

Drafting Committee's report and its processing by plenary Conference will be completed by 12 April.

*Third Stage (6-12 April)*

7. During this stage the Conference will decide the date on which rule 33 will become operative. Delegations could also use this period to consult their respective governments on the decision-making stages of the session.

*Fourth Stage (13-22 April)*

8. Should delegations at this point of time feel it necessary to submit formal amendments to the draft convention, such amendments would have to be submitted to the secretariat by 6 p.m. on Tuesday, 13 April. Should the President, in accordance with rule 37, defer the taking of a vote on amendments, the plenary Conference will give an opportunity to delegations, during the interval, to make statements on the amend-

ments. During that period, the President, assisted by the General Committee, will make every effort conducive to the attainment of general agreement.

*Fifth Stage (23-30 April)*

9. By Friday, 23 April, the Conference will have to determine whether all efforts at reaching general agreement have been exhausted.

10. During the last week that will end on 30 April, the Conference will adopt the convention, the text of the draft resolution on the establishment of the Preparatory Commission, the final act and any other pertinent decisions.

11. Should the fifth stage have started and more time be needed to complete the work of the Conference, it shall, in consultation with the Secretary-General, be authorized to extend its formal work beyond 30 April exclusively for that purpose.

## DOCUMENT A/CONF.62/L.65

### Potential financial implications for States parties to the future convention on the law of the sea: Report of the Secretary-General

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[18 February 1981]

#### Introduction

1. During the resumed ninth session of the Third United Nations Conference on the Law of the Sea, the First Committee at its 49th meeting<sup>10</sup> requested that the Secretary-General prepare a concise study showing how each State party would have to contribute to the administrative budgets of the International Sea-Bed Authority, the International Tribunal for the Law of the Sea and other organs to be established under the future convention, and also to determine each State's contribution to the budget of the Enterprise. Accordingly, in response to that request, the Secretary-General now presents such a study.

2. The draft convention on the law of the sea (informal text) (A/CONF.62/WP.10/Rev.3 and Corr.1 and 3) has been used as the main basis for this study, but the report of the President on the work of the informal plenary meetings of the Conference on the Preparatory Commission (A/CONF.62/L.55),<sup>11</sup> has also been taken into account. Particular reference, as appropriate, has been made to other previous reports such as those on the costs of the Authority and contractual means of financing its activities<sup>12</sup> and alternative means of financing the Enterprise.<sup>13</sup> The draft Convention does not contain provisions in respect of all factors bearing significantly on the magnitude of future costs, for instance under Part XI, sections 5 and 6, especially in regard to the location, number and duration of the meetings of the various organs and other subsidiary bodies established or which might be established thereunder and the volume of documentation which might emanate therefrom. Perforce, and especially until some experience has been gained, certain assumptions have had to be made in regard to these important elements of potential costs. Similarly, until decisions are made as to the ultimate location of the International Sea-Bed Authority, the Enterprise and the International Tribunal for the Law of the Sea, some broad assump-

tions have had to be taken to facilitate the preparation of cost estimates on the establishment of a headquarters for these activities. In order to provide as much information as possible, the study shows in such instances, where this is practical and meaningful, a range of possible costs depending upon whether the meetings are held or the activity located in a country having a relatively low, medium or high cost of living index. Furthermore, the draft resolution for the establishment of a Preparatory Commission contained in the annex of document A/CONF.62/L.55 has yet to be given more detailed consideration by the Conference. Consequently, the cost estimates presented in this study for the Preparatory Commission and any subsidiary bodies it may establish are confined to those related to the servicing of its meetings and therefore do not reflect the full extent of the administrative expenses likely to arise in regard to this Commission.

3. For all these reasons, it is clear that the study at this stage can give only a forecast of the possible order of magnitude of the cost involved and is subject to considerable revision in the light of future developments and experience. Furthermore, the general world economic trends will have a bearing on the costs, particularly since many of these may not arise until some time after the convention comes into force. Nevertheless, considerable effort has been made to provide estimates of cost that are as realistic as possible under present circumstances. The unique experience of the appropriate departments and offices of the organizations of the United Nations has been drawn upon extensively in the preparation of these estimates. Where the text of the draft convention leaves matters still to be decided upon and therefore it has proved necessary to make certain assumptions, these have been of a conservative nature. In some cases only partial estimates are possible at this stage. Thus, for the guidance of the Conference the costs shown should be regarded as being on the low rather than the high side.

4. The study is presented in two parts. Part I gives a costing of the administrative expenses of the organs to be established together with the broad assumptions used, where applicable, in assessing these costs. Part II deals with the contributions of States parties to the financing of the Enterprise, including the financial implications related to the exploration and exploitation of one mine site in the Area.

<sup>10</sup> See *Official Records of the Third United Nations Conference on the Law of the Sea*, vol. XIV (United Nations publication, Sales No. E.82.V.2).

<sup>11</sup> *Ibid.*, vol. XIII (United Nations publication, Sales No. E.81.V.5).

<sup>12</sup> *Ibid.*, vol. VII (United Nations publication, Sales No. E.78.V.3), document A/CONF.62/C.1/L.19.

<sup>13</sup> *Ibid.*, vol. VI (United Nations publication, Sales No. E.77.V.2), document A/CONF.62/C.1/L.17.

### Part I

5. This Part provides an estimate of the costs associated with the functioning of the following organs:

(a) The Authority—including the Assembly, the Council, its Economic Planning Commission and Legal and Technical Commission and the Secretariat;

(b) The Enterprise—including the Governing Board and the Secretariat;

(c) The International Tribunal for the Law of the Sea—including the Sea-Bed Disputes Chamber, Special Chambers, the *Ad Hoc* Chamber and the office of the Registrar;

(d) The Commission on the Limits of the Continental Shelf;

(e) The Preparatory Commission, and any subsidiary bodies it may establish.

The various elements of cost have, of necessity, been computed on the basis of 1980 United States dollars, and the standard costing formulae used by the United Nations in effect at that time. It is assumed that the salary structure and other staff entitlements would be those of the common system of the United Nations organization.

6. Estimates related to the provision of a headquarters seat for the Authority and Enterprise as well as the Tribunal have been prepared without the aid of architectural and engineering studies and discussions with a prospective host Government, which would be essential in producing firm estimates in due course. They are based on general experience and comparable data available in this field: they assume that all facilities would need to be constructed on land made available by a host Government and that all technical conference equipment, conference and office furniture and equipment for the maintenance of buildings and grounds as well as transportation equipment would have to be purchased. To the extent that a host Government provided at its expense all or any portion of these requirements the costs could, of course, be reduced accordingly. Costs of a non-recurring nature such as building construction, conference and office furniture and equipment have been separated from costs which will arise each year. All amounts of less than one hundred dollars have been rounded up or down to the nearest hundred.

7. For the information of the Conference, annex I provides the current scale of assessments for the United Nations regular budget. This scale, which was approved by the General Assembly at its thirty-fourth session in resolution 34/6, became effective on 1 January 1980, and remains in force for a period of three years thereafter. It will provide some guidance to the Conference in determining the possible level of the contributions of States parties to the administrative costs of the activities included in the draft convention.

#### A. THE AUTHORITY

8. Articles 156 to 185 of the draft convention deal with the establishment and functions of the Authority. The Authority, including the Assembly, the Council, the Secretariat and the

two Commissions of the Council, and any other subsidiary organs which might be established at some future date, are to be located at the same seat. For the purpose of estimating the administrative cost related to the functioning of the Authority, it is assumed that the seat would be in a developing country away from any established United Nations office and therefore relatively self-sufficient. On the basis of reasonable variations in the relevant cost factors, a range of three possible levels of cost are provided where feasible.

9. The costs relate to:

(a) The programme of meetings of all the principal organs and their subsidiary bodies;

(b) The secretariat for the Authority;

(c) The provision of a headquarters seat for all these organs including conference rooms and related technical facilities as well as office accommodation, a library and a special area for computer operations.

10. Although it is foreseen in the draft convention that the Authority may establish regional centres or offices, and will establish appropriate mechanisms for directing and supervising a staff of inspectors in the absence of any definitive information in this regard, no provision is made within the estimates for these purposes.

#### Meetings programme

11. Table 1 provides a summary of the possible meetings programme of the principal organs of the Authority and their subsidiary bodies.

12. The assumed programme of meetings shows a projected minimum requirement of four meetings each day throughout a major portion of the year. Under these circumstances it might be prudent to provide, within the secretariat of the Authority, for a permanent team of conference servicing staff sufficient to service two meetings, with six languages and summary records, each day throughout the year. This permanent staff would need to be supplemented on a temporary basis to service two additional meetings each day as required throughout the year, with six languages but not necessarily with summary records for all meetings. It might be decided that certain of the meetings may be provided with tape recordings of their proceedings which could be transcribed on those occasions where resolutions or decisions are adopted or where explanations of votes are given or where some special event would so require. Such a permanent conference servicing team would comprise: 26 interpreters, 10 précis-writers, 6 revisers, 30 translators and 42 typists.

13. The temporary reinforcements to service two additional meetings each day requiring six languages and summary records, would comprise: 20 interpreters, 6 précis-writers, 6 revisers, 20 translators and 36 typists.

14. However, for each meeting requiring only the transcription of the tape recordings of its proceedings, the temporary servicing staff could be limited to: 20 interpreters, 6 revisers and 18 typists (sound transcribers).

TABLE 1. POSSIBLE MEETINGS PROGRAMME FOR THE PRINCIPAL ORGANS OF THE AUTHORITY AND THEIR SUBSIDIARY BODIES

Organ or subsidiary body	Languages provided	Official Record	Total vol. of original pre-, in- and post-session documentation	Weeks of meetings	Number of sessions each year	Membership
The Assembly .....	6 <sup>a</sup>	Summary Records	2500 pages	8	1	All States parties
The Council .....	6 <sup>a</sup>	Summary Records	4500 pages	20	not less than 3	36
Economic Planning Commission .....	6 <sup>a</sup>	Tape recordings	1000 pages	8 to 16	1 or 2	15
Legal and Technical Commission .....	6 <sup>a</sup>	Tape recordings	1000 pages	8 to 16	1 or 2	15
Subsidiary organ of the Council for the elaboration of draft financial rules, regulations and procedures .....	6 <sup>a</sup>	Tape recordings	800 pages	8	1 or more	not known

<sup>a</sup> Arabic, Chinese, English, French, Russian and Spanish.

