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Maritime Boundaries Between Trinidad and Tobago/Venezuela/ Barbados and Grenada - Its Impact on Offshore Oil

Patty Marajh
University of Rhode Island

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MARITIME BOUNDARIES BETWEEN TRINIDAD AND TOBAGO/
VENEZUELA/BARBADOS AND GRENADA - ITS IMPACT
ON OFFSHORE OIL

BY
PATTY MARAJH

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
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UNIVERSITY OF RHODE ISLAND
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OF
PATTY MARAJH

APPROVED:
Thesis Committee
Major Professor

DEAN OF THE GRADUATE SCHOOL

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1987
Abstract

The future of the economy of Trinidad and Tobago is heavily dependent upon the exploitation of the hydrocarbon resources in its continental shelf. Trinidad's geographical proximity to the Venezuelan mainland is relevant because both states share the same continental shelf in areas not delimited by the 1942 Gulf of Paria Treaty. The continental shelves of Barbados and Grenada also intersect and these areas have not been delimited and defined by any agreement.

The current expansion of the exploration and exploitation of crude oil and natural gas have raised several problems within recent years. This thesis will focus attention to the legal problems, most of which stem from the method used in boundary delimitation.

Venezuela and Trinidad and Tobago are parties to the 1958 Geneva Convention on the Continental Shelf. Venezuela did so with specific reservations with respect to the articles which provide for delimitation as they relate to the Gulf of Paria and surrounding areas. Venezuela has not signed the 1982 Law of the Sea Convention, because of its reservations to the clauses relative to delimitation. Under the 1982 Convention no reservation can be made under any of the articles. Trinidad and Tobago, Barbados and Grenada all signed the 1982 Convention;
Trinidad and Tobago has also ratified this convention.

This thesis will suggest a delimitation of the maritime boundaries between Trinidad and Venezuela, Barbados and Grenada. The criteria used are special circumstances (i.e. economic dependence) and the precedents set by the International Court of Justice and other International Tribunals.

This thesis is divided into six chapters:

In Chapter 1 the importance of the oil industry to the economy of Trinidad and Tobago is considered.

Chapter 2 focuses attention on the economy of the neighbouring countries i.e. Venezuela's oil industry and the Barbados and Grenada tourist industry.

Chapter 3 discusses the concept of the continental shelf. The 1942 Gulf of Paria Treaty is also analyzed.

Chapter 4 introduces the study areas in which the boundary lines will be delimited. The maritime practices and possible approaches to delimitation of Venezuela and Trinidad and Tobago are discussed.

In Chapter 5 the terms "equity" and "special circumstances" are discussed. The geographical, geological and economic characteristic are considered. Four cases are reviewed in which economic dependence is used in reaching a decision.

In Chapter 6 the boundary lines are constructed in
the study areas and the methods used are analyzed.

The potential exists for a dispute to arise in any undelimited boundary region, especially when the countries are aware of the economic value of the area resulting from petroleum development. Relations between Trinidad and Tobago and its neighbouring countries are good at present; therefore this is an opportune time to negotiate a bilateral treaty delimiting the common areas between these neighbouring states.
Acknowledgements

There are many to whom I am indebted yet there are some I feel obliged to mention: Marine Affairs, University of Rhode Island; Professor Lewis Alexander who supervised the preparation of this document - I must express my thanks to him for his advice and assistance. Dr. Neils West and Mrs. Ann West to whom I am sincerely indebted for making this dream come true.

Dr. Lewis, The Ambassador of Trinidad and Tobago to the U.S.A, for his assistance in the documents he brought to my attention. Mrs. Vidya Haracksingh for her help in sending me information from the various departments in Trinidad and Tobago.

My dear friend Ghosh for his patience and encouragement. Finally and by no means least my belated dad, my dearly beloved mother, and family for their support and inspiration on this project, I shall always be grateful to them.
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INTRODUCTION:

Maritime boundary delimitations have increased as a result of the greater number and diversity of possible boundaries arising from the seaward expansion of coastal state jurisdiction. In the 1960's we saw the increasing worldwide demand for ocean resources, such as offshore oil and gas and fisheries. This resulted in countries unilaterally extending their offshore claims, partially to secure a resource base, and partially for security. Consequently, the number and importance of maritime boundaries increased.

Alternative rules and principles which should be applied to maritime boundaries have been discussed at the Hague in 1930, at Geneva in 1958 and at the UNCLOS III conference from 1973 to 1982. The International Court of Justice has also decided several maritime boundary cases, for example the North Sea case 1969, but despite this, there is still much ambiguity as to what appropriate methodology should be used in order to delimit a maritime boundary. Consequently, there is considerable leverage for interpretation of the law, which remains as one of the controversial issues in the 1982 Law of the Sea Convention.

As a result of this, a maritime boundary dispute may persist for many years. This could bring about
delays in the exploration of the resources of the particular disputed area. This is especially true in the case of Trinidad and Tobago, where the outcome of one particular bilateral agreement could affect the boundary of a third country which may not be party to the negotiation. For example a bilateral agreement between Trinidad and Tobago and Barbados could affect Grenada who is not party to the agreement.

In ancient days, little or no importance was attached to the sea-bed, and there was no burning desire to control it. However, with the growth of civilization, communication and trade, and with the development of science and technology capable of exploiting the resources of the seabed and ocean floor, the sea is flourishing with unprecedented legal conflicts.(1)

At present the law of the sea is in the process of drastic change. In the past, the sea was the subject of political and military rivalry; but today economic considerations play an over-riding influence due to multiplicity of uses of the marine environment. Due to this increased activity, conflicts between different users are increasing. Traditional maritime freedoms are being questioned by coastal states. Emerging claims are prolific. Past concessions have become unrealistic and the public order of the sea is being vigorously challenged. The resultant effect is
that many of the existing rules are becoming obsolete. (2)

As stated by Dr. Kaldone G. Nweihed, delimitation of maritime space is the direct outcome of two obvious situations: contiguity vicinity (sharing a boundary) and multiplicity (more than one boundary) of political sovereignties within the area in common. The first situation becomes more evident in semi-enclosed seas vis-a-vis continental coasts on open ocean space while the second is the result of complex historic processes in which economics, geopolitics, strategy, social relations and other factors are involved. The Caribbean region identifies with both situations. (3)

The literature on delimitation is fairly scant, in comparison to that available on other related issues of the law of the sea, other than the precise articles contained in the 1958 Geneva conventions dealing with delimitation, and the 1982 Law of the Sea Convention. The other main sources which the investigator draws upon are jurisprudence and state practice.

The method that will be used will be inductive: individual cases are studied on their own merit and thus, certain principles and methods are singled out to be compared and classified.

In quantitative terms about 100 maritime
boundaries have been settled globally. Thus in qualitative terms, the world community enjoys the benefit of several test cases and a lot of examples where maritime delimitation has been successfully achieved in certain delicate areas at reasonable cost.

Orderly and rational offshore resource development requires that there be precise definition of the area in which such developments may occur, or else, a joint development scheme set up between the countries involved. Uncertainty over ownership or title can be a major deterrent to resource exploration and development.

Where the continental shelf or other maritime jurisdiction zones of neighbouring states overlap, and they frequently do in semi-enclosed seas, delimitation of maritime boundaries between zones is required in order to establish the precision and certainty necessary for marine resource uses.

In this thesis, the author will try to delimit the maritime boundaries between Trinidad and Tobago—Venezuela, Grenada and Barbados. The criteria that will be used for delimitation are "special circumstances," i.e., economic dependence of Trinidad and Tobago on offshore oil as opposed to Venezuela's larger reserves on land, in the Gulf of Maracaibo, and in the Orinoco Oil Belt region. In the case of
Barbados and Grenada tourism and agriculture are their economic base. Historically little or no exploration of oil was carried out by either Barbados or Grenada, also there is no infrastructure present in both these countries for oil refining. In the Anglo-Nowegian Fisheries case (1951), "special circumstances" was justified in international law. The court in this case recognised, the economic interest of the coastal fisheries to Norway.

In the last two national budget presentations in Trinidad and Tobago, it was emphasized that oil remains the backbone of the country's economy. This industry has played a critical role in the economic development of the country over the past decade, as the principle source of foreign exchange and fiscal revenue for financing the massive improvements undertaken in the country's social and economic infrastructure. Therefore, it is hypothesized that if the equidistant method is used to delimit the maritime boundaries off the east, north and part of the south coast of Trinidad and Tobago, the economy will lose more, as opposed to, what will be gained if special circumstances are used, (special circumstances meaning: to take into consideration the social, economic and political-economic dependence of oil revenue to sustain the economy of Trinidad and Tobago.)
Under international law, the basic obligation with respect to delimitation of unsettled maritime boundaries is that the boundary be fixed by agreement between the nations involved. (5)
Chapter 1: Trinidad and Tobago Oil Industry

Geography:

The Republic of Trinidad and Tobago is a two-island nation located in the southeastern Caribbean Sea, off the northeast coast of Venezuela, on the continental shelf of South America. It is believed that Trinidad was once a part of the South American mainland, and Tobago a few miles northeast of Trinidad is part of a sunken mountain chain related to the continent.(1) Its areal size is nearly 2,000 sq. mls, (5,000 sq km.) - located approximately between 10° 00' N and 11°35' N latitude and 60° 30' W and 62° 00' W longitude. The sedimentary oil prospect area includes some 1,600 sq mls. (4,000 sq km.) onshore, and 11,300 sq. mls., (29,000 sq km.) offshore to a water depth of about 600 feet. (200 m).(2) See Map 1.

Geology:

Trinidad is geologically a detached part of the South American continent,(3) separated from it by the Gulf of Paria, an oval-shaped body of water with narrow straits on the north west and south east bearing respectively the picturesque names of the Dragons Mouths and the Serpents Mouth.

The geology of Trinidad is closely related to that of east Venezuela, since the southern part of
Map 1:

Location Map of Trinidad and Tobago.
the island is a continuation of the Maturin Basin, while the northern range of mountains is a continuation of the Venezuelan Andes. The "basement" here is probably composed of the northward-slanting South American "shield", with its intensely folded metamorphic rock, and with the minerals arranged in layers. (4)

Trinidad is positioned at the mouth of the Orinoco river and according to Van Andel & Postma (1954), the islands of Trinidad and Tobago and their surrounding continental shelf form part of the shelf of the greater marine Orinoco region. (5)

The east-west trend of the northern range is deceptive, since the general structural trend is really northeast-southwest. The direction agrees with the average strike of the pre-Oligocene beds both in Barbados and along the north of Venezuela as far as Puerto Cabello. (6) (See Map 2, 3 and Fig.1).

Trinidad is characterized by an extremely intricate system of folding and faulting. Thrusting seems to have come from both north and south, so that the least deformed portion is a central strip with closely folded and broken beds on either side. The differential folding intensity may also be related to the age of the beds, since, with almost continuous folding and faulting movements in action, the most
The Petroleum Geology
Trinidad

Map 2:

Generalized Geology of Trinidad

TRINIDAD B.W.I.
GENERALISED GEOLOGY

- Miocene & Pliocene
- Oligocene - Eocene
- Mesozoic
- Mud Volcanoes
- Oil Fields

(Barr, and others, 1958)
Paleogeographic map of Trinidad During Late Miocene Time

Map 3:

[Map showing the paleogeographic map of Trinidad during the Late Miocene time.]
Figure 1:

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<td></td>
<td>Cenozoic</td>
<td>345,000,000</td>
</tr>
<tr>
<td></td>
<td>Cenozoic</td>
<td>405,000,000</td>
</tr>
<tr>
<td></td>
<td>Cenozoic</td>
<td>425,000,000</td>
</tr>
<tr>
<td></td>
<td>Cenozoic</td>
<td>500,000,000</td>
</tr>
<tr>
<td></td>
<td>Cenozoic</td>
<td>800,000,000</td>
</tr>
</tbody>
</table>

affected beds would be those which have been longest subjected to these forces.

An Inventory Of Resources:

Hydrocarbons are normally found in sandstone reservoirs, but are also found in carbonate (limestone and dolomite) reservoirs at depths of approximately 1,000 to 15,000 feet, either in the form of crude oil, or natural gas. Many of the natural gas deposits contain very light crude oil called condensates. (7)

Trinidad and Tobago is a geologically ideal state, in terms of the presence of source rocks that generate crude petroleum. However, two major regional faults subdivide this essentially petrolierous region into different provinces that have some striking differences. Off the north coast of Trinidad, the sedimentary rock cover is relatively thin, and this is underlain by a thick sequence of metamorphosed basement rock. In the southern part of Trinidad, the major oilfields of the past have been identified in multi-layer sandstone reservoirs that extend westward into the Gulf of Paria, while off the East Coast extensive but somewhat younger sediments stretch beyond the continental shelf. (8)

All three provinces have abundant deposits of petroleum, the type and frequency of these deposits
varying according to the area's geological age and the environment in which the rocks were deposited.

**Offshore Exploration and Geology:**

Intensive offshore exploration has been carried on off the coast of Trinidad in recent years, resulting in a number of important discoveries of oil and gas in Miocene sandstone reservoirs. The first of the offshore oil accumulations to be developed was Soldado, which lies off the southwest coast, and produced 13.5 million barrels in 1981. The first success on the east coast was Point Radix - near Mayaro. This discovery was made in 1968, and other oil accumulations have subsequently been found in this area.

The Teak offshore oilfield lies about 25 nautical miles to the southeast of Trinidad. It was discovered in 1969 and put into production in 1972. The structure is a broad anticline in the eastern part of the east Venezuelan Tertiary basin along a compressional fold belt related to the Caribbean and South American tectonic plates. See Map 4.

It was at one time thought that the oil in Trinidad was related in origin to the lignites which occur in the upper Tertiary formation. However, nearly all these lignites have since been proved to
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Crude Oil Production</td>
<td>51.2</td>
<td>68.1</td>
<td>78.8</td>
<td>77.5</td>
<td>83.6</td>
<td>83.8</td>
<td>78.3</td>
<td>77.4</td>
<td>69.1</td>
<td>64.6</td>
<td>56.4</td>
<td>61.9</td>
</tr>
<tr>
<td>(million barrels)</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Central Government Revenue</td>
<td>85.1</td>
<td>986.0</td>
<td>1,209.5</td>
<td>1,426.4</td>
<td>1,782.6</td>
<td>1,718.4</td>
<td>2,347.5</td>
<td>4,136.5</td>
<td>4,253.0</td>
<td>3,311.2</td>
<td>2,485.1</td>
<td>2,715.3</td>
</tr>
<tr>
<td>(TT$ million)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Petroleum Revenues</td>
<td>380.4</td>
<td>1,180.0</td>
<td>1,688.1</td>
<td>2,126.7</td>
<td>2,973.4</td>
<td>3,052.1</td>
<td>4,032.5</td>
<td>6,433.3</td>
<td>7,099.9</td>
<td>7,051.5</td>
<td>6,556.2</td>
<td>6,498.3</td>
</tr>
<tr>
<td>Total Revenues</td>
<td>521.5</td>
<td>996.5</td>
<td>1,245.5</td>
<td>1,413.4</td>
<td>1,856.1</td>
<td>1,777.1</td>
<td>2,380.5</td>
<td>4,593.8</td>
<td>3,312.5</td>
<td>2,485.1</td>
<td>2,715.3</td>
<td>2,913.4</td>
</tr>
<tr>
<td>$ of Total</td>
<td>20.2</td>
<td>69.0</td>
<td>69.0</td>
<td>60.3</td>
<td>60.0</td>
<td>56.3</td>
<td>56.2</td>
<td>59.0</td>
<td>46.9</td>
<td>37.0</td>
<td>16.8</td>
<td>11.8</td>
</tr>
<tr>
<td>Value of Merchandise Exports, F.O.B.</td>
<td>267.5</td>
<td>933.2</td>
<td>931.9</td>
<td>1,017.8</td>
<td>1,179.3</td>
<td>1,226.3</td>
<td>1,649.3</td>
<td>2,541.7</td>
<td>2,607.8</td>
<td>2,224.8</td>
<td>2,108.3</td>
<td>2,115.0</td>
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<tr>
<td>(US$ million)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exports of Crude Oil and Petroleum Products</td>
<td>267.5</td>
<td>933.2</td>
<td>931.9</td>
<td>1,017.8</td>
<td>1,179.3</td>
<td>1,226.3</td>
<td>1,649.3</td>
<td>2,541.7</td>
<td>2,607.8</td>
<td>2,224.8</td>
<td>2,108.3</td>
<td>2,115.0</td>
</tr>
<tr>
<td>Total Merchandise Exports</td>
<td>521.5</td>
<td>996.5</td>
<td>1,245.5</td>
<td>1,413.4</td>
<td>1,856.1</td>
<td>1,777.1</td>
<td>2,380.5</td>
<td>4,593.8</td>
<td>3,312.5</td>
<td>2,485.1</td>
<td>2,715.3</td>
<td>2,913.4</td>
</tr>
<tr>
<td>$ of Total</td>
<td>52.3</td>
<td>78.1</td>
<td>81.6</td>
<td>83.6</td>
<td>77.5</td>
<td>82.7</td>
<td>84.5</td>
<td>87.6</td>
<td>84.4</td>
<td>81.3</td>
<td>81.2</td>
<td>80.2</td>
</tr>
</tbody>
</table>

Source: Ministry of Energy and Natural Resources.
lie stratigraphically above the oil reservoir beds and to be separated from them by unconformities. (11)

**Importance Of The Oil Industry To Trinidad Economy:**

The point cannot be overemphasized that for more than half a century, the local oil industry has been vitally important to the economic growth and development of Trinidad. The oil industry is the highest single revenue earner, brings in the most foreign exchange for the country, and is generally regarded as the pace-setter for national wages and fringe benefits. The petroleum sector receives the largest share of all direct foreign investment capital employed in the domestic economy.

In 1984, petroleum-related and petrochemical products contributed 40% of the gross domestic product, and also comprised about 80% of the total merchandise handled in the export trade. (12) Thus as far as the international public image of Trinidad is concerned, the economy is identified largely with petroleum. See Table 1.

The energy sector of Trinidad, a nation of 1.2 million people, is based on two primary energy sources, oil and gas, and is predominantly export
oriented. This sector has been the dominant force in
the country's economic development, and the country's
economic performance has been closely tied to trends
in international energy prices. During 1974-81,
dramatic increases in government oil revenues
occurred as a result of increased oil output and the
rapid increase in world oil prices. This increase in
revenue fueled a growth in gross domestic product of
over 6% per annum, or more than double the level
during the previous eight years. (13)

Receipts from the petroleum sector provided
an average of about 42% of Central Government
revenues. (Table 1), and Central Government
expenditure became the dominant influence in the
economy. At the height of the oil boom, export
revenues from crude oil and petroleum products sales
reached annually about U.S. $2.2 billion. (14)

Why Offshore Oil?
The volume of oil production from 1908 to
1967 indicates the stagnation of land production
during 1939 to 1953, and the relative importance of
marine production in the 1960's, (Fig 2). In 1967 for
example, marine production contributed 25 million
barrels, or nearly 40% of an overall total of 64.9
million barrels. (15)

In fact, between 1934 and 1960 only two
significant new land based fields were discovered. Given the peculiar geological characteristic of Trinidad's onshore geology, (ie. comprised of sand and multiple faulting rather than large continuous blocks.) (16) and the consequent tendency to rapid decline in well productivity, the failure to find new land based reserves and the limited contribution made by the various secondary recovery methods employed would have had serious consequences for the economy had it not been for the discovery of the Soldado Marine fields in 1954.

There are both direct and indirect economic implications - any increase in national economic activity and of government revenues in such economies as that of Trinidad and Tobago is relatively narrow based. When the economic base is petroleum the swing can be dramatic, and the psychological implications considerable.

Futhermore, the income and revenue flowing from oil lead to the undertaking of development projects and to a pattern of government spending that generates a lasting and insistent demand for more current expenditures to sustain and service projects which are not usually self-financing. Any reduction in petroleum production and therefore in revenue (given a fixed level of prices), not only adversely affects plans for expanding the base of the economy,
but threatens the very existence of projects, (economic and social), already began.

**History Of The Oil Industry:**

The development of the local petroleum industry was initiated by the British during the first quarter of this century, when Trinidad was still a crown colony of Britain. British capital was channelled into the petroleum of this territory, not only as a source of investment, but also because Britain needed the resource to fuel her expanding fleet. For many years Trinidad ranked as the leading oil producer in the British Commonwealth. Today it produces .5% of the total world production of oil. (17)

The Trinidad oil industry was fairly well established by 1914 with some twelve operating companies producing a total of one million barrels a year, and employing around 1,200 persons.(18)

Interest in Trinidad's oil prospects continued after World War I, and in 1920, as many as forty companies were actively exploring for oil. However, the international economic climate reduced the flow of capital into Trinidad, which resulted in a slowdown in exploration programs. The few oil companies able to survive during the economic
Figure 2: Trinidad and Tobago: crude-oil production per annum, 1908-1989.

Source: Trinidad and Tobago, Ministry of Petroleum and Mines.
depression of the 1930's were those which had profitable shallow production, the sales of which generated the capital required to explore deeper prospects.

In 1937, a major geophysical exploration program was initiated in Trinidad, as seismic and gravity surveys were employed to find the deeper oil-bearing structures. In 1942, new down-hole logging tools were introduced in the effort to find oil. (19)

Interest in expanding the search for oil resources in the offshore areas was restrained by the lack of an agreed upon maritime boundary between Venezuela and Trinidad. A common boundary was established by the treaty of 1942. In 1952, an oil exploration concession in the Gulf of Paria was granted to a major oil company. After extensive geological and geophysical surveys, the first offshore well was drilled in 1954, at a site nineteen miles southwest of Port-of-Spain. The well was drilled to a depth of 6,841 ft and found natural gas. Later in 1954, the Solado oilfield was discovered in the Gulf of Paria about 8.5 miles west of the onshore Point Fortin field. The Solado field provided the bulk of Trinidad's production for many years. (20)
In 1960, interest was shown in the east coast on the assumption that since the west coast and Gulf could be much more prolific than the land area, the possibility existed that the east coast would prove to be even more so. In 1961, the Pan American Oil Company (it was changed to Amoco, Trinidad), secured an oil company license over an area covering 2 million acres, that includes almost the whole east coast. The terms of the original license granted to Amoco, prescribed that at least 25% of the licensed area should be surrendered within five years, and an additional 25% should be surrendered in the subsequent five years. (21)

In 1968 Amoco found the first commercial oil and gas on the east coast. Additional exploratory and production drilling is being carried out in the areas currently held under license by Amoco and Tesero oil companies. A great deal of interest has been expressed by many different oil firms in the open acreage of the eastern continental shelf of Trinidad and Tobago.

