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The Economy of Aruba: Adjusting to Changing Conditions

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CURRENCY EQUIVALENTS

Currency Unit = Aruban florin (AFL)
AFL1 = US\$0.56
US\$1 = AFL1.79

The Aruban florin replaced the Netherlands Antilles guilder on January 1, 1986, when Aruba separated from the Netherlands Antilles, at the same rate of exchange with the US dollar. The NA guilder has been pegged to the US dollar since 1971.

WEIGHTS AND MEASURES

Metric System

FISCAL YEAR

January 1 through December 31

PREFACE

This report was prepared by a mission that visited Aruba in May 1986, at the request of the Governments of the Netherlands and Aruba, to assess the current situation and prospects of the economy. A separate report has been prepared by the mission on the Netherlands Antilles, from which Aruba separated on January 1, 1986.

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THE ECONOMY OF ANJARA:
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COUNTRY DATA - ARUBA

AREA
193 km²

POPULATION
0.064 million (mid-1985)
Rate of Growth: 1.6% (from 1981 to 1985)

GNP PER CAPITA IN 1981 a/: US\$7,100

GROSS NATIONAL PRODUCT IN 1984ANNUAL RATE OF GROWTH (% constant prices)

	<u>US\$ Mln.</u>		<u>%</u>	
	<u>US\$ Mln.</u>	<u>%</u>	<u>1987-83</u>	<u>1984</u>
GNP at Market Prices	461.4	100.0	0.2	-5.8
Gross Domestic Investment	52.8	11.1	..	..
Gross Domestic Savings	20.3	4.4	..	..
Current Account Balance	-43.8	-9.5	..	..
Exports of Goods & Services	287.2	62.3	..	..
Imports of Goods & Services	331.0	71.7	..	..

OUTPUT, LABOR FORCE AND PRODUCTIVITY IN 1981

	<u>Value Added</u>		<u>Employment</u>		<u>V.A. Per Worker</u>	
	<u>US\$ Mln.</u>	<u>%</u>	<u>Thousands</u>	<u>%</u>	<u>US \$</u>	<u>%</u>
Agriculture	—	—	0.04	0.17	—	—
Industry	164.2	18.8	2.02	8.58	81,287	237.3
Services	711.2	81.2	23.49	91.25	30,277	88.4
Total/Average	875.4	100.0	25.55	100.00	34,262	100.0

GOVERNMENT FINANCE

	<u>Central Government</u>	
	<u>(AFL Million)</u>	<u>% of GDP</u>
	<u>1984</u>	<u>1984</u>
Current Receipts	247.0	29.9
Current Expenditure	276.2	33.4
Current Surplus	-29.2	-3.5
Capital Expenditures	45.6	5.5
External Assistance (net)	25.7	3.1

a/ The per capita GNP estimate is calculated by the Government.

.. not available

COUNTRY DATA - ARUBA

<u>PRICES</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Consumer Price Index (1984 = 100)	79.9	89.6	95.2	97.8	100.0	103.5
Annual % Changes in:						
Consumer Price Index	14.9	12.2	6.2	2.7	2.2	3.5

BALANCE OF PAYMENTS (US\$ million)

	<u>1983</u>	<u>1984</u>	<u>1985</u>
Exports of Goods & Services	337.2	294.1	287.2
Imports of Goods & Services	390.8	339.7	331.0
Balance on Current Account	-53.6	-45.6	-43.8
Net Public Disbursements	19.7	8.0	17.6
Other Capital	5.0	3.4	8.8
Change in Reserves (- = increase)	28.9	34.2	17.4

EXTERNAL DEBT, DECEMBER 31, 1984

	<u>US\$ Mln.</u>
Public Debt, incl. guaranteed	58.3
Nonguaranteed Private Debt	..
Total outstanding & Disbursed	..

RATE OF EXCHANGE

<u>December - 1971</u>
US\$1.00 = NAf1.00
<u>Since January 1986</u>
US\$1.00 = AFL1.79
AFL1.00 = US\$0.56

DEBT SERVICE, DECEMBER 31, 1984 a/

	<u>%</u>
Public Debt, incl. guaranteed	21.3
Nonguaranteed Private Debt	..
Total Outstanding & Disbursed	..

a/ Ratio of debt service to exports of goods and non-factor services.

.. not available

OVERVIEW
SUMMARY AND RECOMMENDATIONS

i. The island of Aruba is one of six Caribbean islands that, with Holland, form the Kingdom of the Netherlands. Situated near the coast of Venezuela, Aruba, together with Bonaire and Curacao, are known as the Leeward Islands. The other three islands, known as the Windwards (St. Maarten, Saba and St. Eustatius) are 900 kilometers to the north. Until the end of 1985, the six islands were centrally governed by an elected Parliament and a Central Government in Willemstad, Curacao, in addition to which each island had its own elected Government.

ii. On January 1, 1986, Aruba separated from the other five islands and became an autonomous state within the Kingdom of Netherlands. The Island Government took over the authority, functions and personnel of the Central Antillean Government in Aruba, functions that included justice, police, postal and other services, and the collection of indirect taxes. Financial transfers between Aruba and the Central Government ceased, although Aruba still contributes 25 percent (with a limit of 1-1/2 percent of its revenues) to a new Solidarity Fund set up to assist the smaller islands of the Netherlands Antilles. Aruba replaced the Netherlands Antilles guilder, which has been pegged to the U.S. dollar since 1971, with the Aruban florin (AFL) at the same exchange rate with the dollar.

iii. Aruba itself, like other islands of the Netherlands Antilles, is poorly endowed with natural resources, has little water and relies on imports for most of its requirements of food and consumer goods. However, it has a very favorable climate and beautiful beaches. The infrastructure of the island is well-developed, and the standard of education is high. There are few households without a piped water supply (from desalinated water) or an electricity connection. The proportion of children attending primary and secondary school, as well as institutions of higher education, matches that in industrial countries. Manufacturing activity is, however, limited, and there is even less agriculture.

iv. Until recently, the economy of Aruba was supported largely by oil refining and tourism for the most part. A large oil refinery was built by Exxon at Lago in the 1920s to serve the United States, whose ports were at that time unable to accommodate very large tankers. Transshipment operations at the Aruba port and trade in the free zone also contributed to the growth of a prosperous society with a standard of living much above that of other countries of the region. Given its attractiveness as a vacation spot, Aruba has long had a strong tourism industry, which is now the mainstay of the economy.

v. Relying as it has largely on external sources of income, Aruba's economy has been vulnerable to changes in world economic conditions. However, the recession of 1980-82 had little effect, mainly because of a large flow of visitors from Venezuela who spent heavily in Aruba's shops and casinos and the free zone. When the drop in oil prices caused a severe

devaluation of the Bolivar in 1983, the flow of visitors from that country fell to less than a third. They have since been replaced by tourists from North America, although the income from this tourism has not been proportionate.

Closing of the Lago Oil Refinery

vi. Much more serious for Aruba's long-term future was the effect of the oil price drop, and changes in the patterns of the world oil trade, on the refinery. The oil sector, mainly the refinery, which had contributed to over 23 percent of GDP in 1980, declined in 1984 and ceased operations altogether in March 1985, when Exxon closed its facility. An active search is under way to find an operator who would re-open Lago as a refinery, but the prospect is not bright unless Colombia, which is short of refining capacity, is interested in having some of its crude oil refined at Lago. Meanwhile, negotiations between the Government of Aruba and Exxon are continuing on the development of part of the site as a resort.

vii. The closing of Lago caused Aruba to suffer a severe loss of foreign exchange, public revenues and jobs. The foreign exchange inflows associated with the refinery, which were equivalent to AFL 282 million in 1982 (37 percent of total inflows) and AFL 140 million in 1984, ceased after March 31, 1985. Direct Government revenues from the refinery operations, not counting taxes paid by employees, were AFL 92 million in 1984; this source of funds was no longer available. Some 1,300 jobs were lost at the refinery, and more in other parts of the economy dependent upon it. GDP is estimated to have fallen 17 percent between 1984 and 1986.

viii. The events of 1984-85 have demanded an immediate reduction in Government expenditures. During its prosperous years, the public sector of Aruba, in common with that elsewhere in the Netherlands Antilles, grew rapidly not only in terms of the numbers employed but also of their average remuneration. The combined wage and salary bill of the Island and Central Governments with respect to employees stationed on Aruba increased by nearly 64 percent between 1980 and 1984, while expenditures on goods and services increased by nearly 47 percent during the same period. Subsidies to the port and the public utilities also increased. Taken together with the decline in revenues, the effect was a budget deficit of AFL 72 million in 1985, with the prospect of much larger deficits in succeeding years unless drastic action is taken.

ix. The overriding constraint on the economy since the loss of Lago's earnings is its ability to pay for imports. Since the Government's wage and salary bill, and its purchases of goods and services, are so large, reducing imports cannot be achieved to any significant degree without a cut in Government spending.

Guidelines for Eliminating the Budget Deficit

x. In consultation with the Netherlands Government and the International Monetary Fund, a set of guidelines was drawn up with the objective of closing the budget gap by the year 1988. The Netherlands

pledged budgetary assistance of Dutch guilders (f) 100 million (presently equivalent to AFL 75 million or about US\$40 million), of which f 40 million was disbursed in 1985. Among the proposed measures listed in the guidelines, one was made a condition of Dutch assistance, namely, an increase in the excise tax on gasoline. The Government has not raised the tax. However, because it has held the price of gasoline constant, despite the large drop in its cost, the Government has realized some increase in revenue from this source, although not as much as was envisaged in the guidelines.

xi. The guidelines are described in Chapter II, which also looks at the measures already implemented and others not yet put into effect. When fully implemented, the reform measures are expected to yield reductions in expenditures or increases in revenues totalling AFL 168 million in 1984 prices, the amount calculated to be required to achieve fiscal balance by 1988. The measures already taken will yield about AFL120 million. The chief expenditure measure has been a cut of 13.75 percent in the wages and salaries of civil servants of the then Island Government, effective April 1, 1985, and of former Central Government civil servants, effective January 1, 1986. On the revenue side, there has been an increase in the income surtax and certain indirect taxes, and the imposition of a solidarity tax.

xii. The full benefit of these measures was not felt in 1985, and the budget deficit for that year, at AFL 72 million before development aid, was larger than in 1984. Additional action will have to be taken soon if a deficit of that magnitude is to be eliminated by 1988. As early as possible, and not later than the end of the third quarter of 1986, an estimate should be made of the out-turn for the year, which is expected to show a smaller deficit than in 1985. A budget for 1987 should be prepared at that time with a gap between expenditures and revenues sufficiently small that it will be possible to eliminate it in 1988.

xiii. The progress so far is commendable, particularly the cuts in the remuneration of civil servants, which should be extended, as soon as possible, to all employees of public enterprises. There remain a number of measures that have not yet been taken but that are necessary, not only to close the remaining gap in the budget but, even more important, to improve efficiency. The principal ones are: to trim the Government sector itself and reorganize its structure and administrative practices; to cut the losses and improve the management of the water and power company and other public enterprises; and to make radical changes in the way health and other social services are financed and managed so as to control their rising costs. The mission's recommendations in these areas, which are discussed in Chapters III and IV, are summarized below.

Government Reform

xiv. A good start has been made to reduce the large backlog of tax assessments and collections. The yield in 1986 is expected to be AFL 18 million, AFL 10 million more than in 1985. The mission also recommended

the institution of a value-added or sales tax, in order to broaden the base of taxation.

xv. The Government should begin an orderly, phased reduction in its workforce. Some reduction is already underway, in keeping with recent announcements of a lower mandatory retirement age and incentives for early retirement. While these measures are an important first step, they will not necessarily reduce overstaffing in the right places. Indeed, some well-qualified employees may be tempted to retire in order to seek employment in the private sector. A systematic inquiry should therefore be undertaken to determine where and when staffing reductions should be made, and what changes, if any, are needed in the present labor laws to make this possible. Interdepartmental task forces could be formed, with private sector participation, to review individual departments and agencies in order to: identify policy and operational problems; assess staffing standards and develop appropriate workload measures; take stock of existing personnel and determine the degree of overstaffing or skill shortages; consider the need for organizational changes within the department or in relation to the responsibilities of others; and establish a timetable for the implementation of each recommendation. The formation of interdepartmental task forces with the participation of non-government citizens, and outside experts if necessary, will ensure an objective approach and emphasize that the reform of Government administration is a national concern.

xvi. Another step that could be taken now is to require each department to prepare a statement, well before the next budget year, of what it hopes to accomplish during the year and beyond, supported by a justification of its claim on budgetary resources. This step presupposes the existence of a capacity within the Department of Finance to analyze and coordinate departmental statements and review actual performance against previous statements. Technical assistance on budgeting is planned to start in October 1986.

xvii. There are three other needs that should be addressed, each of which will require time, resources and technical assistance. The first is to establish the fiscal credibility of the Government, which will strengthen and attach importance to the general audit function and the upgrading of staff. Aruba can ill afford to have unaudited accounts and incomplete budgets.

xviii. The second is to build up the sources and management of information needed for effective planning and administration. Initial targets should be the Government accounts, budget and control systems, tax information and an up-to-date flow of essential statistics. The Government is in the process of acquiring a data-processing facility, which should be of considerable help in this regard.

xix. The third is to develop, coordinate and control job retraining efforts. This reform will be a key element in upgrading productivity, bringing proper skills to bear in critical areas and providing a rational and compassionate bridge to the private sector for those employees who face the loss of public sector jobs. In the latter respect, private sector

involvement and commitment would be beneficial. Both Government and the private sector would benefit from a well-directed training effort to enhance management skills.

More Efficient Public Utilities

xx. There is little underground water in Aruba and only limited water storage behind dams. Most water is therefore supplied by desalinization plants. The cost is high but so also is consumption, which runs some 60 percent higher than that of the other islands of the Netherlands Antilles. On the other hand, domestic water tariffs are lower, partly because the rates formerly charged to the oil refinery subsidized domestic consumers. Since the oil refinery closed, this relief is no longer available, and it is estimated that the average water revenue now covers only 70 percent of average production costs. If an increase in the water tariffs (or in the Government's subsidy) is to be avoided, drastic reductions in production costs must be made.

xxi. The key to cutting costs is to improve the efficiency of the Water and Power Company (WEB), a Government agency that does not manage its own bill collections and is subject to constant political interference in its operational and staffing decisions. WEB is overstaffed by at least 25 percent, and its management has been known to take time off to engage in parliamentary campaigns. WEB's losses in 1983 are said to have been AFL 22.9 million and in 1984 AFL 7.6 million, but they are probably understated, as the cost of bill collection is borne by the Government Treasurer's office and WEB's financing costs are subsidized.

xxii. The condition of the desalinization plants and the distribution system is generally good. Metering is accurate, and distribution losses are understood to be low. Given that the desalinization plants used to supply the refinery, which is now closed, there is ample capacity to meet future demand.

xxiii. The quickest and easiest solution to WEB's problems is to put management and operations under contract to an experienced private operator such as ELMAR, which manages the power distribution system efficiently under a long-term contract. If that approach is not feasible, WEB should be transformed into an autonomous company free of governmental and political interference.

xxiv. Electric power production has also been affected by the closing of the oil refinery, which accounted for 40 percent of the electricity consumed in 1983 and 35 percent in 1984. Although its closure would suggest that there is now surplus generating capacity, the future needs of other sectors, particularly the hotel sector, which is planning a major expansion, should be carefully assessed. Moreover, the principal generators are more than 20 years old. Careful analysis of the least cost solution to their replacement should be undertaken.

xxv. Government policy has been to subsidize power costs in order to keep tariffs low. The subsidy in 1985 was AFL 4.4 million and may increase

to AFL 10 million in 1986 now that overhead costs are no longer carried in part by the refinery. Moreover, the willingness of the Government to subsidize the system removes the incentive to control costs. Here again, the need to examine and improve WEB's efficiency is evident.

xxvi. Wind energy offers considerable promise as a cheap source of power for Aruba. As in the other Leeward Islands, wind speeds are high, and the wind regime relates closely to the power load distribution during the day. Wind power therefore offers economies as a substitute for conventional power production at peak load times. It is also attractive because small wind power installations can be added as the need arises.

xxvii. A feasibility study would be warranted to determine the extent to which wind power should be integrated into the system, and the phasing of such installations in relation to the timing of generating capacity replacement. Development of a wind farm would allow Aruba to gain expertise in this growing technology that could thus be exported to other countries in South America and the Caribbean. A similar suggestion has been made for Curacao, and collaboration between the two islands would be in their common interest.

xxviii. The exploitation of solar energy for water heating is also attractive, as it offers satisfactory rates of return. However, the larger hotels now use the exhaust heat from their air conditioning systems, and it would not pay for the smaller ones to retrofit solar water heaters. Solar energy could be a viable alternative in new facilities and when existing installations in the hotels need to be replaced. The Government could consider providing financial support for a technical evaluation of the possibilities.

Social Services

xxix. Aruba has continued the same schemes for providing for sickness, retirement and other social needs that pertain in the Netherlands Antilles. The system as a whole is very complex and costly, and there are few if any built-in controls or incentives to hold costs down. This is particularly the case with health services. There is no effective control over medical costs, which can include the cost of treatment abroad, and the average length of stay at the hospital is more than twice that in the United States. The hospital appears to be used as a hostel for welfare patients and the elderly as much as to provide medical services. The mission recommends that, as in other countries, a cap be placed on the cost of particular treatments and procedures to be paid at public expense, that all patients in addition to salaried civil servants should pay a share of their medical bills, and that the health insurance schemes be made contributory. Measures of this kind would help meet the rising financial costs and instill a sense of cost-consciousness in both providers and consumers. Consideration should also be given to building appropriate facilities for poor and elderly people who need institutional care but not a fully equipped hospital.

xxx. Aruba has been paying the retirement pensions for civil servants directly for the most part, as APNA, the pension fund, is underfunded. The reason is that the Central and Island Governments had not been paying the full premiums to APNA, instead using them to finance their budget deficits. The accumulated arrears of both APNA and SVB accordingly have been very large. However, Aruba has been paying off its arrears to the SVB, and its account with APNA is almost clear.

The Productive Sectors: Prospects for Employment

xxxi. Some of the measures described above, notably the trimming of the Government service and overstaffing in public enterprises, will add to an already heavy burden of unemployment. Aruba must therefore look to the private sector to absorb a growing share of the jobless and new entrants in the labor force in productive employment. Tourism has been a mainstay of the Aruban economy for many years, and after the closing of Lago, its leading economic sector. However, tourism cannot provide enough jobs for everyone, nor would it be wise for Aruba to rely, as it once did, on a single industry. Besides investigating the plans and possibilities for expanding tourism, the mission also considered the prospects for expanding manufacturing. Its findings are described in Chapter III and summarized here.

Tourism

xxxii. Growth in the sector was sustained throughout the 1970s. Visitor arrivals^{1/} rose from 75,000 in 1970 to nearly 190,000 in 1980, with the major market throughout this period being the United States. Following the prosperity brought about by the increases in world oil prices in 1973/74 and again in 1979/80, the Venezuelan market developed rapidly and the share of Venezuelan visitors in total arrivals rose from 15 percent in 1970 to 28.5 percent in 1980. Traffic from Venezuela continued to grow rapidly, in the early 1980s, increasing by a further 40 percent by 1982. Total visitor arrivals in 1981 and 1982 exceeded 220,000 (Table A.1). However, with the devaluations of the Bolivar in 1983, the Venezuelan market collapsed, and its traffic fell by 72 percent between 1982 and 1984. This dramatic decline was only partly offset by growth in other markets. However, as a result of intensified marketing efforts elsewhere, the overall drop in visitor numbers was only 11 percent in 1983, and part of this decline was made up in 1984 and 1985, when visitor arrivals numbered 210,000 and 207,000, respectively. A 33 percent increase in traffic from the United States between 1982 and 1985 was the principal offset to the decline in traffic from Venezuela.

xxxiii. Accommodation capacity has grown more slowly since 1970 than visitor numbers. As a result, average annual hotel occupancy rates rose during the 1970s and have been in excess of 70 percent in all but one year since 1973. The average for all hotels has been close to 80 percent since 1980, an exceptionally high level in a holiday destination subject to seasonal fluctuations in traffic. These high occupancy rates reflect the

^{1/} Visitors from outside the Netherlands Antilles.

effectiveness of marketing and promotion programs and the high quality of organization and management in the sector.

xxxiv. The expansion of tourism is generally regarded as offering the most promising opportunity for making up the losses to the economy flowing from the closing of the Lago refinery, and the Government's objective is to double visitor capacity and tourist flows within the next five years. This would mean adding some 2,000 hotel rooms to the existing stock (2,061 rooms) and a visitor flow of about 400,000 by the early 1990s. Doubling of traffic to Aruba would mean that the island's share in the Caribbean market would need to rise from about 2.8 percent in 1984 to 4.3 percent by 1991, were traffic to the Caribbean as a whole to grow by 4 percent annually, the growth rate actually realized over the period 1970-84. To achieve so large an increase in the market share in a relatively short time will be difficult. Besides the necessary expansion of accommodation capacity, it will require that new market segments be tapped, which could be in new geographical areas or in specified areas of existing markets (e.g., conventions).

xxxv. There are good prospects for achieving an increase in accommodation capacity in the short term, but to obtain the capital needed to double hotel capacity by 1990/91 will be a major task. On the basis of projects already under way or for which financing is available or in sight, there should be not less than 2,700 rooms by 1988. A number of other projects are planned, and financing is being sought. The costs of the different projects will vary according to the standard of facility and whether the particular project is a new hotel or an expansion of an existing one. On the basis of 1986 prices, a rough estimate of the financing needed in addition to the amounts secured so far is AFL 160-180 million (US\$90-100 million).

xxxvi. An estimate of the costs of tourism-related infrastructure and of the necessary expansion of tourist services (shopping, tours, transport services, etc.) is not available. Supplies of electric power and water would be adequate to meet the growth of demand although investment to strengthen the distribution networks would be needed. Further investment in roads and pedestrian ways and in expanding the capacity of the airport terminal to handle a doubling of visitor numbers would also be required. Given these requirements, the total investments in the tourism sector needed to support a doubling of visitor numbers by 1990/91 seem likely to be not less than AFL 200-250 million, or AFL 40-50 million a year.

xxxvii. Were the Government's targets for 1990/91 to be achieved, the tourism sector would then earn gross foreign exchange receipts (at 1986 prices) of about AFL 450 million and would provide employment for approximately 10,000 persons, about twice the number presently employed. Such levels of foreign exchange earnings and employment would go far to offsetting the effects of the closure of Exxon's Lago refinery on the Aruban economy. Nevertheless, it must be recognized that the targets are highly ambitious in terms of achieving so large an increase in visitor numbers, of attracting from abroad the capital required

for the expansion of visitor capacity, and of being able to construct this additional capacity in so short a period.

