1.985) - CEDE - Universidad de los Andes. Ricardo Chica, Oscar Landerretche y Juan Mauricio Ramirez.

Table A-2. Composition of MVA by end use, 1973, 1978 and 1982

	1973	1978	1982
<b><u>MAINLY CONSUMER GOODS</u></b>	<b><u>52.5</u></b>	<b><u>52.6</u></b>	<b><u>54.5</u></b>
Food products	12.6	14.1	14.8
Beverages	11.7	14.4	15.6
Tobacco	3.1	2.9	3.5
Textiles	15.2	12.7	11.4
Wearing apparel	3.5	2.6	2.7
Leather products	0.6	0.8	0.8
Footwear	0.7	0.6	0.7
Wood products	1.1	0.9	1.1
Furniture	0.6	0.6	0.8
Paper	3.4	3.0	3.1
<b><u>MAINLY INTERMEDIATE GOODS</u></b>	<b><u>29.5</u></b>	<b><u>27.2</u></b>	<b><u>22.2</u></b>
Printing	2.8	2.4	2.4
Industrial chemicals	5.1	5.2	5.1
Other chemical products	7.2	7.5	7.3
Petroleum refineries	5.1	3.9	4.7
Misc. petroleum products	0.1	0.1	0.1
Rubber products	2.0	2.5	2.6
Plastic products	1.7	...	...
Pottery	0.5	0.6	...
Glass	1.2	1.3	...
Other non-metallic products	3.8	3.7	...
<b><u>MAINLY CAPITAL GOODS</u></b>	<b><u>17.9</u></b>	<b><u>20.4</u></b>	<b><u>23.2</u></b>
Iron and steel	2.8	2.5	2.3
Non-ferrous metals	0.4	0.4	0.3
Metal products	4.2	5.1	5.8
Non-electrical machinery	2.1	2.6	3.5
Electrical machinery	2.2	2.7	3.0
Transport equipment	5.1	6.2	7.5
Scientific equipment	0.3	0.3	0.3
Other manufactures	0.8	0.6	0.5

Source: Statistics and Survey Unit, UNIDO, 1985.

Table 3. Product mix of traded manufactured goods, 1975, 1983 and 1984\*/

SITC DESCRIPTION OF TRADE GOODS	E X P O R T S				I M P O R T S			
	1975	1983	1984	1984	1975	1983	1984	1984
	PERCENT IN TOTAL	PERCENT MANUFACTURES	PERCENT MANUFACTURES	(1000 US \$)	PERCENT IN TOTAL	PERCENT MANUFACTURES	PERCENT MANUFACTURES	(1000 US \$)
01 Meat and meat preparations	3.542	2.597	0.877	10524	0.008	0.075	0.076	2874
02 Dairy products and eggs	0.184	0.023	...	...	0.125	0.363	0.128	4861
032 Fish n.e.s. and fish preparations	...	...	...	...	0.336	0.351	0.610	23182
0422 Rice, glazed or polished not otherwise worked	3.036	0.195	0.690	8284	0.000	0.004	0.006	222
046 Meal and flour of wheat or of meslin	...	...	...	...	0.032	0.010	0.010	364
047 Meal and flour of cereals, except above	0.004	0.009	0.010	122	0.009	0.000	0.000	1
048 Cereals preparat. & starch of fruits & vegetab.	0.363	0.642	0.432	5184	0.002	0.396	0.155	5897
052 Dried fruit	0.007	0.001	...	...	0.032	0.071	0.028	1056
053 Fruit, preserved and fruit preparations	0.093	0.308	0.272	3270	0.131	0.113	0.051	1931
055 Vegetables, roots & tubers, preserved or prepared	0.005	0.007	0.006	70	0.015	0.028	0.018	677
06 Sugar, sugar preparations and honey	15.483	6.694	3.563	42763	0.114	0.082	0.079	2993
0713 Coffee extracts, essences, concentrates & similar	0.002	2.992	3.101	37224	...	0.001	0.000	5
0722 Cocoa powder, unsweetened	...	0.004	0.001	16	0.015	0.000	0.000	16
0723 Cocoa butter and cocoa paste	0.137	0.487	0.805	9664	0.488	0.018	0.000	0
073 Chocolate and related food preparations	0.443	0.040	0.590	7083	0.007	0.008	0.010	393
074 Tea and mate	0.000	...	...	...	0.001	0.005	0.003	110
081 Feeding-stuff for animals	1.455	0.047	0.036	435	0.201	0.853	1.320	50140
09 Miscellaneous food preparations	0.116	0.225	0.159	1907	0.646	0.273	0.253	9600
11 Beverages	0.016	0.127	0.178	2139	0.504	0.450	0.365	13850
122 Tobacco manufactures	0.015	0.052	0.066	797	0.029	0.382	0.064	2429
2219 Flour and meal of oil seeds, nuts, kernels	...	...	...	...	...	0.000	...	...
231 Crude rubber, synth. & reclaimed (excl. SITC 2311)	0.001	0.002	...	...	0.823	0.668	0.775	29425
243 Wood, shaped or simply worked	0.501	0.025	0.014	166	0.007	0.032	0.091	3458
251 Pulp and waste paper	...	...	...	...	1.488	0.657	1.015	38542
2626 Wool shoddy	0.000	...	...	...	...	...	...	...
2627 Wool or other animal hair, carded or combed	0.000	0.003	0.001	18	0.001	0.000	0.000	13
2628 Wool tops	...	...	...	...	...	0.015	0.023	885
2629 Waste of wool and other animal hair n.e.s.	...	0.024	0.012	148	0.001	0.000	...	...
263 Cotton	11.616	1.968	4.089	49076	0.139	0.028	0.027	1015
266 Synthetic and regenerated (artificial) fibres	0.308	0.011	0.012	138	0.686	0.478	0.918	34865
267 Waste materials from textile fabrics (incl. rags)	...	0.004	0.000	4	0.000	0.000	0.000	8
332 Petroleum products	15.643	36.912	39.984	479928	1.116	6.433	5.033	191174
4 Animal and vegetable oils and fats	0.006	0.005	0.004	47	1.697	2.238	2.776	105433
411 Animal oils and fats	0.000	...	...	...	1.240	0.896	1.245	47286
421 Fixed vegetable oils, soft (incl. SITC 422)	...	...	...	...	0.366	1.269	1.418	53860
431 Animal and vegetable oils and fats processed	0.001	0.005	0.004	47	0.091	0.073	0.113	4288

Table A-3 (continued)

SITC DESCRIPTION OF TRADE GOODS	E X P O R T S				I M P O R T S			
	1975	1983	1984	1984	1975	1983	1984	1984
	PERCENT IN TOTAL	PERCENT MANUFACTURES	PERCENT MANUFACTURES	(1000 US \$)	PERCENT IN TOTAL	PERCENT MANUFACTURES	PERCENT MANUFACTURES	(1000 US \$)
5 Chemicals	8.868	8.861	8.843	106141	24.178	17.258	21.407	813124
51 Chemicals elements and compounds	2.443	2.922	2.448	29387	10.742	6.891	8.931	339220
52 Tar and chemicals from coal,petroleum,nat. gas	0.000	0.002	0.004	42	0.282	0.013	0.014	548
53 Dyeing,tanning and colouring materials	0.178	0.075	0.095	1141	1.858	1.057	1.339	50862
54 Medicinal and pharmaceutical products	1.284	1.417	1.480	17767	2.364	1.553	1.929	73258
55 Essential oils and perfume materials	0.130	0.223	0.161	1931	0.821	0.605	0.693	26305
56 Fertilizers,manufactured	1.273	0.212	0.003	35	2.787	1.634	2.204	83721
57 Explosives and pyrotechnic products	0.007	0.002	0.010	118	0.143	0.163	0.236	8964
58 Plastic materials,regenerated cellul. & resins	0.914	1.232	1.749	20994	2.895	2.876	3.628	137800
59 Chemical materials and products n.e.s.	2.627	2.778	2.893	34724	2.286	2.466	2.434	92446
6 Manufactured goods classified by material	21.960	21.527	23.384	280678	19.464	16.962	17.936	681278
61 Leather manufactured n.e.s. & dressed fur skins	1.274	1.151	1.215	14580	0.007	0.061	0.037	1414
62 Rubber manufactures n.e.s.	0.871	0.170	0.225	2703	0.716	0.942	0.722	27440
63 Wood and cork manufactures(excl.furniture)	0.460	0.663	0.458	5498	0.057	0.372	0.154	5851
64 Paper,paper board and manufactures thereof	0.401	1.984	3.004	36055	3.253	2.438	2.878	109322
65 Textile yarn,fabrics,made-up articles	10.195	5.681	6.106	73285	1.118	0.931	0.934	35463
66 Non-metallic mineral manufactures,n.e.s.	5.524	5.654	4.745	56951	0.748	0.869	0.734	27872
67 Iron and steel	0.560	4.090	5.501	66032	8.765	6.127	7.463	283466
68 Non-ferrous metals	0.420	0.160	0.826	9919	2.581	2.252	2.747	104361
69 Manufactures of metal,n.e.s.	2.254	1.975	1.304	15658	2.219	2.970	2.266	86090
7 Machinery and transport equipment	4.912	3.758	2.791	33506	42.617	46.248	41.842	1589327
71 Machinery,other than electric	2.817	2.036	1.665	19989	19.213	21.619	19.829	753188
72 Electrical machinery,apparatus and appliances	1.018	0.854	0.573	6873	7.370	10.230	10.406	395247
73 Transport equipment	1.078	0.867	0.554	6644	16.034	14.399	11.607	440892
8 Miscellaneous manufactured articles	11.285	12.452	10.078	120967	5.088	5.498	4.983	189290
81 Sanitary,plumbing,heating & lightning fixtures	0.310	0.265	0.180	2165	0.092	0.072	0.057	2152
82 Furniture	0.304	0.155	0.147	1760	0.027	0.117	0.055	2082
83 Travel goods,handbags and similar articles	1.250	1.218	0.865	10383	0.018	0.014	0.014	514
84 Clothing	4.434	5.268	3.620	43446	0.536	0.457	0.479	18210
85 Footwear	0.865	0.487	0.450	5367	0.004	0.027	0.043	1641
86 Professional,scient. & controll. instruments	0.317	0.272	0.234	2808	1.927	2.424	2.122	80597
89 Miscellaneous manufactured articles,n.e.s.	3.804	4.788	4.583	55006	2.484	2.387	2.214	84093
TOTAL MANUFACTURES		1975	1983	1984		1975	1983	1984
TOTAL: SITC 5-8 LESS 68 a/		655524	1178392	1200297		1367637	4144234	3798439
TOTAL TRADED GOODS: SITC 0-9		305501	547225	531372		1213998	3469307	3168659
		1464932	3080893	3489140		1494794	4966910	4492392

Note: Data and SITC descriptions refer to SITC revision 1

a/ This table is based on the definition of trade in manufactures covering a list of 148 specifically identified SITC 3-digit or 4-digit codes comprising a wide range of processing stages of manufactured goods.

a/ Definition of trade in manufactures SITC 5-8 less 68 is one of the most often found.

It covers only items recognized as exclusively manufactured goods, i.e. with a high level of manufacturing content.

Source: UNIDO data base; information supplied by the United Nations Statistical Office.

Table A-4. Trade in industrially processed goods and intermediates, product composition and revealed comparative advantage, 1970-83 (selected periods)