15. The total preparatory, in-session and post-session documentation might well approximate 10,000 pages of original text per annum based on the experience of reasonably comparable organs and subsidiary bodies in the United Nations meetings programme held during the past several years. To translate this documentation into five languages, a total staff of 30 revisers, 54 translators and 60 typists would be required. Until some experience is gained, it might also be prudent to provide for half of this staff on a permanent basis within the secretariat of the Authority and to furnish the other half by temporary assistance. The ratio could be adjusted later, as necessary, in the light of actual needs.

16. Thus, for the servicing of the projected conference programme, including the translation of all related documentation, a permanent staff of 26 interpreters, 10 précis-writers, 21 revisers, 57 translators, and 72 typists would be needed. This permanent staff would need to be supplemented for a major portion of the year by temporary assistance comprising 20 interpreters, 6 précis-writers, 21 revisers, 47 translators and 66 typists. This latter temporary staff could be reduced by 6 précis-writers, 15 revisers, 27 translators and 18 typists, representing a considerable reduction in cost, for those meetings where summary records are replaced by transcription of tape recordings. Provision is also made within the permanent staffing for supervisory staff, meetings planning and servicing, documents management and control, editing, terminology, copy preparation and proof-reading, conference officers, documents clerks and sound engineers, by a principal officer and a further 30 Professional and 25 General Service posts.

### Secretariat

17. Table 2 shows the estimated staffing of the secretariat for the Authority, which remains the same as that shown in the secretariat report costs of the Authority and contractual means of financing its activities<sup>12</sup> except for the permanent conference staff. The latter staff requirements have been revised in the light of the projected programme of meetings and the estimated volume of translation of related documentation as now foreseen.

#### (a) Consultants

There is expected to be a need, especially at the beginning, to have recourse to technical, economic and marine geological experts as well as financial advisers and environmentalists. Provision is made for up to 25 experts for a period of six months.

#### (b) Temporary assistance

It is assumed that greater use of temporary assistance than would normally occur would be desirable until the volume of work becomes measurable. For this reason the estimate provides for a significant portion of the projected requirements for messengers, drivers, guards and other custodial staff as well as for 5 Professional and 30 General Service staff for a period of nine months to meet peak workload periods, other than for conference servicing, to serve the consultants and for sick-leave replacements.

TABLE 2. ESTIMATED STAFFING—INTERNATIONAL SEA-BED AUTHORITY

	Secretary-General	Under-Secretary-General/Assistant Secretary-General	D2	D1	P5	P4	P3	P2	P1	Total	Principal	Other	Security Officer	Manual Worker	Total
1. Office of the Secretary-General . . . . .	1	1	1	1	—	1	—	—	—	5	1	3	—	—	4
2. Legal Division . . . . .	—	—	—	1	5	6	7	5	—	24	1	6	—	—	7
3. Economics Division . . . . .	—	—	—	1	5	6	6	6	—	24	1	6	—	—	7
4. Technical Division . . . . .	—	—	—	1	5	6	6	3	—	21	1	5	—	—	6
5. Administrative and Financial Services . . . . .	—	—	—	1	4	6	6	6	—	23	4	72	15	45	136
SUBTOTAL . . . . .	1	1	1	5	19	25	25	20	—	97	8	92	15	45	160
6. Conference Services . . . . .	—	—	—	1	10	55	59	20	—	145	2	95	—	—	97
TOTAL . . . . .	1	1	1	6	29	80	84	40	—	242	10	187	15	45	257

#### (c) Estimated costs

##### Recurring costs

Low                      Medium                      High

##### Secretariat

1 Secretary-General<sup>14</sup>  
 1 Under-Secretary-General/  
 Assistant Secretary-General<sup>14</sup>  
 1 Director<sup>14</sup>  
 6 Principal officers  
 233 Professional posts  
 197 General Service posts  
 15 Security officers  
 45 Manual workers

Salary and common staff costs . . . . . 11 108 500 14 554 000 14 396 500

##### Temporary conference servicing staff

20 Interpreters  
 6 Précis-writers  
 21 Revisers  
 47 Translators  
 66 Typists

Salary, per diem and travel . . . . . 4 187 400 5 112 200 5 320 400

<sup>14</sup> Salary to include representation allowance.

	<i>Single</i>	<i>Low</i>	<i>Medium</i>	<i>High</i>
<i>Other staff costs</i>				
Consultants .....	750 000	—	—	—
Temporary assistance .....	—	460 000	711 800	588 000
Overtime .....	25 000	—	—	—
Travel on official business .....	180 000	—	—	—
Hospitality .....	10 000	—	—	—
TOTAL	<u>965 000</u>	<u>460 000</u>	<u>711 800</u>	<u>588 000</u>
<i>General expenses</i>				
Communications .....	250 000	—	—	—
Rental and maintenance of premises .....	—	1 030 000 <sup>15</sup>	2 000 000 <sup>15</sup>	2 950 000 <sup>15</sup>
Utilities .....	—	150 000	210 000	300 000
Supplies and materials .....	325 000	—	—	—
Miscellaneous services .....	—	455 000	485 000	500 000
Petrol and lubricants .....	—	10 000	15 000	20 000
Insurance for property and equipment .....	—	34 000	50 000	74 000
External printing .....	76 500	—	—	—
Purchase of books, and periodicals .....	25 000	—	—	—
Rental and maintenance of equipment including computer equipment .....	570 000	—	—	—
TOTAL	<u>1 246 500</u>	<u>1 679 000</u>	<u>2 760 000</u>	<u>3 844 000</u>

<sup>15</sup> The estimate provides for the rental of office accommodation appropriately equipped and furnished pending the availability of permanent facilities.

#### *Headquarters seat for the Authority*

18. A headquarters seat capable of providing for all the requirements of the Authority, including its principal and subsidiary organs, would need to offer the following minimum facilities:

(a) A conference building containing: one large conference room to accommodate meetings of all States parties such as the Assembly; one medium size conference room to accommodate meetings such as that of the Council; six smaller conference rooms for meetings of the size of the two commissions of the Council, and other subsidiary committees which may be established. All these rooms would need to be equipped with simultaneous interpretation facilities for six languages, Arabic, Chinese, English, French, Russian and Spanish, sound recording equipment and the usual seating and podium arrangements

for delegates, advisers, press, public and other participants. Restaurant and lounge facilities would also be needed;

(b) Office accommodation to house the secretariat of the Authority comprising a possible total staff of a secretary-general, an under-secretary-general/assistant secretary-general, one director, 358 professional staff and 358 general service, security and custodial staff including permanent and temporary personnel. Such office accommodation to be appropriately furnished and equipped;

(c) A library for reference work and to store the archival material emanating from the work of the Authority;

(d) A specially constructed area for computer operations;

(e) A reserve of accommodation for future growth.

19. A summary of the estimated space required and the non-recurring costs is given below:

#### *Total net usable area*

	<i>m<sup>2</sup></i>
Conference rooms and related facilities .....	4 000
Office accommodation .....	11 000
Library .....	800
Computer operations .....	400
Restaurant, reproduction, telecommunications storage and other common services facilities .....	6 650
Expansion reserve .....	3 000
TOTAL	<u>25 850</u>

#### *Non-recurring costs*

	<i>Low</i>	<i>Medium</i>	<i>High</i>
<i>Construction costs</i>			
Construction .....	32 000 000	48 000 000	72 000 000
Fixed equipment and furnishings including simultaneous interpretation, telephone telecommunication, restaurant and library equipment .....	11 000 000	16 000 000	24 000 000
Architectural and engineering fees and administrative costs .....	5 000 000	8 000 000	12 000 000
TOTAL	<u>48 000 000</u>	<u>72 000 000</u>	<u>108 000 000</u>

<i>Other non-recurring costs</i>	<i>Low</i>	<i>Medium</i>	<i>High</i>
Office furniture and equipment .....	2 200 000	2 600 000	3 000 000
Reproduction equipment .....	380 000	350 000	380 000
Vehicles .....	160 000	180 000	200 000
<b>TOTAL</b>	<b>2 740 000</b>	<b>3 130 000</b>	<b>3 580 000</b>

20. A recapitulation of the possible level and range of costs for the Authority, together with its principal organs and subsidiary bodies and Secretariat is given as follows:

<i>Recurring costs</i>	<i>Single</i>	<i>Low</i>	<i>Medium</i>	<i>High</i>
Secretariat of the Authority (including permanent conference staff) .....	965 000	11 568 500	15 265 800	14 984 500
Temporary conference staff .....		4 187 400	5 112 200	5 320 400
General expenses .....	1 246 500	1 679 000	2 760 000	3 844 000
<b>TOTAL</b>	<b>2 211 500</b>	<b>17 434 900</b>	<b>23 138 000</b>	<b>24 148 900</b>

#### *Non-recurring costs*

##### *Headquarters*

Conference and office accommodation, library, computer operations area and reserve for future growth	48 000 000	72 000 000	108 000 000
Furnishings and equipment .....	2 200 000	2 600 000	3 000 000
Transportation equipment .....	160 000	180 000	200 000
Internal reproduction equipment ...	380 000	350 000	380 000
<b>TOTAL</b>	<b>50 740 000</b>	<b>75 130 000</b>	<b>111 580 000</b>

#### **B. THE ENTERPRISE**

21. Article 170 of the draft convention deals with the establishment of the Enterprise and annex IV contains the Statute of the Enterprise.

22. For the purpose of estimating the administrative costs of the Enterprise it is assumed that, together with the Authority, it would be located in a developing country, and thus a range of three possible levels of cost are provided where practical and meaningful. The costs relate to:

(a) remuneration to be paid to the members of the Governing Board;

(b) the servicing of the meetings of the Governing Board;

(c) the provision of a Director-General and of staff for the Enterprise;

(d) the provision of permanent headquarters accommodation for the principal office of the Enterprise including a conference room for the Governing Board, fully equipped and furnished, office accommodation for the Director-General and the staff, a library, laboratory and computer facilities.

23. Although it is foreseen in the draft convention that the Enterprise may establish other offices and facilities in the territory of any member of the Authority with the consent of that member, in the absence of any decision in this regard, no provision is made within the estimates for such purposes.