Manufacturing

xxxviii. There are about 420 people presently employed on Aruba in 27 enterprises manufacturing a variety of products, mainly for the domestic market. They were established under the Netherlands Antilles' policy of protecting local industry, a policy that has not had much success in creating job opportunities. Protection leads to the development of inefficient, high-cost industries, or more efficient industries with high profits, both at the expense of the consumer. The Government of Aruba is wise to abandon protection in favor of a free trade policy with respect to imports, and to phase out economic levies over a five-year period. This commendable decision should be matched by improvements in the procedures for issuing licenses, and by more liberal permit and immigration procedures, so that businesses can bring in the management and technical staff they feel they need.

xxxix. Aruba has continued the investment incentives policy in force before separation (mainly tax holidays and accelerated depreciation) but may wish to consider whether it is appropriate for its needs. A more effective policy might be to offer tax credits based on value added or net domestic content of production, with different rates for exports and domestic products so as to give the former a preference. Tax credits could be held by a company until it became profitable or could be sold to another company. Such a system would encourage companies to earn credits through performance.

xl. Given the small size of Aruba's market, a serious attempt to expand manufacturing must look principally to the export markets. However, efficient small companies could start by making goods for tourists and local residents, and with that experience turn later to exporting. A number of products have been suggested in earlier reports, mainly in specialized textiles and electronics, as offering prospects for successful exports. A strategy that has been used successfully elsewhere is to focus on high technology, high value products in specially designed industrial parks. The Lago site, which already has a well-developed infrastructure, could be developed in part as a number of industrial estates for specific users, since the needs of different industries vary.

xli. An essential element of an industrial strategy for Aruba is to raise the general level of skill of managers and the work force. The mission has proposed to the Netherlands Antilles Government that a non-profit training foundation be set up on Curacao, to be run jointly by the Government and the private sector. Over time, the foundation could develop into a regional training center. Should Curacao adopt this proposal, Aruba might use it to meet its own skill requirements; otherwise, Aruba might set up a foundation of its own.

xlii. The principal instrument for promoting investment would be the Aruban Development Bank. At present it is largely inactive for lack of funds, but an informal proposal--which the mission supports--has been made to restructure and expand the Bank and give it an infusion of new capital. A revitalized Development Bank, in its role of provider of equity and loan capital for promising ventures, could join with commercial banks, which are traditionally conservative in their approach to industrial investment, in joint financing of such ventures, with the Bank taking a significant share of the risk.

xliii. A special unit might be set up within the Bank to promote investment, to provide information for potential foreign investors and to investigate market possibilities for Aruban exports. The unit should be managed initially by expatriates experienced in these areas, with the duty of training local counterpart staff.

Primary Production

xliv. It should be possible to expand the very limited activity in agriculture, livestock and fishing. The hotels and restaurants catering to the tourist trade offer a natural market for good quality meat and produce, and local consumers could be attracted to supplies of fresh food at reasonable prices. Soil and water conditions are not as favorable as elsewhere in the Caribbean, but visits to some of the farms and gardens now working suggest that with proper irrigation the soil can be productive. Conditions for livestock rearing on feed lots are more favorable. Extension services will be needed to provide technical advice, and work must be done to rehabilitate existing storage dams and, where feasible, to build new ones. The seas around Aruba have been heavily fished, but the development of commercial fishing for local consumption should be possible.

Job Creation

xlv. Present employment in Aruba is about 22,500 people, with unemployment estimated at 5,500, although some of these people are probably earning money, if not a full livelihood, in various informal activities. To bring unemployment down from its present level--nearly 20 percent--to 10 percent during the period 1986-95 would be a considerable achievement. Taking into account net additions to the labor force and a shake-out from Government employment, the creation of some 6,600 new jobs in the private sector is required.

xlvi. Assuming that the plans to double the number of hotel rooms are implemented and the maintenance of a high occupancy rate, tourism could provide 5,000 new jobs in hotels, restaurants and related trades. However, this is an outside estimate, and it would be prudent to count on a somewhat smaller increase in tourist-related employment. There will be some increase in employment in construction, commerce and other sectors, but most of the remaining 2,000-2,500 new jobs would have to be found in agriculture, fishing and manufacturing. This target is ambitious but not

impossible. If achieved, the proportion of the labor force in primary production would still be far less than that in other Caribbean countries, and the proportion in manufacturing would be well within the range found there. In the case of manufacturing, providing some 1,500-2,000 additional jobs by 1995 would mean fostering the creation of 150-200 new businesses, depending on their size. This target would offer a challenge to the Development Bank.

Sources of Government Financing

xlvi. The 1985 budget deficit was financed largely by drawing on the Government's balances with the Central Bank. The balances are now low, and other sources must be found to finance the budget deficits that will arise in 1986 and 1987. One source is the undisbursed portion (Dutch guilders 60 million) of the special budgetary assistance offered by the Netherlands, provided that the authorities are satisfied with Aruba's progress under the guidelines. Although Aruba's foreign public debt is small, borrowing on commercial terms for deficit financing should be avoided as the Government has contingent liabilities for part of the obligations incurred by the former Central Government and has indicated its willingness to guarantee some of the loans that will be required to finance the large program of hotel expansion in Aruba that is under way or planned.

xlvi. Another source of funds for public as well as private investment is the deposits of Arubans in foreign banks and their holdings of foreign securities. As investment opportunities are created, repatriation of these savings should begin to occur and could be encouraged by official measures permitting the withdrawal of repatriated funds from bank accounts in foreign exchange at the original rate. The Government could also issue bonds for development with a dollar or maintenance of value clause, thus itself carrying the exchange risk.

Chapter 1

ECONOMIC OVERVIEW

1.1 In January 1986, Aruba, an island of 193 square kilometers and an estimated population of 64,000, became a separate state within the Kingdom of the Netherlands. Although Aruba has poor soil and little precipitation, it is endowed with a beautiful coast and fine climate, which have provided the basis for a successful tourist industry.

A. Recent Economic Developments^{1/}

1.2 Until the end of 1984, the dominant activities on Aruba were oil refining, tourism and transportation services, with the oil sector in 1980 contributing more than 23.0 percent of domestic value added. These productive activities, heavily dependent on international developments and world economic fluctuations, have supported a relatively high standard of living and a stable sociopolitical environment. Aruba's per capita income in 1981 was the equivalent of US\$7,100, but has declined since then in real terms.

1.3 Aruba escaped the 1980-82 world recession mainly because of its booming tourism trade. Nevertheless, when the industrial countries entered a period of pronounced growth in 1983, the Aruban economy faced severely adverse developments that affected its oil refining, tourism and transshipment industries. In 1984, the latest year for which the mission was able to compile GDP data, output was 9 percent lower in real terms than in 1982, the last year of economic growth (Tables I.1-I.5). It fell even further in 1985, when Exxon closed the Lago oil refinery. That event had a severely disruptive effect on the Aruban economy, causing the loss of a large part of the island's employment, fiscal revenues and foreign exchange earnings. Between 1984 and 1986, the decline in output probably exceeds 17 percent.

1.4 The transshipment activities at the port also saw a decline in the early 1980s. The one industry that escaped the downturn was hotels and restaurants, mainly because of a rapid increase in tourist arrivals from the United States. The reduction in Venezuelan tourism after the successive devaluations of the Bolivar affected the Aruban tourist industry far less than it did neighboring Curacao.

^{1/} The Aruban florin (AFL) is used throughout the report, even for the pre-separation period. The Aruban florin, which came into existence in 1986, is on a par with the Netherlands Antilles guilder (NAf) and can be used interchangeably with the Netherlands Antilles guilder when discussing the pre-separation period.

Table I.1 Gross Domestic Product by Economic Activity at Current Market Prices
(millions of AFL)

	1979	1980	1981	1982	1983	1984
Industry and Oil	139.3	165.2	164.2	176.7	193.3	138.4
Public Utilities	11.2	18.3	21.1	16.1	14.5	15.0
Construction	34.3	41.6	47.7	63.7	55.5	62.7
Trade	126.8	121.9	142.8	166.9	159.2	140.6
Hotels and Restaurants	59.5	75.2	98.8	112.2	89.5	93.5
Transportation and Communications	38.0	40.9	24.9	28.9	24.5	24.3
Finance and Real Estate	56.3	64.9	71.8	83.6	85.0	86.3
Personal Services	55.2	58.7	95.1	120.1	131.4	136.8
Government Services	89.6	99.7	122.1	131.5	145.0	152.0
Less Imputed Bank Charges (-)	20.5	23.6	19.7	24.3	24.2	23.7
Gross Domestic Product at Market Prices	589.7	662.8	768.8	875.4	873.7	825.9

Source: Central Bureau of Statistics and staff estimates.

Table I.2 Aruba: Shares in Gross Domestic Product
(percentage)

	1979	1980	1981	1982	1983	1984
Industry and Oil	23.6	24.9	21.4	20.2	2.1	16.8
Public Utilities	1.9	2.8	2.7	1.8	1.7	1.8
Construction	5.8	6.3	6.2	7.3	6.4	7.6
Trade	21.5	18.4	18.6	19.1	18.2	17.0
Hotels and Restaurants	10.1	11.3	12.9	12.8	10.2	11.3
Transportation and Communications	6.4	6.2	3.2	3.3	2.8	2.9
Finance and Real Estate	9.5	9.8	9.3	9.5	9.7	10.4
Personal Services	9.4	8.9	12.4	13.7	15.0	16.6
Government Services	15.2	15.0	15.9	15.0	16.6	18.4
Less Imputed Bank Charges (-)	3.5	3.6	2.6	2.8	2.8	2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Central Bureau of Statistics and staff estimates.

Table I.3 Aruba: Gross Domestic Product by Economic Activity
1980 Prices
 (millions of AFL)

	1979	1980	1981	1982	1983	1984
Industry and Oil	158.1	165.2	146.0	149.6	161.1	127.0
Public Utilities	10.4	18.3	18.5	14.5	13.6	13.5
Construction	37.6	41.6	43.5	55.3	47.8	55.34
Trade	141.8	121.9	127.0	142.4	132.1	114.2
Hotels and Restaurants	65.9	75.2	86.7	89.8	69.2	71.2
Transportation and Communications	43.2	40.9	21.9	23.1	18.9	18.5
Finance and Real Estate	63.2	64.9	63.4	68.1	67.1	67.0
Personal Services	60.1	58.7	82.9	94.3	97.1	99.1
Government Services	100.1	99.7	108.8	110.3	115.4	117.0
Less Imputed Bank Charges (-)	23.0	23.6	17.4	19.8	19.1	18.4
Gross Domestic Product at Market Prices	657.4	662.8	681.3	727.6	703.2	662.5

Note: The figures in this table and Table I.4 were derived from Table I.1 by deflating the latter with the Consumer Price Index (Table I.11) and should therefore be treated with caution.

Source: Staff estimates.

Table I.4 Aruba: Gross Domestic Product by Economic Activity
 (growth rates %)

	1980	1981	1982	1983	1984
Industry and Oil	4.5	-11.6	2.5	7.7	-21.2
Public Utilities	75.8	1.3	-21.8	-6.1	-0.5
Construction	10.6	4.5	27.3	-13.7	11.7
Trade	-14.1	4.2	12.1	-7.2	-13.5
Hotels and Restaurants	14.1	15.3	3.5	-22.9	2.9
Transportation and Communications	-5.3	-46.4	5.4	-18.0	-2.3
Finance and Real Estate	2.7	-2.3	7.3	-1.4	-0.2
Personal Services	-2.3	41.2	13.7	3.0	2.1
Government Services	-0.4	9.2	1.4	4.6	1.4
Less Imputed Bank Charges (-)	2.5	-25.9	13.8	-3.5	-3.7
Gross Domestic Product at Market Prices	0.8	2.8	6.8	-3.4	-5.8

Source: Staff estimates.

Table I.5 Aruba: GDP by Expenditure Category, 1985
(percentage shares)

Private Consumption	71.9
Government Consumption	23.7
Gross Capital Formation	11.1
Exports of Goods and Services	41.5
Less Imports of Goods and Services	<u>-48.2</u>
Total	100.0

Source: UNDP/DECO.

Industrial Activity

1.5 The Lago oil refinery played a key role in the Aruban economy from the 1920s on. However, in recent years the facility became obsolete and was uncompetitive. Unlike the Shell refinery in Curacao, wage concessions and personnel reductions would not have been sufficient to improve its weak competitive position. As it was, Exxon made no substantial investments to contain operational costs and reduce the dependence of the refinery on Venezuelan crude. Production of refined products fell between 1980 and 1984, and Lago recorded financial losses. When faced with the additional problems of the fall in oil prices and the reduction in world demand, Exxon chose to close the facility. It made the announcement in October 1984, with operations ceasing on March 31, 1985.

1.6 The direct loss of jobs was 1,300. However, if the indirect employment generated by the refinery is included, the total loss of jobs was much larger. Moreover, the foreign exchange inflows associated with the refinery had been AFL 282 million in 1982 and AFL 140 million in 1984, while direct Government revenues from the oil refinery operations in 1984 had been AFL 92 million. Both foreign exchange and revenue flows ceased in 1986.

1.7 The Government and Exxon are now negotiating the future of the Lago site. Both sides have shown a willingness to seek a constructive alternative use for the site, rather than simply restoring it to its former condition, which Exxon is legally obliged to do. A commission has been appointed to explore the possibilities of re-opening Lago as a refinery. The depressed state of the oil industry and the trend toward refining crude oil where it is produced, using associated natural gas as the energy source, make the prospect of finding a new operator rather unlikely. However, it is possible that Colombia, which is experiencing a boom in crude oil production but has insufficient refining capacity, may be interested in having some of its crude refined at Lago. Pending the outcome of the Commission's work, the essential refining facilities at Lago

are to be retained; studies will proceed on the use of other parts of the site as a resort. The mission also recommends the development of part of this large area as an industrial park. These suggestions are discussed further in Chapter III.

1.8 Apart from the cessation of the refining activity, oil transshipment and the storage of crude oil also declined, as noted, with business falling to a very low level by the end of 1985 (Table I.6). The shifts in world oil trade patterns and the improvement in U.S. ports together with the deep recession in the world shipping industry, substantially reduced the volume of transshipment and repair tonnage at the Aruba port. However, these developments were also related to the relatively high labor costs and thus the uncompetitive position of the port relative to similar facilities in the area. These problems persist today.

Table I.6 Port of Aruba: Gross Registered Tonnage
(millions of tons)

	1980	1981	1982	1983	1984	1985
Gross Registered Tonnage	52.9	57.9	41.9	35.1	22.7	7.2
Of Which Transshipment	43.3	47.0	33.7	27.5	17.3	2.1

Source: Central Bank of Aruba

Tourism and Commerce

1.9 Expanding cruise and stay-over arrivals from the United States have compensated for the loss of Venezuelan visitors in terms of numbers, but not in terms of foreign exchange inflows. Whereas U.S. visitors come to vacation and not to shop, Venezuelans made extensive purchases for resale at home. On a more positive note, there is reasonable assurance of a 50 percent increase in hotel capacity by 1988 compared to 1984, with sufficient demand projected to fill it. This sector should be able to absorb some of the unemployed and contribute to foreign exchange earnings. (The subject is discussed in more detail in Chapter III.)

1.10 Within commerce, the turnover of enterprises catering to the Venezuelan tourist trade fell by an estimated 70 percent between 1982 and 1984. The depressed domestic market conditions have also severely affected commercial enterprises catering to residents.

Other Sectors

1.11 The offshore financial sector is small in Aruba, but generated close to AFL 10 million in Government revenues in 1985 (from zero in 1981). This source of revenue is expected to dry up within the next two years, however, because the Antilles are no longer a favored channel for

Eurobonds and other borrowings by U.S. companies. The main reason is the elimination in 1984 of the U.S. withholding tax on payments to non-residents from which the Antilles was exempt. In addition, current lower interest rates encourage borrowers to refinance their loans.

1.12 Construction activity, albeit small, has not been affected by the economic crisis, largely because of the hotel expansion and relatively low interest rates.

1.13 Agriculture hardly exists on the island, mainly because of the poor soil and lack of water. Fishing is also very limited, but although fish resources in the lower Caribbean are not abundant, there is potential for a fishing industry to supply the local market.

Labor, Wage, and Price Developments

1.14 The most recent reliable information on the labor force and its employment by sector is derived from the 1981 census (Table 1.7). The service character of the economy can be judged from the fact that over 83 percent of the employed population was engaged in service activities, including government and other public services (almost 39 percent); tourism and trade (about 33 percent); and banking, insurance, transport and communications (about 10 percent). Total employment is estimated to have dropped to some 19,000 people, largely as a result of the closing of the Lago refinery and the decline in related activities. Unemployment in 1981 was 9.4 percent of the labor force and was estimated until recently to have increased to 32 percent, or some 9,000 people. However, a Government campaign in June 1986 to persuade the unemployed to register, on pain of losing welfare benefits if they did not, produced about 5,000 registrants, some of whom are believed to have part-time jobs. The number of those eventually registering is not expected to exceed 5,500, representing nearly 20 percent of the present labor force of about 28,000. It seems clear that the previous estimate of 32 percent unemployment did not take into account individuals who are engaged in informal (i.e., unrecorded) activities or who have emigrated. Statistics provided by the Central Statistical Bureau of the Netherlands (which do not distinguish between Aruba and the other islands of the Dutch Antilles) show that net immigration of Antillean residents into Holland has varied between less than 1,000 to more than 3,000 a year since 1980, with a surge of over 4,500 in 1985, mainly in the latter part of that year. The increase in net immigration in that period -- it subsided to normal levels in the first four months of 1986 -- is presumably connected to the closing of Lago. The unemployment problem, although serious, is therefore not as severe as it was once considered to be.

Table 1.7 Employed Persons by Sector, 1981

	Numbers (000')	Percent
Agriculture, Fishing	0.04	0.17
Oil and Industry	2.02	8.58
Construction	1.88	7.98
Public Utilities	0.48	2.04
Tourism and Trade	7.72	32.78
Banking and Insurance	1.05	4.46
Transport and Communications	1.28	4.46
Public Sector and Other Services	<u>9.08</u>	<u>38.56</u>
Total	25.55	100.00

Source: Central Bureau of Statistics

1.15 Average wages in Aruba, as on the other islands of the Netherlands Antilles, are comparable to wages in industrial countries and are high compared with the rest of the region (Tables 1.8 and 1.9), mainly because of the high wages paid by the oil refineries. However, the average monthly wages of hotel and restaurant workers in 1983 were 34 percent lower, and the average wages paid by the public utilities 10 percent higher, than the average monthly earnings of oil refinery wage personnel. In the recent past, some enterprises have reduced their wage bills by eliminating the cost of living adjustments and reducing or eliminating bonuses. The Government also reduced the wages and bonuses of civil servants substantially, as explained in Chapter II (para. 2.03).

Table 1.8 Minimum Monthly Wages by Sector, 1980-84
(in AFL)

	1980	1981	1982	1983	1984
Industry, including Oil and Construction	713	817	920	922	925
Transport and Communications and Hotels and Restaurants	512	587	654	687	687
Textiles and Electronic Assembly	430	493	520	585	595
Household Personnel	206	236	262	278	284

Source: Department of Economic Development

Table 1.9 Average Monthly Wages by Sector, 1981, 1983
(in AFL)

	1981	1983
Industry, Excluding Oil	1,000	1,100
Industry, Including Oil	1,660	1,770
Construction	1,116	1,404
Transport and Communication	1,080	1,269
Hotels and Commerce		1,206
Public Utilities		1,970

Source: Department of Labor.