SITC CODE	PRODUCT GROUP	PRODUCT COMPOSITION OF EXPORTS (PERCENTAGE SHARES)		PRODUCT COMPOSITION OF IMPORTS (PERCENTAGE SHARES)		REVEALED COMPARATIVE ADVANTAGE (INDEX)	
		1970-1972	1981-1983	1970-1972	1981-1983	1970-1972	1981-1983
011-013	MEAT AND MEAT PREPARATIONS	8.51	4.03	0.05	0.06	1.27	0.92
022-024	DAIRY PRODUCTS	0.49	0.84	0.45	0.59	0.14	0.32
032	FISH PREPARATIONS	...	...	0.23	0.56	-1.43	...
0422	RICE, GLAZED OR POLISHED	0.02	0.54	0.00	0.00	0.04	1.05
046	MEAL AND FLOUR OF WHEAT OR OF MESLIN	...	...	0.09	0.01	-1.56	...
047	MEAL AND FLOUR OF CEREALS, EXCEPT OF WHEAT OR OF MESLIN	0.01	0.01	0.03	0.00	-2.78	0.27
048	CEREAL PREPARATIONS AND STARCH	0.22	0.55	0.01	0.27	0.22	-0.80
052	DRIED FRUIT	0.00	0.00	0.05	0.06	-1.00	-1.29
053	FRUIT, PRESERVED AND FRUIT PREPARATIONS	0.25	0.38	0.09	0.09	-0.15	0.00
055	VEGETABLES, ROOTS AND TUBERS, PRESERVED OR PREPARED	0.00	0.01	0.01	0.04	-0.02	-0.25
061, 062	SUGAR, SUGAR PREPARATIONS AND HONEY	12.89	7.34	0.11	0.10	4.55	3.99
0713	COFFEE EXTRACTS, ESSENCES AND SIMILAR PREPARATIONS	0.00	2.85	0.00	0.00	0.01	14.95
0722/3+073	COCOA AND CHOCOLATE PREPARATIONS	0.03	0.58	0.06	0.05	-0.37	0.55
074	TEA AND MATE	...	...	0.00	0.01	-0.03	...
081	FEEDING-STUFF FOR ANIMALS	4.06	0.02	0.15	0.80	1.21	-1.37
091	MARGARINE AND SHORTENING	0.00	0.02	0.01	0.11	-0.32	-3.59
099	FOOD PREPARATIONS, N.E.S.	0.10	0.31	0.03	0.19	-0.06	-0.79
111	NON-ALCOHOLIC BEVERAGES, N.E.S.	0.01	0.00	0.00	0.02	0.03	-0.65
112	ALCOHOLIC BEVERAGES	0.02	0.10	0.54	0.46	-0.89	-0.94
122	TOBACCO MANUFACTURES	0.07	0.11	0.53	0.43	-3.44	-2.28
2219	FLOUR AND MEAL OF OILSEEDS, NUTS AND KERNELS	...	...	0.00	0.00	30.11	...
2312, 2313	SYNTHETIC AND RECLAIMED RUBBER AND SUBSTITUTES	0.00	0.00	0.74	0.67	-4.49	-4.48
243	WOOD, SHAPED OR SIMPLY WORKED	1.93	0.09	0.01	0.01	0.54	0.01
251	PULP AND WASTE PAPER	...	...	1.49	0.74	-2.30	...
2626-2628	WOOL SHODDY, OTHER ANIMAL HAIR AND TOPS	0.00	0.00	0.00	0.02	0.00	-0.02
266	SYNTHETIC AND REGENERATED FIBRES	2.18	0.01	0.35	0.46	0.37	-2.52
332	PETROLEUM PRODUCTS	14.36	21.29	1.05	8.26	1.21	-0.83
411	ANIMAL OILS AND FATS	...	...	1.67	1.01	...	14.97
421, 422	FIXED VEGETABLE OILS AND FATS	0.02	0.00	0.09	1.80	-0.12	-0.26
431	ANIMAL AND VEGETABLE OILS AND FATS, PROCESSED	0.01	0.00	0.09	0.06	-1.49	-0.90
512	ORGANIC CHEMICALS	0.47	1.72	5.49	4.98	-4.22	-2.58
513	INORGANIC CHEMICALS: ELEMENTS, OXIDES AND HALIDES	1.80	0.61	0.92	0.88	-1.33	-1.58
514	OTHER INORGANIC CHEMICALS	0.47	0.35	0.76	0.70	-2.87	-2.67
515	RADIOACTIVE AND ASSOCIATED MATERIALS	0.00	0.00	0.00	0.01	-0.05	-0.03
521	MINERAL TAR AND CRUDE CHEMICALS FROM COAL, PETROLEUM	0.16	0.00	0.02	0.01	0.28	-0.11
531	SYNTHETIC ORGANIC DYESTUFFS	0.00	0.02	1.15	0.46	-4.78	-2.96
532	DYEING AND TANNING EXTRACTS AND MATERIALS	0.00	0.01	0.17	0.12	-9.19	-8.11
533	PIGMENTS, PAINTS, VARNISHES AND RELATED MATERIALS	0.19	0.06	0.67	0.48	-3.10	-2.09
541	MEDICINAL AND PHARMACEUTICAL PRODUCTS	2.35	1.49	2.56	1.47	-2.86	-1.53
551	ESSENTIAL OILS, PERFUME AND FLAVOUR MATERIALS	0.02	0.03	0.51	0.29	-4.99	-3.41
553	PERFUMERY AND COSMETICS, EXCEPT SOAPS	0.17	0.22	0.03	0.04	0.06	0.09
554	SOAPS, CLEANSING AND POLISHING PREPARATIONS	0.01	0.05	0.30	0.21	-2.27	-1.36
561	FERTILIZERS, MANUFACTURED	0.04	0.16	1.22	1.64	-3.62	-4.32



Table A-4 (continued)

SITC CODE	PRODUCT GROUP	PRODUCT COMPOSITION OF EXPORTS (PERCENTAGE SHARES)		PRODUCT COMPOSITION OF IMPORTS (PERCENTAGE SHARES)		REVEALED COMPARATIVE ADVANTAGE (INDEX)	
		1970-1972	1981-1983	1970-1972	1981-1983	1970-1972	1981-1983
571	EXPLOSIVES AND PYROTECHNIC PRODUCTS	0.00	0.04	0.26	0.18	-6.41	-4.35
581	PLASTIC MATERIALS, REGENERATED CELLULOSE, ARTIFICIAL RESINS	1.19	1.44	2.77	2.75	-2.18	-1.73
599	CHEMICAL MATERIALS AND PRODUCTS, N.E.S.	1.59	2.83	1.93	2.13	-2.26	-1.85
611	LEATHER	4.32	0.53	0.01	0.05	4.41	0.47
612	MANUFACTURES OF LEATHER OR RECONSTITUTES	0.35	1.02	0.02	0.01	1.27	4.87
613	FUR SKINS, TANNED OR DRESSED	0.00	0.00	.	...	0.01	...
621	MATERIALS OF RUBBER	0.08	0.03	0.18	0.13	-1.74	-1.49
629	ARTICLES OF RUBBER, N.E.S.	0.78	0.21	0.49	0.85	-0.73	-1.63
631	VENEERS, PLYWOOD BOARDS, RECONSTITUTED WOOD	1.05	0.13	0.04	0.17	0.55	-0.56
632	WOOD MANUFACTURES, N.E.S.	0.35	0.74	0.01	0.07	0.47	0.71
633	CORK MANUFACTURES	0.00	0.06	0.02	0.01	-1.17	0.55
641	PAPER AND PAPERBOARD	0.79	0.31	2.46	2.43	-1.86	-2.16
642	ARTICLES OF PULP, PAPER OR PAPERBOARD	0.31	2.73	0.14	0.10	-0.36	2.06
651	TEXTILE YARN AND THREAD	4.92	1.80	0.28	0.37	0.82	0.10
652	COTTON FABRICS, WOVEN	6.83	3.15	0.02	0.09	3.38	1.99
653	TEXTILE FABRICS, WOVEN OTHER THAN COTTON	0.34	0.10	0.29	0.34	-0.20	-0.44
654	TULLE, LACE, EMBROIDERY, RIBBONS, ETC.	0.06	0.05	0.01	0.03	0.08	-0.29
655	SPECIAL TEXTILE FABRICS AND RELATED PRODUCTS	0.36	1.56	0.23	0.15	-0.55	0.94
656	MADE-UP ARTICLES, CHIEFLY OF TEXTILES	0.21	1.18	0.03	0.09	0.10	1.10
657	FLOOR COVERINGS, TAPESTRIES, ETC.	0.02	0.31	0.00	0.02	0.01	0.25
661	LIME, CEMENT, BUILDING MATERIALS, EXCL. GLASS AND CLAY	2.71	2.73	0.01	0.06	3.70	2.96
662	CLAY AND REFRACTORY CONSTRUCTION MATERIALS	0.22	0.48	0.18	0.25	-0.72	-0.75
663	MINERAL MANUFACTURES, N.E.S.	0.18	0.31	0.19	0.17	-0.82	-0.50
664	GLASS	0.68	0.71	0.36	0.22	-0.97	-0.29
665	GLASSWARE	1.58	0.33	0.09	0.12	1.43	-0.26
666	POTTERY	0.04	0.26	0.02	0.02	-0.11	0.40
671	PIG IRON, SPIEGELEISEN, SPONGE IRON, ETC.	0.00	1.54	0.19	0.10	-0.80	1.59
672	INGOTS AND FORMS OF IRON OR STEEL	.	...	1.08	0.33	-2.61	...
673	IRON AND STEEL BARS, ROOS, ANGLES, ETC.	0.03	0.01	1.03	0.64	-1.22	-1.09
674	UNIVERSALS, PLATES AND SHEETS OF IRON OR STEEL	0.10	0.00	4.14	3.18	-2.93	-3.43
675	WIRE AND STRIP OF IRON OR STEEL	0.00	0.00	0.26	0.13	-1.38	-1.06
676	RAIL AND RAILWAY TRACK CONSTRUCTION MATERIALS	0.00	0.00	0.23	0.15	-6.49	-5.06
677	IRON AND STEEL WIRE	0.02	0.00	0.17	0.12	-1.31	-1.54
678	TUBES, PIPES AND FITTINGS OF IRON OR STEEL	0.17	0.04	1.05	2.38	-1.64	-2.98
679	IRON AND STEEL CASTINGS, FORGINGS, UNWORKED	0.00	0.02	0.02	0.04	-0.32	-0.96
681	SILVER, PLATINUM AND RELATED METALS	1.71	0.07	0.05	0.00	1.61	0.05
682	COPPER	0.12	0.01	1.06	0.68	-0.95	-1.34
683	NICKEL	0.00	0.00	0.13	0.06	-0.54	-0.59
684	ALUMINIUM	0.20	0.03	0.95	0.95	-1.60	-1.54
685	LEAD	0.00	0.00	0.11	0.03	-1.22	-0.54
686	ZINC	0.01	0.00	0.32	0.28	-2.77	-3.15
687	TIN	0.06	0.00	0.13	0.11	-0.85	-0.99
689	MISCELLANEOUS NON-FERROUS METALS USED IN METALLURGY	.	...	0.04	0.03	-0.37	...

Table A-4 (continued)

SITC CODE	PRODUCT GROUP	PRODUCT COMPOSITION OF EXPORTS (PERCENTAGE SHARES)		PRODUCT COMPOSITION OF IMPORTS (PERCENTAGE SHARES)		REVEALED COMPARATIVE ADVANTAGE (INDEX)	
		1970-1972	1981-1983	1970-1972	1981-1983	1970-1972	1981-1983
691	FINISHED STRUCTURES AND STRUCTURAL PARTS, N.E.S.	0.21	0.11	0.56	0.64	-2.19	-1.83
692	METAL CONTAINERS FOR STORAGE AND TRANSPORT	0.41	0.15	0.05	0.29	0.39	-2.24
693	WIRE PRODUCTS (EXCL. ELECTRIC), FENCING GRILLS	0.30	0.62	0.43	0.36	-3.05	-2.21
694	NAILS, SCREWS, NUTS, BOLTS, RIVETS, ETC.	0.13	0.19	0.19	0.19	-0.92	-0.94
695	TOOLS FOR USE IN THE HAND OR IN MACHINES	0.58	0.49	0.63	0.53	-1.66	-1.40
696	CUTLERY	0.44	0.35	0.09	0.08	-0.03	0.02
697	HOUSEHOLD EQUIPMENT OF BASE METALS	0.17	1.09	0.02	0.05	0.13	1.37
698	MANUFACTURE OF METALS, N.E.S.	0.55	1.09	0.48	0.57	-0.73	-0.63
711	POWER GENERATING MACHINERY, EXCL. ELECTRIC	0.08	0.57	3.27	2.59	-2.33	-1.65
712	AGRICULTURAL MACHINERY AND IMPLEMENTS	0.42	0.31	1.31	1.37	-2.04	-2.41
714	OFFICE MACHINES	0.25	0.03	1.42	1.41	-1.09	-0.85
715	METALWORKING MACHINERY	0.08	0.24	1.03	0.64	-1.44	-1.17
717	TEXTILE AND LEATHER MACHINERY	0.38	0.27	3.53	1.75	-4.23	-4.04
718	MACHINES FOR SPECIAL INDUSTRIES	0.26	0.22	4.20	4.09	-3.58	-3.37
719	MACHINES, APPLIANCES (EXCL. ELECTRIC.), PARTS	1.92	1.75	9.68	8.67	-2.42	-2.32
722	ELECTRIC POWER MACHINERY, SWITCHGEAR	0.12	0.66	3.90	3.55	-3.85	-2.83
723	EQUIPMENT FOR DISTRIBUTING ELECTRICITY	0.21	0.27	0.21	0.36	-0.75	-1.15
724	TELECOMMUNICATIONS APPARATUS	0.06	0.06	2.55	2.75	-1.88	-1.83
725	DOMESTIC ELECTRICAL EQUIPMENT	0.02	0.38	0.10	0.17	-0.22	-0.19
726	ELECTRIC APPARATUS FOR MEDICAL PURPOSES	0.00	0.00	0.19	0.25	-1.98	-1.59
729	OTHER ELECTRICAL MACHINERY AND APPARATUS	0.41	0.48	2.35	2.39	-1.41	-1.01
731	RAILWAY VEHICLES	0.00	0.01	0.47	0.20	-2.51	-1.26
732	ROAD MOTOR VEHICLES	0.39	1.36	11.49	11.71	-1.78	-1.73
733	ROAD VEHICLES OTHER THAN MOTOR VEHICLES	0.02	0.21	0.06	0.31	-0.26	-1.23
734	AIRCRAFT	1.53	0.18	3.17	1.06	-2.81	-0.80
735	SHIPS AND BOATS	0.56	0.00	0.87	0.93	-0.77	-1.14
812	SANITARY, PLUMBING, HEATING AND LIGHTING FIXTURES	0.31	0.58	0.08	0.10	-0.05	0.25
821	FURNITURE	0.29	0.39	0.04	0.10	0.06	-0.01
831	TRAVEL GOODS, HANDBAGS AND SIMILAR ARTICLES	0.29	1.72	0.01	0.01	0.48	2.89
841	CLOTHING, EXCEPT FUR CLOTHING	1.80	9.77	0.08	0.37	0.18	1.06
842	FUR CLOTHING AND ARTICLES MADE OF FUR SKINS	0.00	0.00	0.00	0.00	0.01	-0.01
851	FOOTWEAR	1.22	0.80	0.01	0.02	0.45	0.29
861	SCIENTIFIC, MEDICAL, OPTICAL, MEASURING INSTRUMENTS	0.41	0.48	1.52	1.42	-1.47	-1.16
862	PHOTOGRAPHIC AND CINEMATOGRAPHIC SUPPLIES	0.06	0.01	0.47	0.62	-1.71	-1.87
864	WATCHES AND CLOCKS	0.00	0.01	0.12	0.08	-0.40	-0.24
891	MUSICAL INSTRUMENTS, SOUND RECORDERS AND REPRODUCERS	0.09	0.18	0.17	0.27	-0.30	-0.29
892	PRINTED MATTER	2.53	3.84	1.93	1.17	-2.95	-0.61
893	ARTICLES OF ARTIFICIAL PLASTIC MATERIALS, N.E.S.	0.26	1.02	0.10	0.25	-0.14	-0.01
894	PERAMBULATORS, TOYS, GAMES, SPORTING GOODS	0.15	0.45	0.12	0.17	-0.22	-0.15
895	OFFICE AND STATIONERY SUPPLIES, N.E.S.	0.18	0.31	0.13	0.10	-1.10	-0.31
897	JEWELLERY, GOLD AND SILVER WARES	0.30	0.15	0.02	0.01	0.30	0.08
899	MANUFACTURED ARTICLES, N.E.S.	0.35	0.56	0.15	0.17	-0.26	-0.16