In 1969, at the request of the government of Trinidad and Tobago, the United Nations carried out exploration work on the north coast in search of
petroleum. The full seismic data resulting from the survey was made available at a price to any firm that was interested. The firms were given a reasonable period in which to assess the data and to submit their bids for specific blocks. The area had been divided into rectangular blocks each comprising approximately 82,920 acres. Each successful bidder was to make provision for the National Petroleum Company as partner; this was and still remains an important requirement of all new concessions granted by the government. (22), See Map 5.

In the mid 1970's, the offshore continental shelf area north of Trinidad was awarded to five different companies for exploration purposes. Six wells were drilled to evaluate these offshore tracts during 1971.

Successful field delineation wells were drilled about fifty miles off Galeota point by Texaco-Trinidad Inc. Originally discovered in 1977, the well is located at water depth of 300 to 500 ft. (23)

The Trinidad and Tobago Oil Company Ltd. drilled a successful well, "The Hibiscus," off the north coast of Trinidad, where there is a production of 12 million cubic feet of natural gas per day. The
Map 4:
MAP SHOWING OILFIELDS, GAS FIELDS AND IMPORTANT WELLS IN TRINIDAD AND TOBAGO

SCALE

LEGEND

Oil producing areas
Gas producing areas

MARINE BASIN BETWEEN TRINIDAD AND TOBAGO

NORTHERN BASIN

SOUTHERN BASIN

ATLANTIC OCEAN
area north of Trinidad and west of Tobago has been considered as having a high risk potential, because of limited information. This area is also subjected to the resolution of sovereignty between Trinidad and Tobago and Barbados and Grenada.

In 1980-1981, another seismic survey of open acreage off the north and east coasts of Trinidad was undertaken. The data were processed and interpreted in 1983/84 and put up for sale in mid year 1984 at TT$1.2 million per package. The sale closed in mid-1985, at the close the bids were evaluated. (24)

Subject to prevailing market conditions, and perceptions of the future of the market, new acreage is expected to be awarded towards the end of 1987. Currently, a team of officials is reviewing the proposed terms and conditions of a model production sharing contract under which such acreage may be leased. The ultimate objective of this entire exercise is to stimulate exploration activity and eventually generate future production in the deeper marine areas off the north and east coast.

At the end of 1984, the total annual production stood at 62,042,000 barrels. The table below reflects the steady increase in the nation's

Table 2 Trinidad And Tobago Average Crude Oil Production (in 000 barrels).

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Marine Prod.</th>
<th>Marine as % of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1974</td>
<td>68,136</td>
<td>49,346</td>
<td></td>
</tr>
<tr>
<td>1975</td>
<td>78,621</td>
<td>63,525</td>
<td>80.8</td>
</tr>
<tr>
<td>1976</td>
<td>77627</td>
<td>61325</td>
<td>78.9</td>
</tr>
<tr>
<td>1977</td>
<td>83620</td>
<td>67135</td>
<td>80.4</td>
</tr>
<tr>
<td>1978</td>
<td>83778</td>
<td>67206</td>
<td>80.2</td>
</tr>
<tr>
<td>1979</td>
<td>78258</td>
<td>61096</td>
<td>78.1</td>
</tr>
<tr>
<td>1980</td>
<td>77618</td>
<td>60510</td>
<td>78.0</td>
</tr>
<tr>
<td>1981</td>
<td>69107</td>
<td>53310</td>
<td>77.1</td>
</tr>
<tr>
<td>1982</td>
<td>64619</td>
<td>49334</td>
<td>76.3</td>
</tr>
<tr>
<td>1983</td>
<td>58344</td>
<td>44567</td>
<td>76.4</td>
</tr>
<tr>
<td>1984</td>
<td>62042</td>
<td>48321</td>
<td>77.8</td>
</tr>
</tbody>
</table>

(Source: Central Statistical Office, Trinidad and Tobago 1986.)

Marine production accounts for an approximate 78% average of the total output as the above figure shows, and there is every indication that this upward trend in production will continue.

Since 1981 this industry has been in decline. (above table).
Internationally, demand has weakened, prices of both crude and refined products have fallen, and substantial refinery capacity throughout the world has been shut in or operated with reduced capacity.

Locally, the decline in crude production which started in late 1978 continued through to 1983. The operating companies, no doubt affected by the international developments, proceeded to rationalize their operations and cut back expenditures.

In addition, the overall performance of the industry was affected by the protracted negotiations involving the future role of Texaco in Trinidad & Tobago; Tesoro's offer for sale of its shares in Trinidad - Tesoro Company (25); and the need to follow the precise requirement of the level of taxation in the light of oil price decreases.

Where, therefore, one may justifiably ask, is oil production heading in 1987? For the first time since 1978, an increase in production has been recorded; annual production which stood at the all time high of 83.8 million barrel in 1978 declined steadily to 58.3 million barrels in 1983. In 1984, however, there was a 6.3% increase in production over the 1983 figure of 58.3 million barrels. (see table 2)
Amoco is the largest oil producer operating off the east coast of Trinidad. (Table 3). Texaco's onshore operation has been the other major fully private sector oil operation, but in March 1985, Texaco's onshore assets were transferred to the government along with the Pointe a Pierre refinery. Both Texaco's former onshore assets and the refinery (except its marine operations) now are managed by Trinidad and Tobago Oil Co. (Trintoc). With the additional acquisition of Tesoro's share in the Trinidad - Tesoro joint venture in November 1985, all onshore holdings except for the very small holdings of Premier Consolidated now are in government hands.(26)

REFINING:

Apart from developing the exploitation of the nation's crude oil resources, British interests also built up the refining arm of the industry which is now the dominant feature of local petroleum operations. (Table 4)

As stated in the 1969 Petroleum Act the earliest leases required a concessionaire to provide refinery capacity for at least 50% of its crude output, within two years after attaining certain levels of production, which are arbitrarily fixed for each lease.
Table 3: OIL PRODUCERS IN TRINIDAD AND TOBAGO, 1984

<table>
<thead>
<tr>
<th>Producer</th>
<th>Ownership</th>
<th>Field Location</th>
<th>Share of 1984 Production ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amoco</td>
<td>100% Amoco</td>
<td>Offshore, E. Coast</td>
<td>53</td>
</tr>
<tr>
<td>Trinmar</td>
<td>1/3 Texaco</td>
<td>Offshore, Gulf of Paria</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>1/3 Trinidad-Tesoro, 6/</td>
<td>Offshore/onshore</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>1/3 Trintoc</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trinidad-Tesoro a</td>
<td>51% Trintoc</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>49% Tesoro</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Texaco b</td>
<td>100% Texaco</td>
<td>Onshore</td>
<td>6</td>
</tr>
<tr>
<td>Trintoc</td>
<td>100% Government</td>
<td>Onshore</td>
<td>5</td>
</tr>
<tr>
<td>Premier Consolidated private consortium</td>
<td>Onshore</td>
<td>0.2 -</td>
<td></td>
</tr>
</tbody>
</table>

a/ The Government acquired Tesoro Petroleum Corporation's stake in Trinidad-Tesoro in November 1985. As of early 1986, the Mission's understanding was that the former holdings of Trinidad-Tesoro would be managed by Trintoc.

b/ Onshore holdings were acquired by the Government in March 1985, and are now under the management of Trintoc.

Source: Ministry Of Petroleum and Mines, Trinidad and Tobago.
Table 4:

TRINIDAD AND TOBAGO

PRODUCTION OF CRUDE OIL BY COMPANY 1975 - 1984
(Thousand barrels per day)

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Amoco</td>
<td>124.7</td>
<td>117.5</td>
<td>135.5</td>
<td>137.7</td>
<td>120.6</td>
<td>120.0</td>
<td>103.0</td>
<td>92.9</td>
<td>81.7</td>
<td>90.1</td>
</tr>
<tr>
<td>Trinmar</td>
<td>47.9</td>
<td>47.8</td>
<td>46.3</td>
<td>44.4</td>
<td>44.2</td>
<td>39.7</td>
<td>37.4</td>
<td>38.0</td>
<td>37.1</td>
<td>38.1</td>
</tr>
<tr>
<td>Trinidad-Tesoro</td>
<td>17.8</td>
<td>18.5</td>
<td>19.0</td>
<td>20.4</td>
<td>21.5</td>
<td>24.9</td>
<td>24.3</td>
<td>22.7</td>
<td>21.4</td>
<td>22.6</td>
</tr>
<tr>
<td>Trintoc</td>
<td>8.7</td>
<td>7.0</td>
<td>8.3</td>
<td>8.7</td>
<td>9.1</td>
<td>8.6</td>
<td>7.6</td>
<td>7.7</td>
<td>8.0</td>
<td>8.6</td>
</tr>
<tr>
<td>Texaco</td>
<td>18.5</td>
<td>21.1</td>
<td>19.7</td>
<td>18.0</td>
<td>18.6</td>
<td>18.7</td>
<td>16.3</td>
<td>15.4</td>
<td>11.2</td>
<td>9.7</td>
</tr>
<tr>
<td>Premier Consolidated</td>
<td>0.4</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td>Total Production</td>
<td>216.0</td>
<td>212.2</td>
<td>229.1</td>
<td>229.5</td>
<td>214.4</td>
<td>212.0</td>
<td>189.3</td>
<td>177.0</td>
<td>159.9</td>
<td>169.5</td>
</tr>
</tbody>
</table>

Source: Ministry of Energy and Natural Resources.
The result was that until 1943, refining capacity and domestic production were each year of the same amount with, if anything, a small overcapacity in the refining sector. Thereafter, production stagnated, while refinery capacity grew apace without any pressure or persuasion from the government. (27)

The geographical and other advantages of Trinidad and Tobago as a refinery centre with easy access to either North or South America, or to Western Europe and Africa were recognized.

In 1957, Texaco Inc. purchased Trinidad Oil Co. formerly Trinidad Leasehold Ltd. and immediately expanded and later continued to expand and diversify the capacity of what was the largest refinery in the British Commonwealth. The results, in terms of the relationship between domestic production and refinery throughput, and the dependence upon imported crudes for sustaining the refinery, are clearly shown in Fig 3. (28) This dependence on foreign imported crude oil presented problems or at least contained an element of potential instability and weakness in the petroleum industry, which had become the main pillar of the economy. The oil industry was subject to an inordinate and unacceptable dependence upon foreign production, business policy and decision making. It
Figure 3: Trinidad and Tobago: comparison of production and imports of petroleum with refinery throughput, 1946-1967

Source: Ministry of Petroleum and Mines, Trinidad and Tobago.
therefore became important for the government to stimulate domestic production; and since land production of petroleum had ceased to furnish the new large scale output, it was necessary to turn to the marine areas. Hence, the incentives given to marine production in the Gulf of Paria in the form of the Submarine Well Allowance of 1954, and the special terms provided in the original license agreement with the Pan American Oil Co. in 1961 for exploration, etc. off the east coast of Trinidad. (29)

Most of the country's production of crude oil is refined at two refineries - the Trinidad and Tobago Oil refinery (Trintoc) or Texaco refinery. But all the crude produced by Amoco (about 60% of total production) is exported, while the remainder is refined at either the local Trintoc or Texaco refineries.

These two local refineries have a rated capacity of approximately 140,000 barrels per day. Over the past couple of years, because of the adverse economics of refining, the level of utilization of refining capacity has been declining steadily. (and was approximately 50 - 55% of capacity in 1979). (30)

The two local refineries produced a very wide
range of petroleum products, most of which are exported to the U.S.A. The dominant product is fuel oil, which accounts for approximately 55% of total output. (31)

Trinidad and Tobago, although it imports crude oil for refining and re-exports at present, cannot be classified as a net importer of petroleum products for domestic consumption; the country's entire domestic energy requirements are met from local production.

Submarine Well Allowance:

When the Solado fields were discovered in 1954, the oil firms approached the government of Trinidad and Tobago with a request for a depletion allowance, (somewhat similar to that which is obtained in the U.S.A.). They argued that the cost was higher for operation offshore, claiming well cost would be two to three times that for land operation; and it was essential to have such an allowance otherwise no new development was possible. In response to the need to find new reserve for the decline in stagnant land production, a submarine well allowance was instituted through Income Tax Ordinance No. 48 of 1955.

Briefly the act provided, as a deduction from
gross income, an allowance to the oil firms at the following rates.

On a per well basis:

- 10% of the gross value of the production for each year from 1956 to 1960 inclusive.
- 15% from 1961 to 1965 inclusive.
- 20% from 1966 to 1982 inclusive.

The act stipulated, however, that the deductions must not exceed 40% of the chargeable income for the taxable year (for each well), before deducting the allowance. (32)

In 1970, the government reduced the submarine well allowance to 10% on the basis of the following:

1) The submarine well allowance was calculated on the gross income and, in that sense, ranked equally with the royalty payment to the sovereign and owner. In the U.S.A, percentage depletion is computed as a percentage of the gross income after deducting royalty payments.

2) While the royalty rate was fixed at 10%, the submarine well allowance escalated, as stated above, from 10 to 15 to 20 percent of the gross income, so that in the final period the operator received twice as much as the sovereign.

3) The greater benefits were to accrue, when the oil firms had less need for them and when
production was at its peak. The result was that the field would be approaching exhaustion before the government revenue would have begun to be relieved of the burden of the allowance. (33)

The submarine well allowance was an incentive to reinvest by the companies for new oilfields - but instead the companies saw the allowances as funds to be utilized in increasing the dividend payments to shareholders, or for investment in more productive areas in other countries.

In April 1981, new legislation, retroactive to January 1980, was enacted amending the Petroleum Act of 1974. The major thrust of the amendment was to provide tax relief to the oil companies. There were four major policy objectives in the bill:

a) To promote further petroleum industry development.

b) To enhance government administrative control over the petroleum industry.

c) To insure that the state receives the maximum benefit from petroleum production and sale.

d) To establish a taxation policy that would be harmonious with international tax systems. (34)

Contractual and Fiscal Regime:
All production of petroleum in Trinidad and Tobago is regulated by license. A number of production sharing contracts have been signed, but none have resulted in the discovery of oil, and although gas discoveries were made, they remain shut in.

Financial obligations are as follows:

a) Royalty on crude oil is payable at the rate of 12.5% for Amoco and 10% for other producers. It is based on the value of products deemed to have been refined from the crude.

b) Petroleum duty is a per barrel payment designed to cover the annual expenses of the Ministry of Energy and Natural Resources. Currently it amounts to about $.16 U.S. per barrel.

c) Petroleum Production Levy has been charged on all producers in order to subsidize the retail price of petroleum products in the country.

d) Petroleum Profits Tax dates back to the Petroleum Taxes Act of 1974. The current rate is 45% of taxable income.

e) Unemployment Levy is levied on all businesses in the country at the rate of 5% of taxable income.

f) Depreciation; in general the capital allowances provided for in the Income Tax Ordinance Act are fairly conservative, but some special
features have been adopted over the years to encourage exploration and production. For marine operations, a submarine production allowance was introduced.

g) Witholding Tax applies to remittances of dividends of profits. The statutory rate is 25% but this is reduced to the 10-25% range if a double taxation treaty is in effect. The rate for the U.S.A. is 10%.

h) Supplemental Petroleum Tax (SPT) was introduced by the Petroleum Tax (Amendment) Act of 1981, which was made retroactive to January 1, 1980. SPT is levied on gross income from the sale of crude oil.(35)

By late 1982, as oil prices began to decline and production cost continued to increase, it became clear that the SPT taxes were too severe. A comprehensive review of the system of taxation of marine producing companies, involving extensive discussion with these companies, was completed in 1984 on the basis of which the Cabinet agreed to the following:-

- That royalty payments on crude oil be deducted from gross income prior to the determination of the Supplemental Petroleum Tax with effect from
January 1, 1984.

- That the existing schedule of production allowances based on incremental production be replaced by a single annual production allowance of 30% of gross income from up to 2 million barrels of oil production per field.

- That the existing incremental investment allowance applicable to marine areas, whereby 100% of the tangible drilling costs is allowed as a deduction against gross income, prior to the determination of the supplemental petroleum tax, be eliminated and replaced by the two allowances designed to facilitate investment in the plant and to promote intangible drilling activity; as of Jan 1, 1985.

- That the Submarine Well Allowance be terminated with effect from Jan 1, 1984.

- That the rate of Supplemented Petroleum Tax for marine operations be reduced from 60% to 55% with effect from Jan 1, 1984.\(36\)

This entire package of proposals has as its prime objective the viability of the local oil industry. Indeed, while these measures may result in a marginal decrease in fiscal revenue in the very short term, they are intended to ensure a steady stream of revenue and continued significant contributions from the industry. Already we have seen an increase in the production of oil of 6.3% in 1984
over 1983. (37)

In response, the two major producing companies in the marine areas, Amoco and Trinmar have submitted for the consideration and approval of the Ministry of Energy and Natural Resources expanded work programmes for the period 1984-1989 over and above their normal activities. These programmes, which involve expenditure of approximately TT$1,000 million, are expected to prove up to an additional 100 million barrels of reserves and will also result in the production of more heavy oil than at present. (38)

Further, a technical committee, under the direction of a Ministerial Team, has been reviewing with the producing companies specific measures which may be taken in 1985-1989, to ensure the earliest possible development of some of Trinidad and Tobago's considerable reserves of heavy oil not exploited to date. (39)

**Oil Production Prospects:**

**Reserves:**

It is estimated that 4.9 billion barrels of oil may be recovered ultimately from the sedimentary basins of Trinidad, this assumes 2.1 billion barrels, the estimated statistical mean value, remains to be found as of January 1, 1979. (See table 5).
Approximately 1.8 billion barrels of oil have been produced from known fields. These may have nearly 1.1 billion barrels remaining to be produced, including nearly 0.3 billion barrels of difficult to recover oil which may be produced at higher cost. Thus, less than 60% of Trinidad and Tobago possible crude oil resources has been discovered and over 40% has been depleted through 1981. (40)

Table 5 showing Ultimately Recoverable Crude Oil Resources of Trinidad. (million barrels).

<table>
<thead>
<tr>
<th>Sedimentary Basins</th>
<th>Discover</th>
<th>Depleted</th>
<th>Undis.</th>
<th>Rem. recov (as of Jan., 1979)</th>
<th>Rem. recov</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern</td>
<td>2709</td>
<td>2209</td>
<td>1543</td>
<td>500</td>
<td>1166</td>
</tr>
<tr>
<td>East</td>
<td>1826</td>
<td>626</td>
<td>248</td>
<td>1200</td>
<td>1578</td>
</tr>
<tr>
<td>Northern</td>
<td>392</td>
<td>2</td>
<td>2</td>
<td>390</td>
<td>390</td>
</tr>
<tr>
<td>Total</td>
<td>4927</td>
<td>2837</td>
<td>1793</td>
<td>2090</td>
<td>3134</td>
</tr>
</tbody>
</table>


Approximately one-half of the remaining recoverable oil of Trinidad may be produced from the
East Trinidad Atlantic shelf area. In the past, however, only one-fifth of Trinidad's known oil resources have been found in the East Coast area. The Southern and Central basin could contain about one-third of the remaining southern land areas, although the area contains more than three-fourths of the known deposits. The Northern basin has an insignificant quantity of known deposits; ultimately, however, this area could contain as much as one-sixth of the remaining recoverable oil of Trinidad.

Trinidad and Tobago's currently identified natural gas reserves are considered adequate to sustain anticipated increases in demand until at least the year 2030. Proven reserves of unassociated gas offshore are estimated at nearly 11 trillion cubic feet, while total reserves, appropriately discounted for risk, are on the order of 18 trillion cubic feet. (41)

Table 6 Unassociated Natural Gas Reserves of Trinidad (trillion cubic feet)

<table>
<thead>
<tr>
<th></th>
<th>Proven Reserves</th>
<th>Total disc. Res.</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Coast</td>
<td>7.13</td>
<td>13.01</td>
</tr>
<tr>
<td>North Coast</td>
<td>3.42</td>
<td>4.96</td>
</tr>
<tr>
<td>Total</td>
<td>10.55</td>
<td>17.97</td>
</tr>
</tbody>
</table>

Source: MENR estimates based on Ryder Scott Study in UNDP World Bank Report, April, 1986.
Productivity per well:

In 1962 the industry had a ratio of approximately 28.1 barrels per foot drilled. (42) In 1984, the ratio was 32.3 barrels per foot drilled. This increase in productivity per foot drilled was due almost entirely to the higher productivity in the marine fields as compared to land fields. (43) In 1984, there were 3,133 producing wells in Trinidad, giving a daily production of some 165,948 barrels. Of this, 2,625 were land-based wells producing an average of 39,033 barrels/day. There are 508 marine wells which average approximately 126,915 barrels/day, nearly three times the average for the land and accounting for approximately 78% of total production. (44) Total land production in 1984 was 13.7 million barrels. Therefore it is not surprising, that despite the somewhat higher cost of marine operations, the marine wells appear to offer the sure way to economic well-being.

Decline in Prices and Production:

In the 1970s, there was the need to develop hydrocarbon production offshore because of the decline in oil prices during this period. One of the factors that influenced the decline was the rapid growth of world production. The prolific growth of
oil production in the Middle East could, unintentionally perhaps, bring about for those governments both a decline in unit prices and compensation in terms of total government revenues by increasing output. Trinidad and Tobago could do neither. It ceased to be the largest producer in the Commonwealth, and its share, 1% of world production, became less than 0.5%. The twin factors of declining prices and declining production combined to reduce government revenues and domestic income and to undermine the balance of payments position, with the result that the need for new supplies became imperative. The 2,000 square miles of land area having proved incapable of meeting the gap, the much greater marine area was the logical alternative.