1.16 Price changes in Aruba reflect the price movements in its major trading partners, notably the United States. Inflation was lowered from 15 percent in 1980 to 2.2 percent in 1984, but inflationary pressures mounted in 1985, mainly because of increases in housing and related prices. For the first nine months of that year, the overall consumer price index rose by 3.5 percent (Table 1.10), in line with prices in the United States but substantially higher than the 0.8 percent recorded in Curacao.

Table 1.10 Changes in the Consumer Price Index
(annual percentage change, 1984=100)

	1980	1981	1982	1983	1984	1985a/
Food	14.5	11.8	7.0	1.9	2.5	1.2
Clothing	0.0	12.5	8.4	6.4	-3.1	1.5
Housing	20.9	14.3	0.7	1.7	2.1	12.5
Transportation	15.0	11.8	6.3	2.3	4.3	4.5
Overall Consumer Price Index	14.9	12.2	6.2	2.7	2.2	0.8
Memo Items						
Curacao and Bonaire	14.9	12.2	6.2	2.7	2.2	0.8
United States	13.5	10.4	6.2	3.2	4.3	3.7

a/ Until September.

Source: Central Bank of Aruba and Bank of the Netherlands Antilles, Quarterly Bulletin.

Development Assistance

1.17 The total flow of development aid to Aruba amounted to AFL 25.7 million in 1984 and fell to AFL 9.0 million in 1985 (Table 1.11). However, in 1985 the first tranche (40 million Dutch guilders) of a special budgetary assistance grant by the Netherlands was disbursed; this grant of f. 100 million is intended to help Aruba overcome the difficulties created by the closing of Lago. Dutch development aid has been devoted mainly to housing and infrastructure projects, and is disbursed partly as grants and

partly in the form of soft loans. The only other source of development aid is the European Development Fund.

Table 1.11 Development Aid, Inflow by Sector
(millions of AFL)

	1980	1981	1982	1983	1984	1985
Public Utilities				6.3	0.7	0.0
Airports				2.2	0.9	0.5
Harbours				9.6	7.2	3.8
Roads and Bridges				1.0	0.1	-
Health				0.9	2.4	0.2
Housing				12.9	10.7	1.6
Tourism				-	-	2.0
Trade and Industry and Other Services				3.3	0.0	0.0
Various						0.4
Total:	30.90	19.7	19.4	36.2	33.0	8.1
Fund for Social, Educa- tional and Cultural Projects	5.6	3.1	2.4	0.6	1.7	0.9a/
European Development Fund	3.6	3.3	1.7	0.2	2.0	0.0
Total:	40.1	26.1	23.5	37.0	25.7	9.0

a/ First half of the year.

Source: Central Bank of Aruba and Bank of the Netherlands Antilles, Quarterly Bulletin.

B. Public Finance

Institutional Background

1.18 Before January 1986, when Aruba was part of the Netherlands Antilles, it participated in the revenue-sharing arrangements between the Central and Island Governments. Aruba no longer does so, but as part of the separation arrangements it agreed to contribute 25 percent or up to 1.5 percent of its revenues to a Solidarity Fund to be set up for the benefit of the smaller islands of the Netherlands Antilles, the other contributors being the Curacao Island Government (55 percent) and the Government of the Netherlands (20 percent). Aruba's share in 1985 was AFL 4.9 million, and in the full year 1986 is expected to amount to AFL 27.0 million.

1.19 All employees of the Central Government and its agencies stationed in Aruba were transferred to the Government of Aruba on January 1, 1986. The accounts of the Social Security bank (SVB) have also been transferred but not those of the civil service pension plan, APNA. The Government of

Aruba now collects all taxes and other public revenues arising in the island. The only public financial institution in Aruba is the Central Bank. Although independent, it reports to the Minister of Finance.

Budgetary Developments

1.20 Through 1983, the trend in fiscal revenues in Aruba was mostly determined by the profit taxes paid by the oil sector (Table I. 12). Total revenues increased from AFL 152 million in 1980 to AFL 295 million in 1982 and AFL 306 million in 1983. Lago profit taxes went from AFL 35 million in 1980 to AFL 156 million in 1982 and then decreased to 129 million in 1983. Although an estimate is not available for 1984, the drop of some AFL 62 million in profit taxes during that year must have been attributable largely to the decline in the profit tax paid by Lago. There were no receipts from this source in 1985. Another source of revenue was the receipts from the offshore sector, which rose from close to zero in 1980 to AFL 8 million in 1983 and AFL 10 million in 1985. Revenues from the tourist and trade sector remained steady during this period at around AFL 24 million.

1.21 The revenue picture changed drastically in 1984. Total Government revenues dropped by 36 percent between 1983 and 1985, largely a reflection of the drop in fiscal receipts from the oil sector. On the other hand, current expenditures -- including those of the Central Government in Aruba -- dropped by only 3 percent between 1983 and 1985.

Table I.12 Aruba: Government Accounts a/
(millions of AFL)

	1980	1981	1982	1983	1984	1985
<u>Current Expenditures</u>						
Goods and Services (Island)	30.0	35.7	41.2	50.9	53.1	48.1
Compensation (Island)	59.8	70.5	79.9	85.7	91.5	89.2
Subsidies (Island)	12.5	10.1	17.0	25.4	9.0	13.3
Transfers (Island)	48.9	53.3	52.5	102.6	100.7	88.1
Debt Interest (Island)	7.8	7.4	7.0	8.5	5.5	5.8
Less: Transfers to Central Government (Island)	-23.1	-26.0	-17.8	-62.0	-53.6	-42.0
Central Government Expenditures	38.8	43.0	48.0	50.0	70.0	65.0
Total:	174.7	194.1	226.9	261.1	276.2	267.5
<u>Current Revenues</u>						
Profit Tax (Oil Sector)	59.4 (35.0)	130.9 (109.4)	183.3 (156.4)	160.5 (129.3)	98.9 (b/)	47.0 (0)
Income Tax	22.0	25.5	24.3	24.7	25.0	24.1
Wages Tax	43.0	57.2	58.7	70.4	62.5	62.5
Property Tax	1.6	1.7	0.5	1.1	1.8	1.8
Tax on Goods and Services	14.0	9.5	17.4	36.6	30.5	32.9
Non-Tax Revenues	12.4	23.5	11.0	12.8	28.3	27.1
Total:	152.4	248.3	295.2	306.1	247.0	195.4
<u>Current Account Balance</u>	-22.3	54.2	68.3	45.0	-29.2	-72.1
Capital Expenditures	38.6	22.8	36.8	33.2	45.6	23.7
Capital Revenues	8.5	9.2	6.4	2.5	16.1	18.8
Capital Account Balance	-30.1	-13.6	-30.4	-30.7	-29.5	-4.9

a/ This table has been constructed on the basis of: (i) estimates of revenues and expenditures of the former Island Government of Aruba, prepared by a UN technical assistance team in Aruba; (ii) the estimated Central Government expenditures in Aruba, less transfer payments from the Island Government to the Central Government.

b/ No estimate.

Source: Department of Economic Affairs (UNCTAD Advisers).

1.22 The combined effect of the decrease in revenues and the increase in expenditures produced a budget deficit of AFL 29.2 million in 1984, increasing to AFL 72.1 million in 1985. In response to the crisis, the Government of the Netherlands agreed to provide special budgetary assistance of Dutch guilders 100 million, provided that the Government of Aruba agreed to follow the guidelines for reducing public expenditures laid down by the IMF (the guidelines are set out in Table 1.13 together with a note of actions taken by the Aruba Government through June 1986). One item, namely, an increase in the tax on gasoline of AFL 0.5 per liter (number 3 in the guidelines) was made a condition of the special Dutch aid.

1.23 The position of the Aruban authorities is that actions have been taken in accordance with the guidelines except for number 5 (increase in import duties), the date for which has not yet arrived, and number 6 (attrition in civil service personnel). With respect to the gasoline tax, although the excise tax has not been increased, the retail price has been held steady, despite a 50 percent drop in the price of crude oil. Revenues from this source are expected to increase by AFL 5.6 million in 1986, whereas the proposed increase in the excise tax on gasoline was expected to yield AFL 14 million (1984 prices) a year.

1.24 The budget deficits in 1984 and 1985 were financed largely by drawing on the cash reserves at the Central Bank. These dropped from AFL 117.6 million in 1983 to AFL 17 million in 1985. During 1985, the Government of the Netherlands disbursed the first tranche of its special budget support, equivalent to AFL 4 million.

Table I.13 IMF Guidelines for Reducing Government Expenditures

Measures	Proposed Date of Implementation	Actions Taken Through June 1986
1. Increase in income surtax from 25 to 30 percent and other tax measures (gambling, motor vehicles)	January 1985	January 1985
2. Solidarity tax (a 6.3 point increase in the income tax schedule)	August 1985	Sept. 16, 1985
3. Increase in excise taxes on gasoline (AFL 0.5 per liter)	January 1986	Not implemented <u>a/</u>
4. Civil service wage cuts	April 1985	April 1985 (Jan. 1986 for former Central Government employees)
5. Increase in import duties	January 1987	. . .
6. Attrition in civil service personnel and reduction of health benefits of civil servants	1985-88	Some reduction in health benefits
7. Reduction in subsidies to public enterprises	July 1986	Drop in oil prices has reduced costs of public enterprises (especially WEB)
8. Reduction of social transfers	July 1986	Temporary Employee Program (TAV) being phased out.
9. Reduction in capital outlays	January 1986	Outlays reduced in 1985 (see Table I.12)
10. Reduction in purchases of materials	No date	Purchases are being reduced.

a/ But revenues have increased following the drop in oil prices (see text).

Money and Credit

1.25 The banking system consists of the Central Bank of Aruba, established in January 1986, and the commercial banks. The Central Bank of Aruba's power to conduct effective monetary policy is expected to be limited, mainly because of the openness of the economy and widespread currency substitution (Table I.14). Monetary policy, though, is expected to be effective in controlling Government borrowing and bank credit to households. The increase in money supply (mainly demand deposits) during the first few months of 1986 is attributable to seasonal factors related to the flow of tourists.

Table I.14 Selected Monetary Indicators, 1986
(millions of AFL)

	January	February	March
Money and Quasi Money (M_2)	280	287	299
Money (M_1)	81	89	102
Currency in Circulation	(32)	(32)	(35)
Quasi Money (M_2-M_1)	199	198	197
Total Short-Term External Assets (Excluding Gold)	74	87	124
Of Which: Central Bank	54	66	71
Commercial Banks	20	21	53

Source: Central Bank of Aruba.

1.26 Lending and borrowing rates in the Antilles have changed little over the years. The official lending rate remained constant at 9.0 percent from March 1983, when it was lowered by 1 point in response to the Venezuelan devaluation, until July 1, 1986 when it was raised to 9.5 percent. Interest rates in Aruba, as in the Antilles generally, used to be well below world interest rates; now that the latter have dropped, they are comparable.

Table I.15 Interest Rates, July 1986
(percent per annum)

Official Lending Rate	9.5
Deposit Rates	
Passbook Savings	5.4
Time Deposits <u>a/</u>	6.6
Lending Rates	
Prime Rate	12.0
Mortgage Rates	12.5
Mortgage Rates from Housing Foundation	8.0

a/ Deposits of AFL 10,000, 12-month maturity.

Source: Central Bank of Aruba.

C. The External Sector

Exchange Rate

1.27 The Aruban guilder, established in January 1986, is pegged to the U.S. dollar at a rate of AFL 1.79 per U.S. dollar, the same as the Netherlands Antilles guilder, which was the currency before separation. As most of Aruba's trade is conducted with the United States, local prices have tended to follow U.S. prices.

The Balance of Payments

1.28 Export earnings, which derive mainly from tourism and oil refining, account for 80 percent of foreign exchange inflows (Table I.16). The remaining 20 percent is accounted for by the offshore sector, harbor-related services, including re-export of goods via the Free Zone, and small exports of oil products and locally manufactured goods.

Table I.16 Balance of Payments and Reserves
(in millions of AFL)

	1980	1981	1982	1983	1984	1985
<u>Current Account Balance</u>	-32.3	39.7	70.7	-95.9	-81.6	-78.5
Inflows	534.5	686.5	762.4	603.7	526.4	514.0
Refining <u>a/</u>	178.4	272.0	344.5	320.3	230.1	195.3
Tourism	230.6	281.6	287.5	193.8	204.4	226.5
Merchandise Exports	83.5	78.4	74.0	29.5	26.0	23.0
Other Current Receipts	42.0	54.5	56.4	60.1	65.9	69.2
Outflows	566.8	646.8	691.7	699.6	608.0	592.5
Export-related						
Imports	117.0	138.9	148.4	119.3	120.0	72.5
Refining <u>b/</u>	43.2	48.8	56.4	53.3	54.6	-
Tourism <u>c/</u>	73.8	90.1	92.0	62.0	65.4	72.5
General Imports	449.8	507.9	543.3	580.3	488.0	520.0
<u>Capital Account Balance</u>	27.1	23.7	-3.5	32.3	12.1	39.7
Private (Net)	1.6	-7.5	-5.2	-2.9	-2.3	8.2
Official (Net)	25.5	31.2	1.7	35.2	14.4	31.5
Errors and Omissions	5.7	4.8	4.2	11.8	8.2	7.6
Overall Balance (Change in Reserves) <u>d/</u>	0.5	68.2	71.4	-51.8	-61.3	-31.2

a/ Intercompany remittances plus local oil deliveries.

b/ Thirty percent of inflows from refining, excluding profit taxes.

c/ Thirty-two percent of inflows from tourism.

d/ Deficit (-) surplus (+)

Source: Central Bank of Aruba.

1.29 As to imports, those of general merchandise imports are very large, as few goods are produced locally; they accounted for almost 60 percent of GDP in 1984. Earnings from the Lago refinery and tourism less related outflows were buoyant in 1982 and resulted in large foreign exchange receipts. In the following three years, however, the net earnings of the refinery decreased and in 1986 ceased altogether; and tourism earnings did not fully recover from the sharp decline in the number of Venezuelan visitors following the devaluation of the Bolivar.

1.30 Until there is a settlement with Exxon and payments are made by that company to clean up the refinery site or to put it to some other agreed use, there will be no further foreign exchange receipts from Lago.

1.31 Current merchandise outflows were almost steady between 1980 and 1983, whereas inflows dropped from about AFL 84 million in 1980 to AFL 30 million in 1983, for a cumulative 64 percent. As the import requirements of the export sectors decreased substantially after 1983, outflows in 1985 were 37.6 percent below their 1983 level. Inflows continued to drop in line with the output of export-related activities. Inflows of private remittances have remained fairly steady. However,, the outflows of remittances grew noticeably between 1980 and 1984, mainly because of increased pension payments to retirees abroad.

The Capital Account and the Overall Balance of Payments

1.32 The capital account is dominated by large changes in official capital inflows. Private capital inflows increased in 1985 as a result of transactions associated with the closing of the Lago refinery. However, official capital inflows fell in 1985 over 1984, as Dutch development aid was partly replaced by direct budgetary support, which is not a capital item.

1.33 The overall balance of payments was in deficit in 1985 for the third year running. Net international reserves in June 1986 corresponded to 2.9 months of imports, an improvement over January 1986, when reserves amounted to 1.5 months of imports.

Official Foreign Debt

1.34 Development loans from the Netherlands are the largest component of official external debt. Debt to the Netherlands grew by 6.0 percent a year on average between 1979 and 1984 and amounted to Netherlands guilders 206.5 million at the end of 1984 (or AFL 104.3 million at that time) (Table I.17).

1.35 Service payments, including amortization and interest, amounted to Dutch guilders 15 million in 1984 and are expected to increase in the future in view of greater amortization payments and the depreciation of the Aruban guilder vis-a-vis the Dutch guilder.

Table I.17 Outstanding Funded Debt Toward the Netherlands
and Debt Service a/
(millions of Netherlands guilders)

	1979	1980	1981	1982	1983	1984	1985 <u>b/</u>	1986 <u>b/</u>	1987 <u>b/</u>
Outstanding Debt <u>c/</u>	155.9	166.0	181.0	187.4	199.0	206.5			
Service Payments	13.6	12.7	12.9	14.4	14.6	15.0	16.9	18.3	19.0
Principal	6.3	5.5	5.5	6.8	7.1	7.1	9.0	10.4	11.1
Interest	7.3	7.2	7.4	7.6	7.5	7.9	7.9	7.9	7.9

a/ The figures represent the outstanding debt of Aruba as a result of Dutch non-ODA assistance within the scope of the multi-annual plan.

b/ Estimate.

c/ As of December 31.

Source: Bank of the Netherlands Antilles, Quarterly Bulletin.

1.36 Prior to January 1, 1986 when Aruba separated from the Netherlands Antilles, the central Government had issued guarantees of loans for various projects in the several islands, and for the purchase of aircraft by the national airline, ALM. The outstanding amount of these loans at December 31, 1984 was NAf 239.2 million, of which Aruba is responsible for 30 percent. Neither Government has been called upon to activate its guarantee for any of these loans, but the guarantees remain a contingent liability of the Governments of the Netherlands Antilles and Aruba in the proportions mentioned. The Government of Aruba has offered to guarantee loans for various purposes (mainly hotel construction) on the island, but none has yet been confirmed.

Chapter 11

ACHIEVING FISCAL BALANCE

2.01 The policy guidelines laid down in mid-1985, following the closure of the Lago refinery, are intended to achieve fiscal balance by 1988 (see Table I.13). The measures involve a combination of increases in taxation and reductions in public expenditures, the latter to be achieved by cutting both the numbers of civil servants and their compensation, including health benefits, and by reducing the subsidies to public enterprises.

2.02 The measures, if implemented in full, were expected to yield revenue increases or expenditure reductions totalling AFL 168 million (1984 prices) in 1988, rather more than the profit tax paid by Lago in 1982 (AFL 156.4 million) and 1983 (AFL 129.3 million). No taxes have been paid by the oil sector since, and the planned measures are intended to compensate for that loss.

2.03 The actions taken so far should yield revenue increases or expenditure cuts of about AFL 120 million, according to the estimates made at the time of the guidelines. This amount is about 70 percent of the total yield expected from the measures included in the guidelines. The measures already taken include:

Revenue Increases

- (a) Increases in the income surtax and taxes on gambling and motor vehicles (estimated to yield AFL 7 million);
- (b) A solidarity tax of 6.3 points on the income tax scale (estimated to yield AFL 36 million);
- (c) Increased revenue from the excise tax on gasoline, estimated to yield an additional AFL 5.6 million in 1986. The excise tax has not been raised as proposed in the guidelines (estimated yield AFL 14 million), but the drop in oil prices has permitted the Government to capture a larger share of the retail price of gasoline, which has been maintained at the previous level.

Expenditure Cuts

- (a) The salaries of Island Government civil servants were reduced 13.75 percent in April 1985, although this measure did not reduce the 1985 wage bill as much as might have been expected. Table I.13 shows a drop of only AFL 2.3 million in the Island's wage (compensation) bill compared to 1984. The salaries of former Central Government civil servants who were taken over by the new Government of Aruba on January 1, 1986 have also been cut 13.75 percent, and some of them have been put on half-pay. The

Government's wage bill should therefore show a more substantial drop in 1986.

- (b) Purchases of materials in 1985 were AFL 5 million less than in 1984, and further substantial reductions are planned for 1986. (This measure was mentioned in the guidelines but not included in the estimate of expenditure cuts made at that time).
- (c) Capital outlays declined about AFL 22 million in 1985, compared to 1984 (Table I.12), rather more than was estimated under the guidelines (AFL 18 million).

Outstanding Issues

2.04 The progress to date is commendable. However, there remain a number of problems that have not yet been addressed, and they are vital not only to bridging the remaining budget gap, but also to creating a more competitive economy and to achieving more efficient public services. The additional measures include expenditure reductions in the following areas:

- (a) Subsidies paid by the Island Government to public enterprises have varied from year to year. They reached a low point in 1984 at AFL 9.0 million, but increased to AFL 13.3 million in 1985 (Table I.12). One of the main causes of this drain on public funds is the losses incurred by the water and power company (WEB), which is inefficiently managed and does not control its own finances. Given more independence and better management, WEB should be able to deliver water and power at reasonable prices without a subsidy. (This subject is discussed more fully in Chapter IV.)
- (b) Transfers to private foundations and other agencies undertaking tasks on behalf of the Government, e.g., in housing, are a large item in the budget (AFL 47.1 million in 1985 after deducting the transfers to the then Central Government). The Government, which pays the wages of these foundations, tried to extend the civil service wage cuts to them, but the foundations appealed the decision successfully in the courts. The Government has also been unable to obtain wage reductions of staff under contract in various agencies. Clearly, the wages in all bodies working in or for the public sector should be brought into line with civil service wage standards when contracts expire.
- (c) Now that the Government of Aruba has taken over all the functions, agencies and personnel of the Central Government in the island (except, for the time being, the civil service pension fund, APNA), it should be possible to achieve important improvements in efficiency and savings in manpower and costs. As noted, minor savings have already been achieved by putting some of the former Central Government civil servants on half pay. The Government's reluctance to move more forcefully to reduce excess manpower is understandable, given the legal restraints on its power to do so and the lack of alternative employment opportunities. However, the framing of a plan for government reorganization, including the redeployment, retraining and

retirement of excess staff, should have a high priority. (This subject is considered in more detail in Chapter IV.)

