



# **EXECUTIVE SUMMARY**

**A SUBMISSION OF DATA AND INFORMATION**

**ON THE OUTER LIMITS OF THE CONTINENTAL SHELF**

**OF THE CO-OPERATIVE REPUBLIC OF GUYANA PURSUANT TO**

**PART VI OF AND ANNEX II TO THE UNITED NATIONS**

**CONVENTION ON THE LAW OF THE SEA**

**PART I**

**Submission to the Commission on the Limits of the Continental Shelf**

**through the Secretary-General of the United Nations**

**August 2011**

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## 1. INTRODUCTION AND OBJECTIVES

The Co-operative Republic of Guyana signed the United Nations Convention on the Law of the Sea (United Nations, Treaty Series, vol. 1833, p. 3) on 10 December 1982 and it became a State Party to the Convention when it deposited the sixtieth instrument of ratification on 16 November 1993. In accordance with article 308, the Convention entered into force twelve months later on 16 November 1994. The Co-operative Republic of Guyana acceded to the Agreement relating to the implementation of Part XI of the United Nations Convention on 25 September 2008.

The continental shelf under national jurisdiction is defined under paragraph 1 of article 76 of the Convention:

*The continental shelf of a coastal State comprises the sea-bed and subsoil of the submarine areas that extend beyond its territorial sea throughout 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 baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance.*

The continental margin, in turn, is defined under paragraph 3 of article 76 of the Convention:

*The continental margin comprises the submerged prolongation of the land mass of the coastal State, and consists of the sea-bed and subsoil of the shelf, the slope and the rise. It does not include the deep ocean floor with its oceanic ridges or the subsoil thereof.*

The outer limits of the continental shelf are prescribed under paragraph 2 of article 76 not to exceed the combination of rules referred to in paragraphs 4 to 6:

*The continental shelf of a coastal State shall not extend beyond the limits provided for in paragraphs 4 to 6.*

The Convention also establishes a procedure for the determination of the outer limits of the continental shelf beyond 200 nautical miles by the coastal State based on the recommendations made by the Commission on the Limits of the Continental Shelf (CLCS) in relation to a submission of information on the limits as described in paragraph 8 of article 76:

*Information on the limits of the continental shelf beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured shall be submitted by the coastal State to the Commission on the Limits of the Continental Shelf set up under Annex II on the basis of equitable geographical representation. The Commission shall make recommendations to coastal States on matters related to the establishment of the outer limits of their continental shelf. The limits of the shelf established by a coastal State on the basis of these recommendations shall be final and binding.*

The above procedure is further elaborated in article 4 of Annex II to the Convention with the addition of a temporal requirement and a request designed to inform the Commission:

*Where a coastal State intends to establish, in accordance with article 76, the outer limits of its continental shelf beyond 200 nautical miles, it shall submit particulars of such limits to the Commission along with supporting scientific and technical data as soon as possible but in any case within 10 years of the entry into force of this Convention for that State. The coastal State shall at the same time give the names of any Commission members who have provided it with scientific and technical advice.*

The Eleventh Meeting of States Parties to the Convention, held from 14 to 18 May 2001, noted that it was only after the adoption of the Scientific and Technical Guidelines by the Commission on 13 May 1999 that States had before them the basic documents concerning submissions in accordance with article 76, paragraph 8, of the Convention. Considering the problems encountered by States Parties, in particular developing countries, including small-island

developing States, in complying with the time limit set out in article 4 of Annex II to the Convention, the Meeting of States Parties (SPLOS/72) decided that:

- (a) In the case of a State Party for which the Convention entered into force before 13 May 1999, it is understood that the ten-year time period referred to in article 4 of Annex II to the Convention shall be taken to have commenced on 13 May 1999; and that*
- (b) The general issue of the ability of States, particularly developing States, to fulfil the requirements of article 4 of Annex II to the Convention be kept under review.*

The Government of the Co-operative Republic of Guyana has identified the maritime region located in the north-eastern part of South America facing the Atlantic Ocean as a region over which it can extend its national jurisdiction over the continental shelf beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.

