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EVALUATION OF INDUSTRIAL ESTATE LOANS
PROVIDED BY THE CARIBBEAN DEVELOPMENT BANK

Study Prepared For The
REGIONAL DEVELOPMENT OFFICE/CARIBBEAN
Of The
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
In Accordance With
Work Order No.1 Under IQC Contract AID/SOD/FDC-C-0156

Clapp and Mayne Inc.
Consultants to Management
San Juan, Puerto Rico
May 1979

BIBLIOGRAPHIC INPUT SHEET

1. SUBJECT CLASSIFICATION	A. PRIMARY	Development and economics	DC00-0000-G310
	B. SECONDARY	Development assistance--Caribbean	

2. TITLE AND SUBTITLE
Evaluation of industrial estate loans provided by the Caribbean Development Bank

3. AUTHOR(S)
(101) Clapp and Mayne, Inc., San Juan, Puerto Rico.

4. DOCUMENT DATE 1979	5. NUMBER OF PAGES 89p.	6. ARC NUMBER ARC LAT332.742.C589
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7. REFERENCE ORGANIZATION NAME AND ADDRESS

Clapp/Mayne

8. SUPPLEMENTARY NOTES (*Sponsoring Organization, Publishers, Availability*)

9. ABSTRACT

10. CONTROL NUMBER PN-AAAG-902	11. PRICE OF DOCUMENT
--	-----------------------

12. DESCRIPTORS Caribbean Industrialization Loans Development	Construction Economic development Evaluation	13. PROJECT NUMBER
		14. CONTRACT NUMBER AID/SOD-PDC-C-0156
		15. TYPE OF DOCUMENT

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EVALUATION OF INDUSTRIAL ESTATE LOANS
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This study is an evaluation of 11 sub-loans made by the Caribbean Development Bank (CDB) to finance the construction of factory buildings in industrial estates located in the following Caribbean countries:

	<u>Loan Amounts (US\$000)</u>
Antigua	1,400
Barbados	620
Belize	478
Dominica (124 + 116)	240
Montserrat	243
St. Kitts-Nevis (123 + 347)	470
St. Lucia (91 + 235 + 423)	749
	4,200

Note: Except for Antigua, amounts are as shown in CDB Supervisor's reports.

Three sub-loans to St. Vincent totalling \$316,000 were not evaluated because of the disturbed conditions in the country resulting from the recent volcanic eruptions. The \$1.4 million sub-loan to Antigua was financed by the Canadian Government. The other 10 sub-loans listed above plus the three to St. Vincent were financed by USAID. Two other sub-loans, the fourth made to St. Lucia and the second to Barbados, were approved in 1978 but have not yet been disbursed. AID funding for the CDB industrial estate program through 1978 has amounted to about \$4.1 million, a figure close to the total for the sub-loans evaluated in this study.

Physical Geography, Population and GDP

This study has been conducted on a country-by-country basis with each of the two-man survey teams visiting three countries and the two teams combining for study of Barbados. Except for proximity among the six island countries and similarities in the sub-tropical climates of all seven countries, the diversities among them are marked.

Table 1. LAND AREA, POPULATION AND GROSS DOMESTIC PRODUCT 1977

	<u>Sq.m</u>	<u>Pop.</u> (000)	<u>Pop./</u> <u>Sq.m</u>	<u>GDP at mkt. prices (US\$M)</u>			
				<u>Total</u>		<u>In mfg.</u>	
				<u>Amt.</u>	<u>Per cap.</u>	<u>Amt.</u>	<u>Per cap.</u>
Antigua	108	72	670	51.8	720	2.6	37
Barbados	166	253	1,524	493.0	1,949	45.2	179
Belize	8,866	132	15	89.9	681	13.0	99
Dominica	305	84	275	32.7	389	1.3	16
Montserrat	39	13	282	9.6	710	.2	18
St.K.-Nevis	68	50	735	31.4	628	4.7	94
St. Lucia	238	114	479	67.7	594	4.8	93

Sources: Statistical and planning offices of respective Governments through direct contact by survey teams.

In area, Belize is 227 times larger than Montserrat and Barbados is nearly 20 times more populous. Barbados with one of the highest population densities in the world is over 100 times more densely populated than Belize, which is among the least densely populated countries. High population densities in Barbados, St. Kitts and Antigua are relieved by the relatively high proportion of flat or gently sloping land in these islands while the reverse situation prevails in St. Lucia, Montserrat and, especially, in Dominica.

The very low level of per capita GDP in Dominica is attributable largely to the country's extreme dependence on bananas grown in relatively poor soils on very steep slopes and on its very low level of industrial development. Also its airport is 38 miles by very poor road from Roseau its capital and port city, which is on the Caribbean side of the Island and the preferred locus for the development of tourism facilities. Physiographic constraints on the development of agriculture and tourism in Dominica are severe. This underlines the urgency for industrial development, which is also somewhat hampered by inadequate air service.

Per capita GDP differences among the other five LDC's included in the study are not large; ranging from a little less than US\$600 in St. Lucia to a little more than US\$700 in Montserrat and Antigua. However, the contribution of manufacturing to GDP is minimal in Montserrat, scarcely higher on a per capita basis than in Dominica. At the other extreme, per capita GDP from manufacturing in Barbados is about 10 times higher than in Dominica and Montserrat and both tourism and export agriculture are also more highly developed than in any of the LDC's.

However, Barbados is also highly dependent on manufacturing for its future growth, since agriculture has already reached its extensive limit and most of the prime sites for tourist facilities have already been developed. In recognition of the long standing pressures of population and economic development on the limited land area of the Island, the Government of Barbados has developed one of the most successful family planning programs in the world, which has already reduced the natural rate of population growth to less than 1% a year. Even so, it shares with the LDC's a common need for expanding and upgrading manufacturing industries, which are the most promising source of future income growth and improvements in human welfare.

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Employment Generation and Construction Costs

As shown below, a total of 375,257 square feet of factory space has been constructed with funding from the 11 sub-loans made by CDB to the seven countries that were surveyed. Total construction costs were about \$4.6 million of which about \$4.2 million was provided by CDB sub-loans.

Table 2. EMPLOYMENT AND COSTS OF CDB-FINANCED FACTORY BUILDINGS

	<u>Total</u>	<u>Employment (1)</u>		<u>CDB-financed buildings(2)</u>			
		<u>Total</u>	<u>In Manufacturing</u>	<u>In CDB.</u>	<u>Cost</u>	<u>Sq.Ft.</u>	<u>US\$/</u>
				<u>Hlrs</u>	<u>US\$000</u>	<u>Sq.Ft.</u>	<u>Sq.Ft.</u>
Ant.	20,013	1,345	(3)	403	1,940	141,800	13.02
Barb.	90,200	13,800		407	1,114	69,000	16.14
Bel.	41,000	3,200		0	38	6,000	16.55
Dem.	22,477(+)	2,556	(+)	0(0)	57	6,000	14.50
Mont.	3,301	219	(+)	150	269	32,000	8.41
St.K.	12,377(+)	1,205	(+)	312	449	42,000	10.69
St.L.	20,371(+)	1,071	(5)	319	746	78,457	9.51
Total	216,327	24,396		2,008	4,610	375,257	12.28

- 1) Total employment and employment in manufacturing in 1977 from statistical yearbooks and annual reports of respective countries, except where noted. Employment in CDB-financed buildings as reported to survey teams in May 1979 by lessees. End of 1979 estimates were made for firms that had been in operation for less than six months.
- 2) Cost and square footage of buildings constructed reported to survey teams by managers of respective estates include cost of land development and some part of the cost of land.
- 3) 1976 data
- 4) Data from 1970 census
- 5) Ministry of Trade estimate for 1978
- 6) Building occupied by forestry training workshop, about 10 trainees.

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		<u>Total</u>	<u>Bldgs</u>	<u>US\$000</u>		<u>Sq.Ft.</u>
Ant.	20,013	1,345 (3	493	1,846	141,800	13.02
Barb.	90,200	13,800	402	1,114	69,000	16.14
Bel.	41,000	3,200	0	99	6,000	16.55
Dom.	22,477(4	2,538 (4	0(6	87	6,000	14.50
Mont.	3,381	219 (4	180	269	32,000	8.41
St.K.	12,877(4	1,265 (4	312	449	42,000	10.69
St.L.	26,379(4	2,031 (5	619	746	78,457	9.51
Total	216,327	24,398	2,006	4,610	375,257	12.28

- 1) Total employment and employment in manufacturing in 1977 from statistical yearbooks and annual reports of respective countries, except where noted. Employment in CDB-financed buildings as reported to survey teams in May 1979 by lessees. End of 1979 estimates were made for firms that had been in operation for less than six months.
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Of the 375,257 square feet of factory space that has been constructed, only 6,000 in Belize are vacant and uncommitted. There is no space in any of the other six countries available for immediate occupancy. An additional 4,000 square feet in St. Lucia is vacant but committed. The 6,000 square feet in Dominica is rented by Government for a training program and 20,000 square feet in Antigua, which had been occupied by an animal feed mixing plant now in bankruptcy, is committed to the Government, which plans to reopen it. Even counting committed space as vacant, the current vacancy rate of less than 10% is quite low; for example, CDB uses a 25% vacancy rate in its formula for calculating economic rental rates. Moreover, one of the 26 firms in the estates included in this study occupies an additional 34,000 feet provided by the 11 sub-loans examined herein. Thus, total space occupied by the 26 firms totals 373,257 square feet.

Of these 26 manufacturing firms, eight have been in operation for less than six months. For these eight firms, employment and other operating estimates were made for levels expected by the end of 1979. For the others, current (May) employment figures were obtained. Since several of the latter were in their first year of operation and still expanding, the total figure of 2,006 for employment in CDB-financed buildings (shown in Table 2) may approximate average 1979 employment in occupied space. The resulting average density of 186 square feet per worker is comparatively low by international standards even though some individual plants were over-crowded.

Among the 26 firms in the estates, 11 are sewing operations and five are electronic assembly, both of which employ women almost exclusively as production workers and supervisors, as do some of the other eight plants. There

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are wide differences in wage rates within the seven countries. The following weekly wages in US\$ for experienced sewing machine operators are usually from the larger firms in the various countries and may be roughly typical of country differences:

Antigua	\$19.00	Belize	\$24.00	Montserrat	\$19.00
Barbados	\$56.00	Dominica	\$14.00	St.K.&St.L.	\$16.00

Electronic assembly workers were generally somewhat higher paid and supervisors were usually paid 40 - 80% more than production workers.

Estate Operations and Estate Facilities

This section of the report includes a country-by-country survey on the development of the industrial estates related to the loan numbers of the CDB funds involved in their development. Management of the estates by the responsible agencies of government is discussed, including management problems as viewed by both management and tenants.

The heart of this section is a tabular presentation listing the names of the companies leasing building in each estate, their origin (local or foreign), the square footage of space they occupy and the products they produce. Except in the case of Belize and Dominica, which have no private manufacturing firms operating in their estates, this is followed by Consolidated Operating Data for 1978 (or estimated for 1979) for the three or more firms operating in each estate. Each of the 26 firms operating in the five countries was interviewed by the survey teams but, in order to obtain response, each firm was assured that its own operating data would not be disclosed. These operating data provide the basis for evaluating the CDB loans on a country-by-country basis. However, because of the great variations in conditions among the five countries, it was decided to concentrate on a general evaluation of the industrial estate program based on the combined experience to date in the five countries surveyed.

Following the tabular presentation of the Consolidated Operating Data of the manufacturers leasing space in the estates in each country there is a description of the physical characteristics of the estates and their facilities, as well as the reactions of manufacturers to them.

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Overall evaluation of the functional and environmental characteristics of all the estates appears in a later section of the report.

ANTIGUAEstate Operations

Antigua is unique among the countries studied by members of the survey team in that none of the CDB loans for industrial estate development there were of USAID origin. Funds channelled to Antigua through the CDB for industrial estate purposes have apparently been principally of Canadian origin (CTDA). Beyond this, the Government of Antigua has received several grants for constructing industrial estate shells from the Government of the U.K. and at least one other source.

The sites and factories studied by the survey team were in four different industrial estates. The two largest, Powells and Collidge, are located more or less adjacent to each other near the entrance to the Coolidge International Airport. The largest of the firms studied, located in the latter estate, is a contract garment manufacturing company, occupying over 40,000 square feet and employing 240 employees, which exports mainly to Canada.

