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IN-DEPTH EVALUATION OF UNIDO'S INDUSTRIAL
HUMAN RESOURCE DEVELOPMENT ACTIVITIES

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Country Case Study: TRINIDAD & TOBAGO*

Prepared by the
Evaluation Staff
Office of the Director-General

* This document has not been edited.

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ABBREVIATIONS

ATSGFWU	All Trinidad Sugar, General and Factory Workers Union
CARIRI	Caribbean Industrial Research Center
CARICOM	Caribbean Common Market
CDB	Caribbean Development Bank
CIDA	Canadian International Development Agency
CTA	Chief Technical Advisor
ECHO	Each Community Helping Out
EMBA	Executive Master of Business Administration
IDB	Inter-American Development Bank
IDC	Industrial Development Corporation
ILO	International Labour Organisation
IMF	International Monetary Fund
IPF	Indicative Planning Figure
IRSI	Industrial Research and Services Institution
GDP	Gross Domestic Product
GTZ	Gesellschaft für Technische Zusammenarbeit
HRD	Human Resource Development
MIC	Metal Industries Company
NGO	Non-governmental Organization
NIHERST	National Institute of Higher Education
NTUC	National Trade Union Center
NUGFW	National Union of Government Federated Workers
OWTU	Oilfield Workers Trade Union
SAL	Structural Adjustment Loan (World Bank)
SBDC	Small Business Development Company Ltd.
SOE	State-owned Enterprises
SWWTU	Seamen and Waterfront Workers Trade Union
T&T	Trinidad & Tobago
UCD	UNIDO Country Director
UNDP	United Nations Development Programme
UWI	University of the West Indies
YESS	Youth Enterprise Support System
YTEPP	Youth Training and Employment Partnership Programme

1. SOCIAL ECONOMIC AND INDUSTRIAL CONTEXT

1. An independent republic and a member of the British Commonwealth of Nations, the Republic of Trinidad and Tobago (T&T) consists of two islands: Trinidad (1,864 sq. miles/ 4,828 sq. km.) and Tobago (116 sq. miles/309 sq. km.). It lies just north of the Orinoco river delta in Venezuela. Trinidad is largely flat or undulating except for a range of low mountains in the north and a pitch lake in the southwest, which is the world's largest basin of natural asphalt. Tobago, immediately northeast of Trinidad and is densely forested with large reserves of hardwoods and dotted with natural beaches.

2. Previously a British colony, T&T became a member of the short-lived West Indies Federation in 1958 and independent in 1962. The country has a parliamentary democratic government.

Demographic Data

3. The population of T&T is estimated to be 1,2 million (1990). Only 0.8 million in 1960, it is expected to reach 1.5 million in the year 2000. The annual population growth of 1.4 percent of the period 1960-1990 is thus likely to rise to 1,5 percent during the last decade of the century.

4. In 1960 T&T had all the characteristics of a rural country with an urban population of 23 percent. The profile has changed rather quickly: In 1990 the urban population was 69 percent and is expected to reach 75 percent at the end of the century.

5. T&T has a high literacy rate of 96 percent (1990). The discrepancy between the male and female population is slight: only 1 percentage point in favor of males. This high literacy rate is also corroborated by schooling statistics. The net ratio of primary enrollment is 91 percent for male children and 93 percent for the female. Ninety-six percent of primary school children complete the primary level education; 73 percent of these move on to the secondary level. Gross secondary enrollment ratio for male and female students is 83 and 84 percent, respectively. It is to be noted, however, that secondary technical school enrollment is only 0.8 percent of total secondary school enrollment. Tertiary enrollment ratio is rather low: 6 and 5 percent of male and female population respectively. (All figures refer to 1988 or 1988/89.)

6. The human development index, that combines the indicators of life expectancy, educational attainment, and income, is 0.876 in 1990 (life expectancy: 71.6; educational attainment: 2.58; and adjusted real per capita GDP US \$ 4,905). This index puts T&T among the 47 high human development countries, ranks it second only to Barbados among the independent Caribbean islands, and thirtieth among 160 countries.

Structure of the Economy

Overall Economy

7. From independence to the early eighties the economy of T&T has expanded and grown appreciably while displaying at the same time many characteristics of underdevelopment. Per capita income grew until 1983, but the end of the oil boom signalled an overall decline. In 1989, for example, per capita income was half the 1983 level in US dollars and 86 percent of it in T&T dollars. The impressive 5.5 percent annual average growth rate of 1974-1983 gave way to an annual decline of 4.4 percent during 1984-1989. However, positive rates of growth were recorded in 1990 (0.5 percent) and in 1991 (1.8 percent). Table 1 gives T&T's GDP at constant prices.

Table 1
Trinidad and Tobago: GDP at constant 1985 prices
and annual percentage changes

<u>Year</u>	<u>GDP T&T \$ million</u>	<u>Annual Growth Rate</u>
1985	17,800.7	
1986	17,478.0	- 1.8
1987	16,678.5	- 4.4
1988	16,048.2	- 3.8
1989	15,691.3	- 2.2
1990	15,776.9	0.5
1991	16,061.0 ¹	1.8

Source: The World Bank. Trinidad and Tobago: Policy Agenda for Sustained Development. Washington, D.C., June 23, 1992.

8. Both the exuberant growth rate of the seventies and early eighties and the negative growth until 1990 can be understood within the context of an economy that has continued to display certain structural rigidities. The major structural features include:

- dependence upon a single product (petroleum) as the economy's major export and revenue earner;
- absence of adequate linkages among the sectors and sub-sectors;
- persistently high level of unemployment;
- a high degree of technological dependence;
- substantial state participation in economic activities.

9. It must be added that T&T is a small open economy with limited population and labor force base. Its macroeconomic development will have to be viewed from the perspective of such constraints.

Sectors

10. Sectoral development in T&T has been severely conditioned by the dominance of the petroleum sector. Throughout the last two decades the macroeconomic picture of the country has been dominated by the oil and gas sector whose relative importance has remained basically stable over the years. The significance of the rest of the manufacturing sector has declined somewhat, while the importance of the agricultural sectors has been almost halved (see Table 2). The dominance of the oil sector has subsided considerably after the peak years of the late seventies and early eighties. Today its relative importance is slightly over 20 percent as in the early seventies. However, neither the agricultural nor the manufacturing sector (excluding petrochemicals) have shed their inertia.

¹ estimated

Table 2
Trinidad and Tobago: Economic Structure (1970-1991)
(In percent of current prices)

<u>Sectors</u>	<u>1970</u>	<u>1980</u>	<u>1987</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
Agriculture	4.9	2.7	2.8	2.5	2.6	2.6
Manufacturing	12.1	5.7	8.0	9.2	8.7	9.8
Oil/Gas	22.3	42.8	25.2	27.5	29.5	22.9
(oil production)	(7.8)	(39.9)	(19.7)	(19.5)	(21.4)	n.a.
(petrochemicals)	(1.9)	(0.5)	(1.5)	(2.5)	(2.1)	n.a.
Others	60.7	49.3	63.8	62.3	58.7	64.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: See Table 1.

11. Diversification away from oil has been a priority since the early eighties, but the economy has been slow to respond to the implemented measures. Several reasons are apparent. Firstly, a large absorption of oil revenue resulted in an appreciation of the real exchange rate and a shift of non-oil production towards non-tradeables. Secondly, it created a structure which made exports capital intensive and imports labor intensive. Thirdly, the highly protective trade regime constrained the expansion of non-traditional exports.

12. In order to redress the balance of the economy the Government has embarked upon a medium-term adjustment program in 1987. The program focused on improving the fiscal situation by reducing public expenditures; introducing tax reform; strengthening the management of the public sector investment program; divesting/ privatizing state enterprises; liberalizing exchange and trade controls; and strengthening the Government's social sector policies and programs. This adjustment package was first supported by IMF (stand-by arrangements, January 1989) and subsequently by the World Bank (SAL, 1990).

13. Progress was achieved in several areas. The measures adopted by the Government, coupled with the new Foreign Investment Act, have begun to encourage private investment. The fiscal deficit has declined and the financial system recorded a number of positive developments. The trade balance has also begun to improve. Unemployment, although still high has shown a fall since its peak in 1988, as shown in Table 6. The problem of employment will be dealt with in detail in the section on Labour Force of this Chapter.

Industry and Its Sub-sectors

14. Given the preponderance of the oil and petrochemical sub-sector in the economy, manufacturing activities continue to be relatively unimportant. This trend has been further exacerbated by the introduction of administrative controls at a time when private sector activities were depressed by the economic decline. The most pervasive controls included trade and exchange restrictions, and excessive administration of industrial regulations and incentives. Discretionary duties and tax exemptions, combined with additional charges on imports, have distorted further the incentive framework. Although some of the distortions were removed during 1989-90, most succeeded in stifling the economy's sustained growth.

15. The profile of the manufacturing sector still reflects this distorted industrial structure. Food and beverages, a sub-sector that relied heavily on the import substitution policies of the past, still represents half of the sector's total value added in 1990. The second most important sector, as can be surmised, is chemicals, petroleum, rubber and plastics. This is followed by the metallic machinery sub-sector.

16. The growth by sub-sector has been uneven. Only chemicals and metal machinery have shown some growth (3.2 and 3.0 percent, respectively) during 1985-1990; the remaining sectors basically stagnated or declined. Table 3 gives the details of value added by manufacturing branches and their growth rates.

Table 3
Trinidad and Tobago: Value Added in Manufacturing
by Branch and Growth Rates, 1990

<u>Branch</u>	<u>US\$ million</u> <u>(1985 base)</u>	<u>Percent</u> <u>of total</u>	<u>Growth</u> <u>Rate</u>
Textile, apparel, leather	11.07	3.1	- 0.9
Food, beverage, tobacco	172.59	47.6	1.3
Chemicals, petrol., rubber	59.23	16.3	3.2
Non-metallic minerals	24.85	6.8	0.3
Fabricated metals, mach.	57.91	16.0	3.0
Paper and printing	34.50	9.5	1.0
Basic metal products	-	-	-
Wood & wood products	2.65	0.7	-10.7
Others	-	-	-
Total	362.80	100.0	

Source: UNIDO. Global Economic Data Base.

17. The importance of manufactured goods within total exports (f.o.b) has remained constant, around 10 percent during the past several years.

Table 4
Trinidad and Tobago: Percent of Domestic Exports

Sectors	1986	1987	1988	1989	1990	1991
Fuel	71.9	71.1	59.7	80.8	70.2	66.8
Chemicals	16.0	14.9	21.8	19.1	14.8	17.2
Manufactures	9.4	9.9	18.6	13.8	10.9	11.0
All others	2.7	4.1	0.0	6.2	4.1	5.0

Source: See Table 1.

18. The detailed analysis of the manufacturing sector also shows clearly the heavy dependence on oil-based manufacturing. In 1990, exports of the chemical industry constituted 72.6 percent of total exports of manufactures, while exports of basic metals represented 12.7 percent and food processing 6.5 percent. Exports of all the remaining sectors were only 8.2 percent of total exports of manufactured products (source: UNIDO, Database). Table 5 gives the trade in manufactures in 1990.

Table 5
Trinidad and Tobago: Trade in Manufactures, 1990
(In percent)

<u>Branch</u>	<u>Imports</u>	<u>Exports</u>
Food processing	15.78	6.54
Textiles & apparel	5.27	0.81
Wood & wood products	1.23	0.46
Paper, print., publ.	6.10	0.53
Chemicals	24.28	72.61
Non-metallic prod.	2.40	1.61
Basic metals, iron & steel	7.38	12.72
Mach. & equipment	36.75	4.31
Misc. products	0.81	0.42

Source: UNIDO Database.

19. Location of industries shows a typical agglomeration tendency. Most of the industrial establishments are located either on the east-west corridor which runs in the direction of Port of Spain and Tunapuna or the north-south corridor which runs in the direction of Port of Spain and San Fernando. The determining factors are the infrastructure facilities such as ports (Port of Spain, Point Lisas), roads and the location of oil refineries.

20. There is little information with respect to the informal sector. The overall contention is that it is not an important one.

Industrial Policy

21. The industrial policy in T&T aims to enhance the level of national technical capability and to reduce technological dependence. However, T&T, like many developing countries has not had the benefit of an industrial history to draw upon. As a result, very little of the essential industrial culture was able to evolve. At the same time, the specialized nature of the local industrial development, concentrated as it is in petroleum production, oil refining, and some sugar refining, has seriously affected the development of the broad-based manufacturing industry.

22. The overall goal of the previous government as well as that of the present (Government changed hands as a result of the elections held in December 1991) is to increase the share of industrial production in the economy.

23. The major objectives can be summarized thus:

- Securing a major shift towards production for exports;
- increasing foreign exchange earnings;
- promoting a high level of productivity and efficiency in industrial production;
- enhancing the level of national technological capability and reducing technological dependence;
- improved linkages within industries and between industrial sectors; and
- raising the quality and increasing the availability of entrepreneurship

24. These objectives are to be pursued through policies directed to strengthening the private sectors' participation; developing human resources; and improving infrastructures of the island.

25. Several concrete policy decisions have been taken. Among such decisions, privatization of state owned enterprises (SOES), liberalizing the import regime, the new Foreign Investment Act (1990), Free Zone Legislation (1988) must be mentioned. It must also be pointed out however that at present privatization is moving with at an extremely slow pace. Out of some 60 State Enterprises, only a few of lesser consequence have been privatized. The Free Zone at Point Lisas, is yet to show any meaningful vitality and the Foreign Investment Act still contains regulations that render Trinidad and Tobago uncompetitive for attracting foreign investment.

