Seabed Regime and Machinery - some ideas, aspects and critics

an analysis of current proposals from the point of view of ocean mining industry

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This paper represents the author's personal meaning and shall not be an official industrial statement.

Introduction

This paper will discuss the problems of a future Seabed Regime and Machinery as to the exploration, development and exploitation of the Ocean's mineral resources from the point of view of the author, who is a research engineer with a firm, which is going to take part in the ocean mining business.

Consequently this paper will not discuss the indistinct specification of the outer limit of the continental shelf. The elastic elements "exploitability" and "adjacency" (1) in the Continental Shelf Convention are attached to the emerged land (2) and that means, there is a limit-albeit difficult to specify. But nobody will seriously doubt anymore that there is a national and an international zone of the seabed. - Only the problems of the international seabed-zone (3) are subject of this paper - in so far as the mineral resources are concerned. The paper will start with some own recommendations for an international law-arrangement concerning the Seabed Regime and Machinery; before this background the following proposals will be discussed:

The American Draft Treaty (4)
Bouchez's Draft Treaty (ILA) (5)
The United Kingdom Proposals (6)
The French Proposals (7)
The Mann-Borgese Draft Treaty (8)
The Danzig Draft Treaty (9)

Discussing the lex ferenda of ocean mining one should not forget that a lex lata exists (10). In order to give a contrast to the following paragraphs, some principles of lex lata shall be mentioned.

The deep sea is governed by the 1958 Geneva Convention on the High Seas. This means that the principle of the freedom of the high seas (Art. 2) applies as a basic legal principle not only to the high seas but also to the seabed itself.

Only few authors (11) think of the seabed as a vacuum iuris, the majority however is against this opinion (12). On the other hand there seems to be universal agreement at present that one basic element of the freedom of the high seas: The exclusion of national occupation or appropriation (13) applies also to the seabed. An other element, however, according to which everybody may exploit whatever resources and whereever he finds them in a manner at his discretion, does not lend itself easily to future deepsea mining. This liberal concept may be tolerated as a starting position for few years ahead when there will be, but negligeable activities in the deep sea area. However, growing utilisation of the seabed in connection with growing interests of Nations to secure rights in the said area will lead undoubtedly to serious shortcomings and eventually to a state of anarchy (14). As the present framework of international law contains too many loopholes, more elaborate rules are needed.

These rules could possibly arise automatically among the different users of the high sea and the seabed. A parallel could be drawn from general principles of Mining Law (15) which were developed for example in the middle of the last century in the Californian gold rush among the competing miners. This law growing process was forced by reason and not by an authority (16).

Another possible approach could be that the community of Nations develops the necessary rules, to be confirmed in an international treaty. Proposals for such regimes show a great variety of concepts, many of which are clearly guided by national interests only. It is difficult to say how many of the repetitive statements saying that this part of our globe should be regarded as the common heritage of mankind, can be taken as lipservice or as constructional political proposals towards an international solution.

Before a new regime will be established we are living with the lex lata.

Meanwhile however, there are some elements, influencing the legal development:

a) "Under the present freedom of the sea-regime, seabed activities could only be protected in the relatively less effective manner in which the uses of the high seas are generally protected, on the basis of nationality and /or the flag. The absence of spatial delimination criteria of the sphere of action of each protecting State, might bring about confusion, conflict, perhaps anarchy" (17).

b) If there is no international solution, interested nations may tend to regional agreements with special rules on the basis of the freedom of the high seas in order to protect their ocean mining operations.

c) The idea of common heritage of mankind, which is an expression of the freedom of the high seas and not an alternative thesis (18) has to be seen before the background of the economical development of the "haves" and the "have-nots". The developing countries want to take part in the ocean mining either in an active or in a passive role.

If you look at the members of the United Nations General Assembly, the intentions of the developing countries are a very important factor in the legal development.

This little excursion into the lex lata shows how urgend it is, to set up an international solution at the earliest possible time.

"The development of international rules and regulations should take place before the inevitable clash between national interests occured. Delay in that respect could only complicate matters. Some form of international machinery would be a practical necessity if conflict was to be avoided and orderly development ensured" (19).

I

Recommendations for the international Regime of Ocean Mining

A. Principles

1. The international Regime for the sea bed must be arranged in a manner as to promote the technical and economical development of ocean mining and to secure equal rights for the parcipitators.

2. The Regime therefore must guarantee

   a) equal admission of all contractors with technical and financial capabilities for ocean mining, independant from their national origin;

   b) to all countries the possibility of active participitation in ocean mining

   c) clear and safe rights for ocean mining, especially the protection for exclusive exploration and exploitation rights against violation by competitions"

   d) the clear separation of national and international seabeds by means of clear boundary criterions;

   e) the protection of investments against depropriations and other high-handed measures of nations or international organisations;
   the protection of investments, which have been made before new international regulations became effective.

f) the exemption of the companies from uneconomical burdens, especially from too high contributions;

g) the licensee's right to dispose of the production as mined on the seabed, including unbehindered transportation;

h) an objective arbitration system against trespassers;

i) a suitable arrangement between the mineral groups and other groups concerned as those of scientific research (20), fishing, navigations and pollution;

j) the effectiveness of the necessary institutions.