Table A-5. Origin of imports of manufactures by branches, 1984\*/

SITC DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US\$)	DEVELOPING COUNTRIES (PERCENT)	DEVELOPED MARKET ECONOMIES				CENTRALLY PLANNED DEVELOPED COUNTRIES (PERCENT)
			TOTAL (PERCENT)	USA (PERCENT)	EEC (PERCENT)	JAPAN (PERCENT)	
01 Meat and meat preparations	2874	3.83	96.17	86.88	0.89	0.00	0.00
02 Dairy products and eggs	4861	27.08	72.92	41.62	23.59	0.00	0.00
032 Fish n.e.s. and fish preparations	23182	98.94	1.02	0.67	0.03	0.00	0.00
0422 Rice, glazed or polished not otherwise worked	222	2.04	97.96	96.77	0.00	0.00	0.00
046 Meal and flour of wheat or of meslin	364	0.00	100.00	100.00	0.00	0.00	0.00
047 Meal and flour of cereals, except above	1	0.00	100.00	100.00	0.00	0.00	0.00
048 Cereals preparat. & starch of fruits & vegetab.	5897	0.05	99.95	4.80	44.52	0.00	0.00
052 Dried fruit	1056	50.25	49.75	47.58	2.17	0.00	0.00
053 Fruit, preserved and fruit preparations	1931	43.28	56.72	49.91	0.30	0.00	0.00
055 Vegetables, roots & tubers, preserved or prepared	677	27.93	72.07	63.53	0.79	0.00	0.00
06 Sugar, sugar preparations and honey	2993	14.58	85.42	36.16	46.42	0.07	0.00
0713 Coffee extracts, essences, concentrates & similar	5	0.00	100.00	100.00	0.00	0.00	0.00
0722 Cocoa powder, unsweetened	16	0.00	100.00	100.00	0.00	0.00	0.00
0723 Cocoa butter and cocoa paste	0	0.00	100.00	100.00	0.00	0.00	0.00
073 Chocolate and related food preparations	393	32.60	67.40	59.94	1.98	0.00	0.00
074 Tea and mate	110	66.72	33.28	17.88	15.60	0.00	0.00
081 Feeding-stuff for animals	50140	63.91	36.09	24.12	4.55	0.98	0.00
09 Miscellaneous food preparations	9600	1.15	98.85	73.68	20.30	0.01	0.00
11 Beverages	13850	20.18	77.96	24.53	50.06	0.00	1.87
122 Tobacco manufactures	2429	18.78	81.22	81.15	0.06	0.00	0.00
231 Crude rubber, synth. & reclaimed(excl. SITC 2311)	29425	40.77	59.10	23.71	14.79	13.31	0.00
243 Wood, shaped or simply worked	3458	9.24	90.76	90.76	0.00	0.00	0.00
251 Pulp and waste paper	38542	74.29	25.71	20.01	0.05	0.00	0.00
2627 Wool or other animal hair, carded or combed	13	94.49	5.51	0.00	5.51	0.00	0.00
2628 Wool tops	885	90.41	9.59	0.00	6.35	0.00	0.00
263 Cotton	1015	15.29	84.71	64.99	19.73	0.00	0.00
266 Synthetic and regenerated(artificial) fibres	34865	51.38	48.62	45.06	0.79	0.27	0.00
267 Waste materials from textile fabrics(incl. rags)	8	33.60	66.40	52.45	0.00	13.95	0.00
332 Petroleum products	191174	89.82	10.17	8.44	1.01	0.62	0.01
4 Animal and vegetable oils and fats	105433	23.58	76.42	74.89	0.97	0.12	0.00
411 Animal oils and fats	47286	38.01	61.99	60.68	0.27	0.26	0.00
421 Fixed vegetable oils, soft(incl. SITC 422)	53860	8.92	91.08	89.80	1.20	0.00	0.00
431 Animal and vegetable oils and fats processed	4288	48.62	51.38	44.50	5.78	0.12	0.00

Table A-5 (continued)

SITC DESCRIPTION OF TRADE GOODS	WORLD	DEVELOPING	DEVELOPED MARKET ECONOMIES				CENTRALLY
	TOTAL (1000 US\$)	COUNTRIES (PERCENT)	TOTAL (PERCENT)	USA (PERCENT)	EEC (PERCENT)	JAPAN (PERCENT)	PLANNED DEVELOPED COUNTRIES (PERCENT)
5 Chemicals	813124	18.61	79.51	44.67	22.40	1.84	1.83
51 Chemicals elements and compounds	339220	14.67	84.66	46.68	25.99	2.43	0.62
52 Tar and chemicals from coal, petroleum, nat. gas	548	0.00	100.00	96.54	3.33	0.01	0.00
53 Dyeing, tanning and colouring materials	50862	24.08	75.83	15.90	33.84	2.54	0.05
54 Medicinal and pharmaceutical products	73258	16.26	83.57	31.16	32.65	0.79	0.13
55 Essential oils and perfume materials	26305	8.15	91.76	48.58	29.34	0.19	0.04
56 Fertilizers, manufactured	83721	28.92	56.84	53.53	1.30	0.63	14.24
57 Explosives and pyrotechnic products	8964	14.97	83.90	30.35	10.03	0.00	1.13
58 Plastic materials, regenerated cellul. & resins	137800	30.89	68.65	36.34	16.98	2.68	0.42
59 Chemical materials and products n.e.s.	92446	7.75	92.12	68.24	21.36	0.62	0.06
6 Manufactured goods classified by material	681278	25.62	72.61	22.33	14.94	22.40	1.70
61 Leather manufactured n.e.s. & dressed fur skins	1414	78.90	21.10	14.02	6.16	0.00	0.00
62 Rubber manufactures n.e.s.	27440	10.35	88.31	48.91	16.63	17.50	0.97
63 Wood and cork manufactures(excl.furniture)	5851	13.55	86.44	80.57	1.71	0.14	0.00
64 Paper, paper board and manufactures thereof	109322	3.24	96.59	45.82	6.70	1.90	0.17
65 Textile yarn, fabrics, made-up articles	35463	21.51	78.41	55.44	11.11	4.36	0.05
66 Non-metallic mineral manufactures, n.e.s.	27872	21.49	75.20	40.23	23.38	0.75	3.24
67 Iron and steel	283466	22.10	75.03	7.71	15.45	46.74	2.86
68 Non-ferrous metals	104361	69.38	29.04	5.08	8.19	2.17	1.58
69 Manufactures of metal, n.e.s.	86090	20.47	78.66	29.82	31.27	10.67	0.57
7 Machinery and transport equipment	1589327	8.26	88.76	33.70	22.73	15.56	2.77
71 Machinery, other than electric	753188	7.32	91.83	44.38	26.61	9.54	0.63
72 Electrical machinery, apparatus and appliances	395247	11.36	87.15	26.47	25.39	16.43	1.12
73 Transport equipment	440892	7.09	84.97	21.95	13.71	25.06	7.90
8 Miscellaneous manufactured articles	189290	20.79	77.91	40.95	13.89	5.26	0.86
81 Sanitary, plumbing, heating & lightning fixtures	2152	27.85	70.72	48.82	18.01	3.57	0.21
82 Furniture	2082	25.09	69.86	40.75	9.08	7.25	0.06
83 Travel goods, handbags and similar articles	514	51.55	39.04	29.11	4.52	5.01	0.00
84 Clothing	18210	9.66	90.04	84.12	1.35	0.50	0.00
85 Footwear	1641	53.36	46.14	25.10	5.10	2.07	0.00
86 Professional, scient. & controll. instruments	80597	24.75	73.06	40.95	17.36	8.79	1.93
89 Miscellaneous manufactured articles, n.e.s.	84093	18.30	81.18	31.80	13.53	2.96	0.08
TOTAL manufactures	3798439	21.45	76.51	33.99	18.32	11.34	1.91
TOTAL: SITC 5-8 LESS 68 a/	3168659	13.39	84.23	35.45	20.92	13.33	2.22
TOTAL traded goods: SITC 0-9	4492392	25.94	72.09	34.18	16.13	9.60	1.61

Note: Data and SITC descriptions refer to SITC revision 1

a/ This table is based on the definition of trade in manufactures covering a list of 148 specifically identified SITC 3-digit or 4-digit codes comprising a wide range of processing stages of manufactured goods.

a/ Definition of trade in manufactures SITC 5-8 less 68 is one of the most often found.

It covers only items recognized as exclusively manufactured goods, i.e. with a high level of manufacturing content.

Source: UNIDO data base; Information supplied by the United Nations Statistical Office.

Note: Percentages may not add to 100.0 due to the fact that countries report trade to/from "unspecified areas".

Table A-6. Destination of exports of manufactures by branches, 1984<sup>\*/</sup>

SITC DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US\$)	DEVELOPING COUNTRIES (PERCENT)	DEVELOPED MARKET ECONOMIES				CENTRALLY PLANNED DEVELOPED COUNTRIES (PERCENT)
			TOTAL (PERCENT)	USA (PERCENT)	EEC (PERCENT)	JAPAN (PERCENT)	
01 Meat and meat preparations	10524	99.69	0.31	0.31	0.00	0.00	0.00
0422 Rice, glazed or polished not otherwise worked	8284	96.11	0.00	0.00	0.00	0.00	3.89
047 Meal and flour of cereals, except above	122	0.64	99.36	79.23	0.00	0.00	0.00
048 Cereals preparat. & starch of fruits & vegetab.	5184	30.83	69.17	68.88	0.00	0.00	0.00
053 Fruit, preserved and fruit preparations	3270	2.94	97.06	69.75	27.31	0.00	0.00
055 Vegetables, roots & tubers, preserved or prepared	70	10.07	89.93	88.19	0.00	0.00	0.00
06 Sugar, sugar preparations and honey	42763	12.81	86.90	79.45	2.46	4.74	0.29
0713 Coffee extracts, essences, concentrates & similar	37224	2.39	96.30	22.27	18.92	39.78	0.00
0722 Cocoa powder, unsweetened	16	100.00	0.00	0.00	0.00	0.00	0.00
0723 Cocoa butter and cocoa paste	9664	15.67	83.56	80.50	2.43	0.62	0.77
073 Chocolate and related food preparations	7083	4.71	95.29	77.64	7.67	9.98	0.00
081 Feeding-stuff for animals	435	100.00	0.00	0.00	0.00	0.00	0.00
09 Miscellaneous food preparations	1907	50.50	49.50	40.42	5.68	1.75	0.00
11 Beverages	2139	6.86	93.14	92.75	0.26	0.01	0.00
122 Tobacco manufactures	797	53.84	46.16	46.09	0.00	0.00	0.00
243 Wood, shaped or simply worked	166	91.07	8.93	4.21	4.72	0.00	0.00
2627 Wool or other animal hair, carded or combed	18	100.00	0.00	0.00	0.00	0.00	0.00
2629 Waste of wool and other animal hair n.e.s.	148	0.00	100.00	53.39	46.61	0.00	0.00
263 Cotton	49076	18.48	30.28	0.03	18.45	10.24	51.24
266 Synthetic and regenerated (artificial) fibres	138	100.00	0.00	0.00	0.00	0.00	0.00
267 Waste materials from textile fabrics (incl rags)	4	100.00	0.00	0.00	0.00	0.00	0.00
332 Petroleum products	479928	22.63	69.93	27.73	39.17	0.00	0.00
4 Animal and vegetable oils and fats	47	66.15	33.85	33.85	0.00	0.00	0.00
431 Animal and vegetable oils and fats processed	47	66.15	33.85	33.85	0.00	0.00	0.00

Table A-6 (continued)