26. Trinidad and Tobago has a long standing history of providing incentives (including fiscal incentives) to industry. The Industrial Development Corporation (a dependency of Ministry of Industry) which was created some thirty (30) years ago is responsible for administering and granting exemptions. A recent legislation also provided a "one-stop shop" to facilitate the procedures for potential investors. At present however the prevailing perception of the private sector as well as the international lending agencies is such that improvement of the overall incentive regime and of the business environment is a better alternative to the I.D.C's discretionary incentives.

27. It is fair to state at this point of time that the overall policy stands as well as the elimination of persisting regulatory or otherwise obstacles are yet to be tackled by the present Government through concrete actions.

28. The diversification of the industrial sector through implementing some specific measures is also yet to be tackled. The prevailing opinion is that Trinidad and Tobago has comparative advantage in certain agro-industries, such as wood and pulp industry, ceramics, garment and fashion industry and down-stream industries based upon existing energy based industries. These sub-sectors which were identified in "Medium-Term Macro Planning Framework 1989-95" continue to have the same validity with the present Government as they did with the previous one.

29. Nonetheless, the expansion in these sub-sectors do not appear to be of consequence. It is some importance to note here that among the existing obstacles, human resources are not perceived as such. There seem to exist a contention that qualified technical/professional human resources in the country for the expansion of these sub-sectors, with little or no re-training needed. Within the sphere of human resources what appears to be lacking, however, is the entrepreneurial capabilities.

Labor Force

30. Total population of T&T is estimated to be 1.2 million (1990). 492,200 Trinidadians are in the labor force, 36 percent of whom are women.

Table 6
Trinidad and Tobago: Labor Force and Participation
of Women

	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
Population (000)	1,196.4	1,211.8	1,211.5	1,213.5	1,234.4	1,252.8
Labor force (000)	417.7	478.8	476.7	469.1	467.6	492.2
% female in labor force	37.6	33.8	33.9	33.5	34.0	36.0
Employed (000)	390.5	372.2	371.6	365.7	372.8	401.0
% fem. employed	32.5	32.2	33.2	32.3	34.0	33.9
Unemployed (000)	81.2	106.6	105.1	103.4	94.8	91.2
% fem. unemployed	36.7	38.6	36.6	37.3	33.9	44.1
Unemployed as % of labor force	17.2	22.3	22.0	22.0	20.3	18.5

Source: Central Statistical Office.

31. As can be seen from Table 6, female employment has been fluctuating around one-third of total employment since 1986. The percentage of unemployed women among the unemployed has also consistently remained constant at little over one-third until 1990.

32. The basic skewness of the industrial sector is also reflected in the employment figures of the chemicals and petroleum, food and beverages, and metal machinery, which employ (1991) almost 70 percent of the labor force at work (see Table 7). It is to be noted that sub-sectoral employment has remained remarkably stable during the past five years.

33. Considering that the total manufacturing employment index fell from 83.1 to 71.5 (1977 = 100) during 1986 to 1991 period, while the productivity index rose from 243.2 to 335.5 (1977 = 100), one can conclude that there must have been a further move towards capital intensive techniques with the use of higher technology (Central Statistical Office figures are used for calculation).

Table 7
Trinidad and Tobago: Employment by Sub-sectors

Sub-sectors	1987 Total	%	1988 Total	%	1989 Total	%	1990 Total	%	1991 Total	%
Textiles, apparel and leather	3,005	9.8	2,805	9.3	2,708	8.7	2,623	8.3	2,646	8.2
Food, beverages, tobacco	8,200	26.9	8,200	27.0	8,325	26.7	8,420	26.7	8,619	26.7
Chemicals, petroleum, rubber, plastics	5,965	19.5	5,965	19.7	6,110	19.6	6,098	19.3	6,147	19.1
Non-metallic mineral products	1,907	6.2	1,907	6.3	1,838	5.9	1,837	5.8	1,917	5.9
Fabricated metal, machinery, transport equipment	5,900	19.3	5,900	19.5	6,868	22.0	7,113	22.6	7,420	23.0
Paper and printing	2,700	8.8	2,700	8.9	2,650	8.5	2,712	8.6	2,737	8.5
Basic metal products	0	0	0	0	0	0	0	0	0	0
Wood and wood products	1,900	6.2	1,900	6.3	1,818	5.8	1,809	5.7	1,808	5.6
N.E.S.	0	0	0	0	0	0	0	0	0	0

Source: UNIDO Database

34. The gender distribution of employment and unemployment in the industrial sectors are given in Table 8.

Table 8
Gender Distribution of Employment and
Unemployment (1991) in Industrial Sub-sectors

<u>Sectors</u>	<u>Employed (%)</u>		<u>Unemployed (%)</u>	
	Male	Female	Male	Female
Textile, apparel, leather	28.8	71.2	12.4	87.6
Food, Beverage, tobacco	64.0	36.0	47.6	52.4
Petroleum	88.8	12.2	95.0	5.0
Paper and Printing	63.9	36.1	38.1	61.9
Wood and Wood Products	98.2	1.8	76.2	23.8
Chemical and non- metallic	70.8	29.2	73.2	26.8
Others	79.9	20.1	63.5	36.5
TOTAL	74.5	25.5	64.0	36.0

Source: Worksheets provided by Central Statistical Office

35. As can be seen from the above table, wood and wood products and petroleum sectors are the most heavily male employment sectors, while the textile and apparel sector indicates a heavy female concentration. The overall picture however indicates that for every employed female there are three (3) males, while the unemployment picture is rather different. The ratio seems to be 2:1.

36. The relative importance of gender by major occupational group is given in Table 9.

Table 9
Occupational Groups and Gender in Industry (1991)

<u>Occupational Groups</u>	<u>Male(%)</u>	<u>Female(%)</u>
Professionals	58.0	42.0
Technical and Associate Professions	49.7	50.3
Clerks	28.5	71.5
Service Workers	56.3	43.7
Craft and related workers	87.3	12.7
Plant & Machine operators	91.1	8.9
Elementary Occupations**	68.6	31.4
TOTAL	63.4	36.6

* Industry includes manufacturing, construction, transport and services.

** Includes not stated occupations.

Source: See Table 8.

37. As can be seen from the above table, there is a heavy concentration of female labor force in the clerk category while in the gender distribution of technical and associate professionals the gender distribution seems to be rather even. All other categories are male dominated in varying degrees.

38. Employment and unemployment in occupational categories and educational levels are given in Tables 10 and 11 respectively.

Table 10
Distribution of Employment and Unemployment
in Occupational Categories in Industry* (1991)

<u>Occupational Categories</u>	<u>% of</u> <u>Employment</u>	<u>% of</u> <u>Unemployment</u>
Professionals	4.2	4.5
Technical Associated Professions	10.2	8.0
Clerks	12.6	18.3
Service Workers	14.4	21.6
Craft and related workers	17.9	18.8
Plant and Machine Operators	11.5	10.5
Elementary occupations **	29.4	28.7
TOTAL	100.0	100.0

* See Table 9. ** See Table 9.

Source: See Table 8.

Table 11
Employment and Unemployment in Industry
and Educational Attainment, 1991

<u>Educational Level</u>	<u>Employment %</u>			<u>Unemployment %</u>		
	Male	Female	Total	Male	Female	Total
Primary Education	42.8	41.2	41.4	40.5	43.6	41.6
Secondary Education	54.1	55.3	55.5	53.1	55.4	56.4
Tertiary Education	3.1	3.0	3.1	4.2	0.0	2.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Source: Table 8

Several inferences can be drawn from the above two tables.

39. First of all, the highest two categories, i.e. Professionals and Technical, constitute 14.4% of the total employed in the industry. Secondly, the unemployment is lower in these categories compared to other occupational groups. Thirdly, gender does not seem to have any bias one way or another with respect to the employed or unemployed. What is important, however is to note, as the fourth point is that at the tertiary educational level unemployment is the lowest for both sexes and that women with tertiary education do not seem to suffer from the unemployment syndrome. Lastly, it is evident that while among the employed, secondary education seems to be prevalent, so it is among the unemployed. However those who have secondary education *cum* technical and vocational training constitute 65% of those employed with secondary education but barely 50% of the unemployed. It must be added in this context that there is a bias towards men in the professional/technical category, in the sense that only 23% of the total employed in this category are women with university education.²

²Based on the unpublished data provided by the Central Statistical Office.

40. Employment prospects in the manufacturing sector are relatively good especially in the non-government paid employee category, even now that it has once again returned to its growth path.³

41. Several additional comments with respect to the labor force are in order here. One of the important safety valves for unemployment is emigration. USA and Canada receives the majority of emigrants (90%). The latest statistics indicate that approximately half of those emigrated were unemployed; 9% were in the occupational category of production workers and only 6.9% were professional, technical and related workers.⁴

42. There is no information on the distribution of workers between the formal and informal sector. About the size of the informal sectors, opinions vary. The estimates are between 10% and 30% of the labor force being in the informal sector.⁵ Information is also absent with respect to the size of firms measured by the number of employees.⁶

Women in Industry

43. As can be discerned from the Tables 9 and 10, women participate in industrial employment rather appreciably in global terms. However, the occupational distribution yields a somewhat different picture. Within the group of professionals, women constitute 41.0% of the total. In technicians and associate professionals women hold 50% of the jobs, while they are employed much more widely as clerks: slightly over 70% of the clerks (and related professionals) are women. On the other hand, the male dominance is evident among craftsmen and machine shop operators (women constitute 12.5 and 8.8% respectively). Among the service workers the ratio is slightly in favor of male workers.⁷ While the ratio within the category of professionals does not indicate a heavy bias in favor of men, Trinidadian society still considers employment within the craftsmen and machine operators as "male-jobs".

44. The Government pays special attention to the affairs of women through the Ministry of Community Development, Culture and Women's Affairs, which aims to co-ordinate the legislation which affects women directly. The division of the Ministry which deals with women affairs, however, is at present considerably understaffed and consists of only two professionals.

45. There is one major NGO, Women's Resource and Research Center, which provides information and services specifically to the female labor force. The Center also provides training especially directed to the lowest skill levels. CIDA and the Netherlands Government have contributed some funds to the Center. The Center also expects to act in the future as a pressure group for better protection of women in the work place.

46. One cannot detect any specific discriminations against women within the existing legal framework. Certainly neither the Government nor the large enterprises practice discrimination, at least openly. Nevertheless, in small enterprises and in the informal sector the absence of an enforcement of legislation to protect women is seriously being debated.

³ See Ministry of Planning "Bi-Annual Labor Market Information Study" Vol.1, no.2, 1990, page 11

⁴ See *ibid* page 45. The above percentages are based on a total emigration of 3,108 persons during the period of 1986-1988.

⁵ Measured indirectly 16.9% of the workers are "own account workers" excluding professionals. See Ministry of Planning "Bi-Annual Labor Market Information Study", Vol. 1, no.2, table xiii. The data refer to 1986-1988 average.

⁶ Based on assets it is estimated that some 75% of the firms can be classified as small or medium-sized enterprises.

⁷ Calculated from the unpublished data provided by the Central Statistical Office.

2. THE WORKING ENVIRONMENT OF INDUSTRIAL ENTERPRISES

47. This Chapter gives a brief account of the public and private sector organizations which have direct or indirect relation to industrial HRD. It also attempts to indicate the linkages (or the absence thereof) among the organizations reviewed here. It does not pretend to be all encompassing. Some institutions are left out since their involvement with industrial HRD was considered tangential.

Government

48. Trinidad and Tobago is a constitutional democracy. There are two major political parties. The President represents the state and the Prime Minister heads the Government. There are nineteen (19) Ministries, and several statutory bodies. Three Ministries are directly involved with HRD. The **Ministry of Planning and Development** is entrusted with overall macro-planning, including human resource planning. Planning in T&T is only indicative. It basically sets up the parameters within which public and the public sectors are expected to operate. The Ministry's is directly involved with HRD through the University of the West Indies (UWI). Since all statutory bodies are attached to a Ministry, UWI's ultimate authority is the Ministry of Planning and Development.

49. The **Ministry of Trade, Industry and Tourism** is directly involved with industrial HRD, as a number of important statutory bodies are either directly or indirectly attached to it. One statutory body is the **Metal Industries Corporation (MIC)**. As its name suggests MIC is a corporation in which the Government is the major shareholder via the **Industrial Development Corporation (IDC)**. Hence, IDC carries a dominant role through MIC's Board of Directors. In turn, IDC is responsible to the Ministry of Industry (see below). The mandate of MIC is to train technicians and engineers and provide diverse services to the local manufacturing sector. The Company receives Government grants for its training activities which are organized in units. These are: **Tool and Metal Product Development Unit; Mold and Plastic Development Unit; Tool Manufacturing Unit; and Maintenance and Repair Unit**. The length of training courses is determined by the educational level of trainees. MIC is considered as the single most significant training institution of its genre, and its graduates are regarded very highly. Unemployment is very rare among its graduates.

50. IDC is another arm of the Ministry of Industry which is in charge of industrial development in general and the management of fiscal incentives and tax holidays in particular. IDC is not directly involved in industrial HRD; however it liaises with the Ministries and statutory bodies involved in HRD and holds occasional seminars/workshops for training on internal need basis.

51. Another statutory body under the umbrella of the Ministry of Industry is the **Small Business Development Company Limited (SBDC)** set up in 1990. Its total capital is T&T\$7 million, 5 million of which is provided by the Government. Its recurrent cost is basically underwritten by the Ministry of Industry (T&T\$ 2 million), and the corporation is expected to generate about T&T\$ 1 million from its own operations. The overall mandate of the corporation is to promote rapid development of small and medium businesses in all sectors. The corporation provides loan guarantee plans; business advisory services; training programmes and information. Its training activities are concentrated at present in offering short workshops/seminars in the areas of record keeping, cash management, accounting, and marketing.