- (d) Reform of the structure, financing and administration of social services is also much needed. Social service expenditures, a major element in the Government's budget, appear to be virtually out of control. In the health area particularly, the provisions for care are not only very generous by any standard, but there are no built-in incentives or controls to keep costs within reasonable limits. Medical costs have been rising in all countries, and even the most affluent have had to take measures to establish limits, for example, by putting a cap on the costs of particular treatments and procedures. In Aruba, by contrast, there are no such controls; physicians can even refer patients for costly treatment abroad (usually in the United States). (These and other causes of the high costs are discussed in Chapter IV.) One recommendation, apart from the need to control costs, is to make health insurance contributory for all wage and salary earners and to increase the share of medical bills paid by the patient.
- (e) Aruba has been paying off its arrears for the Social Security Bank (SVB) and the Civil Service pension fund (APNA). NAF 2 million of arrears to SVB remain to be paid, while the arrears to APNA have been almost cleared.

Reducing the Interim Deficits

2.05 As noted above, a series of Government measures estimated to yield AFL 120 million when fully implemented have been taken in response to the 1985 guidelines, leaving AFL 48 million to be yielded by additional measures. The deficit in 1985 was larger than that--AFL 72 million (see Table 1.13)--which may be explained by the fact that the cut in civil service salaries was not completed until January 1986, and other measures will also yield their full relief to the budget only in 1986 and beyond. A preliminary estimate of the current account deficit in 1986 is about AFL 40 million.^{1/}

2.06 As early as possible, and not later than the end of the third quarter of the year, an official estimate of the fiscal outcome for the current year, 1986, should be made and a budget for 1987 constructed with a lower deficit consistent with the achievement of fiscal balance on the current account in the following year. If the 1986 deficit turns out to be no larger than about AFL 40 million, this objective should not be too difficult to achieve, provided that active steps are taken to reduce the subsidies to public enterprises, control expenditures on social services, and trim the size of the Government service. The proposed increase in import duties in January 1987 will also help to reduce the deficit in that year, although the mission recommends that the increases be moderate in order not to conflict with the Government's policy of moving away from protective tariffs. In the longer term, the aim should be to achieve a surplus in the current account, so as to contribute to the financing of necessary improvements in infrastructure and other capital works.

^{1/} Estimate by UNCTD advisers for purposes of the draft National Plan.

The Case for a Value Added or Sales Tax

2.07 A substantial part of the increased revenue being obtained from measures under the guidelines derives from raises in the rates of the income tax. The disadvantage of this policy in a country with a weak tax administration is that the burden falls unevenly on different segments of the population; it is heaviest mainly on those whose incomes are subject to withholding. In Aruba, as elsewhere in the Netherlands Antilles, many incomes, especially from profits, interest and informal activities, are either inadequately taxed (if they are taxed at all), or assessments are years in arrears. Strengthening the assessment and tax collection capability of the Government should improve the situation, but consideration should also be given to shifting the emphasis of taxation towards taxes on consumption. The developed countries have been moving in this direction during recent years because of the disincentive effect of the high direct taxation on productive efforts and the encouragement it gives to tax avoidance and evasion.

2.08 The argument against taxes on consumption is again that they bear more heavily on poorer than on richer consumers. For that reason, and to minimize the effect on the cost of living, it would be important to exclude certain essential commodities such as food and children's clothing; in a country at Aruba's income level, such items account for 20-25 percent of total consumption expenditures. Subject to this safeguard, the mission recommends a study of the financial, administrative and social implications of a value-added or sales tax, not so much as a means of raising additional revenue as a substitute for the recent increases in the income tax and surtax, and to moderate the proposed increases in import duties.

Sources of Financing

2.09 The 1985 deficit was financed largely by drawing on the Government's cash balances at the Central Bank (see para. 1.25). The balances are now very low, and other sources must be found to finance the deficits of 1986 and 1987. One source is the undisbursed portion of the special budgetary assistance from the Government of the Netherlands, amounting to Dutch guilders 60 million (about AFL 44 million). Further disbursements are contingent on The Hague's being satisfied that good progress is being made in following the guidelines.

2.10 A successful adjustment of the Aruban economy will require substantial investments to finance it. One source of savings for investment would be to encourage the repatriation of balances held abroad, mainly in the United States, by local residents. According to the U.S. Treasury, time deposits held in U.S. banks by residents of the Netherlands Antilles at the end of 1985 totalled US\$1,082 million, part of which were presumably owned by residents of Aruba.^{2/} An appeal to them to bring back a part of these deposits should meet with a favorable response, provided the terms of local bank deposits or other local investments are attractive, including permission to withdraw the deposits in foreign currencies at the original rate. Depositors must also have confidence that the Government is actively addressing the country's problems.

^{2/} U.S. Treasury Bulletin. A large part of the balances were no doubt held by offshore finance companies located mainly in Curacao.

2.11 There are also large holdings of foreign securities by residents of the Antilles. The Aruba Government could encourage the return of part of these funds by issuing bonds in Aruban florins with a dollar or maintenance of value clause. A similar suggestion has been made by the mission to the Netherlands Antilles Government, and an agreement to coordinate the terms of such bonds would be necessary in order to avoid competition.

2.12 Direct foreign borrowings by the Government would be acceptable for the financing of capital expenditures, since the public debt is presently quite modest. However, a strict limit should be put on such borrowings, since the Government has contingent obligations for a 30 percent share of the guarantees issued by the central Government of the Netherlands Antilles prior to January 1, 1986, and may be called upon to guarantee some of the large foreign loans required to finance the construction and rehabilitation of hotels (see Chapter III).

2.13 The issues touched upon in this chapter, including the issue of how to provide employment for civil servants retired early or declared redundant, are the theme of the remaining chapters of this report.

Chapter III

THE PRODUCTIVE SECTORS

3.01 The employment gap in Aruba is one of the critical problems facing the Government and the nation, even though recent evidence shows that there are not as many unemployed as earlier estimates indicated. Compounding the problem is that there will be additional pressures within the next few years from both a shake-out in the public sector and net additions to the work force arising from the age structure of the Aruban population.

3.02 Now that the Lago oil refinery is closed, the tourist industry will have to be the main source of new jobs. However, Aruba will also need to develop other sources of employment in order to avoid dependence on one industry. That lesson has been learned from the oil refinery at Lago: most of the employment problems have resulted from its closure in 1985. However, unemployment cannot be solved by replacing Lago with a company of equal size, even if that were desirable. Further, the direct employment in new industry will probably have to be greater than that lost at Lago, since oil refining typically has a strong multiplier effect owing to the practice of contracting out some of the service work, such as tank cleaning. As the Aruban market is very small, the appropriate strategy will be to encourage the growth of small and medium-size businesses producing mainly for export.

3.03 The chapter looks at the main productive sectors in the Aruban economy--tourism, industry, primary production and offshore oil exploration--in terms of their current status and potential for growth. By way of context, the chapter opens with brief review of the policy environment and its influence on the pattern of economic activity. Based on that information and the findings with respect to the productive sectors, suggested approaches to the achievement of higher levels of growth and employment are offered.

A. Policy Environment

3.04 Since its separation from the Netherlands Antilles, Aruba has adopted a free-trade policy with respect to imports. Existing protection through economic levies is being phased out over a five-year period. Remaining tariffs, which will serve as a means of raising revenue, will be modest and uniform across the board. This strategy will avoid creating inefficient, high-cost businesses that can only survive behind protective barriers, as well as more efficient businesses for whom protection yields high profits. In both cases, it is the consumer who ultimately pays. Uniform tariffs will also minimize the distortions among industries.

3.05 These commendable policy changes should be matched by improvements in the procedures for issuing business licenses. A clear, automatic system should be set up that minimizes bureaucratic delays, with procedures

that are as simple as possible and where the discretion of officials is kept to a minimum. The present procedure of submitting applications to the Chamber of Commerce for comment as to their suitability is not consistent with a free trade policy.

3.06 In addition, work permit and immigration procedures for key personnel should be streamlined and made semi-automatic (with a few quick checks) so as to allow a business to staff itself as it sees best. However, training programs and requirements for the replacement of foreign personnel over time need not be eliminated; indeed, they should be built into the system. The less bureaucratic Aruba is in terms of allowing the establishment of new businesses, the greater its attractiveness will be for foreign investment.

3.07 As to investment specifically, so far Aruba has continued to follow the investment incentives policy of the Netherlands Antilles, which is based on a tax holiday and accelerated depreciation. The country may now wish to consider whether this package is sufficient to induce the growth of new enterprises on the scale required. Aruba does not have the funds to provide grants to new businesses, but it could develop a tax credit system of investment incentives geared to achieving its objectives of employment and investment generation.

3.08 For instance, Aruba could introduce a system that provides tax credits based on the value added by a company or the net local content of its inputs (or a combination of the two), with different rates for exporters and domestic producers to give the former an added incentive. Both new and expansion projects would qualify. Export manufacturers (including those selling goods to tourists) would import raw materials and parts duty-free so as to make them cost-competitive. A company not making profits in its initial years could use its tax credits later when it became profitable, or the credits could be sold to other companies. This system would encourage companies to earn their tax credits through performance. Appropriate rates should be set in keeping with the GATT rules so as not to attract countervailing duties. They should also be set with an eye to correcting the distortions in the Aruban economy, especially for exporters, and to ensuring that all the rates applicable to the various sectors (primary, manufacturing and services) reflect equal benefits.

3.09 A system along these lines would be a key element in the Government's industrial strategy: it would be geared to objectives, automatic, simple to understand, and easy to administer. It would also require the timely production of audited accounts, a discipline that in itself would help companies to become more efficient.

B. Tourism

3.10 The tourism sector for many years has been a mainstay of the Aruban economy, and with the closure of Exxon's Lago refinery in 1985, it has become the island's leading economic sector. Its role is only partly reflected in the estimated contribution to GDP, which in 1984 amounted to 94 million, or 11.3 percent. A more accurate measure of the importance of tourism is its contribution to Aruba's foreign exchange earnings, which

amounted to AFL 227 million out of total current receipts of AFL 514 million in 1985, or 44 percent. Employment in the sector consists of those working in hotels and casinos, as well as restaurants, transport enterprises, shops and other activities (e.g., water sports) catering to tourists. A survey conducted in 1980 recorded 3,046 employees in hotels and casinos and 1,950 in other tourist-dependent activities. Early in 1986, 2,950 were employed in hotels and casinos; assuming the same ratio of employees in related activities, related employment is 1,900. Hence, employment in tourism is probably about 4,850 at present, or 25 percent of total employment.

3.11 Growth in the sector was sustained throughout the 1970s. Visitor arrivals^{1/} rose from 75,000 in 1970 to nearly 190,000 in 1980, with the major market throughout this period being the United States. There was an upsurge in Venezuelan tourists following the increases in world oil prices in 1973/74 and again in 1979/80; their share in total arrivals rose from 15 percent in 1970 to 28.5 percent in 1980. Traffic from Venezuela continued to grow rapidly in the early 1980s, rising a further 40 percent by 1982. With the devaluations of the bolivar in 1983, however, the Venezuelan market collapsed, falling by 72 percent between 1982 and 1984. This dramatic decline was only partly offset by growth in other markets, spurred by intensified marketing efforts elsewhere. Nevertheless, the overall drop in visitor numbers was only 11 percent in 1983, and part of the decline was made up in 1984 and 1985, when visitor arrivals numbered 210,000 and 207,000, respectively. A 33 percent increase in traffic from the United States between 1982 and 1985 was the principal offset to the decline in traffic from Venezuela (See Annex Table A.1.)

3.12 Recognizing the importance of tourism to the economy, the Government has devoted considerable resources to its support. Apart from developing basic infrastructure to serve hotels and other tourist facilities, the Government, as a part owner of three hotels with some 600 rooms, has provided direct support for the expansion of tourist accommodations and indirect support through loan guarantees to assist private investors. In addition, investment incentives--particularly the 10-year tax holiday for hotel investments--have been available in Aruba, as in the other islands of the Netherlands Antilles.

3.13 The Government has also supported tourism growth through the establishment, with assistance from the European Development Fund, of the Aruba Hotel School, which opened in 1982. The school offers certificate, diploma and associate degree programs; students finishing the associate degree program are expected to go abroad to complete their degrees. Attached to the school is a 53-room practice hotel, which is to be expanded by 100 rooms. The school has at present just over 100 students, who are studying front office operations, accounting, food preparation, food and beverage service, housekeeping, property operations and maintenance, and more general courses including languages. Over half the students are from Aruba; the great majority of the remainder come from the Netherlands

^{1/} Visitors from outside the Netherlands Antilles.

Antilles. The school will have an increasingly important role in supporting the Government's target of doubling the number of hotel rooms and tourist traffic by the early 1990s.

3.14 Further Government support for the sector has been provided through the promotion programs of the Aruba Tourist Board. These programs have been based in part on detailed statistics of visitor flows, collected and analyzed by the Board, which classifies visitors by country/state of residence, occupation, age group, gender, month of arrival, length of stay, air carrier, and type of accommodation utilized. The Tourist Board's statistics are of exceptionally high quality and are an essential input in planning promotion programs.

3.15 The main emphasis in the Board's promotion activities has been on the U.S. market, which absorbed over three-quarters of the market-specific promotion expenditures in 1985. The Board's work is closely coordinated with promotion programs of the private sector (hotels and airlines). The effectiveness of these programs and the high quality of organization and management in the tourism sector have been reflected in the progress of the sector and the high hotel occupancy levels achieved.

3.16 Accommodation capacity has grown more slowly than visitor numbers since 1970. Whereas Aruba had 917 rooms in 6 hotels of international standard in 1970, it had 2,067 rooms in 10 hotels by 1980. Although new hotels have been opened in the past five years, the total number of available rooms has not increased, as one of the larger older hotels was closed for renovation and expansion in June 1984. As a result, available capacity in international standard hotels was 2,061 rooms at the end of 1985. Some 295 rooms were also available in apartments, guest houses and lower category hotels.

3.17 With the somewhat faster growth of traffic than of hotel capacity, average annual hotel occupancy rates rose during the 1970s and have been in excess of 70 percent in all but one year since 1973. The average for all hotels since 1980 has been close to 80 percent, an exceptionally high level for a holiday destination subject to seasonal fluctuations in traffic. The dips in average occupancy levels in 1977, 1978 and 1983 reflect the opening of new hotels in those years, including Aruba's largest one, with almost 500 rooms, in 1978. On the other hand, the maintenance of a high average occupancy level in 1984, a period of declining visitor arrivals, was helped by the closure of the 200 room Caribbean Hotel for renovation, although there were smaller additions to new capacity in 1983 and 1984.

3.18 Sustaining the high occupancy levels has been facilitated by a marketing strategy that involves large price differentials in room tariffs between the high (winter) and the low (summer) season. This approach is characteristic of both Caribbean and many other tourist destinations that experience seasonal fluctuations in traffic. It is noteworthy, however, that in Aruba the seasonal fluctuations have narrowed, and high occupancy rates have been maintained over much of the low season. Given the holiday patterns in the main market countries, however, it could be to Aruba's economic advantage to meet more of the demand in the high season, even if the result were a lower average occupancy year-round.

3.19 To support the growth of tourism, the Government of Aruba favors a liberal air access policy, even though that stance has not always been compatible with the interests of the Antillean national carrier, ALM. ALM was the carrier for about a quarter of the foreign visitors to Aruba in recent years, but its share of U.S. visitor traffic was much smaller (about 12 percent) and declined sharply (by 22 percent) in 1985. U.S. scheduled (American and Eastern) and charter airlines have carried the bulk of the traffic from the U.S., while ALM has been the major carrier from Venezuela and has had a substantial share (about one-third) of the market from Colombia. Hence, the recent cessation of international air services to Aruba by ALM is likely to affect tourism flows adversely. Nevertheless, Aruba continues to have a strong interest in a liberal air access policy, and in this respect its policy does not coincide closely with that of Curacao, where tourism plays a less crucial role in the overall health of the economy.

3.20 In 1980, the Government of Aruba commissioned a consultant^{2/} to carry out a study of the tourism sector and to make recommendations for future development. The study group presented its conclusions in a comprehensive and detailed report in March 1981. The report analyzed Aruba's tourism assets, the structure of the industry, the growth of traffic, visitor reactions, the operating experience of hotels and other enterprises in the sector, and the impact of tourism on the economy, particularly with respect to foreign exchange earnings, employment, value added and Government revenues. The report's analysis of hotel financial operations over the period 1975-79 indicated that despite high personnel costs averaging almost 30 percent of revenues, and high costs for water and electricity by international standards, the operating profit before fixed charges averaged about 25 percent of revenues. This profit level was satisfactory when compared with the experience in many other countries and reflected the high average occupancy rates.

3.21 The report also looked at the imported component of tourist expenditures. The conclusion was that expenditures for the direct imports needed to meet tourist demand plus the expenditures abroad of the Tourist Board constituted just over 40 percent of tourist revenues (foreign exchange receipts from tourism) in 1980. This proportion varied from 37 percent in hotels to an average of 43 percent in other tourist establishments--restaurants, shops, transportation, casinos, etc. The study also calculated that Government revenues were almost 10 percent of gross tourist expenditures in 1980.

3.22 The IDAS study proposed targets for the industry in terms of markets, visitor accommodations and ancillary facilities. An average annual occupancy rate in all hotels of 75 percent was suggested as the industry's objective. A corollary recommendation was that new accommodations should not be licensed if the average yearly occupancy rate fell below 70 percent. These high occupancy rates were judged necessary in order to achieve financial viability, given the high operating costs, which are the product of wage levels substantially above the Caribbean average,

^{2/} International Development Advisory Services (IDAS), Miami, Florida.

the high costs of water and electricity, and the added costs of importing most if not all operating supplies. The report also recommended that new additions to capacity be sized and scheduled so that an average occupancy rate of 75 percent in all hotels would be achieved within approximately one year of the opening of new capacity.

3.23 These recommended targets appear to be broadly sound. Their implementation is, of course, dependent in part on the accuracy of the projections of traffic. Optimistic or pessimistic forecasts would result in excess or insufficient capacity, with consequential economic losses, at least in the short term. The approach recommended by IDAS implies that each new addition to capacity should not be very large in relation to existing capacity, as the greater the increase, the more occupancy levels will be affected. There may, however, be new market segments that can only be attracted by a certain scale of operation, and depending on the degree of risk, a relatively large investment may then be justified.

3.24 The IDAS report also contained recommendations on the physical development of the principal tourism zone or "tourism corridor," consisting of the coastal area that extends for approximately 11 kilometers from Oranjestad to California Point in the northwestern tip of the island. IDAS' initial work was followed up by a further study in 1982 to develop still more detailed planning concepts for this zone. The IDAS 1981 report also contained more general planning recommendations for island-wide tourism development. A principal recommendation of both studies was that a major new access road, set back from the shore (an "inland arterial"), be constructed in the tourism corridor and that the existing coast road be used for access to the individual hotels and as a low density scenic route for tourists and the local population. Spur roads would connect the two. Construction of the inland arterial is already underway, and when completed, it will provide easier access from Oranjestad and the airport to the major high-rise hotels along Palm Beach. Moreover, by reducing traffic on the coastal road, new hotel development east of this road on sites that do not have direct beach access will be more feasible. A further recommendation was the development of a wildlife sanctuary and botanical garden at the existing waste water lagoon, part of the sewage treatment plant near Palm Beach. The lagoon already attracts an abundance of bird life and could become an important new tourist attraction.

3.25 Apart from the tourism corridor, the study recommended the protection of the northern coast of the island by the creation of a North Shore National Park. This area, largely empty of population, has considerable beauty, with a rugged coastline pounded by rough seas and indented by deep ravines that create protected sandy coves and palm groves at several locations. At present, access is limited by the lack of roads in some areas, and development has been confined mainly to the area of the natural bridge, where, however, rather unsightly tourist facilities have been built. Much of the appeal of this area lies in its emptiness, and the visual quality of the landscape could be quickly destroyed by unsuitable development. Hence, its protection is critical if the area is to be preserved as an attraction for tourists and a source of recreation for the Aruban population.

3.26 The remaining major potential area for tourism development identified by the IDAS study was the Oranjestad waterfront. However, the study did not contain detailed proposals for its development. The amenities of the waterfront are important for both stay-over tourists and cruise ship passengers. Between 1978 and 1984, visitors from cruise ships declined from 98,000 to 29,000, while ship calls fell from 152 to 49. This trend reflected changing patterns in the cruise market brought about largely by the great increase in oil prices in 1979/80. There was a reversal in 1985, however, when 106 cruise ships called at Aruba, bringing 72,000 visitors. The further decline in oil prices in 1986, and the prospects for continued growth in the U.S. economy point to a further expansion of the cruise market. Partly in expectation of this growth, a project to develop a new commercial center and marina on the waterfront at Oranjestad has begun. It may include a new hotel in a second phase.

