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Beneath the Surface: The common heritage of mankind*

By Christopher Garrison M.A.(Oxon.) LL.M. (Lond.) E.P.A.
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"The international conflict now developing over the sea-bed is an issue of a kind that has never emerged before in man's history. It is arguable that it is the most important dispute that has ever arisen in dealings among states, for it concerns the ownership of two-thirds of the territory of the earth and a substantial proportion of its wealth."

Evan Luard

"The Control of the Sea-bed, A New International Issue", 1974

* This paper is based on research carried out for Essential Inventions, Inc. (Washington, D.C.). However, any views expressed herein are those of the author and should not be taken as representing any policy position or view of Essential Inventions, Inc.

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CHAPTER 1 - INTRODUCTION

This paper seeks to bring together certain lines of thought from two, apparently distinct, areas. The first is the system of governance for the planet's oceans established under the 1982 United Nations Law of the Sea Convention¹. The second relates to a newly suggested Biomedical Research & Development (R&D) Treaty to better meet the public health needs of all humanity in the 21st century.

The law of the sea has a rather ancient history. For as long as mankind has been using the seas, disputes have arisen as to the norms that should be observed. It is unsurprising, therefore, that the international law of the sea has often featured rules based on long-standing customs. However, as the affairs of the international society of states have become more complex, and as technological progress has continued its steady advance, it has become necessary to move to more clearly defined treaty seabed arrangements. The leading example is the 1982 Law of the Sea Convention. The matters to be addressed are many and varied. To ask just a few questions: Where should the lines be drawn between the territorial waters of a state and the high seas? Who should be allowed to control the narrow straits through which much of the world's shipping passes? Who should own offshore fish stocks, or oil

1 It should be noted at the outset that the structures of the Law of the Sea Convention and particularly those established (and subsequently amended) in respect of the deep seabed and the negotiations that led to it are tremendously complex. Thousands and thousands of pages have been written on many aspects of the Convention and its negotiating history. This paper can therefore only hope to establish outlines of issues for illustrative purposes. In a number of respects a degree of selection and simplification has had to take place. Although terms such as developing and developed countries are often used, or industrialised or Western countries, or North and South, it is stressed that this is a shorthand which often masks tremendous variation in circumstances. Hopefully, where this variety has been important it is reflected clearly.

and gas deposits in the continental shelf? How should scientific ocean research be carried out?

Beyond their practical importance of these questions, however, at an abstract level they can often be seen in terms of regimes of exclusive rights. This gives a clue as to how the second area of interest in this paper will be introduced to the first.

A wholly new law of the sea question which arose in the 1960's was how to deal with the recently discovered mineral deposits of the deep seabed. It was believed, by some at least, that untold wealth lay around in the form of metallic nodules in the deep waters of the abyssal plains, under the high seas, just waiting to be harvested. The problem was that only a few states possessed the technology to reach such depths. Applying traditional legal property concepts such as *res nullius* or *res communis* would lead to the result that, although in theory anyone was able to exploit these resources, in practice only the technically advanced states, or entities belonging to those states such as companies, would be able to benefit by doing so. Many in the developing world felt that it would be deeply unfair if this wonderful new resource were exploited only to the benefit of the already developed world. It is true to say that feelings of unfairness often arise very easily and are often similarly easily dismissed. Importantly though, against the background of the Cold War, many developing countries were riding comparatively high in terms of political weight through their use of "commodity power" (for example the "Oil Shock" of 1973). Consequently, to a certain degree, the developing countries were then able to compel the developed world take note of their point of view.

A new legal property concept was therefore proposed in 1967 to govern these mineral resources of the deep seabed. They were to be treated as the "Common Heritage of Mankind". Instead of a "first come, first served" situation, the deep seabed was to be managed under an international regime which would share the benefits of exploitation amongst all humanity. It was a radical concept and was, and continues to be, admired or loathed depending on one's political convictions. The

concept has survived and has broken free of the "deep seabed" circumstances of its birth to be applied in such varied fields as outer space, Antarctica, the human genome and culture. The devil, as always though, is in the detail. The concrete effect that the Common Heritage of Mankind concept has depends on the model used for implementation and these range from stronger to weaker, to merely conceptual regimes.

It is the concept of the Common Heritage of Mankind which is the link between the two areas of interest in the paper. Although there is a great deal of public sector input, much of the present global biomedical R&D takes place today under the exclusive rights regimes (e.g. patents) established under the World Trade Organisation Agreement on Trade Related Aspects of Intellectual Property Rights (the "TRIPS" Agreement). However, a thought experiment is proposed in this paper whereby inventions are treated under the broader concept of the Common Heritage of Mankind, drawing on the above-mentioned models for implementation of the concept. In this way, it becomes clear that the present exclusive rights regimes could in theory be subsumed into a broader conceptual framework, which could help to inform present day thinking on the proposed Biomedical R&D Treaty.

This paper was originally created at the beginning of 2006 as an internal resource paper for Essential Information, Washington, D.C. Given that it may now be read by a wider audience this new introduction has been added as of June 2007. For the general reader, in terms of following different strands of thought in the different areas the following is suggested:

Chapter 2 provides a very broad brush introduction to the political economy background of the 1960's and the standing of thinking about technology transfer to assist developing countries at that time. Chapter 3 provides a likewise broad brush introduction to the mineral resource aspects of the oceans.

For those who are interested in the specific issues pertaining to the Law of the Sea Convention, Chapters 4 to 9 are most relevant. Chapter 4

reviews the earlier history of international negotiations on Law of the Sea issues between the Second World War and the late 1960's. Chapter 5 outlines the birth of the concept of the Common Heritage of Mankind in the context of the Law of the Sea discussions. Chapter 6 summarises the extremely complex debate which led to the settlement of the original 1982 Law of the Sea Convention text, including a fairly strong reflection of the concept of the Common Heritage of Mankind. Right at the end of this process however a new administration came to power in Washington under President Reagan. His views differed sharply from those of his predecessor on the political and legal impact of the concept of the Common Heritage of Mankind and he indicated that the US could not become party to the Convention without substantial changes. At the time these were not acceptable to most other states. The Convention text was put to a vote and was adopted by 130 votes to 4 against (including the United States) with 13 abstentions (including the United Kingdom and West Germany). The Convention eventually entered into force in 1994. By the 1990's the political fortunes of the developing world had rather fallen and an approach was made to the United States to try to bring them on board, to give the framework a better chance of being put into operation. The result of this was the 1994 New York Agreement which, by virtue of an interesting legal mechanism, effectively amended the Convention just before it entered into force. A central purpose of the Agreement was to weaken the implementation of the Common Heritage of Mankind concept. As noted in Chapter 9, despite this, due to powerful disagreements in the Senate over the Common Heritage of Mankind concept among other issues, the United States still refused to join the Convention and refuses to this day. Whether this situation will change remains to be seen.

This half century of diplomatic wrangling provides some tremendously interesting perspectives on the negotiation of treaties. One element of this was the hotly debated attempt by the United States to "cherry pick" a part of what was seen as a "package deal" Convention (by declaring that it now regarded that attractive part as customary international law) whilst rejecting those parts relating to the deep seabed and the Common Heritage of Mankind that it felt were disadvantageous (by maintaining

that these were mere treaty provisions and not binding on the US if it was not a party).

In fact, although deep seabed mining has not so far taken off, developments in this area have occurred since the paper was first written. As the waters of the Arctic are warming and the polar ice melts a new "gold rush" seems to be in prospect for resources which are becoming more and more amenable to exploitation. The paper noted some of these developments (see Chapter 9) but they have recently culminated in Russia laying claim to a substantial portion of the Arctic under the provisions of the Law of the Sea Convention. Specifically, Russia asserts that it now has the data to prove that its geological linkage to the Lomonosov ridge is such that it can claim some 460,000 square miles of the North Pole as its own, including all the rich gas and oil deposits believed to lie therein (reported in e.g. "Kremlin lays claim to huge chunk of oil-rich North Pole", the Guardian, June 28th 2007). Crucially, since the United States is not a party to the Convention it has no representation on the Commission on the Limits of the Continental Shelf and cannot therefore formally contest the claim. Perhaps not coincidentally, President Bush urged the Senate to "to act favorably on U.S. accession to the United Nations Convention on the Law of the Sea during this session of Congress" in a statement of May 15th, 2007.

For those that are instead interested only in the general concept of the Common Heritage of Mankind and its application to biomedical R&D, Chapters 5 and 10 to 12 are most relevant. Unfortunately due to the genesis of the concept within the Law of the Sea discussion many elements of the implementation of the concept refer back to Law of the Sea issues so the two areas cannot be cleanly divorced. Nevertheless, the general direction of the thinking should be apparent. Chapter 10 reviews the application of the concept of the Common Heritage of Mankind in areas other than the Law of the Sea. Chapter 11 examines the likely legal standing of the concept at the present time. It is Chapter 12 which outlines the thought experiment of treating biomedical R&D under a Common Heritage of Mankind type regime. There are in fact obvious similarities between a mining enterprise prospecting a given territory for

a valuable mineral deposit and a pharmaceutical company using robotic means to prospect among huge numbers of molecules for one that will lead to a valuable drug. The examples of oseltamivir, the HIV/AIDS Vaccine Enterprise and the proposed Biomedical R&D Treaty are briefly examined.

There have also been developments in “global” thinking about biomedical R&D and the shortcomings of the present system since the paper was first written. Notably, the Intergovernmental Working Group (IGWG) on Public Health, Innovation and Intellectual Property has been established under the auspices of the World Health Organisation.

Although it is perhaps rather dense, it is advantageous to examine something of the detail of both areas to best appreciate the numerous links that may be drawn between the two. For example, the diplomatic history of the negotiations over the deep seabed resources may well inform present day negotiations over biomedical R&D. Likewise, cautious comparisons are made in the course of the paper between, for example, exclusive rights under the Law of the Sea Convention and patent rights under the TRIPS Agreement.

CHAPTER 2 - BACKGROUND - POLITICAL ECONOMY & TECH. TRANS

2.1 The post-war world of politics and economics²

The institutional architecture of international society changed enormously following the Second World War. Although there were already rising tensions between the United States and the Soviet Union, the ending of the conflict ushered in a brief period of optimism. The first and foremost development in terms of new international institutions came with the historic signing of the Charter of the United Nations in

2 For a good general introduction to this issue see e.g. “The Politics of International Economic Relations,” Spero & Hart, Routledge, 1997 (5th ed).

San Francisco on 26th June 1945. Following the 1944 Bretton Woods Conference among the allied powers the International Bank for Reconstruction and Development (now the World Bank) and the International Monetary Fund (IMF) were established in 1945. Following something of a debacle in the American Congress the General Agreement on Tariffs and Trade (GATT) was likewise established in 1947. In this way, it was perhaps hoped that a break could be made with the failures and indeed horrors of the past³ and that the new global governance systems would guide humanity to a more peaceful and more prosperous future, although the advent of the Cold War soon dampened such spirits.

It was not only the architecture of international society but also the composition of international society which changed after the Second World War. An irresistible urge for independence had spread among the colonies of what had been the European powers. Throughout the late 1940s and 1950s, a long list of former colonies achieved their independence and became sovereign members of the United Nations in their own right. UN Membership swelled from 51 States in 1945 to 60 States in 1950, 76 States in 1955 and 99 States in 1960⁴. Very quickly there were so many new, developing country Members of the UN that between them and the Soviet bloc, they could outvote the Western country Members on a straightforward one country, one vote basis.

However, although such Members were juridically equal, as ever the ability of each Member to act in a sovereign fashion depended to a great extent on their political, economic and military strength: 'all states are equal but some are more equal than others'⁵. The weakness of many of these newly independent Members in this respect became starkly apparent. The perspective of these states vis-à-vis their relationship with

3 Noting also the establishment by the allies of the International Military Tribunal for the Punishment of War Criminals in 1945.

4 See e.g. <http://www.un.org/Overview/growth.htm>. As of 2005 there are 191 Members.

5 c.f. George Orwell. *Animal Farm*. 1945.

the international financial and trading order reportedly changed from one of "benign neglect" to "malign neglect"⁶. That is to say that instead of believing that they would prosper from integrating themselves into the international system, that although they were weaker than their rich trading partners that nevertheless the 'invisible hand' would reap benefits for all, many came to believe that their integration with the international system on the existing terms was adversely impacting the growth of their economies. The design of the international political economy architecture had taken place on the basis of the prevailing Anglo-American free market philosophy and was therefore not aimed in any particular way at what were perceived to be the special needs of these developing countries.

Early efforts at improving the situation of the developing countries had tended to focus on calling for increased aid flows and incremental improvements in trading arrangements such as preferential terms for market access. Although there was some limited success, for example with the inception of agencies such as the United Nations Conference on Trade and Development (UNCTAD) (1964), the United Nations Development Program (UNDP) (1965) and the United Nations Industrial Development Organization (UNIDO) (1966), this did not result in any substantial re-design of the prevailing governance systems. Many developing countries felt frustrated that they could not do more. The fundamental weakness in their position was that they had little leverage with the rich countries.

The Group of 77 (G77) was formed in 1963 in an effort to consolidate and thereby increase the negotiating strength of the developing countries. This strategy did lead to some success, for example the addition of Part IV in the GATT 1947 ('Trade and Development': calling for special consideration of the situation of developing countries, especially as regards non-reciprocity) but again there was no fundamental breakthrough for the developing countries.

6 See "The New International Economic Order (MIT Bicentennial Studies 2)", ed. Jagdish N. Bhagwati, pp. 2-3, MIT Press, 1977.