##### *Remuneration to be paid to the members of the Governing Board*

24. Such remuneration might be estimated at \$US 47,000 based on \$US 3,000 per member and \$US 5,000 for the Chairman per annum, following the practice of payment of honoraria to members, of similar organs of the United Nations, serving in their personal capacity. These amounts, which are periodically reviewed, are set by the General Assembly of the United Nations. Since the members of the Governing Board are to serve in their personal capacity, they may be entitled, under General Assembly resolution 1075 (XI), to receive a per diem for each day they serve on the Governing Board and reimbursement of travel expenses incurred to attend such meetings. These entitlements are estimated at \$US 127,500 for the per diem based on the current average rate of \$US 85 for

an estimated 20 weeks of meetings and \$US 180,000 for travel based on an average cost of \$US 3,000 for each member per session.

##### *Meetings of the Governing Board*

25. For the purpose of estimating the costs related to the servicing of the meetings of the Governing Board, it is assumed that the Board will hold four sessions a year for an estimated total of 20 weeks as a minimum requirement for the fulfilment of its functions. Provision for six languages, Arabic, Chinese, English, French, Russian and Spanish and summary records is made and the total volume of preparatory, in-session and post-session documentation is estimated initially at 4,000 pages of original text based on a comparison with other reasonably similar organs in the United Nations programme of meetings. This volume may well increase by a further 2,000 pages by the third year as the activities of the Enterprise expand. The temporary conference servicing staff needed to provide these services is estimated as follows: 20 interpreters, 6 précis-writers, 6 revisers for summary records, 20 translators for summary records, 36 typists for summary records, 24 revisers for pre-, in- and post-session documentation, 48 translators for pre-, in- and post-session documentation, 48 typists for pre-, in- and post-session documentation, 1 conference officer, 1 documents clerk, 2 security officers and 2 sound engineers. Estimated cost of salary, per diem and travel on the basis of four sessions of 20 weeks of meetings would be \$US 5,779,900.

26. Should the Enterprise and Authority agree to share, on a reimbursable basis in conformity with paragraph 4 of article 11 of annex IV of the draft convention, a common conference servicing staff and facilities, then the added flexibility so achieved in the use of the total resources available would make possible some reduction in the total cost. Such an economy would be further assured by the substitution of the transcription of tape recordings of the proceedings of certain meetings of some of the subsidiary organs of the Authority in lieu of summary records.

##### *Estimated staff needs of the Enterprise*

27. As envisaged in paragraphs 7 and 8 of the preliminary note by the Secretary-General on alternative means of financ-

ing the Enterprise<sup>13</sup> the staff of the Enterprise might begin with the relatively modest figure of 1 Director-General, 15 Professional and 10 General Service posts, exclusive of conference servicing personnel. By the third year, however, it is expected that this staff would have to be expanded to 1 director-general, 1 under-secretary-general/assistant secretary-general, 2 directors, 75 professional and 50 general service posts to meet the growing programme of work of the Enterprise. Furthermore, it would be necessary to supplement such personnel, particularly at the beginning, by consultants and experts in order that the highly technical, scientific, financial and legal aspects of the work of the Enterprise could be dealt with expeditiously.

#### Headquarters seat for the Enterprise

28. A headquarters seat for the Enterprise would need to offer the following minimum facilities:

(a) A conference room large enough to accommodate meetings of the Governing Board. This room would need to be equipped with simultaneous interpretation facilities for six languages, Arabic, Chinese, English, French, Russian and Spanish, sound recording equipment and the usual seating and podium arrangements for delegates, advisers, press, public and other participants. Restaurant and lounge facilities would also need to be available;

	Single	Low	Medium	High
<i>1st Year</i>				
1 Director-General <sup>16</sup>				
15 Professional posts				
10 General Service posts				
Salary and common staff costs .....	—	689 300	910 700	933 400
<i>3rd year</i>				
1 Director-General <sup>16</sup>				
1 Under-Secretary-General <sup>16</sup> / Assistant Secretary General				
2 Directors <sup>16</sup>				
75 Professional posts				
50 General Service posts				
Salary and common staff costs .....	—	3 581 200	4 378 600	4 526 000
<i>Other staff costs</i>				
Consultants				
Provision is made for up to 25 experts and advisers for one year .....	1 500 000	—	—	—
Temporary assistance				
Until the volume of work becomes measurable, the estimate reflects greater use of temporary assistance than would normally occur. For this reason, the estimate provides for a signif- icant portion of the projected requirements for messengers, drivers and other custodial staff as well as for 25 general service clerical staff to meet peak workload periods of up to nine months, to serve the consultants and to provide replacement for permanent staff on sick leave. ....	—	358 100	534 400	465 000
Overtime .....	20 000	—	—	—
Travel on official business .....	125 000	—	—	—
Hospitality .....	10 000	—	—	—
TOTAL	1 655 000	358 100	534 400	465 000
<i>General expenses</i>				
Communications .....	320 000	—	—	—
Rental and maintenance of premises .....	—	850 000 <sup>17</sup>	1 650 000 <sup>17</sup>	2 400 000 <sup>17</sup>
Utilities .....	—	80 000	170 000	250 000
Supplies and materials .....	195 000	—	—	—
Miscellaneous services .....	—	200 000	230 000	245 000
Petrol and lubricants .....	—	10 000	15 000	20 000
Insurance for property and equipment .....	—	22 000	32 000	47 000
External printing .....	30 000	—	—	—
Purchase of books, periodicals .....	40 000	—	—	—
Rental and maintenance of equipment including computer equipment .....	500 000	—	—	—
TOTAL	1 085 000	1 162 000	2 097 000	2 962 000

<sup>16</sup> Estimated salary to include representation allowance.

<sup>17</sup> The estimate provides for the rental of office accommodation appropriately equipped and furnished pending the availability of permanent facilities.

(b) Office accommodation adequate to house the staff of the Enterprise comprising a possible total staff of 1 director-general, 1 under-secretary-general/assistant secretary-general, 2 directors, 75 professional and 50 general service posts, some 50 consultants and temporary staff and 124 professional and 89 general service temporary conference servicing staff, unless an agreement is made with the Authority to have a common conference servicing staff on a reimbursable basis. This of-

fice accommodation is to be appropriately furnished and equipped;

(c) A library, laboratory and computer facilities are considered essential to the work of the Enterprise and would need to be easily accessible to the staff.

29. A summary of the estimated space required and the non-recurring costs is given below:

<i>Net usable area</i>	<i>m<sup>2</sup></i>
Conference rooms and related facilities .....	1 000
Office accommodation .....	8 000
Library .....	400
Computer operations .....	400
Restaurant, reproduction, telecommunications storage and other common services facilities	3 500
Expansion reserve .....	3 000
<b>TOTAL</b>	<b>16 300</b>

<i>Non-recurring costs</i>	<i>Low</i>	<i>Medium</i>	<i>High</i>
<i>Construction costs</i>			
Construction .....	20 000 000	30 000 000	45 000 000
Fixed equipment and furnishings including simultaneous interpretation, telephone telecommunication, restaurant and library equipment .....	7 000 000	10 000 000	15 000 000
Architectural and engineering fees and administrative costs .....	3 000 000	5 000 000	7 500 000
<b>TOTAL</b>	<b>30 000 000</b>	<b>45 000 000</b>	<b>67 500 000</b>
<i>Other non-recurring costs</i>			
Office furniture and equipment .....	1 400 000	1 700 000	2 000 000
Reproduction equipment .....	180 000	150 000	200 000
Vehicles .....	160 000	180 000	200 000
<b>TOTAL</b>	<b>1 740 000</b>	<b>2 030 000</b>	<b>2 400 000</b>

30. A recapitulation of the possible level and range of costs for the Enterprise including the Governing Board and the staff is given as follows:

<i>Recurring costs</i>	<i>Single</i>	<i>Low</i>	<i>Medium</i>	<i>High</i>
Remuneration, per diem and travel expenses to be paid to members of the Governing Board .....	354 500	—	—	—
Servicing meetings of the Governing Board <sup>18</sup> .....	5 779 900	—	—	—
Staff of the Enterprise .....	1 655 000	3 939 300	4 913 000	4 991 000
General expenses <sup>18</sup> .....	1 085 000	1 162 000	2 097 000	2 962 000
<b>TOTAL</b>	<b>8 874 400</b>	<b>5 101 300</b>	<b>7 010 000</b>	<b>7 953 000</b>
<i>Non-recurring costs</i>				
<i>Headquarters</i>				
Conference <sup>18</sup> and office accommodations, library, <sup>18</sup> laboratory, computer operations area <sup>18</sup> and reserve for future growth .....	—	30 000 000	45 000 000	67 500 000
Furnishings and equipment .....	—	1 400 000	1 700 000	2 000 000
Transportation equipment .....	—	160 000	180 000	200 000
Internal reproduction equipment .....	—	180 000	150 000	200 000
<b>TOTAL</b>	<b>—</b>	<b>31 740 000</b>	<b>47 030 000</b>	<b>69 900 000</b>

<sup>18</sup>These expenses could be reduced if the Enterprise and the Authority agreed to share common staff resources and facilities on a reimbursable basis in conformity with paragraph 4 of article 11 of annex IV of the draft convention.

C. THE INTERNATIONAL LAW OF THE SEA TRIBUNAL, INCLUDING THE SEA-BED DISPUTES CHAMBER, SPECIAL CHAMBERS AND *Ad Hoc* CHAMBER

31. Annex VI of the draft convention contains the statute of the International Tribunal for the Law of the Sea.

32. For costing purposes, it is assumed that the Tribunal and its organs might be located in Europe or elsewhere and the estimates therefore give, where feasible and meaningful, three possible levels of cost depending upon whether these activities are based in a country having a relatively low, medium or high cost of living index. The major elements of cost arise in regard to the servicing of the meetings programme, the provision of secretariat services and the provision of a permanent headquarters. The estimates also include the cost of compensation to be paid to members chosen under article 17 of annex VI of the draft convention, other than members of the Tribunal, annual and special allowances to be paid to the members of the Tribunal, as well as the reimbursement of travel expenses for the members of the Tribunal.

*Annual and special allowances to be paid to members of the Tribunal and compensation to non-members*

33. Taking into account the entitlements approved by the General Assembly at its thirty-fifth session<sup>19</sup> and which became effective 1 January 1981, in regard to the remuneration made to the Judges of the International Court of Justice, which is perhaps the closest parallel, the costs under this heading are estimated at \$US 1,515,000. The estimate includes provision for a special annual allowance for the president, a special allowance for the vice-president when acting as president, an annual allowance for members and a special allowance for each day on which they exercise their functions provided that in any year the total sum payable to any member as special allowance shall not exceed the amount of the annual allowance and compensation to members chosen under article 17 of annex VI of the draft convention other than members of the Tribunal.