52. The **Ministry of Education** is in charge of education in T&T, except higher education. All primary and secondary education, including technical and vocational education, is this Ministry's responsibility. The educational system in T&T is rather complex. It still carries certain norms and examination systems which resemble the British educational system. The full description given in the next chapter related to technical and vocational education must, therefore, be understood with this context.

53. The **Ministry of Sport and Youth Affairs** administers five (5) youth camps and seven (7) trade centers. Training given in the youth centers is at the basic vocational level which prepares assistant

craftsmen who join the labor force after graduation. Those who elect to supplement their training can go to technical schools (certificate level) on a part-time basis while working. Trade centers are designed to train the youth who have little or no education for the building industry.

54. The **National Training Board**, which is composed of fourteen (14) members, serves as an advisory and consultative body to the Ministry of Education. Of the fourteen (14) members five (5) come from the industry, seven (7) from the public sector, and two (2) from labor unions. They are appointed by the Minister for unspecified terms. The Board emits opinions on a variety of matters. However, the Board so far has not really entered into areas such as human resource planning and coordination. A new body in lieu of the Board is now under consideration. The present Government is very likely to set-up a **National Training Commission** whose mandate will be to co-ordinate all training activities related to HRD and will possibly report directly to the office of the Prime Minister.

55. At present two institutions related to training and education are attached to the Prime Minister's office. The **National Institute for Higher Education, Research, Science and Technology (NIHERST)** is a *sui-generis* organization and serves as a local co-ordination point for international assistance related to research, development, science and technology. It is governed by a seventeen (17) member board of directors who represent both the private and public sector. The board is responsible to the **Office of the Prime Minister**.

56. NIHERST operates in three specific mandate areas. One is training where NIHERST operates four college programmes which are: a language training programme with emphasis on training the business community in Spanish; an allied health sciences programme with emphasis on training industrial laboratory technicians, food and nutrition technicians, and environmental health technicians; a college level associate degree programme in nursing; and an information technology programme (set-up in 1989 with UNIDO's assistance) which provides short courses for training up to "higher national diploma level".

57. The second mandate is to provide research and training facilities at post-graduate levels. In this area, the **Caribbean Industrial Research Institute (CARIRI)** develops indigenous science and technology and research and development capabilities in the country. As will be detailed in the next chapter, CARIRI also carries out training activities of various sorts including training in high levels of technology. The third mandate area is the popularization of science and technology.

58. Within the Prime Minister's Office, a Minister without portfolio is entrusted to co-ordinate all public sector activities related to science and technology. At present NIHERST and CARIRI report to his office.

59. Several conclusions can be drawn from the above. Firstly, there is no single body in T&T who is in charge of technical and vocational training, although the Ministry of Education carries out the major, but not the exclusive responsibility. Secondly, although the Ministry of Planning assesses the overall situation of education and training in T&T, there is no single body that co-ordinates technical and vocational training and much less overall HRD. (See, for example, **National Planning Commission, Medium-Term Macro Planning Framework 1989-1995**, pp 137 ff). Thirdly, as was discussed in the previous Chapter, T&T is taking serious steps towards restructuring and liberalizing its industrial sector. Yet, there is no comprehensive manpower and training policy parameters or plans emerging at present. Also, although the Government is committed to reorganize and redeploy its human resources, no concrete policy directives and implementation policies have emerged as yet.

60. Due to such dispersion of training functions it is rather difficult to estimate accurately the public sector financial resources allocated to industrial HRD. As an indication this report notes that in 1991 the total expenditures for technical and vocational education within the Ministry of Education amounted to T&T\$ 3,791,680. This amount represents 0.45% of the total budget of the Ministry; in turn the Ministry's budget is 12.8% of total recurrent expenditures.

Industry Organizations

61. The private sector appears to be organized along traditional lines. The **Trinidad and Tobago Chamber of Industry and Commerce** is the oldest establishment, and its membership extends to all sectors. It acts as a pressure group and a focal point in the Government-private sector dialogue. It holds seminars/workshops for its members; but such activities are more for information dissemination and private sector position stands, rather than for any specific training.

62. Another private sector organization is the **South Chamber of Industry and Commerce**, located in San Fernando. It draws its membership from the enterprises whose activities are either directly or indirectly linked to the Petroleum industry.

63. A third organization is **The Employers' Consultative Association of Trinidad and Tobago**. The Association is more of a consultative and training body, rather than a typical employers' association. It offers professional development training programmes in the areas of management, small business development, and women's affairs. It also provides technical assistance to its members in labor legislation, collective bargaining and related labor issues and represents its members in a number of regional and international associations. The Association's funds come exclusively from private sources and the sale of services.

Workers' Organizations

64. T&T has a fairly long history of labor movement which goes back to pre-World War II. The ideological tenets of the movement originally were anti-colonialism and diminishing poverty. The unions continued to grow after the war and especially during the oil boom period. At present they represent a political-economic power which cannot be overlooked.

65. There are (5) major unions:

- National Union of Government and Federated Workers (NUGFW). This union claims to have approximately 30,000 members. The membership is prevalent among unskilled and semi-skilled Government workers, public utility workers and laborers of the Ministry of Works and Transport.
- Public Service Association (PSA) is the union of permanent Government employees. Its membership is estimated around 12,000.
- Seamen and Waterfront Workers Trade Union (SWWTU) has an estimated membership 6,000.
- All Trinidad Sugar, General and Factory Workers Union (ATSGFWU) is especially strong in the agricultural sector. The union claims a membership of 9,000 workers.
- Oil field Workers Trade Union (OWTU). This is a strong and well organized union with a membership of about 10,000.

66. In June 1991, the above mentioned unions formed an umbrella organization called the **National Trade Union Center - (NTUC)**. The Center does not extend its individual membership to workers. Its main objective is to coordinate the activities of the member unions.

67. Neither the NTUC nor the unions are engaged in technical and vocational training. Occasional seminars/workshops are held, however, which deal with union matters in the workplace and on job opportunities. OWTU holds seminars from time to time dealing with the specific issues related to women.

Banks and the Financial Sector

68. There are eight (8) commercial banks operating in T&T; all, but one, are locally controlled. The ready availability of petro-dollars during the boom years have also permitted the establishment of non-banking finance houses which offered high rates of interest and attracted considerable deposits. One such house collapsed, however, in 1984; this led the Government to impose tight controls over them via the Central Bank. A Stock Exchange was established in 1981. Share trading was suppressed during the recessionary years; however, the share market gained some vitality in 1990 and 1991.

Suppliers and Customers

69. Industrial enterprises negotiate with domestic and foreign suppliers and customers. There are no state supply and marketing boards. Imports are subject to foreign exchange regime which has been considerably eased since 1988. The Government has eliminated most restrictions on import payments under the IMF agreement of 1990. Again, as part of its IMF programme, the Government has gradually eliminated quantitative restrictions on imports (known as the "negative list") that competed with local manufactured goods.

70. T&T is a signatory of the Caribbean Common Market, the Lomé Convention, and beneficiary of the Caribbean Basin Initiative. The bulk of its trade continues to be with the USA, although trade with CARICOM countries is of particular significance. Exports of petroleum products has given T&T a persistent surplus with the other countries notably with Barbados and St. Lucia. T&T has always represented the most important country within CARICOM, and also the most vociferous for trade liberalization within CARICOM.

3. INDUSTRIAL MANPOWER DEVELOPMENT

Introduction

71. As stated in Chapter 2, Trinidad and Tobago's technical education is developed mainly by the Ministry of Education and the Ministry of Youth Affairs up to the tertiary non-university level. All certificates related to these technical courses are issued by the National Training Board.⁸

72. The Ministry of Industry, the Ministry of Planning, the Ministry of Labor and the Office of the Prime Minister are also somehow involved in scientific and/or technical education of special types. A diagram of the system is shown in Annex 6.

73. The School of Engineering of the University of the West Indies, is located at the St. Augustine Campus, Trinidad Island. This campus is supported by the T&T Government through the Ministry of Planning, even though the University itself is a fully independent body.

74. Moreover, there are formal and informal technical training and managerial courses which are taught by some state and private organizations, as will be indicated in this report.

75. As previously mentioned, Trinidad and Tobago is an interesting country to analyze because it has a large per capita income compared to most developing countries, and, moreover, with an educational system based on the British system, altogether different from the prevailing systems in Latin American countries.

EDUCATION SYSTEM

A. Technical Education

Ministry of Education

Full-time technical education system (Secondary and Tertiary levels).

76. The country's state educational system provided by the Ministry of Education is organized as follows:

<u>Alternative A:</u>	Traditional secondary school system
<u>Alternative B:</u>	New secondary school system - Composite
<u>Alternative C:</u>	Technical Secondary Schools
<u>Alternative D:</u>	Technical (Vocational) College- Non-Full Secondary Level
<u>Alternative E:</u>	Full-time apprenticeship

77. Alternative A allows for "O" level Certificate. Outstanding "O" level students may enter the two year pre-university courses. Should they succeed an "A" level certificate it allows admission to the Faculty of Engineering, at the University of West Indies (UWI) as well as other universities.

⁸ The National Training Board comprises of: The National Examination Council; The Curricula Development Unit; The School of Supervisors; The Manpower Research Unit; The Occupational Research Unit.

Alternative B allows for "O" level and "A" level certificates.

Alternative C (and also B) allows for admittance to the tertiary, non university Vocational (Technical) Colleges of San Fernando and Jhon S. Donaldson.

In theory both "A" and Tertiary Technical Certificate should be equivalent for admittance to the Faculty of Engineering (UWI).

Part time

Alternative F: Career Orientation - Part time

Ministry of Sport and Youth Affairs

The Youth camps and Trade centers under this ministries are explained in Chapter 2 in the Section "Government".

Y.T.E.P.P. - Youth Training and Employment Partnership Programme

78. This programme originated as an effort to find solutions to the existing barriers for youth employment. The Ministry of Education provides formal school-system infrastructure (premises, equipment) to the YTEPP programme, while the Ministry of Youth provides financial support. As of 1991, the World Bank granted the T&T Government a loan for supplying equipment to the YTEPP programme. YTEPP emphasizes mostly on hand- tool training since these are the tools that will be used by the self-employed.

79. The YTEPP programme, in our opinion, emphasizes self-employment as a method of increasing employment (which does not necessarily mean micro-enterprises). Many of the skills taught by the YTEPP programme are in the services area (non-industrial conventional sector), which may give rise to informal self-employment. Actually, this is one of the major problems which in our opinion have risen in developing countries, where public sector restructuring and opening up of the economy are currently taking place.

Ministry of Industry

Under the sponsorship of the Ministry of Industry, there are formal technical courses at the Metal Industries Company Limited (MIC).

80. MIC undertakes special training activities, where the company (60% state and 40% privately owned) is used as a key instrument to the country's industrial development.

81. It is important to emphasize that even though MIC trainees have access to advanced technical equipment, they only represent 5% of the total Technical Vocational Education system. The average number of graduates for the five-year full-time course is 35/year, and for the evening course 250/year.

Other Training Programmes

82. In relation to the large number of major employment Government programmes, mainly administered by the Ministry of Labor, there are three special employment programmes related to other Ministries which bear training components:

- a. ECHO - Each Community Helping Out

b. Youth Employment Schemes

b1. AIM - Apprenticeship for Industrial Mobilization

b2. YESS - Youth Enterprise Support System

Technical Education - Office of The Prime Minister - Ministry of Science and Technology

Please see information under Chapter 2.

General Comments on Technical (Non-University) Enrollment (Annexes 8 and 9)

83. Even assuming that all enrolled first-year students will graduate from these technical (vocational) schools, the number of graduates is very small (less than 1 out of 1000 of the population per year). It is worth comparing these figures with total student enrollment in the county for primary and secondary schools, shown in Table 3.1 for the 1988/89 academic year in absolute figures, and in Table 3.2 as percentage of primary enrollment. (Data elaborated from Ref. 2)

Table 3.1

Number of students enrolled at elementary, secondary and Technical/Vocational schools
1988/89 academic year

<u>Primary School</u>	<u>Secondary School</u>	<u>Technical/Vocational</u>	
All ages from age 5	Traditional, Assisted, junior and senior	Technician courses	Craft courses
<u>186,189</u>	<u>91,811</u>	<u>1,765</u>	<u>2,470</u>

Table 3.2

Percentage of enrollment in relation to primary school enrollment⁹.

<u>Primary School</u>	<u>Secondary School</u>	<u>Technical/Vocational</u>	
All ages from age 5 - corrected	Traditional, Assisted junior and senior	Technician courses	Craft courses
<u>100 %</u>	<u>54%</u>	<u>1.04%</u>	<u>1.45%</u>

From Table 3.2, a combined value of 2.49% for both craft and technicians is obtained.

B. The Science and Technology System - Higher Education

84. As already commented in Chapter 2, apart from the University, in T&T there are two organizations dedicated to the development of Science and Technology: CARIRI - Caribbean Industrial Research Institute and NIHERST - National Institute for Higher Education, Research, Science and Technology.

⁹ A correcting factor of 0.91 was applied to primary school enrollment in order to consider amount of population and literacy growth. (Total corrected primary figure is 169,432).

CARIRI

85. CARIRI is a classical Industrial Technology Research and Services Institution (IRSI). It was created through a United Nations (UNDP/UNIDO) programme aimed at assisting the industry. It is located at the St. Augustine Campus. CARIRI offers its services to the Caribbean region.