This situation was perceived to change radically in the late 1960s and early 1970s. It became increasingly apparent that developing countries were in a position to exercise meaningful control over a number of commodities that developed countries required, especially given that the developed countries were experiencing something of an economic boom at that time. The leading example is, and perhaps continues to be, oil. Five countries (Iran, Iraq, Kuwait, Saudi Arabia and Venezuela) met in 1960 to form the Organisation of Petroleum Exporting Countries (OPEC) in order to exercise control over the global price of oil through the formation of a cartel. Over the following years membership increased to thirteen states⁷ exercising control over the majority of the world's oil reserves. Such a degree of control over such an important resource was not something that could be lightly dismissed by the rich countries. Public realization of the situation came perhaps with the 'Oil Shock' of 1973 when OPEC cut off supplies to the West in response to their support of Israel in the Arab-Israeli War of that year (the 'Yom Kippur' War), leading to a quadrupling in the price of oil. Oil was not the only commodity of interest to the industrialised West however and the thinking was quickly applied to wider classes of commodities. As of 1976 it was said:

"...the developing countries seemed to feel that finally there was one dramatic instance of a set of primary producers in the Third World who were able to get a "fair share" of the world incomes by their own actions rather than by the unproductive route of morally persuading the rich nations for fairer shares. Even while many of them suffered from the fallout of the oil price increases, many developing countries therefore felt a sense of solidarity, a *corps d'esprit* with the OPEC countries and the exhilarating sense that they could finally take their economic destiny in their own hands. Thus, the stage was to be set psychologically and politically for the present phase of "trade unionist" militancy. The nascent sense that collective action, as crystallised in the developing

7 The five founding members being joined by Algeria, Libya, Nigeria, Gabon, Qatar, United Arab Emirates, Ecuador and Indonesia. Ecuador and Gabon have subsequently left OPEC.

countries' Group of 77 and the activities at UNCTAD, could yield some results (such as schemes for preferential entry), was now to be transformed into an act of faith...The developing countries also seemed to infer from the OPEC experience that their commodity exports, which had traditionally been viewed as a sign of weakness, could be turned instead into weapons of collective action."⁸

It can be no surprise that the developing countries decided to convert this new-found leverage into action. In 1970 the General Assembly reiterated and buttressed the provisions of the United Nations Charter and notions of the important principles of international law in the "Declaration on Principles of International Law concerning Friendly Relations and Cooperation among States in Accordance with the Charter of the United Nations"⁹. The Declaration identifies and fleshes out some seven fundamental 'general principles of international law'¹⁰ in ways which were perceived to be more favourable to developing countries than the Charter alone.

More particularly however, following a G-77 action plan, in May 1974

8 Bhagwati, *ibid* note 6, pp.6-7

9 The Declaration is set out in an Annex to United Nations General Assembly Resolution 2625 (XXV) of 24th October 1970. It was adopted without a vote.

10 The principle that States shall refrain in their international relations from threat or use of force against the territorial integrity or political independence of any State, or in any manner inconsistent with the purposes of the United Nations; the principle that States shall settle their international disputes by peaceful means in such a manner that international peace and security and justice are not endangered; the principle concerning the duty not to intervene in matters within the domestic jurisdiction of any State, in accordance with the Charter; the duty of States to cooperate with one another in accordance with the Charter; the principle of equal rights and self-determination of peoples; the principle of sovereign equality of States; and the principle that States shall fulfill in good faith the obligations assumed by them in accordance with the Charter.

the General Assembly of the United Nations adopted the 'Declaration and Action Programme on the Establishment of a New International Economic Order' (NIEO). The aims of the NIEO movement related broadly to the reshaping of the international system such that developing countries would obtain a greater say in how the system was run in terms of financial and trade matters, and would benefit from that system to a greater extent than they had done previously, including the possibility of a greater degree of redistribution of resources.

One concrete result of the NIEO Declaration was the adoption by the General Assembly in December 1974 of the 'Charter of Economic Rights and Duties of States' (CERDS)¹¹. This instrument declares that it is a "fundamental purpose of the present Charter to promote the establishment of a new international economic order, based on equity, sovereign equality, interdependence, common interest and cooperation among all States, irrespective of their economic and social systems". The various provisions of the Charter deal with issues such as free choice of economic and political systems, sovereignty over natural resources, regulation of foreign investment and transnational corporations, nationalisation or expropriation of foreign assets (with adequate compensation), technology transfer (discussed below) and a variety of international trade relations matters.

Although by no means a universal sentiment, by the 1970s many economists were evidently persuaded of the need for some degree of reform in the international financial and trading system to better accommodate the needs of the developing countries. The noted free trade thinker Jagdish Bhagwati, in introducing the proceedings of one of the prestigious MIT Bicentennial Studies in 1976, made a clear call for action:

11 The Charter was included within United Nations General Assembly Resolution 3281 (XXIX) of 12th December 1974. It was adopted by 120 votes in favour to 6 against (Belgium, Denmark, (West) Germany, Luxembourg, United Kingdom and United States) with 10 abstentions.

"In conclusion, I might address my fellow economists who worry, quite naturally, about efficiency in international economic arrangements, and note explicitly that the only feasible way of guaranteeing such an outcome to the present debate on the new international economic order is to have the world system respond, in some significant manner, to the demands for distributive justice; the alternative politically is disorder from disenchanted developing countries, and that can hardly be expected to lead to conditions for international efficiency. Moreover the program of reforms set out here fully meets these requirements, while ensuring a sense of fair play and justice to the developing countries and while moving them substantially in the direction of assuring them of their sovereignty - newly discovered and therefore much valued...[Proposals from a number of contributors summarised for a brain drain tax, new GATT rules, commodity price stabilisation and resource transfer (including seabed mining)]...The full agenda for the new international economic order, as developed and proposed here, is surely fully deserving of economist's support - support that is critical for its adoption by the developed countries."¹²

In fact, the pressure for a NIEO faltered over the years to come and it is now clear that the NIEO movement fell far short of achieving the success that developing countries had hoped for. Modest progress was made in some areas. In place, for example, of plans to stabilise the international prices of commodities, some progress was instead made on compensation funds to offset to some extent the effects of commodity price fluctuation. In terms of the GATT framework, instead of a wholesale redesign of the world trading system, further amendment was made to Part IV GATT 1947 (the 'Enabling Clause') to reflect the notion of 'special and differential treatment' for developing countries.

The simple fact was though, that developing countries did not manage to maintain the negotiating strength that they had hoped for. Apart from the difficulty of keeping such a diverse membership as that of the G-77 all pointing in the same direction, OPEC did not end up exercising its

undeniable leverage to the end of furthering the interests of the developing world in any general way, and commodities other than oil in general suffered a price collapse in the early 1980s. Soon enough the developing countries were involved in the rather different matter of negotiating to transform the GATT into the World Trade Organisation (WTO) with the enormous implications for the developing world that that would entail. Nevertheless for the purposes of the later discussion on seabed mining, it is worthwhile bearing in mind the perception of an upward arc in their fortunes in the 1960s and 1970s before the difficulties of the 1980s and 1990s.

2.2 Post-war attitudes to technology transfer¹³

As mentioned above, an important part of the attempts by developing countries to improve their situation relates to technology transfer.

Concerted attempts have been made by developing countries to improve their ability to access and absorb technology from the developed countries since at least the 1960s. The rapid advances in technological capabilities brought about by the Second World War¹⁴ left the developing countries far behind in technological terms and there was no obvious sign that that gap would be narrowing any time soon; quite the

13 For a good general introduction to this issue up to the late 1980s see e.g. "Legal Aspects of the Transfer of Technology to Developing Countries", Blakeney, ESC Publishing (Oxford), 1989. For a shorter but broader (up to 2001) introduction see e.g. "The Unfinished Agenda", Roffe & Tesfachew, Chapter 27 in *International Technology Transfer*, Patel, Roffe & Yusuf (eds.), Kluwer Law International, 2001.

14 It is interesting to reflect on the degree to which war, or the threat of war, on a sufficiently large scale (i.e. perceived existential threat) acts as a powerful incentive to innovation, as compared, for example with the intellectual property system. This effect is particularly interesting in respect of non-market driven innovation (although there may be a great many commercial applications subsequently).

12 Bhagwati *ibid* note 6 pp. 20-21.

opposite in fact.

The channels by which the necessary technology might be transferred could be classified broadly in terms of non-commercial and commercial routes. General publications and journals included technical information which in theory was available to the global public, although issues such as cost and ease of distribution of non-electronic media meant that access to these materials in the developing world was patchy at best. In much the same way, it is one of the general aims of a patent system that the technical information in patent specifications be made widely available on publication and accordingly the patent systems of the developed countries were a source from which technical information was in theory able to flow from those countries to developing ones. This was not a panacea for the needs of the developing countries however. Although the likelihood that the subject matter of a patent would be available for unfettered use in a developing country was perhaps far higher than it is today (a combination of the likelihood of patent applicants filing in developing countries and the far greater degree of control that developing countries had over the substantive provisions of their patent legislation in the pre WTO/TRIPS Agreement (noted below) there remained the problem that the technical skill base in many developing countries was often so low that nothing practical could be done with the information. Occasionally more comprehensive, often politically motivated, technical cooperation and transfer programs were undertaken however involving the deployment of foreign technical advisers, for example Soviet assistance to China in their nuclear program in the 1950s.

However, many in developing countries identified the Trans- or Multi-National Corporations (TNCs, MNCs) of the Western countries as the source of the technologies that they were most in need of. The problem was that even when MNCs were active in a given developing country there was little or no guarantee that that country would obtain access to the technology employed in the MNC's operations. Neither was a developing country likely to be able to pay market rates to buy access to the underlying technology, even if that were in theory an option.

Suspicion and a degree of hostility in the developing world as to the activities of MNCs had however arisen by the 1970s. Accordingly in what had become something of an adversarial process, thoughts turned in the developing world to how the practices of the MNCs could be brought more into line with the needs of the developing countries. A central issue is obviously the distinction between 'carrots and sticks': an MNC holder of technology could either be incentivised to transfer the technology of its own free will or could perhaps be forced to do so, if agreement were not forthcoming. There were limits however to both the incentives that developing countries could offer to encourage a voluntary transfer and the leverage that they had to force a compulsory one¹⁵.

A flurry of legislative activity at national or regional level brought a new framework for the transfer of technology to many developing countries. Perhaps the leading example was the 1969 'Andean Code', which formed the basis of legislation in a number of South American countries, although similar models were used in developing countries elsewhere¹⁶. The various objectives of this legislation were summarised as:

- (i) to increase the bargaining power of local purchasers of technology;
- (ii) to increase the information available to local parties as to possible sources of technology;
- (iii) to improve the quality and local assimilation of transferred technology;
- (iv) to protect local innovation and technology;
- (v) to improve the balance of payments;

15 A classic example of a developing country which exerts a strong attraction for private firms notwithstanding what are supposed to be strong disincentives for investment, for example, standards of intellectual property protection that are perceived to be, or have been, inadequate, is China.

16 Decision 24 of the Cartagena Treaty, Blakeney, *ibid* note 13, Chapter 7.

- (vi) to control foreign exchange operations;
- (vii) to prevent tax avoidance;
- (viii) to limit industrial property protection;
- (ix) to control the nature of imported technology; and
- (x) to regulate foreign investments¹⁷.

Such technology transfer provisions tended to prescribe strict conditions on the technology transfer, forbidding objectionable terms in agreements, monitored by a national administrative body.

New rules for the transfer of technology at the international level was also an abiding concern of those who subscribed to the NIEO thinking. Article 13 of the abovementioned 1974 Charter of Economic Rights and Duties of States indicates that:

1. Every State has the right to benefit from the advances and developments in science and technology for the acceleration of its economic and social development.
2. All States should promote international scientific and technological cooperation and the transfer of technology, with proper regard for all legitimate interests including, *inter alia*, the rights and duties of holders, suppliers and recipients of technology. In particular, all States should facilitate the access of developing countries to the achievements of modern science and technology, the transfer of technology and the creation of indigenous technology for the benefit of the developing countries in forms and in accordance with procedures which are suited to their economies and needs.
3. Accordingly, developed countries should cooperate with the developing countries in the establishment, strengthening and development of their scientific and technological infrastructures and their scientific research and technological activities so as to help to expand and transform the economies of developing countries.

¹⁷ Blakeney, *ibid* note 13, Chapter 7.

4. All States should cooperate in research with a view to evolving further internationally accepted guidelines or regulations for the transfer of technology, taking fully into account the interests of developing countries.

Progress was made in the 1970s and 1980s toward an international technology transfer code.

In 1974 a draft code was submitted by the Pugwash Conference on Science and World Affairs to UNCTAD for consideration¹⁸. The following year UNCTAD convened the Intergovernmental Group of Experts on a Code of Conduct on the Transfer of Technology. Further proposals were presented from, for example, the G-77, the Group B countries (Western developed countries) and the Group D countries (Eastern Europe). Broadly speaking, developing countries were in favour of a binding set of provisions, which would be applied even as between parent and subsidiary firms, which would expressly forbid some forty technology transfer practices perceived as unduly restrictive and which would be governed by the local law of the developing country to which the technology was being transferred. By contrast, the developed countries intended to negotiate a voluntary 'code of best practice', which would not apply to dealings between a parent and subsidiary firm, which would only flag a much smaller set of practices which were thought to be an impediment to free competition and which would be governed by an applicable law and process at the choice of the parties to the technology transfer agreement.

Eventually, under Resolution 32/188 of 1977 the UN General Assembly called for a United Nations Conference on an International Code of Conduct on the Transfer of Technology. The discussions and negotiations were to be hosted under the auspices of UNCTAD. Protracted discussions and negotiations taking place in 1978, 1979, 1980, 1983, 1985 and 1987 did lead to the elucidation of the greater part

¹⁸ See e.g. "The Pugwash Code", Oldham, Chapter 11 in *International Technology Transfer*.

of a Draft Code, but the project never managed to come to fruition.

The issue of a transfer of technology (TOT) Code has now largely been overtaken by the negotiation and entry into force of the WTO/TRIPS Agreement¹⁹. Under this regime and to a great extent a reflection of the fact that private sector entities cannot, in the ordinary course of events, be coerced into transferring technology by States, technology transfer issues are addressed in terms of incentives rather than restrictions or compulsion and in terms of anti-competitive practices²⁰.

Accordingly, as with the more general discussion above of the world political economy, there have been marked changes in the way in which

developing countries conceptualised technology transfer. To a great extent, thoughts switched from trying to mandate strict terms on which technology transfer would be allowed to take place, in the late 1960s, 1970s and 1980s (which would only likely be a successful strategy if there were supervening reasons, such as size and wealth of market, why private entities would want to transfer technology to that country on what they would perceive as disadvantageous terms, which was not often the case for developing countries) to trying to establish an atmosphere where technology transfer would be encouraged and incentivised, in the 1990s. These changing attitudes to technology transfer were clearly reflected in the posture developing countries adopted toward seabed mining, as discussed below.

CHAPTER 3 – BACKGROUND - RESOURCES OF THE OCEANS²¹

Coastal States are bordered by the ‘continental margin’ which can be divided into three portions, the ‘continental shelf’, the ‘continental slope’ and the ‘continental rise’. The continental shelf is, in essence, a shallow extension of the coast, sloping gradually away, typically over depths of some tens of metres, into deeper waters. Beyond the edge of the continental shelf is the continental slope, which drops down more sharply to the continental rise. This in turn drops away at a shallow gradient to the abyssal plains of the deep seabed. The particular form and extent of the continental margin and deep seabed varies greatly from place to place. Along some coastlines the continental shelf extends for a long way out whereas along others the continental shelf is of a relatively small extent and the drop-off to the deep seabed occurs more quickly. Against an average of some 40 nautical miles, the width of the continental shelf varies from 700 nautical miles in the Barents Sea to less than 20 nautical miles west of the Niger Delta²².