Other firms operating in CDB financed shells include producers of lenses, garments/clothing and electrical appliances. One CDB financed structure, located in the Sandersons Industrial Estate, is now in disuse because the previous occupant, a firm dedicated to the shelling and grinding of corn for animal feeds, is now in receivership. The Government of Antigua is very interested in resuscitating the operation, not only for the jobs created, but also to assure the availability of the resultant feeds, as well as a market for locally grown corn.

Other manufacturing firms now operating or expected

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to start operations soon in these industrial estates include such diverse operations as small car assembly, needle craft, mattress manufacture, and the production of carpets, gloves, protective clothing, electronic components and biscuits and confectionery products.

INDUSTRIAL ESTATES, ANTIGUA

(CIDA Funds)

<u>OCCUPANTS</u>	<u>ORIGIN</u>	<u>SQ. FT.</u>	<u>PRODUCTS</u>
<u>Coolidge</u>			
Freelance Antigua, Ltd.	Foreign	40,600	Contract apparel
<u>Powells</u>			
Antigua Hosiery Ltd.	Foreign	6,400	Men's Hosiery
Knitwear Antigua Ltd.	Foreign	20,200	Contract Apparel
Guardian Optics Ltd.	Foreign	26,300	Contract Lenses
<u>Cassada Gardens</u>			
Antigua Applicances Industries Ltd	Foreign	<u>28,300</u>	Misc Appliances
SUB TOTAL		121,800	
<u>Sandersons</u>			
Committed to Government		<u>20,000</u>	
TOTAL		<u>141,800</u>	

CONSOLIDATED OPERATING DATA, 1978 US \$(000)

Sales	3,503
Exports	3,268
Employment	493
Production workers	426
Supervisory	48
Management (incl.clerical)	19
Payroll	695
Rent	121
Other local costs	56
Total local costs	872
Imports in goods sold	1,037
Foreign Exchange (earnings + savings)	2,466
Direct Contribution to GDP	2,410
Investment in machinery & equipment	651
Average Inventories	179
Cost of buildings occupied	1,640

It is of interest to note that the construction of CDB-financed industrial shells in Antigua has been and is being carried out by the Public Works Department. The average construction cost per square foot of US\$15.02, however, is significantly higher than the US\$8.41 per square foot in Montserrat where construction has also been effectuated by its PWD.

A more critical matter for consideration is the practice in Antigua of tying the length and the terms of the rental agreement between the government and the occupant of an estate shell (rents are now at US\$1.00 per square foot) to the entire duration of the latter's tax exemption period. This whole matter of the relationship between rents charged, construction costs and loan repayment schedules demands a thorough evaluation and rethinking. This important but rather complicated matter is specifically treated in a subsequent section of this report.

Estate Facilities

The executing agency, The Ministry of Economic Development, has under its jurisdiction the four industrial estates previously mentioned, namely: the Coolidge and Powells industrial estates located at the entrance to the International Airport; the Cassada Gardens Industrial Estate, located about three miles east of the city of St. Johns on the road towards the airport, and Sandersons Industrial Estate, located about 6 miles south-southeast of St. Johns in an area of former sugar cane plantations.

Coolidge and Powells together have a total of 77,000 sq.ft. already constructed of which 47,000 sq.ft. were financed by the CDB; Cassada Gardens contain a total of 109,800 sq.ft. of industrial space, plus a 20,000 sq.ft. building under construction for a total of 129,800 sq.ft.

Of that total, 94,800 sq.ft. were or are being financed by the CDB. On the other hand, Sandersons has only one building of 20,000 sq.ft. which was also financed by the C.D.B.

From the physical planning point of view the estates' locations are considered to be acceptable; they are adequately serving the major populations center, St. Johns, and do have satisfactory access to both the International Airport and the new seaport area.

Development of the industrial parks, except Sandersons, has taken place mostly along the main roads, a sort of "string-like" development, and no sidewalks are provided. The sites lack the final grading and may require an improvement of the surface drainage systems. Paved or improved accesses to the structure should also be provided. The only building at Sandersons needs to be completed, especially the second floor where the offices are located, which lacks doors, windows, electric and water installations and general finishing. In addition it also needs substantial improvement of the lot in terms of grading and a run-off drainage system, as well as the provision of more adequate access.

On the basis of the observations made by the survey team of the grounds and buildings, it can be concluded that there is a complete lack of a regular preventive maintenance program. Maintenance is virtually nonexistent, except at the Freelance factory near the airport.

The unreliability of the electric power system is a serious problem. It also affects the water supply because the pumps depend on electricity. During the team's plant visits, there were several reports of full days without electric power or water. Factories are then forced to close

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for the day but, by law they must stay "open" for at least two hours and pay the employees for those two hours.

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BARBADOS

Estate Operations

It should be stressed at the outset that the factory buildings in Barbados constructed with the use of USAID funds, channeled through the CDB, constitute a very small subset of shell structures in B IDC owned industrial estates and, of course, therefore house an even smaller component of the total manufacturing sector of the country as a whole. Clearly, Barbados as an MDC is generally quite different from the six other countries studied here in many important respects which are germane to the industrial development process but which for various reasons will not be elaborated upon here.

The first CDB loan to the Government of Barbados, in the amount of US\$1,624,000, was approved in October 1972 but actual construction did not begin until three years later. Five buildings with a total area of 169,390 square feet were partly financed out of the funds made available through this loan. Three of the structures were completed and occupied before the end of 1977. Two others, with a total area of 69,000 square feet were partially constructed. Loan funds to complete these two projects were included in the second loan.

The second industrial estates loan of the CDB to the Government of Barbados, Loan No. 1/SFR-OR-BS, is in the amount of US\$3,440,000 of which US\$620,000 comprises a sub-loan of USAID. The B IDC as the executing agency is charged with the completion of two structures begun with the aid of funding from a previous CDB loan as indicated above. One is a three-storey 48,000 sq.ft. expansion of an existing factory occupied by the Cooper sporting goods factory at

Harbour Industrial Estate, and the other is a 31,200 sq.ft. new building for the relocation of the Catelli Macaroni factory at Wilday Industrial Estate. In addition BIDO will carry out much new construction and the complete rehabilitation and/or reconstruction of a complex of artisan workshops (Pelican Village).

It is important to note that in the allocation of the various loan funds that all available, soft (low interest) funds, including all those of USAID origin (US\$620,000), are destined to financing workshop rehabilitation and construction. Presumably this responds to the need to provide these work spaces at lowest possible rentals which correspond to the economic capabilities of artisans and craftsmen. At the same time, however, sight should not be lost of the real and probable future uses of the spaces thus provided. This relates specifically to actual production of the various products versus display and retail sales functions and the job generation coefficient. Several existing shops are used exclusively for sales purposes with no production and with very few employees.

The new CDB-financed structures now actually under construction or contemplated, other than workshops and the Pelican rehabilitation, will be financed by non-USAID funds. This new construction of about 178,000 square feet will cost about US\$3.4 million and will involve US\$2,173,825 in hard fund loans from the CDB's Ordinary Capital Resources (OCR). The 35% participation of the Government of Barbados in the hard fund portion of the loan will be provided in the form of US\$1,108,000 in other factory construction wholly financed by the Government plus US\$400,000 in cash advanced from the CDF which, we are told, is ultimately of USAID origin but enters this loan project through a different funding program.

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<u>Sources of funds, second CDB loan</u>		<u>US\$</u>
Soft Funds		
USAID	\$620,000	
SFR (other)	<u>250,000</u>	
Total soft funds		\$870,000
Hard funds		
OCR		
Completion costs	396,175	
New construction	<u>2,173,825</u>	
Total hard funds		<u>2,470,000</u>
Loan Total		\$3,340,000

Three aspects of industrial estate operations in Barbados should be studied and reviewed: construction of multi-storey buildings; the rental rates charged and lease-purchase agreements.

Debate concerning the advisability of constructing multi-storey factories has been inconclusive. There may be no generally applicable resolution of this matter. We believe, however, that operating as well as construction costs in single and multi-storey buildings should be closely reviewed to serve as a guideline for further construction.

A high official of the IDC indicated to the survey team that no firm occupying an IDC owned shell was paying rent in excess of BDS\$2.00 (US\$1.00) per square foot. This conforms to the rule of thumb that annual rental is calculated at 1/15 of the total construction cost of the structure occupied given that the present cost per square foot is about US\$16.00. It is doubtful however, that the estates can continue to be financially viable, holding rental rates to this level. A searching reappraisal of rental policy would take into account 1) the incentive value of low rental costs once a firm has started operations, 2) this is

particularly related to the diminishing significance of a constant rent, while other costs rise with inflation, 3) that unwillingness to take advantage of reasonable increases in rental rates, despite the fact that servicing costs of the original fund remain essentially constant, results in a significant, adverse opportunity cost to the estate and 4) that present rents are a continuing subsidy that will become increasingly burdensome as more buildings are constructed with 8% OCR hard funds.

Agreement is almost universal that existing lease-purchase agreements are extremely attractive to eligible purchasers. There are, of course, obvious advantages to freeing needed capital which is now tied up in occupied BDC buildings. At the same time, financial guidelines should be developed to assure that liquidation of these assets to finance new construction is on terms and conditions that are beneficial to BDC, as well as to the lease purchaser.

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INDUSTRIAL ESTATES, BARBADOSLOAN NUMBER 1/SFR-OR-BS

<u>OCCUPANTS</u>	<u>ORIGIN</u>	<u>SQ.FT.</u>	<u>PRODUCTS</u>
<u>Harbour</u>			
Cooper Barbados Ltd.	Foreign	37,000	Athletic equipment
Waupaca International Ltd.	Foreign	11,000	Quality gloves
<u>Wildey</u>			
Catelli Food Products (Barbados) Ltd.	Mixed (51% local)	<u>21,000</u>	Macaroni Products
TOTAL		<u>69,000</u>	

CONSOLIDATED OPERATING DATA, 1978 US\$ (000)

Sales	5,407
Export Sales	4,136
Employment	402
Production workers	355
Supervisors	21
Management (incl. clerical)	26
Payroll	845
Rent	69
Other local costs	100
Total local costs	1,014
Imports in goods sold	2,325
Foreign exchange (earnings + savings)	3,082
Direct contribution to GDP	2,982
Fixed investment	3,100
Average inventories	1,700
Cost of buildings occupied	1,114

Estate Facilities

This description of BIRC estate facilities will only cover in detail the two buildings occupied by the Cooper, Waupaca and Catelli firms, as these are the only ones financed by CDB through the second IEP loan. Other BIRC facilities will be mentioned in general terms to provide a sketch of present estate building activities in Barbados.

Cooper factory expansion

The Cooper factory at the Harbour Industrial Estate located in a 0.9 acre lot adjacent to the Bridgetown waterfront, close to the central business district of the capital city. The project consists of a 48,000 sq.ft. three-storey expansion of an existing 34,000 sq.ft building which was previous constructed by BIRC using non-CDB funds. the expansion is a mixture of steel structure and reinforced concrete floor, beams, columns and roof, with hollow concrete block walls. Roof heights are around 14ft. and columns spacings and accessory facilities are adequate for efficient manufacturing operations. The expansion was constructed without an elevator and with only narrow stairways connecting the different floors. The tenant is installing a heavy duty elevator at a cost of US\$100,000 and also conveyor belts connecting each floor, plus a complete air conditioning system. The total cost of the expansion project including tenant improvements is around \$1.0million

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available space and has rented part of the second floor to a glove factory on a temporary basis, but is planning to use the whole building by 1980.

The tenant also indicated that they are considering acquisition of the building since a significant portion of accumulated rent payments can be credited toward the acquisition price which at current prices is attractively low. On the other hand, as the title of the land will always remain with the BIDC, the tenant has not decided whether to exercise this option.

The Harbour Industrial Estate covers a total of 26 acres of developed industrial land and the several buildings which up to fiscal year 1978 included eleven factories with a total floor area of 337,958 sq.ft.¹⁾ The overall project is generally well planned. The site is very accessible to the deep water port but is constrained, as is much of Bridgetown with respect to other means of transportation. The potential of this area, as well as that of other industrial areas of Barbados is limited by the narrowness of the main streets serving and connecting the sites and also linking them with the international airport.

No roll-on-roll-off, trailer waterfront facilities are available in Barbados. As large trailer vans reach the ports their cargo has to be broken down for transfer to smaller transport vehicles that can traverse the local roads. This creates an additional cost for manufacturers here vis-a-vis other countries served directly by trailer vans from factory to markets and from supplier to factory.