B. The Regime

1. Scope of the Regime

a) The Regime may be restricted exclusively on the exploration and exploitation of raw minerals, including hydrocarbons, which are on and underneath the seabed.

b) The international regulation must be restricted to the extent which is necessary for the protection of the rights of the international community and for warranting equal rights to all parties. Within this international framework it should also be possible to practice national jurisdiction.

2. Subjects of the Regime

Not only States but also operators should be subjects of the international Regime and capable for activities of their own.

3. System of licensing

a) One should get licenses for two types of mining rights:

(1) the right of exploration
(2) the right of exploitation

b) In the exploration phase 2 steps should be distinguised

(1) the exploration on big scale of certain ocean districts with respect to the existence of deposits (1. step)
(2) the detailed investigation of discovered or assumed deposits with regard to their possible profit (2. step).

c) The exploration should be free in the first as well as in the second step; that is to say, it should not be subject to licensing but be allowed without the granting of an exploration permit. For both exploration steps it might prove necessary however, to establish a formal duty of registration with the machinery, in order to set up a control system for the protection of other users of the sea and of avoiding pollution. If such duties are provided, the machinery may reject a project only in certain, clearly limited cases, e.g. if the project violates the rights of others or if the rules of the international regime for ocean mining are hurt.

d) During the 2. step of exploration the contractors should have the chance to get a strengthened and safe legal position by calling for an exploration permit. This exploration permit should

(1) grant an exclusive right on exploration;

(2) apply to an exactly limited area with a certain maximum size;

(3) be restricted to a fixed period of time;

(4) provide a certain duty for activity, which, if not fulfilled, will lead to the cancellation of the permit;

(5) involve the payment of a contribution according to the size of the area. The contribution should be in proportion to the exploration cost and should rise with the length of the permits period;

(6) contain details for the protection of other ocean users and for pollution-controll.

e) If more than one applicant asks for an exploration permit for the same area, the permit, as a rule, should be granted on a "first come, first served" basis. In this procedure due regard should be given to investments and exploration work done already by one of the competing applicants; in evaluation of the investments the length of the exploration period can be taken into account.

f) The exploitation, which can include at the same time also the milling at the spot, necessitates a concession in any case. It only can be granted on the premises of a discovery.

The conditions for granting are as follows:

(1) If there is only one operator or one State respectively applying for the rights over a certain area, the permit can only be refused, if the applicant fails to fulfil certain international premises as to his technical and financial efficiency and if he is not willing to follow the conditions of the machinery.

(2) If several applications for granting exploitation licenses are demanded for the same area in a certain period of time, the present (respectively the former) owner of the exploration permit has priority in

competition with all other applicants. If no applicant fulfills this premise, the priority of the first application or registration respectively will be decisive, except with the reservation of paragraph (II, B 3 e).

g) The exploitation license must be restricted to a fixed period of time. After this period the license owner can, if he wishes, keep a part, say 50 % of the license. The rest must be submitted to the public as a "return concession". By corresponding customs in granting return concessions it might be possible to counteract the danger that mining licenses of one contractor or of only a few countries crowd excessively in certain places.

4. Obligations and conditions

a) The Machinery has to restrict itself those obligations and conditions to mining licenses, which are formally provided for in the future code of international mining rights.

b) The code of international mining rights should only include such obligations and conditions, which serve for the protection of navigation, investigation and marine surrounding, including living resources.

5. Royalties and licensing fees

a) The principles should aim at the promotion and encouragement of ocean mining. The international taxes must be restricted to

such an amount that ocean mining, which suffers from a high investment risk, will not become uneconomical.

b) The following criteria should be observed when fixing the taxes:

(1) Fee for granting mining licenses as a contribution for covering the administration costs connected to the granting act;

(2) Fee for the granted size of seabed area, calculated by square kilometers (field tax)

(3) Fee on the mined raw mineral (Exploitation tax)

c) The income accumulated from the taxes must be used for covering the running costs of the Machinery until their financing is guaranteed without calling for contributions of the member countries. A suplus of income, if any, must be used according to the common heritage principle so that developing countries will receive an equivalent share of profit; at the same time the States, engaged in ocean mining should try to help those States becoming active members in ocean mining as soon as possible.

Procedure of the Machinery

1. Participitation of Operators

It must be safeguarded that the individual operators

a) may bring matters before the Ocean Tribunal like all other subjects of the Regime;

b) have the possibility to send representatives to the bodies of the Machinery.