19 A related matter was of course amendment of the intellectual property framework in which technology transfer was to take place. In the long term technologies ought to be able to flow from developed countries to developing ones as they pass out from patent monopoly protection to the public domain and widespread use. However, depending where intellectual property rights are in force, in the short to medium term over which their lifetimes run, a tension exists between, for example, the exclusive rights accorded under patent protection and the widespread diffusion and use of the subject matter of that patent. Accordingly, another front of activity for developing countries was to achieve amendment to the main patent related convention of the time, the 1883 Paris Convention for the Protection of Industrial Property, on such matters as preferential treatment for developing countries and the ability of a state to grant a compulsory licence or even revoke a patent in the event that a patent holder fails to work their patent sufficiently. See, for example, “The Revision of the International System of Patent Protection in the Interest of Developing Countries”, Kunz-Hallstein, 1979, 10 IIC 649. Again these efforts were superseded by the WTO/TRIPS Agreement.

20 See e.g. Articles 66.2 (calling for developed country incentives for technology transfer to LDCs) and 40 (‘Control of Anti-Competitive Practices in Contractual Licences’) TRIPS. There is also a WTO Working Group on Technology Transfer, see: http://www.wto.org/english/tratop_e/devel_e/dev_wkgrp_trade_transfer_technology_e.htm

21 For a good popular introduction to this issue, especially as regards mineral resources, although possibly now somewhat dated, see e.g. “The Mines of Neptune”, Elizabeth Mann Borgese, Elsevier, 1985.

22 “The Political Geography of the Oceans”, Prescott, David & Charles,

There are a number of different classes of sea or ocean resource that mankind has exploited over time, the vast majority of which have been in relatively shallow waters. On the one hand are 'living' resources. Fishing in coastal waters and on the high seas is something that has been done since time immemorial. On the other hand are classes of resource including oil and gas and minerals. A limited amount of exploitation of these resources has also taken place throughout history, whether extracting salt from sea-water, tunneling out from the land beneath the sea to mine sea-coal, or dredging in the shallows to search for 'unconsolidated' resources washed out from river mouths. The antiquity of these sorts of practices is impressive: "The Chinese extracted sea salts as far back as 2200 B.C. The kings of India had a 'superintendent of ocean mines' as early as the fourth century B.C. It was his responsibility to 'attend to the collection of conch shells, diamonds, precious stones, pearls, corals and salt and also regulate the commerce in the above commodities'"²³.

However it has only been comparatively recently that large scale, that is to say industrial scale, exploitation has occurred. Oil fields are generally accepted as forming from the remains of organic material left behind from an earlier geologic period²⁴. For example, vegetation falls to the sea floor and decays. Covered by successive layers of sand and clay the pressure and temperature increases until these remains are converted to oil. This oil then seeps upward until it is trapped beneath an impermeable layer, for example a hard clay or salt dome, to form a reservoir of oil. It is interesting, and important for the purposes of exploration, to note that these oil fields did not originally form in the places that we find them today. For example, the oil fields presently

1975, pp. 172-173.

23 Borgese *ibid* note 21, p.114

24 Though debate seems to continue as between the 'biogenic' and 'abiogenic' schools of thought, the latter brought to wide attention by Thomas Gold, holding that oil is formed from non-biological processes deep in the planetary crust and seeps upward to the oil fields that we have found. The different theories have rather different implications for total planetary oil reserves.

located in the North Sea result from the process of areas of sea floor, previously covered in warm shallow seas, migrating up to where they are today, under the process of continental drift, after having been far nearer the equator during the Jurassic and preceding geological epochs²⁵. Not surprisingly therefore, the particular form and extent of present day deposits varies from place to place. Apart from land-based oil fields, there are also off-shore oil fields, largely located in the areas of the continental shelf. The first off-shore drilling, apparently took place at the end of a wharf off the Californian coast in 1897. In later years significant reserves have been located and extracted from considerably deeper waters around, for example, the Gulf of Mexico, the Persian Gulf and the North Sea. Apart from coal and hydrocarbons, other 'consolidated' resource deposits include metallic sulfides and salts.

For the purposes of appreciating the debate over deep sea resources however, attention must be paid to a different type of mineral resource altogether. Sea water contains vast amounts of minerals in solution. Although in theory these dissolved minerals could be extracted directly, in general the cost / benefit ratio is not favourable²⁶. There is however a

25 It is interesting to view the boundaries and borders that humanity has devised in this light. From the perspective of continental drift over geological time the present distribution of States might be regarded as only temporarily delineating areas on a moving surface. During the Carboniferous period, some 300 million years ago, we would all have been 'Pangaeans'. Although the rising and falling of human States, Empires and other organisational units is highly likely to take place over much shorter time scales than anything that would cause worry from a continental drift point of view, the problem of resources moving in relation to borders is not an entirely fanciful one. As discussed below, climate change is causing the migration of living resources, such as the Arctic crab, from waters controlled by one State to those of another.

26 There may be exceptions in certain places where extraction does become feasible - one example is perhaps the hot brines of the Red Sea "Deeps" where the rift between the tectonic plates running down the centre of the Red Sea causes the surrounding mud to be very high

natural process, seemingly not completely fully understood, of gradual precipitation of these minerals out of the sea water. 'Seeded' by a nucleus which may be either organic or inorganic, for example a shark's tooth or portion of whalebone, or simply portions of rock or clay, minerals gradually precipitate out of sea water around the nucleus to form mineral nodules²⁷.

Now although such an individual nodule may sound rather unprepossessing, it was found that areas of the seabed are covered in them. Originally discovered by the British survey ship 'Challenger' in the course of a four year expedition launched in 1872, subsequent expeditions mapped the location of a number of vast fields, particularly on the seabeds of the Indian and Pacific oceans, some kilometres down. By the 1960s the existence and nature of these fields was beginning to be more widely known and appreciated. The nodules, often described as being 'potato' sized, contain a great deal of manganese but also include a variety of different metals including nickel, copper, cobalt, molybdenum, aluminium and iron. A 1971 report prepared on behalf of the Secretary-General of the United Nations indicated that the resources contained in the form of these nodules may be estimated to include 16.4 billion tonnes of nickel, 8 billion tonnes of copper and 8.8 billion tonnes of cobalt²⁸. These and other contemporary estimates, for example 358 billion tonnes of manganese, were equated to between several thousands and millions of years worth of supply at 1960 world rate of consumption, compared to the only decades or centuries of land-based supply which were thought to remain at that time²⁹. Perhaps one of the most interesting features of these precipitate resources is that they are accreting in nodule form all the time. It was estimated in 1966 that the

in mineral content.

27 Borgese *ibid* note 21, Chapter 3.

28 Marine Mineral Resources, Report of the UN Secretary-General, January 13th 1971, noted in Luard, "The Control of the Seabed, A New International Issue", Heinemann, 1974.

29 See e.g. Table 2, "Reserves of Metals in Polymetallic Nodules of the Pacific Ocean" (quoting data from John Mero), p.28, Borgese *ibid* note 21 and Luard, *ibid* note 28 pp.15-16.

average nodule was growing at a rate of 0.1mm per 1000 years. In aggregate this would amount to a resource increase in the Pacific fields of 6 million tonnes per year³⁰.

So, not only were these metallic nodule fields found to be vast but, to an extent, they were growing. Could these nodules represent a sustainable mining resource?

Bearing in mind, on the one hand, the rich resources of the oceans and, on the other, the need and desire for competing human societies to obtain control over resources, it can be no surprise that the question of who owns ocean resources is a long standing one, as now discussed.

CHAPTER 4 - BACKGROUND - LAW OF THE SEA - UNCLOS I & II

It is self-evident that States will want to control as far as possible the resources that lie either on or beyond their coast. The particular form and extent of the control that a given state has been able to exert of these neighbouring resources has varied over time and has depended on the resource type.

The most fundamental form of control occurs where states claim that a portion of the neighbouring sea or ocean is simply to be regarded as an extension of its land based territory i.e. a claim for fully sovereign rights over territorial waters. During one of the earlier phases of European imperial expansion, in the early Seventeenth Century, a dispute arose between the Portuguese and the Dutch over the extent to which the latter were free to trade with the East Indies in the light of the supposed Portuguese 'rights of dominion' over the East Indies and the seas by which they could be reached. The Dutch hired a lawyer, Hugo Grotius, to strengthen their position and the result was one of the most famous books in the history of international law and relations, *Mare Liberum*, or

30 Borgese, *ibid* note 21 p.74.

the 'The Free Sea'³¹. Grotius established his view that navigation, trade and fishing ought to be regarded as freedoms of the seas, and his position has remained highly influential over the intervening years.

31 "The Free Sea, or a Disputation Concerning the Right Which the Hollanders Ought to Have to the Indian Merchandise for Trading", Grotius, 1609. Lest it be thought that free-trade *per se* was an overarching concern of the other trading nations of the time, the Dutch, British and Danish East India Companies of the time all operated on the basis of trying to monopolise as much of the rich East Indies trade as possible for themselves. Notwithstanding the intentions of his clients, Grotius presented himself above the day to day concerns of power and instead looked to 'Natural Law' as the basis of his opinion: "It is no less ancient than an pestilent error wherewith many men (but they chiefly who abound in power and riches) persuade themselves, or (as I think more truly) go about to persuade, that right and wrong are distinguished not according to their own nature but by a certain vain opinion and custom of men. These men therefore think that both laws and show of equity were invented for this purpose: that their dissensions and tumults might be restrained who are born into the condition of obeying; but unto such as are placed in the height of fortune they say that all right is to be measured by the will and the will by profits...[comparison with Natural Law, written 'in the minds and senses of everyone']...But as in man himself there are some things which are common with all, and other some whereby everyone is to be distinguished from other, so of those things which nature had brought forth for the use of man she would that some of them should remain common and others through every one's labour and industry to become proper. But laws were set down for both, that all surely might use common things without the damage of all and, for the rest, every man contented with his portion should abstain from another's". Unsurprisingly, given that his opinion was published to strengthen the position of his clients, in terms of this distinction he found that "The sea therefore is in the number of those things which are not in merchandise and trading, that is to say, which cannot be made proper. Whence it followeth, if we speak properly, no part of the sea can be accompted in the territory of any people." (Chapter 5)

Claims to territorial waters *per se* however have long been accepted as reasonable although the persistent question was how extensive the territorial waters were to be. A threshold that came to be accepted among European powers in the Seventeenth and Eighteenth centuries was set at "Three Miles, The Possible Reach of Cannon Shot from Land"³². As will be discussed further below however, this was not regarded as a universal rule and after the Second World War a number of countries, including the newly independent developing countries, began to press for rather more extensive territorial waters. By 1973 there were fifty-six states claiming territorial waters extending out to 12 nautical miles, twentyfive states claiming 3 nautical miles, ten states claiming 6 nautical miles and eight states claiming 200 nautical miles³³. One reason for pressing greater claims was to exert control over fisheries to prevent fishing, or over-fishing, by others. The states claiming 200 nautical mile territorial waters were all South or Central American states with rich fishing grounds off-shore. With the Declaration of Santiago of 18th August 1952, Chile, Peru and Ecuador had proclaimed "sole sovereignty and jurisdiction" over these waters out to 200 nautical miles. Clearly there will be contention between states that want to bring fisheries under their exclusive control through extending their territorial waters claims and those states whose fishing fleets have operated on what would previously have been universally regarded as the high seas. Serious disputes over fishing in contested areas have broken out, a good example perhaps being the 'Cod Wars' between the United Kingdom and Iceland in 1952, 1958 and 1973 when Iceland claimed successive extensions of its territorial waters, eventually out to 50 nautical miles³⁴.

32 Prescott, *ibid* note 22 p.39. The proposal from, for example, Bynkershoek seemed to provide for territorial zones of control only offshore from actual gun batteries however and Galiani's later suggestion that this could be generalised to a strip of territorial water along the whole coast, even where there weren't gun batteries, was regarded as an innovation. See e.g Churchill & Lowe, "The Law of the Sea", Juris Publishing, 1999 *ibid* note pp.77-78.

33 Prescott, *ibid* note 22 p.67.

34 See e.g. Chapter 10, "Cod: A Biography of the Fish that Changed the

Another reason for pressing greater claims than a traditional territorial waters limit of a few miles was to exert control over oil and gas reserves. The continental shelf area bordering a states coast is of immediate concern in terms of exploiting oil and gas reserves but it extends out far beyond a traditional territorial water claim of, for example, 3 nautical miles. President Truman made an important claim for the United States in 1945 when he declared that: "Having concern for the urgency of conserving and prudently utilizing its natural resources, the Government of the United States regards the natural resources of the subsoil and seabed of the continental shelf beneath the high seas but contiguous to the coasts of the United States as appertaining to the United States, subject to its jurisdiction and control"³⁵. Naturally enough this triggered off a number of equivalent claims by other states. Given that continental shelves have different forms and extent in different places however it was not easy to construct a single definition that permits agreement over the extent of claims in all cases.

Exerting exclusive rights over various portions of the ocean brings in its wake a large set of complex, interdependent, problems. Consider, for example, the general problem of the freedom of movement of ocean vessels. The freedom of the high seas was tremendously important for, for example, the major naval Powers in terms of planet-wide force projection. Agreement on expansive limits of territorial waters could interfere with this capability not only in terms of getting close to the shore of other coastal States but crucially, where there was a narrow strait that was important for international navigation, broad territorial waters extending from both coasts could close off the strait altogether. Irrespective of whether or not the extension of territorial waters brought increased resource control therefore Cold War politics had the capacity to complicate the matter even further³⁶.

World", Kurlansky, Vintage, 1999.

35 Reproduced in "Cases and Materials on International Law", Harris, Sweet & Maxwell, pp. 455-457.

36 "Indeed, the knowledge that the erosion of the extent of the high seas

After the Second World War there was a strong recognition among States that some agreement had to be reached on these interconnected issues. The United Nations therefore convened a conference on the Law of the Sea in 1958 (UNCLOS I). This conference resulted in four new conventions on "The Territorial Sea and the Contiguous Zone", "The High Seas", "Fishing and Conservation of the Living Resources of the High Seas" and "The Continental Shelf"³⁷.

The High Seas Convention included important re-iteration of what were accepted to be customary international legal norms, for example:

"The high seas being open to all nations, no State may validly purport to subject any part of them to its sovereignty. Freedom of the high seas is exercised under the conditions laid down by these articles and by the other rules of international law. It comprises, *inter alia*, both for coastal and non-coastal States:

- (1) Freedom of navigation;
- (2) Freedom of fishing;
- (3) Freedom to lay submarine cables and pipelines;
- (4) Freedom to fly over the high seas.

These freedoms, and others which are recognised by the general principles of international law, shall be exercised by all States with reasonable regard to the interests of other States in their exercise of the freedom of the high seas."