34. No estimate of cost is included at this time in regard to the possible arrangements for pension entitlements for members of the Tribunal. As regards the reimbursement of travel expenses for the members of the Tribunal, in the absence of any data on the amount of such travel, a token estimate of \$US 50,000 is included. Provision for the travel of the Registrar is included within the estimates for that office.

*Meetings programme*

35. Given the proposed powers and functions of the Tribunal, the Sea-Bed Disputes Chamber, the Special Chambers the number of which is unknown and likely to vary at any given time and the *Ad Hoc* Chamber, their meetings programme could give rise to a need to service a minimum of two meetings a day for a major part of the year. It is also anticipated that because of the nature of the activities of the Tribunal and its Chambers, that the related documentation is likely to be voluminous. It is assumed that, as in the case of the International Court of Justice, only two languages would be provided and that summary records would not be available. Sound recordings would be made however of the proceedings and these could be transcribed when required, as for example, for those meetings where decisions are taken, judgements are

made, explanation of votes are given or when for any other important reason a transcription is desired. For the information of the Conference the additional costs of providing summary records is given together with the additional cost which would arise should six languages be provided rather than two.

36. The total conference staff required to service two meetings a day with two languages and no summary records and with an estimated total of 6,000 pages of original text of preparatory, in- and post-session documentation is estimated as follows: 8 interpreters, 5 revisers, 8 translators, 10 typists, 2 conference officers, 2 documents clerks, 2 sound engineers, 2 security officers, 5 Professional and 10 General Service posts for documents control, meetings, planning and editing.

37. Since this relatively small number of staff would be required for most of the year and in view of the technical and legal nature of the discussions and documentation necessitating experienced staff, it might be wise to engage this staff permanently, in which case the cost of servicing the meetings programme would comprise the salaries and common staff costs of the permanent conference staff, together with the cost of external printing of selected documentation. These costs are incorporated within the estimates for the registrar and supporting secretariat.

38. In the event that summary records are provided, the additional costs involved are estimated at \$US 1,194,500. These additional costs reflect the need to expand the conference servicing staff as follows in order to provide summary records: 6 précis-writers, 4 translators, 2 revisers and 12 typists.

39. The estimated additional cost also assumes that this staff would be recruited on a temporary basis as the meetings programme required, for an estimated period of 30 weeks each year, and includes the cost of reproduction and distribution of the records. Should six languages, Arabic, Chinese, English, French, Russian and Spanish and summary records be required, then the estimated cost would increase by \$US 6,870,800 because the conference servicing staff would need to be significantly augmented by: 18 interpreters, 10 précis-writers, 18 revisers, 42 translators and 52 typists. The estimate of additional cost assumes that one third of this staff would need to be added to the permanent establishment and the other two thirds provided as temporary assistance. It also includes the cost of reproduction and distribution of the records.

*Registrar and secretariat services*

40. It is anticipated that the activities of the Tribunal, the Sea-Bed Disputes Chamber, the special Chambers and the *Ad Hoc* Chamber will over the years generate a large volume of documentation, the custody and control of which will be the responsibility of the registrar and the supporting staff.

41. Reference has been made to the staffing of the office of the registrar of the International Court of Justice, which is felt to be the closest comparable activity in so far as the functions of the two offices are concerned. Accordingly, and in the absence of experience or more precise data on the nature and volume of the work load, the estimate of costs for the registrar and supporting secretariat services are based essentially on those of the registry of the International Court of Justice, as follows:

<sup>19</sup>General Assembly resolution 35/220.



<i>Salary and common staff costs</i>	<i>Single</i>	<i>Low</i>	<i>Medium</i>	<i>High</i>
1 Registrar (Assistant Secretary-General)				
1 Director				
1 Principal Officer				
13 Professional posts (3 at P5, 3 at P4, 2 at P2 and 5 at P2/1)				
21 General Service posts (6 Principal and 15 other levels)				
8 Interpreters				
5 Revisers				
8 Translators				
10 Typists				
2 Conference Officers				
2 Documents clerks				
2 Sound engineers				
2 Security Officers				
4 Manual workers				
5 Professional (2 at P4 level and 3 at P3) and 10 General Service posts for documents control, meetings planning and editing documentation				
	<u>—</u>	<u>2 167 500</u>	<u>2 955 500</u>	<u>2 828 800</u>

*Other staff costs*

Consultants (Provision is made for 2 experts for 6 months each) . . . . .	60 000	—	—	
Temporary assistance (Provision is made for 4 General Service staff for 6 months each) . . . . .	—	15 800	34 600	27 200
Overtime . . . . .	20 000	—	—	—
Travel on official business . . . . .	40 000	—	—	—
Hospitality . . . . .	5 000	—	—	—
<b>TOTAL</b>	<u>125 000</u>	<u>15 800</u>	<u>34 600</u>	<u>27 200</u>

*General expenses*

Communications . . . . .	25 000	—	—	—
Rental and maintenance of premises . . . . .	—	580 000 <sup>20</sup>	855 000 <sup>20</sup>	1 405 000 <sup>20</sup>
Utilities . . . . .	—	80 000	150 000	220 000
Supplies and materials . . . . .	40 000	—	—	—
Miscellaneous services . . . . .	—	30 000	40 000	50 000
Insurance for property and equipment . . . . .	—	20 000	26 000	35 000
External printing . . . . .	100 000	—	—	—
Purchase of books and periodicals . . . . .	30 000	—	—	—
Rental and maintenance of equipment . . . . .	—	50 000	80 000	120 000
<b>TOTAL</b>	<u>195 000</u>	<u>760 000</u>	<u>1 151 000</u>	<u>1 830 000</u>

*Headquarters seat for the International Tribunal for the Law of the Sea*

42. A headquarters seat for the Tribunal and its organs would need to offer the following facilities:

(a) A conference building containing: two conference rooms to accommodate meetings of the Tribunal and the Sea-Bed Disputes Chamber; four smaller conference rooms to accommodate meetings of the Special Chambers and the *Ad Hoc* Chamber and any other arbitral committee meetings. All of these rooms would need to be equipped with simultaneous

interpretation facilities for two languages, sound recording equipment and the usual seating and podium arrangements for delegates, advisers, press and other participants. Facilities would also be needed for the reproduction of documentation, restaurant and lounges;

(b) Office accommodation for members of the Tribunal as well as the registrar and secretariat comprising a possible staff of a registrar, a director, a principal officer, 39 professional posts and 49 general service posts. Such office accommodation to be appropriately furnished and equipped. A large area fully equipped for the storage of documentation, records, and archival material would also be needed. Should summary records and/or six languages be provided this office accommodation would have to be enlarged to provide for the additional permanent and temporary conference servicing staff with an increase in cost estimated at \$US 12 million.

<sup>20</sup> The estimate provides for the rental of office accommodation appropriately equipped and furnished pending the availability of permanent facilities.

43. A summary of the estimated space required and the non-recurring costs is given below:

*Total net usable area*

	<i>m<sup>2</sup></i>
Conference rooms and related facilities .....	2 750
Office accommodation .....	2 350
Common services facilities .....	3 015
Expansion reserve .....	500
TOTAL .....	<u>8 615</u>

*Non-recurring costs*

	<i>Low</i>	<i>Medium</i>	<i>High</i>
<i>Construction costs</i>			
Construction .....	13 000 000	21 000 000	31 000 000
Fixed equipment and furnishings including simultaneous interpretation, telephone telecommunication, restaurant and library equipment .....	4 500 000	7 000 000	10 500 000
Architectural and engineering fees and administrative costs .....	<u>3 000 000</u>	<u>3 000 000</u>	<u>5 000 000</u>
TOTAL .....	<u>20 500 000</u>	<u>31 000 000</u>	<u>46 500 000</u>
<i>Other non-recurring costs</i>			
Office furniture and equipment .....	500 000	600 000	700 000
Reproduction equipment .....	<u>160 000</u>	<u>150 000</u>	<u>180 000</u>
TOTAL .....	<u>660 000</u>	<u>750 000</u>	<u>880 000</u>

44. A recapitulation of the possible level and range of costs for the Tribunal and its organs is given as follows:

	<i>Single</i>	<i>Low</i>	<i>Medium</i>	<i>High</i>
<i>Recurring costs</i>				
Remuneration to members of the Tribunal, compensation to members chosen under article 17 of annex VI of the draft convention (informal text) .....	1 515 000	—	—	—
Reimbursement of travel costs for members of the Tribunal .....	50 000	—	—	—
Registrar and secretariat (including permanent conference servicing staff) .....	125 000	2 183 300	2 990 100	2 856 000
General expenses .....	<u>195 000</u>	<u>760 000</u>	<u>1 151 000</u>	<u>1 830 000</u>
TOTAL .....	<u>1 885 000</u>	<u>2 943 300</u>	<u>4 141 100</u>	<u>4 686 000</u>
<i>Non-recurring costs</i>				
<i>Headquarters</i>				
Conference and office accommodation .....	—	20 500 000	31 000 000	46 500 000
Furnishings and equipment .....	—	500 000	600 000	700 000
Internal reproduction equipment .....	—	<u>160 000</u>	<u>150 000</u>	<u>180 000</u>
TOTAL .....	—	<u>21 160 000</u>	<u>31 750 000</u>	<u>47 380 000</u>

#### D. THE COMMISSION ON THE LIMITS OF THE CONTINENTAL SHELF

45. In accordance with article 76 of the draft convention and with annex II, a Commission on the Limits of the Continental Shelf is established.

46. Since the secretariat of the Commission may be provided by the Secretary-General of the United Nations, for costing purposes it is assumed that the Commission and sub-commissions would meet at United Nations Headquarters in New York. However, for the information of the Conference, the additional cost of holding these meetings elsewhere is provided. The main elements of cost include the servicing of the meetings programme, the provision of secretariat services, and office accommodation for the secretariat.