3.27 A further asset with possible tourism potential is the senior staff housing at the Lago oil refinery, which is now largely unoccupied following the facility's closure in 1985. Because of the remoteness of the site at the southeastern tip of the island and its proximity to the refinery, its attractiveness for visitors is problematical. Nevertheless, if the refinery structures were removed and the site cleaned up, the marketability of the senior staff housing would be greatly enhanced, though probably more as retirement than vacation homes, for foreign visitors. In any event, their contribution to the planned expansion of tourism flows is likely to be relatively minor.

3.28 The expansion of tourism is generally regarded as the most promising means of making up for the losses to the economy flowing from Lago's closure, and the Government's objective is to double visitor capacity and tourist flows within five years. This target means adding some 2,000 hotel rooms to the existing stock and attaining a visitor flow of about 400,000 by the early 1990s. If traffic to Aruba is to double, the island's share in the Caribbean market would need to rise from about 2.8 percent in 1984 to 4.4 percent by 1991, assuming that traffic to the Caribbean as a whole grows by 4 percent annually, the growth rate actually realized over the period 1970-84.

3.29 Achieving so large an increase in the market share in a relatively short time will be difficult. Besides the necessary expansion of accommodation capacity, new market segments will need to be tapped. These might be in new geographic areas, which will require improved air services and/or better air connections, or new segments of the market, such as the convention and incentive tour markets, which have been among the fastest growing in the United States in recent years. An essential condition for success with the U.S. convention market would be arrangements allowing U.S. companies and participants to deduct the costs of the trip for tax purposes. Aruba and the United States are presently negotiating this matter in the context of the Caribbean Basin Initiative, but the outcome is not yet clear.

3.30 The prospects for achieving an increase in accommodation capacity in the short term are good, but to obtain the capital needed to double hotel capacity by 1990/91 will be a major task. The renovation of the 200-room Caribbean Hotel is to be completed by the end of 1986, and the

addition of a new wing, with a further 240 rooms, is expected to be completed early in 1987. Other projects already underway are expected to add about 90 rooms by the end of 1987. There is financing to expand the capacity of the hotel school by an additional 100 rooms, a project that should also be completed by 1987, and the prospects for obtaining financing to expand two ongoing time-share projects, which could add a further 100 units by 1988, are favorable. Other projects that are being considered but for which financing has not yet been secured include a phased expansion of 400 rooms at the Holiday Inn, the development of a Hyatt Regency hotel with about 350 rooms, and the development of a 200-room hotel at Eagle Beach in a complex that might eventually include with condominium and time-share units 450 rooms. A further project to develop a 200-room hotel in two phases close to the existing Manchebo Beach Hotel is also planned. Were all these projects to find financing and be implemented in the next five years, total capacity by 1990/91 would be around 4,000 rooms. The costs of the different projects will vary according to the standard of the facilities and whether they involve new hotels or the expansion of existing ones. On the basis of 1986 prices, however, a rough estimate of the financing needed in addition to that secured so far is AFL 160-180 million (US\$90-100 million).

3.31 An estimate of the costs of developing tourism-related infrastructure and new tourist services (shopping, tours, transport services, etc.) is not available. The supplies of electric power and water should be adequate to meet the growth in demand, although investment to strengthen the distribution networks would be needed. Further investment in roads and pedestrian ways and in expanding the capacity of the airport terminal to handle a doubling of visitor numbers would also be required. A proposal to construct a golf course to serve several of the larger hotels and attract new market segments has been studied. Because of the high costs of irrigating the greens and fairways, the golf course would be expensive: a preliminary estimate suggests an investment cost of nearly AFL 15 million. The likely return on this investment in terms of Aruba's ability to attract higher spending foreign tourists has not yet been calculated. Even without the golf course, however, the total investments in the tourism sector that would be required to support a doubling of visitor numbers by 1990/91 seem likely to be not less than AFL 200-250 million, or AFL 40-50 million a year. This figure compares with a level of investment in the whole Aruban economy estimated at AFL 61 million in 1985.

3.32 Were it possible to achieve the Government's targets of an approximate doubling of visitor capacity and visitor numbers by 1990/91, the tourism sector would earn gross foreign exchange receipts (at 1986 prices) of about AFL 450 million and would provide employment for approximately 10,000 persons. Such levels of foreign exchange earnings and employment would go far to offset the effects of the closure of the Lago refinery. Nevertheless, it must be recognized that the targets are highly ambitious in terms of the increase in visitor numbers, of attracting from abroad the capital required to expand visitor capacity, and of being able to construct this additional capacity in so short a period. A more complete evaluation of the growth target and its implications for the whole economy in the next five years appears desirable.

C. Manufacturing

3.33 The range of products manufactured on the island includes import-substituting and export products in food, beverages and tobacco (13 firms, of which 7 are bakeries); chemicals (4); paper products (1); light engineering (4); printing (2); clothing (1); and furniture (2). Among the specific products being manufactured are radiator cores; batteries; detergents and disinfectants; industrial chemicals; cosmetics; paint; mattresses; and soft drinks, snacks and bakery products.

3.34 The Aruba Manufacturers and Industry Association (AKMIA) has 24 member companies that employ a total of 376 people. There are about 45 more employees in three manufacturing enterprises that are not members of AKMIA. Seven of these companies export, three of them to the Netherlands Antilles primarily.

3.35 While some of the import-substituting companies have been set up under protective barriers, during visits to 7 of the 27 operations management suggested that most could compete against imported products as long as the price of the latter included freight and insurance, plus the low, revenue-raising tariff. There is little doubt that the companies have enjoyed above-average profits. However, while the phasing out of protective tariff barriers would reduce the level of their profits, it should not cause them to become loss-makers. Moreover, if the protection is phased out, that is, not removed too suddenly, companies should have time to initiate cost savings.

3.36 Concern was expressed to the mission about smuggling and competition from Venezuelan products, which under the present exchange rate regime of that country are able to enter the Aruba market at very low prices. The planned reduction in tariffs will reduce the motivation for this trade, much of which is illegal; more effective policing of Aruba's coastline would also help. Since the import of any particular item through this trade is likely to be sporadic, it should not seriously interfere with the regular supply of good quality merchandise from local manufacturers.

3.37 What the limited manufacturing sector shows is that it is possible to produce efficiently in Aruba and hence that production for export and for the domestic market can be profitable without heavy protection. This conclusion is reached even though nearly everything has to be imported for further assembly, or mixing and processing, on the island. Of all the companies, only one uses an indigenous product as its main raw material input.

D. Primary Production

3.38 There is little primary production on the islands in general. The 1981 census indicated that less than 1 percent of the population was engaged in this area. However, the proportion may be slightly higher now on Aruba, as there has been some increase in agriculture.

Agriculture

3.39 When Lago was operating, comparative advantage led to food importing rather than domestic production, and the earlier traditions of farming and horticulture were lost. While it is no longer economic to import food in the quantities of the past, farming will not return overnight, even though there is scope for efficient production of certain fruits and vegetables. Three factors are thought to militate against efficient production in Aruba: market size; the supply of water and the soil conditions; and the willingness of Arubans to work the land. To permit the growth of a small efficient agricultural sector, these factors should, and can, be overcome.

3.40 As one step, the market has to be seen as consisting of the local population plus tourists. Hotels and restaurants in particular are a ready market for regular suppliers of good quality fruits and vegetables. At the same time, fresh produce of good quality should be able to compete well with the cheap but poor quality imports (with little or no shelf-life) available to local consumers in the floating market.

3.41 Water is neither plentiful nor cheap on Aruba. The normal supply, piped to most parts of the island, is expensive desalinated water. Rainfall is, however, collected in dams that typically hold water from one rainy season to the next. As to the soil, at first sight it appears to be poor, but in fact it is rich in some minerals. Visits to existing small holdings indicate that with adequate drip irrigation, the growing of crops can be productive. One of these holdings irrigates with desalinated water and is still profitable.

3.42 To increase production, more dams will be needed to store water. To take maximum advantage of the dams, the idle land around them should be zoned for agricultural use. Those owning idle land but who are unwilling to farm it should be obliged to sell the land or lease it to willing or would-be farmers for periods long enough that returns on investments can be realized. Where there are disputes about land titles or boundaries, these should be resolved as soon as possible, with the help of outside survey staff if necessary. The numbers willing to farm the land are likely to increase as the economic recession begins to bite and the opportunities in and returns to agriculture are perceived.

Livestock

3.43 A similar situation exists in the livestock industry, where the rearing of chickens, pigs and goats is being undertaken on a similar scale. There is scope for expanding this activity, linked to the tourist and local markets.

Fisheries

3.44 Fishing, like agriculture, has not been developed as an industry. Individual fishermen supply their own needs and sell any surplus to the hotels and restaurants. However, as with the market for produce, demand is likely to grow with the tourist industry, and there is scope for development both in scale and organization, given the right help in coordinating the markets and supply.

3.45 Aquaculture of many species has been mentioned as a feasible development for Aruba, given its surrounding waters and other favorable conditions.

Extension Services

3.46 An agricultural extension service at Santa Rosa provides advice and demonstration on crops to grow (or not to grow), irrigation systems to use, and types and breeds of livestock to rear (or not to rear). This extension service will be a valuable asset in the development of a larger agricultural sector in Aruba.

3.47 The extension service should also play a valuable role in the fisheries industry by providing assistance to existing and potential fishermen in developing harvesting and marketing activities.

3.48 Funds have already been allocated to the extension service to promote aquaculture, but nothing has happened. In reality, the technical problems involved in developing this industry are probably beyond the scope and expertise of the service, and expert assistance may be needed from outside consultants or agencies.

E. Offshore Oil Exploration

3.49 Seismic studies of the geology off the shore of Aruba, which is situated on the South American continental shelf, indicate the possible existence of oil and gas formations, mainly the latter. The issues of sovereignty between Aruba and Venezuela, and between Aruba and the Netherland Antilles, have been resolved, and a Petroleum Bill is to be presented to Parliament. The conditions of Aruba are more benign than other offshore areas such as the North Sea--for example, the waters are shallower--so that the area should be of interest to oil companies, particularly now that the fall in crude oil prices is forcing oil companies to seek low-cost production areas.

3.50 Licenses for exploration should be auctioned as soon as possible. Should oil be discovered, the development of an onshore supply industry would follow in time, given that the port and other back-up infrastructure are already in place. However, should the existence of petroleum reserves be proven mainly in the form of natural gas, this resource could be developed to supply the local demand for energy. The authorities should keep this possibility in mind in planning the future replacement and expansion of electric power capacity.

F. Proposed Development Strategy

3.51 This section suggests a development strategy that Aruba could pursue in order to meet its employment and growth targets. Broadly speaking, the strategy consists of five elements: strengthening Aruba's comparative advantage; identifying new markets; strengthening management and labor; promoting investment; and job creation.

Strengthening Aruba's Comparative Advantage

3.52 The comparative advantages and disadvantages of Aruba have been chronicled in many reports and are merely listed here:

<u>Advantages</u>	<u>Disadvantages</u>
-Well-educated labor force	-Few natural resources
-Political stability	-High wage rates
-Favorable climate	-Rigid worker dismissal laws
-Location on a major trade route	-Lack of skilled middle management
-Proximity to South and North America	-Outward migration of technically qualified personnel
-CBI/EEC association	-Inward-looking private sector
-Developed private sector	-High utility cost structure
-Investment incentives	-High handling costs at port
-Good port facilities	-Small domestic market
-Proximity of offshore-banking sector in the region	-Conservative banking sector not geared to lending to manufacturing sector

3.53 Many of the disadvantages of Aruba stem from the structure of the economy that has evolved over the past 40 years: its major industry, oil refining, provided so much support to the island and provided such a satisfactory standard of living that the economy developed uncompetitive traits. Aruba has a well-educated labor force but with limited experience; a well-developed private sector but with an inward and narrow focus; a good port facility, but characterized by inefficiency and high costs. Moreover, although Aruba is near the South American and North American markets, it only imports from them.

3.54 The unfavorable characteristics of the Aruban economy need to be minimized and the favorable ones strengthened in order to make Aruba more competitive. There is a need for technical assistance to help the economy become export-oriented so that alternatives to oil refining can be developed. Training in management and the skills that will meet the requirements of new industry need to be provided. Cost reduction programs should be implemented at the ports and utilities, indeed, throughout the economy, to improve the productivity of labor and cut the wage bill.

Identifying New Markets

3.55 Aruba shares some of the characteristics of both developing and developed economies. It should therefore draw on the experience of localities in both developed countries that have lost their major industries and developing countries that have used technical assistance to help them identify, evaluate and promote investment opportunities. As Aruba moves to strengthen its positive features and to reform its weaknesses, it should be better able to identify and exploit new opportunities and markets. At present, these may not be apparent because of the narrow perspective of entrepreneurs or because Aruba cannot yet be competitive.

3.56 The discussion on agriculture advocated the development of an agricultural sector that serves tourists as well as local residents. A similar market exists for manufactured products. Efficient small companies could well begin in this market and, once experienced in production and marketing,^{3/} shift to direct exports. While Aruba cannot compete in mass-produced, labor-intensive industries because of its high labor and utility costs, it should be able to compete in areas where labor and utilities do not form a large part of the total cost or ex-factory price. Indeed, an examination of the cost structure of the companies visited during the mission suggests that their success is based upon this principle.^{4/}

3.57 One strategy that has been used often is to promote local employment initiatives centered around the development of high tech, high value products in specially focused industrial parks, supported by a variety of incentives. This strategy is also appropriate for Aruba. The Lago site could be developed as a number of industrial estates for specific user industries rather than as one large homogeneous estate, given that the needs of different industries vary. The benefit of the Lago site is that the base infrastructure is there, and it could accommodate a variety of different industries given adequate planning and zoning.

3.58 While Aruba has a well-developed private sector, it is not experienced in the identification, evaluation and promotion of investment opportunities, particularly those related to the export market. The country requires expertise in project identification and evaluation; promotion and attraction of foreign investment; and the development of export markets relating to these investments. Therefore, technical assistance in these areas, oriented to achieving results, combined with training of counterpart staff, would be an essential piece of a strategy to develop industry.

3.59 Technical assistance could also be provided to help identify other markets for alternative sources of imports. One of the reasons for the high cost of living and therefore high wages has been attributed to the rigidity of the sources of imports. The study of export markets could be extended at low marginal costs to cover import sources.

3.60 Again, this approach to investment has been used successfully in many developing countries. Project profiles of investment opportunities covering markets, supplies, technology, costs and revenues, and likely rates of return are prepared by specialist teams. The information is then

^{3/} Some of the items identified in the many reports on Aruba cover the manufacture of: towels and bed clothing, good quality napkins and toilet tissues, air conditioning parts, electronic equipment, craft industries and high value textiles.

^{4/} Various potential areas have been identified in the reports on Aruba. Generic ones such as high-tech assembly plants and software production need, however, to be researched in detail with respect to markets and costs to determine their viability.

used to generate investor interest in the country. The degree to which these profiles have been marketed aggressively has varied from country to country. An aggressive sales pitch is advocated for Aruba.^{5/}

Strengthening Management and Labor

3.61 A third part of the strategy would be to raise the general skill level of management and the work force. There is a clear need, emphasized in the IMF guidelines, to reduce the staffing of the Government sector; in the chapter on the Government, mention is made of the consequent need to strengthen the remaining staff, particularly with respect to certain departments and functions, such as project evaluation. Moreover, in order for the private sector to absorb additions to the labor market and also to meet its own and Government's needs, a significant training effort is warranted.

3.62 One proposal advocated for the Netherlands Antilles has been to set up an autonomous non-profit training foundation, to be run jointly by the private sector and the Government. This organization could provide training in the skills needed by both the private and public sectors. Over time, the foundation could develop into a regional training center and be linked to the International Trade Center that is to be established in Curacao. Should Curacao institute this training center, the Aruban Government could use that facility to meet its own skill requirements, as identified by the Labor Department, rather than attempt to establish a competing unit. Moreover, the presence of the ITC in Curacao would make it the preferred location for a regional center, with both countries participating in it to their common advantage. However, should Curacao not wish to establish such an institution, Aruba might then want to set up its own independent training foundation.

Promoting Investment

3.63 If Aruba is to expand its productive sector and exploit new markets, it will need to promote investments. The Aruban Development Bank was established with this objective in mind and has made a number of investments in small enterprises. At present, however, the Bank is virtually inactive owing to a lack of funds, and it has an accumulated deficit equal to one-third of its paid-in capital, as well as administrative expenses larger than its revenues. Informal plans for restructuring and expanding the Bank along familiar development finance company lines have been formulated; they envisage an infusion of new equity capital, mainly from local and foreign banks, and long-term loans.

3.64 The mission fully supports this initiative: a revitalized Development Bank would be a key element in the strategy to promote economic development on the island. The commercial banks tend to be conservative in their lending policies and do not normally lend in the medium or long term for business activities. The Development Bank, in its role of provider of

^{5/} A current investment promotion venture (over a period of 15 months) in one Malaysian state has generated commitments for 14 projects totaling \$130 million in investment, and creating 1,029 jobs.

equity and loan capital for promising new ventures, could enter into joint financing arrangements with the commercial banks, with the understanding that it would carry a significant share of the risk. The Development Bank could also work with the commercial banks to provide short-term credit facilities and credit guarantees for exporters.

3.65 Although the Development Bank should operate as a private institution, its importance as an instrument of economic policy would warrant the participation of the Government as a minority shareholder, particularly if that proved necessary to attract sufficient private share capital.

3.66 A special unit might be set up within the Development Bank to promote investment as a general policy on behalf of the Government. The unit would be responsible for the design and implementation of a system of investment incentives, including duty-free imports of materials and equipment for exporters; information services for potential foreign investors and assistance in obtaining the necessary permits and licenses; preliminary evaluation of investment proposals; and exploration of market possibilities for Aruban exports. Oversight of the industrial estate would be another possible function.

3.67 The unit should be managed initially by expatriates experienced in export promotion, with the obligation of training a full-time counterpart team. The expatriates might be paid from Dutch aid, while the counterpart team would be supported by the Government.

3.68 Subject to general policy guidance, the Bank and the special investment unit would be free from Governmental or political interference. Their objectives should be clearly stated, and they should be judged on the basis of results.

Job Creation

3.69 Planning for a substantial reduction in unemployment by creating new jobs requires a perspective of 5 to 10 years. For illustrative purposes, 1995 is chosen as the year by which unemployment is to be reduced to 10 percent. Aruba has a labor force of some 28,000, which will grow to about 31,200 by 1995, assuming no net migration. Recent evidence indicates that unemployment is about 20 percent of the labor force, or some 5,500 people, although some of these workers probably are earning money, if not a full living, in various part-time and informal activities. Current employment is about 22,500.

3.70 Reducing unemployment to 10 percent by 1995, about half the present level, means increasing the number of jobs by about 5,600 over the next nine years.^{6/} However, a shake-out of Government service is needed in the interests of efficiency, a process that could release about 1,000 Government employees and leave 6,600 new jobs to be found in the private sector.

^{6/} $31,200 \times 0.9 = 28,080 - 22,500 = 5,580.$

3.71 Assuming that the plans to double the number of hotel rooms are implemented and that a high level of occupancy is reached and maintained, tourism could provide additional employment in the hotels, and in the jobs serving this industry, for 5,000 people. However, it would be prudent to count on a somewhat smaller increase in tourist-related employment, leaving, say, 2,000-2,500 additional jobs to be created in agriculture, fishing and manufacturing, although there will be some growth in construction, commerce and other sectors. This target is ambitious but not impossible.

Table III.1 Primary and Secondary Employment in Selected Caribbean Countries

Country	Population (000's)	Percent Labor Force in	
		Agriculture	Manufacturing
Barbados	252	9.5	13.1
Montserrat	12	9.5	11.2
Trinidad & Tobago	1060	9.8	16.4
Grenada	92	28.7	5.6
Dominica	77	13.1	5.5
Antigua & Barbuda	78	9.0	7.4
St. Kitts and Nevis	45	17.2	13.3
Suriname	374	11.3	10.4

Source: IBRD Economic Reports.

3.72 Conditions in the Dutch Leeward Islands, including Aruba, are less favorable for agriculture than elsewhere in the Caribbean, but a determined effort to encourage horticulture and fishing should make possible the employment of 2-3 percent of the labor force in primary production by 1995, or some 600-800 additional people. Agricultural employment would still be far less than the proportion employed in agriculture on other islands (Table III.1). Equally, manufacturing should be capable of expanding to employ an additional 1,500-2,000 people by 1995, bringing total employment in this sector to 6-8 percent of the labor force, at the low end of the range of manufacturing employment elsewhere in the region. That target means fostering the establishment of 150-200 new small businesses. The Development Bank might set itself the target of establishing 80 such companies by 1990 (20 a year on average), and the remainder during the following five years.

Chapter IV

GOVERNMENT, INFRASTRUCTURE AND SOCIAL SERVICES

4.01 This chapter looks at the provision of critical public services--infrastructural and social--that have a strong influence on economic development. By way of context, the chapter opens with a review of the nature of Government in Aruba and its operations, since they have a profound impact on the provision and strengthening of the public service base. It then examines the current infrastructural system and needs, and social services and needs.