Electric, water and sewerage facilities are adequate, although some concern was expressed by tenants about the generally low water pressures in the pipelines and the

1 "Annual Report 1977-78", Barbados Industrial Development Corporation, Table 1, P. 19.

corresponding higher costs of fire insurance. The factory adjoins an open storm sewer channel that appears to carry sanitary sewage also. The sanitary sewer facilities of the Cooper factory are septic and filtration tanks. No piped sanitary sewer system exists at the moment but the Bridgetown sanitary sewer system is already under construction and will eventually serve this project.

The surrounding area is already built-up and further horizontal expansion of this factory is not feasible.

Catelli Factory

The Catelli Factory is sited within a 1.6 acre lot that forms part of the Wildey Industrial Estate, a 22.3 acre BIDC property two miles east of downtown Bridgetown. As of 1977-78, eight factories were located in the Wildey Estate with a total floor area of 234,520 sq. ft. ¹⁾ The Catelli building has an area of approximately 31,200 sq. ft. It consists of reinforced concrete floors, beams and columns, hollow block walls and steel roof. It includes a two storey reinforced concrete and hollow block wall annex used mainly for offices.

The design and general layout of this building and of the Wildey Industrial Estate in general, is considered very adequate for manufacturing activities. The tenant indicated satisfaction with the building and accessory facilities. A noteworthy negative factor observed during the visit to the Catelli plant was the lack of dust control facilities within the premises. We suggested to the Catelli official the installation of partitions to segregate the flour handling operations, of dust extractors to recover the flour particles and face masks to protect the employees working with the flour sacks.

The overall maintenance conditions of the grounds and within the factory building leave much to be desired. Maintenance is the responsibility of the tenant. The site of the building is fully occupied and no further

1) "Annual Report 1977-78", Barbados Industrial Development Corporation, Table 1, P. 19.

expansion of this building is feasible. There is a bus stop in front of the building and main streets connect it with other parts of the estate and surrounding areas. Electric power and water connections are available at the site, but due to lack of power reliability, the company installed its own diesel electric power generator. Septic and filtration tanks provide disposal for sanitary sewage originating in the project.

The following is a list of other BIDC industrial buildings now under construction, which the survey team visited. We understand they are funded in part at least by the CDB, but only the Pine Workshops involve funds of USAID origin.

<u>% Compl.</u>	<u>Project</u>	<u>Lot area (acres)</u>	<u>Building Sq. ft.</u>	<u>Estimated cost (\$US)</u>
90	Triple Gable Bldg. Newton	1.8	39,200	630,000
75	Pine Workshops Pine	0.8	28,800	340,000
	6 - 1,200 sf modules			
	3 - 960 sf "			
	1 - 811 sf module			
	1 - 480 sf "			
60	Six Roads Bldg. Six Roads	0.8	20,542	340,000
3	Newton Factory Bldg. Newton	0.8	25,000	452,000
2	TRW expansion Newton	2.1	40,400	620,000
20	Phase One - Cluster Bldg. Grantley Adams	1.0	35,200	590,000
	Totals		189,142	2,972,000

25.

Other BJDC industrial building projects with CDB financing on which construction will soon be started are the following:

	<u>Area of lot (acres)</u>	<u>Area of bldg. (sq.ft.)</u>	<u>Cost of project (\$US)</u>
Pelican Shops Rehab. Harbour Industrial Est.	N/A	N/A	\$360,000
New Factory Bldg. Six Roads Ind. Estate	0.6	15,250	250,000
New Workshops, Six Roads Ind. Estate	N/A	18,000	<u>230,000</u>
Total			\$840,000

The total cost of these facilities is US\$3.8 million. It is our opinion that their design and planning standards are adequate for the location of light manufacturing projects. Connections for piped water and electric power are to be provided and septic and filtration tanks will help to dispose of the liquid sanitary wastes. In the majority of the projects, vacant land was available for future expansion. The layout of the lots, streets and utilities of the various industrial estates is considered more than adequate for manufacturing operations.

BELIZEEstate Operations and Economic Setting

The Development Finance Corporation of the Government of Belize performs the dual role of borrower and executing agency on Loan No. 13/SFR-BZ. This loan of US\$477,864 was approved on August 28, 1974. Its purpose was to facilitate expansion and improvement of the manufacturing and service sector through the development of the Ladyville Industrial Estate located 9 miles north of Belize City, near the International airport. In its original conception, the loan was to have provided for land development of the estate and the construction of 32,000 sq.ft. of factory structures in 3 buildings of 6,000, 6,000 and 20,000 square feet, respectively.

Initiation of the project was delayed for more than two years for a variety of reasons. To date, the actual accomplishments include the improvement of 256,143 square feet of government-owned land (cost US\$188,226) and the construction of a prefabricated steel building of 6,000 square feet (cost US\$89,762). The completed building and the proportional development costs for the plot of land which it occupies (12,950 square feet) absorbed a combined expenditure of US\$99,278 or an average of US\$16.55 per square foot of factory area constructed.

Actual disbursements fell considerably below the total amount of the approved loan because only one shell, rather than three was constructed. It must be noted, however, that land improvements for the entire industrial estate (including not insignificant consultancy fees of US\$72,500) were included in the total expenditure.

~~The fact remains, nevertheless, that the one existing~~

structure, completed in September 1978, remains unoccupied. Several prospective firms have apparently expressed interest but no commitment has been made. This lack of interest may be partly attributable to the fact that the paving to the internal access road and parking area has not been completed. The Investment Promotion Unit of D.F.C. is confident, however, that an appropriate occupant can be secured in the immediate future.

In viewing the general industrial development situation in Belize, it should be recognised that manufacturing and processing industries there are unusually well developed relative to most of the other areas studied. Belize is second only to Barbados in both absolute and relative terms (See Table 2) even though no planned industrial parks had been developed previously. This is largely a reflection of the greater availability of natural and agricultural resources for processing. Moreover, recent trends and developments augur well for the development of a larger and more diversified industrial structure.

Although sugar, citrus, fish, lumber and other processed products of extractive origin continue to dominate exports, the value of exports of "miscellaneous manufactures" more than tripled in the 1973-1977 period, while total domestic exports barely doubled. A particularly significant contribution has been made by one large U.S. owned garment manufacturing firm, which employs over 600 people and imports all raw materials and exports all finished products via truck through Mexico. There are, however, a number of smaller factories of various kinds, many located in very improvised quarters, producing diverse goods for export, as well as consumer goods exclusively for the local market.

Enthusiasm for additional, direct government involvement.

in industrial estate development has perhaps been dampened in recent months as the result of the imminent development of a 100 acre industrial estate under private auspices. It is planned to include a free trade area adjacent to the new port facility, which is now being constructed south of Belize City with significant involvement of CDB financing. The survey team was informed that the agreement between the government and the private developer will result in the establishment of at least 25 new firms, with a minimum of 2,000 jobs during the first three years. Presumably six firms are already committed. Moreover, the developer has allegedly guaranteed his compliance with the overall agreement by means of a performance bond. The primary objective of the project is job creation through exclusively export oriented processing, assembling, manufacturing, and warehousing.

At the same time, however, government officials indicated interest and intent to develop one or more industrial estates in the vicinity of the new capital city of Belmopan which is located near the geographic center of the country. There, estates would concentrate on forest products and food processing. Development of such government sponsored estates and any future construction of new shells in the Ladyville Estate for which CDB has already been requested to provide funds will require dynamic and effective promotional effort supported by appropriate financing. This must be achieved within the context of an explicit government policy toward smaller scale, higher cost local manufacturing firms and import substitution vis-avis the enclave, export concept.

Estate Facilities

The development of manufacturing industry in Belize

has been affected by its relatively secluded location; away from the major sea lanes, as well as by the lack of a strong, vigorous and competitive industrial promotion program. It is only within the past few years that outside manufacturing enterprises have started to discover the significant advantages of establishing in Belize.

The Development Finance Corporation (DFC) is developing a promotional program that has as one of its important elements the construction of industrial estates and industrial buildings throughout the commonwealth. So far, the Ladyville Industrial Estate, next to the Airport and 9 miles from Belize City, is the only such facility developed by the DFC. Although the survey team found no evidence of active demand for industrial space, government plans call for the construction of an additional 100,000 square feet of industrial space in Ladyville and some 32,000 square feet in an industrial estate to be developed within the limits of the new capital city of Belmopan.

From a planning and engineering point of view, the Ladyville Park is well located and relatively well conceived. Although only one small building (6,000 sq.ft.) has been built, there is already enough improved land area to accommodate an additional factory floor area amounting to 110,000 square feet. Immediately adjacent to the estate a housing development for laborers has been built and is being considered for possible expansion. Hopefully this development house a good percentage of the Ladyville work force but it seems likely that the housing will be occupied before the estate can be developed and that employees will have to be bussed from Belize City, as a large garment manufacturer is presently doing. Construction in the area is expensive because floating slabs and foot-

ings are required and because all construction materials except sand and gravel must be imported. In and near Belize City, serious subsoil conditions resulting from a very high water table, plus hurricane hazards, have restricted availability of suitable industrial sites. Construction costs are extremely high in areas such as this, requiring floating slabs and footings and complicated systems for the disposal of human and industrial wastes. If the sand blanket, piles and drains process were to be used, the cost would be prohibitive because of the amount of land involved, the lack of the required amount of special granulated sand and because of the possible effects of the process on the immediately adjacent areas.

It is the opinion of the survey team that development of Ladyville should continue but that attention must be given to transportation between this industrial estate and Belize City, where the labor force resides.

A word of caution -- the free trade and manufacturing area being developed adjacent to the new port by a private enterprise should be carefully monitored. The so called "commitment" of the venture to establish within the first three years enough factories (25 they said) to generate 2,000 jobs seems unrealistic. It is our opinion that the DFC may be relying too much on this project and to the detriment of its own promotional effort.

DOMINICAEstate Operations

Estate finance and management is provided by the National Commercial and Development Bank of Dominica (AID Subsidiary). 1) Industrial promotion is the responsibility of the Ministry of Industry.

Loan No. 3/SFR-D of US\$127,000 was originally intended to finance two 6,000 sq. ft. factory shells. One shell, completed in May 1975 is now occupied by Government Forestry Training workshop having about 10 trainees. Government is charged US\$1 per square foot per year rental (US\$1 = EC\$2.60) or a total of US\$6,000 but payment in 1978 totalled US\$3,628. Construction cost in 1975 was about US\$87,496 (US\$=EC\$2) of which US\$81,223 was provided from the first loan leaving a balance of US\$45,777, an amount insufficient for construction of the second shell. However, there was then no demand for additional factory space.

Loan No. 8/SFR-D of US\$116,000 was originally approved in 1973 for the purpose of constructing a large factory shell but CDB has granted a waiver to permit the proceeds to be used in the construction of a prefabricated 6,000 sq.ft. shell estimated to cost US\$103,000. Construction of this second shell has been delayed but is now expected to start in June. A rental agreement has been signed with Dawn Creations, a local lingerie firm presently operating in insufficient space to permit a planned expansion.

The survey team was told that a third loan for two 20,000 sq.ft. shells had been approved by CDB but there was uncertainty as to whether or not the loan agreement had lapsed. This matter should be clarified since there is

1) "AID Subsidiary" does not refer to USAID but rather to a former Agricultural and Industrial Development Bank that became a subsidiary of the new National Commercial Bank of Dominica.

presently a considerable unsatisfied demand for factory space. By-Trinee Industries, a local firm producing men's and women's outerwear, is presently operating two shifts in inadequate space. In addition, it now has a firm offer from a U.S. producer of blue jeans for contract sewing of precut material. Fashionaire, a St. Lucia based manufacturer of lingerie, is seeking space for establishment of a Dominican subsidiary and is considering temporary use of a banana shed. A Dominican from the U.K. who has begun to refurbish another banana shed for the manufacture of aluminium windows is finding the renovation costly. The cooperative (of which Dawn Creations is a member) is seeking space for a manufacturing and training center and a German firm is a serious prospect for a fruit canning plant. Maidenform (brassiers), seeking 12,000 to 20,000 square feet of space, lost interest on learning that none was available for immediate occupancy.

Government appears to be strongly committed to industrial development; the Budget contains EC\$50,000 for industrial promotion. It has industrial representation in the U.K. and hopes to establish representation in the U.S. and Canada. It is convinced of the need for additional factory space and of its need for vacant space ready for immediate occupancy, not only in Roseau, but perhaps also in Portsmouth and Granby. The National Commercial and Development Bank supports the principle of charging an economic rental rate but presently calculates it at 7% of total construction cost over a 20-year life.