Although every State now had a degree of confidence over what freedoms they could exercise on the high seas, there was no equivalent confidence over where the High Seas began. The Territorial Sea

operates against the freedom of action of major powers may be a positive recommendation for some countries of the Third World. The government of China has persistently warned these countries to be on their guard against the efforts of the United States of America and the Soviet Union to establish hegemony over the world's oceans.", Prescott, *ibid* note 22 p. 215. Whence the 'tragedy of the commons'.

37 Adopted together on 29 April 1958.

Convention acknowledged the concept of territorial waters but failed to arrive at a precise definition of its maximum extent: "The sovereignty of a State extends, beyond its land territory and its internal waters, to a belt of sea adjacent to its coast, described as the territorial sea" (Article 1.1).

Likewise, although the Continental Shelf Convention recognised the concept of the continental shelf and vested control in the hands of the coastal State, "The Coastal State exercises over the continental shelf sovereign rights for the purpose of exploring it and exploiting its natural resources" (Article 2.1), there remained a lack of agreement on a precise delimitation of its extent, "For the purpose of these Articles, the term 'continental shelf' is used as referring (a) to the seabed and subsoil of the submarine areas adjacent to the coast but outside the area of the territorial sea, to a depth of 200 metres or, beyond that limit, to where the depth of the superjacent waters admits of the exploration of the natural resources of the said areas..." (Article 1). However, the depth at which resources could be exploited was ever changing, at least as permitted by the technologies available to the developed countries, extending deeper with every new technical development. Similarly no agreement could be reached on the issue of precise delimitation of jurisdiction over fisheries beyond territorial waters.

A second United Nations conference of the Law of the Sea in 1960 (UNCLOS II) failed to make any further progress.

Into these turbulent waters was now thrown the issue of the resources of the deep seabed. As outlined above in Chapter 3, the presence of vast fields of metallic nodules on the deep seabed was well known by the 1960s. Given the thinking above on matters such as territorial waters, the continental shelf, fisheries and the high seas, what claims could be advanced over the riches of the deep seabed?

In terms of thinking about potential property rights over the deep seabed at that time, a distinction would have drawn between the Roman law concepts of *res nullius* and *res communis*. *Res nullius* means property "belonging to no-one". Such property is capable of being owned by

some one, if they claim and exercise adequate rights over it. Uninhabited territory which is considered to have the status of *res nullius* for example could be subject to ownership if discovered and occupied. By contrast, although *res communis* also carries with it the notion of not being owned by anyone in particular, it is in the sense of being owned by, or being available for use by, everyone. One example of something treated as *res communis* is air, another is the notion of a village's common ground, 'The Common', where any and all villagers were able to graze their animals³⁸. Accordingly, if the deep seabed were considered in terms of *res nullius*, property rights over the seabed itself, as well as its mineral resources, could be claimed through occupation and use, for example by a mining company. By contrast if the deep seabed were considered in terms of *res communis*, no-one could claim property rights over the deep seabed *per se*, although in terms of exercising a freedom of the high seas, mining companies could claim ownership of the mineral resources that they harvested in and removed from that area.

From a developed country perspective either of these conceptions would likely have been satisfactory³⁹. From the perspective of a developing country without the technical skills or capital to be able to engage in deep seabed mining, neither of these options looked attractive. They feared they could be left as helpless bystanders to what seemed likely to amount to a new goldrush.

It will be recalled from Chapter 2 that in the later 1960s the developing countries were beginning to ride comparatively high in terms of growing political weight. It was not the case that the developed countries could simply assert their point of view over these resources and regard that as the end of the matter. The Cold War complicated matters further as

38 'Whence the tragedy of the commons.'

39 Yet another option was that the developed countries could have claimed greater and greater areas of seabed under the 'exploitability' test of the Continental Shelf Convention 1958 as their technology allowed to dive deeper and deeper. See Churchill & Lowe, *ibid* note 32 pp.224-225.

between the United States and the Soviet Union and their respective allies. There were significant fears that the world was on the brink of seeing a headlong militarisation of the deep seabed.

In recognition of these various dangers, in a declaration in July 1966, President Johnson declared that "Under no circumstances, we believe, must we ever allow the prospects of a rich harvest of mineral wealth to create a new form of colonial competition among the maritime nations. We must be careful to avoid a race to grab and hold the lands under the high seas. We must ensure that the deep seas and the ocean bottom are, and remain, the legacy of all human beings"⁴⁰.

It was not clear how this should be done as a matter of law however.

Step forward Dr Arvid Pardo, the Maltese Ambassador to the United Nations.

CHAPTER 5 - BIRTH OF CHM - PRINCIPLES

On August 17 1967 the Maltese government asked the Secretary-General of the UN to include a supplementary item in the agenda of the twenty second session of the UN General Assembly. The item title was "Declaration and Treaty Concerning the Reservation Exclusively for peaceful Purposes of the Seabed and of the Ocean Floor, Underlying the Seas Beyond the Limits of Present National Jurisdiction, and the Use of their Resources in the Interests of Mankind"⁴¹. The request was agreed. Accordingly:

"On November 1, 1967, Dr Arvid Pardo was invited to introduce the item. He then embarked on a long, learned and eloquent disquisition, lasting over three hours - a long time, even for UN speeches - on all the main aspects of the question. It can safely be said that the members of the First Committee, accustomed to listening over and over again to

well-worn arguments on well-worn themes repeated interminably from year to year, have rarely listened with such fascination as they did in hearing the wonders of the deep explored by the learned doctor with such erudition and force."⁴²

Dr. Pardo warned of the "very grave" consequences of a free-for-all scramble for resources of the seabed, "surpassing in magnitude and in its implication last century's colonial scramble for territory in Africa and Asia", not least a considerable exacerbation of the tensions between the Superpowers, the rest of the industrialised nations and the developing world. Perhaps the most important and revolutionary element of Dr. Pardo's address was the proposition that the Assembly pass a Declaration that the seabed was to be treated as the 'Common Heritage of Mankind', recalling and reformulating the phrase used by President Johnson. Dr. Pardo's proposed Declaration:

"...would set out the general principles to be followed in the use and exploitation of the seabed, and would call on member states to refrain from extending their national claims until a common decision had been reached about the limits of the rights of coastal states. At the same time, ' a widely representative but not too numerous' body should be established to consider the political, the economic and other implications of setting up an international regime for the seabed, and to draw up a comprehensive treaty designed to 'safeguard the international character' of the seabed and define the limits of national rights. An international agency could then be set up to ensure that national activities on the sea floor conformed to the principles contained in the treaty and perhaps administer the area generally."⁴³

Dr. Pardo's proposal on treating an area as the Common Heritage of Mankind tends to be summarised in terms of four essential elements:

(i) the area is not subject to appropriation of any kind, whether public

40 Quoted in Luard, *ibid* note 28 p. 84.

41 UN Doc.A/AC.105/C.2/SR.75 (17 Aug 1967)

42 Luard, *ibid* note 28 p.86.

43 Luard, *ibid* note 28 pp. 86-87.

- e.g. by a State or private e.g. by a Corporation;
- (ii) the management of the area must be carried out by and on behalf of all humanity, or rather as a practical matter, by ‘trustee’ representatives thereof;
 - (iii) any benefits flowing from such management must be shared amongst all humanity;
 - (iv) the use of the area must be limited to peaceful purposes.

Some add other elements such as (v) scientific research in the area must be able to be carried out freely, so long as the area is not thereby compromised in any way, and the results openly published, for the benefit of all humanity⁴⁴.

This proposal differs from both the previous conceptions of *res nullius* and, indeed, *res communis*. For example, an area treated as the Common Heritage of Mankind would not only be incapable of being owned by a particular entity such as a State or a Corporation but they could only carry out the exploitation of the area within the management framework established on behalf of all humanity. There would be no possibility of unilateral exploitation on the basis of the freedom of the high seas. This was therefore a revolutionary concept.

In fact Dr. Pardo had drawn on a number of previous sources and suggestions in making his proposal. Similar thinking had been evidenced in the early 1960s within the ambit of discussions at the United Nations over Outer Space, discussed below, and Dr. Pardo did make an explicit link in his presentation. More specifically though the notion of treating the seabed as something similar to the CHM principle had been raised before. In particular various Non-Governmental Organisations (NGOs), such as the Committee on Natural Resources Conservation and Development of the National Citizens’ Commission on International Cooperation, The Commission to Study the Organisation of Peace, the Law of the Sea Institute, the American Bar

44 See e.g. Christopher C. Joyner in “Legal Implications of the Concept of the Common Heritage of Mankind”, *International and Comparative Law Quarterly*. Vol.35, 1986, pp.190-199.

Association National Institute on Marine Resources, the World Peace Through Law Center and the International Law Association (Deep Sea Mining Committee), made significant contributions in the period leading up to Dr. Pardo’s presentation⁴⁵.

Notwithstanding this, the introduction of the Common Heritage of Mankind proposal in the context of the Law of the Sea debate is certainly credited to Dr. Pardo in terms of his having evidently formalised, timed and delivered his presentation to perfection so as to seize the attention of the delegates to the First Committee and the international community more widely. His speech was later hailed as having "started a new era in the history of international law comparable to that begun more than 300 years before by Hugo Grotius with the doctrine of the freedom of the seas"⁴⁶.

BOX 1 - Another Roman legal concept worth bearing in mind is that of ‘usufruct’. Usufruct connotes the right to utilise and enjoy the profits of property belonging to a third party, so long as the property is not thereby changed in any fundamental way. One example would be that

45 Their contribution and the strong continuing input from NGOs following Dr. Pardo’s presentation is detailed in “The Dawn of a Régime For the Deep Ocean Floor”, Oda, reprinted in Chapter 14 of “Oda: Fifty Years of the Law of the Sea”, Kluwer, 2003, pp.333-418. It is interesting to note that the Quakers played a helpful role in facilitating the Law of the Sea negotiations: “Indeed, in the 1970s, the Quakers played a similar role [facilitating intergovernmental negotiations] during the Law of the Sea negotiations by offering an independent platform to discuss contentious issues on deep seabed mining”, “The Role of Third Parties as Facilitators”, Freymond, Chapter 17 in *International Technology Transfer*, Patel, Roffe & Yusuf. Freymond, *ibid* note13, makes reference to “Negotiating the Law of the Sea: Lessons in the Art and Science of Reaching Agreement”, Sebenius, Harvard University Press, 1984.

46 Biggs, quoted in Li, “Transfer of Technology For Deep Seabed Mining”, Nijhoff, 1994, p.19.

of a miner accorded usufructuary rights to extract minerals from a given territory. Mineral resources could thereby still be extracted without the need for the miner to claim title over the territory. A distinct similarity can be seen with the concept of the patent system, *viz* the provision of exclusive rights over a defined period of time to permit exploitation, although at the end of this period the invention does not revert to the 'owner' but to the public (domain).

Immediate reaction to the proposal fell broadly speaking into four camps⁴⁷. Firstly, most developing countries and supporters, notably Malta and Sweden, strongly endorsed swift 'international' action on this issue to prevent the *fait accompli* by the technically sophisticated States that Dr. Pardo had warned about and to bring forth a new instrument for improving their developmental situation. Secondly, although also developing countries and not possessing the technology to exploit the resources of the seabed themselves, the Latin American countries were initially reticent to compromise any claims that they had to fishing grounds far offshore and were therefore cautious as to rushing to support the Maltese proposal. Thirdly, the technically sophisticated developed countries also took a cautious view. They noted the lack of legal precision of the concept introduced by Dr. Pardo. The American delegation, seemingly finessing President Johnson's statement, indicated that they agreed that an international regime was necessary for the seabed and in their view this should be one which ensured that the seabed would be "open to exploration and use by all States, without discrimination"⁴⁸. As noted above though in discussing the concepts of *res nullius* and *res communis*, even if the United States and a small developing country had the same legal rights to explore and use the seabed, only one of them would be able to do so in fact. Developing countries wanted more than this. Finally, the Soviet and allied socialist States were also initially skeptical. They were not in as strong a position as the developed countries to exploit the seabed resources and evidently believed that they would lose out: "[although] the forms of

47 Luard, *ibid* note 28, p.87 et seq.

48 Li, *ibid* note 46 p.21.

administering such common ownership might be outwardly democratic and although the majority of States might be sincerely desirous of a just distribution of the benefits to be derived from this enterprise, the top command posts under such a system would inevitably be in the hands of the capitalist monopolies of a few imperialist Powers. The entire system, despite the good intentions of its creators, would become one more instrument serving the predatory aims of the monopolies and their neo-colonialist policy"⁴⁹.

Some insight into the complexity of the politics of the CHM concept, as considered alongside the other sovereignty issues discussed above, can be gained by thinking about who would stand to gain and who to lose under such a regime.

As noted, it was already the case that the naval Powers had an interest in limiting sovereign claims over portions of the ocean as far as possible, to maximise the freedom of the high seas. A similar outcome could now be desired by other States however, including landlocked States, for totally different reasons. For example, for a State with a long coastline and rich resources off-shore, there will be a natural tendency to want to exercise territorial claims over as great an extent of the coastal waters as possible. To the extent that there might be an international regime to exercise control over resources further out, beyond the limit of their territorial claims, that will be all well and good. The State would also expect to receive its share of any benefits that might flow under the residual international regime. These considerations will not find favour with, for example, a small land-locked State however. Assuming that all States could expect to benefit from the international regime, for such a State with no coastline, their greatest interest will lie in ensuring that territorial claims are restricted to as narrow a band of coastal waters as possible so that as many resources as possible fall instead under the international regime, such that their benefits flowing from the international regime are maximised. Other states with varying lengths of coastline and riches of off-shore resource would make intermediate

49 Li, *ibid* note 46 p.22.

determinations.

In terms of trying to make a judgment on where to 'draw the lines' on ownership and control of ocean resources, States had of course to come to some estimate of their potential value. Some estimates of the 'riches' of the oceans included the resources of the continental shelf areas, which tended to skew the overall picture significantly. As far as the resources of the deep seabed alone were concerned, the estimation of the cost of the extraction of the nodules and the estimation of their value once extracted was not a trivial exercise. Although no complex drilling equipment would be necessary to harvest the nodules, as compared for example to deep-water oil and gas extraction, there remained the fact that they were several kilometres below the surface of the ocean. Proposals were made for deep dredges or other lifting systems attached to surface vessels or for autonomous underwater vehicles that could move along the seabed collecting the nodules on 'auto-pilot' and then return to a mother ship to transfer their yield. Even if the nodules could be realistically collected from an engineering point of view however, there remained the issue of their valuation. Much as it was easy to multiply the late 1960s prevailing price of 1 tonne of a given metal by several billion to obtain a total value of that metal in nodule form, that is not how the law of supply and demand works. Valuation remained difficult; even by 1974 estimates of the value of the mineral wealth of the deep seabed were still described as only "crude guesses"⁵⁰. The nature of deep seabed mining operations was therefore such that apart from State entities such as Yuzmorgeologiya (USSR), Department of Ocean Development (India) or COMRA (China), private (and other public) sector entities often formed consortia such as Ocean Minerals Company, Ocean Management, Inc., Ocean Mining Associates, the Kennecott Consortium, Deep Ocean Resources Development Co., Ltd. and AFERNOD, to pool their resources and spread their risks.