*Meetings programme*

47. It is assumed that the Commission and each sub-commission might hold one session of three weeks duration

each year. Thus a total of 12 weeks of meetings each year might be expected. Provision for six languages is made in the estimates, Arabic, Chinese, English, French, Russian and Spanish. It is assumed that no summary records would be provided but sound recordings would be made of all proceedings and these would be transcribed for those meetings where decisions are taken or explanation of votes given or where for some special reason a transcription is required. For the information of the Conference, the additional cost of providing summary records in six languages for all meetings is also given. To service the Commission and three sub-commissions, therefore, with interpretation and all relevant documentation in six languages, but with no summary records, and assuming that the Commission and sub-commissions do not meet simultaneously the following temporary conference servicing staff would be needed: 20 interpreters, 6 revisers, 12 translators (based on an estimated 50 pages of preparatory, in-session and post-session documentation each week), 12 typists, 12 sound transcribers, 1 conference officer, 1 documents clerk, 2 sound

engineers and 1 security officer. The cost of salary, per diem and travel is estimated at \$US 1,081,700. The above staff is costed on the basis of a total of 12 weeks of meetings for the Commission and sub-commission.

#### *Secretariat of the Commission*

48. To provide the necessary support services to the Commission, a secretariat comprising the following staff may be needed: 1 principal officer, 5 Professional and 6 General Service staff members. Under article 2 of annex II of the draft convention, the Secretary-General of the United Nations is required to provide the secretariat of the Commission. The cost of salaries and common staff costs is estimated at \$US 495,600. Other related costs are estimated as follows:

#### *Recurring costs*

##### *Other staff costs*

Overtime .....	5 000
Travel on official business .....	15 000
<b>TOTAL</b> .....	<b>20 000</b>

##### *General expenses*

Rental and maintenance of premises <sup>21</sup> .....	79 000
Communications .....	10 000
Internal reproduction supplies and services .....	40 000
External printing .....	4 600
Office supplies .....	15 000
Rental of office equipment .....	5 000
Library acquisitions and periodicals .....	2 000
<b>TOTAL</b> .....	<b>155 600</b>

#### *Non-recurring costs*

##### *Permanent equipment*

Furniture, fixtures and equipment <sup>21</sup> .....	34 000
<b>TOTAL</b> .....	<b>34 000</b>

49. Should the Commission and its sub-commissions meet at a location other than United Nations Headquarters and assuming that adequate office accommodation, conference rooms, and technical facilities would be readily available at no cost, then the additional cost involved would be the travel and per diem of the secretariat from New York to the place of the meetings. This might be broadly estimated to be in the order of \$US 50,000 based on an average cost for travel and per diem.

50. Should the Commission and its sub-commissions be provided with summary records in six languages for their meetings then the temporary conference staff would have to be expanded by: 6 revisers, 6 précis-writers, 20 translators and 36 typists. The cost of this additional staff, for a period of 12 weeks, is estimated at \$US 1,096,100, to which must be added \$US 28,000 for the estimated additional cost of reproducing and distributing the records in six languages.

#### **E. THE PREPARATORY COMMISSION**

51. The report of the President (A/CONF.62/L.55) considers the creation of a Preparatory Commission, its possible composition, functions, duration, financing and substantive and administrative servicing.

52. The Conference has yet to consider these proposals in the detail and depth required; accordingly, the present study follows the lines of document A/CONF.62/L.55; as the only guide available at this stage. While it is understood that interim arrangements will need to be made until the convention comes into force and a scale of assessments for the States parties is

<sup>21</sup> To provide office accommodation for the secretariat given the present and foreseeable shortage of such space at United Nations Headquarters.

established, it may be expected that this period may last for some time. In view of the current financial situation of the United Nations, it would be difficult for a loan to be made in respect of the Preparatory Commission unless the General Assembly made additional funds available to the Secretary-General for the purpose. One way in which this might be done would be for the costs of the Preparatory Commission to be included in the regular budget of the United Nations, subject to eventual reimbursement once the Authority is established. The administrative costs of the Preparatory Commission arise mainly in regard to its programme of meetings and the provision of necessary secretariat services. If the latter are to be provided by the Secretary-General of the United Nations, any portion of the costs so incurred which could not be met from within the resources available to him would need to be included under the special financing arrangements made by the Preparatory Commission with the authorities of the United Nations. If other arrangements should be considered, it is possible that all the related expenses would have to be met from within the loan. The amount of the loan and the schedule of repayment would, of course, affect the amount of the annual assessments of States parties.

53. As to the meetings programme of the Commission, they could be held in any established United Nations Office having the required conference facilities, provided such meetings could be accommodated within the total annual meetings programme of that office. In which case the costs could be limited essentially to the provision of temporary conference servicing staff, the reproduction and distribution of preparatory, in-session and post-session documentation and the travel, per diem and, where applicable, salary costs of the substantive secretariat and other consultant expertise which may be needed to assist the Commission, as envisaged in paragraph 6 of the draft resolution in annex II of document A/CONF.62/L.55. However, in paragraph 55 below certain observations are made in regard to the provision and location of a secretariat, which might have some effect on the choice of location for the meetings of the Commission. Assuming that the Commission might hold two sessions of eight weeks duration the first year and slightly longer sessions thereafter at United Nations Headquarters, that six languages would be required (Arabic, Chinese, English, French, Russian and Spanish), that summary records would be provided and that all other documentation would average a total of 100 pages of original text a week, then the cost of temporary conference staff, based on 20 weeks of meetings, is estimated as follows:

20 interpreters
32 translators/précis-writers/revisers
36 typists
36 translators/revisers
24 typists

##### *Other Staff*

1 conference officer
1 documents clerk
2 security officers
2 sound engineers
Editing/terminology/control (6 professional and 8 general service)

*Documents reproduction and distribution* (\$US 50,000)

*External printing* (\$US 10,000)

Salary, per diem and travel

**TOTAL** 1 247 500

54. In the absence of any definitive information on the number of subsidiary committees that might be established or the type of services they might require, no provision is made at this time for these possible requirements.

55. Until the Conference has further considered and decided upon the many proposals and suggestions contained in

the draft resolution in annex II of document A/CONF.62/L.55, any assumptions made for the purpose of preparing cost estimates in regard to the provision of a secretariat, its accommodation and related general expenses would be very speculative. It would seem, however, reasonable to predict that under any arrangement whereby the Preparatory Commission would meet away from United Nations Headquarters the costs could be expected to be substantially larger. Interdepartmental co-operation has permitted the use of resources from several departments and offices of the Secretariat, thereby allowing the Special Representative to call upon a wide range of expertise and specialization. The institution of a completely separate secretariat, particularly if it should be located away from United Nations Headquarters, would inevitably reduce the existing flexibility and hence necessitate a much larger staff than is currently devoted solely to the law of the sea matters. In all probability, however, given the present and foreseeable acute shortage of office accommodation at United Nations Headquarters some additional costs would arise in regard to the rental of office accommodation, its furnishing and maintenance, including lighting, heating, air-conditioning and cleaning, as well as general expenses for the supply of normal office needs including communications, stationery, library books, periodicals and other general supplies should the meetings of the Commission and the Secretariat be located there.

56. Should other arrangements be decided upon and the Preparatory Commission hold its meetings at a site other than

an established United Nations Office, then clearly given the need for the Commission to begin its work as soon as possible, after a sufficient number of States parties have become signatories to the convention, the site must have readily available conference rooms to accommodate all participants at the Commission meetings and meetings of any subsidiary committees it might establish, as well as facilities to provide all the technical language and documents services required. Furthermore, adequate office accommodation appropriately furnished and equipped, for an enlarged secretariat, consultants and temporary conference servicing staff would be needed immediately. Unless these requirements are provided at no cost by a host Government, they would have to be obtained on a rental basis at considerable additional cost.

57. In so far as the total costs of the Preparatory Commission are concerned, therefore, the study provides only an estimate of that portion related to the servicing of the meetings of the Commission and the translation, reproduction, printing and distribution of all documentation in the event that the meetings are held at United Nations Headquarters. An estimate of the costs of providing a secretariat, together with its furnished office accommodation and other general administrative needs irrespective of its location, is not, for the reasons given, attempted at this time.

58. A summary of the possible administrative costs arising in regard to all of the activities included under Part I of this study, should the draft convention be adopted, is given below:

SUMMARY OF POSSIBLE ADMINISTRATIVE COSTS ARISING FROM THE ADOPTION OF THE  
DRAFT CONVENTION ON THE LAW OF THE SEA (INFORMAL TEXT)  
(In thousands of US dollars)

	Single Cost	Low	Medium	High
<b>A. The International Sea-Bed Authority</b>				
(a) Secretariat of the Authority .....	2 211.5	13 247.5	18 025.8	18 828.5
(b) Temporary conference staff .....	—	4 187.4	5 112.2	5 320.4
(Recurring cost) SUBTOTAL	2 211.5	17 434.9	23 138.0	24 148.9
(c) Headquarters				
(Non-recurring cost) SUBTOTAL	—	50 740.0	75 130.0	111 580.0
<b>B. The Enterprise</b>				
(a) Remuneration, per diem, and travel expenses paid to members .....	354.5	—	—	—
(b) Servicing meetings of the Governing Board .....	5 779.9	—	—	—
(c) Secretariat for the Enterprise .....	2 740.0	5 101.3	7 010.0	7 953.0
(Recurring cost) SUBTOTAL	8 874.4	5 101.3	7 010.0	7 953.0
(d) Headquarters				
(Non-recurring cost) SUBTOTAL	—	31 740.0	47 030.0	69 900.0
<b>C. The International Tribunal for the Law of the Sea</b>				
(a) Remuneration to members of the Tribunal and compensation to members chosen under article 17 of annex II of the draft convention .....	1 515.0	—	—	—
(b) Reimbursement of travel expenses for members .....	50.0	—	—	—
(c) Registrar and secretariat .....	320.0	2 943.3	4 141.1	4 686.0
(Recurring cost) SUBTOTAL	1 885.0	2 943.3	4 141.1	4 686.0
(d) Headquarters				
(Non-recurring cost) SUBTOTAL	—	21 160.0	31 750.0	47 380.0
<b>D. The Commission on the Limits of the Continental Shelf</b>				
(a) Temporary conference staff .....	1 081.7	—	—	—
(b) Secretariat .....	671.2	—	—	—
(Recurring cost) SUBTOTAL	1 752.9	—	—	—
(c) Furniture and equipment				
(Non-recurring cost) SUBTOTAL	34.0	—	—	—

		Single Cost	Low	Medium	High
<b>E. The Preparatory Commission<sup>22</sup></b>					
Temporary conference staff (Recurring cost)		TOTAL 1 247.5			
<b>F. Single costs distributed</b>					
Recurring . . . . .		—	15 971.3	15 971.3	15 971.3
Non-recurring . . . . .		—	34.0	34.0	34.0
Recurring cost		GRAND TOTAL	41 450.8	50 260.4	52 759.2
Non-recurring cost		GRAND TOTAL	103 674.0	153 944.0	228 894.0

## Part II

### CONTRIBUTIONS OF STATES PARTIES TO THE FINANCING OF THE ENTERPRISE

#### *Loans by States parties*

59. According to article 11, paragraph 3 (a) and (b) of annex IV of the draft convention, all States parties shall make available to the Enterprise, by way of long-term interest-free loans, an amount equivalent to one half "the funds necessary to explore and exploit one mine site, and to transport, process and market the metals recovered therefrom, namely nickel, copper, cobalt and manganese, and to meet (the Enterprise's) initial administrative expenses". The shares of this amount to be contributed by the individual States parties shall be determined "in accordance with the scale of assessments for the United Nations regular budget in force at the time when the contributions are made, adjusted to take into account the States which are not members of the United Nations".