Estate Facilities

Goodwill Estate

The only industrial building constructed with CDB funds in Dominica is at the Goodwill Estate within the urban area north of the capital city of Roseau. It consists of a 6,000 sq.ft. concrete floor, hollow block walls and steel roof building, which at present is occupied by a Government Forestry Project that involves woodworking and sawmilling. The structure is situated in a half-acre lot and it has adequate electric and water facilities. It is adjacent to the old water front commercial area. There are no plans for expanding the Goodwill Estate. The sanitary facilities consist of septic and filtration tanks.

Canefield Estate

Future development plans are now focussed on a presently unimproved site of about ten acres a mile north of Roseau. It is bounded on the east and north with well paved roads leading to Roseau and to a local short-strip airport now under construction.

The new deep water port terminal nearby will facilitate roll-on-roll-off operations. The land is flat, hard and with adequate drainage. Construction of a 6,000 sq.ft. industrial building for the Dawn Creations Factory and two other buildings of 20,000 sq.ft. in each, is planned to begin as soon as CDB financing can be arranged.

Electric power and water facilities are available and the proximity of the estate to the ocean will facilitate disposal of sanitary and industrial wastes once adequate pre-treatment facilities have been developed. In the meantime, septic and filtration tanks will be used to dispose of the sanitary waste.

The areas adjoining the site are developed or have other potential uses. For this reason further expansion of the Canefield Estate is limited to about 10 industrial lots averaging about 3/4 acre each.

There were no tenants to interview in Dominica, but in our opinion both the Goodwill and Canefield Estates are adequate for the location of light manufacturing industries.

MONTSERRATEstate Operations

The first planned industrial estate development in Montserrat was primarily financed by Loan No. 5/SFR-M with the Development Finance and Marketing Corporation as both the borrower and the executing agency. This first loan, approved December 13, 1974, was for site preparation and the construction of three industrial shells of 6,000, 6,000 and 20,000 square feet, respectively, for a total of 32,000 square feet. Construction did not begin however until July 1976. The three structures, located about a mile to the northeast and about 300 feet above the Plymouth port area have been completed and are occupied at least provisionally.

The two smaller (6,000 square foot buildings), which were built first are occupied by firms engaged in electronic assembly operations, under contracts with mainland U.S. firms. The third building with 20,000 square feet of factory area has been taken over by Montserrat Government Enterprises Ltd. which will have management responsibilities for the development of a project for the spinning and weaving of locally produced Sea Island cotton. The spinning operations and the weaving operations respectively will be facilitated by British and Canadian financing, technology and experience. British funds are also available for product development and design and for marketing research. Canadian financing will provide 112 looms. Considerable interest and importance is attached to this project because, in addition to its direct generation of employment, backward linkages to the cotton growers will have important indirect impacts. Once operating at full capacity it is anticipated that raw materials input requirements for cotton will perhaps

exceed local production and may require importation from other growers especially in Guadeloupe.

Although the scope of the present report was not defined to include a subsequent, Phase II, loan to the DFMC for industrial estate development, specific reference to on-going activity resulting from this loan is relevant. It should be noted that construction under both Phase I and Phase II was and will be carried out by the Public Works Department. As indicated in Table 2 the cost of construction in Phase I of US\$8.41 per square foot was the lowest among the 7 countries studied. Although the programmed construction of another 32,000 square feet distributed among 3 buildings (10,000, 10,000 and 12,000 square feet respectively) will also be carried out by the Public Works Department cost estimates incorporated into the loan application are more than 20% higher presumably due to inflationary pressures on construction costs. The fact remains, however, that expected per square foot construction costs of between US\$10 and US\$12 are still low by comparison with those in the other countries studied.

The first of the Phase II buildings to be constructed, one of 10,000 square feet, is nearing completion. It will be occupied by one of the existing electronic assembly firms which is expanding and requires more space. No new tenant has yet been obtained to occupy the 6,000 square foot structure that will be vacated. However, land preparation for a second 10,000 square foot building as part of Phase II has begun and construction will follow shortly. The structure will be occupied by a U.K. firm which will engage in the packaging and export of tropical plants.

Factory rents in CDB financed shells are pegged at or near US\$1.00 per square foot. A serious problem of delinquency in payments of rents has plagued the DFMC for over a year but the issues involved seem to be in the process of satisfactory resolution.

DAGENHAM INDUSTRIAL ESTATE, MONTSERRATLOAN NUMBER 5/SFR-M

<u>OCCUPANTS</u>	<u>ORIGIN</u>	<u>SQ.FT.</u>	<u>PRODUCTS</u>
Electro Magnetics Ltd.	Foreign	6,000	Contract elect. assembly
W & W Electronics Ltd.	Foreign	6,000	Contract elect. assembly
Montserrat Govt. Ent.	Local	<u>20,000</u>	Cotton spinning & weaving
		<u>32,000</u>	

CONSOLIDATED OPERATING DATA 1978 US\$ (000)

Sales	1,335
Exports	1,335
Employment	180
Production workers	143
Supervisory	19
Management (incl. clerical)	18
Payroll	345
Rent	30
Other local costs	92
Total local costs	467
Imports in goods sold	50
Foreign exchange (earnings + savings)	1,285
Direct contribution to GDP	1,193
Investment in machinery & equipment	540
Average inventories	63
Cost of buildings occupied	269

Estate Facilities

The Development Finance and Marketing Corporation (DFMC) is the executing agency in the island. The single industrial estate, Dagenham, is located within the urban limits, about one mile north-east of the seaport area. Three buildings are completed and occupied, two of 6,000 sq. ft. each and one of 20,000 sq. ft. An additional building of 10,000 sq. ft. is almost completed, lacking only the finishing of the septic tanks and the installation of the doors. Site preparation has begun for another 10,000 sq. ft. shall, for which the steel materials are now on site.

The buildings are all of the steel frame type with concrete blocks walls. The three original buildings have no windows, using open clay ceramic blocks instead. The shell being completed has aluminium Miami-type windows. The height of all the structures is very low for an industrial type building, especially under prevailing climatic conditions.

The site is at the foot of a very steep hill and it is developed with terraced lots, with the buildings located one behind the other and a service street alongside the buildings providing access. The location of the estate is acceptable for the kinds of industries being promoted which are light-dry and labor intensive. It is less than a mile from the port area, the road system can accept even the 40 ft. trailers of the roll-on-roll-off type. The estate is capable of attracting industries requiring use of such equipment and the new port is also capable of handling it.

Human waste disposal is through the use of septic tanks and the reliability of the supply of electric power and water is within acceptable limits.

ST. KITTS - NEVISEstate Operations

Estate administration is in the hands of the Development and Finance Corporation, which is not at present active as a lender. Government, through the Ministry of Trade, Industry and Tourism, is responsible for financial management and leasing of the two estates and for maintenance expenditures. The Ministry is also active in industrial investment promotion.

Loan No. 3/SFR-ST.K was approved in December 1971 and the two 6,000 sq. ft. buildings it provided for at the Bird Rock Estate were completed in 1975. While both buildings are nominally occupied, one (Curtis Mathes) is being converted from manufacture of TV sets to contract apparel and the other (Kaytronics, a firm having connections with Curtis Mathes) is being refitted for electronics assembly. Kaytronics has agreed to a recent increase from US\$0.92/sq. ft. to US\$1.08 but Curtis Mathes had not yet accepted the increase. Since the original cost of the buildings was US\$12.08/sq. ft., even the higher figure is considerably short of an economic rental rate.

Loan No. 7/SFR-ST.K., approved in February 1975, provided for three buildings in the Ponds Pasture Estate. The first with 20,000 sq. ft. was completed in 1976 at a cost of US\$9.76 per sq. ft. and occupied by Caribbean Shoe in October 1977 with production starting in January 1978. This firm is partly owned by Government and pays no rent. Two 5,000 sq. ft. buildings were completed early in 1978, the first being occupied by Qualitek in February and the second by Electrofab in October. The average cost of these

two buildings was US\$10.91 per sq. ft. and the annual rental charged is about US\$0.93 per sq. ft.

Total rental income from the two estates during 1978 was US\$11,885 with payments of US\$6,546 being sixty days or more in arrears, of which about \$1,846 is accounted for by the rental increase which has not yet been accepted by Curtis Mathes. It will be noted that rental payments shown in the following tabulation of Consolidated Operating Data for 1978 amount to US\$21,000. This is approximately the total rental for the entire year for all four rent-paying firms, only one of which occupied its building throughout the year.

It will also be observed from the Consolidated Operating Data that nearly all products in the St. Kitts estates are for export. Moreover, since two of the five firms are contract operators, value of materials is not reflected in either their materials costs, value of inventories or sales and the consolidated ratio of payroll to sales is comparatively high.

Industrial development is given a high priority by Government. It has been doing promotional advertising in the Wall Street Journal and the New York Times. The Premier is also Minister of Finance, Trade, Industry and Tourism. He and the Permanent Secretary for Trade, Industry and Tourism have been doing promotional work, especially in West Germany and they are considering retaining professional representation for the US and Canada.

Government favors payment of economic rental rates in the estates and decentralization of factory locations. It is concerned that Nevis has a shortage of electric power, which precludes the establishment of any but cottage

industries. However, it is believed that the extension of the new highway from Frigate Bay to a point at the southern tip of St. Kitts will permit shortening the present 11 mile ferry route between Basseterre, St. Kitts and Charlestown, Nevis to about two miles. This plus additional power capacity should enable Nevis to develop industrially.

Of all governments contacted, only that of St. Kitts was indifferent and possibly somewhat opposed to maintaining a reserve of ready-to-occupy factory space. One factor contributing to this position may be the unsatisfactory financial situation of the Development and Finance Corporation and the poor financial performance of the estates with respect to both rental rates charged and amounts collected.

A possibly more important factor is the highly satisfactory experience of Government (and the Ponds Pasture Estate) with a large U.S. manufacturer of brassiers. This firm, with Government assistance, arranged financing for construction of a large plant at a 10% rate of interest that was completed in about eight months from termination of the financial agreement with the local branch of Bank of America. Building and grounds are perhaps functionally and esthetically the best encountered during the survey. However, Bank of America no longer operates in St. Kitts and other private banks may not be interested in long-term mortgage financing at this rate, even with a government guarantee.

INDUSTRIAL ESTATES, BASSETERRE, ST. KITTSLOAN NUMBERS 3/SFR-ST.K. and 7/SFR-ST.K.

<u>OCCUPANES</u>	<u>ORIGIN</u>	<u>SQ. FT.</u>	<u>PRODUCTS</u>
<u>Bird Park</u>			
Curtis Mathes of St. Kitts Ltd.	Foreign	6,000	Contract apparel
Kaytronics, St. Kitts Ltd.	Foreign	6,000	Electronics
<u>Ponds Pasture</u>			
Qualitek, St. Kitts Ltd.	Foreign	5,000	Sound, Video assemblies
Electrofab, (St. Kitts) Ltd.	Local	5,000	Contract elec. assembly
Caribbean Shoe Manufacturers Ltd.	Local	<u>20,000</u>	Shoes
		<u>42,000</u>	

CONSOLIDATED OPERATING DATA, 1978 US\$ (000)

Sales	1,951
Exports	1,917
Employment	312
Production	273
Supervisory	19
Management (incl. clerical)	20
Payroll	430
Rent	21
Other local costs	113
Total local costs	564
Imports in goods sold	503
Foreign exchange (earnings plus savings)	1,448
Direct contribution to GDP	1,335
Investment in machinery & equipment	667
Average inventories	148
Cost of buildings occupied	449

Estate Facilities

There are two industrial estates, Bird Rock with about three acres adjacent to the roll-on-roll-off dock facilities now under construction and Pond Pasture with about 20 acres. The two estates are located about a half mile from each other north of the city of Basseterre.

The Bird Rock Estate consists of two steel roofed, reinforced concrete and concrete blocks shell buildings, 6,000 sq. ft. each, whose original drainage problem has been corrected. One is vacant but committed and the other is occupied by Curtis Mathes. The conditions of these shells are acceptable to present occupants, but we found that the DFC has not defined the lot limits for either building. The land is owned by government and the property extends to the waterfront. The overall conditions of this estate are highly acceptable for manufacturing operations.