2. General structure of the Machinery

The Machinery which is to be classified as an international economic organisation, should consist of:

a) The Ocean Assembly, in which all member States are represented, shall elect the members of the Ocean Council and the Ocean Tribunal, shall discuss all matters of the Machinery and shall give recommendations, but it should have no power to make decisions against nations or operators;

b) The Ocean Council, which consists of a limited number ob member States, is the legislative body; it has to elect the members of the Ocean Agency; the laws or decisions of the Ocean Council may be cancelled by the Ocean Tribunal;

c) The Ocean Agency should consist of independent international officers and should conclude its decisions free of national directions. It has administrative functions, inter alia to grant mining licenses; it is responsible to the Ocean Tribunal;

d) The Ocean Tribunal should have the right to control the mining standards; it should be competent for actions of invalidation against particular decisions and for complaints concerning restitutions. The Court should be open to nations as well as to operators.

e) The Ocean Advisory Committee consists of ocean mining operators; the Committee shall have the possibility to discuss and to give consultative proposals on general matters of ocean mining of principal importance, before being set up by the Ocean Council.

3. Personnel composition of the Bodies

a) The composition of the decisive bodies must primarily garantee their functional effectiveness.

b) In the bodies there must be a balanced representation of the industrial and of the developing countries, as well as of the land- and shelflocked countries.

c) The voting procedure should be based on the principle of equal votes (1 country = 1 vote), and no State should receive special privileges as for instance the privilege of veto.

II

Proposals for an Ocean Regime and Machinery

To ensure conservation, development and national use of all ocean resources, especially of the mineral resources of the seabed, it is necessary to fix general standards for the exploration and exploitation of minerals, in order to avoid possible conflicts between competitors in particular areas and between different users of the sea.

As outlined in the introduction the existing draft proposals will be studied according to what principles they suggest for Ocean Mining.

Special interest is given to the system of licensing, the royalties and the functions of the Machinery (21).

A. Principles of the Regime

1. Common Heritage of Mankind

The general status of the seabed and it's mineral resources is designated in terms of "the common heritage of mankind" (22) or "for the benefit and in the interest of all countries" (23). These terms, however, are very vague and precise only in so far as they include the principle of nonappropriation, which is expressly supported in most proposals, e.g. in the Center Draft, Art. II, A 2 "... not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means".

The principle of non-appropriation of the seabed does not exclude that "there shall be free access to all areas of the seabed" (24).

Having a consensus of the above mentioned principles, one should not forget that only the "wealth", realized for the benefit of mankind through production from the seabed is a benefit for the mankind. This production, however, requires an enormous amount of capital, which will not be invested without a legal stability or a guarantee against uncertainties.

2. Realisation of the Regime

Before a Regime might be realised, it must be acceptable to a great majority of Nations (25) and must fulfil the requirements of economic efficiency and international equity (26). In principle there is an agreement that the Regime shall be established by an international treaty, setting out basic principles (27) or providing already very detailed regulations (28).

A treaty, setting out basic principles only seems not to be very helpful to find a legal stability, exploring and exploiting the seabed. Some basic principles have been widely accepted at the United Nations (29), but the most important ones (e.g. where are the limits of the seabed? Who is allowed to explore and exploit the seabed?) are far away from an agreement. Therefore it should be supported that the realisation of the Regime requires a treaty with very detailed regulations. This procedure has

inter alia three advantages: firstly, every partie, joining the treaty, knows exactly what are the conditions, rentals and possibilities for ocean mining; secondly a legal stability comes into existence; thirdly, every State sees the possible advantages and disadvantages of the different future Regimes, by setting out the detailed regulations.

Taking into account the present situation of international discussions, it is likely to take a long time until a Regime might be established; therefore it should be emphasized, to concentrate on an interim solution.

3. Scope of the Regime

The Regime should apply to an exactly defined area. It does not affect the legal status of the superjacent waters of the high seas or the air space above those waters; this is a consensus of some proposals (30), and one of the principles, accepted by the UN General Assembly (31).

The Center Draft, however, provides a Regime for the Ocean Space that means, seabed, superjacent waters and the atmosphere above it (Art. III, 1). Consequently such a Regime will be more complicated and has less chances to be accepted, because it embraces all ocean resources - and all their problems too.

The problems of areas of special rights are not subject to this paper, therefore Nixon's trusteeship zone or ILA's areas of special rights (32), can't be discussed here.

4. Mineral Resources

The Regime should embrace all mineral resources of the seabed (33), but not minerals recovered from the actual waters of the sea (34). The Center Draft (Art. III (5) on the other hand provides a Regime for the natural resources, including minerals and other nonliving resources of the seabed, as well als living resources in the ocean space.

In principle it is universally accepted to establish a Regime, handling the exploration and exploitation of the seabed's mineral resources.