With the recent decline in oil output and world oil prices, and a resulting decline in government revenue and expenditures, the Trinidad and Tobago gross domestic product fell by 6.1% (per annum) between 1983 and 1984, and the country's fiscal and balance of payments situations both deteriorated. (45) Exacerbating the situation is the sharp decline in the country's refinery operations. Imports of crude oil for processing have been halted because of negotiations between Tesero and Trinidad and Tobago Oil Company. Capacity utilization fell to
below 30% in 1983 and 1984, and both refineries have been incurring heavy losses. (46). A series of new natural gas based export industries have come on stream during the early 1980's, but their contribution to total economic output and export earnings has remained small but could surely boost the economy.

As international energy prices are not expected to strengthen significantly over the medium term, there is little prospect for an immediate return to past patterns of economic expansion based on high profits in the energy sector. The key objective is to minimize further short-term falls in economic output and secure modest growth in the late 1980's. Projected increases in unit costs and further declines in real oil prices imply that oil revenues will continue to fall substantially.

A strategy to minimize the decline in oil revenues will need to focus on a further fine-tuning of the oil producer tax structure, and a careful planning of investment in the public sector holdings onshore and offshore. To cut refinery operating losses and minimize reductions in oil export earnings will require a major restructuring of refinery operations. (47)
Further development of natural gas based industries cannot be expected to yield substantial new central government revenues, but a well-designed program for developing new joint-venture projects can provide a key source of value-added and foreign exchange by the end of the decade.

Viewing the Trinidad and Tobago economy in 1986, substantial progress has been made in adjusting to the post-oil boom era, particularly in terms of reductions in fiscal and balance of payments deficits, through cut-backs in government spending and a budgeting of foreign exchange for exports (48). Nevertheless, the economy remains largely dependent upon the petroleum sector. Petroleum revenues accounted for 42% of total central government revenue in 1986, and government expenditure were equivalent to 39% of Gross Domestic Product, at market prices. Exports of crude oil and petroleum products continued to account for over 80% of total merchandise export value.(49) Manufacturing, including refining and petrochemicals accounted for only 9.3% of Gross Domestic Product (GDP) at current prices. Agriculture comprised only 3% of GDP. During the oil boom, construction output was 13% of GDP, it remained larger than manufacturing and agriculture combined.(50) Services accounted for over one half of
GDP in 1984 in current terms, despite recent sharp declines. Further significant changes, particularly in the structure and potential sources of growth, will need to occur during the next decade (51)

Given the level of maturity in Trinidad and Tobago's oil development and the likelihood of further decline in crude oil prices during the remainder of the 1980's, there is little doubt that central government revenue from the petroleum sector will continue to decline. While future oil price trends are highly uncertain, most industry analysts foresee a continued fall in world prices, especially over the short term. There is little prospect for a recovery to recent price levels by the end of the decade. Although OPEC on August 2, 1986 called for a reduction in output of member countries and an increase in oil prices, there was no agreement then. (52) In February 1987, when OPEC decided to reduced oil production, the price of oil has increased from U.S $13 to $18 a barrel.

Without a major new program for investment in oil development in Trinidad, oil production would decline by at least 6% per annum during the remainder of the decade; compounding the effects of a weak market price structure on government revenue (53). However, increased investment in the oil sector,
spurred by recent revisions in the government taxation regime, can temporarily arrest the decline in oil production, and even enable production to increase slightly over the short term. Such a scenario could somewhat soften the decline in government oil revenues, as well as provide direct balance-of-payments benefits and a series of indirect economic benefits, but government oil revenues would still continue to fall, even with the most optimistic assumption regarding oil prices. Stabilization of production can only occur with substantial increases in unit costs and hence reductions in the net income available to be split between the government and the oil producers.

Table 7 Showing Oil Production of Trinidad and Tobago, 1975 - 1984. (million barrels per day)

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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>216</td>
<td>229.5</td>
<td>214.4</td>
<td>212.0</td>
<td>189.3</td>
<td>177.0</td>
<td>159.9</td>
<td>169.5</td>
</tr>
</tbody>
</table>

(source: Central Statistical Office, Trinidad and Tobago, 1984)

In 1984, typical costs per barrel produced onshore including depreciation, were reported about
Map 5: Areas under oil exploration in Trinidad and Tobago.
$13.50/bbl or almost three times costs offshore, this is because land deposits had been reduced and drilling had to be carried out at greater depths, while the average price obtained for the heavier onshore crude oil was some 15% lower than the average offshore price. Barring dramatic reductions in prices the onshore industry can profitably sustain further substantial increases in unit costs through increased investment in higher cost development, but the industry cannot be expected to provide the net income and government revenue levels of the past. With the present oil prices of $18 U.S./barrel, there is a great reduction in the government revenues from the industry.(54) The economy of the country is in great difficulty. The Trinidad and Tobago government has a lot to lose with these reduced OPEC oil prices.

Net income levels per barrel produced offshore will continue to far exceed onshore levels, but the effect of the increasing unit costs required to uphold offshore production levels and weak market prices will also serve to reduce government revenue levels.

Even with an increase in total production onshore and offshore of about 4% in 1985, and average price levels for the year at approximately May 1985 levels, the government percentage take of the oil industry's net income fell from about 85% to about
80%, while its average take of the market price could fall from some 65% to perhaps 58%. Corresponding total government petroleum revenues were TT$2.5 billion, which implied roughly a 20% reduction from 1984 levels in real terms. (54) There is a further decline in revenue during 1986-1987; for this period government percentage take of the market price will most likely be in the 40 - 45% range. Thus government oil revenue will be below TT$1.5 billion or less than half the 1984 level in real terms. (56)

Government oil revenues clearly can be expected to fall substantially in the future, but just how fast they will fall is uncertain. Future oil prices will play a critical role, but so will future investment patterns in the oil industry, which will define the relationship between increasing unit costs and increasing production above rates of natural decline. This relationship underlines the importance of refining the government's taxation and investment incentive policies towards the sector - a process which should include greater sophistication in monitoring and stimulating industry responses, consideration of the impact of future price changes, and to some extent, a balancing of revenue maximization against other economic benefits from production. Also the expansion of its claims offshore
in order to increase the possible areas where oil could be found could be beneficial.

**Economic Growth:**

While the indirect effects on GDP of developments in the petroleum sector (especially oil price developments), caused by decline in government petroleum sector revenues, have major negative implications for future economic growth, there is a significant potential for increase in the direct value-added contribution of the petroleum sector to GDP. Of key importance is the further development of the natural gas-based petroleum industry, therefore there is need to develop the gas fields on the east coast and north coast of Trinidad and Tobago.

Over the short term, increases in petrochemical output are limited to potential gains through improvements in capacity utilization or decentralization in existing plants, but the commissioning of a series of new plants by the end of the decade could make a significant contribution to economic growth.

The optimal pace of development of new petrochemical plants will need to be determined by rigorous economic and financial analysis on a projet-by-project basis. In a rapid growth scenario, output of ammonia (including ammonia used for urea production), could conceivably reach about 2.7
million tons by 1990, compared with 1.3 million tons in 1984. If the proposed methanol plant is commissioned by 1990, methanol output could rise to over 900,000 tons in 1990 compared to 180,00 tons in 1984.(57)

Assuming value added levels per unit output on par with recent levels, value added in the petrochemical industry from these developments would increase to two and one-half times the 1984 level by 1990. The share of the petrochemical industry in the Gross Domestic Product would surely rise in 1990.

Summary:

The failure to find new land based reserves would have had serious consequences on the economy of Trinidad and Tobago, had it not been for the discovery of marine fields. Marine production accounts for an approximate 78% of total production in 1984. The backbone of the economy of Trinidad and Tobago is based on the local oil industry. In 1984 this industry contributed 40% of the gross domestic product. It also comprised about 80% of the total merchandised handled in the export trade. This sector has been the dominant force in the country's economic development.
Chapter 2: Venezuela Oil Industry and the Tourist Industry in Barbados and Grenada

Venezuela:

The Republic of Venezuela occupies most of the northwest coastal area of South America; its areal size is approximately 352,100 sq.mls (912,100 sq.km). It is located mostly between 2°N to 15°N latitude and 60°W to 73°W longitude. The sedimentary areas which are actually and potentially petroleum prospective total 123,600 sq.mls (320,000 sq. km), or 35% of the total land mass. In addition, Venezuela has 32,000 sq. mls of continental shelf or (83,000 sq.km.), measured out to the 600 ft depth (approximately 200 m isobath). See map 8.

There are five sedimentary areas of historic interest. The most important from a historical crude oil production viewpoint are: the Maracaibo Basin, Maturin Basin, Barinas Basin, Guarico Basin and the Falcon Basin.

In addition, the offshore areas include from west to east: the Gulf of Venezuela Basin, the Gulf of Paraguana basin, the La Vela Embayment, the Isla Margarita-Tobago Trough, the Gulf of Paria and the Orinoco Delta Shelf. (See Map 8)

Structural Geology

The sedimentary and tectonic history of Venezuela
4. The Petroleum Geology of Venezuela and Trinidad

Figure 4. Location Map of the Eastern Venezuela Tertiary Basin

(Rex, and others, 1958)
and Trinidad was influenced by the Proterozoic age (precambrian) granite and metamorphics which composes the Guyana Shield. The Shield comprises about one-half of the land mass of Venezuela, which is approx. 335,000 sq. mls. The Trinidad land mass is about 2,200 sq. mls. (3)

It is believed that the Guyana Shield with few exceptions has been a stable feature through geological time. Between the Craton-Shield and the geosynclines is a belt of pericratonic basins, which are pre-Cambrian metamorphic rocks. (4)

The geosynclinal trough which extended east-west along the northern edge of Venezuela and across Trinidad existed since middle Precambrian time. The true width of the geosynclinal belt is not known. It is believed that early Paleozoic sediments were deposited in the geosyncline and were subsequently uplifted into mountains during late Paleozoic-Early Mesozoic time. (5)

Faulting and vulcanism which accompanied the uplifting raised the whole of the area above sea-level. The erosional period which followed the uplift resulted in positive structural features which had an important impact on late Mesozoic (Cretaceous) and Tertiary sedimentation. (6) See fig 4.

This was followed by the Laramide Orogeny (late Cretaceous-Eocene time) which raised the mountains of
the Andes and the coastal ranges of Venezuela and Trinidad. The Tertiary phase of the Orogeny interrupted the sedimentation process along the southern margin of the Caribbean in the late Eocene time. A series of epeirogenic movements marked the beginning of subsidence of the Maracaibo-Falcon and East Venezuela and Trinidad basins. (7)

Depositional History

The sedimentary history of Venezuela and Trinidad is very complex, and the brief discussion included herein provides only a general overview of the depositional history. The sedimentary sequence discussion is limited to the principal sedimentary basins, beginning first with the Maracaibo basin and then proceeding east to Trinidad.

Maracaibo Basin

The Maracaibo basin is approximately 27 thousand sq. mls. in western Venezuela. It is the most important producing province in the country. In the Maracaibo basin, sandstones are found in the extreme southern part of the basin with limestone in the northern portion.

Most oil accumulations in the Maracaibo basin are found in anticlinal structures. Faulting has occurred in most of the structures; this enhanced the
accumulation of oil particularly in the Cretaceous reservoirs.

The dominance of this basin as a source of Venezuelan oil is made apparent by the fact that it has yielded 70% of the total cumulative oil production. During the first half of 1979, it contributed nearly 80% of Venezuelan oil production. Most of the oil produced from this basin is from sandstone reservoirs. (8)

**The Falcon Basin**

This is located east of the Maracibo Basin, covering an area of about 14 thousand sq. mls. The basin was formed by compression folds and faults. The oil deposit in this basin is not as good as the Maracibo Basin. The largest field in this area is an elongated asymmetrical dome cut by numerous transverse faults. (9)

**Eastern Venezuela Basin (including Trinidad)**

The Eastern Venezuela Tertiary basin is an east-trending and east-plunging structural and sedimentary trough located in the north central and north eastern part of Venezuela and the island of Trinidad. The Basin covers an area of 59.4 thousand sq.mls, of which about one-third is not prospective for oil because of inadequate sediment cover; another
5 thousand sq. mls. is covered by the Orinoco petroleum belt area. Thus about 35.1 thousand sq. mls. is oil prospective with an effective sedimentary volume of 67.2 thousand cubic mls. (10) See Fig 4.

The Eastern Venezuela and Trinidad region was subjected to flooding of the sea during the Paleozoic and Early Mesozoic time, which was followed by faulting movements associated with igneous activity.

The sediments of the shallow seas are the most probable petroleum source rocks. The numerous occurrences of such environments are the reason for the large number of oil sands. In addition, great rivers emptied into the basin carrying abundant organic material. See Map 3.

**Venezuela Petroleum History**

During the Pre-Columbian era the presence of "menes" - an indigenous name for surface seepages of petroleum - revealed the existence of oil in what is now Venezuela. In 1539, just a few decades after the discovery of Venezuela, a barrel of oil was shipped to Spain for medicinal purposes. In 1914, the first commercial volumes of oil were discovered on the eastern shores of lake Maracaibo; a field which at present remains very productive. (11)

In 1925, the value of petroleum exports outstripped that of agricultural exports for the first time, a
situation that has been maintained ever since. Originally, the oil found was nearly all of Tertiary age, in Miocene and Eocene reservoirs; but with the discovery of a Cretaceous limestone reservoir at La Paz in 1944; a new and continuing phase of deeper exploration commenced. (12)

For many years about 600 wells were drilled every year in Venezuela, many of them in the shallow waters of Lake Maracaibo, which was one of the first offshore areas of the world to be developed. However, in the early 1960's the intensity of exploration drilling declined, due to unfavorable political and fiscal conditions. As a consequence of this curtailment of exploration activity, Venezuelan oil production has been declining slowly in recent times. Thus in 1976, production was 2,294 million barrels of which 82% came from Western Venezuela, and 18% from eastern Venezuela. In 1984, output was notably smaller, amounting to 1,799 million barrels, as compared to Trinidad's 62,042 thousand barrels in

<table>
<thead>
<tr>
<th>Year</th>
<th>Production (mm. brl.)</th>
</tr>
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<tbody>
<tr>
<td>1976</td>
<td>2,294</td>
</tr>
<tr>
<td>1977</td>
<td>2,238</td>
</tr>
<tr>
<td>1978</td>
<td>2,166</td>
</tr>
<tr>
<td>1979</td>
<td>1,356</td>
</tr>
<tr>
<td>Year</td>
<td>Production (bbl/day)</td>
</tr>
<tr>
<td>------</td>
<td>---------------------</td>
</tr>
<tr>
<td>1980</td>
<td>2,168</td>
</tr>
<tr>
<td>1981</td>
<td>2,107</td>
</tr>
<tr>
<td>1982</td>
<td>1,893</td>
</tr>
<tr>
<td>1983</td>
<td>1,796</td>
</tr>
<tr>
<td>1984</td>
<td>1,799</td>
</tr>
</tbody>
</table>


Costs of production are high in Venezuela, since the average production per well is only about 300 barrels/day from some 12,700 wells, 80% of which are on artificial lift.\(^{(14)}\) The reluctance of the Venezuelan government to grant new concessions over a period of more than a decade, coupled with the high sulphur contents of Venezuelan crudes, which render them less acceptable in pollution conscious areas, are other factors which have restrained development.

Venezuela was for many years second only to the U.S. as a world oil producer. The Soviet Union then took that position, and both Iran and Saudi Arabia have since outstripped Venezuelan output. Until recently, however, Venezuela was still the world's largest oil exporter, about 1,370 million barrels per year, mainly to U.S. East Coast and to Canada. However because of the U.S. quota system, Venezuela's share of U.S. oil imports has been steadily dropping in recent years from the peak of 52% reached in 1959.\(^{(15)}\)
Table 9 Venezuela Oil Exports (million barrels).

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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,370</td>
<td>1,320</td>
<td>1,244</td>
<td>1,402</td>
<td>1,283</td>
<td>1,267</td>
<td>1,062</td>
<td>985</td>
<td>1,007</td>
</tr>
</tbody>
</table>


Petroleum exports contribute approximately three-quarters of Venezuela's foreign exchange earnings, thus emphasizing the need for Venezuela to maintain reasonable levels of exploration, development and production. About one-eighth of its annual production is consumed by the domestic market but consumption is increasing rapidly. (16)

Nearly one-third of Venezuela's crude oil exports flow through the refineries of the Netherlands Antilles, and subsequently, the petroleum products are re-exported. About one-third of the crude oil is imported by the U.S. and Canada. The remainder of the crude oil exports enter markets throughout the world, principally in South America and Western Europe.

At present, payments from the oil industry constitute over 70% of the National Treasury's revenues. (17)

Reserves:
It is estimated that 89.6 billion barrels of oil
will be recovered ultimately from the sedimentary basins of the Republic of Venezuela. This assumes that 23 billion barrels, (the statistical mean value of a range with a probability of approximately 40%), remain to be found in fields undiscovered as of January 1, 1979. As of January 1, 1984, 41.1 billion barrels of oil have been produced from the known fields. (18)

Table 10 Ultimately Recoverable Crude Oil Resources of Venezuela (billion Barrels).

<table>
<thead>
<tr>
<th>Sedimentary Basin</th>
<th>Ultimately Discovered Depleted Undis. Rem. reco. oil</th>
<th>reco. oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maracaibo</td>
<td>54.85</td>
<td>47.5</td>
</tr>
<tr>
<td>Falcon</td>
<td>5.09</td>
<td>0.09</td>
</tr>
<tr>
<td>Maturin</td>
<td>28.13</td>
<td>19.13</td>
</tr>
<tr>
<td>Margarita</td>
<td>1.49</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>89.56</td>
<td>66.67</td>
</tr>
</tbody>
</table>

In the known fields there is also an estimated 16.1 billion barrels of proven reserves recoverable under current conditions, and an additional 13.8 billion barrels of oil which will require secondary recovery efforts if the oil is to be produced. (19)

About 45% of Venezuela resources have been produced; and about three-fourths of Venezuela's estimated crude oil resources have been found as of 1984. It took 67 years to produce 41.1 billion barrels of oil, left is 48.5 billion barrels. (20)

Exploration:

Petroles de Venezuela's exploration activities have the following goals: discovery of new reservoirs, especially of light and medium crudes; evaluation of all promising areas in the country and assessment of the volume of oil and non-associated gas still to be discovered; precise quantification and delineation of the deposits containing the heavy oil in the Orinoco oil belt. In view of its size and geological complexity, precise calculation of the amount of oil present in this vast basin is difficult. But it is estimated that it may exceed one billion barrels. (21) Efforts to find new reservoirs of medium and light crudes are concentrated on cretaceous limestone formations in East and West of the Country, as well as on the continental shelf.
As of January 1987 Venezuela's crude oil reserves jumped to 55.5 billion barrels at year end 1986, from 29.5 billion barrels at year end 1985, officials said. The increase partly reflects the inclusion for the first time 18 billion barrels of easily recoverable reserves in the Orinoco Oil Belt.
Venezuela's 10 best prospects

Source: Oil and Gas, (1979).

1. The Gulf of Venezuela
2. Gulf of La Vela and Triste Gulf
3. The Bonaire Basin.
4. The Central-Eastern Continental Shelf.
5. The Margarita-Tobago Shelf.
6. The Venezuelan section of Gulf of Paria.
7. The Orinoco Delta.
8. Southern Portion, Lake Maracaibo.
10. The Orinoco Petroleum Belt.
Barbados:

1) Economic Background

Barbados, the most easterly of the Caribbean islands, is one of the most densely populated countries in the world. Its total area of 166 sq. mls., and population of 253,000 gives it a density of 1,524 per sq. mls. Population growth has traditionally been low and is currently below 1%. Barbados has become, over the last two decades or so, one of the more developed countries in the Commonwealth Caribbean. Within the Commonwealth Caribbean, its per capita income in 1979 was $1,400 (U.S); this was surpassed only by oil rich Trinidad and Tobago and the Bahamas. (23)

Barbados' natural resources are limited. Soil, topography and rainfall have contributed to the traditional emphasis placed on sugar cane within the agricultural sector. No metallic mineral deposits are known, but pockets of petroleum and natural gas now supply a modest fraction of consumption. In the last couple of decades, the country's most valuable natural resources have been its beautiful beaches and mild weather, which presently attract almost 400,000 tourists annually. (24)

Major Economic Developments

The mid-1950's marked an important milestone in
Barbados economic development. After three centuries of exclusive dependence on sugar, the economy began at that time a process of economic diversation and structural change. This process has been mainly characterized by: a) the emergence of manufacturing ... initially inward looking, but increasingly export oriented; and b) tourism as an important economic sector.

Table 11 Composition of Barbados Gross Domestic Product (percent)

<table>
<thead>
<tr>
<th></th>
<th>1970</th>
<th>1975</th>
<th>1979</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>14.2</td>
<td>10.0</td>
<td>9.4</td>
</tr>
<tr>
<td>(sugar)</td>
<td>(10.4)</td>
<td>(6.4)</td>
<td>(3.5)</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>7.9</td>
<td>10.0</td>
<td>10.8</td>
</tr>
<tr>
<td>Tourism</td>
<td>8.6</td>
<td>11.6</td>
<td>15.4</td>
</tr>
<tr>
<td>Other (services, public sector)</td>
<td>69.3</td>
<td>68.4</td>
<td>64.4</td>
</tr>
</tbody>
</table>


Economic Development During 1980:
Barbados experienced during 1980, its fifth consecutive year of rapid economic expansion. The performance of the balance of payments improved. Public finances, however, weakened somewhat and the rate of inflation increased moderately.

Because of good rainfall sugar production increased substantially. It reached 135,000 tons in 1981. Manufacturing exhibited a strong performance. The construction sector also appears to have expanded in spite of shortage of skilled labour. Tourist arrivals increased, also there is a larger proportion of winter arrivals, which average higher expenditure per visitor, thus value added in the sector increased slightly. Annual rate of growth of GDP at 1984 market prices was 9.1%. (26)

2) Development Objectives, Issues and Policies:

Background

Barbados has experienced, in the last few years, rapid economic growth. As a result, per capita income is relatively high and employment has substantially increased. This rapid growth has been achieved with financial stability. Public finances have been well managed. External debt ratios are low and international reserves are not too high. In addition, over the last two decades or so, Barbados has developed a good economic infrastructure. Also,
education and health facilities are relatively good, and the distribution of income is relatively equitable.