The Convention recognizes that competence with respect to the delimitation of international maritime boundaries which may arise in connection with the establishment of the outer limits of the continental shelf rests with States according to paragraph 1 of article 83:

*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 Statute of the International Court of Justice, in order to achieve an equitable solution.*

The Convention establishes that any outer limits of the continental shelf beyond 200 nautical miles determined in accordance with paragraphs 4 to 6 of article 76 are without prejudice to the delimitation of continental shelf boundaries between States according to paragraph 10 of the same article:

*The provisions of this article are without prejudice to the question of delimitation of the continental shelf between States with opposite or adjacent coasts.*

The distinction between the delimitation of international continental shelf boundaries and the determination of the outer limits of the continental shelf is further reinforced by a savings provision contained in paragraph 4 of article 134:

*Nothing in this article affects the establishment of the outer limits of the continental shelf in accordance with Part VI or the validity of agreements relating to delimitation between States with opposite or adjacent coasts.*

However, the Convention, in article 9 of Annex II, also urges the Commission to take a cautious approach during the consideration of submissions and the preparation of its recommendations:

*The actions of the Commission shall not prejudice matters relating to delimitation of boundaries between States with opposite or adjacent coasts.*

In this sense, the Co-operative Republic of Guyana makes a Submission of data and information concerning the outer limits of the continental shelf along the northern part of its continental margin for the consideration of the CLCS without prejudice to any potential boundary delimitations with any other States which may be conducted at a later date.

In light of the relevant provisions contained in the Convention, the Co-operative Republic of Guyana makes this submission through the Secretary-General to the Commission:

- i) to fulfil its obligations pursuant to paragraph 8 of article 76 of, and article 4 of Annex II to the Convention;
- ii) in accordance with the methodology contained in paragraphs 1 to 7 of article 76 of the Convention; and

- iii) without prejudice to questions relating to the delimitation of international boundaries with any other States.

Accordingly, the Co-operative Republic of Guyana reserves the right to determine the outer limit of the continental shelf beyond 200 nautical miles based on the recommendations of the Commission, and any potential maritime boundary agreements made with other States at a later date.

This submission contains data and information used in support of the determination of the outer limits of the continental shelf beyond 200 nautical miles of the Co-operative Republic of Guyana in accordance with the Convention and the Scientific and Technical Guidelines of the Commission on the Limits of the Continental Shelf (CLCS/11; CLCS/11/Corr. 1; CLCS/11/Add. 1; CLCS/11/Add. 1/Corr. 1).

## **2. THE OUTER LIMIT OF THE CONTINENTAL SHELF**

The Convention offers two complementary provisions designed to provide the definition of the continental margin and the determination of its outer limit. The first provision, contained in paragraph 3 of article 76, provides its definition:

*The continental margin comprises the submerged prolongation of the land mass of the coastal State, and consists of the sea-bed and subsoil of the shelf, the slope and the rise. It does not include the deep ocean floor with its oceanic ridges or the subsoil thereof.*

The second provision, contained in paragraph 4 (a) (i) and (ii), subject to paragraphs 5 and 6 of article 76, determines the position of the outer limit of the continental margin by means of a complex formula based on four rules. Two of these rules are affirmative and the remaining two



are negative. The two positive rules, herein referred to as *formulae*, are connected through an inclusive disjunction:

- (i) *a line delineated in accordance with paragraph 7 by reference to the outermost fixed points at each of which the thickness of sedimentary rocks is at least 1 per cent of the shortest distance from such point to the foot of the continental slope; or*
- (ii) *a line delineated in accordance with paragraph 7 by reference to fixed points not more than 60 nautical miles from the foot of the continental slope.*

The use of a disjunction between the two *formulae* above implies that it is sufficient that one formula line extends beyond 200 nautical miles in order to ensure the determination of an outer limit of the continental shelf beyond this distance. Thus, the limit of the continental shelf beyond 200 nautical miles can be extended up to a line delineated by reference to fixed points where sediment thickness is at least 1% from the shortest distance to the foot of the continental slope, or to a line delineated by reference to fixed points at a distance of 60 nautical miles from the foot of the continental slope, whichever is furthest from the baselines from which the breadth of the territorial sea is measured.

The use of an inclusive disjunction also implies that when both *formulae* lines are used, their outer envelope determines the maximum potential extent of entitlement over the continental shelf by a coastal State. If any portion of this outer envelope extends beyond 200 nautical miles, the test of appurtenance would be satisfied and a coastal State would be in a position to apply the full range of provisions contained in paragraphs 4 to 6 to determine the outer limits of the continental shelf extended beyond 200 nautical miles.