5. Subjects of the Regime

It is proposed that subjects of the Regime are States (35), Member States (36) ord Associated Members (37) of the Treaty and "... a Contracting Party or group of Contracting Parties or natural or juridical persons under its or their authority or sponsorship" (38).

Most proposals prefer the State as subject of the Regime, in order to have him inter alia liable for damage, caused by the State himself or by the State's sublicensee. In the Nixon Draft (39) the Authorizing or Sponsoring Party has to certify the operator's financial and technical competence. This idea seems not to be very useful. Which State will certify to its own operator, not to have the technical competence? It might be that the liability for damage will prevent a misuse.

- But there is also another idea of having States as licensees and operators as sublicensees. The State, responsible for paying the necessary fees and royalties to the Machinery, has the chance to vary the fees and taxes, taken from the operator, in order to support him.

Referring to the authors suggestion (40) the Machinery should grant licenses directly to "private or public operators, including States themselves, in so far as the latter were and remained direct operators in the financial, industrial, commercial, scientific and technical fields" (41). It could be that States secure mining rights over large areas, which are granted in turn to sublicensees. The author agrees with Arrangio-Ruiz (42), seeing to following dangers of such a system:

i) "reduce the efficiency of the control of the agency over the licensees";

ii) "let in by the window the idea of national appropriation;"

iii) substitute a distribution of licenses on a "national" or geographical "basis ... for the idea ... of a distribution of licenses based on economic and technical evaluations made by the agency in the interest of the best utilization of Sea-bed resources for the benefit of all".

In other words, subjects of the Regime shall be operators or States - if they are operators - as individuals or groups; but it must be guaranteed that the Machineries regulatory and administrative actions reach directly the operating subjects.

6. System of Licensing

6.1. Nature of Licences

The ILA Draft (Art. VII) suggests an exclusive right for blocks registered, while the English Proposals (§ 9) differs between non exclusive prospecting licences (for large areas) and exclusive development licences (for small areas, but including the production). The area, getting the licence for, is a block, the size of which depends on the kind of mineral, geological and economical factors (§ 8 a).

The French Proposal following the same idea advocates an interesting classification:

- non exclusive first type licence (mining requires mobile equipment, e.g. dredging manganese nodules) and an exclusive second type licence (mining requires fixed installations, e.g. for hydrocarbons) (§ I b).
- The second type licence - given exclusivly to States- will be converted to sublicenses granted to the Company by the States as prospecting licence, which might be converted (in the case of an economic discovery) into an exploitation licence (§ III f).

The idea of classification by the kind of producing equipment is pretty similar to the proposed categories of minerals (43) and may be supported. But the author doesn't agree that a first type license should be non exclusive.

Interest should be given to the explorationwork which is as well necessary for manganese nodules as for hydrocarbones. In so far, the French Proposal should be amended as to seperate the first type licence into a non exclusive prospection licence and into an exclusive exploration license.

The Nixon Draft provides all exploration and exploitation operations to be licensed (Art. 13).
There shall be non-exclusive exploration licences (not restricted to area, validity of two years) and exclusive exploitation licences, which shall specify the minerals or categories of minerals and the precise area to which it applies (Art. 15).

An interesting point of the Nixon Draft (44) shall be mentioned. Deep drilling for exploration and exploitation requires a license and deep drilling for other purposes needs only a permit. The idea of this classification should be supported but it causes problems, to seperate exactly mineral and scientific explorations (45).

The authors suggestion of a 1th step exploration-phase and the exploitation-phase (as outlined in § I B (3) of this paper) is not supported expressis verbis (46).

6.2. Allocation of Licences and Areas

There seems to be some kind of a consensus that an international authority allots licences to States or

Sponsor Parties, which themselves may give sub-licences to operators.

The Relationship between the authority and States or Sponsor Parties is regulated on the basis of the Convention and international law, between States or Sponsor Parties and Operators on the municipal law basis in accordance with the Convention (47).

States or Sponsor Parties shall certify the operator's financial and technical competence and shall require the operator to conform to the rules, provisions and procedures specified under the terms of license (48).

States or Sponsor Parties apply for blocks avaible (49), which will automatically be allotted, if there is only one bid. For the case of more claims for the same block, the bidding system is supported by several drafts (50), while others (51) refuse the bidding-system, suggesting the attempt of amicable agreement or even by random computer selection.

The equal allocation to all States is one of the most difficult problems. The reason is of political nature - the differences between "haves" and "haves-not" and the fear, ocean mining will enlarge the economic differences. But what system grants equal allocation as well as the most efficient development of ocean resources? Is it the "quota-system", which grants every State a

certain percentage of the seabed? This system has some uncertainties:

i) the best places with mineral resources will be taken by the industrial States - the developing countries have not the technical capability of exploration work,

ii) what is the key-measure to find the area-percentage of every State?