60. The above contributions of a State party need not be made in cash at one time. Paragraph 3 (d)(i) of the same article states that "each State Party shall, within 60 days after the entry into force of this convention, or within 30 days after the date of deposit of its instrument of ratification, acceptance or approval, whichever is later, deposit with the Enterprise irrevocable non-negotiable non-interest-bearing promissory notes in the amount of the share of such party of interest-free loans" mentioned above. As explained in Part III of the memorandum submitted by Mr. T. Koh on negotiations co-ordinated by him relating to financial arrangements and the statute of the Enterprise,<sup>23</sup> those promissory notes can be cashed by the Enterprise in accordance with the following procedure:

"First, as soon as possible after the entry into force of the Convention and thereafter, at annual or other appropriate intervals, the Governing Board of the Enterprise shall prepare a schedule of the magnitude and timing of its requirements for the funding of its administrative expenses and for carrying out its operations. Secondly, the States Parties shall be notified by the Enterprise, through the Authority, of the magnitude and timing of the Enterprise's financial requirements. After notifying the States Parties, the Enterprise shall cash such amounts of the promissory notes as are required to meet its expenses in accordance with the schedule."

61. In order to arrive at the contribution of a ratifying State party in the form of interest-free loans, the amount of "the funds necessary to explore and exploit one mine site, and to transport, process and market the metals recovered therefrom, namely nickel, copper, cobalt and manganese and to meet (the Enterprises's) initial administrative expenses" must be determined. A note of caution should be added at the outset about whatever amounts are used for the purpose of this study. As has been stipulated in article 11 paragraph 3 (a) of annex IV of the draft convention, "the amount of the said funds, and the criteria and factors for its adjustment, shall be

included by the Preparatory Commission in the draft rules, regulations and procedures of the Authority". The amount relevant for the purpose of a ratifying State party shall be the amount included by the Preparatory Commission, and, therefore, whatever amounts are mentioned in this study are of a purely hypothetical nature, and are in no way intended to pre-judge the work of the Preparatory Commission.

62. At this time, quantification of the amount of the funds referred to above involves substantial problems of estimation. The initial administrative expenses have been dealt with in Part I of this study. As to the funds necessary to explore and exploit one mine site, and to transport, process and market the metals recovered therefrom, it is assumed in this study, on the basis of the discussion in the Conference touching upon this issue, that the costs of developing an integrated four-metal mining project up to the fully operative stage are to be considered.<sup>24</sup> These costs would include exploration costs, research and development costs and/or costs of acquiring technology, capital costs in mining, transportation, processing and marketing sectors, construction (costs of plant, machinery, equipment, vessels, land, buildings, construction, etc.) and, possibly, working capital.

63. Deep sea-bed mining, as an industry, does not exist now. Data on development costs are necessarily estimates and these should be seen, at best, as "order-of-magnitude" estimates. Technological uncertainties and lack of precise knowledge about relevant physical factors make it impossible to have estimates of any other nature.

64. The current status of manganese nodule mining and processing technology can be summarized as follows: the principal technical feasibility of nodule mining from the deep sea and of metal recovery from the nodules have been proved on an experimental basis; before an operation is planned, the efficiency of each subsystem — mining, transportation and processing — has to be established to a reasonable degree and on a longer-term basis; each subsystem has to be upscaled several times; and, finally, the technical feasibility of the whole system has to be demonstrated. To give a few examples in the first category, the sweep efficiency and the dredge efficiency of the mining equipment, recovery efficiency of the processing route, etc. have yet to be narrowed down to reasonably predictable ratios. Each of the three categories can give rise to extreme variation in costs. Relevant physical factors include the grade and abundance of manganese nodules in a mine site, bottom topography, weather conditions, distance to be traversed by transportation ships etc. Costs can vary substantially depending on each of these factors.

65. Figures on development costs used in this study are based on existing estimates obtained from various sources.<sup>25</sup> The purpose, coverage and method of estimation and the data base used were different in the case of each of these sources

<sup>24</sup> See *Official Records of the Third United Nations Conference on the Law of the Sea*, vol. XII (United Nations publication, Sales No. E.80.V.12), document A/CONF.62/C.1/L.26.

<sup>25</sup> Annex II of the present report gives a summary of the existing estimates in various published sources. In addition to monitoring published sources, the secretariat sent a letter requesting relevant data, to heads of the Delegations of States which may be in a position to have such data, commercial entities having interest in sea-bed mining and researchers involved in cost estimation. Most of the responses referred to published sources.

<sup>22</sup> Partial estimates only are provided.

<sup>23</sup> See *Official Records of the Third United Nations Conference on the Law of the Sea*, vol. XIV (United Nations publication, Sales No. E.82.V.2), document A/CONF.62/C.1/L.28 and Add.1.

and the estimates vary widely. In any case, none of these estimates may coincide precisely with what is required according to article 11, paragraph 3 (a) of annex IV. For example, to determine the adequacy of estimates, information about some system/design or policy options is required. These options involve, among other things, the number of metals to be recovered, the capacity of the operation, mining equipment, nodule hoisting mechanism, number of mine ships, number of transportation ships, siting of processing plant, processing route, ownership or leasing of transportation ships etc. Some of these options are either specified in the informal text or can be reasonably deduced from the text, the Chairman's report or explanatory or interpretation statements made during the negotiation process. For example, four metals, nickel, copper, cobalt and manganese, have been specified in paragraph 3 (a). The implicit understanding about the capacity of the operation is that it would be able to mine, transport, and process 3 million dry tons of nodules per year for at least 20-25 years.<sup>26</sup> But the options regarding the other factors are unspecified; in reality, there is an inter-dependence among some of the options and the technological and physical factors mentioned earlier.

66. The treatment of some of the costs in the existing estimates are not uniform and may not be in conformity with what is required according to the draft convention. For example, the benefits from research and development work may spread over a number of projects but the existing estimates usually charge research and development costs against one project. The costs of purchasing technology — which may be relevant for the Enterprise — are not dealt with in any of the estimates. There are no estimates for capital costs of the marketing sector for one project. Working capital, which is required to bridge over the period between production and sales, is not uniformly treated within development costs.

67. Finally, it should be emphasized that the cost estimates used in this study are estimates made currently about costs to be incurred in the future. In addition to the limitations discussed above, the usual caveats regarding the difference of "actual" from estimate and the intrinsic uncertainty of the future should be kept in mind.<sup>27</sup> Moreover, the actual contributions of States parties will be based on the amount which will be determined at a future date and will most probably be expressed in terms of a given currency in accordance with article 11, paragraph 3 (g) of annex IV at the time of the determination. The amounts in this study are expressed in 1980 dollars. Changes in the general price level in the future and the rate of exchange of dollars will necessarily change the amounts.

68. In sum, for the purpose of this study, the amount to be contributed by all States parties by way of interest-free loans to the Enterprise has been derived from existing estimates of development costs of an integrated four-metal sea-bed mining operation. These existing estimates are of an "order-of-magnitude" nature, vary widely from one source to another, and, in any case, may not coincide with the amount to be included by the Preparatory Commission. Keeping these limitations in mind, in this study, three alternative amounts — "low", "medium" and "high" — are assumed in order to quantify the funds necessary to explore and exploit one mine site, and to transport, process and market the metals recovered therefrom; they are, respectively, \$700 million, \$1,000 million and \$1,400 million 1980 dollars.

69. Half of these three alternative amounts — \$350 million, \$500 million and \$700 million respectively — along with half of the administrative costs of the Enterprise estimated in part I of the present study will be contributed by all States parties by

way of interest-free loans. As mentioned in paragraph 60 above, the cash payments in respect of these loans will be made in accordance with a schedule of the Enterprise's financial requirements which will be prepared by the Governing Board. For the purpose of this study, a hypothetical schedule is given below (based roughly on the project financing schedule in the "baseline" case of the Massachusetts Institute of Technology cost model.<sup>28</sup>

SCHEDULE OF LOANS IN CASH BY STATES PARTIES<sup>a</sup>  
(million 1980 US dollars)

Year	"Low"	"Medium"	"High"
1.....	30	40	60
2.....	30	40	60
3.....	100	150	200
4.....	100	150	200
5.....	90	120	180
TOTAL	350	500	700

<sup>a</sup>Excludes funds for the initial administrative expenses of the Enterprise.

The schedule of contribution of each State party in the form of cash loans, then, can be calculated by applying the percentages given in annex I to the figures in the table above.

70. It should be pointed out that the draft convention includes provisions regarding the repayment of the interest-free loans. The repayment "shall be in accordance with a schedule adopted by the Assembly, upon the recommendation of the Council and the advice of the Governing Board of the Enterprise", (art. 11, para. 3 (f) of annex IV).

#### *Debt guarantees by States parties*

71. Article 11, paragraph 3 (a) and (b) of annex IV also state that debts incurred by the Enterprise in raising an amount equivalent to one half the funds "necessary to explore and exploit one mine site, and to transport, process and market the metals recovered therefrom, namely nickel, copper, cobalt and manganese and to meet (the Enterprise's) initial administrative expenses" shall be guaranteed by all States parties. The shares of the individual States parties in the total amount of debts guaranteed will be determined in accordance with the scale mentioned in paragraph 59 above. The debt guarantees will also be made available in the same procedure as the interest-free loans.

72. Upon request by the Enterprise, a State party may provide a guarantee covering debts additional to the amount it has guaranteed in connexion with the funds mentioned above (art. 11, para. 3 (e) of annex IV).