The determination of the outer limits of the continental shelf is an essential procedure of the implementation of article 76. The outer envelope of the 1% sediment thickness and the foot of the slope plus 60 nautical miles *formulae* lines is used once again in this procedure. But it is still

subject to spatial constraints in order to produce the determination of the outer limits of the continental shelf.

The extent of the outer envelope formed by the lines derived from the two *formulae* is restricted by a line derived from the two lines, defined by the Commission as constraints. According to paragraph 5, the simultaneous application of these two constraints defines the outer limit beyond which the continental shelf cannot be extended:

*The fixed points comprising the line of the outer limits of the continental shelf on the seabed, drawn in accordance with paragraph 4 (a) (i) and (ii), either shall not exceed 350 nautical miles from the baselines from which the breadth 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.*

The outer limits of the continental shelf beyond 200 nautical miles in the continental margin of the Co-operative Republic of Guyana are determined under the above provisions by the application of both formulae provided by a line defined by the outermost fixed points at each of which the thickness of sedimentary rocks is at least 1 per cent of the shortest distance from such point to the foot of the continental slope and a line determined at a distance of 60 nautical miles from the foot of the continental slope, and a single constraint provided by the 350 nautical miles line.

The constraint line defined by the 2,500 metre isobath plus 100 nautical miles does not extend beyond the 350 M constraint, and it was not applied to determine the outer limit of the continental shelf.

## **2.1 THE SEDIMENT THICKNESS FORMULA**

Bathymetric and geophysical data and information were assembled in order to demonstrate that the seabed and subsoil of the submarine areas that extend beyond the territorial sea to the outer edge of the continental margin are the natural prolongation of the land territory of the Co-operative Republic of Guyana to the outer edge of the continental margin (article 76, paragraph 1). Geophysical surveys were conducted to demonstrate the legal entitlement of the Co-operative Republic of Guyana to extend the outer limits of its continental shelf beyond 200 nautical miles and to determine the coordinates of these limits.

Geophysical data was applied with the purpose i) to demonstrate the continuity of the sedimentary apron from the continental slope throughout the outer limit of the continental margin beyond 200 nautical miles, as proof that it meets the Test of Appurtenance described in section 2.2 of the CLCS Scientific and Technical Guidelines; ii) to estimate sediment thickness beyond 200 nautical miles to determine the position of the outermost fixed points at each of which the thickness of sedimentary rocks is at least 1 per cent of the shortest distance from such point to the foot of the continental slope during the implementation of the sediment thickness formula (article 76, paragraph 4 (a) (i)); and iii) to determine the region of the base of the continental slope by means of evidence to the contrary in the area of the constant curvature slope of the Guyana Margin Basin. The outermost sediment thickness fixed points contribute to the determination of the outer limit of the continental shelf of the Co-operative Republic of Guyana beyond 200 nautical miles.

The search for the foot of the continental slope was conducted by means of the search for the maximum change in the gradient at its base and the evidence to the contrary provision contained in article 76, paragraph 4 (b) and described in Chapter 7 of the Scientific and Technical Guidelines of the CLCS. Whereas the majority of foot of the slope points was determined by means of the general rule of maximum change in the gradient, two foot of the continental slope points were determined by means of evidence to the contrary due to the almost constant

curvature shown by the continental slope and rise of some parts of the continental margin of the Co-operative Republic of Guyana.

## **2.2 THE FOOT OF THE CONTINENTAL SLOPE PLUS 60 M FORMULA**

The bathymetric and morphological information was assembled in order to demonstrate that the seabed and subsoil of the submarine areas that extend beyond the territorial sea to the outer edge of the continental margin are the natural prolongation of the land territory of the Co-operative Republic of Guyana (article 76, paragraph 1). Morphological and geophysical criteria were implemented to demonstrate the legal entitlement of the Co-operative Republic of Guyana to extend the outer limits of the continental shelf beyond 200 nautical miles and to determine the coordinates of these limits.

The distance formula was implemented by means of the method of envelopes of arcs in accordance with paragraph 7 by reference to fixed points not more than 60 nautical miles from the foot of the continental slope (article 76, paragraph 4 (a) (ii)).