The bidding-system, however, cannot grant an equal allocation, the highest bidder gets the allocation. This system should be refused and it seems to be more reasonable to grant licenses on the first-come, first seved basis. This principle would encourage the exploration work. Of course, the developing countries could nothing more than to share in the benefits, deriving from the exploitation of the seabed resources. But the sharing of benefits can also take the form of technical assistance, in order to spread know-how, training and knowledge of ocean mining (52).

There is no system, free of disadvantages and one should consider, which one offers the best compromise.

Necessarily a limitation on acquisition of large blocks of the seabed has to be guaranteed by the treaty, otherwise there might be a great land rush to acquire rights. The treaty should not lend encouragement to those, who may be mainly interested in control of mineral reserves for speculative reasons (53).

In order to avoid this "reservation of blocks" the licenses should be limited by time (54) and hard - but reasonable - workrequirements (55), which compose principially by (i) a certain amount of money, spend for work per block and year and (ii) by a time relinquishment of the blocks. Furthermore a density-limitation-system should be created, with the aim, that one State may only claim one block per "special area".

Another point, connected with the allocation of licences is the general description of the work to be done and the equipment and methods to be used, that means the detailed information of authority and State Sponsoring Party (56).

7. Relationship of the different Users of the Seabed

There is a general consensus that exploration and exploitation should not "result in any unjustifiable interference with other activities in the marine environment" (57). Fixed installations are allowed, but strictly regulated (58) the living resources, the marine environment, life and property are to be protected (59). Scientific research shall be encouraged and interference with it shall be prevented.

The consensus includes the knowledge that it is impossible to abviate every interference with other users or uses of the seabed.

8. Liability for Damage

Subjects of the Regime (as outlined in paragraph II B 5 of this paper) "shall bear international responsibility for national activities (60) in the seabed and shall be liable for any and all damages (61). The operator and his authorizing or sponsoring party shall secure reimbursement of clean-up and restoration costs of damage to marine and land environment or for remedying damages to other users of the seabed (62).

B. Machinery

There is a great variety of views as to the possible purposes, structure and powers of an international Machinery - if they accept a Machinery at all. Of course there is the lex lata (63) an the possibility of a "non-institutionalized international legal Regime"; "the latter provides" a number of agreed rules concerning the exploitation of the seabed ... without creating a specific Agency for their enforcement" (64). Bettini comes to the result that such a system doesn't guarantee a legal stability and therefore doesn't encourage private investments in ocean mining. This is not the place to discuss the possible advantages of such a system, because the problems of a Machinery shall be studied.

1. General Structure

It has been proposed, to establish an international registry-system, in order to register claims with exclusive mining rights in a special area. Such a system is the loosest form of "granting licenses", which grants the active part of ocean mining to the industrialized States - the developing countries share of the benefits. But on the other hand, there are two advantages:

i) the system has a chance of soon realisation

ii) the ocean mining will be developed for the benefit of mankind under international rules and there will be a protection of other users of the high seas and of the ocean-environment itself.

The ILA-Draft (Art. V) proposes such a system, providing three bodies with already separated functions, the

International Registration Agency (administrative function, registration of claims), the International Supervisorgy Agency (supervision of the implementation of international mining regulations) and the Ocean Floor Tribunal (settlement of disputes).

Within the organisation of a licence-giving authority, however, it is more complicated to seperate functions, but we find e.g. in the British (§ 6) and French Proposal (§ II B (b) the same idea that technical people shall mainly influence the licence-giving and supervising activities; for the settlement of disputes special arrangements are provided.

The Nixon-Machinery is much more complicated. Within the agreed, international rules the Machinery has legislative, executive and juridical functions. The Nixon Draft provides the establishement of an International Seabed Resource Authority, with three principal organs:

The Assembly (Art. 34 - 35; composed of all Contracting Parties; functions inter alia: approval of budget, making recommendations to the Council or Contracting Parties).

The Council (Art. 36 - 38; composed of twenty four Contracting Parties, six of which are the most industrial advanced Contracting Parties (Appendix E); the council is the most important body for decision-making, including three Commissions: the Rules and Recommended Practices Commission, an Operations Commission and an International Boundary Review Commission).

The Tribunal (Art. 46 - 60; not only Contracting Parties (65) but also operators (Art. 54 (2)) may bring matters before the Tribunal.

The organisation of the Commissions is very important, because they consist of five to nine members, "who shall have suitable qualifications and experience in seabed resources management, ocean sciences, maritime safety, ocean and marine engineering, mining and mineral technology and practises" (Art. 43 (1)). Here the decisions are made by experts and not by politicians.

For the Ocean Mining the Operations Commission will be the most important one because it has the executive power. Inter alia the commission issues licences for seabed mineral exploration and exploitation (Art. 44, 2 (a)), supervises the operations of licences (Art. 44, 2 (b)) and controls the collection of international fees and other forms of payment (Art. 44, 2 (c)).