The possibility of successful seabed mining raised yet another issue for some States. Bringing significant amounts of metals to the global market

through mining of the nodules without a significant pick-up in demand would likely rapidly depress their market price. In general, developed industrial states could be expected to welcome the prospect of new sources of important metals at lower prices, not only for purely economic reasons but, for example, for national security reasons since access to metals from the seabed could not be curtailed in the same way that access to land based supplies in an unfriendly or unstable developing country could be. For developing countries who depended on the income they generated from the export of metals from their land-based mines however, the depression in global market price that would likely be brought about by large scale seabed nodule mining might be nothing less than a disaster. The particular impact of course depended on the mineral in question and the degree of diversification of the economy of the exporting country: Nickel was mainly exported by developed countries (Canada, USSR and Australia), Copper was exported by both developed and developing countries (USA, USSR, Canada as well as Chile, Zambia and Zaire (now the Democratic Republic of Congo)) whereas Cobalt was almost entirely a developing country export.

Discussion of Dr. Pardo's proposal was brisk and lively.

As a first step the General Assembly adopted Resolution 2340 (XXII) on 18 December 1967 providing for the establishment of an Ad Hoc Committee to study the matter further. This Ad Hoc Committee first convened in March 1968 with a membership of thirty-five States; five from Asia, seven from Africa, six from Latin America, eleven from Western Europe and Others and six from Eastern Europe. Two working groups were set up, one to investigate technical and economic questions and other legal matters. Before the common heritage of mankind and the international regime issues could be debated in substance the issue of the delineation between territorial and international waters had to be settled. Sharp differences of opinion persisted:

"Within the legal working group, there were those who felt that the law of the seabed, including the legal definition of where it began and where

⁵⁰ Prescott, *ibid* note 22 p.207

the continental shelf ended, was still to be made through some international act of decision; and those who felt that the existing instruments of international law already covered such matters (and, some held, protected a general freedom of action), so there was no need for any new definition. The former was the view of Malta, Sweden and a number of other countries, many of whom favoured calling a special conference on the law of the sea, or even an attempt by the Committee or the Assembly to resolve the question through a resolution. Against these were most of the Latin-Americans, who held strongly to the view that maritime limits had already been decided (by unilateral action) and that any attempt to review that issue would now be an infringement of national sovereignty and could lead to endless international conflict. The rich countries were equally divided. Some took the view that it would be counterproductive to attempt to call a new conference on the law of the sea, since there was little reason to think that it could reach any more agreement than that of 1958, but that decisions on a new international system might be required. Others wanted a conference but only to define the territorial sea and other undecided questions. And some, such as Britain, urged that one could not in any case reach a decision on the limits of the shelf until one knew what kind of regime would be set up beyond the shelf (though it was equally logical to urge that one could not decide the regime until one knew the area it was to cover).⁵¹

Following further debate and a report from the Ad Hoc Committee, General Assembly Resolution 2467A (XXIII) provided for the setting up of a standing Seabed Committee. This Seabed Committee first convened in February 1969 and was composed of forty-two States; seven from Asia, eleven from Africa, seven from Latin America, eleven from Western Europe and Others and six from Eastern Europe. Discussions and deliberations continued. It was decided that a Third United Nations Conference on the Law of the Sea (UNCLOS III) would be convened (Resolution 2570 (XXV) of 1970) and preparatory work began. Some of the impetus for calling for a new UNCLOS session came from the newly independent States. They had not participated in

the rule formation of either UNCLOS I (1958) or UNCLOS II (1960) and this new Conference would give them a chance to do so. Two important way-stages were reached shortly afterwards: a moratorium and a declaration of general principles.

With the intention of heading off Dr. Pardo's fears of an uncontrolled rush, on 15 December 1969, General Assembly Resolution 2547D (XXIV) provided for a seabed resource exploitation moratorium:

- "(a) States and persons, physical or juridical, are bound to refrain from all activities of exploitation of the resources of the area of the seabed and ocean floor, and the subsoil thereof, beyond the limits of national jurisdiction;
- (b) No claim to any part of that area or its resources shall be recognised."

Many developing countries saw this resolution as an important achievement, weakening the ability of Western mining companies to move ahead with unilateral exploitation. It was apparently not the intention of the resolution to slow down exploration, although it seems that exploration would likely be compromised if the ability to exploit whatever was found during exploration was not clear. Perhaps unsurprisingly then the United States and other developed countries had voted against this Resolution, it having been passed with 62 votes for, 28 against, and 28 abstentions. They believed that not only would it inhibit the developing of exploration and exploitation technology but that it would also likely lead to the increased submission of territorial claims over offshore resources. So long as the boundaries of the international regime area were not clearly defined it would be in a States interest to err on the side of greater territorial claims to permit the exploitation of resources within waters to which the moratorium would not or might not apply.

A far greater degree of agreement was reached on the issue of general principles. On 17 December 1970, by a majority of 108 votes for to none against (with 14 abstentions, from Eastern European countries) the

51 Luard, *ibid* note 28 p.90

General Assembly adopted Resolution 2749 (XXV), a "Declaration of Principles Governing the Seabed and the Ocean Floor, and the Subsoil thereof, Beyond the Limits of National Jurisdiction". This Declaration provides that:

"[...]

1. The seabed and ocean floor, and the subsoil thereof, beyond the limits of national jurisdiction (herein after referred to as the area) as well as the resources of the area, are the common heritage of mankind.
 2. The area shall not be subject to appropriation by any means by States or persons, natural or juridical, and no State shall claim or exercise sovereignty or sovereign rights over any part thereof.
 3. No State or person, natural or juridical, shall claim, exercise or acquire rights with respect to the area or its resources incompatible with the international regime to be established and the principles of this Declaration.
 4. All activities regarding the exploration and exploitation of the resources of the area and other related activities shall be governed by the international regime to be established.
 5. The area shall be open to use exclusively for peaceful purposes by all States whether coastal or land-locked, without discrimination, in accordance with the international regime to be established
 6. States shall act in the area in accordance with the applicable principles and rules of international law including the Charter of the United Nations and the Declaration on Principles of International Law concerning Friendly Relations and Co-operation among States [...]
 7. The exploration of the area and the exploitation of its resources shall be carried out for the benefit of mankind as a whole, irrespective of the geographical location of States, whether land-locked or coastal, and taking into particular consideration the interests and needs of the developing countries.
 8. The area shall be reserved exclusively for peaceful purposes, without prejudice to any measures which have been or may be agreed upon in the context of international negotiations undertaken in the field of disarmament and which may be applicable to a broader area. One or more international agreements shall be concluded as soon as possible in order to implement effectively this principle and to constitute a step towards the exclusion of the seabed, the ocean floor and the subsoil thereof from the arms race.
 9. On the basis of the principles of this Declaration, an international regime applying to the area and its resources and including appropriate international machinery to give effect to its provisions shall be established by an international treaty of a universal character, generally agreed upon. The regime shall, *inter alia*, provide for the orderly and safe development and rational management of the area and its resources and for expanding opportunities in the use thereof and ensure the equitable sharing by States in the benefits derived therefrom, taking into particular consideration the interests and needs of the developing countries, whether land-locked or coastal.
 10. [Marine Research]
 11. [Pollution]
- [...]"

The establishment of these principles, including the acceptance of the concept of the 'common heritage of mankind' and an appropriate

international regime, was a tremendous diplomatic achievement and a concretisation of Dr. Pardo's proposal. These principles can be taken as reflecting a clear international consensus, given the lack of any states casting an opposing vote. The Chairman of the Legal Sub-Committee of the Seabed Committee stated that "[T]he clear-cut intention of the Declaration...was to establish with respect to the seabed completely different rules from those international custom had authorised for the utilisation of the living resources of the high seas"⁵².

Having said all this however, although the concept could be regarded as having been established, the precise nature and extent of the concept had not. The agreement of this form of words for the Declaration had papered over deep disagreements⁵³: "The main reason for its acceptability was its delphic construction"⁵⁴. On the one hand developing countries held that, not only was the CHM principle at heart a legal one, the fact that the General Assembly had adopted this Resolution unanimously meant that the Declaration already had some binding effect under customary international law⁵⁵. As a result, so they said, seabed mining outside the framework established to implement the CHM principle would be unlawful. By contrast, developed countries did not subscribe to the belief that General Assembly Resolutions, even if unanimous, necessarily had any *per se* legal effect. The Declaration was for them more of a statement of political intent. In any case, so they said, within the terms of the Declaration, a regime reflecting their view of the seabed mining was just as good as any other.

52 Quoted in Li, *ibid* note 46 p.26

53 For the views of a number of Ambassadors present at the time, see e.g. Anand, "Common Heritage of Mankind: Mutilation of an Ideal", *Studies in International Law and History: An Asian Perspective*", Martinus Nijhoff, pp.182-185.

54 Churchill & Lowe, *ibid* note 32 p. 227.

55 The notion of an 'instant' customary norm. See e.g. Li, *ibid* note 46 p.30 et seq or Churchill & Lowe, *ibid* note 32 p.228. Schmidt, "Common Heritage or Common Burden?", Clarendon Press, Oxford, 1989, pp.104-105.

In terms of the international regime to be adopted, as of 1967 there were at least four broadly differentiated models based on notification, registration, allocation and an international enterprise⁵⁶.

At the minimalist end of the spectrum was the concept of a mere notification regime. The discovery of seabed resources suitable for exploitation would be notified to a central authority which would help to alleviate conflict between competitor claimants. However, this model would in no sense require permission to be granted before exploration and exploitation could take place, it would simply be a formalised 'first come-first served' system. Further along the spectrum was the concept of a registration regime. Although similar in concept to the notification model, the possibility opens with this model that the claim need pass some test before the registration can take place. Such a test could be an 'internal' one, which is to say that it could relate to the claim *per se* such as demonstrating that the claimant was in a position to exploit a site effectively. Alternatively, or in combination, the test could be an 'external' one, for example there could be a rationing system such that claimants of a given nationality will not succeed in their claim if their State has reached its agreed quota of claimed sites.

Moving yet further along the spectrum were models where, instead of the regime authority simply responding to claims filed by claimants, the regime authority itself would have rather more control over the choice of sites offered for exploitation. Accordingly the next set of regime models provided for the ability of the authority to perform allocation. The choice as to which sites would be made available for exploitation and when would reside in the hands of the authority. Sites could for example be auctioned, or allocated on a deliberate or random basis. Finally, at the maximalist end of the spectrum was the concept of the seabed mining system being the exclusive preserve of a new international mining entity. This entity could range over all seabed sites as other operators, whether public or private sector, would be excluded. Clearly there could be foreseen significant issues with the complete

56 See e.g. Chapter 10, *ibid* note 28, Luard.

handing over of seabed mining to a new and unproven entity but many in developing countries thought that this would be the only way to ensure that all States were treated on an equal footing. Naturally however, the expertise to exploit the resources of the seabed would not spring *ex nihilo*, so an alternative proposal was for the experienced operators to act in essence as contractors for this new entity.

Specifically:

"One approach acceptable to industry circles in the United States was a system wherein a licensing authority would be given wider jurisdiction than the mere registration of claims over seabed use, namely imposing licence fees, regulating work requirements, and reviewing work plans received from contracting parties. The 1970 United States Draft Convention on the International Seabed Area provided for this type of regime. At the other end of the spectrum, 13 Latin American states proposed in 1971, the establishment of an autonomous operating arm of the ISA, the Enterprise, which would be empowered to explore and exploit the deep seabed, either through service contracts or joint ventures with companies or states. The Enterprise concept was conceived mainly by three delegates, Sergio Thompson Flores of Brazil, Alvaro de Soto of Peru, and Lennox Ballah of Trinidad and Tobago, and served two purposes: one was to provide a 'sensible' alternative to the 1970 United States draft, the other, more important one, was to provide the Latin American states with a bargaining chip which they could use in their efforts to secure the acceptance of 200-mile EEZs. Over time, the Enterprise proposal took on a life entirely of its own..."⁵⁷

The concept of the Exclusive Economic Zone (EEZ) is discussed below.

CHAPTER 6 - UNCLOS III

6.1 UNCLOS III negotiations

Following the preparations noted above, the third United Nations Conference on the Law of the Sea (UNCLOS III) was launched in 1973.

What came quickly to be appreciated in these discussions was the fact that they were not just about who could lay claim to fields of manganese nodules on the deep seabed. The proposal to treat these resources as the Common Heritage of Mankind had opened a new door to discussions of no less importance than the way in which the resources of the planet ought to be managed:

"As the negotiations have progressed, the stakes in the process of "who gets what, when and how" have been considerably enlarged and elevated. The issues at UNCLOS III are no longer simply confined to pragmatic questions of State practice and jurisdiction but rather encompass more issues of State's principles. In 1978 one Carter Administration expert correctly asserted that the mandate at UNCLOS III has evolved from the technical design of a regime for deep seabed mining to the "architectonic construction of the contours of a future international legal, economic, and political order". The struggle is no longer for the codification of international law but a competition for the control of future global institutions and commons resources. In this context, it is not surprising that national interests are increasingly defined in ideological terms: centralization versus decentralization; private enterprise versus Authority control; resource policies versus free market principles; unitarianism versus pluralism; and equity versus efficiency."⁵⁸

Quite simply, what were the ends to which the exploration and exploitation of the deep seabed ought to be carried out? Should the regime be maximally efficient in terms of supplying mined minerals to the world market, presumably maximising the financial benefits to be shared out with developing countries? Or should instead the regime aim at a broader range of goals, managing the supply of mined minerals to

57 Schmidt. "Common Heritage or Common Burden?" Clarendon Press, Oxford, 1989, pp. 104-5.

58 Shusterich, "Resource Management and the Oceans: The Political Economy of Deep Seabed Mining." Westview Press, p.109.

the world market among other things so that land-based miners would not be overly harmed by the competition, and operating the system in such a way that developing countries gained benefits in the form of technical expertise, even if the financial benefits were reduced? After all, a strong motivating factor for developing countries was that they wanted to be able to acquire the necessary technology and expertise to take part in the mining themselves, either directly or through the sort of new international entity mentioned above: "Developing countries hoped that their technical and managerial experts could be trained through direct participation in the Enterprise, and this was expected to bring some important 'nonfinancial benefits in terms of industrial and technological spillover and stimulus to the industrial sectors of their economies'"⁵⁹.