## **2.3 THE 350 M CONSTRAINT**

The extent of the outer envelope formed by the lines derived from the two *formulae* is restricted by a line derived from the two lines, defined by the Commission as constraints. According to paragraph 5 of article 76, the simultaneous application of these two constraints defines the outer limit beyond which the continental shelf cannot be extended:

*The fixed points comprising the line of the outer limits of the continental shelf on the seabed, drawn in accordance with paragraph 4 (a) (i) and (ii), either shall not exceed 350 nautical miles from the baselines from which the breadth 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.*

Geodetic baseline information was compiled to determine the location of the constraint line at a distance of 350 nautical miles from the baselines from which the breadth of the territorial sea is measured along the low-water line of the coastline of the Co-operative Republic of Guyana. Since the sediment thickness formula line is almost entirely located seaward of 350 M, the constraint determined at a distance of 350 nautical miles needs to be applied in order to determine the outer limit of the continental shelf of the Co-operative Republic of Guyana.

### **3. NAMES OF MEMBERS OF THE CLCS WHO PROVIDED ADVICE**

The Co-operative Republic of Guyana received advice from Prof. Galo Carrera-Hurtado and Prof. Karl Hinz, current and former members of the Commission on the Limits of the Continental Shelf, respectively.

### **4. ABSENCE OF DISPUTES**

The continental margin of the Co-operative Republic of Guyana is a maritime region over which there are overlapping claims made by other States. There are no disputes in the region relevant to this Submission of data and information relating to the outer limits of the continental shelf beyond 200 nautical miles. This submission is made without prejudice to the delimitation of continental shelf boundaries between States according to paragraph 10 of article 76.

### **5. GUYANESE INSTITUTIONS RESPONSIBLE FOR THE PREPARATION OF THIS SUBMISSION**

The following institutions of the Government of the Co-operative Republic of Guyana were responsible for the preparation of this submission to the Commission on the Limits of the Continental Shelf:

- Ministry of Foreign Affairs
- Geology and Mines Commission

Scientific and technical support to the preparation of this submission was granted by the following institutions:

- Federal Institute for Geosciences and Natural Resources (BGR), Hanover, Germany, on behalf of the German Federal Ministry for Economic Cooperation and Development
- Special Advisory Services Division, Commonwealth Secretariat, London, UK
- The UNEP Shelf Programme at GRID-Arendal in Norway provided a data compilation from its One Stop Data Shop

Scientific and technical training on the implementation of article 76 was gratefully received from the United Nations Division for Ocean Affairs and the Law of the Sea (DOALOS) through two training courses held in Buenos Aires, Argentina, and Port of Spain, Trinidad and Tobago.

## **6. THE OUTER LIMIT OF THE CONTINENTAL SHELF**

Figure 1 shows the outer limits of the continental shelf of the Co-operative Republic of Guyana beyond 200 nautical miles measured from the baselines from which the breadth of the territorial sea is measured according to paragraph 7 determined by straight lines not exceeding 60 nautical miles in length, connecting fixed points, defined by coordinates of latitude and longitude. Table 1 lists the coordinates of the outer limit.

Point	Latitude	Longitude	Point	Latitude	Longitude
1	11.49746	-54.3732	26	11.86143	-54.5378
2	11.70738	-54.386	27	11.86777	-54.5443
3	11.71287	-54.3913	28	11.8741	-54.5508
4	11.71944	-54.3976	29	11.88042	-54.5573
5	11.726	-54.4039	30	11.88673	-54.5639
6	11.73254	-54.4101	31	11.89304	-54.5704
7	11.73908	-54.4164	32	11.89933	-54.5769
8	11.74561	-54.4227	33	11.90561	-54.5835
9	11.75212	-54.429	34	11.91188	-54.59
10	11.75863	-54.4353	35	11.91814	-54.5966
11	11.76513	-54.4417	36	11.92439	-54.6032
12	11.77162	-54.448	37	11.93063	-54.6098
13	11.7781	-54.4544	38	11.93686	-54.6164
14	11.78457	-54.4607	39	11.94308	-54.623
15	11.79103	-54.4671	40	11.94929	-54.6296
16	11.79748	-54.4735	41	11.955494	-54.636272
17	11.80391	-54.4799	42	11.961684	-54.642915
18	11.81034	-54.4863	43	11.967864	-54.649568
19	11.81676	-54.4927	44	11.974034	-54.656231
20	11.82318	-54.4991	45	11.980193	-54.662904
21	11.82958	-54.5055	46	11.986342	-54.669587
22	11.83597	-54.512	47	11.992481	-54.67628
23	11.84235	-54.5184	48	11.99861	-54.682982
24	11.84872	-54.5249	49	12.004729	-54.689695
25	11.85508	-54.5313	50	12.010837	-54.696417