SITC DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US\$)	DEVELOPING COUNTRIES (PERCENT)	DEVELOPED MARKET ECONOMIES				CENTRALLY PLANNED COUNTRIES (PERCENT)
			TOTAL (PERCENT)	USA (PERCENT)	EEC (PERCENT)	JAPAN (PERCENT)	
5 Chemicals	106141	76.69	23.30	19.22	1.70	0.22	0.01
51 Chemicals elements and compounds	29387	88.26	11.74	5.81	2.07	0.00	0.00
52 Tar and chemicals from coal, petroleum, nat. gas	42	100.00	0.00	0.00	0.00	0.00	0.00
53 Dyeing, tanning and colouring materials	1141	57.90	42.10	0.00	0.00	0.00	0.00
54 Medicinal and pharmaceutical products	17767	89.22	10.78	10.37	0.15	0.00	0.00
55 Essential oils and perfume materials	1931	93.67	6.33	6.33	0.00	0.00	0.00
56 Fertilizers, manufactured	35	100.00	0.00	0.00	0.00	0.00	0.00
57 Explosives and pyrotechnic products	118	100.00	0.00	0.00	0.00	0.00	0.00
58 Plastic materials, regenerated cellul. & resins	20994	90.34	9.62	9.30	0.30	0.00	0.04
59 Chemical materials and products n.e.s.	34724	51.78	48.22	42.54	3.18	0.66	0.00
6 Manufactured goods classified by material	280678	24.77	74.39	34.06	29.01	9.49	0.83
61 Leather manufactured n.e.s. & dressed fur skins	14580	10.07	89.93	51.39	37.82	0.05	0.00
62 Rubber manufactures n.e.s.	2703	98.71	1.29	1.01	0.15	0.12	0.00
63 Wood and cork manufactures(excl.furniture)	5496	60.71	39.29	28.96	0.87	0.00	0.00
64 Paper, paper board and manufactures thereof	36055	21.96	72.32	42.13	27.13	0.00	5.72
65 Textile yarn, fabrics, made-up articles	73285	18.05	81.57	52.47	24.74	0.00	0.38
66 Non-metallic mineral manufactures, n.e.s.	56951	39.30	60.70	19.83	0.36	40.32	0.00
67 Iron and steel	66032	4.61	95.39	17.71	72.28	5.41	0.00
68 Non-ferrous metals	9919	7.71	92.29	92.26	0.00	0.03	0.00
69 Manufactures of metal, n.e.s.	15658	94.00	6.00	5.33	0.11	0.54	0.00
7 Machinery and transport equipment	33506	89.92	10.08	7.01	1.85	1.16	0.00
71 Machinery, other than electric	19989	91.23	8.77	6.31	1.26	1.10	0.00
72 Electrical machinery, apparatus and appliances	6873	91.60	8.40	2.32	5.36	0.70	0.00
73 Transport equipment	6644	84.22	15.78	13.96	0.00	1.82	0.00
8 Miscellaneous manufactured articles	120967	41.43	58.21	49.91	6.15	0.63	0.34
81 Sanitary, plumbing, heating & lightning fixtures	2165	65.62	34.38	34.38	0.00	0.00	0.00
82 Furniture	1760	8.92	91.08	90.57	0.48	0.00	0.00
83 Travel goods, handbags and similar articles	10383	13.51	86.49	79.09	0.45	0.15	0.00
84 Clothing	43446	28.77	71.23	66.62	3.85	0.00	0.00
85 Footwear	5397	19.31	80.69	76.17	0.00	4.48	0.00
86 Professional, scient. & controll. instruments	2808	68.88	31.12	30.76	0.22	0.08	0.00
89 Miscellaneous manufactured articles, n.e.s.	55006	57.55	41.66	28.91	10.36	0.90	0.74
TOTAL manufactures	1200297	31.62	62.99	31.38	24.85	4.22	2.37
TOTAL: SITC 5-8 LESS 68 a/	531372	43.36	56.12	31.91	17.18	5.27	0.52
TOTAL traded goods: SITC 0-9	3483140	15.67	81.16	31.50	35.03	4.41	2.13

Note: Data and SITC descriptions refer to SITC revision 1  
 a/ This table is based on the definition of trade in manufactures covering a list of 148 specifically identified SITC 3-digit or 4-digit codes comprising a wide range of processing stages of manufactured goods.

a/ Definition of trade in manufactures SITC 5-8 less 68 is one of the most often found.  
 It covers only items recognized as exclusively manufactured goods, i.e. with a high level of manufacturing content.

Source: UNIDO data base; Information supplied by the United Nations Statistical Office.

Note: Percentages may not add to 100.0 due to the fact that countries report trade to/from "unspecified areas".

**Table A-7. Manufactured imports and exports by main manufacturing categories, 1980-84**  
(percentage)

Sectors	<u>Manufactured imports</u>					<u>Manufactured exports</u>				
	1980	1981	1982	1983	1984	1980	1981	1982	1983	1984
Mainly consumer goods	11.8	12.9	11.6	10.6	11.4	54.2	54.3	44.4	33.1	29.6
Mainly intermediate goods	32.1	30.1	29.8	29.0	31.6	27.3	23.6	37.6	52.7	56.9
Mainly capital goods	56.1	57.0	58.6	60.4	57.0	18.5	22.1	18.0	14.2	13.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: Statistics and Survey Unit, UNIDO, 1982; DANE, 1985.

Table A-3. Gross output, value added, employment and wages and salaries by main manufacturing categories, 1973 and 1981-83

Sectors	Gross output				Value added				Employment				Wages and salaries			
	1973	1981	1982	1983	1973	1981	1982	1983	1973	1981	1982	1983	1973	1981	1982	1983
Mainly consumer goods	58.8	51.7	52.8	53.1	55.3	49.2	57.1	53.8	54.4	52.7	52.5	52.7	49.6	47.7	48.0	48.3
Mainly intermediate goods	24.5	30.6	30.1	30.8	28.1	32.8	25.4	28.9	23.2	24.7	25.7	25.8	28.7	29.7	25.9	29.3
Mainly capital goods	16.7	17.7	17.1	16.1	16.6	18.0	17.5	17.3	22.4	22.6	21.8	21.5	21.7	22.6	26.1	22.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: Statistics and Survey Unit, UNIDO, 1982; DANE, 1985.



**Table A-9. Foreign investment by main sectors, 1981-85**  
(millions of US\$)

Sector	1981	1982	1983	1984	1985 <sup>a/</sup>
Agriculture	12.3	11.9	13.9	10.9	12.3
Mining	55.8	108.5	119.3	295.5	735.8
Manufacturing	868.0	921.9	990.9	1,101.2	1,144.8
Electricity, gas and water	0.8	1.5	1.5	1.5	2.2
Construction	3.6	3.9	2.8	3.5	2.5
Trade	108.7	112.1	122.0	133.2	138.5
Transportation and communication	33.0	33.6	32.3	31.7	32.5
Banking, finance and insurance	114.6	117.0	141.6	159.8	176.2
Public and personal services	0.8	0.7	0.7	0.8	0.7
Other activities n.e.c.	3.0	3.0	6.3	3.1	3.2
<b>Total</b>	<b>1,200.7</b>	<b>1,314.2</b>	<b>1,431.4</b>	<b>1,741.2</b>	<b>2,248.7</b>

Source: Banco de la República, 1985.

a/ Up to September 1985.

Note: Includes old and new investment. Does not include investment in petroleum.

Table A-10. Foreign investment in Colombia, classified by country of origin, 1981-85  
(millions of US\$)

Country	1981	1982	1983	1984	1985 <sup>a/</sup>
<b><u>NORTH AMERICA</u></b>	700.6	759.4	813.1	1,042.5	1,510.9
Canada	45.4	46.4	49.2	64.1	61.5
United States	655.2	71.3	763.9	978.4	1,449.4
<b><u>CENTRAL AMERICA AND ANTILLES</u></b>	121.1	128.6	132.9	131.2	131.3
Central America Common Market	0.1	0.1	0.1	0.2	0.2
Mexico	5.1	5.6	5.6	5.3	6.8
Panama	69.6	74.4	80.5	79.0	74.5
Antilles	46.3	48.5	46.7	46.7	49.8
<b><u>SOUTH AMERICA</u></b>	74.0	77.5	84.4	82.1	83.4
Andean Group	68.1	71.2	78.7	76.6	77.9
Other South American Countries	5.9	6.3	6.0	5.5	5.5
<b><u>EUROPE</u></b>	291.5	334.6	387.7	450.2	482.6
EFTA	129.6	133.9	145.3	134.1	143.0
ECC	153.6	193.2	229.6	303.9	326.7
Other European Countries	8.3	7.5	12.8	12.2	12.9
<b><u>ASIA</u></b>	12.1	12.6	12.5	32.5	38.6
Other Countries	1.4	1.5	1.6	1.8	1.9
<b>Total</b>	<b>1,200.7</b>	<b>1,314.2</b>	<b>1,431.4</b>	<b>1,741.2</b>	<b>2,248.7</b>

Source: Banco de la República, 1985.

a/ Up to September 1985.

Table A-11. Foreign firms in Colombian manufacturing industry,  
classified by ISIC categories, 1980  
(percentage)

ISIC Categories	Ownership structure			Per cent	Total (No. of Companies)
	Foreign firms <sup>a/</sup>	Minority joint ventures	Colombian firms		
311 Food processing	73.9	21.7	4.4	100.0	(23)
313 Beverages industries	87.5	12.5	-	100.0	( 8)
314 Tobacco manufactures	100.0	-	-	100.0	( 2)
321 Manufacture of textiles	57.1	28.6	14.3	100.0	(14)
322 Manufacture of wearing apparel	50.0	-	50.0	100.0	( 2)
323 Leather products	100.0	-	-	100.0	( 2)
324 Footwear	100.0	-	-	100.0	( 1)
331 Manufacture of wood and cork products	60.0	-	40.0	100.0	( 5)
332 Furniture and fixtures	80.0	-	20.0	100.0	( 5)
341 Paper and paper products	66.7	33.3	-	100.0	(12)
342 Printing and publishing	85.8	7.1	7.1	100.0	(14)
351 Industrial chemicals	85.3	11.8	2.9	100.0	(34)
352 Other chemical products	86.8	8.4	4.8	100.0	(83)
353 Petroleum refineries	100.0	-	-	100.0	( 1)
354 Misc. products of petroleum and coal products	25.0	25.0	50.0	100.0	( 4)
355 Rubber products	100.0	-	-	100.0	( 4)
356 Plastic products	28.6	57.1	14.3	100.0	( 7)
361 Pottery, china and earthenware	100.0	-	-	100.0	( 2)
362 Glass and glass products	33.3	66.7	-	100.0	( 3)
369 Other non-metallic mineral products	45.4	27.3	27.3	100.0	(11)
371 Iron and steel basic industries	40.0	50.0	10.0	100.0	(10)
372 Non-ferrous metal basic industries	37.5	50.0	12.5	100.0	( 8)
<b>RAW MATERIAL</b>	<b>74.1</b>	<b>17.6</b>	<b>8.3</b>	<b>100.0</b>	
<b>SUB TOTAL: PROCESSING</b>					
<b>INDUSTRIES</b>					<b>(255) (70.4%)</b>
<b>OTHER CATEGORIES</b>	<b>60.7</b>	<b>29.0</b>	<b>10.3</b>	<b>100.0</b>	
					<b>(107) (29.6%)</b>
<b>TOTAL</b>					
Per cent	70.2	21.0	8.8	100.0	
(No. of Enterprises)	(254)	(76)	(32)		(362)

Source: Banco de La República, Oficina de Cambios, 1982.

<sup>a/</sup> Includes wholly owned subsidiaries and majority joint ventures.

Table A-12. Estimates of potential production of oil, 1985-92  
( '000 b/d)

Year		Ecopetrol	Concessions, etc.	Association contracts	Total
1985	June-Dec.	67.5	66.6	45.1	179.2
1986	June-Dec.	74.0	63.4	157.1	294.5
1987	June-Dec.	80.5	60.1	212.3	352.9
1988 <sup>a/</sup>	June-Dec.	76.6	49.9	261.6	388.1
1989 <sup>a/</sup>	June-Dec.	71.1	41.1	265.9	378.1
1990 <sup>a/</sup>	June-Dec.	66.7	33.8	269.5	370.0
1991 <sup>a/</sup>	June-Dec.	57.1	28.1	269.1	354.3
1992 <sup>a/</sup>	June-Dec.	50.2	23.5	268.5	342.2

Source: Financial Times, "Colombia: Energy Resources, Discovering a Silver Lining", August 22, 1985.

<sup>a/</sup> Assuming no new discoveries.

Table A-13. Summary of technical assistance financed by external sources for Colombia by economic sector, 1985  
(in millions US\$)

Sector	Source of finance									
	UNDP (Per cent)	UN systems excl. UNDP (Per cent)	Bilateral programmes (Per cent)		Other <sup>a/</sup> (Per cent)		Total (Per cent)			
02 Development policy and planning	1.572	42.4	1.795	14	46	2.1	19	0.6	3.432	15.5
03 Natural resources	277	7.5	365	2.8	141	6.3	432	12.9	1.215	5.5
04 Agriculture, forestry and fishing	228	6.2	4.853	37.8	147	6.6	128	3.8	5.356	24.2
05 Industry	148	4.0	129	1.0	* *	0.0	90	2.7	367	1.7
06 Transport and communications	119	3.2	3	0.0	55	2.5	336	10.2	513	2.3
07 Commercial and international finance	84	2.3	-	0.0	-	0.0	-	0.0	84	0.4
08 Population	-	0.0	664	5.2	-	0.0	-	-	664	3.0
09 Human settlements	429	11.6	106	0.8	47	2.1	-	0.0	582	2.6
10 Health	18	0.5	2.115	16.5	62	2.8	768	23.0	2.963	13.4
11 Education	158	4.2	-	0.0	750	33.8	373	11.2	1.281	5.8
12 Employment	91	2.5	-	0.0	18	0.8	45	1.3	154	0.7
13 Humanitarian aid and emergency	-	-	1.172	9.1	435	19.6	793	23.8	2.400	10.9
14 Social conditions and equity	32	0.8	1.482	11.5	184	8.3	64	1.9	1.762	8.0
15 Culture	-	0.0	-	0.0	-	0.0	18	0.5	18	0.1
16 Science and technology	549	14.8	164	1.3	198	8.8	272	8.1	1.183	5.3
Others	-	0.0	-	0.0	139	6.3	-	0.0	139	0.6
<b>Total</b>	<b>3.705</b>	<b>100</b>	<b>12.848</b>	<b>100</b>	<b>2.222</b>	<b>100</b>	<b>3.338</b>	<b>100</b>	<b>22.113</b>	<b>100</b>
Percentage of total assistance	16.7	-	58.1	-	10.1	-	15.1	-	100	-

Source: UNDP, Report on Development Co-operation, 1985.