Barbados' resource base is narrow, and is still highly dependent on sugar and tourism for most of its foreign exchange earnings. Domestic production of petroleum covers only about 20% of fuel consumption. (27)

Development Objectives and Strategy

The government's development objectives for the coming years, as outlined in the 1985-1990 Development Plan and in other governmental statements are, therefore, to:

a) Sustain rapid economic growth and reduce unemployment, mainly by promoting a sustained expansion of tourism and manufacturing and increased sugar production.

b) Achieve a higher degree of economic and export diversification by promoting manufacturing and non-sugar agricultural exports.

c) Achieve a higher degree of self-sufficiency by promoting energy conservation, the development of traditional and non-traditional sources of energy, increased non-sugar agricultural production, and the use of mineral resource. (28)

Overall, the government's development objectives
are sound and realistic. They are consistent with Barbados' resource potential, and also with past economic experience.

Tourism:

Tourist's arrivals increased significantly during 1977-79, and at present are still increasing. At the same time, occupancy rates improved, the average length of stay increased and the geographical distribution of visitors is now more diversified. Visitors from the United Kingdom, United States of America and Caribbean countries have continued to increase. Flight availability, which has created problems in some markets, has improved, there is an increase in charters and less expensive flights from the U.S. In 1983 the tourist industry showed a 5.2% increase. In 1984 the total number of visitors were 362,470 and the average tourist dollars spent was $98/day U.S.(29)

The Barbadian government also intends to increase further the contribution of tourism to the economy by increasing value added per visitor. To achieve this, the government plans to encourage the construction of large hotels, which create more employment per bed-night, and the upgrading of present facilities. Furthermore, promotional efforts are focussing on the
middle and upper segments of the market which contribute more to value added.

Manufacturing:

Manufacturing production and particularly manufactured exports have increased rapidly in the last few years. The government's industrial incentives are generally well conceived and administered, its promotional efforts have been successful and its provision of factory space has proved to be a key factor in attracting industrial ventures, labour relations are good, and the investment climate is excellent. The sector is dominated by foreign-owned enterprises, but recently Barbadians seem more interested in investing in industrial ventures.

Agriculture:

Sugar production peaked in 1977 at 120,000 tons. The government policy is to raise sugar production to 150,000 tons. The benefits, however, would be good. For example at average estimated 1981-85 prices, a production of 150,000 tons as compared with one of 107,000 would yield U.S. $220 M in additional foreign exchange per year. (30) The government has also given priority to increased production of vegetables, root crops and grain. Root crops offer some possibility for exports.
Petroleum:

Proven reserves of hydrocarbons are relatively small. That of crude oil is estimated at 4 million barrels, of which about a third may be recoverable; natural gas is estimated at 10,000 million cubic feet. (31)

Domestic production of crude oil amounts to some 320,000 barrels. Domestic production of crude oil started in 1973. In 1980, petroleum imports amounted to 75% apparent petroleum consumption. Imports of crude oil from Venezuela amount to some 730,000 barrels per year, and from Trinidad to about 230,000 barrels. Petroleum imports reached U.S.$31.3M in 1980 or 6.2% of domestic exports and 3.9% of the estimated GDP. (32)

Under governmental licensing, a subsidiary of Mobil Corporation is carrying out deep (below 6,500 ft.) oil drilling activities in the Woodburne area, which is aimed at finding large - by Barbados standards - reserves of oil. This company is also undertaking an island-wide seismic survey. No information is available yet on the results of these exploration and seismic activities.

Grenada

Grenada lies North west of Trinidad and Tobago, and has an area of 120 sq. mls. (344 sq.km.) with a
population of 113,000 as of 1984.

Growth in output in Grenada has been led by the dominant export agriculture sector and the vital tourism sector. Bouyancy of these sectors produced steady growth in GDP of about 4% annually during the 1960's. Since then, growth has fluctuated with exogenous factors affecting the performance of these sectors.

In the early 1970's, successive years of unfavorable weather and political disturbances adversely affected agricultural output and tourism and the pace of economic activity slackened markedly.

Economic recovery resumed in 1975 and gained momentum in 1976, when the GDP rose by 9% as the economy was recouping earlier losses. All sectors of the economy contributed to the recovery, but the major thrust came from expansion in agricultural output, tourism and public administration. As growth in agricultural output leveled off, the GDP growth rate moderated to 5.5% annually in 1977-78. Prolonged heavy rains late in 1979 adversely affected agriculture and the political upheaval curtailed growth in tourist arrivals. As a result, GDP growth slowed further to an estimated 2% in 1979.

In 1983 with the U.S. invasion of that island the GDP fell considerably. Now with U.S. aid, agriculture is reviving, tourists once again are vacationing in
Grenada, so the GDP is rising again. (no figures are available yet). Initial estimates show the Grenadian economy growing by about 3% in 1985 and averaging 4% per annum thereafter. (36)

Agriculture:

Agriculture is the dominant sector responsible for roughly one-third of GDP and employing 30% of the labor force. The authorities estimated that land under cultivation is some 50% below what it was fifteen years ago. (37) Moreover, this sector has suffered from serious neglect and urgent efforts are needed to realize its full potential. The present government is focusing on the issue of land use and land tenure, credit and extension. The government hopes to bring marginal lands into production of food crops and livestock, contributing to better soil and water conservation.

Agriculture's performance, therefore, is crucial to the health of the economy. However, markets for the traditional exports have been weakening for a long time past and the structural problems of fragmentation of holdings, labor supply and primitive technology all result in low productivity and farm incomes. To modernize this sector, public policy is addressing the issues of agricultural organization infrastructure, markets and human resource development. In 1984, it was estimated that the
agricultural sector's contribution to GDP was about 25%. About 75% of the agricultural sector's value comes from bananas, cocoa and nutmeg. While production of these crops has been decreasing, the present government is making agriculture revitalization a keystone of their economic growth policy. (38)

Tourism:

It is estimated that tourism accounts for about half of Grenada's foreign exchange earnings and, in addition, has heavy impacts on employment, tax revenues and retail trade. The continued deterioration in the performance of this sector in 1982 was thus a significant drag on the economy. (see Table 12).

**Table 12 Grenada selected Tourism indicators**

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Stopover visitors†</td>
<td>29.4</td>
<td>25.1</td>
<td>23.3</td>
<td>-8.8</td>
<td>-14.8</td>
<td>-7.2</td>
<td></td>
</tr>
<tr>
<td>Cruise ship visitor*</td>
<td>146</td>
<td>78</td>
<td>62</td>
<td>5.0</td>
<td>-46.7</td>
<td>-19.9</td>
<td></td>
</tr>
<tr>
<td>Average length of stay of stopover visitor†</td>
<td>18</td>
<td>18</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td></td>
</tr>
<tr>
<td>Number of cruise ship calls</td>
<td>236</td>
<td>131</td>
<td>103</td>
<td>18.0</td>
<td>-44.3</td>
<td>-21.4</td>
<td></td>
</tr>
<tr>
<td>Number of yacht calls</td>
<td>1,863</td>
<td>1,367</td>
<td>1,602</td>
<td>8.3</td>
<td>-26.1</td>
<td>16.4</td>
<td></td>
</tr>
<tr>
<td>Hotel and guest house beds</td>
<td>1,500</td>
<td>1,500</td>
<td>1,112</td>
<td>-</td>
<td>-</td>
<td>-23.9</td>
<td></td>
</tr>
<tr>
<td>Estimated visitor expenditure*</td>
<td>54.3</td>
<td>46.7</td>
<td>46.6</td>
<td>1.4</td>
<td>-14.1</td>
<td>-0.2</td>
<td></td>
</tr>
</tbody>
</table>

Source: Grenada, Ministry of Tourism.
*Preliminary figures.
†Thousands.
‡Days.
*Millions of East Caribbean dollars.

The serious decline in visitors and in cruise ships and yachts calls seems not to have been reflected in visitor expenditure, which just about maintained its nominal value of 1981. It is in this light that public policies will have to revive the industry through provision of facilities for wide-bodied aircraft, providing more hotels and also more effective promotion of Grenada as a tourist destination.

In 1982-83 the government then in power embarked on the construction of Point Saline a jet airport largely with financing from Cuba. This was thought of as a solution to the air access problem. But in 1983 because of political upheaval and fear of the Soviets in the island, U.S. military invaded the island. Work at the airport was completed by U.S. funds. Tourist infrastructure is being improved on the island at present. Now in 1987 with the threat of terrorism to U.S. citizens abated, holiday makers are heading for the Caribbean, thus it is expected that Grenada's tourist trade may boom in the future.

In 1984 the total number of visitors arriving in Grenada was 39,563 (stayover) and the average tourist dollar spent was $110 U.S. This is a 19% increase from the previous year. (39)
Chapter 3: The Continental Shelf and the 1942 Gulf of Paria Treaty

The Continental Shelf:

The continental shelf is of fundamental importance to the future prosperity of Trinidad and Tobago. Since land production of petroleum began declining in the late 1960's, it has been proved that the greatest potential reserves of hydro-carbon resources do exist in the continental shelf.

Most of the future expansion in oil exploration and production activity is expected to take place on the continental shelf. In the face of this reality; the subjects of the continental shelf and the development of national legislation in this area are of greatest importance for the future outcome of oil exploration.

Submarine exploration of petroleum resources falls under the subdivision of international law known as the "Law of the Sea". The 1982 United Nations Convention on the Law of the Sea has reaffirmed much of the 1958 Convention's provisions. It has refined further certain aspects of marine law, expanded others, and more importantly it has introduced fundamental changes of a jurisdictional nature.

As a geological formation, the continental shelf may be generally described as the submarine continuation of the land mass, extending under the
sea to where the sea floor begins to fall off steeply into oceanic depths - i.e. a submarine area lying between the coast and the first substantial fall-off on the seaward side. (1) But this underwater platform on which the continents seem to be sitting is highly irregular. Conventionally, the seaward edge of the continental shelf and the beginning of the steep continental slope are taken to start at a water depth of 200 metres, but instances are known where the increase of slope begins at more than 400 metres or less than 65. Sometimes there is no identifiable slope at all; instead, what would ordinarily be the edge of the shelf is a sea floor torn into intersecting ridges, basins and elongated troughs. (2)

Article 76 para.3 of the 1982 Convention states that the continental margin comprises the submerged prolongation of the land mass of the coastal state, and consist of the sea-bed and subsoil of the shelf, slope and rise.

This same article, para.5, states that the outer limits of the continental shelf on the sea-bed shall not exceed 350 nautical miles from the baseline from which the breath of the territorial sea is measured; or shall not exceed 100 nautical miles from the 2,500 metre isobath. (3)

The continental shelf is of extreme international
economic importance since it is a rich storehouse of minerals and fuel resources. Oil and natural gas are being mined in increasingly large quantities from the shelf. About one-third of the world's petroleum production is derived from submarine areas.

Since it is now a principle of customary international law that coastal states have exclusive rights of exploitation over their seaward extension of the shelf, these states usually enact mining laws to regulate the exploration and exploitation of all hydrocarbon resources within their sovereign jurisdiction. (4)

Trinidad and Tobago enacted the Continental Shelf Act 1969, to give effect to certain provisions of the Geneva Convention of 1958. (5) This Act was amended in 1986 in order to include in the municipal law of Trinidad and Tobago the provisions of Article 76 of the 1982 U.N. Convention on the Law of the Sea. (6)

Trinidad and Tobago is shelf locked as her continental shelf merges into that of Venezuela. Eastward Trinidad and Tobago's continental shelf may extend to approximately 200 mls, where it merges into that of neighbouring Venezuela and Guyana. Northwards, the shelf stretches into that of Barbados, Grenada and the Windward Islands.
Historical Background to the 1942 Treaty:

In the early 1930's geological surveys by a British committee showed that there were rich oil-bearing deposits in the seabed and sub-soil of the Gulf of Paria. Studies revealed that in time these deposits would be commercially exploitable.

Negotiations began on August 29, 1936. It was agreed that the two countries would conclude an agreement after which each government would take "parallel action to divide up as national territory (emphasis added) between them, the seabed of the Gulf of Paria.

At that time delimitation of the seabed outside the territorial sea was without precedent. Both countries felt at first that they should agree to a line of delimitation after which each government would annex the area allocated to it. However it was decided that a treaty followed by Annexation Orders would be a stronger and more valid declaration in respect to third states.

The Gulf of Paria Treaty:

On the February 26, 1942, the British Government and the Venezuelan Government signed the Gulf of Paria Treaty. In this treaty the boundary of the continental shelf outside the territorial waters in the gulf region was delimited between the two
countries for the exploitation of mineral resources. (10)

The submarine areas of the Gulf of Paria, eastward and northward of the dividing lines AB, BY, YX described in the treaty were annexed to His Majesty's dominions and attached to Trinidad and Tobago for administrative purposes. (11) See Map 10.

The treaty is the first international agreement reached between opposite states concerning the division of submarine areas, outside territorial waters.

At that time Trinidad and Tobago was a colony of the United Kingdom of Great Britain and Northern Ireland, and both the United Kingdom and Venezuela adhered to the then traditional territorial sea limit of three miles. Therefore, a considerable part of the waters of the gulf were high seas.

On gaining independence in 1962, the Government of Trinidad and Tobago concluded an agreement with the U.K. generally known as the Devolution Agreement on August 31, 1962, relating to the inheritance of international rights and obligations. (12) Trinidad and Tobago accepted all the treaty obligations contracted by the U.K. on her behalf during colonial rule.

The Terms of the Treaty
The United Kingdom and Venezuela reached agreement on a treaty delimiting the submarine areas of the Gulf of Paria that lie beyond the three nautical mile territorial sea limit of each state. The areas lying east of that boundary line formed part of the United Kingdom's dominion and were attached to the colony of Trinidad and Tobago for administrative purpose. The areas west of that line were attached to Venezuela—this is stated in Article 1 of the Treaty. (13)

Article 2 provides that each country, "will not assert any claim to sovereignty or control," over the submarine areas in the Gulf of Paria, and recognition would be given to any rights of sovereignty or control which have been or may hereafter be lawfully acquired by the other. (14) This claim of sovereignty resulted in both states annexing the submarine areas. The British Government by order in council. (The submarine areas of the Gulf of Paria Annexation Order, 1942) annexed her submarine areas and attached them to Trinidad and Tobago for administrative purposes.

Article 3 gives the geographical location of the dividing lines AB, BY, and YX which separated the areas. (See Map 10)

Article 4 makes provision for the appointment of a mixed commission to demarcate the above lines.

Article 5 and 6 make certain that the status of
islands and rocks above the surface and the waters of the gulf or any rights of passage or navigation are not affected; and measures are to be taken to ensure navigational safety.

Articles 7 and 8 are rather modern concepts for that time in that they provide a legal obligation to prevent pollution of each other's territorial waters during exploitation of their submarine areas. Inclusion of these articles indicates that it was the intention of the parties, (more the British) to commence exploration for petroleum in their submarine areas of the Gulf as soon as possible.

According to Article 8 the effective observance of Articles 6 and 7 must be stipulated in any concession for exploitation of the submarine areas in the Gulf. Article 9 states that disputes relating to the "interpretation or execution of this treaty shall be settled by peaceful means as are recognised in International Law." Thus International Law is given due recognition.

Was It An Equal Treaty?

The Gulf of Paria Treaty of 1942 divided the submarine areas of the Gulf giving Venezuela sovereignty over two-thirds of the area and the U.K. (now Trinidad and Tobago) one-third of the Gulf. According to one writer, the background of this
disproportionate delimation may be found in the fact that traditionally Venezuela has always opposed the equidistance principle for delimiting the marine areas of opposite and adjacent states with the claim that this principle is not a rule of customary international law. (15) The criterion which Venezuela urges should be used is the natural prolongation of the territory and the coastal state. It would appear historically, the U.K. did accept that rationale when she agreed to the terms of the 1942 Treaty. (16)

To another writer, the treaty delimited the submarine areas, seabed and subsoil of the Gulf proportionately, giving Venezuela approximately two-thirds of the area. (17) It can be presumed that the treaty was an unequal one proportionately.

At that time Great Britain was an imperial power whereas Venezuela was an emerging Latin American Republic. At that time when this treaty was concluded, Britain was engaged in the Second World War. The price and value of oil had increased and it was needed for the British war effort. Therefore, Britain could not afford to antagonize Venezuela from whom she derived 40% of her total oil imports. Thus during the period of negotiations, 1936-1942, both countries were on almost equal footing. Therefore the treaty was not unequal at that time.
But Is This Treaty Equal For Trinidad and Tobago
Since This Country Has Gained Independence?

Trinidad and Tobago became an independent, sovereign state on 31st August, 1962. This new status brought with it renewed evaluation of the legal implications of treaties which were concluded by the U.K. and other countries, and which by their terms of agreement were binding on Trinidad and Tobago.

The law of state succession to treaties is not straightforward and simple. (18) There is no established principle stating whether, and if so to what extent, newly independent states, which were formerly colonial territories, are bound by or are entitled to succeed to treaties made on their behalf by their "parent states." (19)

Trinidad and Tobago, like most of the new Commonwealth States which emerged after World War II, concluded a devolution agreement (i.e. an agreement transferring property, or rights to a successor), between itself and the U.K. (20) This agreement came into being by exchange of letters on 31st August, 1962 at Port of Spain between the Prime Minister of Trinidad and Tobago, Hon. Dr. Eric Williams and the British High Commissioner. (21)

The view is sometimes expressed that as far as third parties are concerned devolution agreements serve no useful purpose and that rules of customary
international law should govern issues involving third parties. (22)

The Nyerere Doctrine (so called, after the Prime Minister of Tanzania in his declaration on Nov. 30, 1961) focuses attention on the right to revise treaties which devolve on a new state two years after it has gained its independence and after to enter into new treaties with the third party states. (23) In effect what the Nyerere Doctrine seeks to do is to limit the operation of any treaty which has been entered into between the U.K. and another party and which devolves on the new state (this doctrine can operate both ways with either party being able to modify, affirm or reject a treaty).

The Nyerere Doctrine can be justified on the ground that a treaty entered into by the U.K. and another country which affected a former colonial territory was _res inter alios acta_, (24) and that it will be highly inconvenient, and probably in certain cases manifestly unjust for the former colonial territory, after its independence, to be bound by acts which were imposed upon it _ab-extra_. (25) Hence the reason for the limitation of its operative period with the right to revision. This doctrine is a clever device to bring about a premature end to a treaty which may operate to the disadvantage of the new state. (26)

Trinidad and Tobago did not adopt the Nyerere
Doctrine in any form, but was content to abide solely by the devolution agreement. So far as Trinidad and Tobago and Venezuela are concerned, neither party took any steps to question the validity of treaties which were entered into between the U.K and Venezuela and related to Trinidad and Tobago. The fact that it is almost twenty-five years since Trinidad and Tobago's independence and the quiescent attitude of the states is an implicit recognition that they regard such treaties as valid. Thus if the treaty was regarded as unequal to Trinidad and Tobago, this state would have objected to the treaty.

History of the Continental Shelf:

Interest in the continental shelf is a comparatively new development dating from the early 1940's. The Gulf of Paria treaty, although it did not mention the word Continental Shelf, appears to be the genesis of the new concept. In 1944, Argentina, by decree No. 1386, reserved to itself the mineral resources of the "Argentinian Epicontinental Sea," which undoubtedly included the shelf and subsoil.

International attention was attracted to the concept of the continental shelf in 1945, when the U.S. President Truman proclaimed that the natural resources of the subsoil and the seabed of the
continental shelf beneath the high seas but contiguous to the coasts of the U.S., are subject to its jurisdiction and control. (28)

The proclamation goes on to enunciate that where the shelf is shared with another state the boundary shall be determined "in accordance with equitable principles," but the proclamation did not define the continental shelf. It is clear that the U.S. did not declare its continental shelf to be national territory nor did it claim sovereignty over the sea-bed and sub-soil of its shelf. The U.S. declared that it would exercise "jurisdiction and control over the natural resources of its continental shelf." (29) However, in the Gulf of Paria treaty of 1942, the U.K. and Venezuela declared that each would not assert any claim to sovereignty or control over the other's submarine areas in the Gulf. (30) In this treaty each party recognized a claim to sovereignty by the other.

The U.S. action was almost immediately followed by unilateral declarations by other states, especially those of South America, claiming adjacent submarine areas but asserting varying degrees of sovereignty over the shelf and superadjacent waters.

The Truman Proclamation was the real impetus to the development of the doctrine of the continental shelf. The ICJ in its judgment in the North Sea Continental
Shelf Cases 1969, stated that the Truman Proclamation:

"has in the opinion of the Court a special status. Previously, various theories as to the nature and extent of the rights relative to or exercisable over the continental shelf had been advanced by the jurists, publicists and technicians. The Truman Proclamation however, soon came to be regarded as the starting point of the positive law on the subject, and the chief doctrine it enunciated, namely that of the coastal state as having an original, natural and exclusive (in short a vested) right to the continental shelf off its shore, came to prevail over all others, being reflected in Article 2 of the 1958 Geneva Convention on the Continental Shelf." (31) Article 2 gives states sovereign rights over the continental shelf for the purpose of exploring and exploiting its natural resources.

Article 1 of the 1958 Geneva Convention on the Continental Shelf reads:

"For the purpose of these articles, the term 'continental shelf' is used as referring;

a) to the seabed and subsoil of the submarine areas adjacent to the coast but outside the area of the territorial sea, to a depth of 200 metres or, beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the natural
resources of the said areas;

b) to the seabed and subsoil of similar submarine areas adjacent to the coasts of islands. (32)

Article 1 of this Convention incorporates the definition of the continental shelf in the Truman Proclamation but goes on to include an exploitability standard.

Article 76 of the 1982 Convention on the Law Of The Sea amends the definition to read:

"The continental shelf of a coastal state comprises the sea-bed and subsoil of the submarine areas that extend beyond its territorial sea throughtout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baseline from which the breath of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance." (33)

At the time of writing this thesis only 31 states have so far ratified the 1982 Convention; 60 states are needed to ratify it, in which case after one year this Convention would enter into force. Since the 1982 Convention is not yet in force, and has not been signed by Venezuela; therefore the provisions of Article 1 on the continental shelf definition of the 1958 convention are still applicable.
Article 1 of the Gulf of Paria treaty states:
"Submarine areas of the Gulf of Paria, denotes the sea-bed and sub-soil outside the territorial waters of the high contracting parties...."