73. According to paragraph 3 (h) of the same article, "a debt guarantee shall mean a promise of each State party to creditors of the Enterprise to pay, *pro rata* in accordance with the appropriate scale, the financial obligations of the Enterprise covered by the guarantee following notice by the creditors to the State Party of a default by the Enterprise". Thus, in the usual case when the Enterprise pays off its debts duly, States parties will not be required to make any financial contribution. In case of a default by the Enterprise, whether and to what extent financial contributions from States parties will be required will depend on the rules, regulations and procedures of the Authority to be drawn up. In view of this, no attempt is made at this time to estimate the financial implications of the debt guarantees.

<sup>26</sup>The Chairman of negotiating group 2 cited an amount of \$1,000 million as development costs (see A/CONF.62/C.1/L.26). An examination of the existing estimates show that this amount corresponds more to a 3-million-ton-capacity project than any other project.

<sup>27</sup>The Chairman of negotiating group 2 underscored the fact that cost over-run is a familiar phenomenon (*ibid.*).

<sup>28</sup>Nyhart, J. D. *et al.* *A Cost Model of Deep Ocean Mining and Associated Regulatory Issues* (Massachusetts Institute of Technology, Cambridge, Massachusetts, March 1978).

*Voluntary contributions by States parties*

74. According to article 11, paragraph 1 (b) of annex IV, there is provision for voluntary contributions to be made by States parties for the purpose of financing activities of the Enterprise. Paragraph 3 (e) of the same article specifically mentions that "in lieu of debt guarantee, a State party may make a voluntary contribution to the Enterprise in an amount equivalent to that portion of the debts (of the Enterprise) which it would otherwise be liable to guarantee".

## ANNEX I

## General Assembly resolution 34/6

## 34/6. SCALE OF ASSESSMENTS FOR THE APPORTIONMENT OF THE EXPENSES OF THE UNITED NATIONS

## A

*The General Assembly**Resolves that:*

1. The scale of assessments for the contributions of Member States to the United Nations budget for the financial years 1980, 1981 and 1982 shall be as follows:

<i>Member State</i>	<i>Per cent</i>
Afghanistan .....	0.01
Albania .....	0.01
Algeria .....	0.12
Angola .....	0.01
Argentina .....	0.78
Australia .....	1.83
Austria .....	0.71
Bahamas .....	0.01
Bahrain .....	0.01
Bangladesh .....	0.04
Barbados .....	0.01
Belgium .....	1.22
Benin .....	0.01
Bhutan .....	0.01
Bolivia .....	0.01
Botswana .....	0.01
Brazil .....	1.27
Bulgaria .....	0.16
Burma .....	0.01
Burundi .....	0.01
Byelorussian Soviet Socialist Republic .....	0.39
Canada .....	3.28
Cape Verde .....	0.01
Central African Republic .....	0.01
Chad .....	0.01
Chile .....	0.07
China .....	1.62
Colombia .....	0.11
Comoros .....	0.01
Congo .....	0.01
Costa Rica .....	0.02
Cuba .....	0.11
Cyprus .....	0.01
Czechoslovakia .....	0.83
Democratic Kampuchea .....	0.01
Democratic Yemen .....	0.01
Denmark .....	0.74
Djibouti .....	0.01
Dominica .....	0.01
Dominican Republic .....	0.03
Ecuador .....	0.02
Egypt .....	0.07
El Salvador .....	0.01
Equatorial Guinea .....	0.01
Ethiopia .....	0.01
Fiji .....	0.01
Finland .....	0.48
France .....	6.26
Gabon .....	0.02
Gambia .....	0.01
German Democratic Republic .....	1.39

<i>Member State</i>	<i>Per cent</i>
Germany, Federal Republic of .....	8.31
Ghana .....	0.03
Greece .....	0.35
Grenada .....	0.01
Guatemala .....	0.02
Guinea .....	0.01
Guinea-Bissau .....	0.01
Guyana .....	0.01
Haiti .....	0.01
Honduras .....	0.01
Hungary .....	0.33
Iceland .....	0.03
India .....	0.60
Indonesia .....	0.16
Iran .....	0.65
Iraq .....	0.12
Ireland .....	0.16
Israel .....	0.25
Italy .....	3.45
Ivory Coast .....	0.03
Jamaica .....	0.02
Japan .....	9.58
Jordan .....	0.01
Kenya .....	0.01
Kuwait .....	0.20
Lao People's Democratic Republic .....	0.01
Lebanon .....	0.03
Lesotho .....	0.01
Liberia .....	0.01
Libyan Arab Jamahiriya .....	0.23
Luxembourg .....	0.05
Madagascar .....	0.01
Malawi .....	0.01
Malaysia .....	0.09
Maldives .....	0.01
Mali .....	0.01
Malta .....	0.01
Mauritania .....	0.01
Mauritius .....	0.01
Mexico .....	0.76
Mongolia .....	0.01
Morocco .....	0.05
Mozambique .....	0.01
Nepal .....	0.01
Netherlands .....	1.63
New Zealand .....	0.27
Nicaragua .....	0.01
Niger .....	0.01
Nigeria .....	0.16
Norway .....	0.50
Oman .....	0.01
Pakistan .....	0.07
Panama .....	0.02
Papua New Guinea .....	0.01
Paraguay .....	0.01
Peru .....	0.06
Philippines .....	0.10
Poland .....	1.24
Portugal .....	0.19
Qatar .....	0.03
Romania .....	0.21
Rwanda .....	0.01
Samoa .....	0.01
Sao Tome and Principe .....	0.01
Saudi Arabia .....	0.58
Senegal .....	0.01
Seychelles .....	0.01
Sierra Leone .....	0.01
Singapore .....	0.08
Solomon Islands .....	0.01
Somalia .....	0.01
South Africa .....	0.42
Spain .....	1.70
Sri Lanka .....	0.02
Sudan .....	0.01
Suriname .....	0.01
Swaziland .....	0.01
Sweden .....	1.31

Member State	Per cent
Syrian Arab Republic .....	0.03
Thailand .....	0.10
Togo .....	0.01
Trinidad and Tobago .....	0.03
Tunisia .....	0.03
Turkey .....	0.30
Uganda .....	0.01
Ukrainian Soviet Socialist Republic .....	1.46
Union of Soviet Socialist Republics .....	11.10
United Arab Emirates .....	0.10
United Kingdom of Great Britain and Northern Ireland .....	4.46
United Republic of Cameroon .....	0.01
United Republic of Tanzania .....	0.01
United States of America .....	25.00
Upper Volta .....	0.01
Uruguay .....	0.04
Venezuela .....	0.50
Viet Nam .....	0.03
Yemen .....	0.01
Yugoslavia .....	0.42
Zaire .....	0.02
Zambia .....	0.02
	100.00

2. In accordance with rule 160 of the rules of procedure of the General Assembly, the scale of assessments given in paragraph 1 above shall be reviewed by the Committee on Contributions in 1982, when a report shall be submitted to the Assembly for its consideration at its thirty-seventh session;

3. Notwithstanding the terms of regulation 5.5 of the Financial Regulations of the United Nations, the Secretary-General shall be empowered to accept, at his discretion and after consultation with the Chairman of the Committee on Contributions, a portion of the contributions of Member States for the calendar years 1980, 1981 and 1982 in currencies other than United States dollars;

4. For the year 1978, Solomon Islands and Dominica, which became Members of the United Nations on 19 September and 18 December 1978, respectively, shall contribute amounts equal to one ninth of 0.01 per cent;

5. For the year 1979, Solomon Islands and Dominica shall contribute amounts equal to 0.01 per cent;

6. The contributions of the two new Member States for 1978 and 1979 shall be applied to the same basis of assessment as for other Member States, except that, in the case of appropriations approved under General Assembly resolutions 32/4 B and C of 2 December 1977 and 33/13 C and D of 8 December 1978 for the financing of the United Nations Emergency Force and the United Nations Disengagement Observer Force and resolutions S-8/2 of 21<sup>st</sup> April and 33/14 of 3 November 1978 for the financing of the United Nations Interim Force in Lebanon, the contributions of those States, in accordance with the group of contributors to which they may be assigned by the Assembly, shall be calculated in proportion to the calendar year;

7. In accordance with rule 160 of the rules of procedure of the General Assembly, States which are not Members of the United Nations but which participate in certain of its activities shall be called upon to contribute towards the 1980, 1981 and 1982 expenses of such activities on the basis of the following rates:

Non-member State	Per cent
Democratic People's Republic of Korea .....	0.05
Holy See .....	0.01
Liechtenstein .....	0.01
Monaco .....	0.01
Nauru .....	0.01
Republic of Korea .....	0.15
San Marino .....	0.01
Switzerland .....	1.05
Tonga .....	0.01

the following countries being called upon to contribute:

- (a) *To the International Court of Justice:*  
Liechtenstein,  
San Marino,  
Switzerland;

- (b) *To international drug control:*

Holy See,  
Liechtenstein,  
Monaco,  
Republic of Korea,  
Switzerland,  
Tonga;

- (c) *To the Economic and Social Commission for Asia and the Pacific:*

Republic of Korea;

- (d) *To the Economic Commission for Europe:*

Switzerland;

- (e) *To the United Nations Conference on Trade and Development:*

Democratic People's Republic of Korea,  
Holy See,  
Liechtenstein,  
Monaco,  
Republic of Korea,  
San Marino,  
Switzerland,  
Tonga;

- (f) *To the United Nations Industrial Development Organization:*

Liechtenstein,  
Monaco,  
Republic of Korea,  
Switzerland;

- (g) *To the United Nations Environment Programme:*

Switzerland;

8. Notwithstanding the provisions of General Assembly resolution 32/39 of 2 December 1977, Tonga shall be called upon to contribute to the expenses of the United Nations Conference on Trade and Development at the rate of three quarters of 0.01 per cent for the year 1979.