86. As an IRSI, it develops training courses, usually post-graduate level, either to university graduates, potential entrepreneurs or to people who are already in business. There are no marketing, financial or business management courses in CARIRI since they are offered in other organizations. CARIRI emphasizes on :

- Food industry (canning, food preservation, production improvement)
- Technology management
- Production
- Quality courses

87. CARIRI offers quality expertise management and has a vast programme in quality training. This programme is now supported by the World Bank, in addition to the technical assistance of the former American Bureau of Standards. Its major objective is to have CARIRI, (and the industry afterwards) achieving full understanding regarding the concept and application methodology of the ISO 9000 standards.

National Institute for Higher Education, Research, Science and Technology (NIHERST)

88. Of the four main NIHERST education activities, the Information and Technology Unit (College) should be singled out due to its relationship with industrial HRD. Nevertheless, some research work carried on by NIHERST's Science and Technology Division, which may also be considered as related to industrial HRD.

89. NIHERST, after identifying national priority areas, seeks for senior researchers with experience in the chosen areas. Encouragement is given in order to have such senior scientists accept post-graduate assistants to teach and train them on a non-formal basis. An interesting area is the bio-control of froghoppers on sugarcane and the viral control of lepidopterous on vegetable crops.

90. Out of the total NIHERST budget of T&T\$ 11,262,000 for the year 1991, only T&T\$ 1,000,000 was allocated to the Science and Technology Division. Besides, it seems that the Division is severely understaffed. NIHERST will have to reappraise its fund-allocation policy in order to give the Science and Technology Division the possibility of undertaking relevant basic and technological research.

C. The University

Faculty of Engineering

91. Even though many Mathematics, Physics, Biology and related courses are taught in other UWI Faculties, e.g. Faculty of Natural Sciences, only the Faculty of Engineering will be considered in this review since it is the only directly related to the Industrial sector. Other Faculties, however, will be considered for post graduate and managerial courses.

University/Industry Interaction

92. The teaching at the Faculty of Engineering is driven by the goal of trying to maintain the level required by the Institute of Engineers of the United Kingdom, to which the Faculty of

Engineering is affiliated.

93. The Faculty has good professors, many of them with Ph.D degrees, endowed with sound skills for teaching and research. Research is driven by the wish to have results published in top-level international journals. However, interaction with local industries is weak. This situation is acknowledged not only by the industry, but also by the Faculty.

94. The Faculty of Engineering is currently trying to change its attitude and looking for more interaction with the industry. For instance, the Faculty is establishing joint teams from Faculty and industry to develop industry-needed instrumentation up to marketing.

95. University/industry interaction has to cope not only with the University's academic mentality, but with industry's 'non-confidence' in the University. It is generally felt that the University is too slow, too bureaucratic and too academic to really help industry. Again, this a common attitude in many developing countries. Unfortunately, it derives from lack of a clear understanding on how knowledge and productive skills are part of a 'cultural state'. If this fails to be well understood, there is no way to fill the gap between the academic and productive worlds.

General Comments

96. It is interesting to compare Trinidad and Tobago student registration in the first (B.Sc.) and higher (M.Sc, Ph.D.) degrees at the University of the West Indies, St. Augustine campus by faculties, and other campuses, as well as graduates, for the period 1984/85 to 1988/89.

97. According to Annex 3, 84% of Trinidad and Tobago's university students who registered for lower degrees at UWI, did so at the St. Augustine Campus in the 1984/85 academic year, while 88% did so in the 1988/89 academic year. For higher degrees, the relationship shifts from 90% to 93%, respectively.

98. It is also interesting to consider engineering registration with respect to the number of Trinidad and Tobago students registered at the University of the West Indies (UWI). It ranges from 12.9% in the 1984/85 academic year, to 11.9% in the 1988/89 academic year, for the lower degrees. The Engineering registration ratio to the total student registration ratio for higher degrees is 34.4% for the 1984/85 academic year, and 29.7% for the 1988/89 academic year.

99. Comparing the student registration ratio in 1988/89 with 1984/85 academic years for the total T&T students registration at the UWI, for lower degrees at the Engineering Faculty and for higher degrees at this same Faculty shows:

The figures are as follows :

Total registration ratio	:	1.09
Total higher-degree registration ratio	:	1.78
First Engineering degree registration ratio	:	0.96
Higher-degree Engineering registration ratio	:	1.54

100. If comparisons were made for graduate students, BA or BSc or BA & BSc from the UWI at the St. Augustine campus, and for the Engineering Faculty, the following figures would be obtained:

Total graduates at UWI	:	388 in 1980
St. Augustine	:	433 in 1985
	:	536 in 1989

101. The ratio of Engineering graduate students in 1989 with respect to 1985 is 0.9, while it is 1.09 with respect to 1980.

102. It is possible to conclude that there is no significant increase in the yearly number of Engineering graduates during a 10-year period. However, there was a significant proportional increase in the registration for higher degrees in Engineering.

D. Private Sector Education

Government - Assisted

103. As previously mentioned, there is almost no formal private secondary, tertiary (non-university) and university education system in fields related to Industrial Human Resource Development in T&T. There are, however, many primary and secondary schools that receive government support but are run by non-governmental organizations.

104. An idea of the importance of the non-public, confessional education sector is shown in Tables 3.4 and 3.5, elaborated from information in Reference 2, Annual Statistical Digest No. 37, 1990.

Table 3.4

School enrollment in government and government-assisted, mostly confessional, primary schools: 2 years infant, 7 years standard primary school

<u>Total</u>	<u>Government</u>	<u>Government Assisted</u>
186.189	55.241	78.518

Table 3.5School enrollment in government and government-assisted, mostly confessional, secondary schools, for the academic year 1988/89

<u>Total</u>	<u>Government</u>	<u>Government Assisted</u>
91,811	73,537	18,274

Private (Technical) Education Sector

105. Under private school it is included any school registered and approved by the Ministry of Education though provided for and maintained by private persons or authorities other than the State. Available information on the private sector is poor. However, from Reference 3 (Bi-annual Labor Market Information Study, Vol.1, No. 2 1990 - Social Sectors Unit, Ministry of Planning and Mobilization), for the 1988/89 academic year, is evident that private technical education is not relevant in T&T.

106. It is possible to consider as private sector training carried out by private companies, which, fulfilling the requirements of the National Training Board, are certified as "masters" by said Board.

107. Besides the previously mentioned training courses, there are others organized by:

- The Small-Business Association
- The Employers Association
- The Unions
- Public sector companies
- Women's Association

University Level

108. There is no private university level institution in Trinidad and Tobago. Only at post-graduate level there are some courses undertaken in cooperation with the private sector.

E. Professional and Management Development**At the University**

109. It is generally accepted that T&T lacks sufficient skilled managers. In the Engineering-based industry, managers tend to be engineers. However, these graduates do not get formal training in business management at the Engineering courses, even though they may take short, *ad hoc* courses on related subjects. The University realizes that this a real problem and is trying to solve it.

Private Sector

110. There are many private institutions that offer courses in Management which are affiliated to overseas institutions, e.g., Brunel, U.K. These private institutions grant certificates in management. Hence, there is strong competition with University courses.

Management and Business Courses

111. As stated above, there are many management and executive basic and upgrading courses. A considerable number of such courses are taught by private organizations and consultants. There are, however, three main organizations related to the Government, the University and the Private Sector, involved in management and business courses. These are:

a. The Business Institute

This institution is affiliated to the UWI, and its Board includes representatives from the Private sector, the Faculty of Social Sciences and the Faculty of Engineering.

b. The Management Development Center

This is a full-Government agency.

c. The Department of Management Studies

It is located at the Faculty of Social Sciences, in the St. Augustine campus, UWI.

112. **The Business Institute** originated as an initiative of large corporations based in T&T. It can be said that the Business school is a joint venture between the private sector and the University.

113. The Board has representatives from the private sponsors, and from the UWI through the Faculty of Engineering and the Faculty of Social Sciences.

114. The Institute offers the following courses:

- a. Executive Master of Business Administration (EMBA)
- b. In-house consultancies
- c. Executive development programmes

The main characteristics of these courses are:

- a. The EMBA Certificate is granted by the UWI, Department of Management Studies.

The EMBA certificates is intended for people already in business, generally University graduates. However, the Institute will consider students on a case-by-case basis, since experience may be considered as a substitute for the University degree.

- b. In-house consultancies.

These are specifically-designed courses in compliance with a company's request. Programme contents and duration are therefore variable.

- c. Executive Development Programmes.

These are 3 to 5-day courses, experience indicates that attendants are mostly executives sponsored from small and medium-sized companies, as well as private individuals.

General Comments

115. The need for Management (Executive) preparation or improvement, at all levels of responsibility (top and medium management), was referred to by many interviewed people as a top priority in T&T. There was no agreement, however, on how to cope with this problem. In fact, some companies rely mostly on their own in-house upgrading programmes, either by hiring teachers or sending their people to take courses overseas. Some companies have own training activities for their executives.

116. In previous UNIDO studies, it was found out that in many developing countries there is a need for the University to be involved in everyday business life. This is being attempted through joint university-enterprise organizations, such as the T&T Business Institute where the University involvement is also usually made through the participation of the engineering and business (or

equivalent) schools. In T&T this seems to have taken place through two stages:

- i) An initial stage, establishing the EMBA (Executive Master of Business Administration) and the other courses and programmes at the Business Institute, looking for the industry private owned sector participation.
- ii) A second stage where the Department of Management Studies of the Faculty of Social Sciences is implementing its own post graduate programmes.

Even when there are differences between the planned higher degree programmes at the DMS and at the Business Institute, there is a risk for both organizations to overlap.

F. Financing of the Educational System

117. As was previously stated, most of the educational system is government-supported. At the university level, students from St. Augustine campus are charged very small fees (US\$ 30/40 per year). The University is trying to raise these fees. The mission learned that the University is obtaining loans - due to shortage of resources - to support its operational deficit. As a result, the University is now in a delicate financial situation. The mission was unable to obtain reliable data on costs per student in many educational levels. However, the following unofficial figures were obtained.

EMBA Business Institute

118. The fees are T&T\$ 20,000/year (US\$ 4,760/year). Assuming that these fees are sufficient to reimburse for the Business Institute operational expenses and taking into account that the Institute does not pay for all the UWI facilities it employs, the T&T\$ 20,000/year should be considered a lower limit for most of the university student/year cost.

119. Despite the fact it was impossible to obtain exact figures for the Faculty of Engineering, two figures were mentioned to us :

- a. T&T\$ 20,000/year (US\$ 4,706/year)
- b. T&T\$ 40,000/year (US\$ 9,412/year)

120. The first figure was supplied by a source which seemed to be most reliable. Should that be the case, assuming a 17% dropout and an average of three and half years for a BSc degree, the total cost for a lower degree graduate in Engineering amounts to T&T\$ 81,100 (US\$ 19,270). In the second case, the total graduate cost amounts to T&T\$ 163,000 (US\$ 38,540).

121. For the secondary and technical/vocational education system, the following information was either obtained from an unofficial source or computed from data collected from the Tables of this report, and the "T&T estimates for the year 1991, Ministry of Finance, 1991".

MIC

Cost of a full time student: T&T\$ 9,000/year - (US\$ 2,118/year)

Cost of a graduate (5-year course assuming a 25% dropout): T&T\$ 56,250 (US\$ 13,235)

Cost of secondary school education

122. Average cost per student: T&T\$ 2,494/year (US\$ 587/year).

Average secondary school graduate (assuming a 30% dropout and a 5-year course): T&T\$ 16,211 (US\$ 3,814)

Technical (Vocational) Full-Time

123. Average cost per student: T&T\$ 7,000 (US\$ 1,647)
Average graduate cost (assuming a 30% dropout and a two and a half-year course): T&T\$ 22,750 (US\$ 5,353)

For the YTEPP programme

124. Cost per student for a one-year cycle: T&T\$ 1,176/year (US\$ 277)

General Comments

125. From the above figures, if EMBA and MIC are taken as reference, it can be concluded that: T&T should spend at least US\$ 2000/year for a full-time secondary (technical) student, and at least US\$ 8000/year for a lower degree student at the Faculty of Engineering (twice EMBA) provided some equipment upgrading and materials shall be made available to students. Should this not be the case, more and more academic - theoretical - instruction will be provided to both secondary (technical) and university level students. The question is: How long will T&T be able to maintain the current tuition-free technical education system, while simultaneously allocating the required amount of funds, in order to avoid providing obsolete training? Should T&T be unable to do so, the system will collapse and it shall not be able to supply industry with the well trained IHR it shall need in order to compete in an open market economy.

G. Infrastructure and Reform of the Technical Education System

126. As commented in Chapter 2, the T&T Government is aware that it must introduce major modifications to the current technical education system in order to make it more realistically related to the market. The Government has appointed a "National Training Commission", which outlined a proposal to reform T&T's technical education system, presently under consideration by official authorities. The mission could not analyze the entire proposal.

127. The National Training Commission is planning a reform of the Technical Education System. Among its main features, the Commission will apparently function under the Ministry of Education, though as a Statutory body. It will have freedom to collect funds and hire teachers. If the new system is adopted by the Government of T&T, the National Training Board will be part of the National Training Commission.

128. We have analyzed on this T&T revamping of the Technical Education System since it seems to be a common denominator throughout developing countries. Faced with the new open market industrial policy, governments realize that their technical education system is sadly out of step with the times. UNIDO, despite having been so highly involved in the MIC experience, has not participated, nor was asked to participate, in this study.