A. Government

Government in Transition

4.02 Prior to January 1, 1986, Aruba was part of the Netherlands Antilles, and its governmental structure was similar to that of the other islands in the group. It had an Island Government with broad responsibilities for most of the services traditionally provided by the public sector. Certain powers, responsibilities and services, however, remained the province of the Central Government, including police, post office, tax assessment and certain inspection and policy functions in the fields of education, social affairs and social security. On December 31, 1985, the Aruba Island Government directly employed 2,637 people and had an Island budget estimated at about AFL 200 million including transfers to the Central Government. There were also 1,328 Central Government employees resident on Aruba. The budget costs incurred by the Central Government on behalf of Aruba included AFL 65 million for the remuneration of employees and purchases of goods and services.

4.03 Neither the personnel nor the budget figures cited above are official; the latter have been calculated by the UNCTAD advisers in connection with their work on the draft National plan, and are believed to be reliable. The books and accounts for Aruba have not been reconciled, audited or closed for a number of years. An accounting firm hired to determine Aruba's fiscal status as of January 1, 1986, was unable to make cost and revenue specifications for either 1984 or 1985, nor to make a defensible division of claims, debts or inventory. The personnel figures are incomplete in that they do not take into account those personnel supported indirectly through subsidies or grants.

4.04 When Aruba separated from the Antilles, it absorbed the Central Government staff employed on the Island. The process of integrating the budget, personnel and functions of the former Central Government required restructuring a number of departments such as Finance and Taxation, taking over responsibility for police and post office services, and integrating both staff and functions in such areas as education, labor and social affairs, aviation and meteorological services.

The Path of the Future

4.05 If Aruba is to reduce the size and cost of government to a level consistent with its reduced revenues, it will have to create a policy,

administrative and procedural framework far different from that of the past. Among the principal tasks to be addressed are:

- The size and composition of the public service.
- The setting and enforcing of efficient standards of service.
- Control of expenditures.
- Improvements in the information base so that appropriate policies and programs can be developed and evaluated.
- Improvements in and integration of the budget and planning systems.
- Development and upgrading of the quality of manpower, with special emphasis on retraining.
- Strengthening of the tax laws and administration and of the collection and billing procedures for taxation, public utility services and social services.

4.06 The measures described in Chapter II are sound as far as they go but do not strike at the difficult problem of an oversized, inefficient public bureaucracy. The social and political consequences of a fundamental restructuring and reduction in force are understandably difficult to contemplate at a time of high unemployment, even though the scale of unemployment is not as large as it was believed to be until recently. Yet it is possible for the Government to plan and phase such a program in a way that would minimize the social dislocation and costs. Specific reforms are discussed below.

Revenue Enhancement

4.07 As discussed more fully in the next section, the Water and Electricity Board (WEB) has incurred steadily increasing operational losses over the years; they amounted to AFL 36.8 million in 1983, the latest year for which financial data are available. Moreover, billing and collections are over five months in arrears. These losses, and the Government subsidies they entail, should be eliminated as soon as possible.

Taxation

4.08 The revenues from taxation could be substantially increased by updating, modernizing and uniformly administering the tax laws. The Island is five years in arrears on its income tax assessments and collections and has a backlog of 130,000 returns whose estimated total value is well over AFL 180 million. Each year, about 26,000 new returns are due.

4.09 The newly restructured Department of Taxation has 50 personnel in its tax assessment division, a small section of more sophisticated auditors, 50 tax collectors, 20 customs collectors, and 200 customs inspectors. In terms of workload and backlog, the Department is understaffed in the area of tax assessment and overstuffed in the area of customs inspections. Over time this imbalance should be corrected by transferring and training custom employees as tax inspectors.

4.10 The department should establish review standards and priorities for processing the backlog of tax returns based on value, complexity and potential yield. The Department could benefit greatly from a greater data processing capability, not only for the tax returns, but also for the data-gathering and analysis needed for policy guidance and implementation.

4.11 In the long term, the Government should consider simplifying the tax policy, forms and procedures. For example, the individual tax return is four pages long, in Dutch and difficult to interpret. There is a "pay as you go" system for wage and salary earners, and extension of this system for the professions and businesses would solve much of the existing collection problem.

4.12 There are over AFL 250 million in demand deposits in Aruban banks generating more than AFL 10 million in interest payments annually. Yet the Department of Taxation estimates that only about AFL 100,000 is reported on the tax forms as interest income each year. One problem is that the laws do not permit banks to provide information to the Government, and taxpayer reporting is a matter of individual conscience. User taxes are also matters of judgment, and verification is impossible. As such, although on the books, the user taxes are not actively enforced or administered by the Department of Taxation. Finally, the Department does not tap into or monitor the rather extensive informal employment network on the Island at all.

Efficient Public Service

4.13 The overriding issue in controlling Government expenditures is how to reduce and make more efficient a public sector establishment that is too large and both short of important skills and wasteful of others. After "status aparte," the Government directly employs nearly 4,000 public servants and indirectly supports some 1,500 more. The Government estimates that excess staff number from 700 to 1,500.

4.14 Aruba has realized only a few economies from the consolidation of the Central and Island work forces. While wage cuts, hiring freezes and earlier mandatory retirement and other early retirement incentives have and will trim wage and benefit costs substantially, these measures fall short of what is required to bring employment and wage costs to a realistic level. The inflated public work force is a product of the earlier era of easy revenues. Government jobs were rewarded regularly for political loyalty. When Governments changed, new people were simply added and new offices and departments created. The "old guard" had job security--while it may have lost power and status, it did not lose its jobs.

4.15 There are signs that a measure of improved discipline is developing. The Government is phasing out the Temporary Employee program (TAV), which is essentially a relief effort. Its rolls now number 400 as opposed to about 1,000 fairly recently. It appears that the hiring freeze in Aruba has been uniformly observed in recent months.

4.16 A quantitative measure of workload and service standards needs to be developed to provide an objective basis for the work force reduction at the department and section level. To help them develop specific measures, interdepartmental task forces might be set up, with non-governmental citizen participation and support from technical experts. They would review individual departments and agencies in order to: identify policy and operational problems; assess staffing standards and develop appropriate workload measures; take stock of existing personnel and determine the degree of overstaffing or skill shortages; consider the need for organizational changes within the department or in relation to the responsibilities

of others; and establish a timetable for the implementation of each recommendation. One outcome of a systematic investigation of this kind would probably be the identification of shortages of skills that are needed in order to achieve efficiency, economy and effectiveness; likely areas are accounting and auditing, data processing and management. Programs need to be established to attract, train and retain personnel in key skill areas.

4.17 A second outcome would likely be a plan to deal with the proliferation of departments and offices. At present, there are 40 separate departments and offices, 30 of which have fewer than 50 employees. Consolidation of functions and management would certainly result in greater efficiency and lower costs.

Control of Expenditure

4.18 The Department of Finance now exercises detailed control over the purchase of goods and services, reviewing and approving every requisition. This process is cumbersome and would not be required under a more disciplined budgetary and allotment system. Although this close departmental involvement does prevent excessive or unauthorized expenditures on goods and services, these costs constitute only about 16 percent of the operating budget.

4.19 The Department of Personnel has the capacity to evaluate promotions and position standards but has had to work within a system where standards and qualifications are observed haphazardly. A clear and enforceable policy on hiring, promotion and pay is important. The Department of Personnel should be included in any efforts to assess staffing standards.

4.20 The audit functions of Government need to be invigorated and supported. The Government accounts are not in good shape, and some years may be only partially auditable. Audit work that has been carried out in the past has not been followed up on, and so there has been little response to the audit findings. Audits should be kept up-to-date, and coverage should be extended to Government subsidiaries and to funds that have escaped attention in past years.

Information

4.21 The lack of timely and useful data handicaps the Government's operations and planning. The data on the Government accounts are incomplete, and expenditure reports are at least four months behind and are unreliable when available. Information on development projects, costs, progress and results is fragmented. Essential planning data are missing.

4.22 The Government is expecting outside help in these areas, with the emphasis on strengthening the data processing capabilities. This approach could, however, be counterproductive unless the information needs are first well-defined and the potential for integrating the systems and reports is explored. Development of a good information system is a long-term task, but it can begin now with the careful selection of priorities.

Planning and Budgeting Systems

4.23 The operational budget used in past years does not lend itself to the setting of priorities, analysis of costs, or inclusion of the projected

continuing costs associated with capital projects. It is essentially a line item budget based on the prior year's estimates. As such, it is an accounting, not a planning, document and is not effective as a control device.

4.24 Budget requests are, for the most part, submitted in the form of requests for funds, with very little workload or rationale available for review and analysis. The development budgets are put together separately by the various departments and agencies; no entity has a good overview of all the projects planned or under way. Aruba even uses supplementary budgets for a number of projects and their continuing costs.

4.25 It is recommended that future budgets be constructed on the basis of the following principles:

- (a) Baseline costs should no longer be accepted as given and unchallengeable;
- (b) Workload, service requirements, program priorities and anticipated results need to be clearly stated;
- (c) Responsibility, control and oversight of capital and development planning should be centralized and formalized; and
- (d) Linkages between the capital and current operational budgets need to be developed and maintained.

Government Priorities

4.26 The opportunities and challenges facing the Aruba Government are many and, if viewed as a whole, overwhelming. The problem is what to do first and how to do it. An initial plan of action might include the following:

- (a) The Government should declare its intention of reorganizing the public sector in order to make it a more effective and less costly instrument for service planning and the implementation of public policy; it would undertake reforms according to a specific and phased program.
- (b) Task forces would be established to evaluate each department or agency, with private sector participation and qualified help from within or outside. The main focus of the task forces would be to identify operational and policy problems, develop workload measures and service standards, inventory personnel skills, assess staffing standards, consider program and organizational restructuring or combinations, and establish a time-phased implementation plan for their recommendations.
- (c) The Government would concentrate on improving the taxation and utility services, especially to eliminate the backlogs of assessments, billings and collections. It would also set the stage for tax simplification and tax law change.

- (d) Technical assistance would be solicited for improving the flow of information and management. Initial targets should be the current accounts, budget and control systems, tax information and a consolidated information base.
- (e) The Government would invest in management training for department, heads and key supervisory officials. It would be useful, as well, to require all ministers to be trained in management.
- (f) Performance goals would have to be set for each department and ways, through formal and informal means, of recognizing and rewarding achievement of those goals would be established.
- (g) Government workers displaced by the restructuring program and reductions in force would be either transferred to productive positions elsewhere or given retraining opportunities for public or private sector jobs.
- (h) An organization would be set up to develop, coordinate and control job retraining efforts. This measure will be a key element in upgrading productivity, bringing proper skills to bear in critical areas and providing a rational and compassionate bridge to the private sector for those employees who face a loss of public sector jobs.

Summary

4.27 Most of the problems mentioned here are well-known and understood. Many studies and reports have underscored the need for change, although they have yet to be translated into action. Public commitment and determination to promote a reform program must exist at the political level if progress is to be made on this difficult but necessary course of action. By moving forcefully now, the Government will retain its options, both as to the choice of measures and their timing.

B. Infrastructure

Water Supply

4.28 Aruba's climate is similar to that of Curacao, but Aruba has less potable water resources. Most water is produced by desalinization plants, as dam storage is limited and there are only a few wells.

Demand and Service Levels

4.29 Average domestic water consumption in Aruba is high (160 lcd), 60 percent more than the already high consumption on the other islands of the Netherlands Antilles (about 100 lcd). However, service levels are also high: the number of inhabitants per connection is a good 3.3, and the number of water supply connections is about equal to the number of power connections.^{1/}

^{1/} Countries with low service levels always have more power than water connections; for example, St. Maarten has about 6,000 power connections versus 4,000 water supply connections.

Sector Organization

4.30 Water (and power) production, distribution, and supply are all administered by the Water and Electricity Company (Water en Energiebedryf, WEB), a Government agency. Since it has no cash management of its own, the Government's financial treasurer is responsible for bill collections. WEB is severely handicapped by its institutional status, which in particular has contributed to excessive politicization. For example, its top officials, who are active in local politics, do not focus adequate attention on WEB. In fact, during the recent electoral campaign, WEB's top two officials took extended leaves of absence. As their party lost the elections, the party now in charge on the Government is different from that of WEB's management. With political interference in WEB's operations, particularly in the appointment and dismissal of staff, which is the norm, it is not surprising that WEB is estimated to have overstaffing of at least 25 percent. Aside from the heavy overhead, the interference also causes operational inefficiencies that affect costs, which are borne either by consumers as high tariffs or by the Government as subsidies. This area will need to be addressed. Conversations with private sector individuals indicate that the public is well aware of the inefficiencies and poor performance of WEB and supports Government action.

Production

4.31 WEB's water production capacity is about 25,500 m³/day, or about twice the average level of consumption (13,500 m³/day in 1985, excluding the water used by the Lago refinery, which is approaching zero). All but one of WEB's desalinization plants have been installed since 1980 (see Annex Table A.2), but one type of plant (with about 50 percent of the capacity) is having maintenance problems.

4.32 As WEB once supplied water and power to the Lago refinery, which is now idle, WEB could accommodate the additional demand (3,000-4,000 m³/day) if the refinery were to start up again. If overall water demand increases much faster than expected, that increase could still be met by present plants and, if necessary, by installing a reverse osmosis plant under a management contract. These plants can practically be bought off the shelf, as has happened in Bonaire and St. Maarten. It is also possible that the hotels could find WEB's water to be too expensive and decide to buy their own RO desalinization plants (at least one hotel on St. Maarten is doing so).

Distribution

4.33 The distribution system appears to be in good condition, based on WEB's description of its state and low rate of water losses. Cast iron and ductile iron are used for large diameter pipes, copper for small diameter ones. Only recently has cement lining been used. In 1985, the older large diameter pipes were mechanically cleaned but were not relined, and further corrosion can be expected.

4.34 All connections are metered, and the type of meter being used is sufficiently accurate to measure the country's expensive, desalinated water.

Tariffs

4.35 Domestic water tariffs in Aruba are lower than those in the Netherlands Antilles (see Annex Table A.3). This situation can be partially explained by the higher rates charged the Lago refinery, which subsidized the other consumers. In addition, the cost for supplying water to the refinery was lower than that for domestic customers because hardly any additional distribution costs were incurred. Cost recovery through the tariffs has worsened since the refinery closed. According to WEB, average water revenue in 1985 was AFL 4.30/m³ compared with an average production cost of AFL 6.21/m³.

Finances

4.36 WEB reported losses of AFL 22.9 million in 1983 and AFL 7.6 million in 1984 for its combined water and power operations. These figures are probably optimistic, however, because WEB benefits from indirect subsidies such as use of the Government treasurer's office for bill collection and subsidized financing. WEB's operating costs will have to be reduced drastically to offset the loss in revenues resulting from the closing of the Lago refinery and to enable WEB to produce water and electricity at reasonable prices. Moreover, WEB's investment plan has become obsolete with the closing of the refinery. Interestingly, the last item mentioned in this plan was that WEB should take over ELMAR, the private company that is under contract with the Government to handle power distribution (see the next section).

Conclusions and Recommendations

4.37 Under the present economic circumstances, Aruba cannot afford the luxury of WEB's inefficient management. The best and quickest solution would be to contract out management and operation to an experienced private operator such as ELMAR. If this approach is not feasible politically, WEB should be transformed into an autonomous company with as little Government and political interference as possible.

4.38 The Government should also start a public relations campaign to spread the message that water is scarce and costly and that people should conserve it. To reduce waste in the future, design standards should be changed to include the use of water-saving devices such as small volume flush toilets and spring action faucets.

C. The Power Sector and Renewable Energy Options

The Existing Power Sector

4.39 The decision by the Lago refinery to cease operations in 1985 implied, besides the very important consequences for the Aruban economy as a whole, considerable changes in the energy balance picture. As Annex Table A.4 shows, the refinery accounted for almost 22 percent of all the energy consumed in Aruba in 1983 and about 40 percent of the electricity generated. This latter figure dropped in 1984, before the closure of Lago, to about 35 percent. It is clear that Lago's closure has meant a significant change in the operations and future needs of the power utility.

Management

4.40 WEB handles all aspects of electricity services except distribution, which is handled by a private company, ELMAR, under a 50-year management contract that expires in the year 2000. The difference in operational efficiency between WEB and ELMAR is striking, given the excessive Governmental interference in WEB's operations.

4.41 In light of the drop of about 35 percent in power production requirements, some substantial reduction in staffing would be expected. Given the success of the operational arrangement between the Government and ELMAR and the difficulties with WEB, it is recommended that the Government consider introducing a similar management arrangement for WEB.

Distribution and Tariff Collection

4.42 ELMAR is responsible for the distribution of power to households, businesses and industry and for the collection of bills. When the Lago refinery was operational, its power requirements were, however, supplied directly by WEB. The average tariff rate charged by ELMAR is about AFL 0.22 per kWh.

4.43 ELMAR's operations are efficient: reported distribution losses are only about 5.5 percent, the accounts are up-to-date with no backlogs, readings are carried out monthly, and service is cut off immediately if payments are not made. ELMAR uses a computerized system for meter readings and for feeding the information into the home base computer. At annual operational costs of about AFL 11 million and with a distribution of about 230,000 MWh, the costs of power distribution are about AFL 0.048 (US\$0.027) per kWh. This figure compares favorably with others elsewhere. The distribution margin is about AFL 0.084 (US\$0.027) per kWh.

Capacity and Load Characteristics

4.44 The present composition of electric power capacity of WEB is as follows:

Year	Quantity Type	Capacity (name plate) MW
1958	2 Boiler/Turbine Generators @ 7.5 MW	15
1963/64	3 Boiler/Turbine Generators @ 33 MW	99
1984	1 Stand-by Gas Turbine (1984) @ 22 MW	22
1984	1 Emergency Diesel Generator @ 2.5 MW	2.5
	Total Capacity (MW)	<hr/> 138.5

4.45 In 1984, before the closure of Lago, the total amount of electricity produced by WEB was 388,038 MWh, at an average load of 44.4 MW. This production included power for WEB's own operations (58,942 mwh), and for water production, as well as some 75,000 MWh for the Lago refinery and some 254,096 MWh for distribution to the rest of the economy. (At that time, the refinery was already operating at sharply reduced capacity; previously it used some 131,000 MWh per year.) Total production with the closure of Lago is now estimated at about 300,000 MWh, with about an average load of 26 MW and a peak load of 36 MW. Clearly, the closure of Lago has left WEB with a considerable amount of excess capacity that affords a comfortable breathing space.

Capacity Planning

4.46 With a peak load approaching 40 MW and an installed capacity of almost 140 MW, WEB need not think of expanding capacity. However, there are areas of concern. First, the principal generators (3 x 33 MW) are over 20 years old and cannot be expected to operate much longer without increasing breakdowns and resultant problems in decreased reliability. Thus, there is an emerging need for equipment replacement. It should be approached through careful analysis of the least cost options.

4.47 Another issue is that, while the future of Lago is still being negotiated with Exxon, its former owner, the Government and thus WEB, regard its sale to or management by a third party as a possibility. According to WEB, that possibility makes it necessary to keep future capacity planning on hold until a decision is reached. Because of these uncertainties, no steps are being taken with regard to capacity replacement planning.

4.48 It is important that a decision be taken in this area as soon as possible and that this uncertainty be removed. It is also necessary that a nationwide electric power needs assessment and projection be conducted by aggregating identifiable needs on a sector by sector basis (such as hotels, industry, etc.). For example, there is a plan for a 50 percent expansion of hotel rooms on Aruba within the next three years; the demand stemming from this increase, to the extent they are expected to be realized, should be clearly accounted for in the future capacity needs assessment.

Cost of Production

4.49 The cost of power production in 1985 at WEB is estimated as follows:

	<u>AFL/kWh</u>	<u>US\$/kWh</u>
Non-fuel Production Costs	0.080	0.044
Fuel Costs	0.073	0.041
Total	<u>0.153</u>	<u>0.085</u>

4.50 With the reduced production level that followed the closing of the refinery and yet similar overhead costs, it is estimated that the cost of power production cost will be about 15 percent higher (i.e., about AFL

0.176/kWh) in 1986. The reason is that the effect of the drop in world oil prices is expected to be somewhat counterbalanced by the increased cost of obtaining fuel oil subsequent to the closure of Lago.

4.51 Because of a Government policy of subsidizing power costs to keep tariffs low, the cost at which power is sold to ELMAR for distribution is set at about AFL 0.136 per kWh. At this rate, a Government subsidy of about AFL 4.4 million was necessary to cover the costs of WEB in 1985 (any deficits in operations are covered by transfers from the Government's budget). As might be expected, there is little if any incentive for cost control. Projections indicate that given present costs and tariffs, a subsidy of about AFL 10 million will be needed in 1986. This situation further underlines the need for the Government to take immediate and far-reaching measures to cut unnecessary costs at WEB, to foster a commercial environment there with incentives for cost control, to remove the subsidies and to set tariff rates at full cost recovery levels.