The "submarine areas" of the Gulf of Paria treaty are within the definition of the "continental shelf" in Article 1 of the 1958 Convention.

Article 2.1 of the 1958 Continental Shelf reads:
"The Coastal State exercises over the continental shelf sovereign rights for the purpose of exploring it and exploiting its natural resources."

Article 2.2 goes on to clarify exactly the "rights" referred to in subsection (1):
"The rights referred to in para.1 of this article are exclusive in the sense that if the coastal state does not explore the continental shelf or exploit its natural resources, no one may undertake these activities or make a claim to the continental shelf, without the express consent of the coastal state."

It seems that the Gulf treaty differs to the article above which is also similar to the doctrine expressed in the Truman Proclamation. "Sovereign rights" in Art. 2 of the Convention is "for the purpose of exploring and exploiting" the natural resources of the continental shelf. The sovereign rights stated in the treaty are quite specifically
over the seabed and subsoil; it states also the respective areas were claimed as "natural territory." The continental shelf, in the context of the Truman Proclamation and the 1958 Convention, is not the national territory of a state. (34)

The 1958 conference on the Law of The Sea:

Each convention will be examined separately for convenience. Both the U.K. and Venezuela participated in the conference - but they signed and ratified the Convention on different dates. Trinidad and Tobago gave its notification of succession and acceded to the Convention on the Continental Shelf some time after its independence. (35)

The Convention On The Territorial Sea and The Contiguous Zone:


In 1956, Venezuela extended its territorial sea to 12 miles. It expressed the view then that a three mile territorial sea was outdated, outmoded and
inconsistent with the pace of modern technology. (37)
As a result of this extension Venezuela's territorial
sea overlapped submarine areas governed in the Gulf
of Paria treaty.

The U.K adhered to a 3 mile territorial sea
(Territorial Water Jurisdiction Act 1878). (38) This
1878 Act extended to Trinidad and Tobago.

Trinidad and Tobago gave notification of succession
to the Continental Shelf Convention on April 11,
1966. (39) This notification did not contain any
declaration, reservation or objections.

In the Territorial Sea Act of 1969, Trinidad and
Tobago declared a 12 mile territorial sea. Section 3
of this Act, like the Venezuela Act provides, "where
the outer limits of the territorial sea of Trinidad
and Tobago intersect foreign territorial waters the
outer limits therefore shall be resolved through
agreement or other means recognized by international
law." Thus it was felt then that the Act provided a
framework to discuss matters relating to fixing of
boundaries where the waters intersect.

The 1958 Continental Shelf Convention;
Venezuela signed the Convention on October 30,
1958 and ratified it on 15th Aug., 1961 with the
following reservations:-
"In signing the present convention the Republic of Venezuela declares with reference to Art. 6 that there are special circumstances to be taken into consideration in the following areas: the Gulf of Paria insofar as the boundary is not determined by existing agreements and in zones adjacent thereto; the area between the coast of Venezuela and the island of Aruba and the Gulf of Venezuela." (emphasis added)

Art. 6 of the 1958 Continental Shelf Convention, provides for a method of delimitation of the continental shelf where the same shelf is adjacent or opposite to two or more states; the median line method line method could be used. It is interesting to note that the boundaries specified in the Gulf of Paria treaty are not in accordance with the median line principle. (40)

What does Venezuela mean by special circumstances? This will be discussed in the next chapter.

Trinidad and Tobago became an independent state soon after Venezuela ratified the Convention and since the U.K. did not ratify it until May 11, 1964, the U.K. objections no longer extended to Trinidad and Tobago.

Trinidad and Tobago acceded to the Convention on 11th July, 1968, almost six years after its
independence. It did not give notice to any objections or reservations on acceding to the Convention, and to date has not placed on record any objection to the Venezuela reservation. Therefore Trinidad and Tobago has implied that it accepted the Venezuela reservation with respect to the Gulf of Paria and zones adjacent thereto.

This treaty can be useful as a precedent for future bilateral agreements.

Summary:
The future expansion of oil exploration and production is expected to take place on the continental shelf. This chapter discussed the continental shelf within the 1958 and 1982 Law of the Sea Convention.

Since it is now a principle of customary International law that coastal states have exclusive rights of exploration over their seaward extension of the shelf, most states enact mining laws to regulate the exploration and exploitation of all hydrocarbon resources within their sovereign jurisdiction. Trinidad and Tobago enacted the Continental Shelf Act 1969 and amended it in 1982.

The 1942 Gulf of Paria treaty between United Kingdom and Venezuela is the first international agreement reached between opposite states concerning
the division of submarine areas. In this treaty each party recognised a claim to sovereignty by the other; whereas in the 1945 Truman Proclamation the U.S. declared that it would excercise jurisdiction and control over the natural resources of its continental shelf and not sovereignty.
Chapter 4: Maritime Practices of Trinidad and Tobago and Venezuela

Study Area

For purposes of conveniences the areas to be considered are separated as follows:

a) The area north of Point A on the line AB specified in Art. 3 of the Gulf of Paria treaty, 1942. (see map 10) This is north of the island of Patos - the Dragon's Mouth. Also the area north of Trinidad's north coast, and west of Tobago and which forms part of the Margarita-Tobago continental shelf. (see map 10 and 11) This delimitation is between Grenada/Trinidad and Tobago/Barbados.

b) The area in the Serpents Mouth east of Point X of the line YX described in Art. 3 of the Gulf of Paria treaty 1942, and which forms part of the Orinoco delta shelf (map 10). It is north of Punta Mariusa and Punta Baja in Venezuela. This boundary is on the south coast of Trinidad and Tobago with Venezuela.

c) The area east of Point Galeota, Trinidad and north of Point Punta Playa, Venezuela at the end of its straight baseline.
Map 10: Trinidad and Tobago: treaty boundary lines in the Gulf of Paria and on the south coast

MAP 11 - Areas of Main Geophysical Survey

AREAS OF MAIN GEOPHYSICAL SURVEYS:
1. COVERED BY TRINIDAD GOVT./UNESCO IN 1966 (7,680 Km²)
2. COVERED BY CVP IN 1972 (19,763 Km²)
3. PRESENTLY BEING COVERED BY CVP (3,000 Km²)
4. COVERED BY CVP IN 1969-1970 (JOINT; 20,005 Km²)

INDEX MAP

NOTE: DEPTHS IN FATHOMS

Graph 1
Economic Characteristics Of Study Area:

a) Areas north of Patos

These areas are part of what is known as the Margarita-Tobago shelf. It extends in an east-west direction between the islands of Margarita and Tobago. Its northern boundary is the 200 meter isobath and the southern boundary, the north coast of Trinidad and Venezuela. (see Map 11)

This shelf is described as one of possible petroleum importance. In 1971-1972, six exploratory wells, specifically to the north and north-east of Trinidad, were drilled. Four were dry, one was non-commercial gas and one discovered a commercial deposit of gas which the government of Trinidad and Tobago is exploiting. (1)

Areas in this shelf have been leased and have been divided for competitive bidding. (2) (see map 6) The waters above these areas are attractive fishing grounds.

Trinidad and Tobago, acting in accordance with its general policy and its Continental Shelf Act, (3) has leased and divided certain areas for competitive bidding. Charts and maps have been published and to date there are no protests or objections from Venezuela or Grenada. (4)

b) Areas East of Serpent's Mouth
This area is a rich fishing ground especially for shrimp. It is part of the Orinoco delta shelf (see map 11). It is a predominantly shallow area with maximum depths of 40 fathoms (approx. 74m), is regarded as favorable for exploration and exploitation in the light of hydrocarbon accumulations, and is already being exploited on a commercial basis.

c) Areas East and North - East Of Point Galeota

These areas have vast potential and are already being exploited on a commercial basis (see map 11). In view of its large potential and of recent statements that Venezuela proposes to begin explorations in the area, the question of defining boundaries becomes important and necessary.(5)

The Venezuelan Approach To Delimitation Of The Continental Shelf:

When considering the Venezuela approach of the Continental shelf in its relationship with Trinidad and Tobago it is necessary to examine the articles of its constitution which are relevant:

The 1953 Venezuela Constitution:
Art.2 of this constitution provides that:
" ..... also subject to its authority and
jurisdiction are the bed of the sea and the subsoil of the areas that constitute the continental shelf as well as any islands that may be formed or that appear in the zone...."

"Neither the territory nor the zones subject to the authority and jurisdiction of Venezuela may be alienated, ceded or leased in any manner to a foreign state or states nor to anyone having, representing or managing their rights....." (6)

Venezuela therefore claimed sovereignty or ownership over the continental shelf, not sovereign rights for the purpose of exploring and exploiting the natural resources in the shelf which is provided for in art.2 of the 1958 Geneva Convention on the Continental Shelf.

The 1961 Venezuela Constitution:

Art. 2 of the 1953 Constitution was modified in Art. 7 of the 1961 Constitution. It now reads:

"..... the sovereignty, authority and vigilance over the territorial sea, the contiguous maritime zone, the continental shelf and the air space, as well as the ownership and exploitation of property and resources contained within them, shall be examined to the extent and conditions determined by law."

Art. 8:

"The national territory may never be ceded,
transferred, or leased or alienated in any way, even partially or temporarily, to a foreign power...."
Although the words are re-arranged and the old article paraphrased on the lines of modern legislative drafting it connotes the same meaning.

The Venezuelan law on the territorial sea and the continental shelf ordains that Venezuela's territorial sea and continental shelf are part of the national territory. This is not in conformity with the 1958 Geneva Conventions on the Law of the Sea or the 1982 Convention. This attitude is strange in that Venezuela signed and ratified the 1958 Convention on the Continental Shelf.

Venezuelan municipal law on the sea (1956) is in accord with the constitution, hence its validity with the state. Thus, it is accepted law that the laws of a state do not extend to another state unless, which is very unlikely, the other state agrees to it. Since then the 1958 Conventions on the Law of the Sea have not been incorporated into the corpus of Venezuelan statute law. Therefore in relationships between Venezuela and other states the Convention takes precedence over the municipal legislation.(7)

Delimitation: (Venezuela's Possible Approach)

Once more I refer to the reservation of
Venezuela with respect to the 1958 Geneva Convention on the Continental Shelf. The reservation reads:

"In signing the present convention, the Republic of Venezuela declares with reference to Art. 6 that there are special circumstances to be taken into consideration in the following areas: the Gulf of Paria insofar as the boundary is not determined by existing agreements and in zones adjacent thereto; the areas between the coast of Venezuela and the island of Aruba; and the Gulf of Venezuela," (emphasis added). (8)

To the author "zones adjacent thereto" are those zones or study areas a), b) and c) referred to in the beginning of this chapter.

What Are Special Circumstances?

The continental shelf must be of immense importance to Venezuela because of the extent of Venezuela's coastline and for economic and security reasons.

The considerations were highlighted by the Venezuelan delegate at the U.N. conference prior to the signing of the 1958 Convention on the Law of the Sea. The view was expressed by the Venezuelan delegate that different formulae ought to be applied according to the circumstances in each case and the median line principle was rejected on the ground that
"it is not possible to accept such an idea without taking into account the circumstances in each area and each state, and probably also other considerations of a scientific nature."(9)  (emphasis added)

The delegate went on to state that, "it is the understanding and contention of Venezuela that the coastal state always has a preferential right to establish rules in such cases."(10)  The Venezuelan policy is based upon geographical and economic factors with petroleum deposits highest on the list of priorities.

Delimitation Of Continental Shelf (Venezuelan Perspective)

In the light of Venezuela's reservations to Art. 6 of the 1958 Geneva Convention on the Continental Shelf - which provide for delimitation of the continental shelf of opposite or adjacent states - it is essential to see what method Venezuela may apply to the problem.

Art.6 of the 1958 Convention states:

"1. Where the same continental shelf is adjacent to the territories of two or more states whose coasts are opposite each other, the boundary of the continental shelf appertaining to such states shall be determined by agreement between them. In the
Shelf allows for reservation of any article except 1 to 3 inclusive. Further the right to make a reservation to the remaining articles of this Convention is recognized by the International Court of Justice.(11)

Article 1 reads: The term "continental shelf" is used as referring a) to the seabed and the subsoil of the submarine areas adjacent to the coast but outside the area of the territorial sea, to a depth of 200 meters or, beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the natural resources of the said areas; b) to the seabed and subsoil of similar submarine areas adjacent to the coasts of islands.

Article 3 reads: The rights of the coastal states over the continental shelf do not affect the legal status of the superjacent waters as high seas, or that of the airspace above those waters. Therefore as far as Venezuela is concerned it is not bound by these articles vis-a-vis Trinidad and Tobago..

What then are the methods proposed or will be suggested by Venezuela?

To answer this, let us look at the
absence of agreement, and unless another boundary line is justified by special circumstances, the boundary is the median line, every point of which is equidistant from the nearest points of the baselines from which the breadth of the territorial sea of each state is measured.

2. Where the same continental shelf is adjacent to the territories of two adjacent states, the boundary of the continental shelf shall be determined by agreement between them. In the absence of agreement, and unless another boundary line is justified by special circumstances, the boundary shall be determined by application of the principle of equidistance from the nearest points of the baselines from which the breadth of the territorial sea of each state is measured.

3. In delimiting the boundaries of the continental shelf, any lines which are drawn in accordance with the principles set out in para. 1 and 2 of this article should be defined with reference to charts and geographical features as they exist at a particular date, and reference should be made to fixed permanent identifiable points on the land.

Art. 12 of the 1958 Convention on the Continental
Venezuelan law on the territorial sea and the continental shelf. Art. 1 provides:

"In the event that the boundary established by this present article intersects foreign territorial waters, the question will be resolved through agreements or other means recognised by international law." (12)

It is quite clear that the Venezuelan law envisages and permits resolving the question of delimitation of the boundary by agreements but in modern times one cannot reach an agreement without the application of rules which in this instance must be a means recognised by international law.

It seems that in arriving at an agreement Venezuela will consider the configuration of the coast, economic factors - petroleum deposits in the sea-bed and subsoil being of paramount importance - and protection of its resources. Yet there is the question of what are the "other means recognised by international law?" Since the solution cannot be Art. 6 of the 1958 Convention on the Continental Shelf, the answer must be sought from principles of customary international law and precedents set by the International Court of Justice.

According to Art. 1 of the 1958 Convention on the Continental Shelf, a state's continental shelf begins where the territorial sea ends. This is the
legal definition, as distinct from the geographical meaning which is a continuation of the land mass under the sea. (13)

Venezuela uses Art. 3-13 of the 1958 Territorial Sea Convention to identify its baselines. Venezuela has adopted and applied these articles for example in defining the baseline at the Orinoco Delta Art. 13 was used for it is apparent that with regard to delimitation of the continental shelf, it can be presumed that Venezuela will resort to the rules of customary international law.

Venezuela: Practice with respect to delimitation

The Gulf of Paria treaty was discussed in chapter 3. In that case the negotiations were of a bilateral nature. In Venezuela's reservation to the 1958 Convention, two other areas are specified, namely, the area between the coast of Venezuela and the island of Aruba and the Gulf of Venezuela. These areas are similar in some respects (geographically) to the areas between Trinidad and Tobago and Venezuela which have not been delimited.

Venezuela/Colombia Dispute

It would be useful to examine the Venezuelan approach to the Venezuela/Colombia problem in the Gulf of Venezuela to see Venezuela's general policy
Venezuela Straight Baseline

A. 9°21'30"N.
60°52'00"W.

B. 8°26'00"N.
59°34'30"W.

Source: Limits in the Sea, U.S. Dept. of State No.11
on such an issue.

The present dispute concerns the respective claims of Colombia and Venezuela to the territorial sea and continental shelf rights in the Gulf of Venezuela. Particularly at stake is the income from proven oil deposits and valuable minerals in the seabed of the Gulf.

The claims of both countries overlap. Colombia claims that the territorial sea and continental shelf rights in the Gulf should be resolved by use of the median or equidistance line, drawn according to the so-called Boggs procedure, which was prepared by the U.S. Geographer S. Whittemore Boggs in 1951. On the other hand, Venezuela relies upon historical title to the Gulf and other special circumstances, and argues that since the 1941 treaty between the two countries makes no mention of territorial rights in the Gulf, silence does not forfeit any long-held Venezuelan interests in the Gulf. Venezuela states that an equidistance line would divide the water roughly equally for states with straight or nearly straight coastlines. In other case, such as the Gulf of Venezuela, an equidistance line would disproportionately favor one party—in this case Colombia.

On July 20, 1975, the President of Colombia
in a speech before Colombian Congress proposed a "joint condominium" over the Gulf of Venezuela as a solution to the delimitation dispute. On the Colombian side everyone was in favor, while on the Venezuelan side almost everyone was against. This condominium proposal is examined briefly here for consideration of joint programmes between Trinidad and Tobago and Venezuela. In international law condominiums exist when two or more states exercise joint sovereignty over a particular territory as for example the area between Iceland and Jan Mayen (Norway) 1981.

Joint jurisdiction and joint exploitation occasionally offer an obvious alternative solution to a dispute concerning overlapping claims to the continental shelf that contains valuable resources. It is suggested that the application of those principles to the Venezuela/Colombia dispute would not be feasible. These countries are neither morally willing nor technologically prepared to initiate such an undertaking. Such an arrangement, inevitably would not meet the economic expectations of the two parties. Therefore precise delimitation of the area should be applied. This thesis cannot adhere to a condominium proposal for the undelimited areas off Trinidad and Tobago, because of the reasons above.

According to Klock the principles that should
be used to delimit this area should be:

   a) A nation should be allowed to adopt its delimitation to practical needs and local requirements. While Venezuela has traditionally been a "maritime" nation, Colombia has been a "continental" nation. Thus it seems unfair to permit Colombia, which has ignored these waters - until the possibility of oil exploitation was raised - to apply the median line in its favor.

   b) Degree of proportionality between the length of the coast and the marine area.

   c) Historical usage and local economic interests in the waters to be considered in delimitation. Venezuela has always been economically dependent on its coast and the Gulf. In fact the major oil deposits in Venezuela are located offshore in Lake Maracaibo, only a few miles inland from the Gulf. Furthermore, discovery and production of oil on the Gulf's continental shelf would be directly tied to commercial activities in nearby Maracaibo. To Venezuela, they could efficiently develop this Gulf of Venezuela-Lake Maracaibo region as a single economic zone. (18)

   This principle could be used to delimit the areas off the coast of Trinidad and Tobago. (This will be discussed in chapter 5)
Agreed Venezuelan Boundary Lines:

In the agreement between Venezuela and the Dominican Republic (1979), the preamble refers to delimiting the boundary 'justly, accurately and on the basis of equitable principles.' The median line was used to delimit this line.(19)

In the agreement between the U.S and Venezuela, (1978) reference has been made to "the need to establish precise and equitable maritime limits," and "according to International Law." The boundary line between Puerto Rico and Venezuela, is a median line, and gives full effect to the Aves Island of Venezuela.(20)

The Treaty between the Netherlands and Venezuela, (1978) was a comprehensive one and dealt with the maritime boundary between the Netherlands Antilles and the Venezuelan mainland and islands. The boundary was drawn in four sectors.

Sector A - between Aruba and the Venezuelan territory.

Sector B - between the Leeward Islands of the Netherlands Antilles (Aruba, Bonaire and Curacao) and the Northern coast of Venezuela.

Sector C - between Bonaire and the Venezuelan territory.

Sector D - between the Venezuelan islands of Aves and the Netherlands islands of Saba and St.
Caribbean Maritime Delimitation.
Eustatius. (See Map 13)

The boundary line in Sectors A, B, and C is a negotiated line, whereas in Sector D it is the median line. The Treaty refers to the delimitation of their respective marine and submarine areas in a manner which is "just, precise and based on equitable principles." (21)
So it seems that Venezuela modifies its boundaries to suit its needs.

Delimitation - A Possible Trinidad and Tobago Point Of View:

In order to arrive at Trinidad and Tobago's policy on this question it would be necessary to examine Trinidad and Tobago's attitude toward international treaties, conventions, and participation at conferences; its municipal legislation and general practice in its relations with Venezuela.

On July 11, 1968, almost six years after its independence, Trinidad and Tobago notified the Secretary General of the U.N. that it had acceded to the 1958 Geneva Convention on the Continental Shelf without any reservations or objection. (22) Venezuela signed the said Convention on October 30, 1958, with reservation and ratified it with an expressed reservation in respect to Art. 6.
The U.K. signed the Convention on September 9, 1958 and ratified it on May 11, 1964, with an objection to Art. 6 paras. 1 and 2 with respect to a reservation made by France. (23)

The U.K. ratified the Convention after the independence of Trinidad and Tobago. Its objections also related to a reservation by France. In any event any objection by the U.K. at that time cannot affect Trinidad and Tobago - Venezuela.

Since Trinidad and Tobago is bound by this Convention it has accepted the method of delimitation specified in Art. 6. Therefore in the absence of any agreement (which there is none) between Trinidad and Tobago - Venezuela on any special circumstances, Trinidad and Tobago adheres to the median line principle. Trinidad and Tobago has signed and ratified the 1982 Convention also.

But Trinidad and Tobago can also use the reservation made by Venezuela to Art. 6 to its advantage, i.e., use "special circumstance" to delimit the maritime boundaries in area a, b and c, (chapter 3) using the economic benefit of these areas to Trinidad and Tobago.

Trinidad and Tobago Municipal Legislation:

In 1969 Trinidad and Tobago passed two acts
which dealt with the territorial sea and the continental shelf. (24) In 1986 bills were passed in The House of Representative which amended these two acts. (25) Also in 1986, a bill was passed declaring Trinidad and Tobago an archipelagic state (26).

Territorial Sea Act 1969

This Act establishes the width of the territorial sea of Trinidad and Tobago at 12 miles. The purpose of the 1986 bill is to affect amendments to the Territorial Sea Act, consequent upon the new formulations for the measurement of the internal waters and the territorial sea of coastal states, introduced by the 1982 U.N. Convention on the Law of the Sea.

Sect. 5 of the amendment substitutes:
"The baseline from which the territorial sea shall be measured shall be the low water line along the coast of the island of Trinidad and of the island of Tobago as well as the coast of all other islands that form part of Trinidad and Tobago." in the 1969 Act for:
"The baselines from which the breath of the territorial sea shall be measured shall be straight archipelagic baselines." (27) This relates to the 1986 Bill declaring Trinidad and Tobago an archipelagic state.