129. Another aspect is the training facilities themselves. From school visits and previous knowledge by the mission, it seems that, save for CMI, most of the schools' equipment was obtained prior to 1970. (John S. Donaldson included; San Fernando was re-equipped 15 years ago.) Twenty year-old equipment was probably not considered a serious problem up to the 1960's. Yet everything changed so substantially with the micro-processors revolution, that T&T, as most developing countries, is now facing the burden of having to invest in modern equipment if technical schools are to keep pace with the new technical knowledge.

130. The mission learned of a proposal to have industrial enterprises accept school students (Compulsory) as trainees in their premises, under the obligation of exposing them to the most advanced sets of equipment available in their respective companies. The idea seems to find difficulties both at Governmental levels as well as in the productive sector.

131. The mission tried to find out whether there were any training programmes in line with the German Dual programme. As stated earlier, there are evening classes/courses for people already

working in factories. These are official courses, however, which bear no similarity with the German system.

H. Co-ordination

132. The number of Ministries, quasi Government organizations, Government- assisted, confessional organizations, unions, and private organizations that teach and train people for industry-related skills is impressive.

133. Despite the fact that effective formal co-ordination may be needed (as mentioned by various interviewed person.) this number is certainly not the most serious problem that technical education is facing in T&T. By having the Ministry of Education grant the corresponding certificates, some sort of compatibility and co-ordination is achieved. Besides, as was previously mentioned, there is a proposal for a complete reform of the technical educational system.

134. The real problem is to have the technical educational system which follows market requirements. This can only be achieved if a huge school retooling takes place and if the technical education system is market-driven.

135. Teachers, students and the Government have to understand that skilled technicians are different from but not less clever than engineers. The problem of social acceptance is becoming one of the most serious handicaps technical education. Most unfortunately, in developing countries secondary and tertiary technical education is considered a second-class education.

I. Employment-Oriented Education and Training Specifically for Women

136. Formally, there is no special official technical education aimed specifically at women, due to possible charges of discrimination. The overall education system is based on the concept that no gender-opportunity differences should arise for job applicants. However, limitations may arise from the women regarding the kind of training they may choose. In T&T men and women are considered equally suited for almost any training or any job. It can be seen (from Annex 8), that in 1989 at UWI, out of a total of 536 graduates, 276 were female and 260 were male. Moreover, University registration at the St. Augustine campus has clearly shown female preponderance. Yet there is a large imbalance between male and females at the Faculty of Engineering, and still a high imbalance at the Faculty of Natural Sciences. Since UWI does not discriminate, there is no doubt that it is the women's own choices that are making the difference.

137. Regarding industry trainees, there is a gender imbalance in the development of skills at the supervisory level and all other medium levels. Again, the feminine attitude and the conviction that women should give priority to their own family care (which they may really prefer, actually), may be also a major reason for gender imbalance.

138. Male and female enrollment in technical and vocational courses for both craft and technician courses for the 1988/89 academic year can be analyzed from Annexes 8 and 9. Out of a total registration of 1,765 in the craft courses, 1,095 (62.0%) were male and 670 (38.0%) were female. If courses were grouped in "more likely industry-related" and "less likely industry-related", the following figures would result, (percentage with respect to total registration): Male 54.3% and Female 45.1%

139. When applying the same calculations to enrollment in technical and vocational schools for the 1988/89 academic year, it results that from a total registration of 2,470 in technician courses, 1,753 (71.0%) were male and 717 (29.0%) female. In this case, assuming that only Home Economics is not industry-related training, if courses were grouped again as before, it results approximately: Male 70% and Female 30%. It can be concluded, from the above figures, that it is the decision of women themselves not to enroll in industry-related training.

140. At the professional and managerial level, as indicated in Chapter 1, since there are 43% of women in these positions compared to 57% of men, again it may be concluded that for high professional skills and executive positions there is no discrimination against women in T&T.

141. At the unskilled level, there are organizations fully dedicated to women training (apart from those non gender-oriented from the state education system). However, most training through these organizations is not "industry-oriented"; consequently, it remains beyond the scope of this study.

TRANSFER OF TECHNOLOGY

142. Transference of technologies, their changes, adaptations or the development of new technologies often require a change in human behavior and skills. As was indicated in Chapters 1 and 2, the private sector does not perceive a clear industrial policy from the Government, while the Government believes that the signals it is emitting are sufficiently clear.

143. We have failed to find a clear perception by the industrial private sector on the connection between industrial HRD and Technology (either its Development or Transference). Actually, a clear understanding of what technology means in an open market economy was not detected either in the Government, the University or the private sector.

144. The concept of appropriate technology is still easily employed, and, regardless whether this concept had significance in an imports' substitution industrial policy, it is no longer the case in an open market economy. Moreover, the great preoccupation of most interviewed Government officials on training for jobs, had no actual correspondence with the understanding that technology and industrial HRD are not separate matters.

145. Therefore, as already commented:

- i. Industry does not perceive, (beyond a declamatory attitude), the connection between technology development and transference and industrial HRD;
- ii. The possibility of sustainability by the private sector is not based on a competitive advantage concept. This sector (as well as most of the Government sector) still talk of comparative advantages based on natural resources, cheap labor, and not on competitive skills;
- iii. Some of the interviewed persons commented that, because of a lack of knowledge on how to negotiate technology transference contracts, the country had made some very bad deals;
- iv. As a result of the previous comment, it was suggested that UNIDO should enhance its participation in workshops on Technology Transference negotiations in T&T;
- v. However, despite the generalized opinion that there is a need for management preparation in T&T, Technology Management was not nominated as one of T&T's main problems;
- vi. If Technology Management is not perceived as a fundamental aspect of any top or medium manager's preparation, our conclusion is that matters such as marketing, financing, taxation, productivity, human resources administration and quality assurance will possibly not be considered adequately;
- vii. It is possible that large companies may have solved this problem. However, it is our opinion that UNIDO may help in this connection.

THE INDUSTRIAL HRD SYSTEM: DEMAND (MARKET)-DRIVEN OR OFFER-DRIVEN?

146. The above question, fundamental to UNIDO, may possibly not have a single, straightforward answer in T&T. As in most developing countries, it is difficult to relate training supply to market demand. This is because almost all studies are related to unemployment, which still is an "offer to market labor" approach. In the case of T&T, as previously stated, many training programmes are focused on job creation. A typical example is SERVOL, a programme to train poor people, supported by the World Bank. This programme, as well as others (ECHO, YESS, YTEPP) have been designed with special emphasis on self-employment. The self-employment approach may be sound for T&T, but it is marginally concerned with Industrial Development.

147. Anyway, an attempt will be made in order to try to clarify as much as possible the offer-driven and the market-driven situation. This aspect will be analyzed taking into account the following market sectors:

- Civil Service
- Public production and service sector
- Large private companies or holdings
- Small and medium-sized enterprises
- Self-employment

148. Before going into each market sector, we will offer a series of comments on each sector.

149. The secondary system is sending too many people to the university, while there is a lack (or shortage) of well-trained and classified technicians in fields such as welding, mechanics, electricity, electronics and instrumentation.

150. It is usually accepted that there is a considerable availability gap between the apprenticeship and Technical assistance levels and the University level. This is the technician level of schools such MIC, John Donaldson and San Fernando.

The Civil Servants Sector

151. As mentioned in different parts of this report, the Government is considering either to reduce the civil service sector or to relocate people to other sectors. As is very often heard in T&T: Too many clerks and too few nurses.

152. Even when on a number-to-number basis it may be correct that the total number of civil servants is appropriate, there is no way to imagine how the relocation procedure, including the corresponding retraining, could take place at the large scale that was mentioned during various interviews.

153. It is usually accepted that the relocation - retraining process should comprise about 10,000 people. However, this relocation/retraining programme is still under study, and no definitions are expected in the short term.

Public Production and Services Sectors

154. It was found that in T&T there is broad acceptance that the public production and services sector is overstaffed; hence, if privatization takes place, many people will be laid off. Anyway, it is evident that this sector shall not drive the labor market for the next few years.

Large Private Companies and Holdings

155. The mission was unable to obtain precise information on the types of people that the private

sector will require in the near future. Due to the opening up of the economy, resizing is the common word. If efficiency is to be obtained by reducing the labor force or increasing sales. With the same labor force, it will mean that this sector will not be a driving force for the labor market. It will certainly need to increase its capacity at executive and higher professional and technical levels. Apparently, this will be done through the retraining of their own people.

Small and medium-sized enterprises

156. As the market opening of the economy proceeds and the negative lists for imports are suppressed, an adjustment of small and medium-sized enterprises will occur. However, SM-organizations and enterprises, are expecting government decisions regarding which industrial sectors will be or priority. There is a growing feeling that many SM's will disappear. Under these circumstances, the SM's sector shall certainly not be a driving force for the labor market.

Self-employment

157. Training for this sector is both offer and market-demand driven. Training is carried out with the expectation that trainees may go into business with their newly acquired skills. However, the problem is how many will really have the possibility to start a business.

158. By November 1990, the YESS programme was able to give financial support for T&T\$ 300,000 to 32 persons. Unless a huge amount of money is allocated, all these programmes may risk spending more money in their own organizational structures than in their final objectives of job creation.

Skill requirements

159. Regarding skills market requirements are as follows:

- **Managers and executives (senior and medium level).** There is real need for these levels in T&T. Training is carried out by many organizations and, in some cases, by the large companies themselves.
- **High-level technicians.** There is a shortage, mainly for maintenance.
- **Professionals in Engineering.** Usually, these professionals are able to secure a job, even if it may not be in their chosen specialty and at the desired qualification levels. Anyway, there is a slight surplus. Moreover, industry claims that they are excessively academic.
- **Most of the technical/craft education and training systems (save for those people already working and taking evening courses by arrangement with their employers) is offer-driven.**

4. INTERNATIONAL ASSISTANCE TO TRINIDAD & TOBAGO

A. UNIDO'S CONTRIBUTION

Introduction

160. UNIDO's presence in T&T is limited, even more so in the field of industrial HRD. Two different categories of industrial HRD activities need to be distinguished: project related industrial HRD, and direct training activities such as fellowships and study tours. These will be referred to as centralized industrial HRD, since they are arranged for at Headquarters to benefit a number of countries.

161. Since 1969, UNIDO implemented some eleven (11) projects in a variety of fields, including direct industrial HRD. A selected number of industrial HRD related projects in T&T was summarized and reviewed as a working paper for the mission. Such a review is not conducive to arriving at conclusions about priority areas and the country's development stance in general. The fact that UNIDO was requested to execute a number of projects in certain areas basically reflects the individual requests by the receiving institutions and other arbitrary criteria, such as the possibility of accessing funds outside of UNDP's country programme. The requesting institutions in most cases had a clear idea of what type of industrial HRD they needed and UNIDO was only approached for funding (e.g. RP/TRI/85/001 and Technical Visit by CARIRI Chemist to China). This makes it difficult to identify the underlying development strategy.

Project-related Industrial HRD

162. No project was ever implemented in T&T with an exclusive focus on industrial HRD (except for individual fellowships). Rather, industrial HRD has been incorporated into projects to complement other activities, such as assistance from experts or the provision of technical equipment, with a view to increasing the sustainability of a project. In addition, UNIDO's industrial HRD delivery was never part of a coherent operational policy by either the Government or UNIDO itself. Of the activities reviewed, most related to immediate training needs at the institutional level, in particular those emerging from CARIRI. Although their usefulness is not called into question, their wider impact in contributing to the country's economic development is almost negligible.

163. Although no hard evidence is available to support the view, it is suggested that the Government turned to UNIDO for those activities that were carried out on an experimental basis, and for which Government itself did not want to commit any resources. One example is project SI/TRI/90/801, Microbial Enhanced Oil Recovery, which initially met a lot of skepticism; and now that the research carried out shows promising results, it is arousing some interest. In a more general context, there seems to be a tendency to utilize UNIDO as a donor of last resort for undertakings to which the Government attaches a low priority. Interestingly enough, UNIDO too, has promoted a pilot project, UC/TRI/89/003, Software Development, which was implemented in a previously untried field, attempting to assess the possibilities of promoting joint ventures between local and overseas software developers.

164. Of the three presently ongoing projects, SI/TRI/90/801, UC/TRI/89/003 (including UC/TRI/89/077, which captures the counterpart's contribution), and DP/TRI/85/007, only the latter two have a clear industrial HRD component. The Software Development project places emphasis on training local software developers in an effort to upgrade their skills as a preparation for and supplement to the second project objective, the negotiation of a pilot joint venture agreement. Since no joint venture could be promoted, the project has been revised recently to concentrate the remaining funds on a series of short-term training activities. This is obviously a second best solution, and it is not too clear to what end training is being carried out. The project generally suffers from an inconcise project document and from the simple fact that the target group it is supposed to benefit (local software developers) was never involved in its design.

165. UNIDO's showcase project, TRI/85/007, Tool Manufacturing and Product Development for Metal Working and Plastics Industries, had a strong industrial HRD component (phase I of this project actually started in 1974). The project was subject to an in-depth evaluation in 1991 which comprehensively assessed the qualitative output of trainees at the institution. Without dwelling into the findings of the evaluation, it is of some importance to point out that the unique and high-calibre position of MIC as a training institution cum commercial production facility was not deliberately designed by either the Government or UNIDO, but happened rather accidentally. However, the continuous support of UNIDO to MIC over the years certainly ensured the viability of the institution and had a strong and lasting impact on industrial development in the country with graduates from MIC being in high demand across the industry.

Centralized Industrial HRD

166. UNIDO regularly offers a number of training opportunities to the country on a grant basis; other opportunities are invitations to workshop/seminars on a self-paid basis. In this context, it is noteworthy that the Government generally accepts only grant programmes and for the past five (5) years has only taken up two (2) self paid offers.