The most characteristic point of Nixon's Machinery is: one of the most important functions - to grant licenses - will be carried out by a small Commission of experts. The license - giving will be a technical and not a political action. This system, however, has only chances of realisation if the Council creates "rules and practices" of such a detailed nature that the Operations Commission has no "real" freedom of decision. Consequently the blocks, which receive more than one bid, have to be allotted by the system of the highest bid,

or a political body, perhaps the Council, has to decide this case and grant the licenses.

Furthermore there is the problem of voting. The one-State, one-vote principle in the Council causes many problems. It should be taken into account to invent a voting-system, in which the "power" of a vote depends on some economic criteria. This system is well known to international law; the most typical example is the International Bank for Reconstruction and Development.
As principle the voting power in the Machinery should be of that kind to ensure the highest efficiency in seabed administration and development (66).

A Machinery, having word-wide responsibilities and being some kind of industrial and commercial operator, concerned with the exploration and exploitation of the seabed and even the ocean space "would have to be of enormous size and would, therefore, present serious problems in carrying out its tasks" (67).
Such a system has been suggested in the Center Draft.
It provides a complete Machinery for administrative, legal, dispute-settling, technical planning and research activities. Therefore the Machinery is a manifold structure and has the following bodies:

The Maritime Commission (Art. VIII; seventeen members, five of which represent the most advanced states in ocean-space technology; Commission is authorized to carry out

functions of the Regime, to regulate, supervise, amend, revoke and enforce licenses; it is responsable to the Maritime Assembly).

The Maritime Assembly (Art. IX; shall consist of four chambers of eighty one delegates each; first Assembly elected by the United Nations General Assembly; functions inter alia: to determine rules for issuing licences.

The Maritime Planning Agency (Art. X; shall be composed of economists, scientists, administrators and other experts; functions inter alia: to prepare plans to maximize exploitation of nonliving ocean resources, to redistribute revenue accrueing from fees, royalties or grants).

The Maritime Secretariats (Art. XI; administrative functions).

Regional Arrangements (Art. XII; regional organizations shall govern matters of exclusively regional character).

The Maritime Court (Art. XIII; composed of eleven judges for settling disputes).

The idea of such a Machinery is ideal and the resources of the ocean space would really be exploited for the benefit of mankind. But the system seems to be unrealistic; who would secure the necessary capital investment and the technical staff? Who would guide ocean research and technical development? Furthermore the Machinery would have a marine monopoly; there would be no free competition, which is the stimulating element for ocean mining development.

2. Tasks and limits

General principles of tasks and limits of the Machinery are to be found in the Center (68) and Nixon Draft (69); the detailed rules and recommended practises shall be developed by the Machinery itself, on the basis of the above mentioned principles.

The author doesn't agree completely with this idea. There are some rules, however, which should be precisely fixed by the establishment of the Machinery:

a) protection of investment made prior to the coming into force of the Convention (Nixon Draft, Art. 73),

b) level, basis and procedures for determining fees and other forms of payments,

c) work requirements, with the obligation for work and for protection of marine environment and of other users of the high seas

d) criteria for defining technical and financial competence of applicants for licences,

e) criteria for limiting the number of licences or the maximum size of licensed areas,

f) right to control the operators.

3. Economic Aspects

3.1. Costs of Machinery

The Costs of Machinery are not mentioned in the proposals. In Art. 74 (2) the Nixon Draft advocates:

"... in the period before ... acquires income ... for the payment of its administrative the Authority may borrow funds for the payment of those expenses". There is no comment of the possible height of costs neither in the Nixon nor in the Center Draft.

The costs of the proposed Machinery should be calculated in advance, because this factor has an important influence to the structure of a Machinery.

3.2. Income of Machinery

All proposals suggest fees for licences for mineral exploration and exploitation. The fees shall be reasonable and be designed to defray the administrative expenses of the Machinery and of the Contracting Parties, discharging their responsibilities in the seabed (70).

The Nixon Draft (Appendix A) provides the following fees:

a) Administrative Fee for application or reneval of exploration licences in the range of $ 500 to $ 1500 per block as specified in the rules (Appendix A, 3.1. and 4.1.); the Sponsor may require the operator to pay an additional license fee up to $ 3000 to cover own expenses (Appendix A, 3.3.).

b) Rental Fees, to be paid yearly, beginning in the third year after the licence has been issued; the fee depends on block-size, kind of mineral and increases by 10 % per annum (more details see Appendix A, 6.1. to 6.4.); after commercial production begins, the

annual rental fee shall be $ 5000 - $ 25000 per block regardless of block size.

c) Royalties imposed on Production

with the beginning of production, the operator has to pay

i) a cash bonus of $ 500.000 to $ 2.000.000 per block to the Sponsor;

ii) yearly royalties, equivalent to 5 to 40 % of the gross value at the site of oil and gas, and 2 to 20 % of the gross value at the site of other minerals (Appendix A, 10.1., 10.2.).

d) The levels of payments may be graduated to take account of probable risk and cost to the investor, including such factors as water depth, climate, volume of production etc. - which may affect the economic rent (Appendix A, 1.1.).