Point	Latitude	Longitude	Point	Latitude	Longitude
51	12.016935	-54.703149	76	12.16599	-54.874585
52	12.023023	-54.70989	77	12.171815	-54.881566
53	12.0291	-54.716642	78	12.177629	-54.888557
54	12.035167	-54.723403	79	12.183432	-54.895557
55	12.041223	-54.730174	80	12.189225	-54.902566
56	12.04727	-54.736955	81	12.195007	-54.909584
57	12.053305	-54.743745	82	12.200778	-54.916612
58	12.059331	-54.750545	83	12.206538	-54.923649
59	12.065346	-54.757355	84	12.212288	-54.930695
60	12.07135	-54.764175	85	12.218026	-54.937751
61	12.077344	-54.771004	86	12.223754	-54.944816
62	12.083328	-54.777842	87	12.229471	-54.95189
63	12.089301	-54.784691	88	12.235177	-54.958973
64	12.095263	-54.791548	89	12.240873	-54.966065
65	12.101216	-54.798416	90	12.246557	-54.973167
66	12.107157	-54.805293	91	12.252231	-54.980277
67	12.113088	-54.81218	92	12.257893	-54.987397
68	12.119009	-54.819076	93	12.263545	-54.994526
69	12.124918	-54.825981	94	12.269186	-55.001664
70	12.130818	-54.832896	95	12.274816	-55.008811
71	12.136706	-54.839821	96	12.280435	-55.015967
72	12.142584	-54.846755	97	12.286043	-55.023133
73	12.148452	-54.853698	98	12.29164	-55.030307
74	12.154309	-54.860651	99	12.297225	-55.03749
75	12.160155	-54.867614	100	12.3028	-55.044682



Point	Latitude	Longitude	Point	Latitude	Longitude
101	12.30836	-55.0519	126	12.441444	-55.225051
102	12.31392	-55.0591	127	12.447453	-55.231896
103	12.31946	-55.0663	128	12.453451	-55.238751
104	12.32499	-55.0735	129	12.459439	-55.245616
105	12.33051	-55.0808	130	12.465416	-55.25249
106	12.33602	-55.088	131	12.471383	-55.259374
107	12.34152	-55.0953	132	12.477339	-55.266268
108	12.347	-55.1025	133	12.483284	-55.273171
109	12.35248	-55.1098	134	12.489219	-55.280084
110	12.35794	-55.1171	135	12.495144	-55.287007
111	12.36339	-55.1244	136	12.501057	-55.293939
112	12.36884	-55.1317	137	12.50696	-55.30088
113	12.37427	-55.139	138	12.512853	-55.307831
114	12.37969	-55.1463	139	12.518734	-55.314792
115	12.38509	-55.1536	140	12.524605	-55.321762
116	12.39049	-55.161	141	12.530466	-55.328741
117	12.39588	-55.1683	142	12.536315	-55.33573
118	12.40125	-55.1757	143	12.542154	-55.342728
119	12.40661	-55.183	144	12.547982	-55.349736
120	12.41196	-55.1904	145	12.5538	-55.356753
121	12.41731	-55.1978	146	12.559606	-55.36378
122	12.41731	-55.1978	147	12.565402	-55.370816
123	12.42336	-55.2046	148	12.571187	-55.377861
124	12.4294	-55.2114	149	12.576962	-55.384916
125	12.43543	-55.2182	150	12.582725	-55.39198

Point	Latitude	Longitude	Point	Latitude	Longitude
151	12.588477	-55.399053	158	12.628441	-55.448826
152	12.594219	-55.406136	159	12.634106	-55.455973
153	12.59995	-55.413228	160	12.63976	-55.463129
154	12.60567	-55.420329	161	12.645404	-55.470295
155	12.611379	-55.42744	162	12.651036	-55.47747
156	12.617077	-55.434559	163	12.652499	-55.479398
157	12.622764	-55.441688	164	12.60742	-56.000441

Table 1: List of coordinates of the turning points that define the outer limit of the continental shelf of the Co-operative Republic of Guyana beyond 200 nautical miles by means of segments not exceeding 60 nautical miles.