167. This scenario is partly caused by the institutional framework under which the UN system operates as it prescribes that all official contact (including invitations etc.) has to be channeled through the Technical Cooperation Unit, Office of the Prime Minister, which perceives itself as a facilitator between external agencies and line Ministries. This is a one-way route which channels only outside offers through the system; the Unit has no mandate to review, prioritize or authorize training requests from within Government. Thus, self-paid industrial HRD generally cannot be accommodated and a huge gap continues to exist between actual demand for industrial HRD by individual Ministries and the centralized supply of industrial HRD by UNIDO which is not targeted to the needs of any country in particular.

168. The provision of centralized industrial HRD is adversely affected by a number of factors, both administratively and conceptually. The deadlines set by UNIDO allot too short a period to complete the entire nomination process; as a result offers cannot be taken up because the deadline has passed. Centralized industrial HRD offers on a non-grant basis are, as described above, generally not considered by the Government, whereas the private sector, which in many cases would have the funds to secure attendance, is not being addressed by either UNDP or the Government.

169. The low-profile presence of UNIDO in T&T defies any attempt to quantify or even simplistically categorize industrial HRD delivery in the country. Hence, the above observations can be summarized only on a rather generalized note. In principle, project related industrial HRD serves an identified need which in most cases seems to be actually met through UNIDO's intervention. Given the parameters of the Government's role in dealing with UNIDO, though, it seems inevitable that a number of activities do not have any lasting impact, nor do they create spin-off effects. Centralized industrial HRD, by contrast, does provide easy access to training, although in a number of instances the training offered may not have been very appropriate to the needs of the country.

B. OTHER INTERNATIONAL ASSISTANCE TO HRD IN T&T

Present Assistance

170. The UNDP Development Cooperation Report for 1991, published in July 1992, shows a total bilateral assistance disbursement of US\$ 1,709,000 for that year. Three countries are of significance in this disbursement: USA (43.1%), Germany (18.2%), and the Netherlands (16.8%).

171. Within the non-UN system, multilateral assistance is provided by three major organizations. In 1991 its total amount reached US\$ 49,663,000; this was mainly in the form of loans. The Inter-American Development Bank (IDB) carried the major share (96.7%). EEC (2.2%) and OAS (1.1%) are of much less importance. It is worth noting that the Caribbean Development Bank (CDB), which has

been financing regional projects for more than two decades, has not undertaken any HRD activities so far. It is starting only now some activities related to HRD, concentrating on the drafting of a policy paper on the matter. These figures refer to total commitment for on-going projects and not necessarily to the amounts disbursed.

172. The projects are of a very heterogeneous nature. A number of them contain training components which are difficult - if not impossible - to disaggregate. For example, assistance extended to various Government agencies/Ministries for economic management has strong HRD components. This report lists only those assistance projects which are clearly designated as human resources development.

173. Within the non-UN system of international agencies the following assistance/grants stand out:

- IDB: Diagnostic study of the economic policy of the Ministry of Education in the primary and secondary school system. Project period: 1987-1992. Total commitment: US\$ 94,000 (grant).
- IDB: Institutional Strengthening of the Ministry of Education. Project period: 1988-1992. Total commitment: US\$ 36,000,000 (loan).
- IDB: Training for small business management and institutional strengthening of the T&T Development Foundation. Project period: 1990-1993. Total commitment: US\$ 115,000 (grant).
- EEC: Development of capacities of technical institutions; training in-country seminars; overseas awards. Project period: 1981-1994. Total commitment: US\$ 3,389,000 (grant).

With respect to bilateral assistance the following should be noted:

- USA: The majority of US assistance center around scholarships and fellowships (such as Fulbright). Project period: 1990-1991. Total commitment: US\$ 132,000 (grants).
- Netherlands: Integrated technical training and training of women. (2 separate projects). Also about 20 scholarships in a number of fields. Project period: 1991-1992. Total commitment: US\$ 13,000 (grant).
- Germany: Assistance to the Ministry of Education to introduce vocational education at secondary school level. Provided by GTZ. Project period: 1990-1991. Total commitment: US\$ 63,000 (grant).

174. It should be pointed out that all bilateral assistance agencies work through their respective embassies; hence, in the absence of a formalized bilateral aid programme, they tend to take rather an ad-hoc approach to technical assistance and basically respond to requests within their prescribed budgets. Multilateral agencies, on the other hand, have a larger and comprehensive view of technical assistance and tend to gear their grants and loans to suit the overall needs of the country. The above list is quite incomplete since a large chunk of the assistance/grants directed to various economic sectors or to various Ministries and their dependencies do include line items for HRD.

Future Assistance

175. UNDP is in the process of preparing and negotiating the Fifth Country Cycle Programme of US\$ 1,890,000, in which 39% is allocated to the diversification of the economy. Restructuring of industrial sector will figure in this line item. The UNDP IPF for T&T is small and usually requires government cost sharing.

176. This report cannot provide detailed information on all planned assistance by multilateral and bilateral agencies. It is important to note that IDB has taken the initiative to set up a multilateral Investment Fund for the next 5 years. The Fund's total assets will be US\$ 1.5 billion and its investments are expected to encompass the entire Caribbean region. The Fund has three purposes: to assist the privatization process; to assist the informal sector; and to contribute towards training and re-training of skilled workers/professionals in public and private enterprises.

177. IDB is also implementing another technical assistance package, the first phase of which is now completed. The allotted amount is US\$ 1.7 million and the targeted areas are: technical and vocational training and education (including policy definitions and background studies); training for micro-enterprises; and qualifying the parameters of a safety net in T&T. IDB is likely to execute these projects either by contracting private consulting firms, or by contracting specialized executing agencies within the UN system. In fact, an IDB financed technical assistance project aims at institutional strengthening of project cycle management. The project started a year and a half ago with, again, US\$ 1.7 million and contains a large training component for the public sector employees. It is executed by UNDP/OPS.

Proposals for Industrial HRD Interventions

178. In conceptualizing possible industrial HRD interaction in the country, industrial HRD assistance may be delivered at four different levels:

- national policy formulation for industrial HRD, as part of an industrial development strategy;
- general support to national training system;
- institutional and sectorial industrial HRD, benefitting organizations or, due to the small size of the economy, entire sectors; and
- individual industrial HRD targeted at individuals operating within the context of some institutional framework

179. UNIDO has only been involved in the lower two levels of industrial HRD delivery. No assistance has been requested from UNIDO to look into either the policy level or the overall framework within which industrial HRD takes place in the country. Those latter aspects are being addressed by the major multilateral finance institutions which, in some cases, operate under conditionalities resulting from a high level policy dialogue. However, the fact that GTZ, without even maintaining a bilateral assistance programme, was commissioned to undertake a policy-oriented review of vocational training, indicates that there is no standing rule by which technical agencies would be confined to the last two levels.

180. Although a number of external agencies is involved in the provision of industrial HRD, there is no coordinated approach among either the donor community at large, or even within the UN system. This is to be explained by the fact that the various activities are far too scattered and are not tied into an overall Government policy. Moreover, the lack of internal coordination within the Government is an added constraint which causes different Ministries to be involved in similar aspects of industrial HRD at the same time. Those proposals will be expanded in the following Chapter.

5. UNIDO'S POTENTIAL CONTRIBUTION TO INDUSTRIAL HRD IN T&T

181. The previous chapters of this report dealt with the state of the economy and the industrial sector; HRD and industrial HRD in particular; public and private sector institutions and their respective involvement in industrial HRD; and multilateral and bilateral technical assistance to the country in industrial HRD with special emphasis on UNIDO's involvement. This chapter's main thrust is on UNIDO's potential contribution to HRD in T&T. Before such an analysis is attempted, a brief recapitulation of the salient features of the previous chapters is called for in order to place UNIDO's potential contribution into a proper context. It should be emphasized that the case of T&T as a small open economy, primarily based on a single monocrop (petroleum) and in transition from import substitution to export orientation, allows for some generalization as it bears a strong resemblance to other economies at similar stages.

The State of the Economy and the Industrial Sector

182. Despite a significant decline of GDP in real terms during the eight consecutive recessionary years after 1982/1983, T&T's national product still ranks among the highest outside the industrialized countries. The economy is largely dependent on one major commodity, petroleum and its downstream products. The manufacturing sector, by contrast, is very small in size and does not significantly contribute to the country's foreign exchange earnings. A relatively high unemployment rate continues to persist, particularly among the youth. The state is heavily involved in the economy, although divestiture is currently under active consideration and the first steps are being taken to rationalize state enterprises.

183. The industrial sector is strongly inward-oriented, the result of deliberate import substitution policies. This inward orientation not only manifests itself in a poor export performance, but also in a low technological transformation rate, since a major portion of value-added in the sector derives from assembly-type operations with low productivity and few linkages. Apart from a few major holding corporations, which are involved in a variety of industrial enterprises, most of the manufacturing takes place in small-size companies. The informal sector assumed to play a significant role.

Industrial Restructuring and Entrepreneurship

184. The Government of T&T is firmly committed to move away from the economic regime of import substitution and has undertaken important steps in that direction, such as lifting the trade restrictions. Emphasis is placed on regional economic integration (CARICOM). The development of the country's export potential is being promoted while restrictions on foreign investment are being relaxed. At present, it is not clear to what extent the process of economic restructuring will be completed. It is expected, though, that the major growth impetus will come from the private sector which is assumed to seize the opportunities provided in the course of industrial restructuring.

185. The long years of operating within a highly protected economy have prevented the development of an imaginative and risk-taking entrepreneurship as part of a corporate culture. Private sector investment was concentrated on safe areas supported by the prohibition of imports (negative list). Co-operation with the outside world, in the form of joint-ventures or otherwise, was deemed undesirable as the prevailing economic regime of import substitution provided strong disincentives. As a result certain managerial skills, such as the permanent drive for improving productivity, may have been lost. This low-key entrepreneurial spirit may pose a serious hindrance to the current process of transforming the formerly protected economy into an open one which is seeking access to global markets. It must be expected that a large number of industries (e.g. assembly-type and garments) will not be able to compete internationally and eventually be forced to close down.

Government Policy and its Perception

186. The Government's adjustment programme is supported by the World Bank (WB) and, more recently, by the IDB. The WB, pending the compliance with the conditionalities of the SAL, has made available a loan on industrial restructuring and business expansion directly aimed at facilitating adjustment to a competitive environment at the enterprise level. Loans from the IDB focus on the upgrading of refinery facilities and also policy formulation for the investment sector. A policy dialogue is conducted to eventually allow the country to access funds under the Bush initiative, with a number of windows provided, including a technical assistance grant for vocational training. A number of possibilities exist for UNIDO to link-up with these initiatives especially under some execution arrangements.

187. Although the new Government, which came into power in December 1991, has further stepped up structural adjustment measures, one can observe a definite lack of policy orientation. By and large, the Government appears to be engaged in troubleshooting, attempting to curtail the negative effects of adjustment instead of mapping out a long term strategy. This particular way of managing an economy in transition is also reflected in the absence of a clearly conceptualized mechanism to deal with further problem areas that are likely to emerge in the course of adjustment (e.g. retrenchment of public employees and subsequent need for retraining, labor unrest etc). Economic transition in T&T can, therefore, be characterized as an ad hoc approach of reacting to events, rather than actively shaping them.

188. Structural adjustment and particularly trade liberalization are in principle supported by the private sector, notwithstanding the vociferous resistance of some doomed industries. One major concern, however, relates to the gradual phasing of opening the economy. It is feared that too fast a pace will prevent companies from efficiently reorganizing themselves. Organized labor, which has a long history of collective resistance, is strongly opposed to structural adjustment, particularly since it is perceived as an outside dictate. Any attempt to privatize state-owned enterprises is likely to meet forceful opposition.

The HRD Scene

189. T&T has an educated population in general and a skilled work force, in particular. Moreover, the absence of large untrained masses indicates that the country does not have an overall human resources problem. The educational facilities, including the University and technical as well as vocational schools, appear to train at satisfactory standards, although the available equipment may be outdated in a number of instances. However, certain pockets of training will exist in the short run, such as chemical technicians or electrical engineers. A shortage of manpower at the managerial level has been identified. Generally, it can be assumed that periodic shortages of supply for HRD are being addressed, to the extent possible, by the training institutions themselves, and may thus be described as self-regulatory. However, it should be noted that the Government does not have a long-term manpower plan which would quantitatively assess the country's training needs for the future.

190. The forthcoming establishment of a National Training Commission with a comprehensive portfolio of co-ordinating and HRD planning in the country may contribute to streamlining the training sector.

The Relevance of UNIDO's Industrial HRD Activities

191. In the past, UNIDO's involvement in industrial HRD in the country hardly extended beyond the provision of fellowships and study tours on a grant basis, and only in a few instances did the Government commit additional resources to facilitate industrial HRD activities. It is obvious that the mere availability of funding cannot be a meaningful criterion for the appropriateness of UNIDO's training opportunities. Moreover, since the Government of T&T does not have a long-term manpower plan, much of its human resource development needs will continue to be formulated on an ad hoc basis. Given the long-term objective of bridging this gap, it is suggested in the meantime to

at least allow for the provision of those industrial HRD activities that are specifically targeted to the country's development needs. One way to do this would be to negotiate an umbrella training project which would enable the Government to access UNIDO's training opportunities as and when the need arises.

192. The relevance of UNIDO's industrial HRD activities may be enhanced further by increasing the functional role of the area officer responsible for T&T. Provided that sufficient country information is available within the area programmes division, certain industrial HRD offers by UNIDO could be fast-tracked if it is deemed to be within the country's immediate development needs. At the same time, the area officer could press for more specifically targeted training activities.