4.52 If such steps are taken, the total cost structure, including distribution, would be:

	1984/85		Present Time	
	AFL	U.S.\$	AFL	U.S.\$
Production costs (WEB)	0.153	(0.085)	0.176	(0.098)
Distribution costs (ELMAR)	0.084	(0.047)	0.084	(0.047)
Total	0.237	(0.132)	0.260	(0.145)

These costs compare with the present average tariff of about AFL 0.22 per kWh.

Renewable Energy Options

4.53 Besides the above-mentioned possibility of reducing operating costs by cutting back on staff and improving efficiency at WEB, the mission also explored the potential in Aruba for exploiting the local available wind and solar resources as a means of reducing costs.

Wind Energy

4.54 The potential for wind energy is significant on Aruba because of a combination of high average annual wind speeds (7.5 meters per second, see Annex Table A.5), high power costs (AFL 0.176, or US\$0.097 per kWh generation costs), and a diurnal load distribution that has a high degree of congruency with that of the wind regime (see Annex IV.4). In addition, wind power is attractive because it allows the addition of small amounts of capacity as needs arise, a desirable characteristic given the uncertainty surrounding Aruba's future needs.

4.55 A general World Bank analysis (Annex Table A.6) of the cost of wind power under various wind regimes also shows that in general costs can be as low as U.S.\$0.08 per kWh. Even lower costs could be expected on Aruba, since at greater heights (above the 10 meters at which wind speed

measurements are made by the meteorological department), wind speeds are even higher and thus more power can be obtained. In addition, the distribution costs likely to be associated with wind power are lower. Finally, the availability of wind power as a substitute at marginal peak power times increases its value and net benefit beyond what it may otherwise appear. In this light, assuming that only about 10 percent of the total annual production of 250 million kWh is produced per year by wind power, while it may seem that the difference in average production costs of only U.S.\$0.017 is small, it actually represents a savings of about U.S.\$425,000 a year.

4.56 Since May 1984, a 60 KW wind turbine has been in operation at ELMAR's offices in town. The machine has not, however, been delivering the amount of power anticipated, based on the wind regime of Aruba--the energy output has been a mere 111,347 kWh on a yearly basis, compared with an expected annual output of about 235,000 kWh. Apparently, the main reason for this poor performance is the location of the machine. If it were closer to the coastal area, where wind speeds are higher and shear effects less, considerably higher output would be obtained. This example points up the significance of the cube relationship between power output and wind speed in terms of the effect of relatively small changes in wind speed on power. Data were not available on the actual wind speeds under which the machine has been operating.

4.57 Even at this poor performance level, the cost of the power is relatively low (U.S.\$0.112 per kWh), as the analysis below indicates:

	Annual Costs AFL <u>(Actual)</u>	Annual Costs AFL <u>(Expected)</u>
Installed cost (AFL 147,221)		
Amortized over 15 years	19,355.70	19,355.70
kWh output	111,347	235,000
Capital costs per kWh	0.174	0.082
O&M costs per kWh	0.027	0.027
	<hr/>	<hr/>
Total costs per kWh	AFL 0.201	0.109
	U.S.\$ 0.112	0.061

Thus, at a better location, where the machine could produce just 60 percent of its full expected output of 235,000 MWh, the output would be competitive (i.e., less than AFL 0.176 or U.S.\$0.098 per kWh). Only an estimated 10 percent improvement in wind speed would be sufficient to achieve this benefit.

4.58 Wind power should be considered as a viable complement to conventional power sources. It certainly warrants the preparation of a feasibility study to identify the extent to which wind power should be integrated into the Aruban electric power facility and to design the optimal path for its implementation as capacity replacement becomes necessary. At the present peak load of 36 MW, a 10 percent share in terms of wind power would represent almost 4 MW. This level would require a substantial enough wind farm to allow Aruba to gain important expertise in this area, which it

could develop and export regionally to South America and the rest of the Caribbean. Since a similar effort is recommended for Curacao, the Netherlands Antilles, it would be mutually beneficial that the two coordinate and cooperate where possible in this respect.

Solar Energy

4.59 Insolation levels for Aruba are not available from the Meteorological Institute, but they can be expected to be similar to the ones for Curacao (Annex IV.4), which are, in general terms, favorable for the use of solar water heaters. However, most hotels are medium- to high-rise and use exhaust heat from their air conditioning systems to warm their water. The other, low-rise hotels were generally built some time ago when solar water heaters were a relatively new phenomenon and their costs much higher. Given that they have already installed conventional systems, it would not pay to retrofit them for solar water heaters. For new hotels, however, or those needing to replace existing installations, solar water heaters appear to be a viable option. Since plans exist to increase the number of hotel rooms in Aruba by 50 percent, it becomes important that the economics of water heating options be clearly established.

4.60 If the economic analysis for solar water heaters carried out for St. Maarten, the Netherlands Antilles, where solar water heaters are prevalent and for which actual cost and performance data of solar water heaters are available (see Annex Table A.7), is adjusted to the conditions and electricity costs (AFL 0.260 per kWh) for Aruba, the resulting rate of return is over 30 percent.

4.61 This analysis is, however, based on the assumption that the competing energy for water heating would be electricity, as it is in St. Maarten. In Aruba, assuming reliable supplies, gas would be a more economical alternative. Properly, therefore, the analysis should be done using gas as the competing technology. In Aruba, the price for gas for industrial uses is AFL 0.59 per liter. Since propane gas has a net calorific value of 23 MJ per liter and a heating efficiency of 55 percent, the cost of effective (useful) heating energy from gas is AFL 0.047 per MJ. The cost of electricity was found earlier to be AFL 0.26 (tariff price--AFL 0.22) per kWh. With heating efficiency of 65 percent for electricity, its effective (useful) energy cost becomes AFL 0.40 (AFL 0.34) per kWh, or equivalently, AFL 0.111 (AFL 0.094) per MJ. Thus, electricity is seen to be more expensive than gas for heating water.

4.62 Alternatively, this gas cost can be converted into an effective cost per kWh electricity equivalent. Using that figure in the analysis would yield a gas cost equivalent of AFL 0.11 per kWh (compared to AFL 0.26/kWh for electricity). When this electricity equivalent cost of gas is used as the alternative against which solar water heaters are compared (see Annex IV.6), a rate of return of 8 percent is obtained. It should be noted that this figure is a real rate of return (net of inflation) and that the values used for the parameters in the analysis have been kept conservative. In addition, costs for Aruba can be expected to be somewhat lower than for St. Maarten because of lower transport and installation costs. Thus, solar water heaters could be a viable alternative in Aruba in many instances, and this option should be explored when new water heater

installations are being considered. The Government should encourage consideration of this option, possibly by providing financial support for a technical evaluation.

The Port

4.63 The new container terminal at Aruba was planned by the same group that planned the Curacao terminal, although on a more modest scale. It has a 250 meter wharf with a 36 foot water depth alongside, but only about 32 feet in the channel. The container crane is the same model as the one at Curacao.

4.64 Aruba is well-served by shipping lines, but the traffic is almost entirely local. The Carol Lines, a consortium of Ned Lloyd, Hapag Lloyd, Harrison and CGM, calls every 12 days; Evergreen calls weekly, with a feeder service from Kingston, Jamaica; Mitsui-Japan Line, with a combined operation, calls every 5 weeks; and a Sea Land feeder vessel from Puerto Rico and Haina calls every 14-28 days. There is also service by the OLAF, which shuttles between Bonaire, Curacao and Aruba, the FERRY CARIBE that serves Venezuela, and the King Ocean Lines and the Genesis Lines. The Eurosal Lines, a consortium of nine lines that operates geared container ships between northwest Europe and the Pacific Coast of South America, have been approached to call at Aruba. Eurosal's first call is at Cristobal, Colombia, and it says it does not have any slack in its schedule to permit it to divert to Aruba.

4.65 Aruba also has a frozen tuna transshipment operation that serves seven factory fishing vessels from the Far East. The tuna is transhipped to Puerto Rico, with some going to Japan.

4.66 Cargo handling at the port is provided by Aruba Stevedoring Company (ASTECC) N.V., which is owned by Ned Lloyd Lines and 10 local shipping agents. They claim to have rationalized the stevedoring industry in Aruba, reducing the staff by 45 percent in two years. Some local people, however, complain that ASTECC enjoys a monopoly and is earning substantial yearly profits.

4.67 Although, in 1984, the port of Aruba made a profit, in 1985 it ran a deficit of AFL 1.7 million, including financing costs. The new terminal was financed equally by the Dutch Government, with standard terms for aid loans, and the Aruba Government. No further investment in the port by the Government is recommended. If a shipping company should request additions or improvements in facilities or equipment, the company should undertake the necessary investment.

4.68 It is difficult to make any positive recommendations about the port without a more detailed investigation into its port operations. The port is in a worse position than the port of Curacao with respect to its

possible use as a regional transshipment terminal for container traffic as it does not have the total port capacity nor the local consumption base that Curacao has. Curacao and Aruba would have to compete with Jamaica and Puerto Rico for container transshipment. Jamaica and Puerto Rico are much better situated for the major trade routes through the region than are Curacao and Aruba and have much greater installed capacity. Jamaica and Puerto Rico have a much greater population base for local consumption than do Curacao and Aruba so that the transshipment operation is more of an addition to existing, natural traffic. Jamaica has significantly lower labor costs than Curacao and Aruba and with the installed capacity can offer much lower tariffs for container transshipment than could either Curacao or Aruba. There is more than enough port capacity at the new terminal at Oranjestad to support the planned construction of hotels within the next several years. In addition there are 1,171 meters of dock space at Barcadera, which is now designated as the industrial port for Aruba.

D. Social Services

4.69 The provision of health, education, retirement and public housing in Aruba compares with that in industrialized nations, in part because public spending on health and education has increased steadily over the years. Education and health care services are now available free of charge or at a nominal price to most people.

Insurance and Pension Schemes and Health Services

4.70 Social security--insurance and pension schemes and health services--is handled by a number of agencies and as a result is complex and inefficient. Health insurance is provided by the Government, the Social Security Bank (SVB), which is now located on Aruba for Aruban citizens, and private insurance firms. Accident insurance for civil servants is provided by the Government. The health insurance provided by the Government, which is self-insuring, covers two contrasting groups--the poor, and higher income Government employees. SVB provides pensions for all citizens from age 62 on. Civil servants at an earlier age (50 or 55, depending on the regulations) from the civil service retirement plan known as APNA, up until they reach the age of 62, when SVB takes over.

The Social Security Bank

4.71 Aruba, after separation, manages its own SVB, which provides insurance against sickness and accidents, as well as pensions and death benefits, for certain groups. By law, the employer of workers earning less than AFL 20,280 (U.S.\$11,330) a year must provide insurance against sickness, including hospital and doctor coverage and wage compensation. The

employer does so by paying a premium representing 7 percent of the workers' wages to the SVB. As to accident insurance, the premium ranges between 0.5 percent and 5 percent of a worker's wages, depending on the risks of the job. Again, it is paid by the employer to the SVB.

4.72 The employer also must contribute 4.85 percent of an employee's salary to the retirement fund of the SVB, while the employee contributes 3.395 percent. Under the old age provision, residents of the Netherlands Antilles 60 years of age or more are entitled to a fixed pension of AFL 497 (U.S.\$278) a month if married and AFL 297 (U.S.\$166) a month if single.

4.73 The health and accident benefits paid by SVB cover 100 percent of medical costs, inclusive of doctors fees, hospital charges and medication. Dependents are also covered. If the physician in charge of a case recommends specialized medical treatment not available in Aruba or Curacao, SVB must provide for travel and part of the costs incurred abroad. The patient may be accompanied by a family member at the expense of SVB.

4.74 The insurance schemes also provide for income payments. In the case of sickness, married men or heads of households are entitled to 80 percent of their daily wage, while employees are entitled to 70 percent. Sickness insurance payments can be claimed for a maximum of two years. In the case of work-related accidents, the insurance provides for 100 percent of the wage during the first year for male married workers and 70 percent for single workers and all women. Insurance payments are indexed under the same provisions as are the wages and salaries of civil servants.

4.75 Until recently, the actual insurance premiums were collected by the Island Governments of the Netherlands Antilles, to be deposited in a fund and transferred promptly to the SVB. However, the Island Governments and the Central Government have been in arrears, although the Governments of Curacao and Aruba have been paying them off. (see Table IV.1). These arrears have caused liquidity problems for SVB, which has had to obtain short-term commercial bank credits to meet its expenditures. Given this problem, in 1985 SVB began to collect the health and accident insurance premiums itself.

Table IV.1 Cumulative Arrears Due the Social Security Bank
(millions of AFL)

	1985
Aruba	2.00
Curacao	0.76
Bonaire	12.22
St. Maarten	32.98 ^{a/}
Saba	0.62
St. Eustatius	1.04

a/ Estimate.

Source: Data provided by the authorities.

Non-SVB Coverage

4.76 The Government of Aruba provides health coverage for its ex-employees. The civil servants in active service pay a premium equivalent to 1 percent of their salaries, which is placed in a special fund (FZOG) to meet the medical costs of former civil servants. The Government covers 90 percent of actual medical costs, while the employees are responsible for the remaining 10 percent. Retired civil servants on pension and dependent family members are covered by the schemes, but their premiums range from 2.5 percent of the first AFL 500 of the pension to 5 percent above that amount.

Controlling Health Care Costs

4.77 Hospital care is available according to three classes, depending on the level of the civil servant, with a clear differentiation in terms of the services rendered and the number of beds per room by class. Individuals earning less than the minimum wage or who are on welfare, and who are able to establish that they have no adequate means of support, are provided with a health care card, called the P.P. card (from the French, "pour les pauvres"), that entitles them to full health care coverage at no cost. Interestingly, the average cost of health care per P.P. cardholder, who is admitted as a third-class patient, is higher than that for civil servants. The reason is that welfare patients stay significantly longer in the hospital, as is also true for retired people. In these cases, the hospital appears to be serving more as a nursing home or welfare hostel. There is no doubt that the hospital on Aruba has one of the highest occupancy rates in the world, if the number of beds and population size are taken into account.

4.78 As most developed countries have found, medical costs have been escalating rapidly, reaching 6 to 11 percent of GDP. Aruba has been no exception (Annex Table A.8). There are no adequate data on health care costs in Aruba, but the costs in Curacao may be taken as a basis (see Annex Table A.9). The mission believes that costs may be higher in Aruba even than in Curacao because the average length of hospital stay is higher and there is a smaller bed capacity for the chronically ill.

4.79 In neither country have the authorities so far taken steps to control costs, for example, by setting limits on the amount they are prepared to pay for certain treatments and procedures. As no deductible or cost-sharing scheme applies either under the SVB or the Government schemes (except for the share paid by the civil servants), patients have no cost

consciousness. For their part, doctors lack the incentive to discharge patients promptly, as their fee is based on the number of weekly hospital visits. The average hospital stay in the Antilles is thus more than twice as long as in the United States and is negatively correlated with patient income. Moreover, doctors have the discretion to send patients abroad for treatment, which can cost as much as US\$25,000 per case. This policy in particular should be subject to careful review. In the case of hospital stays, costs could be reduced by making alternative accommodations available for old people who need custodial care but not the services of a fully equipped (and expensive) hospital.

4.80 To ease the burden on public funds and to instill cost-consciousness among both the general public and health care personnel, health insurance schemes should be contributory. That is, policy holders should pay to SVB a share of their premium, as is the case with the retirement pensions and civil servant health insurance. An appropriate amount might be, say, 2 percent of salary. Policy holders should also be required to pay an annual deductible of perhaps AFL 100-150 p.a. For higher level civil servants who are not covered by SVB, an independent health insurance foundation might be established, financed by premiums paid by both the Government and the employees. Contributory schemes are a necessary way to help control medical costs and reduce Government expenditures.

4.81 In the Netherlands Antilles, the Government announced its intentions of increasing the proportion of medical bills paid by patients who are higher level civil servants to 25 percent from 10 percent, but this proposal has not been confirmed. A smaller increase, together with an annual deductible of AFL 100 per person covered, which is also along the IMF guidelines, may be more acceptable in both the Netherlands Antilles and Aruba.

4.82 The changes outlined in this section could save the Government as much as AFL 20 million a year.

The Public Servant's Pension Plan (APNA)

4.83 This general pension fund for Aruban and Netherlands Antillean civil servants presently has 9,000 active contributors and provides pensions to 3,500 former permanent Government employees living in Aruba or abroad. Aruba continues to be included in the scheme for the time being, but the Government intends to take over APNA'S responsibilities for Aruban citizens as soon as possible. The system works as follows: retired civil servants eligible under the fund are entitled to an annual pension equal to 70 percent of the last year's actual salary plus some element of the bonuses received. During their employment, these employees contribute 2 percent of their salaries to the fund; the employer Governments are to

contribute 26 percent. These contributions are to be paid into a bank account in Aruba. The balance of funds required to meet APNA's pension obligations are paid to APNA by the Government.

Education

4.84 Education in Aruba is not compulsory, but a high proportion of children attend school at both the primary and secondary levels. Pre-primary schools are also widespread and well-attended. At the primary level (ages 6 to 11), enrollment is 99 percent, at the secondary level (ages 12 to 17) 86.4 percent, of the respective age group.

4.85 The great majority of the schools are private, largely religious institutions, but the Government still pays the teachers' salaries and benefits. Teachers, therefore, are Government employees, although their remuneration is significantly higher than that of regular civil servants of comparable seniority (Annex Table A.10).

4.86 Attendance at institutions of higher education is approximately 18 percent of the age group 18 to 22, a substantially higher proportion than in other countries of the region. Such institutions are found only on Aruba and Curacao.

4.87 There is a substantial Study Abroad Program, which, although not formally part of the educational system, plays an important role, especially at the higher level. The Government administers the scholarships, which are financed out of Dutch aid. After the recent budgetary developments, the Aruba Government gives loans for study abroad and a very limited number of grants. In the past, all Government-funded fellowships were in the form of grants.

4.88 The education system is diversified and complex. There are two main branches at the secondary level, general and vocational/technical, each with a series of sub-branches. The upper sub-branch of the general secondary schools leads to the university, while the sub-branches of the specialized schools lead either directly into a job or into an intermediate or higher technical or vocational training institution. The choice is made early, and there is little opportunity to cross from one stream to another later on.

4.89 A frequent comment made by those who have studied and reported on the system is that it is unduly rigid. Apart from the educational issues that feature raises, it is likely that the complexity and rigidity are factors in the high cost of the system. Greater flexibility would ease the problems of staffing and teacher training and reduce the administrative costs. At the primary level, a particular problem is the use of Dutch as the medium of instruction, beginning in the third grade. Since Dutch is not one of the languages the great majority of children speak on entering

school (they are taught in Papiamento in Aruba, until Dutch takes over), this requirement causes a number of children to have to repeat a grade, which also adds to the costs.

4.90 The cost of education, 30 percent of total Government expenditures, is the largest single item in the budget of Aruba, with teacher salaries accounting for more than 80 percent of total expenditures. Measures aimed at bringing Government expenditures into line with projected revenues must include the simplification of the educational system.

Housing

4.91 After a major restructuring in 1978, the Public Housing Foundation now functions as a non-profit private enterprise. Its primary goals are the construction of low-cost, adequate quality public housing and direct lending to low and low-medium income groups for home improvement or construction. It also functions as a mortgage bank and provides technical advice to individuals.

4.92 The Housing Foundation was endowed initially with capital contributed by the Aruba Island Government and Dutch development aid. The Government presently contributes land for new public housing projects and some rent subsidies.

4.93 Rents and profits from mortgages enter into a revolving fund geared for housing maintenance and upgrading. Both mortgages and rents of dwellings are set in accordance with the income of the recipient; mortgage rates vary between 7 and 10 percent a year. The average monthly rent for public housing is AFL 350 and rent collection is good. New tenants pay only 70 percent of their rent and gradually contribute the full amount. The balance of the rent is a direct subsidy to the individual. The usefulness and economic rationale of this subsidy are questionable. Workers when unemployed, pay a small fraction of the rent, AFL 20 a month, to the Housing Foundation, while the remaining amount is subsidized by the Government.

4.94 With the exception of the above-mentioned subsidies, the Foundation has no serious managerial or financial problems.