The royalties and fees, proposed in the Nixon Draft, are pretty similar to those in the national mining laws. There is a basis for calculation exactly fixed, fees giving, however, the possibility to amend the royalty to the real economic facts. Such a clause should be in the seabed treaty.

Another principle should be taken into account: the operator starts to earn money with the production, therefore the fees, rentals and bonuses should

be low during the prospection, increasing with the exploration and increasing more with the beginning of production. As already outlined, strong work requirements should force the operator to work hard in all the stages: prospection, exploration and exploitation.

3.3. Possible Profit

A possible profit shall cover the administrative expenses (general consensus). For the case, there will be a net profit, it should be shared for the benefit of mankind, particularly to promote the economic advancement of developing states and areas.

An other portion of net profit shall promote international ocean research (71).

III

Some summarized comments:

1. The seabed is governed by the principle of the freedom of the high seas, which grants a legal starting position for ocean mining; but the international law contains too many "loopholes", more elaborate rules are needed.

2. There seems to be a general consensus that an international Regime and Machinery should be established as soon as possible.

3. There is a great variety of drafts and proposals for a future Regime and Machinery; their principles have been studied and some of their advantages and disadvantages have been outlined.

4. Fortunately there are some principles to be found, indicating a general consensus.

5. Some basic principles, however, are far away from being generally agreed. - It should not be forgotten that the wealth of the seabed's mineral resources, will be realisied for the benefit of mankind, when it will be exploited lying on or in the seabed, the mineral resources offer no advantage to the mankind.

6. More interest should be given to the economic details and possibilities of a Seabed Regime and Machinery, which might simplify some discussions.

7. Setting up a Seabed Regime and Machinery it should be inter alia taken into account:

- to develop the ocean mining for the benefit of mankind on an efficient and reasonable basis
- to provide an active role of the developing countries in ocean mining
- to provide a strong international cooperation in ocean research and technical development

To reach this aim will be a long and difficult way of discussions an international efforts, but the problems have to be resolved - for the interest and benefit of mankind.

Reference Notes

(1) Art. 1 (1) Convention of the Continental Shelf Geneva, 28th April 1958

(2) see e.g. Arangio-Ruiz, "Reflections on the Present and Future Regime of the Seabed of the Oceans" Proceedings of the Symposium on the International Regime of the Sea-Bed, Rom, Accademie Nazionale Dei Lincei, 1970, S. 299

(3) the international seabed zone is cited hereinafter as seabed

(4) UN-Doc. A/AC. 138/25, August 3, 1970; cited hereinafter as Nixon-Draft.

(5) International Law Association The Hague Conference (1970) Deep-Sea-Mining, Report of the Committee; cited hereinafter as ILA Draft.

(6) UN-Doc. A/AC. 138/26, August 5, 1970; cited hereinafter as British Proposal.

(7) UN-Dokument A/AC. 138/27, August 5, 1970

(8) Mann-Borgese, "The Ocean Regime", Center Occasional Paper, Vol. I, No. 5, Santa Barbara, Calif. 1968; cited hereinafter as Center Draft.

(9) Danzig, Proposed Treaty Governing the Exploration and Use of the Ocean Bed, New York, 1968; cited hereinafter as Danzig Draft.

(10) see Münch, "Lex lata of Deepsea-Mining", Pacem in Maribus, Proceedings of the Preparatory Conference on the Continental Shelf and Legal Framework, January/February 1970, p. 353 - 368

(11) so e.g. Levy, "Österreichische Zeitschrift für Außenpolitik", 8. Jg., 1968, Heft 3, p. 135 und Eichelberger, Nineteenth Report of the Commission to Study the Organisation of Peace, New York, March 1969, p. 13

(12) see e.g. UN Legal Subcommittee in its report of August 28, 1969, A/AC 138/18 par 89 (= A/7622); Francois, "Réflexions sur l'occupation", Festschrift Guggenheim, 1968, p. 799; Verdross, Völkerrecht, 5th edition, Springer-Verlag, Wien, 1964, p. 225; Münch, op, cit. p. 360

(13) see e.g. Arrangio-Ruiz, op. cit. p. 301

(14) see Arrangio-Ruiz, op. cit. p. 302

(15) Münch, op. cit. p. 363

(16) Kausch, Der Meeresbergbau im Völkerrecht, Verlag Glückauf, Essen, 1970, p. 89 - 91

(17) Arrangio-Ruiz, op. cit. p. 301

(18) Christy, jr. "The Distribution of the Sea's Wealth in Fisheries", in the Law of the Sea, ed. Lewis M. Alexander, 1967, p. 109

(19) General Assembly, 25th Session, UN-Supplement No. 21 (A/8021), 1970, p. 68; the American Mining Congress, Statement with respect to working paper of the Draft United Nations Convention on the International Seabed Area, January 27, 1971, p. 3, urges, but from an industrial point of view, ... "More precise international arrangements and new legal concepts are needed at the earliest possible time in order to provide the secure investment climate necessary for the development of deep ocean mining".