193. As for UNIDO's counterpart within the Government, it should be noted that not only the Ministry of Industry and its subsidiaries are involved in industrial HRD but also a number of other Ministries, particularly the Ministry of Education, which is in charge of technical and vocational training. Therefore, UNIDO has to initiate and maintain a constant dialogue with a number of Governmental agencies in order to obtain a complete picture of the country's training needs. The same argument applies to the private sector organizations which were detailed in Chapter II.

Marketing Industrial HRD

194. Interviews conducted by the team reveal that most of the private and public sector institutions involved in industrial HRD are not fully aware of the opportunities provided by UNIDO. To capitalize on its potential role as a key player in industrial HRD UNIDO must develop a marketing stance. Resident UNIDO Country Directors (UCD's) and Junior Professional Officers (JPO's) can and must be utilized much more aggressively in this respect than they were in the past. As an initial recommendation in this regard, UNIDO's representatives in the field should be equipped with comprehensive briefing material on all activities UNIDO is involved in with a view to sensitize potential recipients. This will greatly enhance UNIDO's ability to collaborate with the key players in industrial HRD and to provide direct assistance to them.

Financing Industrial HRD

195. In countries like T&T, which only receive small amounts of grant aid through the UN system due to their relatively high per capita income, executing agencies like UNIDO need to place much more emphasis on identifying alternative sources of financing. Moreover, with the successor arrangement in place, UNIDO can no longer rely on a regular allocation of IPF funds for the industrial sector. Alternative sources would include both the WB and the IDB and other multilateral institutions, such as the EEC. However, mere cooperation agreements between UNIDO and the donor agencies will do little to improve UNIDO's position, as the decision to utilize technical agencies like UNIDO for the implementation of programmes and projects funded by other donors rests with the Government. This reinforces the need for a diligent marketing of UNIDO, by which Government has to be convinced that UNIDO's unique technical expertise can be made available in a rather more innovative fashion.

196. A similar point applies to UNIDO's co-operation with the private sector which so far has not received sufficient attention. In T&T a number of medium to large scale enterprises have realized the importance of specialized training and now resort to arranging such industrial HRD activities by themselves. In view of the availability of industrial HRD funds for the private sector, a number of scenarios can be conceived by which UNIDO could be subcontracted (along the lines of a self-financed trust fund) to execute or at least organize specified training activities. However, UNIDO may confront an image problem in this respect, since the private sector still perceives UNIDO as an international body that is operating solely through and to the benefit of the Government. One first step to overcome this obstacle would be a renewed emphasis on intermediate private sector institutions like the Chamber of Commerce or the Manufacturers Association with a view to get more closely involved in private sector industrial HRD.

MEMBERS AND DATES OF THE MISSION

Mr. F. Andic, UNIDO Consultant

Mr. C. Varotto, UNIDO Consultant

31 August - 19 September 1992

PERSONS CONSULTED**Government of Trinidad & Tobago**

L. Bowrin	Ministry of Youth, Youth Training and Employment Partnership Programme (YTEPP)
F. Dolly	YTEPP
Minister Gordon Draper	Minister for Public Administration, Office of the Prime Minister
Carlyle Harris	Principal, John S. Donaldson Technical Institute
Joseph Howard	Technical Cooperation Unit
Minister Brian Kuei Tung	Minister of Trade and Industry
Kenneth Lynch	Permanent Secretary, Science and Technology, Prime Minister's Office
C. Maitland	Director, Division of Training, Department of Personnel, Prime Minister's Office
Arlene McComie	Technical Cooperation Unit
C.P. Modeste	Division of Technical/Vocational Education and Training, Ministry of Education, Director of Operations
Peter Pariag	Central Statistical Office
Justin Paul	Director, National Training Board of Vocational Education, Ministry of Education
D. Walker	Vice Principal, Mucurapo, Senior Comprehensive Secondary School
Winston Williams	Executive Director, YTEPP

Statutory Organizations

Desmond Ali	Chief Executive Office, CARIRI
Farzan Ali	Manager, Human Resources, CARIRI
H. Allahar	Executive Director, Small Business Development Company
Y. Alleyne	Industrial Development Corporation
Oscar Alonzo	Executive Officer, Export Development Corporation
Alwin Ashton	Dean of Higher Education, NIHERST

Dave Bhajan	Managing Director, MIC
A. Guiseppi	Industrial Development Corporation
Michael Harris	Manager, Research and Development, CARIRI
Lennox Lewis	Manager, Finance and Administration, CARIRI
Maureen Manchouk	Director, NIHERST
Robert Nunes	Director, Industrial Development Corporation
Ram Ramnasibsingh	Manager, Business Development, CARIRI
Ash Saigal	Manager, Center for Technology, Sourcing and Intelligence, CARIRI
Sainjat Singh	Manager, Laboratory Base, CARIRI

University of the West Indies

St. Clair- King	Professor, Faculty of Engineering
K.S. Julien	Professor, Faculty of Engineering
E. Simms	Professor, Department of Management Studies Center

Private Sector

Carmena Baird	General Manager, Chamber of Commerce
Reginald Dumas	Interim Executive Director, Institute of Business
Brian Ghent	Manager, Human Resources, Neal & Massey Holdings Company
M. Mansoor	Financial Director, Mc Al Inc.
Emerald Millet	Executive Director, Employer's Consultative Association
Laura Segar	Training Officer, Employer's Consultative Association
S. Welch-Farrel	Welch-Farrel Associates

NGO's

Karen Bart-Alexander	Director, Women's Resource and Research Center
Wilma Coryet	Research Officer, Women's Resource and Research Center

EDUCATION

a) TRINIDAD AND TOBAGO STUDENT REGISTRATION IN FIRST AND HIGHER DEGREES
AT THE UNIVERSITY OF THE WEST INDIES, ST. AUGUSTINE BY FACULTY, 1984/85-1988/89
(Full-Time and Part-Time)

Faculty	First degrees									
	1984/85		1985/86		1986/87		1987/88		1988/89	
	St. Augustine campus	Total all campuses	St. Augustine campus	Total all campuses	St. Augustine campus	Total all campuses	St. Augustine campus	Total all campuses	St. Augustine campus	Total all campuses
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Agriculture	239	239	269	269	253	255	272	272	289	289
Arts and general studies	605	672	585	650	320	368	651	698	669	704
Education	-	-	-	2	-	5	-	3	-	3
Engineering	374	374	359	399	370	370	384	384	364	364
Law	35	120	34	118	33	115	32	102	31	97
Medicine	38	174	50	174	62	183	51	182	60	188
Natural sciences	588	633	650	688	676	722	714	753	687	729
Social sciences	475	580	536	654	375	479	687	691	594	672
Nursing	-	1	-	-	-	1	-	-	-	-
Total	2 356	2 795	2 483	2 914	2 091	2 498	2 711	3 086	2 694	3 046
	Higher degrees									
Agriculture	56	56	77	77	85	85	108	108	98	98
Arts and general studies	48	51	62	66	69	74	81	85	62	70
Education	18	22	17	19	29	33	20	24	64	66
Engineering	125	125	154	154	168	168	177	177	192	192
Law	-	8	-	6	-	6	-	6	-	5
Medicine	-	12	6	15	8	17	10	24	22	30
Natural sciences	32	39	43	52	59	67	70	78	71	77
Social sciences	49	50	85	86	93	98	95	100	92	98
Total	328	363	444	475	511	548	561	602	601	646

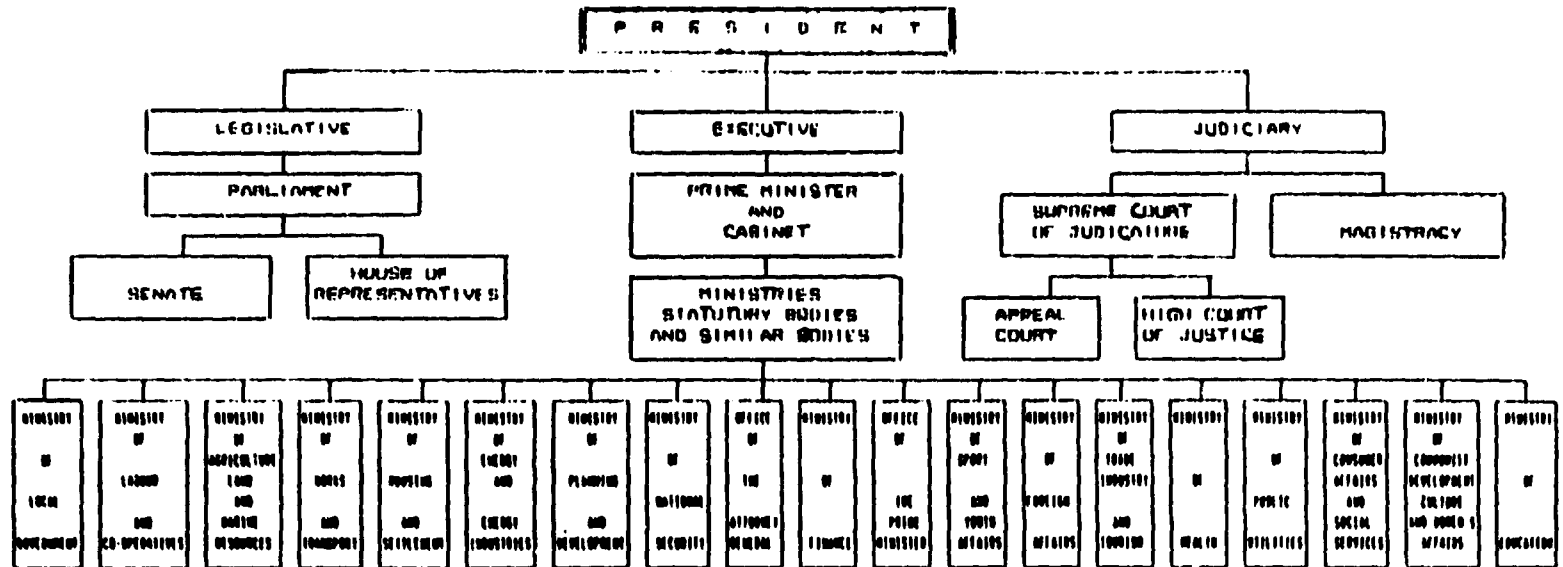
Source: 28

b) TRINIDAD AND TOBAGO GRADUATES FROM UNIVERSITY OF THE WEST INDIES,
ST. AUGUSTINE, BY FACULTY, 1980-1989

Year	Sex	Total	Faculty					
			Agriculture B.Sc.	Arts and general studies B.A.	Engineering B.Sc.	Natural science B.Sc.	Social science B.Sc.	Medicine
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
1980	Male	227	18	50	74	33	52	-
	Female	161	16	77	6	36	26	-
1981	Male	198	15	48	71	35	32	-
	Female	164	10	80	9	31	34	-
1982	Male	199	10	42	76	36	35	-
	Female	195	30	84	9	37	35	-
1983	Male	188	16	36	65	42	29	-
	Female	188	13	79	24	31	41	-
1984	Male	197	16	32	56	44	49	-
	Female	207	17	86	13	35	56	-
1985	Male	228	20	35	74	48	37	14
	Female	205	19	72	21	48	39	6
1986	Male	234	16	31	64	66	46	11
	Female	240	20	90	7	64	51	8
1987	Male	520	54	101	82	139	115	33
	Female	286	30	80	20	68	75	13
1988	Male	257	21	22	91	58	51	14
	Female	286	24	70	9	87	82	14
1989	Male	260	16	17	69	98	41	19
	Female	276	22	126	18	42	60	8