Since both states have territorial sea of 12 miles the seas intersect at several points. So the
problem will have to be resolved through agreements or other means. But whereas Trinidad and Tobago accepts Art. 12 of the Convention on the Territorial Sea Venezuela has not, since Venezuela had a reservation to this article on delimitation of the territorial sea.

The Continental Shelf Act of Trinidad and Tobago

The 1969 Act is an Act to make provision as to the exploration and exploitation of the continental shelf. Sect. 2 of the Act re-enacts with minor modifications and drafting changes the definition of the term "continental shelf" in Art. 1 of the Geneva Convention on the Continental Shelf. Trinidad and Tobago, like Venezuela, adopted in its local law the 200-meter isobath criteria as well as the exploitability standard but unlike Venezuela did not provide that the shelf is national territory.

The 1986 amendment of the Continental Shelf Act Sect. 2 substitutes a new definition of "continental shelf" as follows:

"Continental shelf means the seabed and subsoil of the submarine areas of Trinidad and Tobago that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of its continental margin, or to a distance of two hundred nautical miles from the
baselines from which the breath of the territorial sea of Trinidad and Tobago is measured, where the outer edge of the continental margin does not extend up to that distance."

This definition is in keeping with Art. 76 Sect.1 of the 1982 Convention. Trinidad and Tobago has signed and ratified this convention.

Neither the 1969 Act or the 1986 amendment provide any method of delimitation, so on an international sphere Trinidad and Tobago adheres to the method prescribed in Art.83 of the 1982 Geneva Convention, which reads:

"The delimitation of the continental shelf between states with opposite or adjacent coasts shall be effected by agreement on the basis of international law, as referred to in Art.38 of the statute of the International Court of Justice, in order to achieve an equitable solution."(emphasis added)

Venezuela has not signed the 1982 Convention, but it seems that it would choose the parts suited to its advantage, eg. extend its continental shelf to 200 miles, yet abide by the 1958 convention.

The 1986 Act Declaring Trinidad and Tobago an Archipelagic State and The EEZ. (No. 15 of 1986)
The main object of the Act is to implement certain provisions of the 1982 U.N. Convention on the Law of the Sea, relating to the archipelagic waters and the EEZ, including the nature and extent of the jurisdiction to be exercised in each of these areas as well as matters connected therewith.

Part II of the Act declares the Republic of Trinidad and Tobago an archipelagic state and defines the area of the archipelagic waters. The Act also states that the archipelagic baselines of Trinidad and Tobago shall consist of straight baselines; it goes on to state that the breadth of the territorial sea, the continental shelf and the EEZ shall be measured from the archipelagic baselines. (see map 14)

It further explains that existing agreements and treaties affecting areas falling within the archipelagic waters are to be respected (e.g., Gulf of Paria treaty) but provision is made for new bilateral agreements to be entered into with other states. (28)

**Trinidad and Tobago Practice With Respect To Delimitation**

Trinidad and Tobago does not have a dispute with any country at present with respect to delimitation of its continental shelf. But Trinidad and Tobago is confidentially preparing itself for
MAP SHOWING ARCHIPELAGIC BASELINES
OF TRINIDAD & TOBAGO

VENEZUELA

SCALE 1:1,000,000
at Lat. 10° 00' N

Sources: Ministry of External Affairs, Trinidad and Tobago, 1985.
negotiations with Venezuela in the near future. The disputed area will be the maritime boundaries on the east coast and the south east coast between Trinidad and Tobago and Venezuela.

Trinidad and Tobago's policy with respect to delimitation of the continental shelf, is that it recognises that it shares a common shelf with Venezuela and that certain areas were delimited by mutual agreement in the Gulf of Paria Treaty, 1942.

In the absence of a common shelf with opposite/adjacent countries Trinidad and Tobago claims sovereignty over the resources of its shelf up to the continental margin or to where the depth admits of exploitability. (29)

Trinidad and Tobago thus relies on the legal principles established by the Geneva Conventions of 1958 and 1982, as well as examples of precedents and modern concepts in the Law of the Sea to support her position on the matter. The exploitability criteria is demonstrated in the last grant of production sharing contracts in 1974; licenses were granted in waters depths up to two thousand feet.(30) The availability of technology to exploit the resources of the shelf can mean a steadily expanding breadth of the continental shelf for Trinidad and Tobago, if she possesses the technology herself or can import it by harnessing the technological resources of the
international petroleum companies to exploit at greater depths.

In this respect therefore, Trinidad and Tobago is justified in claiming rights over as much of the continental shelf as can be exploited. Her claims to the east would be limited only by the extent to which they impinge on the equitable claims of other states. It appears that Trinidad and Tobago would like to establish a claim over the continental shelf on the east coast to a distance of approximately 240 miles. (31)

Mr. Carl Hudson Phillips (attorney-General of Trinidad and Tobago) on November 4, 1971, at the Ministerial meeting of Commonwealth Caribbean countries held in Barbados, stated:

"Trinidad and Tobago adheres firmly to geomorphological criteria in determining the outer limit of the continental shelf. This Trinidad and Tobago considers to be a natural prolongation seaward of its land domain."

This principle was applied by the International Court of Justice in arriving at a judgment in the North Sea Continental Shelf Cases, February 20, 1969. The geomorphological principle, which hinges on the idea that the continental shelf is clearly an extension of something already possessed, is now a determinant principle in claims
to the continental shelf.

The Court determined that:

"...... the rights of the coastal states in respect of the area of the continental shelf that constitutes a natural prolongation of its land territory into and under the sea exist ipso facto and ab initio by virtue of its sovereignty over the land, and as an extension of it in an exercise of sovereign rights for the purpose of exploring the seabed and exploiting its natural resources." (32)

Trinidad and Tobago actively supported this position at the U.N Conference on the Law of the Sea, when she suggested that the Trinidad and Tobago Law of the Sea delegation adopt the following definition of the continental shelf:

"The continental shelf of a coastal state extends beyond its territorial sea throughout the natural prolongation of its land territory." (33)

It is likely that there could be a 'collision of rights' between Trinidad and Tobago and Grenada on this issue. However, in terms of the geomorphological principle defined in technical terms of location of the continental shelf between Trinidad and Tobago and Grenada, the former appears to have a strong case.

In areas of the continental shelf to the south and southeast which were not defined by the Gulf of Paria Treaty, the licensed acreages awarded
by Trinidad and Tobago veer south of the international treaty line which extends abruptly midway across the Columbus Channel. Trinidad and Tobago limits the southeasterly extension of her continental shelf by what she considers to be the median line in the waters separating this territory from Venezuela. (34)

Though there has been no agreement between Trinidad and Tobago and Venezuela on delimitation of the area, the portion claimed by the former has been awarded to companies under licences. This seems to gain a great measure of legality from the apparent consent, recognition or acquiescence of other states.

In international law any state is free to claim any portion of the sea appertaining to its land - the legality of such a claim depends on consent, recognition or acquiescence of other states. (35) This position was established by the World Court in the Anglo-Norwegian Fisheries Case of 1951 between Norway and the U.K.

Venezuela has not yet protested about Trinidad and Tobago's unilateral awards in the study area. As a result of Venezuela's acquiescence in this area, eventually under international law Venezuela might be prevented from laying claim to the areas effectively occupied by Trinidad and Tobago. Thus Venezuela's continuing silence on the issue will mean
that she tacitly agrees with the actions of Trinidad and Tobago in the area.

Trinidad and Tobago seems to be using the rationale of the North Sea Continental Shelf Cases—that if the state effectively occupies the areas beyond the territorial sea off the east coast, then it could perhaps come to an agreement with the neighbouring states if the area occupied is under dispute. The argument here is there could be no apportionment of something which does not belong to anyone, and which remains an integral, undisputed, undivided whole.

The 1969 North Sea Continental Shelf Cases would be used to emphasize this point:

"Any dispute about boundaries must involve ...... a marginal or fringe area to which both parties are laying claim. So that any delimitation of it which does not leave it wholly to one of the parties will in practice divide it between them in certain shares or operate as if such a division had been made." (36)

It should nevertheless be emphasized then that Trinidad and Tobago has tried to ensure that the boundaries of the licensed areas are well within the limits of the continental shelf to which this country can legally lay claim in accordance with established
principles of international law. The very fact Trinidad and Tobago has given out licenses in these areas indicates that the state is offering the international petroleum companies a guarantee that it has exclusive sovereign rights to the resources of the area.

It is most desirable that all potential issues over the delimitation of the continental shelf between Trinidad and Tobago and other coastal states of the Caribbean be resolved peacefully. Customary international law provides the basis for possible solutions set within the framework of the 1958 and 1982 Geneva Conventions, and also precedents set by the International Court of Justice judgments.

Firstly, in cases of dispute, "the wisest solution is to leave the parties free in each case to determine by agreement between themselves the most appropriate frontier line." (37) In the absence of a treaty and in cases where the countries are parties to the Convention, delimitation may be based on the principle of "special circumstances," which takes into consideration equitable principles, historic rights and economic benefit. Failing this, the equidistance principles may be applied. But this principle is not in itself a binding principle of customary international law since the use of the
median line may lead in some cases to inequitable results.

The geography, geology and geomorphological characteristics of Trinidad and Tobago are largely responsible for the direction of her policy on matters related to her continental shelf. It is a question of how could her policy on these issues best serve the national interest and maximize the economic and fiscal benefits to the state.

Her policy is consistent with that of her Latin American neighbours, in that she desires maximum economic jurisdiction over the maritime resources and wishes to exercise her sovereign rights over the most extensive area possible of the continental shelf. The very fact that Trinidad and Tobago went beyond the 200 mile limit set by the 1958 Convention in awarding licences to explore and exploit petroleum, demonstrates that she found the criterion unacceptable in terms of national interests.

The greater the extent of ocean space over which Trinidad and Tobago has sovereign rights to explore and exploit, the greater is the likelihood of discovery of large exploitable reserves of hydrocarbon resources by the international petroleum
companies operating under license from this state. Trinidad and Tobago looks toward the continental shelf for much of her present welfare and future prosperity.

**Barbados and Grenada's Views of Delimitation**

Both Barbados and Grenada were colonies of the U.K. In 1966 Barbados became independent; Grenada did so in 1974. Both countries are not parties to the 1958 Territorial Sea or Continental Shelf Conventions. But both countries have signed the 1982 Law of the Sea Convention.

Barbados in 1977 declared a 12-mile territorial sea; in this Act archipelagic straight baselines were also declared. (38) In the 1978 Marine Boundaries and Jurisdiction Act, Barbados declared a 200 mile EEZ.

Grenada in 1978 declared a 12-mile territorial sea and also declared archipelagic straight baselines. (39) These two countries stated in their legislation, that if there is no agreement between the parties disputing a boundary then the median line would operate as the residual rule.

Both countries at present have no maritime boundary disputes with any country.
Summary:

Venezuela did not sign the 1958 Geneva Convention, but placed a reservation to Article 6; "zones adjacent thereto" stated in this reservation refers to those zones or study area described in this chapter.

Trinidad and Tobago can use this reservation to its advantage i.e., use "special circumstances" to delimit the maritime boundaries in the study areas - emphasizing the economic benefit of these areas to Trinidad and Tobago.

In any boundary delimitation account should be taken of the difference in each area and each case should be considered on its own merit; this was viewed by the Venezuelan delegate to the U.N. conference prior to the signing of the 1958 law of the sea conference.

The precedence set by Venezuela in its agreed boundary lines are on the basis of equitable principles eg. The Dominican Republic and Venezuela boundary. In the case of the dispute between Venezuela and Colombia - Venezuela relies upon historical title and other special circumstances.

Trinidad and Tobago relies on the legal principles established by the Geneva conventions of 1958 and 1982, as well as examples of precedents and
modern concepts in the law of the sea to support her position on delimation.
Chapter 5: Maritime Boundary delimitation Principles and Precedents set by the International Court of Justice, and other International Tribunals.

The international community of nations is struggling with the vexing problems of the establishment of off-shore boundaries; presumably each state hopes to maximize its economic advantage, while minimizing interference with traditional freedoms of access.

Art. 6 of the 1958 Continental Shelf Convention dealt with delimitation. This article has a three prong approach, in that it states .... the boundary should be determined by agreement; if there is no agreement and no special circumstances which can influence the boundary line, then the median line or equidistant principle should be used. The article does not explain what is meant by special circumstances.

All social structures are subject to change. The Law of the Sea is no exception. UNCLOS III provided the occasion for a shift of fashions. The criteria for delineation of the continental shelf between opposite/adjacent states changed from a "specific" into a "diffuse" mode; from the "median line principle" and "special circumstances" into "equitable solutions", the 1982 Law of the Sea
Convention being the new savoir faire. (1) The new delimitation criteria are couched in the following terms in Art. 83 of the 1982 convention.

Article 83 reads: "The delimitation of the continental shelf between states with opposite or adjacent coasts shall be effected by agreement on the basis of international law as referred to in article 38 of the state statute of the International Court of Justice, in order to achieve an equitable solution" (emphasis added)

This development leaves the settlement of criteria for stipulation of boundaries to the negotiating parties, while at the same time the scope for consideration of regional characteristics is enlarged. "Special Circumstances" now denotes not only geographical factors; also political, legal, demographic and economic features (resource interest i.e. usage) of the regions in question may be taken account of.

Special Circumstances/Equity:
It seems therefore, when one refers to special circumstances one is referring to equity, therefore circumstances can be viewed as a means of creating equity and should play an important role in delimitation of the area.

The seaward extension of coastal states'
jurisdiction is aimed at acquiring rights to the resources and the purpose of delimitation of the boundary is to clarify such rights between states. In 1958 the residual rule was equidistance. In recent years we have seen several developments by the International Court of Justice in the decisions on settlement of boundary disputes. In the North Sea Continental Shelf Case of 1969, the Court ruled that the continental shelf, a natural prolongation of the land territory, should be delimited in accordance with equitable principle, taking account of all relevant circumstances. The Court also held that Art. 6 of the 1958 Continental Shelf Convention was not a principle of customary international law. (2)

It was as a result of this case that we have the emergence of 'equity' as the guiding principle or method. "Equity does not necessarily imply equality ......." (3) But with an equitable line the result should be fair to the parties involved. Art. 83 of the 1982 Convention says that the objective of maritime boundary delimitation should be to achieve an equitable solution. The role of equity is still left to be defined, but it became the new concept in settling maritime boundary disputes.

The Anglo-French case gave the rule of equity a final imprint. The Court stated that the fundamental
principle in the delimitation of maritime areas between opposite/adjacent states is that based on equity, the object being to achieve an equitable line. (4)

In the 1982 judgment of the Tunisia/Libya Case the court affirms that "the delimitation is to be affected in accordance with equitable principles, and taking account of all relevant circumstances; the principles are subordinate to the goal." The term 'equitable principles' cannot be interpreted in the abstract. The equity of any principle depends on whether it produces a just result in the circumstances of the particular case. (5)

In the U.S./Canada judgment in 1984, the Court stated "the present judgment can be summed up in four words: the result is equitable. It seems equity is to some extent in the eyes of the beholder." (6)

**Equity As A Rule**

Equity as pursued in International Court of Justice decisions is the main principle on which maritime delimitation may safely rest, notwithstanding the fact that special circumstances and economic dependence or historic titles may act as corollaries to determine whether the application of the equidistant method would be tantamount, in a given case to equity. (7)
Indeed, what makes the median or equidistant line equitable or not is the presence (or absence) and regard (or disregard) of special geographical circumstances such as islands, or the shape of the coast (convex or concave), but also special circumstances, such as economic dependence on resources in the delimited area together with historical usage.

Hodgson stressed the fact that "while equidistance is not the sole basis for the delimitation of the continental shelf, the principle has been enshrined as unquestionable 'conventional wisdom,' for maritime limits. It is the only method mentioned in both the 1958 Convention on the Territorial Sea and the Continental Shelf and, as a consequence, states find the concept easy to accept due to its proper 'sanctification.'(8)

Nweihed himself states that the best boundary between states is one the both states accept peacefully.(9).

The difficulty between lines of equidistance and limits founded on equitable principles has been finessed by the reference to Art. 38 of the Statute of the International Court of Justice, which emphasizes equitable solutions.

The tribunal in the U.K./France dispute, noted that the judgment in the North Sea Case contained the
assertion that there is no legal limit on the considerations which states can use in order to ensure equitable procedures. (10) Brown, as referred to by Prescott, has picked up this point and asked, why the judges in the North Sea Case did not consider population size, per capita income, dependence of industry on shelf resources and the relative poverty of land resources. (11) Nor will some states accept the view of these two international tribunals that it is not the purpose of an equitable solution to create a situation of complete equity when geography and nature have established an inequity. (12)

It is all very well for international judges to argue that equity calls for a suitable abatement of disproportionate effects of special geographical circumstances; for politicians with electorates to satisfy equity is likely to mean at least equality. (13)

Since there is no restriction on the range of issues which can be introduced into the debate about an equitable solution, the debate might be long, especially when there is a marked discrepancy between the parties.

Circumstances Which May Complicate Maritime Boundary Negotiations

The settlement of any international maritime
boundary faces the basic problem that there are no precise rules governing the manner in which negotiations should be conducted, and no definite principles to guide the parties.

Art. 83 of the 1982 Convention now requires the delimitation of maritime boundaries to be based on international law, as referred to in Art. 38 of the Statute of the International Court of Justice, in order to achieve an equitable solution. Alas, Art. 38 does not provide much help. It enjoins the courts to reach decisions by applying international conventions expressly recognised by the contesting states; by international customs, by the general principles of law recognized by civilized nations which implies that there are uncivilized nations; and by judicial decisions and the teachings of the most highly qualified publicists. Most international lawyers suggest that there is nothing in this prescription to prevent any state from raising any matter it wants in support of a particular boundary alignment which will suit it. (14)

It is this lack of restriction on arguments which might be raised that accounts for the wide range of circumstances which might create complications for boundary negotiations. Circumstances which could complicate boundary negotiations are political, geographical and economic.
Political Circumstances:

Because of the multiple interests at play, neighboring states do not necessarily share the same views on the importance, need or urgency of maritime delimitation.

A pair of states are lucky if they find out that they share a mutual interest in identifying a potentially delimitable area, and a similar degree of urgency in negotiating an agreement. Thus good relations between governments will probably promote a fair and prompt solution; e.g. U.S./Mexico and Mexico/Cuba: Mexico maintains friendly relations with both. Therefore, it is plain that the lack of formal relations between countries, or the existence of poor relations, would probably prevent the start of negotiations; for example it is unthinkable that Jordan would discuss maritime limits with Israel, or that China would discuss maritime boundaries with Taiwan.

The next most important political circumstance concerns conflicting claims to territory from which maritime zones may be claimed. e.g., Venezuelan claims to western Guyana. These countries cannot begin to draw their maritime boundary until the sovereignty question is settled. Conflicting claims to territory are always a fruitful source of
disagreement and ill will, and the difficulties are exacerbated when the disputed territory would allow a successful claimant to make claims to potentially valuable seas and seabed.

Geographical Circumstances:

Geographical circumstances which might make negotiations difficult include:-

a) The problem of deciding whether a feature standing above high tide ceases to be a rock and can be considered an island. Art. 121 of the 1982 Convention states that an island is a naturally-formed area of land surrounded by water, which is above water at high tide. The article also confirms that states may claim all maritime zones from such features. The final part of the article provides that rocks which cannot sustain human habitation or economic life of their own may be used to claim territorial waters, but shall have no continental shelf of their own. There is no other indication of how to distinguish rocks from islands or what entails an economic life of their own. It is apparent that decisions about the status of features which might be rocks or islands will have to be decided between the negotiators.

b) The next geographical circumstance which might
complicate maritime boundary negotiations concerns the nature of the continental shelf/seabed shared by two adjacent or opposite states. The 1982 Convention in Art. 76 permits a state to claim the continental shelf which extends throughout the natural prolongation of its land territory, without providing any guidance on how that natural prolongation will be determined. The continental shelf of the Convention is a legal abstraction which does not reflect the complexity of the world's continental margins. Thus it is left to the negotiators to solve this problem.

Economic Circumstances:

If there is a marked disparity in wealth and resources between two states, the poorer state may argue for the lion's share of a disputed zone, or at the very least the poorer country might try to persuade the richer state to discount part of the richer state's claims.

Negotiations might be made more difficult if the economic potential of a disputed area is high, or is totally unknown. If the overlap formed by two claims is known to be valuable in terms of reserves of petroleum or natural gas, both countries will be reluctant to compromise until each has fully tested the resolve of the other state. Conversely, if the value of the disputed zone is totally unknown, the
uncertainty about what is at stake will encourage countries to try to strike the hardest bargain possible.

In every case the critical element is always the attitude of states towards the question. If governments approach the issue in a spirit of conciliation, then the apparently serious difficulties associated with potentially rich continental margins may be readily overcome. Conversely, if governments approach the matter with a determination to secure their preferred solution, then even trivial difficulties can be magnified into apparently impassable obstacles. (15)

Principles and Methods:

For over three decades international diplomats and jurists have attempted to develop maritime boundary delimitation principles with broad if not universal applicability. Two basic elements, however, have frustrated the pursuit to establish a definitive set of delimitation rules. First, and foremost no two boundary situations are identical; all boundary regions are unique, in that there are differences in coastline configuration, seabed geomorphology and geology, and in economic dependence. Thus related to the geographical perspective there is also the difference in the pattern of marine resources
distribution. These and other related characteristics should be considered in a boundary delimitation. Therefore, the delimitation method that may provide an equitable and reasonable boundary solution in boundary region one may create, due to the different geographical and special circumstances, an inequitable line in boundary region two. (16)

A second basic element is that new marine regions are coming under national jurisdiction. To a certain extent the delimitation of offshore maritime boundaries reflects a continuum of experiences gained from state practice relating to land boundaries and then to near shore limits. (17) Certain old practices may be retained, but due to the nature of the new zones, particularly to the distances involved, a change in emphasis and technique will most likely be forthcoming. But Art. 83 of the 1982 Convention remains vague and is subject to interpretation. This may not be bad since there must be a certain amount of flexibility, due in part to the geographical and special circumstance uniqueness of boundary regions, in the process of boundary delimitation. (18)

There does not exist a measuring rod good enough as to split principle from method in maritime delimitation. Certain publicists diplomats and cartographers have applied the term "principle" to
categorize the equidistant or median line, wherein "equidistant" is but a cartographic method (or at the best, a rule for the delimitation of maritime space), but definitely not a principle to be confounded erroneously or on purpose, with a legal principle. The International Court of Justice in the North Sea case and the Tunisa/Libya case ruled that the equidistant method cannot be considered a rule of the law. (19)

Process Of Maritime Boundary Delimitation:

Questions that may be asked in any maritime boundary delimitation are:

1) What function would the boundary serve, i.e., would it serve the interest of security or defense or is it for economic considerations?