<sup>a/</sup> Programmes and activities of other multilateral organizations, foundations, and non-governmental organizations.

\* \* No detailed figures available.

Table A-14. Summary of bilateral assistance to Colombia in 1985  
(in millions US\$)

Sector	Fed. Republic of Germany	Spain	France	UK	Italy	Switzerland	Total
02 Development, policy and planning	**	-	46	-	-	-	46
03 Natural resources	**	-	74	**	**	67	141
04 Agriculture, forestry and fishing	**	**	24	**	**	123	147
05 Industry	**	-	-	-	**	-	-
06 Transport and communications	**	-	55	-	-	-	55
07 Commercial and international finance	-	-	-	-	-	-	-
08 Population	-	-	-	-	-	-	-
09 Human settlements	-	-	47	-	-	-	47
10 Health	-	**	62	-	**	-	62
11 Education	**	**	205	545	-	-	750
12 Employment	-	**	18	-	-	-	18
13 Humanitarian aid and emergency	-	-	-	-	-	435	435
14 Social conditions and equity	**	**	-	-	-	184	184
15 Culture	-	-	-	-	-	-	-
16 Science and technology	-	-	198	-	-	-	198
Others	-	-	-	-	-	139	139
Total	**	**	729	545	**	948	2.222
Percentage of total assistance	-	-	32.8	24.5	-	42.7	100

Source: UNDP, Report on Development Co-operation, 1985.

\*\* No detailed figures available.

Table A-15. Externally financed technical co-operation projects and activities in industry in Colombia, 1985  
(in millions US\$)

Project/activity	Source of co-operation	Duration of project	Total assistance of project (in million US\$)	Annual expenditure and future annual payments (in million US\$)	Nature of assistance
COL/82/016 - Capital goods	UNDP/UNIDO/IPF <sup>a/</sup>	1984-1985	310	1985: 70 1986: 202	Exports, subcontracts, equipment.
COL/84/004 - Very small enterprises	UNDP/ILO/IPF	1984-1986	285	1985: 78 1986: 24	Technical assistance.
Subtotal	UNDP		604	1985: 148 1986: 226	
COL/83/002 - Revolving credit fund for women enterprises	UNIFEM <sup>b/</sup>	1984-1985	89	1985: 57	Consultant services, training.
Subtotal	UNIFEM		89	1985: 57	
Projects for development of very small enterprises	UNICEF	1983-1987	174	1985: 31 1986: 27 1987: 64	Support for strengthening small enterprises through training, systematization, promotion and adjustment measures.
Subtotal	UNICEF		174	1985: 31 1986: 27 1987: 64	
ELA/82/018 - Modernization and reform of Industrial Property System	OMPI	1985	22	1985: 22	Consultant services.
Seminars and courses in industrial property	OMPI	1985	19	1985: 19	Financial assistance for participation in different seminars and courses.
Subtotal	OMPI		41	1985: 41	
Strengthening of ICTA investment in science and technology in the food industry, Bogotá	Italy	1982-1985	480	* *	Technical assistance, training.
Technical training in machinery and tools, SEMA - Bogotá	Italy	1985-1990	3.500	* *	Technical assistance, training.

\* \* No detailed figures available.

(continued)

a/ Indicative Planning Figure.

b/ UN Fund for Women Development.

Table A-15 (continued)

Project/activity	Source of co-operation	Duration of project	Total assistance of project (in million US\$)	Annual expenditure and future annual payments (in million US\$)	Nature of assistance
School of ceramics	Italy	1985-1988	193	* *	Technical assistance, training.
Subtotal	Italy		4.173	* *	
Project for metrology and quality control	Federal Republic of Germany	* *	21	* *	Technical assistance to Superintendence of Industry and Commerce.
Development of enterprise to enterprise co-operation	Federal Republic of Germany	* *	55	* *	Technical assistance to PROEXPO.
Consultants to the Centre of Small and Medium Industries	Federal Republic of Germany	* *	30	* *	Technical assistance to SEMA of Cali.
Subtotal	Federal Republic of Germany		106	* *	
22 45A 300 C01	OEAS <sup>g/</sup>	1982-1985	1	1985: 1	Programme for Commerce and Tourism.
05 52D 855 C01	OEAS	1984-1985	13	1985: 12	Metallurgical processing.
05 52D 855 C06	OEAS	1984-1985	24	1985: 5	Metallurgical processing.
05 52D 770 C01	OEAS	1984-1985	7	1985: 3	Metallurgical processing.
05 52D 770 C02	OEAS	1984-1985	20	1985: 20	Metallurgical processing.
05 52F 684 C01	OEAS	1982-1985	3	1985: 3	Information and assistance to industrialists in technical matters.
Subtotal	OEAS		68	1985: 44	
CD 4D010 Cali	CRSB <sup>h/</sup>	3 years	60	1985: 22	Programme of financing of very small enterprises in Cali for families with limited resources.
CO 5D001 - Fund for small projects	CRS	1985	24	1985: 24	Financing of various projects at the national level.
Subtotal	CRS		84	1985: 46	
Total			5.339	1985: 367	

Source: UNDP, Report on Development Co-operation, 1985.

\* \* No detailed figures available.

g/ Organization of American States.

h/ Catholic Relief Service.



Appendix B

Institutional framework for industrial development

Important Governmental Agencies:

DNP - Departamento Nacional de Planeación (Calle 26 No. 13-19 pisos 4 al 16, Bogotá).

Fondo de Promoción de Exportaciones (PROEXPO). Created by Decree 444 (March 22, 1967). Its purpose is to promote exports, and to strengthen balance of payments through export diversification.

ICONTEC - Instituto Colombiano de Normas Técnicas (Carreras 37 No. 52-95, Bogotá).

INCOMEX - Instituto Colombiana de Comercio Exterior (Calle 28 No. 13 a 15, Bogotá). An Import Licensing agency.

INDERENA - Instituto de Desarrollo de los Recursos Naturales Renovables (Av. Caracas No. 25 a 66 - Bogotá).

Chambers of Commerce:

Cámara de Comercio de Bogotá (Carrera 9 No. 16-12, Bogotá).

Cámara de Comercio Colombo-Americana (Apartado Aéreo 8008, Bogotá).

Cámara de Comercio Colombo-Americana (Apartado Aéreo 5943, Cali).

Cámara de Comercio de Cali (Departamento Promoción y Desarrollo) (Apartado Aéreo 1565, Cali).

Trade Associations:

FEDEMETAL - Federación Colombiana de Industrias Metalúrgicas (Carrera 14 No. 37-15 Apartado Aéreo 10262, Bogotá).

ACOPI - Asociación Colombiana Popular de Industrias (Carrera 23 No. 14-94, Bogotá).

ANDI - Asociación Nacional de Industriales (Carrera 13 No. 26-45 piso 6, Bogotá).

SCI - Sociedad Colombiana de Ingenieros (Carrera 4 No. 10-41, Bogotá).

Finance and Investment Institutions:<sup>1/</sup>

El Fondo de Inversiones Privadas (FIP) (Private Investment Fund). Created in 1963 to allocate credits from the Central Bank to private industries.

El Fondo Financiero Industrial (FFI), Industrial Financing Fund. Created in 1968 with resources from Central Bank Bonds and reserves from commercial banks.

Instituto de Fomento Industrial (IFI). Created in 1940 as a mixed society for industrial development.

Private Financial Corporation. Created in 1980 to promote private savings and medium- and long-term credits.

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<sup>1/</sup> Manrique, R., Políticas de Industrialización en Colombia, UNIDO/IS.317.

Appendix C

Leading industrial enterprises, 1984

Company	Type of business	Sales/ Turnover	Profit (loss)	Employ- ees	Net Assets	Ownership
Ecopetrol	Petroleum	1,656.1	25.2	10,519	1,540.2	
Federacafe/Fondo	Coffee exports	1,216.0	32.3	1,577	1,315.0	
Esso Colombiana	Petrol	525.7	31.2	366	81.5	US
Codi-Mobil	Petroleum	460.7	12.8	370	74.0	US
Texaco	Petroleum	363.8	6.7	649	87.1	US
Bavaria	Brewery	238.1	20.8	4,920	313.0	
FMC - Flota Mercante Gran Colombiana	Shipping	202.6	7.6	2,400	341.3	
Coltejer	Textiles	194.1	(7.5)	8,300	346.8	
Rafael Espinosa Hnos	Coffee exports	180.0	41.4			
Interconexion - ISA	Electricity	171.9	41.7	1,268	1,547.9	
El Tiempo	Publishing	157.3	47.2	1,599	29.3	
Grupo Gonchy/Gonchecol	Coffee exports	147.6	44.3			
Sefasa-Renault	Autos	142.2	1.3	2,137	90.6	France
Colmotores	Autos	142.2	(30.9)	1,286	111.9	Gen. Motors, US
Carton de Colombia	Packaging	142.2	9.3	1,848	113.6	
Carvajal	Office equip.	139.2	7.6	4,000	26.7	
Monomeros Col-Ven	Petrochemicals	135.3	0.1	1,073	55.7	
CCA-Mazda	Autos	122.7	(4.2)	1,286	56.2	
Uniban	Banana exports	121.1	0.9	920	35.2	
Postobon-Lux	Drinks	119.2	3.1	9,800	403.6	
Acerias Paz del Rio	Steel	116.0	(17.8)	6,151	371.6	
Intercol	Petroleum	113.5	8.7	560	179.7	
Ind Noel	Food	101.0	3.5	2,449	49.3	
Propal	Paper	89.4	15.2	1,037	72.6	
Nacional de Chocolates	Confectionery	85.2	6.5	1,026	113.9	
Coltabaco	Tobacco	82.6	4.3	2,403	102.8	
Enka de Colombia	Petrochemicals	78.0	6.8	1,354	56.7	
Cristaleria Peldar	Glass	77.8	4.8	2,125	63.6	
INPA	Food	72.6	8.7	1,458	60.0	
Cafetera de Manizales	Coffee exports	72.0	...	...	...	
Lloreda Grasas-Aceites	Vegetable oils/ animal feed	67.2	...	...	...	
Petroquimica Col.	Petrochemicals	64.6	...	...	...	
Shell	Petroleum	61.4	...	...	...	
Ingenio El Cauca	Engineering	61.2	...	...	...	
Cerromatoso	Steel	60.4	...	...	...	

Source: South, April 1986.

Appendix D

SELECTED MANUFACTURING PROJECTS AND DOMESTIC COMPANIES  
REQUIRING FOREIGN ASSISTANCE, 1964a/

A. FOOD, BEVERAGES, TOBACCO AND OTHER AGRO-INDUSTRIES

NUMBER	Title	Capacity	Total Invest. US\$ Millions	Foreign Contribution Sought	Local Sponsor
31-01	Canned Foods	E New Production Line	1.07	Loan, Market Access	Comestibles Dan Ltda. Cra. 43A No. 31-104 Tel. 2320353 - Medellín
31-02	Industrialization of Meat Products	E 24 mt/month	0.12	Equity, Market Access	Instituto de Desarrollo Municipal del Huila -FDIH- Centro Administrativo Gobernación Of. 305 Tel. 23593 - Neiva
31-03	Slaughter-House for Pigs	N 40,000 pigs/year	2.00	Loan, Equity	Fundación Educativa para el Desarrollo Agropecuario Nacional Av. Jiménez No. 4-03 Of. 805 Tel. 2849797 - Bogotá
31-04	Slaughter-House and Processing of By-Products	N 250 cattle/day and 150 pigs/day	0.80	Equity	Fundación Educativa para el Desarrollo Agropecuario Nacional Av. Jiménez No. 4-03 Of. 805 Tel. 2849797 - Bogotá
31-05	Meat, Cheese and Leather Production	E Maximum capacity: Cheese 10 mt/month - Goat meat 200 mt/month Goat skins 8,000/month	0.35	Equity, Market Access	Alirio Rey Jiménez Apartado Aéreo No. 40391 Tel. 56510 - Bucaramanga
31-06	Pasteurized Milk	N 40,000 litres/ 8 hours	0.50	Loan, Equity	Federación de Ganaderos de Santander - Coproleche Ltda. Calle 36 No. 19-18 Of. 507 Tel. 20960 - Bucaramanga
31-07	Milk Processing - UHT System	N 3,600 litres/hour	2.30	Loan, Equity License	Fundación Educativa para el Desarrollo Agropecuario Nacional Av. Jiménez No. 4-03 Of. 805 Tel. 2849797 - Bogotá
31-08	Pasteurized Milk and Milk Products	E Processing of 5,000 litres/hour milk	0.52	Equity	Quesería Quindiana Edif. Banco Cafetero Piso 4 Tel. 43506 Armenia
31-09	Orange Growing and Processing	N 600 HA	6.00	Equity, Loan	
31-10	Fruit Processing (Tomatoes, Papayas and Mulberries)	N 3 mt/hour Fresh Fruit	1.50	Market Access, Equity, Technology	Corporación Financiera Popular Calle 19 No. 8-71 Tel. 37304 - Bogotá
31-11	Processing of Tropical Fruits (Palm Hearts and other fruits)	N 1.5 Million Tons Palm Hearts/ 900,000 litres Nectar/ 540,000 Jars Jam	1.50	Market Access, Technology, Equity	Comité Departamental de Cafeteros del Valle Cra. Sa. No. 13-46 Edif. El Café Tel. 893232 - Cali
31-12	Coconut Processing	N 200 mt/year	0.23	Equity	CVC-Plan de Desarrollo de la Costa Pacífica - Procepa Cra. 56 No. 11-2 Tel. 393431

a/ This list includes industrial projects for which foreign co-operation, such as joint venture or other partnerships, acquisition of technology, management expertise and marketing assistance, is sought. Enterprises interested in the possibility of participating in any of these projects can obtain more detailed information from UNIDO Investment Promotion Service. UNIDO does not accept responsibility for accuracy and completeness.