The Ponds Pasture Estate is a well-planned industrial subdivision including paved interior roads with water and electric power connections to 31 lots, ranging in size from 0.5 to 1.66 acres. The DFC offers these lots for lease at US\$278 per acre per year, which is considered below the market. Ten of the lots are occupied by manufacturing activities. The general condition of the area is good, even considering the lack of maintenance of the vacant lots.

Three of the lots have CDB financed shell buildings. Lot No. 11 with a 5,000 sq. ft. steel building is occupied by Electrofab, No. 12 with a 5,000 sq. ft. steel building is occupied by Qualitek and No. 30 with a 20,000 sq. ft. reinforced concrete steel roofed building is occupied by Caribbean Shoe Manufacturing.

Occupants of the buildings at Bird Rock and Ponds Pasture are very satisfied with their conditions and with the utilities available in St. Kitts.

No sanitary sewer facilities are available at these estates. Septic and filtration tanks are used to dispose of the sanitary waste in an adequate manner. The area is surrounded by flat well drained land presently under cultivation for sugar cane.

Title to Fond Pasture land is vested in the Government and not in DFC, which has direct control only over the buildings.

The Fond Pasture development plan includes the reservation of particular sections of the estate for "large scale" projects, electronics and light assembly, "general" industry, food and confectionery, small scale and service industries, and storage and warehouse. We would suggest that the classifications be simplified perhaps into small scale projects, food processing, warehousing and general light industries.

Attention should be given to eventual construction of a sanitary sewer system to collect the liquid wastes from the estate (including those from a small existing leather tannery) and after suitable treatment discharging them into the ocean. In the meantime, any major manufacturing project producing industrial (non-sanitary) waste should provide for its own pre-treatment plant and for ocean-discharge facilities.

ST. LUCIAEstate Operations

There are two developed industrial estates in St. Lucia: the first, Bisee, is in Castries, near the port and the local airport; the second is in Vieux Fort on the south coast adjacent to the international airport and near an adequate port facility. A third site at Dennery is under construction. All three estates are owned and operated by the National Development Corporation which also has title to some 6,000 acres of land (formerly Beane Field) most of which is now rented for grazing.

Two 6,000 sq.ft. buildings were constructed at Bisee with the proceeds of Loan No 3/SFR-ST.L., which was approved in November 1972. The buildings were completed in 1973 at a cost of US\$98,303, or US\$8.19 per square foot. They now rent at US\$0.58 per square foot, with both buildings divided into three 2,000 sq.ft. bays. Two bays are presently vacant but are committed to firms that will move in as soon as some necessary repairs have been completed.

The proceeds of loan no. 4/SFR-ST.L., approved in December 1972, were used to finance a 20,000 sq. ft. air conditioned building which was completed in 1975 and a 10,457 sq.ft. building completed in 1976. Construction cost (US\$231,408) amounted to US\$11.57 per square foot on the a/c building and US\$8.44 per square foot on the smaller building (US\$38,261). The air conditioned building rents at only US\$0.57 per square foot while the smaller building rents for US\$0.58. It should be noted that the total cost of the two buildings (US\$319,669)

considerably exceeded the amount of the Loan (US\$235,203).

Loan No 8/SFR-St.L., was approved in December 1973 and its proceeds were used in the construction of three buildings in Vieux Fort that were completed in 1976. Their cost, footage and rent rates are as follows:

<u>Cost (US \$)</u>	<u>sq.ft.</u>	<u>\$/sq.ft.</u>	<u>Rent sq. ft.</u>
214,568	20,000	10.73	0.67
107,284	10,000	10.73	0.58
64,372	6,000	10.73	0.65

The 20,000 sq.ft. building is divided for two firms with some ownership connection that expect to combine some of their local marketing and procurement operations. Universal Flavors, a U.S firm, has started production of fruit concentrates and mixes and Banks B.H. Ltd., from Guyana, is expected to start production of snack foods in August or September. Operating estimates for the latter, included in the Consolidated Operating Data which follow, were obtained from Universal Flavors.

Loan no 19/SFR-St.L., which was approved in December 1977, is not included in this survey. Part of its proceeds are intended for the construction of two buildings (12,000 sq.ft. and 4,000 sq.ft.) which will occupy the only remaining vacant land space at Bisee. For this reason, NDC is seeking additional land in the Castries area for one or more industrial estates and is considering other sites, in addition to Dennerly, to further decentralize the location of manufacturing industries.

Although rental rates in the NDC estates are much below an economic rate of return, collection experience has been satisfactory. The US\$7,670 that is more than 60 days in arrears is accounted for by a single tenant and the matter is now in litigation.

The NDC is responsible for industrial promotion, as well as for the construction and administration of the industrial estates. It has a promotional office in New York, good quality promotional materials and it has done a limited amount of advertising designed for reuse in reprint format. The Manager of NDC is very active in promotional work and the survey team received a number of unsolicited comments on the helpfulness of NDC in the settling in of foreign personnel and in dealing with other start-up problems.

Consolidated Operating Data are presented below, separately for the six firms operating at Bisee and for the three firms operating at Vieux Fort with estimates for the fourth which will soon begin to operate.

BISEE INDUSTRIAL ESTATE, CASTRIES, ST. LUCIALOAN NUMBERS 3 SFR/SL and 4 SFR/SL

<u>OCCUPANTS</u>	<u>ORIGIN</u>	<u>SQ.FT.</u>	<u>PRODUCTS</u>
Roses Enterprises Ltd.	Local	2,000	Miscellaneous apparel
Kaygee Garments Ltd.	Local	2,000	Miscellaneous apparel
St. Lucia Industries Ltd.	Local	2,000	Misc. sewn plastic products
Vieglass Ltd.	Foreign	2,000	Moulded fiber-glass prod., Car body filler
Harlin Industries Ltd.	Local	10,457	Furniture, janitors' supplies
Mayfair Fashion Knits Ltd.	Foreign	20,000	Miscellaneous apparel
Committed	Local	2,000	Furniture
Committed	n.a.	<u>2,000</u>	n.a.
		42,457	

CONSOLIDATED OPERATING DATA, 1978 US\$ (000)

Sales	1,941
Export sales	1,548
Employment	348
Production workers (incl. 30 homeworkers)	304
Supervisory	21
Management (incl. clerical)	23
Payroll	284
Rent	33
Other local costs	42
Total local costs	359
Imports in goods sold	968
Foreign exchange (earnings plus savings)	973
Direct contribution to GDP	931
Investment in machinery & equipment	718
Average inventories	323
Cost of buildings occupied	326

VIEUX FORT INDUSTRIAL ESTATE, VIEUX FORT, ST. LUCIALOAN NUMBER 8 SFR/SL

<u>OCCUPANTS</u>	<u>ORIGIN</u>	<u>SQ.FT.</u>	<u>PRODUCTS</u>
Teeanty Industries Ltd.	Foreign	10,000	Miscellaneous Apparel
Manumatics Ltd.	Foreign	6,000	Electrical assembly (Contract)
Universal Flavors (Caribbean) Ltd.	Foreign	10,000	Fruit Concentrates, Mixes
Banks DIH, Ltd. (Committed)	Foreign	<u>10,000</u>	Snack foods
		36,000	

CONSOLIDATED OPERATING DATA, 1978 US\$ (000)

Sales	1,400
Export sales	1,100
Employment	271
Production workers	230
Supervisory	18
Management (incl. clerical)	23
Payroll	418
Rent	23
Other local costs	103
Total local costs	549
Imports in goods sold	119
Foreign exchange (earnings plus savings)	1,281
Direct contribution to GDP	1,173
Investment in machinery & equipment	857
Average inventories	58
Cost of buildings occupied	420

Estate FacilitiesBisee

The Bisee estate facilities are located in a 4.57 acre tract of flat, well drained and hard land about half a mile from the city of Castries, (pop. 43,000) along a dead-end, poorly unpaved road that also serves as access to a nearby stone quarry operation. The surroundings of the four building at Bisee are well landscaped but marred by the dust generated by the quarry and the access road, and by piles of refuse left unattended in a drainage ditch that runs through the estate. The topography surrounding the site is very rugged and precludes further expansion.

Five of the six industrialists interviewed at Bisee need space for further expansion. Four out of six complained of poor ventilation for lack of sufficient windows. Three expressed need for more toilet facilities and two complained about leaking roofs. Most of the deficiencies were in the two 6,000 sq. ft. concrete block and steel-roof buildings which are divided into 2,000 sq. ft. bays and which are occupied by firms whose present operations require more space than is available.

The other two buildings are a 10,457 sq. ft. reinforced concrete and steel roof furniture factory, and a 20,000 sq. ft. reinforced concrete, building occupied by an apparel operation. The occupant of the latter considers the building defective because of exposure of its central air conditioning unit to dust and rain which causes breakdowns.

The layout of the estate is well planned and it provides internal street access and water and electric power connections to each building space. There is no sanitary sewer

system in the area and each factory disposes of its sanitary wastes through septic and filtration tanks. Consideration should be given to the future extension of sanitary sewer facilities to this estate.

The government of St. Lucia through the NDC is implementing a decentralization policy that will try to divert industrial activity away from the capital city toward Vieux Fort, a major center of population and air traffic on the southern coast and also toward other urban centers such as Dennery on the east coast and Soufriere in the west. The Hess Corporation is already well advanced in the construction of a \$300 million deep water port and oil refinery at Cul de Sac Bay, south of Castries, which is expected to be combined with a foreign trade (free) zone.

Vieux Fort Estate

The Vieux Fort Estate has some 6,000 acres of good flat and firm land of which only about 100 acres has been reserved for industrial use. Outside this area reserved for the industrial estate, there is a brewery and a cardboard carton factory producing mainly banana shipping containers for both St. Lucia and Dominica. Three buildings in the estate, all with reinforced concrete floors, hollow block walls, with corrugated iron roofs over steel trusses, of 20,000, 10,000 and 6,000 sq. ft. were constructed through CDB financing. They are presently occupied by or committed to manufacturing firms. Another factory on the estate has been constructed by its owner-operator who has plans and some of the materials for the construction of two other factories on land rented from the estate.

Comments from industrialists indicated general satisfaction with the Vieux Fort location, which adjoins a major international airport and a sea port suitable for container operations. The road connection to Castries is well paved.

The estate is well conceived with local streets, electric power, piped water and piped sanitary sewer facilities extended to each building. The old base sanitary sewer system discharges the untreated sewage into the ocean. Provisions should be made for future construction of a secondary treatment plan as part of this Vieux Fort system. In the meantime, any major emitter of industrial liquid wastes should have its own pre-treatment facilities, such as was required of the beer factory.

The layout of the Vieux Fort Estate and the topography of the adjoining NDC land lend themselves to further expansion of the Estate. Commercial services and amenities in the town of Vieux Fort (pop. 6,000) should be expanded to support the population growth resulting from future manufacturing expansion. The town is somewhat beyond walking distance from the estate and there is a reported need for improved public transportation.

Dennery Estate

Near the town of Dennery, (pop. 3,000) which is a 45 minute drive from Castries along a well paved road, NDC is constructing a 13,000 sq. ft. reinforced concrete floor, block walls and steel roof building for a garment factory. The site of about two acres is level and well drained and hard. It fronts on a paved road, about one mile west of the town. The building is about one-fifth completed. The proposed estate will include two more lots with frontage

on the existing public road. The garment firm has indicated plans for future expansion to triple present facilities in about two years. Piped water and electric power connections are available. Sanitary sewers will discharge into septic and filtration tanks. Although the site is somewhat away from the town, the population can readily walk to it. The land around the site can not be economically developed for industrial use.

The Economic Contribution of IEP

The primary objective of the Industrial Estates Program (IEP) is and should be, job creation. In evaluating the program from the standpoint of job creation or, as Sir William Feveridge put it, creation of "work places", Barbados, Belize and Dominica should be excluded from our 11-loan universe: Barbados because the financing of the single loan included accounts for only a very small part of its industrial estate program; and Belize and Dominica for the opposite reason, there are still no private industrial tenants for the two small buildings that have already been built. In the remaining five LDC's the record is impressive. (See Table 2). Some 1,600 jobs, or work places, have been created during the relatively short period of about six years during which the program has been operative.

Of course, the creation of all these jobs can not be attributed solely to the Industrial Estates Program. However, most of them can be, because in all of these LDC's, apart from St. Lucia, promotion programs are comparatively weak and because none of these countries has adequate industrial space outside the estates.