Lengthy negotiations carried on over the next decade, intensified by the developing thinking on the NIEO and the NIEO Declaration was explicitly invoked during the 1974 Caracas session of the negotiations, where the licensing authority approach of the developed countries was strongly rejected by the developing countries. On the other side, with every such evidencing of the developing country thinking and hardening of position on the NIEO, the forces ranged against such a world-view grew in their conviction:

"Elizabeth Mann Borgese has been concerned with the connections between the NIEO and UNCLOS III for many years. In the following statement she succinctly points out the relationship between the Law of the Sea and the efforts of the underdeveloped nations to restructure the world political and economic order: "It cannot be stressed enough that the adoption of the [common heritage] principle by the General Assembly as a norm of international law marked the beginning of a revolution in international relations. It must be and it will become the basis of the new international economic order, of which the Law of the Sea convention, whether one likes it or not, is both a forerunner and an essential part". Statements like this give hope to the Group of 77 for a

59 Li, *ibid* note 46 p. 81.

NIEO, and stir confusion and fear among leaders of governments and industry in the developed industrialised nations of the North."⁶⁰

Strong opposition was therefore voiced by those proponents of free-market economies in the developed countries who were not about to sit back and let centrally managed command economy thinking, as they saw it, in the shape for example of the proposed Enterprise, dictate the future of the seabed arrangements.

BOX 2 - These various regimes can be viewed in the light of a comparison with patent offices. The minimalist 'notification' end of the spectrum would perhaps correspond to a patent office which did not carry out any substantive examination of patent applications but merely grants the application if it complies with minimal administrative requirements (slightly confusingly perhaps this is typically known as a 'registration' system in patent terms). Conflicts would have to be resolved later on. Moving along the spectrum, the 'registration' model perhaps looks like a typical developed country patent office where an application has to be examined and to pass the requisite tests (including e.g. examining novelty and inventive step in the light of the 'prior art') before the application can be granted. Further along the spectrum, the equivalents move beyond a traditional patent office and would, for example, have the power to decide which areas of invention would be patentable, in order that they could play a role in guiding R&D efforts. Such possibilities are returned to below in Chapter 12.

An important step toward a compromise was made in 1976. Suggestions were made that the exploitation of the seabed resources might be carried out by both States and their companies and the Enterprise. The difficulty was that, without substantial technical and financial assistance, the Enterprise was not going to be able to carry out any exploitation. Perhaps the crucial intervention came from Henry Kissinger, the US Secretary of State. Visiting the UNCLOS III negotiations in person in

60 Shusterich, *ibid* note 58 p. 110.

September 1976, he indicated that “[T]he United States would be prepared to agree to a means of financing the Enterprise in such a manner that the Enterprise could begin its mining operation either concurrently with the mining of State or private enterprises or within an agreed time-span that was practically concurrent...[T]his would include agreed provision for the transfer of technology so that the existing advantage of certain industrial states would be equalized over a period of time”⁶¹.

The G77 apparently accepted that this compromise was about as good as could be achieved at the time. Although the Enterprise would not be given free rein, and although other entities, including private companies from the developed countries, would be allowed to carry out exploration and exploitation, at least there was the chance that the developing countries, through the instrument of a financially and technically capable Enterprise, would be able to keep pace.

Apart from the promise of financial support and technology transfer, to make this chance of keeping pace as realistic as possible they called for a number of further concessions for the Enterprise. An important one of these was the introduction of the so-called ‘banking system’ whereby, whenever a State or private entity makes an application to begin exploitation of a particular seabed site, another commercially equivalent seabed site has to be identified. The State or private entity would then be authorised to begin activities at only one of those sites, and the other will be reserved to the Enterprise. The intention of this system was clearly to permit the Enterprise to leapfrog to a stage where it could begin exploitation of a viable seabed site directly, without the need for lengthy exploration.

61 75 Dept. State Bull. 395, 398 (remarks of Kissinger at reception for heads of delegations to UNCLOS III, Sept 1, 1976), quoted in “Consensus and Confrontation: the United States and the Law of the Sea Convention” (proceedings of a international symposium held in Hawaii by the Law of the Sea Institute, the Environment and Policy Institute of the East-West Center and the University of Hawaii), Law of the Sea Institute, Hawaii, 1985, pp.263-264.

6.2 The Law of the Sea Convention

To cut an enormously long story short, viz. several more years of complicated negotiations, remarkably, UNCLOS III adopted the Law of the Sea Convention on 30th April 1982 by 130 votes in favour to 4 against (the United States, Israel⁶², Turkey and Venezuela) with 13 abstentions (including the Western European industrialized countries and the Soviet bloc). As discussed in detail below in Chapter 7, American attitudes to the Law of the Sea Convention had changed markedly between the administrations of Presidents Carter and Reagan, leading to this ‘no’ vote.

Nevertheless, the settling of the text of the 1982 Law of the Sea Convention is widely described as a monumental achievement in terms of the codification and development of such an important area of international law. The ‘package deal’ of its seventeen parts deal respectively with the introduction, territorial sea and contiguous zone, straits used for international navigation, archipelagic states, exclusive economic zones, continental shelf, high seas, regime of islands, enclosed or semi-enclosed seas, right of access of land-locked states to and from the sea and freedom of transit, the ‘Area’, protection and preservation of the marine environment, marine scientific research, development and transfer of marine technology, settlement of disputes and general and final provisions⁶³.

62 Israel reportedly voted no out of concern at the standing that might be accorded the P.L.O. in terms of the benefits of the sub-sea mining regime being shared amongst all humanity, including independence movements, as noted above. See e.g. Anand *ibid* note 53 p. 190.

63 There are important general issues relating to the CHM principles which are either touched on or provided for in the Convention but which can only be pointed to here. One example is that of the peaceful use of the oceans (recalling element (iii) of the CHM noted above): Article 301 of the Convention (Article 301 Law of the Sea Convention: “Peaceful uses of the seas. In exercising their rights and performing their duties under this Convention, States Parties shall refrain from any threat or use of force against the territorial integrity or

It was opened for signature on 10th December 1982 in Montego Bay, Jamaica, and on that very day 119 states signed up. Article 308 provided that the entry into force of the Convention was to be one year after the ratification or accession of the sixtieth state, which following the ratification by Guyana on 16 November 1993, followed on 16 November 1994.

Looking back from the perspective of 2002, four particularly successful elements in the 1982 Law of the Sea Convention have been identified⁶⁴:

- (a) The limit of the territorial sea was agreed⁶⁵

As discussed above, a coastal state will exercise sovereignty over

political independence of any State, or in any other manner inconsistent with the principles of international law embodied in the Charter of the United Nations.”) has been supplemented by further agreements of a more particular nature such as the 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Seabed. Further examples are that of environmental management and protection (recalling element (ii) of the CHM as noted above): Provisions under Part V of the Convention (“Exclusive Economic Zones”, discussed below) and Part XII of the Convention (“Protection and Preservation of the Marine Environment”) have been supplemented by agreements such as the 1995 ‘Straddling Stocks’ Agreement. For further see e.g. Churchill & Lowe, *ibid* note 32 Chapters 17, “Military Uses of the Sea”; 14, “Fishing”; and 15, “The prevention of marine pollution and protection of the marine environment”.

64 “Some Reflections on Recent Developments in the Law of the Sea.” Oda, *Yale Journal of International Law*, vol. 27 (2002), pp. 217-221, reprinted as Chapter 31 in “Oda: Fifty Years of the Sea.” Oda.

65 For a comprehensive introduction to the territorial sea provisions of the Law of the Sea Convention see Churchill & Lowe, *ibid* note 32 Chapter 4. Discussion of the additional 12 mile contiguous zone further out from the territorial waters (not discussed here) can be found in Chapter 7.

territorial water in much the same way as it exercises sovereignty over its land territory. This Convention steps forward from the Territorial Sea Convention 1958 in determining a limit of maximum extent. Article 3 provides that: “Every State has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles, measured from baselines determined in accordance with this Convention”. However, as did the 1958 Convention, balancing concerns about freedom of movement with sovereign rights, Part II, Section 3, provides for the right of ‘innocent passage’, under which foreign vessels may pass in the ordinary course of events (“passage shall be continuous and expeditious”) through these territorial waters, subject to an exception if “prejudicial to peace, good order or security” in the relevant coastal State, in which case the right may be suspended by that State. The ability of warships to exercise the right of innocent passage through territorial waters is a long standing question. As the Law of the Sea Convention stands, warships are able to exercise the right of innocent passage through territorial waters so long as the coastal State permits. There is still a tension between some forty States indicating that formal prior permission has to be sought before warships may pass and the naval Powers simply effecting passage without such permission⁶⁶. Submarines and other submerged vessels are required to surface in territorial waters and show their flag (although whether they always abide by this requirement is open to doubt, as in the case of the numerous submarines pursued by the Swedish navy in their territorial waters, one of which, a Russian submarine, ran aground in 1981).

- (b) A definition of the extent of the continental shelf has been agreed⁶⁷

Further to the above-mentioned Truman proclamation in 1945, many other States made similar claims. The extent of the continental shelf is

66 Churchill & Lowe *ibid* note 32 p. 89.

67 For a comprehensive introduction to the continental shelf provisions of the Law of the Sea Convention see Churchill & Lowe, *ibid* note 32 Chapter 8.

of tremendous importance in terms of establishing control over the natural resources, such as oil and gas, located in the continental shelf. Although the concept of the continental shelf had been recognised in the Continental Shelf Convention 1958 and had been recognised as a norm of customary international law in 1969⁶⁸, this Convention refines it and makes it more precise.

Article 77(1) provides that “The coastal State exercises over the continental shelf sovereign rights for the purpose of exploring it and exploiting its natural resources”, article 77(2) that “The rights referred to in paragraph 1 are exclusive in the sense that if the coastal State does not explore the continental shelf or exploit its natural resources, no one may undertake these activities without the express consent of the coastal State”; and article 77(3) that “The rights of the coastal State over the continental shelf do not depend on occupation, effective or notional, or on any express proclamation”. Article 77(4) provides that “The natural resources referred to in this Part consist of the mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to sedentary species, that is to say, organisms which at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil”.

The nature and extent of the continental shelf is provided for in Article 76 in terms of “the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance”. However the precise delineation of the natural prolongation beyond 200 nautical miles is a complex matter and apart from being capped at an absolute maximum of 350 nautical miles out from the limits of the territorial sea, has to be calculated in the light of a number of factors laid down in subsections,

68 Note e.g. North Sea Continental Shelf Cases (ICJ Reports 1969, p.3.).

including the so-called ‘Irish formula’. Given the often important economic consequences of making claims to continental shelf areas, it is no surprise that article 77(8) provides for the establishment of a Commission on the Limits of the Continental Shelf, which Commission makes recommendations to coastal States on the justifiable extent of their continental shelf claims on the basis of the data submitted to it.

It is of great interest for the discussion below in Chapter 11 to note that some fraction of the benefits obtained from exploiting the mineral resources of the continental shelf beyond 200 nautical miles is to be shared. Specifically:

Article 82

Payments and contributions with respect to the exploitation of the continental shelf beyond 200 nautical miles

1. The coastal State shall make payments or contributions in kind in respect of the exploitation of the non-living resources of the continental shelf beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.
2. The payments and contributions shall be made annually with respect to all production at a site after the first five years of production at that site. For the sixth year, the rate of payment or contribution shall be 1 per cent of the value or volume of production at the site. The rate shall increase by 1 per cent for each subsequent year until the twelfth year and shall remain at 7 per cent thereafter. Production does not include resources used in connection with exploitation.
3. A developing State which is a net importer of a mineral resource produced from its continental shelf is exempt from making such payments or contributions in respect of that mineral resource.
4. The payments or contributions shall be made through the Authority, which shall distribute them to States Parties to this Convention, on the basis of equitable sharing criteria, taking into account the interests and needs of developing States, particularly the least developed and the

land-locked among them.

This ‘Authority’ is the International Seabed Authority, as discussed below in section 6.3.

(c) The concept of the Exclusive Economic Zone (EEZ) was agreed⁶⁹.

Rights under an EEZ are different from those associated with territorial waters. A lesser degree of control is provided under the EEZ, with sovereign rights accorded over only a limited set of matters. The concept of an EEZ was originally proposed by Kenya in an Asian-African Legal Consultative Committee meeting in 1971 and was thereafter strongly supported by developing countries. Due to the large number of States claiming EEZs subsequently⁷⁰ it is likely that the concept became a norm of customary international law before its reflection in the 1982 Law of the Sea Convention or its explicit recognition as such a norm in 1982 and 1985⁷¹.

Article 56 (1)(a) provides that, “[In the exclusive economic zone, the Coastal State has] sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil, and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds”. Article 56(1)(b) further provides that, “[In the exclusive economic zone, the Coastal State has...jurisdiction as provided for in the relevant provisions of this Convention with regard to] marine scientific research”. Article 57

69 For a comprehensive introduction to the Exclusive Economic Zone provisions of the Law of the Sea Convention see Churchill & Lowe, *ibid* note 32 Chapter 9.

70 See Churchill & Lowe *ibid* note 32 Appendix 1 for an up to date list of such claims.

71 Note e.g. *Tunisia v. Libya Continental Shelf* (ICJ Reports 1982, p.74) and *Libya v. Malta* (ICJ Reports 1985, p.33) cases.

provides that the “exclusive economic zone shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured”. Within the EEZ, in respect of activities other than subjected to the control of the coastal state, the freedoms of the high seas, for example the freedom of navigation or overflight or the freedom to lay submarine cables and pipelines, are to be generally enjoyed.

A coastal State is therefore provided with two different possible grounds on which to exercise control over off-shore natural resources. Rights over the continental shelf permit control over seabed and subsoil natural resources but only including sedentary living resources on the seabed. Rights under an EEZ permit control over all natural resources in that region, whether in the waters of the EEZ, such as fish stocks, on the seabed or in the subsoil. However, rights to the continental shelf exist without the need to effect a claim and may extend out beyond the 200-mile limit, whereas rights under an EEZ which can only extend to the 200-mile limit and have to be claimed.

The importance of the creation of the EEZ is reflected in the fact that:

“The universal establishment of 200-mile EEZs would embrace about thirty-six per cent of the total area of the sea. Although this is a relatively small proportion, the area falling within 200-mile limits contains over ninety per cent of all presently commercially exploitable fish stocks, about eighty-seven percent of the world’s known submarine oil deposits, and about ten percent of manganese nodules. Furthermore a large proportion of marine scientific research takes place within 200 miles of the coast, and virtually all the major shipping routes of the world pass through the EEZs of States other than those in which the ports of departure and destination are situated.”⁷²

However, an appraisal of the impact of the EEZ does not indicate that it brought as many gains for developing countries as had been hoped.