NUMBER	Title	Capacity	Total Invest. US\$ Millions	Foreign Contribution Sought	Local Sponsor
31-13	Packaging of Citrus Fruits and Production of Concentrated Juice	N 52,000 mt/year Fresh Fruit 23,000 mt/year Fresh Fruit Processed Into Juice	3.17	Market Access, Equity	Federación Nacional de Cafeteros de Colombia - Prodesarrollo Calle 14 No. 7-36 Piso 6 Tel. 2836331 - Bogotá
31-14	Processing of Pineapples (slices and juice)	E 2 mt/hour Fresh Fruit	0.55	Equity, Technology, Market Access	Comité Departamental de Cafeteros del Valle - Cra. 5a. No. 13-46 Edif. El Café Tel. 893232 - Cali
31-15	Fishmeal and Fish Oil	N 20 mt/hour (E Shifts)	10.75	Equity, Market Access	CVC-Plan de Desarrollo de la Costa Pacífica - PLADEICOP Cra. 56 No. 11-36 Piso 2 Tel. 393431 - Cali
31-16	Canned Sardines	N 30 mt/day	4.36	Equity, Market Access	CVC-Plan de Desarrollo de la Costa Pacífica - PLADEICOP Cra. 56 No. 11-36 Piso 2 Tel. 393431 - Cali
31-17	Tuna Packing Plant	N 20 mt/day	4.80	Market Access, Equity	CVC-Plan de Desarrollo de la Costa Pacífica - PLADEICOP Cra. 56 No. 11-36 Piso 2 Tel. 393431 - Cali
31-18	Fish Processing	N 1,000 mt./year	3.30	Equity, Fleet Contracting	Instituto de Fomento Industrial Att. Hugo Millán Ch. Calle 16 No. 6-66 Piso 6 al 15 Tel. 2419367 - Bogotá
31-19	Shrimp Farm	N 1,000 Ha Breeding grounds	8.00	Equity, Technology	Corporaciones Financieras Calle 10 No. 4-47 Piso 21 Tel. 822692 - Cali
31-20	Shrimp Raising (Penaeus Vannamei)	N 10 million/month		Technology	Antonio Bonilla Jaramillo P.O. Box 2155 Tel. 511704 - Cali
31-21	Rice Milling	E 2,000 bags/48 hours	0.45	Equity	Helf Bocanegra B. Calle 14 No. 4-37 Tels. 3061 - 4416 Espinal (Tolima)
31-22	Candies Plant	N 1,100 mt/year	0.24	Equity, Market Access	CVC-Plan de Desarrollo de la Costa Pacífica - PLADEICOP Cra. 56 No. 11-36 Piso 2 Tel. 393431 - Cali
31-23	Cacao Processing	N 500 kg/hour	4.50	Market Access, Loan	Federación Nacional de Cafeteros de Colombia - Prodesarrollo Calle 14 No. 7-36 Piso 6 Tel. 2836331 - Bogotá
31-24	Cocoa and Chocolate	E 2,000 mt/year	3.22	Equity, Technology	Comité Departamental de Cafeteros de Santander Cra. 33 No. 49-35 Piso 4 Tels. 71380 - 71385 - Bucaramanga
31-25	Tea Packaging Plant	N 57,600 Small bags/day (one shift)	0.50	Equity, Loan	Jaime Rey Albomoz Cra. 5a. No. 70A-35 Tel. 2493543 - Bogotá
31-26	Coloring Agents	E 14 mt/month	0.55	Market Access, Equity	Industrias Altman Ltda. A.A. 20264 Tel. 686218 - Cali
31-27	Honey and Wax Production	E Honey: 1 mt/hour Wax: 178,000 Sheets/year	2.45	Market Access, Equity, Technology	Comité Departamental de Cafeteros del Valle - Cra. 5a. No. 13-46 Edif. El Café Tel. 893232 - Cali
31-28	Concentrated Food Plant	N 16,000 mt/year	Under evaluat.	Equity, Technology	Cervecería Unión S.A. A.A. 627 Tel. 2777777 - Medellín

NUMBER	Title	Capacity	Total Invest. US\$ Millions	Foreign Contribution Sought	Local Sponsor
31-29	Concentrated Animal Food Plants	N 5 mt/hour	2.30	Loan, Technology	Cooperativa de la Federación de Ganaderos de Antioquia Comité Departamental de Cafeteros de Antioquia Calle 72 No. 64-155 Tel. 570800 - Medellín
31-30	Brewery	E 550 hl/day	6.00	Technology	Cervecería Unión S.A. A.A. 627 Tel. 2771444 - Medellín
31-1 B	Biscuits, Cakes and Candy	E 150 pounds/hour	1.10	Technology, Equity	Instituto de Formento Industrial Att. Celina de Arteaga Calle 16 No. 6-66 Pisos 7 al 15 A.A. 4222 Tel. 2822055 - Bogotá
31-5 B	Flour and Fish	N 30 tons/month	0.8	Equity, Market Access, Technology	
31-9 B	Oil and Cooking Fat	E 70-100 tons/day	2.5	Loans	Cantaclaro Ltda. Cra. 7a. No. 79-72 Oficina 502 Tel. 2486759 - Bogotá
31-11 B	Starch and Corn, Sorghum and potato extracts	N Under study	Under study	Loans, Technology	Cervecería Unión S.A. A.A. 627 Tel. 2771444 - Medellín
31-14 B	Concentrated Food for Animals	N 16,000 tons/year	Under study	Loans, Technology	Cervecería Unión S.A. A.A. 627 Tel. 2771444 - Medellín
31-18 B	Concentrated foods	N 30,000 tons/year	Under study	Equity, Technology	Fundación Desarrollo Industrial del Huila - FDIH Calle 8 No. 3-14 Piso 17 Tel. 823271 - Cali
31-22 B	Fruit Processing	N 4 tons/day	0.5	Equity, Market Access	Instituto de Desarrollo Municipal del Huila - FDIH Centro Administrativo Gobernación Of. 305 Tel. 23593 - Neiva
31-27 B	Canning and Bottling of Tropical Fruits	N 2,900,000 units aprox.	0.01	Market Access, Technology, Equity	CVC-Plan de Desarrollo de la Costa Pacífica - PLADEICOP Cra. 56 No. 11-36 Piso 2 Tel. 393431 - Cali
31-31 B	Starch and Syrup Extraction from corn and potatoes	N Under study	Under study	Equity, Technology	Cervecería Unión S.A. A.A. 627 Tel. 2771444 - Medellín
31-33 B	Industrial Processing of Guava and Tomatoes	N 3 tons/hour	0.5	Market Access, Equity	Instituto de Desarrollo Municipal del Huila - Idehuila Centro Administrativo Gobernación Of. 305 Tel. 23593 - Neiva
31-42 B	Pineapple, Berry and Apple Wines	E 60,000 units/month making 30% use of plant capacity	0.3	Loans, Market Access	Vinícola del Valle Ltda. Att. Samaria Márquez J. Calle 50 No. 7N-37 Tel. 605100 - Cali
31-43 B	Dairy Products - Goats and Sheep Marketing of Carcass Meat	N 100,000 litres/month 2,000 animals for production purposes	0.205	Equity Loan, Market Access	Alirio Rey Jiménez A.A. 40391 Tel. 56510 B/manga
31-44 B	Concentrated fruit pulp, guava, passion fruit, curuba, berries, oranges, papaya, lulo	E 231 kg. 1 h. concentrated pulp at 70° Brix	0.514	Loan, Market Access	Ind. Alimentaria de los Nevados Ltda. Att. Carlos Enrique Cardona Cra. 103A No. 37-39 Tel. 2677151 - Bogotá
31-45 B	Green banana flour, green banana and soya flour, a blend of vegetable and non-fat soya flour	E 200 tons/year	0.113	Equity, Loan	Germán Antonio Giraldo Calle 7 No. 23-06 Tel. 52151 - Armenia
31-46 B	Milkshakes, Fruit Cocktail, Juices	N Under study	Under study	Loans, Market Access, Technology	Manuel José López D. Av. 7 No. 7-94 Tel. 28208 - Cúcuta

NUMBER	Title		Capacity	Total Invest. US\$ Millions	Foreign Contribution Sought	Local Sponsor
1-3 B	Silkworms-Raw Silk	N	3,065 skeins/year 60 kgs.	2.3	Loan, Market Access, Technology	Comité Departamental de Cafeteros del Valle - Cra. 5a. No. 13-46 Edif. El Café Tel. 893232 - Cali
1-5 B	Tuna Fishing & Canning	N	5,000 to 30,000 over a ten-year period		Tuna Fleet	Corporación Autónoma Regional del Cauca. CVC-Plan Desarrollo para la Costa Atlántica - PLADEICOP Cra. 56 No. 11-36 Piso 2 Tel. 393431 - Cali
1-6 B	Fertile eggs, chicken, concentrated feed & processed fowl	E	50,000 chickens per month, 250 concentrated tons/month, 12,000 breeding hens	0.52	Credits	Mauro Estrada Salazar Cra. 14 No. 25-55 Tel. 930 - 80204 Túquerres - Nariño
1-7 B	Forestry (lumber)	N	Under study	Under study	Equity, Technology	Corporación Financiera del Norte Att. Roberto Cuello Lizcano Cra. 44 No. 34-31 A.A. 2747 Tel. 324340 - Barranquilla
1-9 B	Shrimp Raising	N	1st. year - 168,000 pds. 2nd. year - 252,000 pds. 3rd. year - 378,000 pds. 4th. year - 420,000 pds.	4.0	Equity, Technology, Marketing	Aquacultivos del Caribe S.A. Att. Carlos Ramirez S. Diagonal 127A No. 29-31 Of. 203 Tel. 2140267 - Bogotá
1-10 B	Vermiculite processing	N	1,800 tons/year	0.60	Credits, Technology, Marketing, Technical Assistance	Electrofumigación Toro & Cia. Ltda. Att. José Miguel Toro Calle 21 No. 32-50 A.A. 12845 Tel. 2695553 - Cali
1-11 B	Production of Post-Larva Shrimp in Laboratory	N	7,000,000 Post Larvas/month	0.09	Equity, Loans	Sociedad Acuicola y Pesquera del Caribe Ltda. - Acuipisca A.A. 20301 Tel. 80739 - Cartagena Comisión Colombiana de Oceanografía - Att. Ximena Pérez V. Cra. 27 No. 43-39 Tel. 2441394 - Bogotá
1-12 B	Production of Artemiasalina Cysts	N	Under study	Under study	Equity, Loans, Technology, Market Access	Antonio Bonilla Jaramillo P.O. Box 2155 Tel. 511704 - Cali