Source: 28

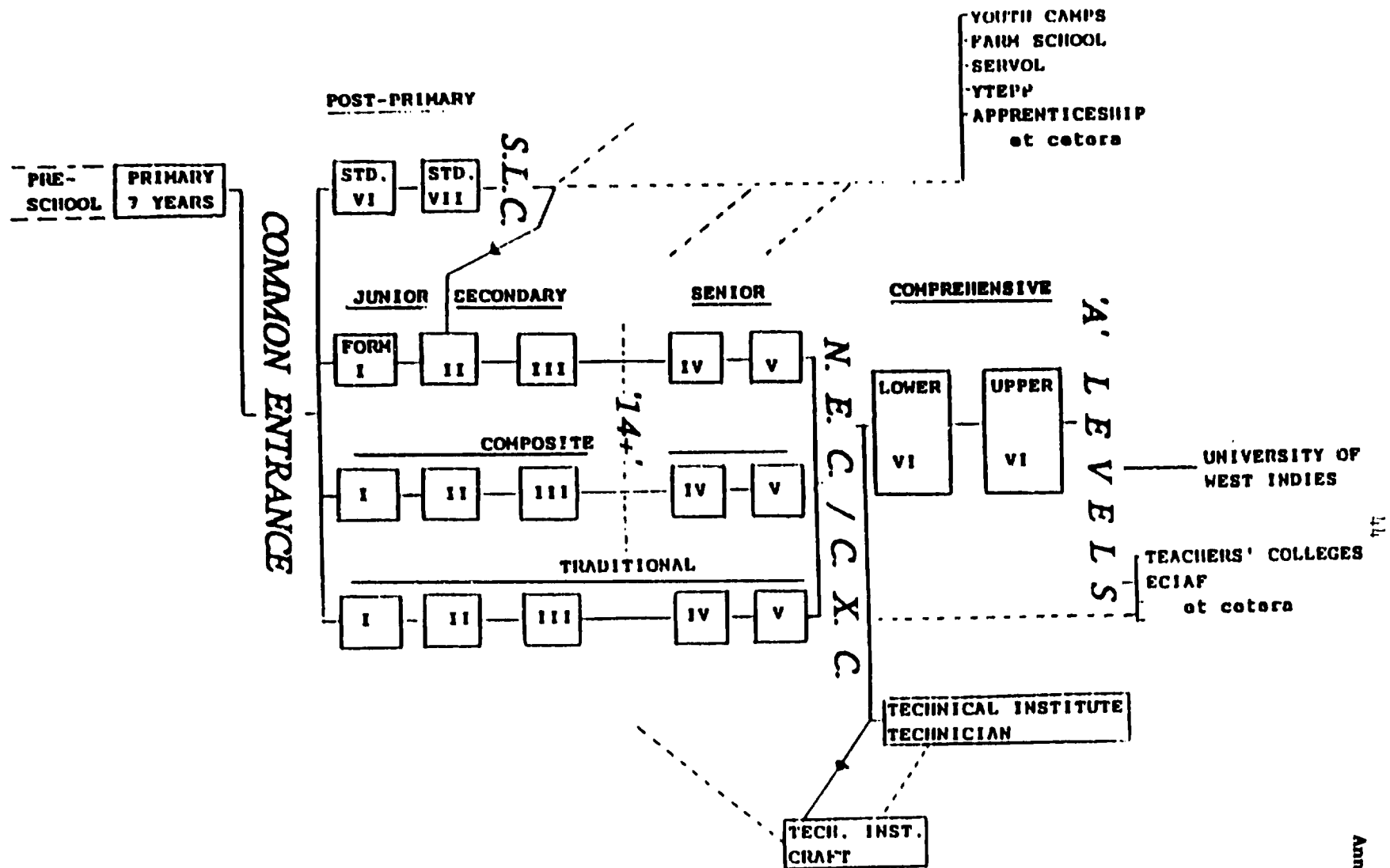
ORGANIZATION OF THE GOVERNMENT OF THE REPUBLIC OF TRINIDAD & TOBAGO



MINISTERS:
 ASSISTANTS TO
 MINISTERS:
 PARASTATAL
 SECRETARIES:

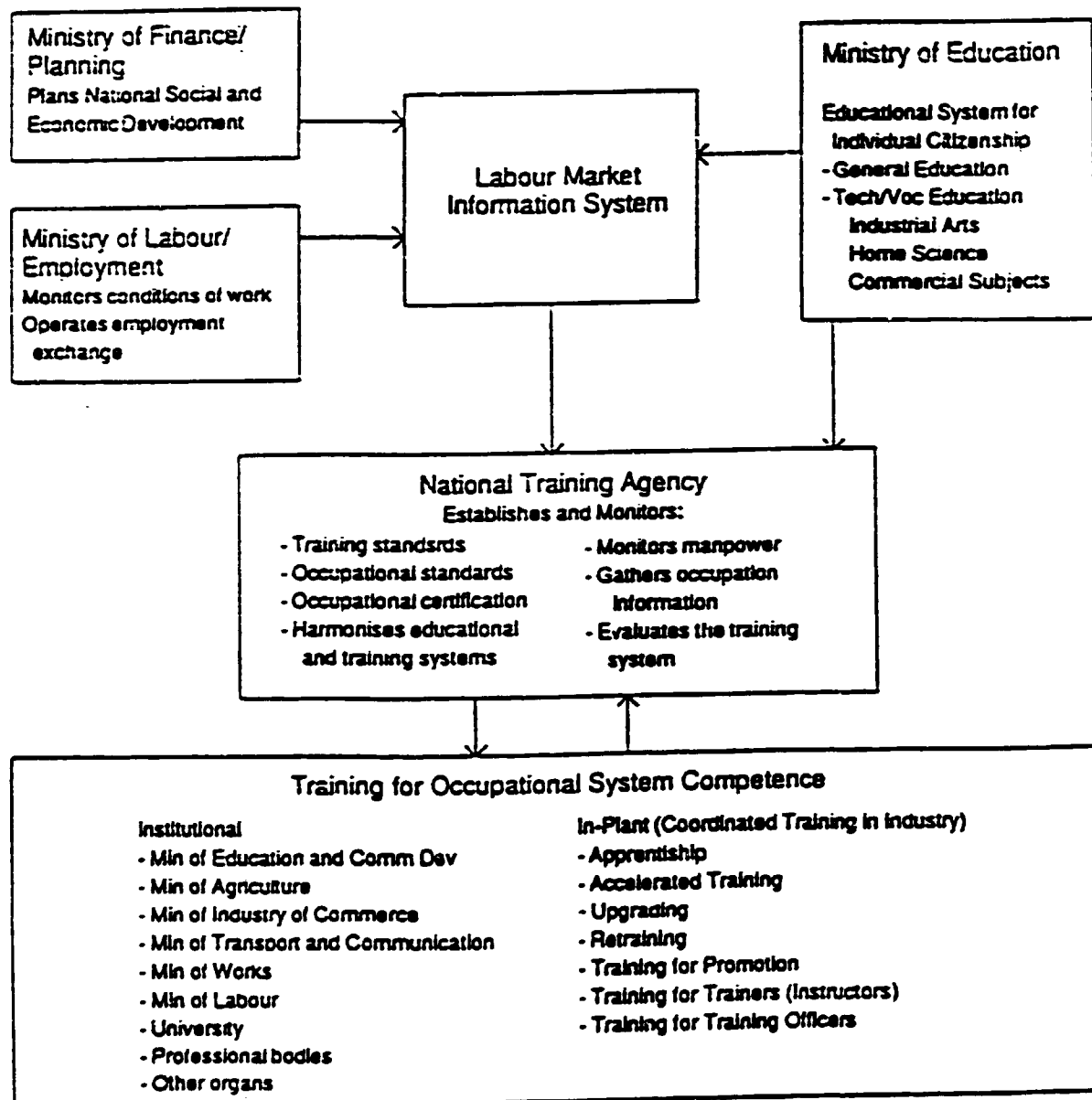
COMMITTEES AND OTHER AUTHORITIES			
Auditor General	Public Service Appeal Board	Law Commission	Elections & Boundaries Commission
Public Service Commission	For Appeal Board	Debate Commission	Industrial Court
Teaching Service Commission	Registration, Recognition and Certification Board	Integrity Commission	Salaries Service Commission
Public Service Commission	Judicial and Legal Service Commission	Tobago House of Assembly	Statutory Authorities Service Commission

PRODUCED BY:
 CENTRAL TRAINING UNIT
 PERSONNEL DEPARTMENT



PUBLIC PROVISION OF EDUCATION AND PRE-SERVICE TRAINING: MAIN ROUTES AND DESTINATIONS

A Model of a National Training System



EMPLOYMENT IN TECHNICAL AND VOCATIONAL SCHOOLS BY COURSE,
YEAR AND SEX: (TECHNICIAN COURSES), 1968/1969 - Continued
(Full-Time and Part-Time)

Course	Total			Year 1		Year 2		Year 3	
	Both sexes	Male	Female	Male	Female	Male	Female	Male	Female
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Applied Sciences									
Process plant operators ... Full time	27	27	-	16	-	13	-	-	-
Process plant operators ... Part time	7	-	7	-	-	-	7	-	-
Science technicians ... Full time	108	43	65	17	27	21	25	5	13
Science technicians ... Part time	86	74	12	35	6	39	6	-	-
Business Education and Management									
Accounting technicians ... Full time	80	23	57	11	41	12	16	-	-
Accounting technicians ... Part time	251	78	173	33	44	21	50	24	57
Business management ... Full time	108	37	71	20	30	9	37	-	-
Business management ... Part time	189	74	115	16	34	26	44	32	37
Supervisory management ... Part time	121	75	46	44	24	31	22	-	-
Computer Studies									
Computer programming ... Full time	39	13	26	5	14	8	12	-	-
Electrical Engineering									
Electrical/electronic engineering ... Full time	224	210	14	83	2	57	10	70	2
Electrical/electronic engineering ... Part time	98	92	6	30	2	37	2	25	2
Home Economics									
Home economic technicians ... Full time	30	12	18	12	18	-	-	-	-
Home economic technicians ... Part time	33	10	23	6	11	4	12	-	-
Clothing and textiles ... Full time	2	-	2	-	-	-	-	-	2
Food and nutrition ... Full time	5	-	5	-	-	-	-	-	5
Land Surveying and Construction									
Building technicians ... Full time	53	50	3	22	1	28	2	-	-
Building technicians ... Part time	81	76	5	22	1	29	-	25	4
Construction technicians ... Full time	38	33	5	-	-	17	5	16	-
Construction technicians ... Part time	50	45	5	18	2	9	1	18	2
Junior builder technicians ... Full time	36	36	-	19	-	17	-	-	-
Mechanical/Production Engineering									
Enhanced oil recovery ... Part time	23	22	1	22	1	-	-	-	-
General draughtsmanship technicians Full time	120	106	14	41	6	41	6	24	2
General draughtsmanship technicians Part time	101	86	15	18	4	24	4	44	7
Industrial instrumentation technicians Part time	104	97	7	38	3	31	3	28	1
Mechanical engineering technicians Full time	127	125	2	45	1	43	1	37	-
Mechanical engineering technicians Part time	207	194	13	87	6	85	4	22	3
Natural gas technology ... Part time	30	28	2	28	2	-	-	-	-
Production engineering technicians Part time	47	45	2	28	-	13	2	4	-
Telecommunication									
Telecommunication technicians ... Part time	45	42	3	23	1	19	2	-	-
Total ... Full time	997	715	282	297	144	246	114	152	24
... Part time	1 473	1 038	435	448	163	368	159	222	113

Source: 9

ENROLLMENT IN TECHNICAL AND VOCATIONAL SCHOOLS BY COURSE.
 YEAR AND SEX. (CRAFT COURSES) - 1966/1969
 (Full-Time and Part-Time)

Course	Total		Year 1		Year 2		Year 3		
	Both sexes	Male	Female	Male	Female	Male	Female	Male	Female
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Business Education and Management									
Executive secretaries Part time	50	-	50	-	30	-	12	-	-
Shorthand Part time	22	-	22	-	22	-	-	-	-
Shorthand/typists Full time	68	-	68	-	44	-	24	-	-
Typewriting Part time	12	-	12	-	12	-	-	-	-
Word Processing Part time	14	-	14	-	14	-	-	-	-
Electrical Engineering									
Air-conditioning and refrigeration Full time	16	15	1	-	-	15	1	-	-
Auto electrical Part time	17	17	-	17	-	-	-	-	-
Domestic electronic servicing Full time	48	48	-	23	-	25	-	-	-
Domestic electronic servicing Part time	66	64	2	28	1	36	1	-	-
Electrical installation Full time	32	32	-	32	-	-	-	-	-
Electrical installation Part time	87	79	8	45	6	34	2	-	-
Graphic and Applied Arts									
Bookbinding and warehouse Full time	13	3	10	-	-	3	10	-	-
Bookbinding and warehouse Part time	35	6	29	3	10	2	9	1	10
Camera operating and plate making Part time	25	11	14	6	7	3	3	2	4
Commercial art Full time	22	7	15	7	15	-	-	-	-
Commercial art Part time	16	11	3	-	-	-	-	11	3
Jewellery Full time	21	7	14	7	14	-	-	-	-
Jewellery Part time	17	7	10	-	-	3	7	4	3
Letterpress printing Full time	7	6	1	-	-	6	1	-	-
Letterpress printing Part time	8	4	4	-	-	-	-	4	4
Offset printing and proving Part time	35	26	9	15	3	8	3	3	3
Photolithography Full time	16	4	12	-	-	4	12	-	-
Home Economics									
Advanced cookery Part time	9	-	9	-	9	-	-	-	-
Cookery Part time	15	-	15	-	15	-	-	-	-
Dressmaking and design Part time	103	-	103	-	103	-	-	-	-
Food preparation Full time	52	9	43	4	26	3	17	-	-
Food preparation Part time	15	1	14	1	14	-	-	-	-
Housekeeper Part time	30	-	30	-	30	-	-	-	-
Practical cafeteria operations Full time	28	2	26	2	15	-	11	-	-
Tailoring Full time	16	4	10	-	-	4	10	-	-
Tailoring Part time	48	12	36	4	15	4	13	4	8
Upholstery Full time	44	17	27	17	27	-	-	-	-
Land Surveying and Construction									
Cabinet making Full time	17	17	-	17	-	-	-	-	-
Cabinet making Part time	13	12	1	12	1	-	-	-	-
Construction, carpentry and joinery Full time	34	33	1	17	-	16	1	-	-
Construction, carpentry and joinery Part time	41	31	10	31	10	-	-	-	-
Mechanical/Production Engineering									
Auto and diesel Full time	90	85	5	51	1	34	4	-	-
Auto and diesel Part time	75	70	5	70	5	-	-	-	-
Diesel Part time	16	14	-	14	-	-	-	-	-
General maintenance fitter Full time	34	33	1	13	1	20	-	-	-
General maintenance fitter Part time	28	28	-	28	-	-	-	-	-
Instrument maintenance Full time	60	37	23	23	20	14	3	-	-
Instrument maintenance Part time	41	37	4	11	2	26	2	-	-
Machine shop Full time	97	94	3	73	-	21	3	-	-
Machine shop Part time	62	59	3	41	2	6	1	12	-
Plumbing Full time	42	41	1	18	1	14	-	9	-
Welding Full time	74	73	1	63	1	10	-	-	-
Welding Part time	38	37	1	37	1	-	-	-	-
Total Full time	829	567	262	369	165	189	97	9	-
Total Part time	936	528	408	365	320	122	53	41	35

Source: 9