Table A.1 Aruba: Statistical Data on Non-Resident Stay-Over Visitors for 1970-1979

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
TOTAL ALL VISITORS	75042	85735	88652	95153	105267	128852	146487	151169	163929	185141
Index numbers (1970=100)	100.00	114.28	118.14	126.80	140.28	171.71	195.21	201.45	218.45	246.72
Yearly % increase (decrease)	-	14.28	3.38	7.33	10.63	22.40	13.69	3.20	8.44	12.94
Mode of travel:										
by air	73813	85052	88078	93428	108814	122727	139846	147252	159681	182658
by sea	1229	783	574	1725	4453	6125	6641	3917	4248	2483
VISITORS PER COUNTRY/REGION										
U.S.A.	54313	61543	68518	58898	63291	75826	94788	94965	102981	118525
Canada	793	1857	5923	9798	12256	16432	9113	6483	6943	6643
Venezuela	11618	15156	13961	16443	19434	24837	38446	35248	38215	48798
Colombia	2187	2365	2687	3176	3989	3819	4858	6841	6551	5527
Rest of S.&C.America	1737	1875	1153	1467	1268	1717	1861	2638	2852	4652
Netherlands	-	-	-	-	-	2685	2693	3848	3297	4839
Caribbean	842	1288	1475	1357	1274	1828	1334	1638	1768	2848
Rest of the World	3648	2559	2943	4838	3843	2588	1482	1228	1322	2189
TOTAL NIGHTS SPENT	498954	538858	598895	743883	783776	986192	1023673	1181887	1192488	1228933
Index numbers (1970=100)	100.00	108.13	121.82	151.34	159.64	200.87	208.51	224.42	242.89	258.32
Yearly increase (decrease)	-	8.13	12.67	24.23	5.49	25.83	3.88	7.63	8.23	3.86
Per class of accommodation:										
High Rise	388983	338382	373913	443567	443375	613956	633633	788727	758393	788898
Low Rise	57984	74329	82541	116882	152868	173321	224816	216882	234644	268863
Commercial	14417	11583	24238	29589	38758	34294	25916	25266	27345	18162
Private	189578	186556	117483	153845	156783	164621	139388	159812	172898	163818
TOTAL HOTEL ROOMS	917	917	917	917	917	1446	1446	1577	2867	2867
High Rise	638	638	638	638	638	1889	1889	1889	1499	1499
Low Rise	287	287	287	287	287	437	437	568	568	568
YEAR-ROUND OCCUPANCY RATES	63.8	66.9	78	76.3	88.5	73.3	82.4	74.2	65.3	77.5
AVERAGE NIGHTS SPENT	6.5	6.2	6.7	7.8	7.4	7.7	7	7.3	7	6.6
CRUISE SHIP PASSENGERS	44659	27474	45358	44532	62273	57838	67735	88686	98838	95594
Index numbers (1970=100)	100.00	61.52	101.57	99.72	139.44	129.49	151.67	198.58	219.51	214.85
Yearly increase (decrease)	-	-38.48	45.89	-1.82	39.84	-7.13	17.13	38.93	18.54	-2.48
Ship calls	142	52	91	91	135	188	121	145	152	147

Source: Aruba Tourism Authority (data processed by DEZ)

Table A.1 Aruba: Statistical Data on Non-Resident Stay-Over Visitors for 1980-1985
(continued)

	1980	1981	1982	1983	1984	1985
TOTAL ALL VISITORS	188917	221325	220209	195189	210166	206747

Index numbers (1980=100)	100.00	117.15	116.56	103.32	111.25	109.44
Yearly % increase (decrease)	2.04	17.15	-3.50	-11.36	7.67	-1.63
Mode of travel:						
by air	186308	218196	217338	195010	210008	204701
by sea	2609	3129	2871	179	158	2046
VISITORS PER COUNTRY/REGION						

U.S.A.	110783	124031	114345	131615	140462	152086
Canada	5537	5662	5266	3480	4149	1999
Venezuela	53967	66299	74429	28474	21434	21689
Colombia	4757	6684	8657	9901	10985	9217
Rest of S.&C.America	4635	6978	3982	5338	6799	6919
Netherlands	4350	5590	4908	4985	6058	4972
Caribbean	2291	3243	4993	7622	8872	6694
Rest of the World	2597	2838	3629	3774	3407	3251
TOTAL NIGHTS SPENT	1164973	1375597	1357095	1252643	1387289	1362954

Index numbers (1980=100)	100.00	118.00	116.49	107.53	119.00	116.99
Yearly increase (decrease)	-5.20	18.00	-1.35	-7.70	10.75	-1.75
Per class of accommodation:						
High Rise	743492	849787	791053	690984	786061	726215
Low Rise	274466	338090	357604	382187	391062	430981
Commercial	14927	23915	36094	29827	39062	36263
Private	132888	163885	172344	149645	171184	169495
TOTAL HOTEL ROOMS	2067	2067	2171	2249	2043	2061

High Rise	1499	1499	1499	1559	1339	1339
Low Rise	568	568	672	690	704	722
YEAR-ROUND OCCUPANCY RATES	77.4	84.5	76.7	75.3	79.6	80.5
AVERAGE NIGHTS SPENT	6.2	6.2	6.2	6.4	6.6	6.6
CRUISE SHIP PASSENGERS	73432	54971	51116	39114	29058	72186

Index numbers (1980=100)	100.00	74.86	69.61	53.27	39.57	98.30
Yearly increase (decrease)	-23.18	-25.14	-7.01	-23.48	-25.71	148.42
Ship calls	110	79	84	63	49	106

Sources: Aruba Tourism Authority (data processed by DEZ)

Table A.2: Aruba/WEB: Water Production Installations

Type - Plant	Nominal Capacity m ³ /day (original cap.)	Year Put into Service
1) Aqua Nova No. 1 (CMF)	2,000 (4,000)	1978
2) Aqua Nova No. 2 (CMF)	2,000 (4,000)	1980
3) Aqua Nova No. 3 (CMF)	3,500 (4,000)	10/83
4) Aqua Nova No. 4 (CMF)	6,000	5/84
5) Aqua Chem No. 1 (MF)	6,000	4/83
6) Aqua Chem No. 2 (MF)	6,000	8/84
	<hr/>	
TOTAL	25,500	

Table A.3: WATER TARIFFS - 1985 - 86 ^{a/}
 NA/m³ (US\$1 = NA 1.75)

Type of Users	Aruba	Bonaire	Curacao (since 11/11/81)	St. Maarten	St. Martin (Fr.)
Domestic	0-4 to 10 m ³ /m -2.50 to 4.75 ^{b/}	0-4 m ³ /m - 3.75 ^{c/}	0-10 m ³ /m - 4	0-3 m ³ /m - 2.50	0-20 m ³ /m - 20 FF/m ³
		5-7 m ³ /m - 4.00	-10 m ³ /m - 7	4-10 m ³ /m - 5.50	20-50 m ³ /m - 40 FF/m ³
	- 4 to 10 m ³ /m -4.75	8-10m ³ /m - 7.00		-10 m ³ /m - 6.00	-50 m ³ /m - 60 FF/m ³
		11-12m ³ /m -10.00			
		-13 -13.00			
Business + Industrial, Hotels	4.85 ^{d/}	0-4 m ³ /m - 5.00 ^{c/} -4 m ³ /m -13.00	7.5	8.00	65 FF/m ³
Average billed ^{e/} to Consumers	4.30	7.5	5.8	9.73	
Production cost ^{e/}	7.20	7.33 ^{f/}	5.7 ^{g/}	5.30 ^{h/}	37 FF/m ³ ^{i/}
Total cost (prod. + distr.)				11.99	

^{a/} All tariffs are approximate as they are periodically adjusted for fuel cost.

^{b/} Depending on estimated rental value of house: NA 100 to NA 500/month a minimum payment increasing from NA 10 to 47.50 per month is billed. Tariffs also increase with rental value.

^{c/} The first 4 m³ is a minimum billed consumption.

^{d/} A minimum payment for 3-25 m³/month is billed, depending on type of use and business.

^{e/} 1984 data.

^{f/} Production cost of the R.O. contract (Bonaire fixed Kw/h price of US\$13 C), while WEB's average sale price was NA 7.69/m³.

^{g/} Average price of water bought from KAE.

^{h/} The cost price of water delivered by GEBE is NA 12, while the price paid by GEBE for water bought from the privately managed R.O. plant is only NA 5.30/m³.

^{i/} Price of water bought from the privately managed plant (UCDEM).

Table A.4 Energy Use by Sector by Energy Type

A. Percent of Total

Sector	Electricity	Water	Benzine	Diesel	LPG	Jetfuel	Kerosine	Total
WEB	3.3	1.4						4.7
Households	4.0	14.6	8.1		1.8		0.1	28.7
Lago	10.6	11.2						21.8
Industry	4.0	0.1	Comm.	5.7				9.8
Commerce	3.0	Ind.	12.8		1.0			16.9
Hotels	Ind.	5.5			Comm.			5.5
Government	0.1	0.6	1.3					2.0
Others	0.4	0.3	2.2			5.5		8.5
Losses	1.2	0.9			0.0			2.1
TOTAL	26.8	34.6	24.4	5.7	2.8	5.5	0.1	100.0

B. In PJ

Sector	Electricity	Water	Benzine	Diesel	LPG	Jetfuel	Kerosine	Total
WEB	0.22	0.09						0.32
Households	0.27	0.98	0.54		0.12		0.01	1.92
Lago	0.71	0.75						1.46
Industry	0.27	0.00	Comm.	0.38				0.65
Commerce	0.20	Ind.	0.86		0.07			1.13
Hotels	Ind.	0.37			Comm.			0.37
Government	0.01	0.04	0.09					0.14
Others	0.03	0.02	0.15			0.37		0.57
Losses	0.08	0.06			0.00			0.14
TOTAL	1.79	2.32	1.63	0.38	0.19	0.37	0.01	6.70

Source: Fundashon Antiyano Pa Energia (FAPE), May 1984.

Table A.5: Wind and Solar Data
(multi-year averages)

	Aruba	Curacao	
	Wind (m/s)	Wind (m/s)	Solar ^{a/} (MJ/m ²)
January	7.1	7.1	18.1
February	7.5	7.2	20.2
March	8.1	7.5	21.4
April	7.8	7.4	21.3
May	8.4	7.8	20.4
June	8.6	8.0	21.2
July	8.4	7.8	22.1
August	8.0	7.2	22.6
September	7.2	6.8	21.6
October	6.1	5.9	20.0
November	6.1	5.9	18.0
December	6.2	6.4	16.8
Mean	7.5	7.1	20.3
Standard Deviation ^{b/}	0.88	0.68	1.73

^{a/} Solar data for Aruba are not available, but should be similar to those for Curacao.

^{b/} Standard deviations are for monthly averages.

Source: Meteorological Institute, Netherlands Antilles.

Table A.6 General Wind Systems Analysis

MWh per year output for various average wind speeds

Wind Turbine Rated Power (kW)	Average Wind Speeds (m/s)					
	4	5	6	7	8	10
1.8	1.4	2.6	4.0	5.4	6.7	8.8
4	3.1	5.8	8.9	12.0	15.0	19.7
10	7.8	14.4	22.2	30.1	37.4	49.1
200	76.0	147.3	246.4	364.5	490.8	727.2

Wind Turbine Rated Power (kW)	Installed Cost (US\$)		Contingency & Start-up Cost, \$/kW (12%)	Total Cost (\$/kW)
	Total	per kW		
1.8	5,500	3,056	367	3,422
4	8,000	2,000	240	2,240
10	16,500	1,650	198	1,848
65	85,000	1,308	157	1,465
200	220,000	1,100	132	1,232

Cost (US\$) per kWh for Various Average Wind Speeds

Wind Turbine Rated Power (kW)	Average Wind Speeds					
	4	5	6	7	8	10
1.8	0.595	0.328	0.217	0.164	0.135	0.107
4	0.394	0.220	0.147	0.113	0.094	0.075
10	0.328	0.184	0.124	0.096	0.080	0.064
65	0.335	0.184	0.121	0.090	0.074	0.058
200	0.441	0.235	0.146	0.104	0.081	0.060

Source: World Bank Staff estimates.

Table A.7: St. Maarten: Hotel Solar Water Heating Analysis

	US\$	System
<u>System Cost:</u> (cif St. Maarten)	20,296	3,800 liter storage for 50 rooms
Installation	<u>7,104</u>	
Total	27,402	
<u>Amortizing Cost Assuming.</u>		
10-year life (conservative), 10.0% Real Discount Rate		
Gives Yearly Cost of	4,466	
O&M estimate	<u>89</u>	
Total Annual Cost	4,556	
<u>Energy Requirement Assumptions:</u>		
Per Room	100 liters per day @ 60 C	
Number of Rooms	50	
Occupancy Rate	85%	
Solar Contribution	82% of total	
<u>Energy Savings</u>		
kWh per year for Heating 1 Liter per Day	17.2	
Liters Heated at 85% Occupancy	5,000	
Contribution of Solar Heat to Total	82%	
kWh Savings with Solar	70611	
Savings @ NAF 0.26 per kWh	NAF 18359	
	US \$10,199 per year	
Net Annual Savings (net of amortized annual costs)	\$5,644	
Rate of Return	35%	
Payback Period	2.7 years	

Source: Solarheat; World Bank staff estimates.

Table A.7: St. Maarten: Hotel Solar Water Heating Analysis
(continued)

	US\$	System
System Cost: (cif St. Maarten)	20,298	3,800 liter storage for 50 rooms
Installation	<u>7,104</u>	
Total	27,402	
<u>Amortizing Cost Assuming:</u>		
10-year life (conservative), 10.0% Real Discount Rate		
Gives Yearly Cost of	4,466	
O&M Estimate	<u>89</u>	
Total Annual Cost	4,556	
<u>Energy Requirement Assumptions:</u>		
Per Room	100 liters per day @ 60 C	
Number of Rooms	50	
Occupancy Rate	85%	
Solar Contribution	82% of total	
<u>Energy Savings</u>		
kWh per year for Heating 1 Liter per Day	17.2	
Liters Heated at 85% Occupancy	5,000	
Contribution of Solar Heat to Total	82%	
kWh Savings with Solar	70611	
Savings @ NAF 0.11 per kWh	NAF 7767	
	US \$4,315 per year	
Net Annual Savings (net of amortized annual costs)	(\$241)	
Rate of Return	8%	
Payback Period	6.4 years	

Source: Solarheat; World Bank staff estimates.

Table A.8: Expenditures and Number of Cases for Medical Treatment by Provider
(million of AFL and thousands of cases)

	1981	1982	1983	1984
Social Security Bank				
Total Expenditures (AFL million)	13.1	13.8	15.2	15.3
Number of Cases (thousand)	22.0	26.0	30.0	31.7
Average Cost per Case (AFL thousand)	0.60	0.53	0.51	0.48
Welfare Cases (holders of P.P. cards)				
Total Expenditures (AFL million)	55.1	65.0	74.6	75.1
Number of Cases (thousand)	52.0	61.0	64.0	68.1
Average Cost per Case (AFL thousand)	1.06	1.07	1.17	1.10
Island Government of Curacao a/				
- Salaried Employees				
Total Expenditure (AFL million)	5.3	4.7	6.6	6.2
Number of Cases (thousand)	11.9	13.0	12.0	12.7
Average Cost per Case (AFL thousand)	0.45	0.36	0.55	0.49
Island Government of Curacao b/ - Wage Earners				
Total Expenditures (AFL million)	2.7	2.9	4.2	3.6
Number of Cases (thousand)	3.9	4.0	4.0	3.9
Average Cost per Case (AFL thousand)	0.69	0.73	1.05	0.92
Central Government Employees c/				
Total Expenditures (AFL million)	3.6	4.4	5.0	6.8
Number of Cases (thousand)	8.3	8.0	9.0	8.9
Average Cost per Case (AFL thousand)	0.43	0.55	0.56	0.76
Retired Employees				
Total Expenditures (AFL million)	3.7	4.3	5.4	6.9
Number of Cases (thousand)	2.0	2.5	3.2	4.0
Average Cost per Case (AFL thousand)	1.85	1.72	1.69	1.73
Private Insurance				
Total Expenditures (AFL million)			47.1	53.2
Number of Cases (thousand)			31.0	25.2
Average Cost per Case (AFL thousand)			1.5	2.1

a/ Covers 90 percent of cost for the worker and family members.

b/ Covers 100 percent of cost for the worker and family members.

c/ Includes upper and lower income groups. For lower income group, 100 percent of expenses are covered by the Government. For upper income group, 90 percent are covered by the Government and 10 percent is employee contribution.

Source: Data provided by the authorities.

Table A.9: Curacao - Expenditures on Health
(in million of AFL)

	1983	1984
Total Expenditures	200.4	214.2
Physical Illnes	137.0	144.6
From Which for Hospital Stay	65.7	67.8
Mental Illnes	24.7	25.9
From Which for Hospital Stay	16.5	16.7
Basic Health Care and Preventive Care	23.6	28.2
Memo Items		
Per Capita Expenses for Physical Illness	896	936
(AFL per person)		
Per Capita Expenses for Mental Illness	161	168
(AFL per person)		

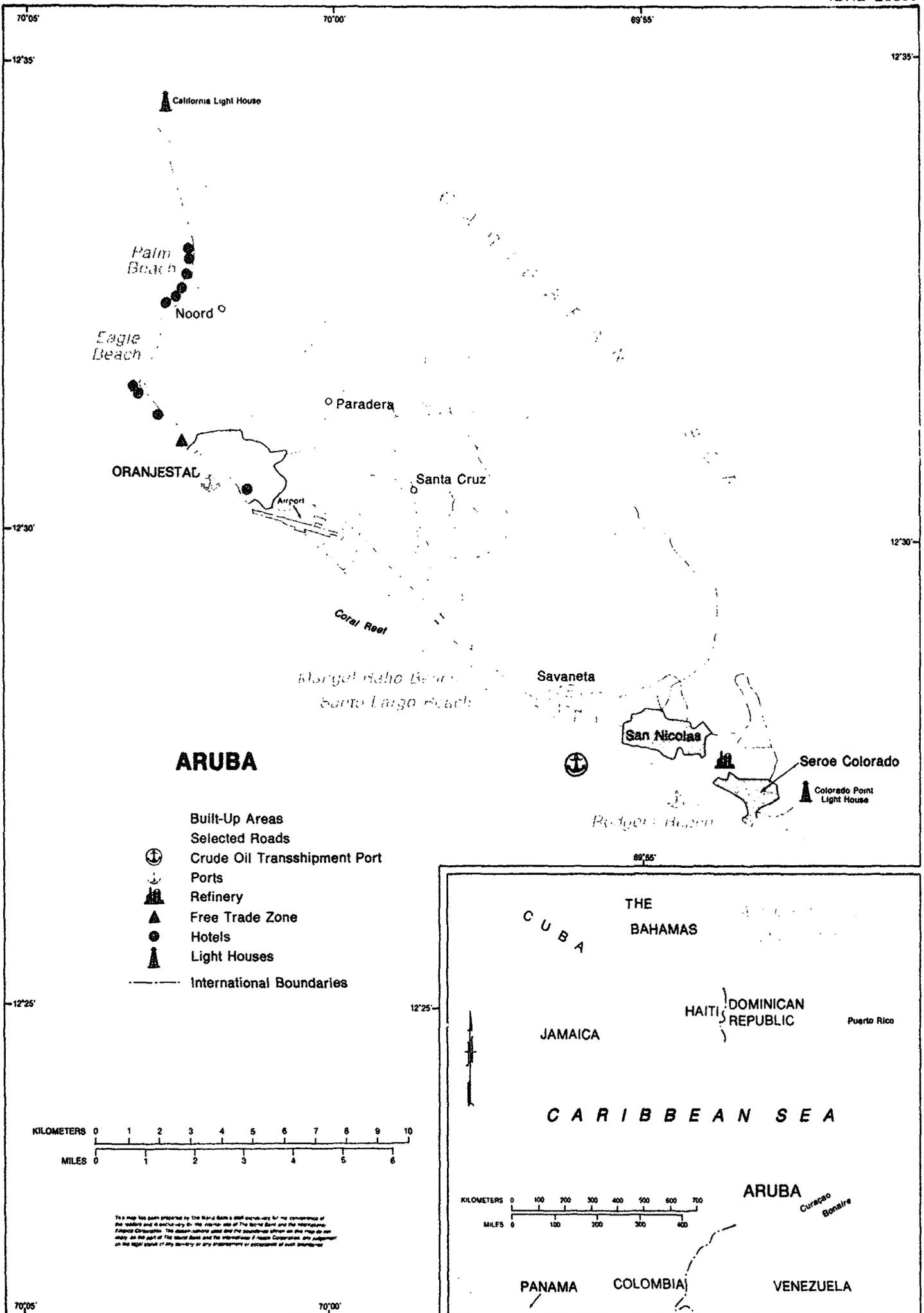
Source: Data provided by the authorities.

**Table A.10: Netherlands Antilles: Monthly Salaries
of Teachers by Level of Education and Career Status for 1982 a/
(in AFL)**

Career Status	Level of Education			
	Pre-Primary	Primary	Secondary and Upper Secondary	University
Beginning	1640	1750	2410	4280
Middle	1855	2915	3775	6295
End	2300	4600	5865	7775
At the Fifth Year of Service	1950	2180	2915	5320
At the Tenth Year of Service	2300	2790	3630	6295
Average Salary	1930	3055	4013	6156

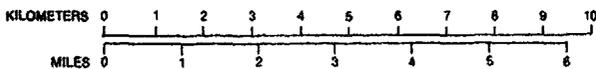
a/ Pension fund is not included in these figures but it amounts to about 27 percent of the annual salary for pre-primary teachers, 31 percent for primary, 32 percent for secondary and upper secondary, and 33 percent for university teachers.

Source: Data provided by the authorities.



ARUBA

- Built-Up Areas
- Selected Roads
- Crude Oil Transshipment Port
- Ports
- Refinery
- Free Trade Zone
- Hotels
- Light Houses
- International Boundaries



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