72 Churchill & Lowe, *ibid* note 32 p. 162.

Although the promise of a greater degree of national control over natural resources was a powerful one for developing countries, the simple fact that most of them do not possess extensive coastlines (particularly extensive coastlines rich in resources) means that, fairly obviously, they were unlikely to benefit. The top ten leading EEZ beneficiaries, in terms of oil, gas and fish resources, are in fact the US, France, Indonesia, New Zealand, Australia, Russia, Japan, Brazil, Canada and Mexico⁷³. To make matters worse for many of these developing States, a primary impact of the EEZ (and continental shelf) regime is to take this huge chunk of oil, gas and fish resources out from what might previously have been regarded as an ‘international zone’, that might have come under the CHM regime, and place them under purely national control. This point will be returned to below.

(d) The free passage of military vessels and aircraft in archipelagic waters and straits was agreed⁷⁴.

As noted above, it was agreed that territorial waters should extend out to 12 miles and that, in theory, passage through those waters should be subject to the permission of the coastal state. The problem of the passage of international commercial and especially military vessels through international straits which were sufficiently narrow (i.e. 24 nautical miles or less at the narrowest extent, which amounts to some 135 straits of international importance) that they could in effect be closed off altogether at the discretion of the coastal States bordering the straits was, as also noted above, a pressing one for the major maritime powers.

A solution was found in the shape of a new right to ‘transit passage’ (Article 37). Unlike the right of ‘innocent passage’ above, the right to

73 Churchill & Lowe, *ibid* note 32 p. 162

74 For a comprehensive introduction to the straits transit provisions of the Law of the Sea Convention see Churchill & Lowe, *ibid* note 32 Chapter 5. Discussion of the concept of archipelagic sea lane passage (not discussed here) can be found in Chapter 6.

transit passage is largely an unimpeded one i.e. it is not subject to the discretion of the coastal state(s), although it is not as unfettered as the freedom of the high seas. It is therefore of great importance for the naval Powers, a point which will be returned to below in Chapter 7.

Overall, it seems that the compromise reached and reflected in the 1982 Law of the Sea Convention in respect of these elements above has been successful: “All in all, the balance struck by UNCLOS III between the high seas and the zones of national jurisdiction appears to be holding”⁷⁵. Something which is conspicuously absent from this list of particularly successful elements of the Law of the Sea Convention however is any mention of deep seabed mining. This is not to say that the issue was unaddressed.

6.3 The deep seabed

In fact a very detailed deep seabed mining regime was provided for in Part XI of the 1982 Law of the Sea Convention, reflecting many of the compromises discussed above. As will be discussed in detail below in Chapter 8 however, this Part XI was extensively changed later on: account therefore needs to be taken of the fact that certain provisions of the original Part XI were either amended or deleted. One overarching matter is that, given that there was perceived to be a good deal of revolutionary thinking associated with this Part of the Convention, negotiators had been pressed by a variety of considerations on a number of different issues to spell out the operation of the system in great detail, which as it turned out was a mistake.

The “Area” is defined as being “seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction” (Article 1). “Resources” are defined as being “all solid, liquid or gaseous mineral resources in situ in the Area at or beneath the seabed, including poly-metallic nodules” (Article 133(a)).

75 At least as of 1999. Churchill & Lowe, *ibid* note 32 p.220.

6.3.1 The Common Heritage of Mankind

As a first and foremost element of Part XI, it is provided that the resources of the Area are to be treated as the Common Heritage of Mankind and the exploitation of those resources is to be carried out for the benefit of all mankind:

Art. 136

Common Heritage of Mankind

The Area and its resources are the common heritage of mankind.

Art. 137

Legal status of the Area and its resources

1. No State shall claim or exercise sovereignty or sovereign rights over any part of the Area or its resources, nor shall any State or natural or juridical person appropriate any part thereof. No such claim or exercise of sovereignty or sovereign rights shall be recognized.
2. All rights in the resources of the Area are vested in mankind as a whole, on behalf of which the Authority shall act. These resources are not subject to alienation. The minerals recovered from the Area, however, may only be alienated in accordance with this Part and the rules, regulations and procedures of the Authority.
3. No state or natural or juridical person shall claim, acquire or exercise rights with respect to the minerals recovered from the Area except in accordance with this Part. Otherwise, no such claim, acquisition or exercise of such rights shall be recognised.

Art. 140

Benefit of mankind

1. Activities in the Area shall, as specifically provided for in this Part, be carried out for the benefit of mankind as a whole, irrespective of the geographical location of States, whether coastal or land-locked, and taking into particular consideration the interests and needs of developing States and of peoples who have not attained full independence or other self-governing

status recognized by the United Nations in accordance with General Assembly resolution 1514 (XV) and other relevant General Assembly resolutions.

2. The Authority shall provide for the equitable sharing of financial and other economic benefits derived from activities in the Area through any appropriate mechanism, on a non-discriminatory basis, in accordance with article 160, paragraph 2(f)(i).

According to the CHM principle, activities in the area are to be carried out for the 'benefit of mankind as a whole', a notion which differs in crucial respects from, for example, 'all States'. It is clear that the interests of all States are to be considered, with special attention being paid to developing States. However this provision goes further and calls for special attention to be paid also to "peoples who have not attained full independence or other self-governing status...". This, as may be imagined, was a problematic one and raised a number of difficult political issues. In the larger sense, it is also perhaps reasonable to take the view that 'mankind as a whole' might truly need to take into account all of mankind i.e. not just those alive today but generations to come. Hence concerns over matters such as environmental sustainability and 'intergenerational equity' need to be taken into account.

What some countries view as entirely justifiable 'equitable sharing' of benefits may be viewed by other countries of course as 'redistributionist' thinking tantamount to 'international taxation', as will be noted in Chapters 7 and 9.

Related matters such as the peaceful uses of the seas in general and the protection of the marine environment in the Area are provided for in Articles 301 and 145 of the Convention respectively, but will not be discussed further here⁷⁶.

⁷⁶ See note 63 above.

6.3.2 The International Seabed Authority

An International Seabed Authority is established under Section 4 of Part XI. In much the same way as with the discussion of EEZs above, it should be appreciated that the ISA does not ‘control’ the seabed in its entirety but rather it administers the regime for mineral exploration and exploitation created under the Law of the Sea Convention. Other matters, such as the high seas freedom of laying submarine cables across the deep seabed, are not within its purview⁷⁷. The ISA is seated in Jamaica. All States Parties to the Convention are ipso facto members of the Authority. The "Authority is based on the principle of the sovereign equality of all its members", although the gap between equality as a

77 Having regard to this though Borgese suggests the following: “On the continental shelf, the Law of the Sea Convention authorizes coastal States to regulate the routing, laying and the maintenance of the cables, and the harmonization of these activities with other uses of national ocean space; and regimes are emerging in many States and also, for instance, in the European Union as a whole. These also include fiscal regimes, the payment of fees for licences, property taxes for cable head-ends, etc. The Authority, at present, has no such powers, but clearly, it should have them. For the safety of the cables themselves, the Authority must ensure the avoidance of conflict of uses of the area, it must agree to the routing and know exactly where these cables are and be informed about their maintenance. In return for these regulatory activities the Authority would be entitled to some payments. A minimal tax, either in the form of a Tobin tax, let us say of 0.001 percent on the trillion dollar annual business transacted through the cables, crossing the Area which is the Common Heritage of Mankind would not only revitalize the Authority but change the whole picture of international development cooperation and constitute a first positive answer to the insistent call ‘by the World Bank, the United Nations system and the developing countries’ for ‘innovative ways’ of generating ‘new and additional funding’ to enable developing countries to implement all the Conventions, Agreements and programmes emanating from the Earth Summit of 1992.” (Caird Medal Address 1999).

matter of law or principle and equality as a matter of fact is immediately apparent in terms of voting arrangements as regards matters of importance.

Section 4, Subsection B of Part XI provides for “The Assembly”. The Assembly is the plenary body of the ISA, consisting of all members of the Authority, each member of the Authority having a single vote. Broadly speaking, the Assembly is intended to establish the general policies for the operation of the Authority.

Section 4, Subsection C of Part XI provides for “The Council”, which is where the main locus of decision making power is clearly intended to reside. The Council is the executive organ of the Authority and is intended to deal with for the specific policies and activities pursued by the Authority. An Economic Planning Commission and a Legal and Technical Commission were established as organs of the Council.

The issue of the degree of control that individual countries or groups of like minded countries would be able to exercise over the Council, and more generally the Authority as a whole, was obviously one of the crucial questions in the lengthy negotiations.

The developed countries were wary of binding themselves into a system which could be disadvantageous for their industries in the event that they lost control over the decision making processes of the ISA. As perhaps an extreme example, in the United States it was reported that: "While addressing a Senate Committee in 1977, Northcutt Ely, counsel to Deepsea Ventures, referred to the ISA as an 'evil' and a 'giant supergovernment composed of a Council and an Assembly of 155 nations'⁷⁸. Other, perhaps more measured, views in the developed countries looked instead to being able to exercise the appropriate degree of voting control, weighted if necessary, over those decisions which were regarded as being most important, or being able to group together with their like-minded states to do so. Naturally, by contrast, developing

78 Schmidt, *ibid* note 57 p. 176.

countries wanted to be able to design the decision making mechanisms of the ISA in such a way as it best favoured their interests. By their force of numbers a straightforwardly democratic one-member, one-vote decision making arrangement would be attractive.

The compromise that was originally struck was complex (and subject to later amendment). In outline though it was as follows.

The Council consists of 36 members, elected by and from the members of the Assembly. In an effort to achieve a balanced representation of interests on the Council, various fractions of the Council's membership were required to be elected from among certain constituencies, defined in terms of consumption of, investment in and export of the relevant minerals, special interests (for example land-locked developing countries) and the need for an equitable overall geographical balance. The voting system established for the Council is complicated, notwithstanding the fact that each member of Council has a single vote, since the majorities that are needed to take a decision vary according to the sensitivity of the subject matter under consideration, ranging from a simple majority, through two-thirds and three-quarters majorities to consensus (defined as "the absence of any formal objection").

One of the most strange elements of the original compromise was that the Soviet bloc was guaranteed seats on the Council, by name, under this arrangement, whereas the United States was not. Instead of explicitly mentioning the United States, the threshold tests applied were thought to be sufficient to guarantee it a place in all but name⁷⁹. Although it seems that this was believed by US Ambassador Richardson to be acceptable to the Carter Administration, there were many in Washington who took a different view: "Most Senators and

79 It is reported that it was the African bloc who were not prepared to accept a United States seat by name: "the unchallenged purpose of the latter amendment [guaranteeing a seat for the world's largest consumer of seabed minerals] was to guarantee the United States a seat, short of expressly designating it, which would have been unacceptable to the Africans", Schmidt, *ibid* note 57 p. 186.

Congressmen deplored the absence of a provision which specifically guaranteed the United States a permanent Council seat, and many termed this 'the single most objectionable feature of Part XI'⁸⁰.

Section 4, Subsection D of Part XI provides for "The Secretariat".

The funding of the ISA was another subject of much contention. Until such time as seabed mining activities were sufficiently intense for the ISA to be self-financing from, for example, mining fees (see below) the States parties to the Convention were to pay contributions to the budget in accordance with (Articles 171(a), 160) the scale used to determine UN contributions. The problem was that the budget was to be settled by the Council and Assembly and given that developed States were not satisfied with how much influence that they had in these fora, the problem that this would lead to unknown levels of budgetary contributions (which they would be paying the largest shares of) compounded the problem.

Section 4, Subsection E of Part XI provides for "The Enterprise", as discussed in the following section.

Section 5 of Part XI provides for a Seabed Disputes Chamber of the International Tribunal for the Law of the Sea.

6.3.3 Activities in the Area: Exploration and Exploitation of Seabed Mineral Resources

The ends to which activities in the Area are to take place is spelled out as follows:

Art. 150

Policies relating to activities in the Area

Activities in the Area shall, as specifically provided for in this Part, be carried out in such a manner as to foster healthy development of the

80 Schmidt, *ibid* note 57 p. 185.

world economy and balanced growth of international trade, and to promote international cooperation for the over-all development of all countries, especially developing States, and with a view to the following:

- (a) the development of the resources of the Area;
- (b) orderly, safe and rational management of the resources of the Area, including the efficient conduct of activities in the Area and, in accordance with sound principles of conservation, the avoidance of unnecessary waste;
- (c) the expansion of opportunities for participation in such activities consistent in particular with articles 144 and 148;
- (d) participation in revenues by the Authority and the transfer of technology to the Enterprise and developing States as provided for in this Convention;
- (e) increased availability of the minerals derived from the Area as needed in conjunction with minerals derived from other sources, to ensure supplies to consumers of such materials;
- (f) the promotion of just and stable prices remunerative to producers and fair to consumers for minerals derived both from the Area and from other sources, and the promotion of long term equilibrium between supply and demand;
- (g) the enhancement of opportunities for all States Parties, irrespective of their social and economic systems or geographical location, to participate in the development of the resources of the Area and the prevention of monopolization of activities in the Area;
- (h) the protection of developing countries from adverse effects on their economies or on their export earnings resulting from a reduction in the price of an affected mineral, or in the volume of exports of that mineral, to the extent that such reduction is caused by activities in the Area, as provided in article 151;
- (i) the development of the common heritage for the benefit of mankind as a whole; and
- (j) conditions of access to markets for the imports of minerals produced from the resources of the Area and for imports of commodities produced from such minerals shall not be more

favourable than the most favourable applied to imports from other sources.

BOX 3 - It is interesting to make a comparison between the rights a coastal State is provided with under the Convention and the rights that a patent holder is provided with under the WTO/TRIPS Agreement, e.g. the rights over territorial waters, the EEZ and the continental shelf may be compared with patents of, in effect, perpetual term. A further interesting comparison can therefore be made between this notion of 'innocent passage' in territorial waters and the notion of exceptions to patent rights. Territorial waters provide exclusive rights to the coastal state. In the ordinary course of events a vessel from a third State can be excluded from these waters if the coastal state denies consent. This is similar to a patent holder denying consent to a third party to practice the patented invention. Where those territorial waters would close off an international strait this would cause an unacceptable navigational problem for the major naval Powers of the world, if passage depended on the consent of the coastal State(s). Instead the unfettered right of transit passage was agreed, as a limited exception to the territorial waters rights. This is similar to a third party wanting to be able to carry out certain acts, notwithstanding the presence of a patent, without the permission of the patent holder, i.e. the exceptions to patent rights provided for under Article 30 of the WTO/TRIPS Agreement. In the recent discussions over the WTO Doha Declaration on TRIPS and Public Health and in particular the discussions over paragraph 6 of that Declaration, proposals were made for creation of an Article 30 based exception that would have allowed production of pharmaceutical products for export to meet public health needs in third countries. Instead the discussions turned to the compulsory licensing measures of Article 31 WTO/TRIPS. The comparison between an unfettered Article 30 WTO/TRIPS exception and the unfettered Article 37 Convention transit right is therefore an interesting one (noting the "Foreign Vessels" exception to patent rights under 5ter of the Paris Convention). If the US Navy had been offered a compromise on a form of 'compulsory' passage right which couldn't be denied so long as the relevant grounds and procedures had been complied with, would that have been sufficient? It seems unlikely.