B. TEXTILES, GARMENT AND LEATHER INDUSTRY

NUMBER	Title	Capacity	Total Invest. US\$ Millions	Foreign Contribution Sought	Local Sponsor
32-01	Carded Cotton Yarn, finished and stamped fabrics	E 10 mt/day	4.00	Equity, Technology, Market Access	Tejidos Unica S.A. Calle 31 No. 26-55 Tel. 23100 - Manizales
32-02	Textile Plant	E Yarn: 25 mt/day Cloth: 110,000 Metres/day	30.00	Technology, Market Access, Equity	Tejidos El Condor S.A. Att. Paul Ruiter Moreno A.A. 815 Tel. 420040 - Medellín
32-03	Yarn, Fabrics and Ready-made Clothing	E	8.20	Equity, Technology, Market Access	Confecciones La Garantía S.A. Cra. 7a. No. 34-136 A.A. 33 Tel. 401104 - Cali
32-04	Ready-made Clothing (children, young people)	E 20,000 Pieces/month	1.00	Technology	Textiles Cali - CALITEX LTDA. Cra. 2a. No. 38-72 Tel. 422084 - Cali
32-05	Ladies' Underwear	E 12,000 Pieces month	0.35	Equity, Technology, Market Access	Rafael Eduardo Jordán Rueda Cra. 25 No. 138-50 Int. 7 Tel. 2586790 - Bogotá
32-06	Underwear and Informal Apparel	40,000 pieces/month	0.80	Market Access	Productos Vogue de Colombia A.A. 4267 - Cali
32-07	Pyjamas / Shirts / Tights	E 50,000 pieces/month	0.80	Market Access	Confecciones Praga Ltda. Att. Hugo Rafael Palacio Zona Franca Manuel Carvajal Palmaseca - Cali
32-08	Artificial furs	N 14,000 metres	1.00	Equity, Technology, Market Access	Afelpadas Ltda. Att. Jaime Rodríguez Pinzón Cra. 23 No. 47-51 Oficina 3 Norte 08 Tel. 2875642 - Bogotá
32-09	Tannery	E 1,200 hides/month	0.10	Equity, Technology	Eduardo Marín Banco Cafetero Piso 4 Tel. 43506 - Armenia, Quindío
32-2 B	Ladies' and Children's Garments	E 5,000 units per month	Under study	Equity, Technology	Creaciones Pepinita Ltda. Calle 52 No. 23-10 Tels. 78022 - 75222 - Bucaramanga
32-9 B	Garment Industry Plant	N 50 units/8 hours	0.03	Equity, Market Access	Oiga Parra de Nieto Cra. 73 No. 49A-58 Tel. 2630569 - Bogotá
32-10 B	Leather Processing	N Under study	0.09	Equity, Market Access	Instituto de Desarrollo Municipal del Huila - Idehuila Centro Administrativo Gobernación Of. 305 Tel. 23593 - Neiva
32-11 B	Special Girdles and Bras for Weight Loss	E 75 units/day	0.14	Loans, Technology, Market Access	Inés Marina de Ibañez Calle 14 No. 12-11 Of. 301 Tel. 2341952 - Bogotá
32-12 B	VELCRO for Industrial Use	N Under study	Under study	Technology, Market Access	Marquillas Niza S.A. Calle 60 Norte No. 1N-121 A.A. 8085 Tel. 422620 - Cali
32-14 B	Men's Suits	E 3,000 suits/year	0.50	Equity	Manuel Buenahora Castro Cra. 35A No. 57-91 Apto. 104 Tel. 2121516 - Bogotá
32-15 B	Sports Jackets, Socks, etc.	E 100,000 units/year	0.05	Equity, Loan, Market Access, Technology	Aurora Gualteros de Rivera Calle 17A Sur No. 32-81 A.A. 025679 Tel. 2033537 - Bogotá
32-16 B	Pelt and Skin Processing for Leather Goods	E 50,000 kgs./ month carcass meat 2,000 skins/month	0.20	Equity, Loan, Market Access	Alirio Rey Jiménez A.A. 40391 - Bucaramanga



NUMBER	Title		Capacity	Total Invest. US\$ Millions	Foreign Contribution Sought	Local Sponsor
32-18 B	Chrome Tanning	E	1,600 skins/month	0.20	Equity	Pérez y Sierra Ltda. Edificio Banco Cafetero Piso 4 Tel. 43506 - Armenia
32-19 B	Medium and Light Weight Knits for Garment Industry	N	12,000 mts/day	12.80	Equity, Technology	Tejidos El Condor S.A. Att. Paul Ruiter Moreno A.A. 815 Tel. 420040 - Medellín

C. WOOD AND WOOD PRODUCTS

33-01	Wooden Boards	E	65,000 m <sup>3</sup> /year	4.00	Equity, Market Access	Bosques de Antioquia S.A. Cra. 42A No. 1 Sur 16 Tel. 2462471 - Medellín
33-02	Particle - Board Plant	N	100 m <sup>3</sup> /day	7.70	Equity, Market Access	Corpocauca Cra. 5a. No. 2-08 Tel. 1314 - Popayán
33-03	Modular Housing	N	800 m <sup>2</sup> /day	0.70	Equity	Carlos Alberto Gómez G. Calle 101 No. 44-75 Apto. 501-13 Tel. 2716150 - Bogotá
33-2 B	Furniture Manufacturing	N	Under study	3.50	Equity, Market Access	Hermógenes Muñoz Páez Calle 8 No. 7-29 Tel. 60411 - Chaparral (Tolima)
33-4 B	Cut Timber Products	N	7 m/minute	0.60	Equity, Technology	Fundación de Desarrollo Integral del Valle del Cauca - FDI Calle 8a. No. 3-14 Piso 17 Tel. 823271 - Cali
33-5 B	Wood, Straw and Agave Fiber Packaging materials	N	Under study	0.20	Loans	Instituto de Desarrollo Municipal del Huila - Idehuila Centro Administrativo Gobernación Of. 305 Tel. 23593 - Neiva
33-6 B	Wood Furniture	E	48 workers/8 hour shift	0.60	Equity, Technology	Industrias Maderín Ltda. Att. Rodrigo Robles Calle 52 No. 36-31 Tels. 317087 - 325744 - Barranquilla
33-8 B	Bamboo Furniture and Crafts	E	1,000 units	0.02	Loan, Market Access	Bosques de Antioquia S.A. Cra. 42A No. 1 Sur 16 Tel. 2462471 - Medellín Colombiana de Bambú Ltda. Cra. 24 No. 33-30 A.A. 1295 Tel. 33729 - Manizales
33-10 B	Wood Furniture - Household	E	6,500 m <sup>2</sup> at 70% plant utilization	0.30	Technology	Inversiones Zapata Calad Cla. Ltda. A.A. 4295 Tel. 2773167 - Medellín

D. PAPER AND PAPER PRODUCTS

NUMBER	Title	Capacity	Total Invest. US\$ Millions	Foreign Contribution Sought	Local Sponsor
34-01	Paper mill	E 14 mt/day	3.90	Market Access. Technology. Loan	Papeles Scott de Colombia S.A. Medellin
34-02	Wrapping Paper for Coins	E 5.000 - 8.000 pieces per day	0.32	Loan Equity	Crane Uribe & Cia. Ltda. A.A. 8579 Tel. 2134820 - Bogotá
34-03	Metallic Paper (for Cigarettes)	E 350 mt/year	1.20	License. Technology. Loan	Productos Metalizados Ltda. A.A. 642 Tels. 58690 - 59692 Manizales
34-04	Publishing / Lithography / Printing	E 150.000 units/month	0.30	Equity. Market. Technology	
34-05	Typography. Lithography	E 50.000/month	0.13	Loan	Tipografía y Litografía Dovel Calle 35 No. 44-25 Tels. 2317968 - 2318309 - Bogotá
34-06	Magazines, brochures	E 700 / hour	1.30	Market Access. Loan	Editorial Bedout S.A. Medellin
34-07	Lithography. Magazines	E To be expanded to 400 mt/month	0.51	Market Access. Loan	Formas Continuas Km 1 Autopista Cali-Yumbo Tels. 621151 - 621154
34-08	Technical Books	E 200.000/year	0.60	Equity. Market Access. Technology	
34-09	Aerial Map Photography	N 29 Maps/month	0.83	Equity	Jorge Posada Gómez Calle 57 No. 47-36 Apto. 101 Pablo VI 2a. Etapa B-79 - Bogotá
34-5 B	Printed Calendars	E 150.000 units/month	0.30	Equity. Market Access	Edgar Hernández Aguirre Cra. 20 No. 48-70 Tel. 42288 - Armenia

E. CHEMICALS

35-01	Processing of Phosphoric Rock	N 50.000 mt/year P205		Technology. Loan	
35-02	Alcohol Plant	N 60.000 litres/day	27.00	Equity	
35-03	Monomer Vinyl, Acetate, Maleic Anhydride	N MVA: 7.000 - 20.000 mt/year MA: 4.000 - 6.000 mt/year		Equity	Anhídridos y Derivados de Colombia S.A. - Andercol Autopista Norte No. 95-84 Tel. 2370083 - Medellin
35-04	Propylene Oxide	N 12.000 mt/year	1.10	Equity. Loan. Technology. Market Access	Servicio Industrial Colombiano Ltda. Att. Antonio Faillace Avenida 13 No. 83-30 Piso 4 Tel. 2364032 - Bogotá
35-05	Ammonia Plant	N 1.000 mt/day	550.00	Equity. Technology. Loan	Químicos de Occidente S.A. Att. Francisco Gaviria R. A.A. 11490 Tel. 802124 - Cali
35-06	Production of Thermophosphates	E 60.000 mt/year	8.20	Technology	Fondiser Cra. 35A No. 52-136 Tels. 72227 - 75847 - Bucaramanga
35-07	Herbicides	E 360 mt/year	0.62	Equity. Market Access	Productos Fitosanitarios Proficol del Carmen S.A. Cra. 15 No. 23-64 Tel. 2812588 - Bogotá

NUMBER	Title	Capacity	Total Invest. US\$ Millions	Foreign Contribution Sought	Local Sponsor
35-08	Polyester Granulate	E 13,000 mt/year	14.80	Equity, Technology	Enka de Colombia S.A. Cra. 63 No. 49A-31 Tel. 300900 - Medellín
35-09	Production of Vitamins and Antibiotics	E New Production Line	0.25	Equity	Laboratorios Farmacéuticos Internacionales Ltda. Cra. 20 No. 398-58 Tels. 2451136 - 2323911 - Bogotá
35-10	Cosmetics	E New Production Line	1.05	Technology, Market Access, Equity	Laboratorios California Ltda. Calle 15 No. 40-36 Tel. 2684811 - Bogotá
35-11	Paraffins (Light and Crystalline) and waxes	N 2,000 mt/year	1.10	Equity	Siliconas y Ceras de Colombia Disincol Ltda. - Calle 47 No. 5-26 Oficina 402 Tel. 2450890 - Bogotá
35-12	Manufacture of Tires	E Bicycle tires: 3.5 million Motorcycle tires: 1.0 million Earth mover tires: 16,000	4.70	Equity, Market Access, Technology	Cauchos de Colombia S.A. Att. José Correa Arango Cra. 51 No. 14-97 Tel. 2353454 - Medellín
35-13	Production of Plastic Taps	E 800,000/month	0.38	Market Access, Loan	Corporación Autónoma Regional del Cauca - CVC-Plan de Desarrollo de la Costa Pacífica - PLADEICOP Cra. 56 No. 11-36 Piso 2 Tel. 393431 - Cali
35-2 B	Coating Clay for the Paper industry	E 14,500 tons/year	0.60	Technology, Equity	Minerales Industriales S.A. Calle 24 No. 44-01 - Medellín
35-4 B	Oxygen, Nitrogen, Argon	N 4,000 mt <sup>3</sup> /hour	23.0	Equity, Market Access	Fundación para el Desarrollo Integral del Valle del Cauca - FDI Calle 8 No. 3-14 Piso 17 Tel. 82371 - Cali
35-6 B	Rubber products for the pharmaceutical industry, such as plugs for injection vials and serum bottles	E Under study	Under study	Equity, Loan	Cauchos Farmacéuticos de Colombia Ltda. Att. Alberto Camargo Cra. 36 No. 164-56 Tel. 6718957 - Bogotá
35-7 B	NPK fertilizer compounds with high phosphorous content	E 220,000 tons/year	0.20	Loan, Technology	Empresa Colombiana de Minas Att. Cecilia García B. Avenida 34 No. 19-05 Tel. 2327467 - Bogotá
35-11 B	Alcohol fuel	N Under study	0.70	Loan, Market Access	Instituto de Desarrollo Municipal del Huila - Idehuila Centro Administrativo Gobernación Of. 305 - Tel. 23593 - Neiva
35-16 B	Production of Glutamato Monozodico	N 1,700 tons/year	7.00	Equity, Technology	Charry y Cia. Ltda. Calle 61 No. 51D-57 Of. 303 Tel. 459775 - Medellín
35-17 B	Industrial and Automotive Transmission belts	N 1,000,000 units/year	Under study	Equity, Technology	Unión General S.A. Cra. 25 No. 36-04 Tels. 25233 - 21673 - Manizales
35-19 B	Maleic Anhydride	N 4,000 - 6,000 tons/year	0.40	Market Access, Technology, Equity	Anhídridos y Derivados de Colombia S.A. - Andercol Autopista Norte No. 95-84 Tel. 2370083 - Medellín

NUMBER	Title	Capacity	Total Invest. USC Millions	Foreign Contribution Sought	Local Sponsor
35-20 B	Plastic Containers for the Pharmaceutical Industry	N 600 units/hour	0.15	Technology. Equity	Insocol Ltda. Cra. 8a. No. 18-28 Tel. 895964 - Cali
35-21 B	Polyester cut fiber (staple)	E 500 tons/month	8.10	Loan	Polímeros Colombianos S.A. Itagüí, Autopista Sur Km. 11 A.A. 4516 - Medellín
35-22 B	Polyester Chips (PET)	E 450 tons/month	1.50	Loan	Polímeros Colombianos S.A. Itagüí, Autopista Sur Km. 11 A.A. 4516 - Medellín
35-23 B	Plant for Industrial Gloves	E 4,800 pairs	0.02	Equity	Eduardo Marín Edificio Banco Cafetero Piso 4 Tel. 43506 - Armenia