The Industrial Estates Program of the CDB is also impressive from an industrial investment standpoint. A public investment of \$4.4 million in estates has served as a catalyst for a private investment of about \$6.5 million in machinery and equipment. Combining the two fixed investments, total investment per worker is about US\$5,400. By international standards, the industries that have been attracted by the Industrial Estates Program have been highly labor-intensive.

Table 3. Consolidated Data for 26 Firms in Five Countries
In millions of US\$

Sales		\$15.5
Export sales		\$13.3
Employment:		2,006
Production workers	1,731	
Supervision	146	
Management (incl. clerical)	129	
Payroll		\$ 3.0
Rent		\$.3
Other local costs		\$.5
Total local costs		\$ 3.8
Imports in goods sold		\$ 5.0
Foreign exchange (earnings + savings)		\$10.5
Direct contribution to GDP		\$10.0
Investment in machinery, equipment		\$ 6.5
Average inventories		\$ 2.5
Cost of occupied buildings		\$ 4.4

A further characteristic of the Industrial Estates Program is indicated in Table 3 above. A surprisingly high 86% of the sales of the tenant firms is for export. Most (84%) of these export sales are to non-CARICOM countries. Nevertheless, as either earnings or savings of foreign exchange, the amount involved, about US\$10.5 million, is significant, so is their direct contribution to GDP. The US\$10 million in GDP they generate is already over 1.5% of the total GDP of these five countries.

One of the figures included in Table 3 is misleading at its face value. The US\$2.5 million shown as inventory is only about 16% of total sales, a moderately low figure.

It is a composite, however, of firms that carry no inventories in the accounting sense (contractors) and those carrying materials inventories for about four months of production because of purchasing, transportation and other time problems. For the latter, working capital requirements are very high and the CDB policy of not lending for working capital purposes should be reviewed, especially because of the general lack of commercial credit available for this purpose.

Evaluation of the Industrial Development Programs

In all the seven countries surveyed, it is evident that government strongly supports industrial development and has high expectations of its contribution to increases in employment and incomes. There are wide variations, however, among them in the way they have organized their development programs and in their budgetary support for the programs as a whole and for their principal components.

All governments rely heavily on tax and tariff exemptions for industrial investment promotion. However, the incentives offered are, by international agreement, nominally the same in all the IDC's though somewhat less in Barbados.¹⁾

Moreover, these incentives and the generally favourable climate for private industrial investment that prevails, with some qualifications as to Belize, are essentially passive attractions. They are relatively effective in attracting investment in manufacturing by local and regional investors but they lack the active outreach required to attract multinationals who will produce for export outside the region.

Barbados and St. Lucia have outreach promotion programs that are institutionalized in their development corporations and Antigua's Ministry of Economic Development and Tourism has London, Toronto and New York offices that do a limited amount of industrial promotion. In St. Kitts,

1) See Industrial Investment Incentives In the Caribbean, May 7, 1979, Document of the World Bank, Latin America and the Caribbean Regional Office, Report No. 2501-CRD.

the Ministry of Trade, Industry and Tourism feels a need for overseas representation but is uncertain as to how best to obtain it. As in the other three countries, overseas promotion is sporadic and unplanned.

None of the programs appears to provide worker training assistance for newly established manufacturing operations. In Grenada an apparel co-operative is seeking space to establish a training workshop but government has not yet been able to provide it. On-the-job training is generally the most effective way to train semi-skilled operatives in light industry. In other jurisdictions, government pays all or part of the wages of such trainees for a predetermined period, usually from four to six months. Training assistance is a legitimate expenditure for government, since it benefits the worker directly, and it is a strong investment incentive because it reduces front-end costs and risks and, later, yields higher levels of worker productivity. Unlike generalized vocational education, there is comparatively little risk of providing training for non-existent jobs.

In three of the countries (Barbados, Belize and St. Lucia) the promotional and the assistance functions of industrial development are consolidated in an IDC or a DFC. In the other four countries, the promotional function, however rudimentary, is ministerial and only the assistance function, (largely the provision of rental buildings and loans) is performed by the development bank or DFC. Generally speaking, the co-ordination of efforts required for a successful industrial development program is more easily achieved in a consolidated organisation. However, the objective of financial self-sufficiency of IDC's, DFC's and development banks is less difficult to attain if

government assumes financial responsibility for research, promotion, public relations, training and other non-revenue-producing functions.

Financial self-sufficiency in the industrial estate programs is presently impossible, however, because rental income is insufficient to finance building costs. Using CDB criteria of a 10% discount rate over a 30 year life, 3% of building cost for maintenance and insurance plus 25% for vacancies yields an economic rent figure of about 18¢ per year per dollar of investment, as follows:

Interest and amortization	\$0.10536
Maintenance and insurance	<u>.03</u>
	.13536
Vacancy allowance (25%)	<u>.4512</u>
	<u>\$0.18048</u>

On this basis, the buildings recently constructed in Barbados at a cost of US\$16.14 per square foot (see Table 2) should be rented at US\$2.91 per square foot. In St. Lucia, buildings completed between 1973 and 1976 at an average cost of US\$9.51 per square foot should be yielding an average rental of \$1.71 per square foot.

In all the countries surveyed, except St. Lucia and St. Kitts, a uniform rental rate of US\$1/ sq. ft. was being charged or quoted. In St. Kitts rates of US\$0.92 and US\$1.08 were quoted and, in St. Lucia, the rates ranged from US\$0.57 to US\$0.67. For the industrial estate program as a whole, with an average cost (Table 2) of US\$12.28/sq. ft. rental rates should average US\$2.21/sq.ft. instead of the actual average of about US\$0.94.

It should be recognized that the rental rates contained in existing lease contracts can not be changed but it is possible to announce an immediate increase in rates for new tenants and for lease renewals. Since rent presently constitutes only about 6% of the total operating costs of the 26 firms surveyed, a doubling of rental rates over a period of five or six years would not impose a serious burden on existing firms and it would probably have little or no disincentive effect for new investors. For the latter, the incentive effect of rental buildings, especially, if they are immediately available, greatly outweighs the negative effect of higher rentals.

From a promotional standpoint, it may be worth considering the offer of an initial year of free rent, an attractive "up-front" incentive that is probably financially feasible with the rather high 25% vacancy allowance in the CDB formula. In any case, since rental rates, except in St. Lucia, are now virtually standardized, any change in rental policy could probably be made simultaneously by all the countries involved.

Delinquencies in rental payments were noted in St. Lucia, St. Kitts and Antigua. In all cases disputes were involved: the amount of rent in St. Kitts and non-completion of buildings or building maintenance problems in Antigua and St. Lucia. The survey teams were in no position to determine the merits in any of these disputes but note that in St. Lucia the matter is in litigation.

It is recognized that those involved in the promotional aspects of the industrial development programs may not concur with the gradual elimination of rent subsidies recommended herein. In our judgement, however, it will be impossible for estate managements to develop and improve the estates nor for governments to mount effective promotional efforts until this drain on the current revenues of the development programs has been stopped.

Environmental and Functional Evaluation of the EstatesEnvironmental Impact Evaluation

The teams carried out a comparative evaluation of the various Industrial Estates taking into consideration some of the factors that are relevant in measuring the potential impact on the environment of such projects in developing countries.

The factors considered and the comparative evaluation is shown in Table 4.

Among the factors were the following:

1. Classification of the site
2. Effect on natural resources, flora or fauna
3. Present and potential nuisances to be generated
4. Relation to other nuisance producing facilities
5. Compatibility with adjoining uses.

A scale from poor(P) to fair (F) to good (G) was selected and each estate was evaluated from the point of view of the best interests of the community.

It should be noted that none of the estates except Vieux Fort in St. Lucia has a sanitary sewer system and the only means of sanitary waste disposal are by septic and filtration tanks or suck wells. At present these conditions do not pose a health hazard, provided the industries to be established are of a "dry" (no major liquid waste) nature and in small concentrations of less than about 15 in one given area. But in the future these conditions might change and in that case piped sanitary sewer systems should be installed with at least "secondary" (removal of solids) pre-treatment of the liquid wastes before their discharge into a major body of water.

As a result of the environmental evaluation only one Estate had two "P's" (poor), Bisee in St. Lucia, while at the other extreme Vieux Fort in St. Lucia also had the most "G's" (good):

In summary it can be concluded that the industrial estates evaluated herein do not constitute a significant (negative) impact on the environment. On the other hand, their development uses land more productively and effectively.

Furthermore, it is anticipated that the future expansion of those estates that have adequate space will also not generate a significant (negative) impact on the environment if the types of industries to be established are similar to those now operating in the estates.

TABLE 4. ENVIRONMENTAL EVALUATION OF THE INDUSTRIAL ESTATES

FACTORS CONSIDERED	Antigua			Barbados						(1) B	Domi- nica	(2) M	ST.K.		ST.L.		
	Cassada Gardens	Doelids Fowells	banderson	Brantley Adams	Harbour	Newton	Pine	Six Roads	Wildey	Ladyville	Canefield	Goodwill	Dagenham	Bird Rock	Pond Pasture	Bisee	Dennery
Zoning (3)	G	G	P	G	G	G	G	G	G	G	G	G	G	G	G	F	G
Nat. Resources(4)	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Nuisances (5)																	
Air pollution (6)	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Water (7)	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	G
Solid Waste (3)	F	F	F	F	F	F	F	F	F	F	F	F	F	F	P	F	F
Noise (9)	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Odors (9)	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Traffic	F	F	G	F	F	F	F	F	F	G	F	F	F	G	G	F	G
Impact (10)	F	F	G	F	P	G	G	G	G	F	F	G	G	G	G	P	G
Compatibility (11)	G	G	G	G	G	G	G	G	G	G	G	G	G	G	F	G	G

(1) Belize. (2) Montserrat. (3) Site reserved for industrial use. Proposed master plan for Dennery does not reserve site for industrial use. But site is adequate and is expected to be rezoned for industry. (4) Effect of project on any valuable natural resource, fauna or flora. (5) Present or potential nuisances generated by tenants. (6) A potential air pollution problem exists in the Catelli Factory in Wildey due to lack of dust collection system. (7) At Vieux Fort the sewer system collects wastes and discharges it untreated into the ocean. At all other sites septic tanks and suck wells are used with considerable possibility of contaminating underground water. (8) Throughout the area, refuse collection is deficient. (9) Present or potential tenants are light industries. (10) Impact on estate tenants of nuisances generated from outside the estate. Harbour Estate adjoins an open sewage channels. Bisee adjoins a dusty rock quarry. (11) Compatibility with adjacent land uses.

Functional evaluation

In order to compare and evaluate the various industrial estates from the point of view of their suitability for the location of typical light manufacturing industries, the specific factors determining suitability were appraised in each estate and evaluated in accordance with a scale from poor (P) to fair (F) to good (G). The major factors considered were the following:

1. Classification of the land
2. Accessibility and/or capacity of the adjacent roads
3. Closeness to population
4. Characteristics of the lots
5. Adequacy of the buildings.

Each factor in each estate was evaluated from the point of view of a typical industrialist considering the establishment of a plant in the estate. The results are shown in Table 5.

As in the environmental evaluation, the lack of piped sanitary sewer facilities affected all estates, except Vieux Fort. Barbados' estates got only fair (F) grades in accessibility because the country lacks roll-on-roll-off truck trailer service because of its very narrow roads.

As in the environmental evaluation, the Vieux Fort Estate at St. Lucia got the highest marks: only one "poor" and two "fair's", while the Sanderson Estate in Antigua received the lowest ratings: eight "poor's" and two "fair's". Others that scored very low were: Dagenham in Montserrat with five "poor's" and six "fair's" and Harbour Estate in Barbados with four "poor's" and seven "fair's".

High scorers were Goodwill at Dominica and Bird Rock at St. Kitts both with one "poor" and five "fair's". Canefield in Dominica had an apparent good score but, since development has not started, only the site was evaluated.

Apart from the many serious problems with reliability of water and electric services and with sanitary sewage disposal, the most pervasive weakness in IEP is poor maintenance of buildings and grounds. There seems to be a general lack of qualified technicians such as electricians, plumbers, mechanics, handiman, etc. The good ones are probably on the payroll of private enterprises. Most of the privately maintained industrial buildings, with the exception of the Catelli factory in Barbados, are in good condition.