2) What factors should be taken into consideration for the purpose of delimitation?
   a) Geomorphological considerations:
      - proximity to the coast
      - appurtenance to offshore areas
      - natural features, e.g., islands or a trench
      - proportionality, e.g., ratio of length of coastlines.
   b) Geological/natural prolongation, i.e., if the continental shelf is a continuation of the land mass.
c) Resource interest/economic interest:
- unity of deposits and fish stocks
- usage, i.e., historical and continuing patterns
- acquiescence and conduct of the states.

d) Environmental considerations, i.e., ocean uses may have effects on coastal areas and vice-versa.

e) Prior governmental activities in boundary area, e.g., in the Tunisia/Libya case - the concession line was used. (20)

The Methods Applied To Delimit Maritime Space Have Been Classified As Follows:

1) Equidistance - by applying a median line every point of which is equidistant from the nearest points of the baselines from which the breadth of the territorial sea of each of the two states is measured.

2) Prolongation of the general direction of the land boundary or the coast.

3) Line perpendicular to the coast at the land boundary.

4) Parallel or meridian of the terminus of land frontier.

5) Modified equidistance - using the bisector of angles and then drawing a parallel line to a known point. (21)
Case Law:

It is proposed here to examine in some detail judgments of the International Court of Justice, which are relevant to the delimitation of Trinidad and Tobago boundaries between Venezuela, Grenada, and Barbados.

The Anglo-Nowegian Fisheries Case (1951)

The dispute involved the validity in international law of the Royal Norwegian Decree of 1935 of the baseline system, delimiting the Norwegian Fisheries Zone. (22)

By ten votes to two the International Court of Justice declared, "that the method employed for the delimitation of the fisheries zone by the Royal Norwegian Decree, 1935 is not contrary to international law." (23)

Part I of the Norwegian Counter-Memorial, contained an investigation of the geographic, economic and historic elements involved in the case. It pointed out that the sole economic basis for this outpost of civilization was the thousand-year old fisheries. From time immemorial, the inhabitants of these regions had carried on their fisheries even far outside the zone laid down by the 1935 decree. (24)
The Judgment

The decision rendered on December 18, 1951, by the International Court of Justice resulted in a judgment completely in favor of Norway. In a last consideration reaching beyond purely geographical factors, the Court recognized "that of the economic interests peculiar to a region, the reality and importance of which are clearly evidenced by a long usage." (25) The vital economic interests of the coastal population involved were very important realities in the Court's consideration, and this was repeatedly stated in the decision.

The historical factor was, together with the geographical, economic and other factors, considered as evidence of the important needs and realities lying behind the Norwegian claims, and was thus one of the factors to be taken into account in applying the general principles of international law to a particular case. Considering this very ancient and peaceful usage, together with the vital needs of the population, the Court found this line a reasonable one. (26)

The importance of the decision of the Court for the parties involved is obvious. It solves a serious dispute which for more than forty years had existed between two friendly nations, and settles questions of the most vital interest for Norway.
The Court emphasized the need for flexibility in the rules of international law governing delimitation. Considerations to be taken into account are those such as the vital economic interest of the regions involved, the practical needs and the local requirements of the coastal population, and the historic element in the case as a proof of such needs. (27)

It seems only natural that the Court in this regard has not stated all the elements which may be of importance in the individual case. The elements expressly mentioned were elements of actual importance in the case pending before the Court. In other cases new facts and elements may play an important role and the intrinsic value of the elements mentioned may vary in each individual case. This case is relevant as a precedent for the delimitation of Trinidad and Tobago boundary because the question of economic interest peculiar to a region was considered and given to this criteria.

U.K. and Northern Ireland vs. Iceland Fisheries Jurisdiction Case, 1974

On April 14, 1972 the British Embassy in the Netherlands instituted proceedings with the International Court of Justice against the Republic of Iceland. The dispute concerns the then proposed
extension by the government of Iceland of its fisheries jurisdiction to 50 miles from baselines round its coast. The U.K challenged this extension stating that it is contrary to international law.(28)

Iceland did not take part in any phase of the Court proceedings. In a letter dated May 29, 1972, the government of Iceland informed the Court that it regarded the exchange of notes between the government of Iceland and the government of the U.K. dated March 11, 1961 as terminated. In its view there was no basis under the statute for the Court to exercise jurisdiction in the case. As it considered the vital interest of the people of Iceland to be involved, it was not willing to confer jurisdiction on the Court in any case involving the extent of the fishery limits of Iceland, an agent would not be appointed to represent the government of Iceland. Notwithstanding the Court's judgment of February 2, 1973, in which the Court decided that it had jurisdiction to entertain the U.K.'s application and to deal with the merits of the dispute, the government of Iceland maintained the same position with regard to the subsequent proceeding.

For the case the Court looked at the law passed in 1948 by the Atheling (the Parliament of Iceland) entitled, "Law concerning the scientific conservation of the continental shelf fisheries" containing inter
alia the following provision. "It is well known that the economy of Iceland depends almost entirely on fishing in the vicinity of its coasts.......

On July 14, 1971 the Government of Iceland issued a policy statement in which it was stated:

"...... the extension of fisheries jurisdiction to 50 nautical miles from the baselines would be effective on Sept. 1, 1972."(30)

The Court stated that, "the delimitation of sea areas has always an international aspect, it cannot be dependent merely upon the will of the coastal state as expressed in its municipal law. Although it is true that the act of delimitation is necessarily a unilateral act, because only the coastal state is competent to undertake it, the validity of the delimitation with regard to other states depends upon international law."(31)

There can be no doubt of the exceptional dependence of Iceland on its fisheries. That exceptional dependence was explicitly recognised by the applicant in the exchange of notes on March 11, 1961; and the Court has also taken judicial notice of such recognition, by declaring that it is:

"necessary to bear in mind the exceptional dependence of the Icelandic nation upon coastal fisheries for its livelihood and economic dependence."
Judgment:

By ten votes to four, the Court found that the fisheries extension of 50 miles from the baselines are not opposable to the government of the U.K. Thus economic dependence was taken into consideration in coming to this decision.

The North Sea Case

This case is relevant to any issue with regard to the continental shelf between Trinidad and Tobago and Venezuela, Grenada and Barbados. In the judgment the 1958 Convention on the Continental Shelf is examined, and the question of delimitation of the continental shelf is considered both if the provisions of Article 6 were applied and vice versa - e.g., a state not being a party to a convention.

The task before the Court was to determine the principles and rules to be applied in the delimitation of the continental shelf boundary between Germany and Denmark, and Germany and the Netherlands in the North Sea.

The Court in its judgment, stressed that a coastal state has rights over those areas of the continental shelf that constitute a natural prolongation of its land territory. It held:

a) That the equidistance method for delimiting the
continental shelf between adjacent or opposite states was not a binding rule of customary international law. The principles of international law governing the delimitation of a common shelf are that such delimitation should form the subject of an agreement between the states concerned, arrived at in accordance with equitable principles.

b) That the delimitation in question should be carried out in accordance with these principles taking into account all relevant circumstances and in such a way so far as possible, as to leave to each party all those parts of the continental shelf that constitute the natural prolongation of its land territory under the sea. (33) Germany, one of the parties in this case, was not a contracting party to the 1958 Continental Shelf Convention. (34)

The Court therefore had to find what general principles of law would apply, i.e., what is the customary international law on this subject. The Court held that:

"The Geneva Convention did not embody or crystallize any pre-existing or emergent rule of customary law, according to which the delimitation of continental shelf areas between adjacent/opposite states must, unless the parties agree, be carried out on an equidistance special circumstances basis." The
rule of Article 6 was a conventional rule and the equidistance method is not a mandatory rule of international law. (35)

The Court had to indicate the rules of the law concerning which methods should be used for effecting the delimitation. The Court found, that the "delimitation must be the object of agreement between the states concerned, and that such agreement be arrived at in accordance with equitable principles." (emphasis added) (36).

The Court tried to define the rule of equity: "Equity does not necessarily imply equality." (37)

Judgment

The Court by eleven votes to six decided that:
"Delimitation is to be effected by agreement in accordance with equitable principles, and taking account of all relevant circumstances........." (38)

The factors to be considered in negotiating a boundary area:-

1) The general configuration of the coast ..... as well as ...any special or unusual features.
2) .... the physical, geological, and natural resources of the continental shelf areas involved.
3) Proportionality - i.e., length of the coastline to the continental shelf.(39)

As a result of this decision, the agreed boundary
by the parties were not extensions of the equidistance boundaries already delimited, but some other line beginning at the terminus of the partial boundaries and extending Germany's jurisdiction over a portion of the North Sea continental shelf out to the median line between the continent and the U.K. (40)

U.S./Canada - The Gulf Of Maine Case

The Claims:

At the outset, the U.S. laid claims to all of George's Bank whereas Canada sought a delimitation line which would secure for it the eastern portion of the Bank, where an important part of the fishing takes place. Both parties requested the Chamber of the International Court of Justice to make a decision to be, "determined on the basis of the applicable law in accordance with equitable principles, taking account of all the relevant circumstances, in order to achieve an equitable result," (41) and not ex aequo et bono. (42) The half-a-loaf strategy adopted by Canada immediately created the appearance of reasonableness - an image which Canada carefully cultivated throughout its written and oral presentations to the Chamber. Such a strategy had a major impact on the majority decision as evidenced by the final delimitation line, giving Canada the
northeastern portion of George's Bank. (43)

The final statement of the majority states, "a decision which would have assigned the whole of George's Bank to one of the parties might possibly have entailed serious economic repercussions for the other." (44)

Economic Dependence: Canada's Counter-Memorial

Indeed, Canada's main pitch to the Chamber centered on the economic dependence of the relatively poor southwestern part of Nova Scotia upon the fishing industry, particularly upon the catch from George's Bank. (45)

Canada asserted that the loss of access to George's Bank would knock out one of the central pillars of the fishery, which forms the 'edifice' upon which 'human life is built,' (46) in southwest Nova Scotia, citing the loss of 3,000 jobs, unemployment for 1,200 scallop fishermen, the loss of some forty million dollars annually, as opposed to the U.S losing only $10 million with a bristling and diversified economy of New England, placing in jeopardy the livelihoods of 1,000 small boat fishermen and also the loss of 5,000 jobs at fish plants. Canada argued that loss of access to the Bank would reflect throughout the secondary industries of boatbuilding and supplies, and eventually spread throughout the entire economic
After painting a bleak picture of the economic disaster which would befall this already depressed economy if the Court decided to award all of George's Bank to the U.S., Canada contended that in contrast, the economy of New England would hardly be affected by awarding Canada the eastern half of the Bank, because New England's economy is far less dependent upon the fishing industry.

Equitable Criteria

What is the difference between the terms, "equitable principles" as used by the parties, and "equitable criteria" which is used by the Chamber. Both terms apparently can be used interchangeably, but for reasons of clarity the Chamber preferred the latter.

It suggested that the term "principles" connotes rules of customary law which, because they are law, would have to be applied in each case. On the other hand, "criteria," are below the level of rules or principles of law, and therefore need only be applied where the particular circumstances make them appropriate.

The Chamber stressed that:

"The criteria in question are not themselves rules of law and therefore mandatory in different
situations, but 'equitable,' or even 'reasonable criteria,' and that what international law requires is that recourse be had in each case to the criterion, or the balance of different criteria, appearing to be most appropriate to the concrete situation. (50)

The degree of "equitableness" of the criteria will vary with the circumstances of each case, and will have different results from case to case.

As with the equitable criteria, no one method is intrinsically appropriate, nor are there any that must receive priority. The appropriateness of a method is determined solely by the particular circumstances in any given situation, although "certain methods are easier to apply .......... because of their almost mechanical operation, they are less likely to entail doubts and arouse controversy .... there is no single method which intrinsically brings greater justice or is of greater practical usefulness." (51)

The Chamber did consider the economic geography arguments as being 'other criteria' - criteria which it declared not 'equitable' - in order to ascertain whether these other criteria rendered the delimitation (which had been achieved by applying equitable criteria) somehow 'radically inequitable.' The Chamber defined inequitable here as "likely to
entail catastrophic repercussions for the livelihood and economic well-being of the population of the countries concerned." (52)

The Chamber concluded that its delimitation did indeed provide an "equitable" result for these stated reasons:

a) Canada retained its scallop fishing grounds on the north eastern end of George's Bank and therefore, the economy of southwestern Nova Scotia would not suffer.

b) The U.S. similarly kept its scallop fishing grounds in the vicinity of the Great South Channel. (53)

c) Both countries retained their lobster fishing grounds on the northeastern and southwestern parts of the bank.

Analysis of Judgment:

Judge Gros in his dissent charged that the Chamber first determined the final result, and then developed the means to reach that result. (54)

The Chamber thus decided to split the Bank. Clain Levi's, view was; "whether the decision itself or the means by which it was made came first does not really matter. If the delimitation line arrived at by means of applying equitable criteria did not result in splitting George's bank, the Chamber in applying
these economic criteria not found to be equitable would have corrected the delimitation line so that it split the bank, in order to achieve a 'equitable result.' Thus, the same result is achieved whether these 'other criteria' are taken into account at the end of the process or at the beginning." (55)

If this analysis is valid, then the final delimitation was ultimately chosen by "considerations of a political and economic character," which the Chamber initially discarded because such considerations called for a decision ex aequo et bono rather than one based on law. (56)

This analysis leads back to Judge Gros' main concern that the law of delimitation today is really one without supporting "guard rails to the use of the concept of equity," (57) and therefore, not "controlled equity," but rather, "equity left, without any objective elements of control, to the wisdom of the judge reminding us that equity was once measured by 'the chancellor's foot.'" (58)

If Judge Gros is right, and the law of delimitation has been reduced to a question of subjective equity, then negotiating an agreement of a delimitation line has been made at once more difficult because of the absence of legal guidelines, and yet more certain, because nations will prefer agreement to 'roll - the dice ' judicial discretion. Further, if the
delimitation dispute does go to adjudication, advocacy - the ability to persuade a judge of the 'equity' of one's case - becomes the primary concern. (59)

The Federal and Provincial officials of Canada claimed a victory and said that the decision ensures the continuation of the scallop industry at the same level, and may lead to an increase in ground fish and lobster catches. (60)

Therefore Canada has 'done good.' Thus Canada has emerged the clear winner in the dispute. Therefore, 'economic dependence' helped in the decision, via subtle implication of the Chamber.

The United States has accepted the Chamber's decision, but not without harbouring, and exhibiting, bitter disappointment. A spokesman for the New England fishing industry estimated that its fishermen will be denied access to as much as 9,000 square nautical miles of the most lucrative part of Georges Bank, reducing the U.S. harvest of haddock by 30%, of pollock by 25%, and of redfish, scallops and yellowtail flounder by 20% - all of which, in turn, would drive up prices to the American consumer. (61)
Chapter 6: Construction and Analysis of Boundary Lines:

It would be useful to begin this section by referring once more to the reservation of Venezuela with respect to the 1958 Geneva Convention on the Continental Shelf. The reservation reads:

"In signing the present Convention, the Republic of Venezuela declares with reference to Article 6 that there are special circumstances to be taken into consideration in the following areas: the Gulf of Paria insofar as the boundary is not determined by existing agreements and in zones adjacent thereto; the area between the coast of Venezuela and the island of Aruba; and the Gulf of Venezuela."(1) (emphasis added)

The "zones adjacent thereto," are defined in Chapter four as the study areas a, b, and c. The economic boundary lines will be constructed in this section for each of these zones as it pertains to Trinidad and Tobago's approach on delimitation.

1) Economic Maritime Boundary Line in Zones B and C. This boundary is on the south coast of Trinidad and Tobago with Venezuela and also on east coast of Trinidad and Tobago with Venezuela. 

Venezuela/Trinidad and Tobago economic boundary line.
The Starting point of construction is Point A, (61° 0' W and 9° 51' N), which is chosen as the closing point for the Serpents Mouth. Point A, is also a point on the petroleum concession boundary line of Trinidad and Tobago used since 1969.

Point D (59° 54' W and 9° 58' N) which is the end of the concession line is extended perpendicular to the closest point of the 1,600 fathom or the 2,909 metre isobath to point Y. The choice of the 1,600 fathom line or 2,909 metres isobath was due to the developments in the Third United Nations Conference on the Law of the Sea, wherein Article 76 para.5 states:

The fixed points comprising the line of the outer limits of the continental shelf on the sea-bed, shall not exceed 350 nautical miles from the baselines from which the breath of the territorial sea is measured or shall not exceed 100 nautical miles from the 2,500 metre isobath, which is a line connecting the depth of 2,500 metres.

So the choice of the 1,600 fathom line or 2,909 metre isobath is in accordance with the above statement, of not exceeding 100 nautical miles from the 2,500 metre isobath.

The line AY, is considered to be the equidistant line between Venezuela and Trinidad and
Tobago; with this line the coast of Venezuela is given full effect.

At Punta Playa which is the hypothetical territory boundary line between Venezuela and Guyana, 12 mile territorial sea arcs are drawn. Point Z is the 12 mile arc at Punta Playa and point H is the 12 mile arc at Punta Baja.

Point A is connected to Point H which is then connected to Point Z.

A modified equidistant line is then constructed. This was accomplished, by determining the line midway between the equidistant line \( AX \), which give the Venezuelan coast full effect, and an equidistant line drawn without regard to the Venezuelan coast.

\( AX \) is the modified equidistant line and is the economic boundary line in zones B and C.

This precedent was set in the United Kingdom/France Continental Shelf Arbitration, 1978, in which the Court drew the boundary by determining the line midway between an equidistant line giving the Scilly Islands full effect and an equidistant line drawn without regard to the Scillies. (2)

2) Maritime Boundary Line in Zone A: this area is the area north of Trinidad and Tobago and forms part of
the Margarita-Tobago continental shelf. The boundaries are constructed between Grenada and Barbados in this zone.

Grenada/Trinidad and Tobago economic boundary line.

The proposed boundary between Trinidad and Tobago and Grenada is an equidistant line $AB_3$.

Point $A_3$ is chosen as the starting point for the boundary line, since it corresponds to the starting point of the petroleum concession line used by Trinidad and Tobago since 1969. This precedent was set in the Tunisia/Libya case, in which the Court delineated the first part of the line using the concession lines utilized by Tunisia (1966) and Libya (1968). (3)

Point $A_3$ is also the tri-point between Grenada, Venezuela and Trinidad and Tobago.

Point $B_3$ is the equidistant point between Pt. Egmont in Grenada and Pt. T on the Trinidad and Tobago archipelagic baseline.

Point $C_3$ is the equidistant point between Requim point in Grenada and Mt. Irvine on the Trinidad and Tobago archipelagic baseline.

Point $D_3$ is the equidistant point between Birds Island in Grenada and The Sisters on Trinidad and Tobago archipelagic baseline.

Point $D_3$ is extended to $X_3$ which is the
tri-point between the Grenadines islands, Barbados and Trinidad and Tobago.

If Trinidad and Tobago uses the petroleum concession line as their boundary, they stand to lose more than if the equidistant line is used. Since there is no fixed methodology as to when to use the equidistant principle and the only advice given by the 1982 Law of the Sea Convention on boundary delimitation is "to achieve an equitable solution." Here the equidistant line is equitable and reasonable to both Trinidad and Tobago and Grenada.

Barbados/Trinidad and Tobago Maritime Boundary Line.

The opposition of the coastlines is used to justify selection of the median line. The points used in the construction of the median line.

Point $X_3$ is the tri-point between Trinidad and Tobago, Barbados and the Grenadines islands. It is used as the end-point or the closing point for the median line. To get this tri-point, Saint Giles in Trinidad and Tobago, Carlise bay in Barbados and Sail Rock in the Grenadines is used.

Point $Y_4$ is the equidistant point between South Point in Barbados and Saint Giles Island in Trinidad and Tobago.

Point $Z_4$ is the equidistant point between Kitridge Pt. in Barbados and Little Tobago in
Trinidad and Tobago.

Point Z is extended perpendicularly to W, which is on the 1600 fathom line or 2,909 metre isobath.

Trinidad and Tobago approach's for these economic boundaries is based on the rule of law that maritime boundaries are to be "determined on the basis of the applicable law in accordance with equitable principles, taking account of all the relevant circumstances, in order to achieve an equitable result." (5)

The Applicable Law:

1) Reference to the 1958 Continental Shelf Convention.

This Convention came into force on June 10, 1964. Venezuela signed the Convention on October 30, 1958 and ratified it on August 15, 1961 with reservation to Article 6 on delimitation of the continental shelf. This reservation is stated at the beginning of this chapter.

Article 6 of the 1958 Continental Shelf Convention states:

"Where the same continental shelf is adjacent/opposite to the territories of two or more states whose coast are adjacent/opposite each other,
the boundary of the continental shelf appertaining to such states shall be determined by agreement between them. In the absence of agreement, and unless another boundary line is justified by special circumstances, the boundary is the median line, every point of which is equidistant from the nearest points of the baselines from which the breadth of the territorial sea of each state is measured."(6)

Venezuela's reservation states:

"...... with reference to Article 6 there are special circumstances to be taken into consideration in the following areas......"(7)

It is clear that by implication Venezuela recognised the validity of the Gulf of Paria Treaty insofar as certain areas have been delimited and that the median line principle prescribed in Article 6 is not acceptable to Venezuela in the Gulf of Paria and in the zones adjacent thereto.

Trinidad and Tobago acceded to this Convention on July 11, 1968. Trinidad and Tobago did not give notice of any objections or reservation on acceding to the Convention and to date, has not placed on record any objection to the Venezuelan reservation. Therefore Trinidad and Tobago has implicitly accepted the Venezuelan reservation with
respect to ..... 'zones adjacent thereto.'