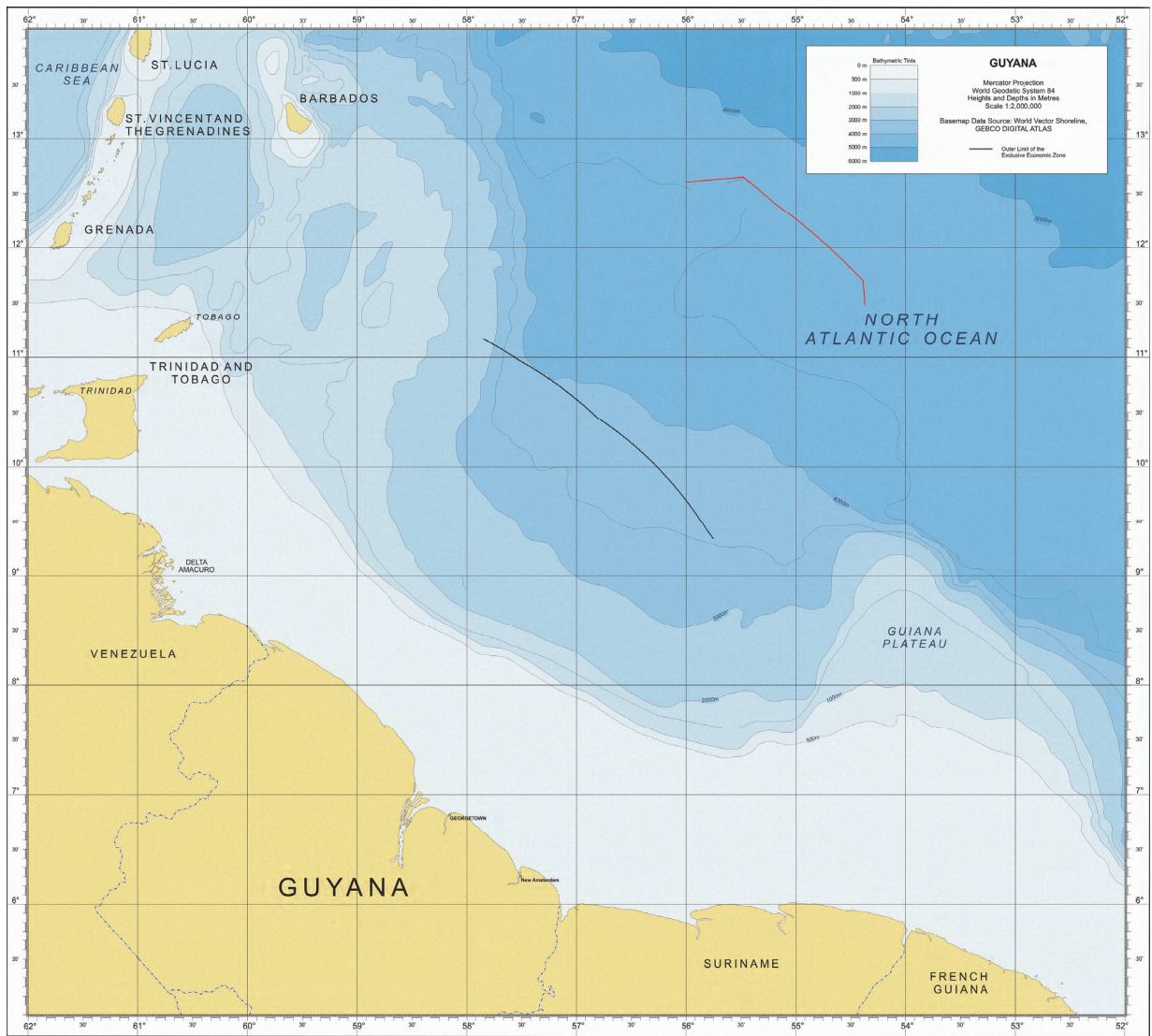


Figure 1. The outer limits of the continental shelf of the Co-operative Republic of Guyana (red line) beyond 200 nautical miles (black line) measured from the baselines from which the breadth of the territorial sea is measured according to paragraph 7 determined by straight lines not exceeding 60 nautical miles in length, connecting fixed points, defined by coordinates of latitude and longitude.