After completing the evaluation we have concluded that all the estates that we surveyed are functionally adequate for the location of light manufacturing operations and that most of their deficiencies can be corrected as soon as the necessary funds can be provided. Our recommendations for correcting the most serious deficiencies in the existing estates are the following:

1. All countries, except Belize, need improvements in their electric power systems. Power outages are a critical problem in Antigua since they also interrupt water supply. Reliable electric power supply is essential for the development of light industries, which normally cannot afford to install their own generating facilities.
2. Barbados and Dominica are in urgent need of highway improvements. In Barbados, the need is for widening the access highways to the estates so that they can accept trailer trucks with 40 foot vans. In Dominica,

the highway from Roseau across the island to the airport is in urgent need of upgrading in support of both tourism and industrial development,

3. The need for improved building maintenance is widespread. Preventive maintenance programs should be established for the protection of the investment in existing buildings and training programs should be developed for mechanics, electricians and handimen. A considerable improvement in the aesthetics of most estates can be achieved at modest cost.
4. In the longer run, provision of piped sanitary sewer and treatment systems should be included in the future plans for all estates, mainly for protection of the water supply. This is critical for Barbados (and Antigua).

TABLE 5. FUNCTIONAL EVALUATION OF THE INDUSTRIAL ESTATES

FACTORS CONSIDERED	Antigua			Barbados						(1)	Domi-	(2)	ST.K.		ST.L			
	Cassada Gardens	Powells	Sandersons	Grantley Adams	(9)	Harbour	Newton	Pine	Six Foads	Willey	Ladyville	Canefield	Goodwill	Dapenham	Bird Rock	Pond Pasture	Bisce	Dennery
Zoning (3)	G	G	P	G	G	G	G	G	G	G	G	G	G	G	G	G	F	G
Accessibility (4)	G	G	P	F	F	F	F	F	F	G	G	G	F	G	G	G	G	G
Location (5)	F	F	F	G	G	G	G	G	G	F	G	G	G	G	G	G	G	G
Site (6)	G	G	G	G	G	G	G	G	G	F		G	F	G	G	G	G	G
Buildings:																		
Size	G	G	G	G	F	G	G	G	G	G		G	G	G	G	G	G	G
Shape	G	G	G	G	F	G	G	G	G	G		G	G	G	G	G	G	G
Ventilation	G	G	G	G	F	G	G	G	G	G		G	P	G	G	F	G	G
Height	G	G	G	G	G	G	G	G	G	G		G	G	G	G	G	G	G
San. Facil. (7)	F	F	F	F	F	F	F	F	F	F		F	F	F	F	F	F	G
Drainage	F	G	G	G	G	G	G	G	G	G		G	F	G	G	G	G	G
Water	F	F	F	F	F	F	F	F	F	G		G	G	F	F	F	F	F
Electricity	F	F	F	F	F	F	F	F	F	G		F	F	F	F	F	F	F
Aesthetics	F	G	P	F	F	F	F	F	F	F		F	F	F	F	F	F	G
Maintenance:																		
(a) Buildings(8)	P	P	P	F	F	F	F	F	F			F	P	P	P	P		P
(b) Grounds	F	F	F	F	F	F	F	F	P			F	P	G	P	F		G

(1) Belize

(2) Montserrat

(3) Area reserved or zoned for industrial use.

(4) Barbados estates classified F because trailer trucks not permitted on highways.

(5) Within walking distance of population.

(6) Convenient lot sizes; stable, flat and well-drained land.

(7) Good are buildings connected to a sanitary sewer system. Fair are buildings connected to individual septic tanks. In Barbados bldgs. are connected to suck wells.

(8) We have been informed by plant managers of lack of adequate maintenance services, particularly electricians, mechanics and handimen.

(9) Harbour Cluster Building is inadequate in size, loading facilities & circulation areas. Other buildings in estate are good.

(10) First two multi-factory bldgs. at Bisee lack adequate ventilation and toilet facilities, which are good in other bldgs.

Future Demand for Factory Space

Two approaches to the estimation of future demand for industrial space have been used herein: the first is based on national goals for industrial development and yields an upper limit or ceiling for demand; the second is a projection based on past experiences that are closer to actual effective demand. In the list of recommendations that follow, there is included a recommendation that countries in the IEP prepare annual, rolling 5-year projections of the demand for industrial space in their respective countries and of expected future construction costs, that will enable an estimate of their total future costs. Until such data are available, estimates of future demand and costs must be based largely on assumptions that may prove to have been quite far from the mark.

Nevertheless, for want of better, two sets of estimates of future demand are shown below: the first is based on the increases in manufacturing employment projected in the National Plans of Barbados, Dominica and St. Lucia plus approximations of such plans estimated by the survey teams on the basis of their consultations with planning and ministerial officials in the other four countries. These estimates can be regarded as expressions of country intent or purpose; they are targets or goals and probably fall somewhere between wishful thinking and prospective reality.

The second set of estimates presented is based on projections of past rates of construction and use of industrial space, modified by judgments by the survey teams regarding the future promotional capabilities of the individual countries.

In both sets of estimates, the line item "CDB Participation" indicates amounts to be committed to mid-1985. Disbursements to mid-1983 are expected to be two-thirds of commitments to mid-1985.

Table 6. COST OF INDUSTRIAL SPACE REQUIRED TO MEET MID-1985 NATIONAL GOALS

	<u>ANT</u>	<u>BARB.</u>	<u>BEL</u>	<u>DOM</u>	<u>MONT</u>	<u>ST.K</u>	<u>ST.L</u>	<u>TOTAL</u>
<u>Mfg. Employment</u>								
Target incr./yr. (1)	150	1,200	250	140	55	125	250	2,170
In Gov. estates	80%	75%	15% ⁽⁵⁾	80%	85%	80%	80%	-
No. in estates	120	900	40	110	47	100	200	1,517
<u>Space required</u> (000 sq. ft.)								
Per Year (2)	18	135	6	16	7	15	30	227
In 6 years	108	810	36	99	42	90	180	1,365
CDB financed ⁽³⁾	50	219	6	40	20	0	66	401
Not financed	58	591	30	59	22	90	114	964
<u>Cost of Space</u>								
US\$/sq. ft. (4)	23	23	24	24	18	18	20	-
Total (US\$000)	1,334	13,593	720	1,416	396	1,620	2,280	21,359
<u>CDB Participi-</u>								
<u>pation</u>	80%	69%	80%	85%	90%	85%	85%	-
Amount (US\$000)	1,067	9,379	576	1,204	356	1,377	1,938	15,897
<u>Disbursements</u> to mid-1983 (US\$000) (6)								
	712	6,256	384	803	237	918	1,293	10,603

- (1) Included in National Plans of Barbados, Dominica and St. Lucia. Others estimated.
- (2) At 150 sq. ft. per employee.
- (3) Financed by undisbursed balances of existing CDB agreements.
- (4) Based on prices 40% above most recent cost data available from each country.
- (5) Privately financed Foreign Trade Zone expected to absorb most demand for space.
- (6) Required in addition to commitments under now existing CDB loan agreements.

Table 7. PROJECTED COST OF INDUSTRIAL SPACE REQUIRED BY
MID-1985

	<u>ANT</u>	<u>BARB</u>	<u>BEL</u>	<u>DOM</u>	<u>MONT</u>	<u>ST.K</u>	<u>ST.L</u>	<u>TOTAL</u>
<u>Space Required</u> (000 sq. ft.)								
Per Year (1)	25	73	6	8	10	6	22	150
In 6 years	150	438	36	48	60	36	132	900
CDB financed(2)	50	219	6	40	20	-	66	401
Not financed	100	219	30	8	40	36	66	499
<u>Cost of Space</u>								
US\$/sq. ft.(3)	23	23	24	24	18	18	20	-
Total (US\$000)	2,300	5,037	720	192	720	648	1,320	10,937
<u>CDB Partici-</u> <u>pation</u>	80%	69%	80%	85%	90%	85%	85%	-
Amount (US\$000)	1,955	3,476	576	163	648	551	1,122	8,491
Disbursements to mid-1983 (US\$000) (4)	1,304	2,318	384	109	432	368	748	5,663

- (1) Based on past trends and prospective promotional capabilities as evaluated by survey teams.
 (2) Financed by undisbursed balances of existing CDB agreements.
 (3) Est. 1983 cost. (4) Above now existing CDB loan agreements.

It will be noted that the estimates of loan disbursements based on projections of past experience (Table 7) are not much more than half those implied by realization of Government goals or targets for increases in manufacturing employment (Table 6). Even the latter, however, appear to exceed the amount presently contemplated by the CDB.

Moreover, neither estimate takes account of the demand for industrial space in St. Vincent and Grenada. This should

in no way prejudice loan applications to CDB that are expected from both countries. The factory shells already built with the proceeds of CDB loans in St. Vincent are all now occupied by local manufacturers, who can also benefit from some of the kinds of technical assistance recommended below. The IEP has not yet reached Grenada, which would appear to provide special justification for the construction of a ready-to occupy building which can give focus to a fledgling development program.

Recommendations

The recommendations listed below are interlocking:
none should be considered without regard for the others:

For Countries

- A. Approach a uniform system of economic rental rates.
- B. Provide incentives for the participation of private investors in the development of industrial facilities.
- C. Strengthen and improve external promotion programs.
- D. Prepare annual rolling 5-year projections of demand for factory space and its costs.

For the CDB

- A. Establish standards for industrial estates and buildings.
- B. Design and provide quantity surveys for a set of standard buildings.
- C. Prequalify consulting firms for construction supervision and design of special buildings.
- D. Extend lines of credit to include an appropriate inventory of ready-to-occupy buildings.
- E. Review lending criteria with respect to working capital for inventories.

For AID

- A. Provide funding to CDB in support of on-the-job training.
- B. Provide appropriate technical and financial

For Countries:A. Economic rental rates

We regard a rapid approach to economic rental rates essential to the future success of the Industrial Estate Program (IEP). Without the resulting increase in revenues, the estates will become an increasingly heavy financial cost to governments and funds needed for implementation of other improvements in the program will not be available. The total subsidy implicit in the rental rates being charged for the 373,257 square feet of occupied space in the CDB financed buildings included in this study amounts to about US\$570,000 per year. Realization of part or all of this amount as income could substantially relieve the fiscal problems of all the countries involved and greatly strengthen the IEP.

Present rental rates are uniform at US\$1, except for lower rates in St. Lucia. We surmise that this near-uniformity in rates may have emerged during earlier CARICOM negotiations regarding uniform investment incentives. The latter are reportedly scheduled for CARICOM review this year. 1) We have no opinion on the desirability of including the rent issue in this review. We note it merely as an indication of general country acceptance of, at least, a measure of uniformity in industrial development incentives.

As indicated earlier by CDB criteria, an economic annual rental rate amounts to about 18% of original land and building costs. This is somewhat more than double the US\$1 rate currently charged in most countries. We recommend that the countries involved agree at the earliest possible date on a minimum rental rate of US\$2/sq.ft. for new and renewed leases and that a system be agreed upon for an

1) Industrial Investment Incentives in the Caribbean, op. cit. p.24.

annual review of this minimum rate as long as land and construction costs continue to escalate rapidly.

This agreement is a critical matter for IEP and we believe that it should be made the primary item in the agenda of a meeting of implementing agency directors and responsible ministers to be sponsored by CDB at an early date. While agreement on economic rent policy should be the focal point of the meeting, other items in these recommendations, especially that for systematic projection of the demand for factory space, should be included in the agenda. There should be a presentation of the technical and financial assistance that will be made available to help upgrade IEP.

It should also be pointed out at this meeting that full application of the CDB economic rent formula, with its 25% vacancy provision, would enable a country to offer an incentive of a year's free rent in new lease contracts. This is a demonstrably strong incentive since it reduces front-end costs and risks which are relatively weighty in private investment decision making. Together with immediate availability and financial assistance for on-the-job training it provides a much needed strengthening of the incentive "package" that the IDC's are now in a position to offer.

B. Provide incentives for private investment in the IEP

Establishment of economic rental rates for the IEP buildings will remove the strong disincentive for the construction of privately owned factory buildings that results from the subsidized rates presently in effect. At present construction cost levels, no private investor would even consider building a factory shell for lease at US\$1 per square foot.

Establishment of economic rental rates, however, will merely remove an existing disincentive for private investment industrial facilities. Positive incentives are required to secure private participation in an unfamiliar form of real estate investment. Among such incentives, the following are recommended:

1. Sale or rent of land in the industrial estates on reasonable terms but under specified conditions regarding future use.
2. Provide property and income tax exemption for investors and mortgage holders in industrial buildings as long as they are occupied by manufacturers who are themselves exempt from such taxes.