Trinidad and Tobago can use this reservation to achieve its goal of an economic boundary line. Trinidad and Tobago has the burden of proving the existence of special circumstances. Venezuela did not define what is meant by special circumstances in its reservation. So Trinidad and Tobago in the opinion of the author takes it to refer to the socio-economic dependence of the nation on the petroleum in the zones.

b) Reference to the 1982 Convention.

Trinidad and Tobago, Barbados and Grenada all signed the 1982 Convention on the Law of the Sea. Venezuela was one of the countries which voted against the 1982 Convention. (8)

Venezuela has objection to with respect to Article 12 - Roadsteads, 24 - Duties of Coastal States, 15, 74 and 83 which provides for delimitation with the Territorial Sea, Exclusive Economic Zone and Continental Shelf. (9) This is a similar approach taken by Venezuela at the sessions before the 1958 Convention which was signed and ratified by Venezuela with similar reservations. (10)

The applicable law in the case of the boundary between Trinidad and Tobago/Venezuela, in
zone B and C is the 1958 Convention.

In zone A the boundary between Trinidad and Tobago/ Barbados/Grenada, the applicable law is the 1982 Convention. But both the 1958 and the 1982 Convention have the same object, i.e., the delimitation of the boundary in accordance with equitable principles.

2) In the concept of "equity," the economy of Trinidad and Tobago is at stake. Trinidad and Tobago argues that one must take cognizance of the relative economic dependence of Trinidad and Tobago upon the petroleum in these zones; about 80% of the total output of oil in 1986 is from these offshore zones. Land production is low and no new productive land-based fields have been found for the last five years. Therefore the well-being of Trinidad and Tobago as a nation depends on the offshore oil in these zones.

The economy of Venezuela would hardly be affected if the economic line $AX$ is awarded. Venezuela's economy is far less dependent upon zone B and C for its oil production. Most of its output comes from the western part of the country. Lake Maracaibo alone produces about 80% of Venezuela's total output oil production; Falcon and Maturin areas also produce a fair amount also. (11)
Venezuela's crude oil reserves jumped to 55.5 billion barrels at year end 1986 from 29.5 billion barrels at year's end 1985. (12)

The increase partly reflects inclusion for the first time of about 18 billion barrels of easily recoverable reserves in the Orinoco Heavy oil belt. (13) Venezuela closed off this area using straight baselines.

Presently only Trinidad and Tobago has explored and is drilling in these zones. Venezuela has made no attempt to even carry out exploration studies in these areas.

Trinidad and Tobago point of view is that if the line AX is thrown out and the equidistant method used, Trinidad and Tobago stands to lose some U.S.$50 million annually from an already depressed economy. Whereas Venezuela does not stand to lose much from its bristling and diversified economy, since no drilling or exploration is taking place in zone B and C by Venezuela at present.

Grenada historically had shown no petroleum interest in zone A. Its economy is based on agriculture and tourism. There has been a 19% increase in tourism in 1984 and the number of visitors are steadily increasing each year. In 1985 there were 39,563 visitors with an average of
U.S.$110 spent each day. (14) The policy of the present government is to develop further the tourism and agriculture industries. There is no policy to exploit for petroleum in this area. Therefore the equidistant line $AX_3$ is equitable. The burden of proof now lies with Grenada to prove otherwise.

Barbados is similar in some ways to Grenada. In 1984 there were 362,470 visitors with an average of U.S.$98 spent daily. (15) This economy is based on tourism, agriculture and manufacturing. The government is showing a great deal of interest in zone A, since recently a subsidiary of Mobil Corporation is carrying out deep oil drilling activities in Woodburne and in the area south east of Barbados. (16) The line $XW$ using the equidistant method is equitable, Barbados will have to prove otherwise.

Reduction in size of these delimited areas would knock out one of the central pillars of the oil industry, which forms the 'backbone' upon which the Trinidad and Tobago economy or human life is built. About 50,000 jobs would be lost directly, (17) this would reverberate throughout the secondary industries of petrochemicals, maintenance, supplies and all other related industries. This would eventually pervade the
entire economic base of Trinidad and Tobago.

In the U.S./Canada Judgment. The Chamber's many and inconsistent reference to the economic dependence argument throughout its decision reveals its difficulty; as to what rational it would use for taking the argument into account, but take it into account it was determined to do. First the Chamber pointed out that this argument and the 'gloomy' prediction of the consequences that would occur if Canadian fisherman were excluded from George's Bank, involved considerations of a political and economic character which the Chamber could not consider as "equitable criteria" in its delimitation of the line. (18) It implied, however, that it might consider the socio-economic conditions in its test to ensure that the line produced an equitable result. (19)

The Chamber appeared at first to dismiss this entire argument as being legally irrelevant but the human side of the judges in the final stages of the majority decision could not help but give legal cognizance to this economic impact plea:

What the Chamber would regard as a legitimate scruple, "...lies rather in concern lest the overall result, even though achieved through the application of equitable criteria and the use of appropriate methods for giving them concrete effect, should
unexpectedly be revealed as radically inequitable, that is to say, as likely to entail castastrophic repercussions for the livelihood and economic well-being of the population of the countries concerned." (20)

Therefore, in the final result, the Chamber's delimitation line assured the continuation of Canada's overall economic dependence upon George's Bank fishing. This is the precedent set on which Trinidad and Tobago is drawing.

In the Anglo-Nowegian Fisheries Case (1951), the Court recognised the economic interest and stated:

"Finally, there is one consideration not to be overlooked, the scope of which extends beyond geographical factors; that of certain economic interests peculiar to a region, the reality and importance of which is clearly evidenced by long usage." (21)

3) Conduct of the Parties - Acquiescence.

Zone A is part of what is known as the Margarita-Tobago shelf. This shelf is described as one of great petroleum importance - areas in this shelf have been leased.
Trinidad and Tobago apparently acting in accordance with its general policy, (22) and its Continental Shelf Act (23), has leased and divided certain areas for competitive bidding, (24) charts and maps have been published, (25) and to date there are no protests or objections from Grenada or Barbados.

Zones B and C, areas east and southeast of point X (designated in the 1942 treaty), in the Serpent's Mouth and the Atlantic ocean. These areas have vast potential and are already being exploited on a commercial basis. These areas have been leased to companies for competitive bidding also. Charts and maps have also been published, indicating the leasing areas to oil companies. (26)

Venezuela has not over the years and ever since the first maps were published and distributed, as well as reflected in Trinidad and Tobago legislation, objected to the areas leased. No notice, protest or objection has been received by the government, in the light of this. It seems that Venezuela, Grenada and Barbados have all acquiesced in Trinidad and Tobago's actions.

This action is further supported by the fact that Trinidad and Tobago has excercised sovereignty -
to put it more forcefully, ownership - of these areas by leasing them to foreign oil companies and collecting the revenues from the leasing and exploration and exploitation of the resources in them. (27) Therefore the current boundary shown on the map 15, should not be changed in favor of Venezuela but be re-defined and should be further south or southeast of Trinidad in zone B and C, thus the line AX is justified.

In the case of Grenada and Barbados the equidistant line AX and XW should be used.

As far back as 1958, Venezuela, through its delegate at the Conference on the Law of the Sea stated that,

"Venezuela could never accept the thesis that rights could never be acquired by occupation in international matters. There should be no recognition of a prescriptive title to the detriment of new countries now in full progress of development. (28)

However, Venezuela by its actions or non-action, does not appear to have adopted this approach with its relations with Trinidad and Tobago. The writer is of the view that Trinidad and Tobago, relying upon general principles of International Law governing division of a common continental shelf, occupation
and prescription, has a strong case against Venezuela, Barbados and Grenada in claiming the areas leased and a little beyond.
Chapter 7: Conclusion:

The purpose of this thesis, as stated in the introduction, was to delimit the maritime boundaries between Trinidad and Tobago /Venezuela /Grenada and Barbados.

The study was based upon several assumptions. First, special circumstances, i.e., the economic dependence of Trinidad and Tobago on offshore oil on the east and north coast of this country, as opposed to Venezuela's larger reserves on the western part of that country in the Gulf of Maracaibo and the eastern side in the Orinoco delta. In the case of Barbados historically, its economy is based on tourism and agriculture.

The second assumption is that the International Law regarding maritime boundary delimitation was not a universally accepted, systematic body of rules. Despite the efforts of the negotiators at UNCLOS III to define the law of maritime boundary delimitation there is no systematic set of rules which can be applied in every case. The controversy centers upon whether or not the concept of "equitable principles," or the strict application of the "equidistance method," with exceptions allowed only in certain "special circumstances," takes precedence in the delimitation. The writer's opinion
is that each case in dispute should be considered and judged on its own merits, having regard to its peculiar circumstances.

The representative of Venezuela, at the 1982 Law of the Sea Conference in his amendment on April 15, 1982 stated as follows:

"Venezuela had maintained that questions regarding the delimitation of ocean and undersea spaces should be resolved by equitable agreement among the parties concerned. Delimitation of that kind had to take into account various questions of judgment and factors that varied from case to case. The practice of states showed that no single method but rather a combination of methods had been used to achieve an equitable solution in the majority of agreements on delimitation of ocean space."(1)

That approach had in the last three years produced satisfactory agreements between Venezuela and four neighbouring states: the United States, Netherlands, Dominican Republic and France. Those agreements covered more than 50% of the areas that Venezuela had to delimit. It is hoped that Venezuela can reach equitable agreements with the other neighbouring states as well.

Venezuela's position was based upon jurisprudence of the International Court of Justice and recent arbitral awards.(2) The Trinidad and
Tobago economic boundary line is also based on jurisprudence of the International Court of Justice. The only concrete guidance provided in the 1958 Continental Shelf Convention and the 1982 Convention in the articles on delimitation of the continental shelf is that the ultimate goal of the negotiations between the parties should be 'to achieve an equitable solution.'

The 1982 International Court of Justice decision between Tunisia and Libya on the continental shelf clarifies the concept of 'equitable solution' as follows:

"The result of the application of equitable principles must be equitable.... It is, however, the result which is predominant. The principles are subordinate to the goal."(3)

The Court also indicated that the application of equitable principles involves, "to balance up the various considerations which it regards as relevant circumstances in order to produce an equitable result."(4) Thus the relevant circumstances taken into consideration in drawing the economic boundary lines is the economic dependence of Trinidad and Tobago on the offshore oil in the study areas.

It is now generally recognised that equity is the rule of International Law to be applied to the delimitation of the continental shelf. This principle
is reflected in the 1969, North Sea Continental Shelf Case, in the Arbitral Tribunal’s decision in 1977 on the continental shelf between France and the U.K. and in the Tunisia/Libya case in 1982.

In the North Sea case the Court provided that "..... in this field it (equity) is precisely a rule of law that calls for the application of equitable principles."(5) In the Tunisia/Libya case, the Court stipulated that the "legal concept of equity is a general principle directly applicable to law."(6) Therefore, it is concluded that the words "on the basis of international law" do not add any new element to Article 83 of the 1982 Convention; in the delimitation context, equity or equitable solution, which already exists in the articles, is the rule of law.

On the other hand the reference to international law does not leave the door open to introducing the equidistance method as a rule of international law, nor does it lead to a presumption in favor of equidistance or median line in relation to other methods.

In the Tunisia/Libya case, the Court provides that "treaty practice", as well as the history of article 83 of the 1982 Convention, leads to the conclusion that, "equidistance may be applied if it leads to an equitable solution. If not, other methods
should be employed.... since equidistance is not, in view of the Court, either a mandatory legal principle or a method having some privileged status in relation to other methods."(7)

The same thinking is embodied in the North Sea case and in the decision of the Court of Arbitration on the continental shelf between France and the U.K.

The author saw it fit that using the equidistance line between Trinidad and Tobago/Grenada/Barbados leads to an equitable solution. Therefore the lines AX and XW are proposed.

For the Trinidad and Tobago/Venezuela boundary line AX is used because it produces an equitable solution for both Trinidad and Venezuela. Venezuela depends for its oil production from the Gulf of Maracaibo, Falcon and the Orinoco Delta; whereas Trinidad and Tobago depends for its oil production from the eastern and northern offshore areas.

As to the precedents set on economic dependence, three cases were looked at in Chapter five. In the Anglo-Norwegian Fisheries Case, the vital economic interests of the coastal population involved were very important realities in the International Court of Justice consideration. In the U.K./Iceland Fisheries case, economic dependence
was taken into consideration in the decision. In the U.S./Canada case the Court also used economic dependence in reaching a decision. This is shown when the Court stated, "... a decision which would have assigned the whole of George's bank to one of the parties might possibly have entailed serious economic repercussions for the other." The criteria used by Trinidad and Tobago in its delimitation have been set by Court decisions.

The subject of maritime boundaries like the subject of land boundaries, is a sensitive one and should be handled carefully and with the understanding of the opposite or different viewpoints. The subject has assumed greater importance because of the developments in the Law of the Sea regarding the extent of a coastal state's jurisdiction in the 200 mile Exclusive Economic Zone and the continental shelf, whose outer limits may under certain circumstances exceed 200 miles.

In these zones, the coastal state enjoys sovereign rights over the resources, as well as exclusive jurisdiction and rights in other specified matters. These may include oil and gas, fisheries, energy, environmental control and other uses of the sea.

Accordingly, the delimitation of maritime zones of states has to be done with due regard to
this sensitivity and in an equitable and fair manner.

A single rule or method may not be automatically or mandatorily applicable in all circumstances, irrespective of the geographical and other facts. A maritime boundary agreement, to be durable, must be a fair and equitable one and take into account the special circumstances in the area relevant to the delimitation.

In the 1987 Budget Speech the new Prime Minister of Trinidad and Tobago, The Honourable A.N.R. Robinson stated:

"The basic reality confronting Trinidad and Tobago in 1987 is that, led by a government in power for thirty years, we have failed to meet the challenge of independence. We achieved political independence in 1962 with an economy dependent on one single resource oil. Twenty-five years later, we are more than ever dependent on the vagaries of the international oil market. We have failed to develop an economy sufficiently diversified and sufficiently resilient to absorb or even cushion the shocks caused by periodic crises on the international oil market."

Trinidad and Tobago and Venezuela, Barbados and Grenada have excellent relationship at all levels; therefore this is a good time to commence
negotiations. Boundaries have to be defined because with modern technology's rapid progress the mineral resources in the continental shelf are no longer outside the reach of mankind.
Footnotes for Introduction


2) Supra Note (1).


4) Hon. Chambers G., Prime Minister of Trinidad and Tobago, Budget Speech of Trinidad and Tobago, 1986 and 1987.

5) Supra Note (3).
Footnotes: Chapter 1


4) Ibid.


7) Cooper G. C. and Bacon P.R., The Natural Resources of Trinidad and Tobago (London: Edward Arnold Publishers, 1983), p. 62

8) Supra Note (7).

9) - 11) Supra Note (6)

12) -13) Central Statistical Office of Trinidad and Tobago, 1983.


16) Ibid.

17) Ibid.

18) Supra Note (1).

116-131.

20) **Supra Note (19)**

21) **Ibid.**


25) Mr. George M. Chambers, Prime Minister of Trinidad and Tobago, Budget Speech of Trinidad and Tobago, 1985, P. 21

26) **Ibid.**, p. 22.

27) **Supra Note (19).**

28) - 29) **Ibid.**, p. 120

30) **Supra Note (14),** p. 25-39.

31) **Ibid.**

32) Income Ordinance No. 48, Trinidad and Tobago, 1955.

33) **Supra Note (14),** p. 16-27.

34) **Ibid.**

35) **Ibid.**, p. 16-17.

36) **Supra Note (25).**

37) -39) Hon. George G. Chambers, Prime Minister of Trinidad and Tobago, Budget Speech, 1986.


41) **Supra Note (14),** p. 45-68.

42) **Supra Note (15).**


44) **Supra** (14).

46) Supra Note (40).

47) Supra Note (44).

48) Supra Note (40)

49) - 51) Central Statistical Office, Trinidad and Tobago, 1986.


53) Supra Note (41).

54) - 56) Ibid.

Footnotes Chapter 2


2) Ibid.


9) - 10) Supra note (1), p. 22-37.

11) - 12) Supra note (8).


14) Supra note (8).

15) - 17) Supra note (13).

18) Supra note (3), p. 3-5.

19) Ibid.

20) Ibid.


24) Ibid.


29) Supra note (26).

30) Supra note (27).


32) Ibid.


34) Supra note (25) p. 97-143.

35) Ibid.

36) Supra note (26).

37) Supra note (27), p. 4.

38) Supra note (26).

39) Ibid.
Footnotes Chapter 3.


2) Ibid.


4) Trinidad and Tobago have enacted their Continental Shelf Act, 1969. 5) Continental Shelf Act, No.43 (1969).


8) Ibid.


10) Gulf of Paria Treaty, Limits in the Sea:Continental Shelf Boundary, Trinidad and Tobago, series A No.11, March 6, 1970. Department of State Bureau of Intelligence and Research.


13) Supra Note (10).

14) Ibid.


16) Ibid.

17) Isidro M. P. "Venezuela: The Country in the


20) Supra Note (8).


24) means: a transaction between other persons should not prejudice one who was not a party to it.

25) means: from without.

26) Supra Note (19).


29) Ibid.

30) Limits in the Sea: Continental Shelf Boundary Trinidad and Tobago - Venezuela No. 11 March, 1970.


34) Supra Note (13).

35) Status of Multilateral Treaties in Respect of which the Secretary-General Performs Depository Functions (1973), vol. List of Signatures, ratifications accessions as at December 31, 1973, p. 147 in Anthony Lucky - Thesis Supra Note (13).

36) Ibid.


38) Territorial Water Jurisdiction Act 1878 S. 7 Hals Vol.8 in Lucky's Thesis Supra Note (13).

39) Supra Note (12).

40) Article 3 of The Gulf of Paria Treaty, 1942.
Footnotes Chapter 4

1) Reports from the Ministry of Petroleum and Mines, Trinidad and Tobago, 1985.


4) Supra Note (2) and The ministry of Petroleum and Mines published maps indicating the areas leased and offered for competitive bidding. These have appeared in several Journals example, American Journal of Petroleum Geologist and Petro-Consultants South America, Nov. 1974 issue.

5) Statement of President Perez reported in Trinidad and Tobago Guardian Newspaper, June 21, 1974.

6) Official Gazette of Venezuela, of April 15, 1953, ib Lucky's Thesis (Supra Note (2).

7) Supra Note (2).


10) Ibid.


13) Webster's Dictionary definition.


17) Ibid.
18) Ibid.


20) Ibid., p. 105.
21) Ibid., p. 106.

22) Status of Multilateral Treaties No. 52.
23) Ibid.


26) An Act to Declare Trinidad and Tobago an Archipelagic State, No.15, 1986.

27) Ibid.
28) Ibid.


30) Smith C. The Legal Regulations of Foreign Investment in the Petroleum Industry of Trinidad and Tobago (Trinidad: Trini. Printery, 1979), p.78.

31) Ibid.


33) 111 U.N. Conference on the Law of the Sea, Statement by Lennox Ballah, Trinidad and Tobago Respantative to the Commitee on the Subject of the
Continental Shelf.

34) Supra Note (30).


36) Supra Note (32), p. 603.

Footnotes for Chapter 5:


3) Ibid.


9) Supra Note (7).


11) Ibid p. 95.

12) Supra Note (2) and (4).

13) Supra Note (10)

14) Ibid p. 90.

15) Ibid p. 103.


17) Supra Note (8), p. 183.
18) Supra Note (16).
21) Ibid.
23) Ibid.
27) Ibid., p. 628.
28) International Court of Justice Reports 1972, Para. 20, p. 16.
29) Ibid., Para. 30.
30) Ibid.
31) Ibid., Para. 45.
32) International Court of Justice Reports 1972, Para. 23, p. 16.
33) Attorney General of Trinidad and Tobago Hon. Karl Hudson Phillips, at Ministerial Meeting of Commonwealth caribbean Countries held in Barbados, Nov. 4, 1971. Stated that, "Trinidad and Tobago adhere firmly to geomorphological criteria in determining the outer limits of the continental shelf. This Trinidad and Tobago considers to be a natural prolongation seaward of its land domain.
34) For all intent and purposes Venezuela is a Party to the Convention - excluding Art. 6.
36) Supra Note (2).

37) Ibid., p. 627.

38) Ibid., p. 631.

39) Ibid.


42) Ibid., Para. 59, Ex aequo et bono is defined as "in justice and fairness."


44) Ibid.


48) Ibid., Para. 89.

49) Ibid., para. 79 and 158.

50) Ibid., Para. 158.

51) Ibid., Para. 162.

52) Ibid., Para. 237.

53) This was not in issue.

54) Ibid., Para. 32.

55) Supra Note (43) Para. 591.


59) *Supra* Note (43), Para. 592.

60) *The Chronicle Herald Halifax*, October 17, 1984 at 3Col.3.

Footnotes Chapter 6:


10) Ibid.


12) Oil and Gas Journal Vol. 85, No. 2 (Jan 12, 1987).

13) Ibid.


15) Ibid.

16) Ibid.


22) Intervention made by Hon. Karl T. Hudson Phillips Introducing General Statement Covering Policy and Law of Trinidad and Tobago on Questions of the Sea, to Ministerial meeting of commonwealth caribbean countries held in Barbados, November 4, 1971. Mr. Hudson Phillips was then Attorney - General and Minister for legal Affairs of Trinidad and Tobago. It is the First and only positive statement on Trinidad and Tobago's law and policy. Inter alia he touched upon two points. The twelve mile territorial sea, one of the reasons for the extension is to ensure that "the islands of Trinidad and Tobago which together with other islands constitute a small archipelago, are completely enclosed by territorial waters so that no pocket of high seas exist between the islands of this small archipelago."

He went on to state that Trinidad and Tobago adheres firmly to geomorphological criteria in determining the outer limit of the continental shelf. This Trinidad and Tobago considers to be a natural prolongation seaward of its land domain, the rights Trinidad and Tobago exercises over.


See Map showing oilfields and marine areas and important wells drilled, Ministry of Petroleum and Mines, Trinidad.

25) The Ministry of Petroleum and Mines published maps on a regular basis indicating the areas leased and offered for competitive bidding.
Footnotes Conclusion.


2) Ibid.


4) Ibid.


6) Supra Note (3).

7) Ibid.
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