46th plenary meeting  
25 October 1979

## B

### *The General Assembly,*

*Recalling* its resolutions 582 (VI) of 21 December 1951, 665 (VII) of 5 December 1952, 1927 (XVIII) of 11 December 1963, 2118 (XX) of 21 December 1965, 2961 C (XXVII) of 13 December 1972 and 31/95 A and B of 14 December 1976,

*Noting* a significant increase in the assessment of some Member States in the proposed scale for the period 1980-1982 in relation to the previous scale,

*Bearing in mind* the continuing disparity between the economies of developed and developing countries,

1. *Reaffirms* that the capacity of Member States to contribute towards the payment of the budgetary expenses of the United Nations is the fundamental criterion on which scales of assessment are based;

2. *Requests* the Committee on Contributions to study in depth and report to the General Assembly at its thirty-fifth session on ways and means of increasing the fairness and equity of the scale of assessments, bearing in mind the debate under agenda item 103 in the Fifth Committee during the thirty-fourth session of the Assembly, and, in particular:

(a) Methods which would avoid excessive variations of individual rates of assessment between two successive scales, including ways of setting a percentage limit or percentage points limit or a combination of the two;

(b) Ways of taking into account conditions or circumstances which adversely affect the capacity to pay of Member States and ways of setting objective criteria by which these conditions or circumstances can be taken into account in the elaboration of the scale of assessments;

(c) Ways of taking into account the particular situation of Member States whose earnings depend heavily on one or a few products;

(d) Ways of bringing up to date the values of the *per capita* allowance formula and their effects on the scale of assessments;

(e) Ways of taking into account the different methods of national accounting of Member States, including the level of different inflation rates and their effects on the comparability of national income statistics;



(f) Ways of taking into account the concept of accumulated wealth and the ways by which criteria could be developed to enable it to be applied as a factor in setting the scale of assessments;

(g) Methods to ensure that all countries are assessed on data covering the same period of time so that data used are comparable;

(h) Effects of altering the statistical base period in the scale of assessments.

46th plenary meeting  
25 October 1979

## ANNEX II

### Summary of recently published estimates for development costs of one integrated sea-bed mining project

Author and date of publication	No. of metals	Capacity of operation/year	Items of cost included	Unit of currency	Cost estimates in millions of dollars
1. Wright (1976) .....	3	3m <sup>a</sup> dry tons	Exploration + R + D + Capital cost + Working capital	1975 \$US	500 — low 640 — med. 750 — high
2. Shaw (1977) .....	4	3m dry tons	Exploration + R + D + Capital Cost + Working capital	1976 \$US	730
3. Dames & Moore — EIC Corp (1977) .....	3	3m dry met. tons	Exploration + R + D + Capital cost in mining and processing	1976 \$US	490 — one ship mining 520 — two ship mining
	4	1m dry met. tons	<i>Idem</i>	1976 \$US	405
4. Nyhart (1978) .....	3	3m dry short tons	Prospecting + Exploration + R + D + Capital cost	1976 \$US	560
5. Tinsley (1978) .....	3	1.5m tons	Exploration + R + D + Capital cost + Working capital	1977 \$US	625 — Kennecott
	4	0.95m met. tons	<i>Idem</i>	1977 \$US	340 — OMA
	4	3m dry met. tons	Capital Cost	1977 \$US	450 — OMI
	3	1.5m met. tons	Exploration + R + D + Capital cost + Working capital	1977 \$US	400 — Ominco
	3	2m dry tons	Capital cost	1977 \$US	250 — AFERNOD
6. Diederich (1979) .....	3	3m dry short tons	Prospecting + Exploration + R&D + Capital cost	1976 \$US	970
7. Arthur D. Little (1979) .....	3 + Molybdenum	3m short tons	Capital cost	1978 \$US	645 — Ammonia leach processing
	4 + Molybdenum	3m short tons	Capital cost	1978 \$US	900 — Ammonia leach processing
	4 + Molybdenum	3m short tons	Capital cost	1978 \$US	775 — Pyro-metallurgical processing
8. Lenoble (1980) .....	3	3m dry met. tons	R + D + Capital cost + Working capital	1979 \$US	1 250
	4	2m dry met. tons	<i>Idem</i>	1979 \$US	1 325

#### Sources:

Rebecca L. Wright, *Ocean Mining: An Economic Evaluation*, (United States Department of the Interior, Ocean Mining Administration, May 1976), table 6, p. 11.

K. D. Shaw, *Ocean Mining Costs and Revenue*, Report No. 16 presented to Seminar under the auspices of the European Economic Community for the benefit of the African, Caribbean and Pacific States Experts to the United Nations Conference on the Law of the

Sea, on the Exploitation of the Deep-Seabed, Brussels, 22-25 February 1977, table I.

Dames and Moore and EIC Corporation, *Description of Manganese Nodule Processing Activities for Environmental Studies*, volume I, *Processing Systems Summary* (United States Department of Commerce, National Oceanic and Atmospheric Administration, 1977), table 2.3, pp. 2-8.

J. D. Nyhart *et al.*, *A Cost Model of Deep Ocean Mining and Associated Regulatory Issues* (Massachusetts Institute of Technology, Cambridge, Massachusetts, March 1978), MIT Sea Grant Report MITSG 78-4, prepared for the United States Department of Commerce, National Oceanic and Atmospheric Administration, Office of Ocean Minerals, table ES-1, p. ES-3 and table V-1, p. 82.

C. Richard Tinsley, *Capital Costs for Individual Manganese Nodule Mining Consortia*, presented to McGill University seminar, "Deep sea bed mining of manganese nodules — a commercial approach to the challenges", Montreal, 16 March 1978, pp. 7, 12, 17, 20 and 23.

Franz Diederich, Wolfgang Müller and Wolfgang Schneider, *Analysis of the MIT Study on Deep Ocean Mining — Critical Remarks on Technologies and Cost Estimates: Summary* (Research Institute for International Techno-Economic Co-operation, Technical University, Aachen and Battelle-Institute e. V., Frankfurt, 1979), table I.1, p. 10.

Arthur D. Little, Inc., *Technological and Economic Assessment of Manganese Nodule Mining and Processing*, revised ed. (Cambridge, Mass., 1979), prepared for the United States Department of the Interior, Office of Minerals Policy and Research Analysis, table I, p. 5 and table 12, p. 43.

J.-P. Lenoble, *Polymetallic Nodules Resources and Reserves in North Pacific from the Data Collected by AFERNOD*, presented at Oceanology International 80, Brighton, February 1980, table 5.

#### NOTES

1. It is advisable to consult the published sources for information about the purpose, coverage and method of estimation and the data base used in the case of each estimate.

2. No attempt was made to adjust any of the estimates to make them comparable.

3. The figures have been rounded to the nearest \$5 million.

4. "Number of metals" means number of metals to be extracted from the sea-bed nodules. "3" stands for nickel, copper and cobalt; "4" stands for nickel, copper, cobalt and manganese.

5. The reader's attention is drawn to the following facts:

(a) For the addition of manganese, capital cost estimates range from \$80 million-\$300 million.

(b) For prospecting costs, estimates range from \$2 million-\$25 million.

(c) For exploration costs, estimates range from \$15 million-\$80 million.

(d) For R + D costs, estimates range from \$50 million-\$200 million.

(e) Recently, some consortia have indicated that before the development of a project at full scale, a demonstration phase will be necessary. The cost estimates for this phase range from \$75 million-\$250 million. None of the estimates in the table include this amount.

(f) For capital costs in the transportation sector, estimates range from \$50 million-\$150 million.

(g) For working capital, estimates range from \$40 million-\$85 million.

(h) None of the estimates in the table include capital costs of the marketing sector, if any.

(i) The escalation factor for obtaining estimates in 1980 dollars from those in dollars of the late 1970s range from 5-10 per cent annually.

(j) The later the date of estimation, the higher the estimate, in general.

<sup>a</sup>m = 1 million.

#### DOCUMENT A/CONF.62/L.66\*

Effects of the production limitation formula under certain specified assumptions: report of the Secretary-General

[Original: English]  
[24 February 1981]

1. At its 141st meeting on 29 August 1980,<sup>29</sup> the Third United Nations Conference on the Law of the Sea requested the Secretary-General to conduct a detailed study analysing the effects of a ceiling-floor-safeguard formula set out in article 151, paragraph (2) (b), contained in the report of the co-ordinators of the working group of 21.<sup>30</sup> The formula, as recommended by the co-ordinators, was embodied in the draft convention on the law of the sea (informal text) (A/CONF.62/WP.10/Rev.3 and Corr.1 and 3). The Conference also indicated that the study should be based upon a range of parameters, including successive production start-up dates, ranging from 1985 to 1995, and assumed projected growth rates for world consumption of nickel of 2.0 per cent, 3.0 per cent, 3.5 per cent, 4.0 per cent, 4.5 per cent and 5.0 per cent during each of those years, based on the 15-year trend line value for 1979 and the historical data from Metallgesellschaft AG. Furthermore, any results or illustrative data should be accompanied by a full indication of the methods used. The present report, together with the annexes, describes the outcome of the study. Paragraphs 2 to 10 contain the observations and deductions that one may make from the results. The latter part of the report is more concerned with an explanation of the working of the production limitation formula and the methods used in this study.

2. It should be emphasized that this is primarily a numerical study which illustrates the effects that the assumptions specified in the directive would have when applied in the production limitation formula pertaining to sea-bed mining. The study itself does not attempt to predict the effects that the

calculated production ceilings may have on sea-bed mining, on other nickel producers, or on the nickel industry as a whole. That, of course, depends on many other factors and must remain a matter of opinion or judgement, based on the reader's own assessment of the most likely situation. It is hoped, however, that the study will give a better understanding of the production limitation formula and provide a clearer basis for evaluation.

3. Two main factors affect the production ceiling for a particular year calculated according to the formula: cumulation over time and the statistical data from which the trend line is derived. Cumulation occurs in two ways: the time-distance of the particular year into the future and the time-distance of the particular year from the year prior to the commencement of the interim period. The effects of the statistical data are reflected in two parameters: the growth rate during the relevant 15-year period and the base amount on which the growth rate is applied. It is an obvious fact but it should be noted that the growth rate and the base amount of the relevant 15-year period are to be distinguished from the growth rate and the base amount used in this study to obtain post-1979 data. Except for the 15-year periods which consist entirely of the post-1979 years, the growth rate and the base amount of a 15-year period will be different from the growth rate and base amount used to obtain post-1979 data. A further point should be noted, that while the growth rate is the parameter which attracts most interest and is more often quoted, the base amount to which the growth rate is applied is extremely important in an exponential trend line.

4. How well the production ceilings calculated in this study will correspond to the actual production ceilings in the future depends on how accurately the assumptions regarding the year of the earliest commercial production and the statistical data reflect future realities. For example, at present there is no

\* Incorporating document A/CONF.62/L.66/Corr.1 of 3 March 1981.

<sup>29</sup> See *The Third United Nations Conference on the Law of the Sea*, vol. XIV (United Nations publication, Sales No. E.82.V.2).

<sup>30</sup> *Ibid.*, document A/CONF.62/C.1/L.28 and Add.1.