C. Strengthen and improve external promotion programs

Strengthening the incentives "package" will, of course, help to strengthen external promotion but only to the degree that outreach measures become more effective. Promotional outreach is expensive and the cost-effectiveness of various outreach methods are not well documented. But some experience is available, especially that gained over the years by Puerto Rico, Israel and Ireland and, more recently, by Singapore. We believe that it would be an appropriate measure of AID technical assistance to make this experience available to the LDC's. A desire for such assistance was volunteered in one of the countries surveyed and we believe it would be valuable to all of them. Here particularly, economic rental charges can finance promotional efforts that will generate income, rather than deficits, for IEP as a whole.

Goal or target setting is an essential for promotional planning, not only to begin appraisal of the costs and

benefits of promotion and set budgets for it, but also to provide inputs to projections of future demand for industrial space.

D. Projections of demand for factory space

It is evident that the projections of future demand for factory space and of land construction costs presented above rest on rather frail bases. Neither the few country plans available nor projections based on historical data can be used with confidence beyond their stated limitations.

Confidence in country plans can be greatly increased if an element in these plans is designed for the specific purpose of estimating future space demands and their cost, especially if the estimates are prepared with all the base data available, including realistic promotion targets and progress reporting on the status of individual promotion cases.

Preparation of such estimates is a technical exercise of some complexity. It is recommended that AID provide technical assistance in this matter, directly or through CDB, at least until methodology is developed and understood in each of the LDC's.

The projections made should probably be for a period extending about two years beyond the financial planning periods of CDB and AID to allow for the time lag between loan approval and completion of construction. They must also be revised annually in order to take recent data into account and to minimize the vulnerability of longer-range planning to shorter run, and often dominant, cyclical change. There is no possibility of avoiding error in longer range plans but it can be reduced. Moreover, the consequences of error can be reduced by shortening the time span between the

demand for and supply of industrial buildings by means of the line of credit and building inventory recommendations outlined below.

For CDB:

A. Estate and buildings standards

The thrust of the recommendations made regarding CDB policies and procedures is to make the IEP more agile in its response to the demands for industrial space and to improve the quality of the estates and their attractiveness to investors. The essential technique is preplanning.

The first preplanning element we recommend is establishment of standards for estates, buildings and leases. We recommend that standards for location, site, development and maintenance characteristics for new industrial estates be set within limits consistent with only moderate improvements in all the estates surveyed. In other respects existing estates meet acceptable standards, except for maintenance and sewage disposal problems which are now usually tenant responsibilities and can only be resolved by estate managements after estate revenue has been increased by higher rental payments.

Building standards, however, need serious consideration. Minimum design standards for lot size, percentage of coverage, ventilation as a percentage of floor area, number of sanitary units, lean-to design of sanitary facilities, building height, loading and unloading ramps or platforms, parking and other access must be established. Structural specifications must conform to insurability requirements. In some of the countries or in the region there may already be a comprehensive set of building standards that can be adapted or modified to fit the IEP.

While this is a matter of primary concern to CDE because it is an element in determining loan-worthiness, it would also appear to be an appropriate object of AID technical assistance.

There is also a need for lower-cost workshop buildings that will not meet these standards or insurance company requirements. A brief memorandum on this subject from the Central Planning Unit of St. Lucia ~~was~~ transmitted to AID in the hope that some grant-loan instrument can be devised for such work places.

E. Standard Buildings

One of the objectives of establishing design standards for estate buildings is to minimize the time and cost of consultant recommendations regarding their eligibility for CDE financing. More important is the basis they provide for the re-design of a set of standard buildings for which CDE will automatically grant design and specification approval. Standard designs for four or five standard sizes and configurations that meet the most common demands for industrial space, plus quantity surveys of the material required for their construction, would also reduce time in preparation of tenders and the cost and time of bid response. It would help routinize bidder calculation and broaden the area of contractor competition and so reduce construction costs. For such buildings, only footings and drainage schemes must be specially designed.

It is tentatively recommended that standard buildings should be initially designed in four sizes of 6,000, 10,000, 20,000 and perhaps of 24,000 square feet. All should permit economical subdivision for multiple occupancy. A careful study of the cost, functional efficiency and durability

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of existing factory buildings throughout the Caribbean, plus their insurance costs, is a prerequisite for the design and quantity survey work. We believe that the design of an appropriate set of standard buildings for the IEP is an appropriate object for AID technical assistance.

C. Prequalification of consulting firms

Another preplanning aspect of shortening the time between loan application and the start of construction is prequalification by CDB of a list of consulting firms approved to design special buildings or supervise the construction of standard buildings. An effort should be made to qualify at least one firm within each country but it is evident that a large enough number of qualificable firms are to be found within the region to give wider choice opportunity to any of the LDC's involved.

D. Lines of Credit for IEP

CDB can provide a more efficient and expeditious service to member countries by providing relatively long-term lines of credit for industrial estate development and the construction of industrial building construction rather than by operating on a loan-by-loan basis. It has apparently already begun to do so and this provides an excellent fit with the other aspects of IEP preplanning recommended above. Detailed planning and monitoring of individual projects is minimized, time between planning and execution is shortened and risks of overbuilding and underbuilding are reduced.

It seems to us in retrospect that there was IEP over lending, though on a small scale, prior to about 1974 with consequent overbuilding until about 1976. This influenced

CDB to restrict lending for projects without firm demand, which, in turn, induced the under-lending and under-construction that is evident at present. An appreciable number of new and expansion projects have been lost as a result.

In any program like IEP, cyclical miscalculations such as this appears to have been, in retrospect, cannot be wholly avoided. Their effects, however, can be minimized by shortening the time between decision and execution and by providing a previously preplanned and financed cushion against inevitable error.

It is strongly recommended that the lines of IEP credit extended by CDB to the LDF's include provision for ready-to-occupy buildings. We are not in a position to specify by country the number and size of such buildings. However, if something like one-fourth of the four-year credit line extended to a country could be used to finance space to which no specific tenant was committed, the attractiveness of the IEP could be substantially enhanced. Immediate availability of factory space could be incorporated into its "package" of incentives, there would be more rapid response of space demands to the existing supply and a more accurate response of future supply to probable demand. It would appear to us that technical assistance in the preplanning of the appropriate amounts and kinds of ready-to-occupy space would be a productive application of AID technical assistance.

E. CDB lending policy on working capital loans and inventory costs

During the course of our survey of IEP we encountered several cases of firms established in the estates which

had insufficient initial working capital financing because of unexpectedly high costs of carrying materials inventories for roughly four months of production. Local financing was apparently unavailable and at least two of these firms were in serious difficulties. We also encountered an opposite case where a well-financed firm had acquired and was continuing to acquire firms in its own field as subsidiaries because of their inability to meet inventory costs on a current basis. We are not prepared to make specific recommendations on this matter but suggest that this is a frequent problem of local firms producing for the CARICOM market which must import materials from outside. At the very least it deserves serious CDB study.

For AID:

A. On-the-job training

To us, there appears to be a functional and promotional void in LEP that needs to be filled. Start-up costs, of which worker training is a major one, create investor uncertainty and act as a disincentive to the establishment of new manufacturing enterprise, especially in an unfamiliar location. Advance financing of worker training reduces or eliminates part of this uncertainty and risk and, if available, becomes a powerful promotional tool. In addition, it contributes to subsequent higher worker productivity and continued viability of the enterprise. We can recommend that AID and CDB consider how best to incorporate on-the-job training into the Industrial Estates Program.

There are three main elements in an on-the-job or "corridor" training program for production workers:

- 1) provision of instructors, often trained supervisors

from a similar operation of the parent company,

- 2) providing some compensation for the trainees and
- 3) providing the necessary machinery and space. If no trained supervisors or instructors are available, supervisor candidates from the host country must first be trained on a "scholarship" basis in some appropriate establishment cooperating with the IEF or they must be hired. Compensation for trainees can be relatively modest and the cost should be met, in part, by the firm. The firm will usually provide the machinery which can be set up in a "corridor" if it has not already been installed in the plant.

Because of the prevalence of apparel plants among the firms already established under the IEF, a pilot training program for sewing machine operators may be deserving of AID-CDB financial assistance.

B. Technical and financial assistance for implementation

Since the employment and income generating capabilities of the IEF have been clearly identified and measured with a fairly high degree of accuracy, and since a large portion of AID support for the countries of the Caribbean is devoted to the construction of IEF factory buildings, it seems likely that technical assistance in other aspects of the program would be catalytic in nature with benefits well in excess of costs.

Suggested applications of AID technical and financial assistance to the IEF have been incorporated in the above recommendations to countries and the CDB for improvements in the program. It is our view that the demonstrable effectiveness of the IEF in job and income generation

warrants a high concentration of AID technical and financial support to program implementation in the following areas:

1. Improving the effectiveness of promotion efforts.
2. Developing techniques for forecasting the demand for factory space.
3. Developing plans and specifications for standard buildings and standard lease contracts.
4. Planning and implementing a pilot program of on-the-job training.

1. Improving the effectiveness of production efforts

The LDC's in particular have very limited funds for the promotion of industrial investment especially among investors outside the CARICOM area. None of them can afford advertising and public relations programs with the scope and continuity required to achieve appreciable results.

The function of such programs is to elicit enquiries from manufacturing firms contemplating increases in production and expansion of their production facilities. The possibility of an eastern Caribbean location will occur to very few of them. A joint advertising and public relations program among all or several of the LDC's in the region might be affordable and worth its cost in generating serious inquiries that could be directed to any or all of the development agencies of the participating countries. Financing the design of such an advertising and public relations program would be a legitimate AID function if several of the LDC's gave assurances of participation.

There are a number of international advertising and public relations firms with Caribbean experience in this

field. Self-interest might influence one or more of them in each field to submit proposals for a low fee, perhaps no more than \$5,000, or, if funds for the program were assured, in advance, competitive proposals could be obtained without cost from a number of firms.

These firms are also capable of designing the brochures needed by individual countries in their initial response to inquiries. Distribution of unsolicited promotional literature is largely wasted effort and expense. So are indiscriminate direct contacts by industrial representatives.

Each country needs its own plan for the effective combination of promotional literature and personal contact and follow-up work. The latter includes estimating the intended start-up date of potential clients. This information provides an important input for estimates of the demand for factory space.

If such promotion plans could be developed for several countries on the same work order, their cost might be in the neighborhood of \$10,000 per country.

2. Developing techniques for forecasting demand for space

Since techniques for estimating the future demand for factory space should probably be standardized, there are two aspects to this recommendation: devising the best possible technique and undertaking the educational process necessary for its effective use in the various countries. It may be that both aspects of the matter can be performed by CDB in house with the assistance of a consultant during the initial stage of technique design and application in one or two countries. This should be doable in one or two months at a cost of between \$30,000 and \$40,000.

3. Developing plans and specifications for building standards, standard buildings, standardized leases and workshop buildings

This is a major undertaking, requiring a substantial amount of research, especially in the matter of building costs, functional performance and durability. We know of one such study done some 20 years ago at a cost of about \$100,000. More and better data are now available. We believe that a preliminary investigation of the scope and amount of work involved and a study design should be made as the basis for an R.F.P. Such a study design could probably be obtained from a qualified source for a fee of approximately \$50,000.

Development of standardized lease contracts for land and buildings could probably be done by a qualified consultant, in collaboration with CDB legal staff, for approximately \$10,000. The matter of securing their adoption by executing agencies could presumably be incorporated in the regular work program of CDB.

It is also recommended that further investigation by CDB staff of the need for and the requirements of low-cost workshop or "incubator" buildings be undertaken in advance of further planning for the provision of such facilities.

4. Planning and implementing a pilot project for on-the-job training

There are at least two types of firms that are primarily engaged in industrial training; those which are specialized by industry and those which are specialized in the design of training programs for various kinds of industries. In addition, several of the larger general consulting firms have the required capabilities. It is presumed that

AID/Washington has profiles of consultants in all three categories.

If it is decided to conduct the pilot project with a firm in the apparel field, it is recommended that one of the consulting firms specializing in this industry be retained. We cannot indicate even a guideline cost for such a pilot project but, in any case, it is a matter for negotiation since it is to be expected that the manufacturer involved would pay about half of project cost.

Many matters beyond mere worker training are involved in such project, including standard production rates, piece rates and pay scales and definition of supervisor responsibilities, qualifications and pay. We would guess that the preparation of a definitive R.F.I. for the project might cost about \$25,000. However, better information on possible contractors and costs may be available in AID/Washington.