(20) see "A comparative study of current Draft Conventions and Proposals for a new Ocean Regime from the point of view of Scientific Research" paper, prepared by Jenisch, for Pacem in Maribus II, June 28 - July 3, 1971

(21) for a detailed enumeration of functions of a future international legal Regime, see Bettini, "Possible Future Regimes of the Seabed Resources", Proceedings of the Symposium on the Internal Regime of the Seabed (Rome 1970) p. 328 - 342

(22) Center Draft, Art. II, A (2); Nixon Draft, Art. I (1)

(23) Danzig Draft, Art. II

(24) Danzig Draft, Art. II

(25) British Proposal, § 1

(26) French Proposal, § 1

(27) British and French Proposal

(28) Center and Nixon Draft

(29) UN-Doc. A/8097 of 16.Dec. 1970

(30) British Proposal, § 3 - 4; ILA Draft, Art. VIII; Nixon Draft, Art. 6

(31) UN-Doc. A/8097 of 16.Dec. 1970, § 13 (a)

(32) Nixon Draft, Art. 26 - 30; ILA Draft, Art VI (1)

(33) ILA Draft, Art. IV; Nixon Draft Art. 5 (1)

(34) British Proposal, § 2

(35) ILA Draft, Art. VII; Danzig Draft, Art. VI; French Proposal, § II B (1); UN-Doc. A/8097 of 16. Dec. 1970, § 14

(36) Center Draft, Art. XIV; British Proposal, § 7

(37) Center Draft, Art. XIV

(38) Nixon Draft, Art. 10

(39) Appendix A, 2.1.

(40) see § I, B (2) of this paper

(41) Arrangio-Ruiz, op. cit., p. 307

(42) Arrangio-Ruiz, op. cit. p. 307 - 308

(43) Nixon Draft, Appendix A, 5.1.;
see also the British Proposal, § 7, which proposes licenses for all or specific minerals.

(44) Appendix A, 1.3. and 1.4.

(45) see Jenisch, op. cit. p. 2 - 7

(46) an exception, see American Mining Congress, op. cit. p. 7

(47) French Proposal, § II, B (3);
British Proposal, § 7 and § 9 j;
Nixon Draft, Appendix A, 2.3.

(48) Nixon Draft, Appendix A, 2.1., Appendix B, 3.1.;
the same meaning is to be found in § III d of the French and in § 7 of the British Proposal.

(49) British Proposal, § 8 c; ILA Draft, Art. VII;
Nixon Draft, Appendix B, 3.4. ... a notice of intent ... for a particular block ...

(50) Nixon Draft, Appendix B, 3.5.;
Danzig Draft, Art. VIII ... on the basis of the highest bid, having due regard to the competency of the bidder ...,
ILA Draft, Art. VII.

(51) French Proposal, § V c; British Proposal, § 7

(52) see also UN Supplement No. 21 (A/8021), Aug. 1970, p. 103 - 104, § 105

(53) American Mining Congress, op. cit. p. 9;
see also French Proposal, § II B (4) and
British Proposal, § 8 c

(54) French Proposal, § III, B (1);
British Proposal, § 7 d

(55) French Proposal, § III B; British Proposal, § 8 c;
Nixon Draft, Appendix A, 5.9. and Appendix B, 5.

(56) Nixon Draft, Appendix A, 7.;
British Proposal, § 9 c.

(57) Nixon Draft, Art. 8, 20 (2); British Proposal, § 5;
Center Draft, Art. II, A (4)

(58) Nixon Draft, Art. 21; Center Draft, Art. XIV

(59) Nixon Draft, Art. 22 - 23

(60) Center Draft, Art. II B (6)

(61) ILA Draft, Art. IX (2); Danzig Draft, Art. VII

(62) Nixon Draft, Appendix A 12;
British Proposal, § 13

(63) see Münch, op. cit. 360 - 368

(64) see Bettini, "Possible Future Regimes of the Sea-Bed Resources", Proceedings of the Symposium on the International Regime of the Seabed (Rome 1970), p. 326

(65) Nixon Draft, Art. 50 (5) and Art. 54 (1)

(66) see Arrangio-Ruiz, op. cit. p. 312

(67) see Bettini, op. cit. p. 328

(68) Center Draft, Art. V, A

(69) Nixon Draft, Art. 66 - 72, Appendix A - E

(70) Nixon Draft, Art. 14; British Proposal, § 10 b

(71) Center Draft, Art. III B (4) and Nixon Draft, Art. 5