F. GLASS PRODUCTS AND BUILDING MATERIALS

36-01	Electrical Insulators	N 1,800 mt/year	0.90	Equity. Market Access	Corporación para el Desarrollo del Cauca - Corpocauca Cra. 5a. No. 2-08 Tel. 1314 - 3523 - Popayán
36-02	Production of Ceramic Crockery	E 210,000 pieces/month	0.42	Technology. Market Access. Loan	Cerámicas Continental Ltda. Att. Dr. Alfonso Betancourt V. Cra. 49 No. 48-59 Oficina 601 Tel. 2313419 - Medellín
36-03	Industrial lime plant	N 60 mt/day	2.36	Equity	
36-04	Portland Cement	N 550,000 mt/year	108.00	Equity	Cementos Río Claro S.A. Att. Luis Fernando Ochoa A. Cra. 46 No. 56-11 Piso 14 Tel. 518181 - Medellín
36-05	Cement Blocks and Pipes	N Under evaluation	1.50	Equity	Instituto de Desarrollo Municipal del Huila - Idehuila Centro Administrativo Gobernación Of. 305 Tel. 23593 - Neiva
36-06	Prefabricated Housing and Construction Materials	N 25 m <sup>3</sup> /day	7.60	Equity. Technology	Corporaciones Financieras Calle 10 No. 4-47 Piso 21 Tel. 822692 - Cali
36-07	Concrete Modules	E 380 modules/month	0.17	Equity. Market Access	Chalet's Ltda. Att. Nestor Acosta A.A. 265 Tel. 48576 - Armenia
36-08	Kaolin for Paper Industry	E 14,500 mt/year	1.30	Equity. Technology	Mineralles Industriales S.A. Calle 24 No. 44-01 Tel. 2327650 - Medellín

G. BASIC METAL INDUSTRIES

NUMBER	Title	Capacity	Total Invest. US\$ Millions	Foreign Contribution Sought	Local Sponsor
37-01	Production of Steel Bars and Shapes	E 120,000 mt/year	0.50	Technology. Loan	
37-02	Casting for Automotive Industry	E 6,000 mt/year	6.48	Technology. Market Access. Equity	Ind. Electromecánica Colombia Ltda. Att. Francisco J. Rodríguez A.A. 2877 - Barranquilla
37-03	Sponge Iron Reduction Plant	N 100,000 mt/year		Equity. License. Loan	
37-04	Aluminium Shapes and Pipes	E 350 mt/month	8.20	Equity	Corp. Financiera de Caldas S.A. Ind. Col. Electrón. y Electrodomest. Cra. 698 No. 19-66 A.A. 460 Tel. 30000 - Manizales
37-05	Refining of Gold and Silver	N 600 mt/week (minerals)	0.13	Equity	Augusto Lozada Isaza Cra. 66A No. 52-67 Tel. 2636310 - Bogotá
37-1 B	Foundry	E 5,277 tons/year	6.50	Equity. Technology. Market Access	Industrias Metalúrgicas Apolo S.A. Cra. 50 No. 25-189 Tel. 2552700 - Medellín
37-2 B	Sand and Sludge filters (turbidity, rectification, softening, sanitizing and protection)	E Household use: 30 per day Rural use: 15 /day Industrial use: 2/day	Under study	Equity. Market Access. Technology	Naturagua Cra. 52 No. 5 Sur 75 Medellín
37-3 B	Iron and Steel Casting	E 100 tons/month	0.50	Equity	Fundiciones del Norte S.A. Cra. 44 No. 34-31A Piso 8 Tel. 414546 - Barranquilla

H. METAL PRODUCTS, MACHINERY AND EQUIPMENT

38-01	Manufacture of Saws and Cutting Tools	E Annual sales: 400,000 dollars	0.50	Equity. Loan. Technology	
38-02	Aluminum Windows and Doors	E 60 mt/year	0.36	Equity. Technology	Jaime David Dreszer Tel. 2924700 - Bogotá Velásquez Restrepo y Cia. Ltda. Calle 26A No. 43F-29 Tel. 321889 - Medellín
38-03	Industrial Stoves	E Annual sales: 1 million dollars	0.42	Equity. Market Access. Technology	
38-04	Gas-Fueled Water Heaters	N 3,000 units / month	0.70	Equity. Market Access. Technology	Compañía Industrial Demaq S.A. A.A. 3518 Tel. 52489 - Bucaramanga
38-05	Assembly of Agricultural Machinery	E 30 units/month	0.55	Equity. Technology	El Campo Ltda. Att. Hugo Yesid Tapiero Tel. 2683915 - Bogotá
38-06	Manufacture and Assembly of Machinery	E 800 machines/year	0.80	Market	FABLAMP Zona Franca Palmaseca A.A. 6663 Tel. 422107 - Cali
38-07	Machinery for Plastics Industry	E 24 units/year	0.83	Equity. Market Access. Technology	Consortio Internacional de Maquinaria CIMA L.Ja. Calle 24 No. 7-74 Tel. 791567 - Cali

NUMBER	Title	Capacity	Total Invest. US\$ Millions	Foreign Contribution Sought	Local Sponsor
38-08	Production of Packaging Machines, Industrial Dryers	E	0.20	License	Fedemetal Att. Alvaro Buenahora Avda. Caracas No. 37-15 Tel. 2323600 - Bogotá Máquinas Ramalco Ltda. Calle 47 No. 43-86 Tel. 313319 - Barranquilla
38-09	Production of Alternators	E 1,000 units/year	0.48	Equity	Penagos Hermanos Ltda. Calle 28 No. 20-80 A.A. 689 Tel. 31268 - Bucaramanga
38-10	Shipbuilding and Repairing	E	3.20	Equity, Market, Technology	Unión Industrial y Astilleros "Unial" S.A. Vía 40 No. 74-240 Tel. 344850 Barranquilla
38-11	Dentists' Chairs	E 20 units/month	1.00	Equity, Technology	Bel Dent Ltda. Att. Luis Manuel Vélez Calle 19 No. 43B-91 Tel. 2320802 - Medellín
38-12	Production of Lenses and Spectacles	N Under study	0.50	Equity, Technology	Fundación para el Desarrollo Industrial del Huila - FDIH Calle 8 No. 3-14 Piso 17 Tel. 823271 - Cali
38-10 B	Thermoshaped, injected and blown containers, CPV shapes	E 800,000 containers/month	13.25	Market Access, Technology, Loan	Plásticos Trevar Ltda. Att. Héctor A. Restrepo A.A. 7241 Tel. 441583 - Cali
38-15 B	Bicycle Assembly	N 100 units/month	Under study	Equity, Technology, Market Access	Importadora Universal Ltda. Att. Docto. Alvaro Gómez P. Calle 44 No. 73-76 Tel. 434342 - Medellín
38-17 B	Bakery Equipment	E According to orders	0.08	Equity	Francisco J. Rodríguez V. A.A. 18342 Tel. 851788 - Cali
38-18 B	Coffee, Rice and Cereal Drying Equipment	E 4 machines/week	Under study	Equity, Loan, Technology	José Páez Sánchez Avda. 10 de Mayo No. 66A-27 Sur Barrio Carvajal Tel. 657475 - Bogotá
38-19 B	Elevators, freight elevators, horse gears	E 350 elevators/year	0.60	Technology, Market Access	
38-22 B	Buses for 580 Chassis Cranes for export	E Buses: 240 units/year Cranes: 100 units/year	0.10	Market Access, Loan, Technology	Industrias El Barco Ltda. Calle 44 No. 27-90 - Barranquilla
38-23 B	Industrial Cutting Tools	E Annual production US\$ 400,000	0.50	Equity, Loan, Technology	Mademetal Ltda. Carrera 25 No. 23-38 - Bogotá
38-25 B	Plate bending machines, Plate cutting machines	E 60 machines	0.30	Equity, Market Access	Saúl Urrea Arias Cra. 20 No. 11-101 A.A. 208 Tel. 54095 - Armenia
38-26 B	Fuel-oil household stoves	N 10,000 per month	2.00	Equity, Technology, Market Access	Alvaro Barreto Bruce Calle 102 No. 31-37 Tel. 2564451 - Bogotá

I. OTHER MANUFACTURING INDUSTRIES

39-01	Manufacture of Dolls and Toys	E 4,000/year	0.20	Market Access	
39-02	Disposable Gas Lighters	N 500,000 units/year	Under study	Equity, Technology	

Appendix E

The completed and on-going technical co-operation projects of UNIDO, 1986

<u>Backstopping Responsibility</u>		<u>Project Number</u>	<u>Project Title</u>
A. <u>The completed technical co-operation projects</u>			
IO/INFR	(00.0)	RP/COL/72/004	Institute of technological research: refers to special fund project COL-30
IO/INFR	(31.1.01)	CC/COL/71/003	Institute for technological research
IO/INFR	(31.1.01)	DP/COL/68/530	Institute for Technological Research Bogota, phase II
IO/INFR	(31.4.04)	DP/COL/72/043	Popular finance corporation
IO/INFR	(32.3.04)	DP/COL/72/025	Free zones
IO/INFR	(32.3.04)	IS/COL/75/024	In-plant training course on industrial free zone development and management
IO/INFR	(31.3.C)	SI/COL/77/801	Assistance to the Centre for Economic Information, Chamber of Commerce, Bogota
IO/INFR	(31.3.D)	IS/COL/75/017	Assistance to the Technical Assistance Programme of the Corporacion Financiera Popular
IO/INFR	(31.3.D)	SI/COL/75/817	Assistance to the technical assistance programme of the Corporacion Financiera Popular
IO/INFR	(31.3.L)	DP/COL/76/020	Assistance to small- and medium-scale industry
IO/FCTY	(31.4.E)	DU/COL/73/002	Advisory services to enterprises - industrial consultancy unit (Executing agency: ILO)
IO/TRNG	(31.5.B)	RP/COL/84/001	Training in investment promotion
IO/PLAN	(32.1.01)	DP/COL/68/018	Industrial economics
IO/PLAN	(32.1.01)	DP/COL/71/020	Industrial programming
IO/PLAN	(31.2.A)	SI/COL/82/801	Assistance in defining a strategy for capital goods development
IO/FEAS	(32.1.02)	DP/COL/71/001	Industrial development
IO/AGRO	(30.6.03)	DP/COL/72/041	Leather and leather goods
IO/AGRO	(31.7.D)	SI/COL/75/819	Assistance to the leather and leather goods industry
IO/AGRO	(31.7.C)	SI/COL/82/802	Technical assistance to the Colombian agro-industrial development

<b>Backstopping Responsibility</b>		<b>Project Number</b>	<b>Project Title</b>
IO/IT/AGRO	J13104	DP/COL/82/007	Leather Centre
IO/MET	(31.8.A)	IS/COL/75/012	Assistance to the aluminium industry
IO/MET	(31.8.C)	DP/COL/72/020	Investigation of the iron and steel industry
IO/MET	(31.8.C)	SI/COL/78/801	Technical assistance to Colombiana de Arrabio Ltda. (COLAR) for blast furnace operations for iron smelting
IO/MET	(31.8.D)	RP/COL/83/001	Modification of cupolas to divided blast operation for nodular iron production
IO/IT/MET	J13209	SI/COL/83/801	Modification of cupolas to divided blast operation for nodular iron production
IO/ENG	(31.9.B)	DP/COL/73/008	Maintenance of road building equipment
IO/ENG	(31.9.B)	IS/COL/76/001	Development of the metalworking sector
IO/ENG	(31.9.B)	SI/COL/76/801	Development of the metalworking sector
IO/ENG	(31.9.B)	SI/COL/80/801	Maintenance and operation of Diesel power plants
IO/ENG	(31.9.D)	DP/COL/76/029	Utilization of road maintenance equipment and establishing investment and operation costs
IO/ENG	(31.9.D)	DP/COL/79/007	Equipos especiales para la recuperación de carreteras
IO/ENG	(31.9.Z)	IS/COL/75/014	Training of civil engineers in the use of explosives
IO/CHEM	(00.0)	RP/COL/72/005	Plastics fabrication industry
IO/CHEM	(30.4.00)	DP/COL/72/024	Assistance in the formulation of project documentation for a metal working and wood centre
IO/CHEM	(30.5.03)	IS/COL/75/013	Symposium on the use of plastics in agriculture



<u>Backstopping Responsibility</u>		<u>Project Number</u>	<u>Project Title</u>
IO/CHEM	(32.1.C)	DP/COL/79/014	Seminario relacionado con el estudio de pre-factibilidad para la producción de gas y productos químicos basados en el carbón de Antioquía
IO/CHEM	(32.1.C)	SI/COL/75/815	Feasibility study on the production of gas and chemicals based on coal of Antiquia
IO/CHEM	(32.1.C)	IS/COL/75/021	Exploratory mission to define specific projects in three priority industrial sectors
IO/CHEM	(32.1.H)	IS/COL/74/003	Assistance for the plastics industry
IO/CHEM	(32.1.H)	SI/COL/74/803	Assistance for the plastics industry
IO/COOP	(31.1.C)	AR/COL/76/001	Small-scale appraisal mission to Colombia
IO/COOP	(31.1.D)	DP/COL/81/007	Training in investment promotion
IO/COOP	(31.1.D)	TF/COL/83/001	Training in investment promotion
CPE/REL	(70.3.2)	RP/COL/78/001	Visit of the Minister of Industry to UNIDO

B. The approved and/or technical co-operation projects

IO/IIS/PLAN	J12413	DP/COL/82/016*	Capital goods
IO/IT/AGRO	J13101	UC/COL/86/099	Exploratory mission for wooden bridge construction
IPCT/II/PIF	G01102	DP/COL/83/020*	Investors forum

\* Large-scale project (= total allotment \$150,000 or above).

\*\* Total allotment \$1 million or above.

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