It is apparent that the views of the developed country proponents of unfettered free-markets did not carry the day. The focus of these guiding principles for activity in the Area points rather to stable management in terms of economic and environmental effects, rather than for example, a maximally efficient extraction and exploitation regime. Article 151 went further and established specific production policies along the lines of these general principles including a seabed mining Nickel production ceiling, the purpose of which was to reduce the adverse impact on land-based producers of Nickel through limiting the proportion of world growth in Nickel demand that could be satisfied by seabed mining sources.

Crucially, as far as exploration and exploitation is concerned, the compromise suggestion of the ‘parallel system’ is adopted, that is to say that States or private entities will be carrying out their activities alongside the ISA’s own Enterprise:

Art. 153

System of exploration and exploitation

- (1) Activities in the Area shall be organized, carried out and controlled by the Authority on behalf of mankind as a whole in accordance with this article as well as other relevant provisions of this Part and the relevant Annexes, and the rules, regulations and procedures of the Authority.
- (2) Activities in the Area shall be carried out as prescribed in paragraph 3:
 - (a) by the Enterprise;
 - (b) in association with the Authority by States Parties, or state enterprises or natural or juridical persons which possess the nationality of States Parties or are effectively controlled by them or their nationals, when sponsored by such States, or any group of the foregoing which meets the requirements provided for in this Part and in Annex III.
- (3) Activities in the Area shall be carried out in accordance with a formal written plan of work drawn up in accordance with

Annex III and approved by the Council after review by the Legal and Technical Commission. In the case of activities carried out as authorized by the Authority by the entities specified in paragraph 2(b), the plan of work shall, in accordance with Annex III, article 3, be in the form of a contract. Such contracts may provide for joint arrangements in accordance with Annex III, article 11.

- (4) [...]
- (5) A contract under paragraph 3 shall provide for security of tenure. Accordingly, the contract shall not be revised, suspended or terminated except in accordance with Annex III, articles 18 and 19.

Much of the operational detail for the parallel system is contained in Annexes III and IV to the Convention. However, the general scheme of operation for a private sector mining company was envisaged to be that the company would carry out prospecting and exploration stages, followed by the submission of a proposed work plan to the ISA. If approved, the ISA would then issue a contract for the company to begin exploitation. The provision of data to the Authority is dealt with in Article 14 of Annex III in the following terms:

Article 14

Transfer of data

1. The operator shall transfer to the Authority, in accordance with its rules, regulations and procedures and the terms and conditions of the plan of work, at time intervals determined by the Authority all data which are both necessary for and relevant to the effective exercise of the powers and functions of the principal organs of the Authority in respect of the area covered by the plan of work.
2. Transferred data in respect of the area covered by the plan of work, deemed proprietary, may only be used for the purposes set forth in this article. Data necessary for the formulation by the Authority of rules, regulations and procedures concerning

protection of the marine environment and safety, other than equipment design data, shall not be deemed proprietary.

3. Data transferred to the Authority by prospectors, applicants for contracts or contractors, deemed proprietary, shall not be disclosed by the Authority to the Enterprise or to anyone external to the Authority, but data on the reserved areas may be disclosed to the Enterprise. Such data transferred by such persons to the Enterprise shall not be disclosed by the Enterprise to the Authority or to anyone external to the Authority.

The financial terms that such contracts were to contain was stipulated to include a fixed application fee of US\$500,000, an annual fixed fee payable on entry into force of the contract of US\$1,000,000 and payments thereafter to the Authority based on either a production charge ("a percentage of the market value of the processed metals produced from the polymetallic nodules recovered from the area covered by the contract", rising from 5% to 12% after year ten of commercial production) or a combination of production charge and a share of net proceeds (the former being set at 2% rising to 4% in the ordinary course of events after year ten and the latter set according to a threshold criterion on return on investment (ROI), ranging from some 35% for a 0-10% ROI slice in the initial period of production to some 70% for >20% ROI slice in the second period of production).

The Enterprise was broadly speaking intended to be the 'business end' of the Authority and was defined as being "the organ of the Authority which shall carry out activities in the Area directly...as well as the transporting, processing and marketing of minerals recovered from the Area", based at the same place as the seat of the Authority i.e. Jamaica. At least for an initial period of ten years both States and the activities of private sector firms were supposed to support the launch of the Enterprise. The Enterprise was to be provided with such financial, technical and other assistance as to enable it to carry out the exploitation of the deep seabed resources on something like an even par with

developed States and their private sector entities.

In particular, under the 'banking' system noted above, the Enterprise would be provided with the location of one or more suitable mining sites. Furthermore, as a distinct matter from the funding of the ISA in general, States parties to the Law of the Sea Convention were obliged to finance the Enterprise so that it could carry out mining and processing activities in relation to at least one such site:

The Enterprise shall be provided with the funds necessary to explore and exploit one mine site, and to transport, process and market the minerals recovered therefrom and the nickel, copper, cobalt and manganese obtained, and to meet its initial administrative expenses. The amount of the said funds, and the criteria and factors for its adjustment shall be included in the Preparatory Commission in the draft rules, regulations and procedures of the Authority⁸¹.

6.3.4 Technology Transfer

Technical assistance was to include technology transfer. The Law of Sea Convention contains both general and specific provisions on technology transfer. For example, Part XIV of the Convention provides for "Development and Transfer of Marine Technology". The provisions of this part apply to marine technology in general but Articles 273 and 274 provide for the applications of these general principles to the case of the deep seabed:

Article 273
Co-operation with international organizations and the Authority

States shall co-operate actively with competent international organizations and the Authority to encourage and facilitate the transfer to developing States, their nationals and the Enterprise of skills and

⁸¹ Art. 11, Annex IV.

marine technology with regard to activities in the Area.

Article 274

Objectives of the Authority

Subject to all legitimate interests including, *inter alia*, the rights and duties of holders, suppliers and recipients of technology, the Authority, with regard to activities in the Area, shall ensure that:

- (a) on the basis of the principle of equitable geographical distribution, nationals of developing States, whether coastal, land-locked or geographically disadvantaged, shall be taken on for the purposes of training as members of the managerial, research and technical staff constituted for its undertakings;
- (b) the technical documentation on the relevant equipment, machinery, devices and processes is made available to all States, in particular developing States which may need and request technical assistance in this field;
- (c) adequate provision is made by the Authority to facilitate the acquisition of technical assistance in the field of marine technology by States which may need and request it, in particular developing States, and the acquisition by their nationals of the necessary skills and know-how, including professional training;
- (d) States which may need and request technical assistance in this field, in particular developing States, are assisted in the acquisition of necessary equipment, processes, plant and other technical know-how through any financial arrangements provided for in this Convention.

More particularly, however, Part XI of the Convention, on the deep seabed proper, also contains technology transfer provisions. Some of these are also couched in general principles terms:

Art 144.

Transfer of technology

1. The Authority shall take measures in accordance with this Convention:
 - (a) to acquire technology and scientific knowledge relating to activities in the Area; and
 - (b) to promote and encourage the transfer to developing States of such technology and scientific knowledge so that all States Parties can benefit therefrom.
2. To this end the Authority and States Parties shall cooperate in promoting the transfer of technology and scientific knowledge relating to activities in the Area so that the Enterprise and all States Parties may benefit therefrom. In particular they shall initiate and promote:
 - (a) programmes for the transfer of technology to the Enterprise and to developing States with regard to activities in the Area, including, *inter alia*, facilitating the access of the Enterprise and of developing States to the relevant technology, under fair and reasonable terms and conditions;
 - (b) measures directed towards the advancement of the technology of the Enterprise and the domestic technology of developing States, particularly by providing opportunities to personnel from the Enterprise and from developing States for training in marine science and technology and for their full participation in activities in the Area.

The general tasks of the Authority under Article 144 (1) (a) and (b) to acquire technology and scientific knowledge and to promote and encourage the transfer of that technology and knowledge to developing States are conditioned by reference to Article 144 (2). This latter subsection makes reference to facilitating access to the relevant technology “under fair and reasonable terms and conditions”. This

points up an important distinction. As far as the acquisition of scientific knowledge and technology which is in the public domain is concerned, there should be no problem with the Authority carrying out its tasks in Article 144 (1). However, where technology that is not in the public domain is concerned, it is clear that the task will not be so easy to carry out. Given that this technology will be subject to intellectual property protection, and given that these general principles provisions (i.e. Part XIV and Article 144 of the Convention) have no mandatory powers character, that is to say they tend to call only for the encouragement, facilitation and promotion of technology transfer, it would seem that the Authority may be limited to purchasing such technology on the open market. Such an outcome would be one that the developed States would be happy with, but for the developing States it would move them no further forward with regard to the acquisition of technology from, for example, MNCs that were unwilling to sell or disclose their secrets, as discussed above.

This is why the buttressing of these general provisions by the specific provisions of Article 5 of Annex III of the Convention, vis-à-vis technology transfer to the Enterprise and developing countries more generally was so important for the developing States and so problematic for the developed States:

Art. 5:

Transfer of Technology

1. When submitting a plan of work, every applicant shall make available to the Authority a general description of the equipment and methods to be used in carrying out activities in the Area, and other relevant non-proprietary information about the characteristics of such technology and information as to where such technology is available.
2. Every operator shall inform the Authority of revisions in the description and information made available pursuant to paragraph 1 whenever a substantial technological change or innovation is introduced.
3. Every contract for carrying out activities in the Area shall

contain the following undertakings by the contractor:

- (a) to make available to the Enterprise on fair and reasonable commercial terms and conditions, whenever the Authority so requests, the technology which he uses in carrying out activities in the Area under the contract, which the contractor is legally entitled to transfer. This shall be done by means of licences or other appropriate arrangements which the contractor shall negotiate with the Enterprise and which shall be set forth in a specific agreement supplementary to the contract. This undertaking may be invoked only if the Enterprise finds that it is unable to obtain the same or equally efficient and useful technology on the open market on fair and reasonable commercial terms and conditions;
- (b) to obtain a written assurance from the owner of any technology used in carrying out activities in the Area under the contract, which is not generally available on the open market and which is not covered by subparagraph (a), that the owner will, whenever the Authority so requests, make that technology available to the Enterprise under licence or other appropriate arrangements and on fair and reasonable commercial terms and conditions, to the same extent as made available to the contractor. If this assurance is not obtained, the technology in question shall not be used by the contractor in carrying out activities in the Area;
- (c) to acquire from the owner by means of an enforceable contract, upon the request of the Enterprise and if it is possible to do so without substantial cost to the contractor, the legal right to transfer to the Enterprise any technology used by the contractor, in carrying out activities in the Area under the contract, which the contractor is otherwise not legally entitled to transfer and which is not generally available on the open market. In cases where there is a substantial corporate

relationship between the contractor and the owner of the technology, the closeness of this relationship and the degree of control or influence shall be relevant to the determination whether all feasible measures have been taken to acquire such a right. In cases where the contractor exercises effective control over the owner, failure to acquire from the owner the legal right shall be considered relevant to the contractor's qualification for any subsequent application for approval of a plan of work;

- (d) to facilitate, upon the request of the Enterprise, the acquisition by the Enterprise of any technology covered by subparagraph (b), under licence or other appropriate arrangements and on fair and reasonable commercial terms and conditions, if the Enterprise decides to negotiate directly with the owner of the technology;
 - (e) to take the same measures as are prescribed in subparagraphs (a), (b), (c) and (d) for the benefit of a developing State or group of
 - (f) developing States [...]
4. Disputes concerning undertakings required by paragraph 3, like other provisions of the contracts, shall be subject to compulsory settlement in accordance with Part XI and, in cases of violation of these undertakings, suspension or termination of the contract or monetary penalties may be ordered in accordance with article 18 of this Annex. Disputes as to whether offers made by the contractor are within the range of fair and reasonable commercial terms and conditions may be submitted by either party to binding commercial arbitration in accordance with the UNICTRAL Arbitration Rules or such other arbitration rules as may be prescribed in the rules, regulations and procedures of the Authority. If the finding is that the offer made by the contractor is not within the range of fair and reasonable commercial terms and conditions, the contractor shall be given 45 days to revise his offer to bring it within that range before

the Authority takes any action in accordance with article 18 of the Annex.

- 5. If the Enterprise is unable to obtain on fair and reasonable commercial terms and conditions appropriate technology to enable it to commence in a timely manner the recovery and processing of minerals from the Area, either the Council or the Assembly may convene a group of States Parties composed of those which are engaged in activities in the Area, those which have sponsored entities which are engaged in activities in the Area and other States Parties having access to such technology. This group shall consult together and shall take effective measures to ensure that such technology is made available to the Enterprise on fair and reasonable commercial terms and conditions. Each such State party shall take all feasible measures to this end within its own legal system.
- 6. In the case of joint ventures with the Enterprise, transfer of technology will be in accordance with the terms of the joint venture agreement.
- 7. The undertakings required by paragraph 3 shall be included in each contract for the carrying out of activities in the Area until 10 years after the commencement of commercial production by the Enterprise, and may be invoked during that period.
- 8. For the purposes of this article, "technology" means the specialised equipment and technical know-how, including manuals, designs, operating instructions, training and technical advice and assistance, necessary to assemble, maintain and operate a viable system and the legal right to use these items for that purpose on a non-exclusive basis.

There are a number of crucially important aspects to the provisions in this Article.

The term 'technology' is given a wide definition, including know-how (Art 5 (8)). A contractor has to keep the Authority generally informed of the technology that it is using to carry out activities in the Area (Art 5 (1), (2)). If the Enterprise is unable to acquire technology equivalent to

that being used by a contractor on the open market, the contractor is obliged to transfer that technology to the Enterprise on fair and reasonable commercial terms and conditions (Art 5(3)(a)). If the contractor is not in a position to do this as, for example, the contractor is not the owner of the technology, the contractor must provide a written assurance that the owner of the technology will make that technology available to the Enterprise on fair and reasonable commercial terms and conditions, at least to the same extent that it has been made available to the contractor (Art 5(3)(b)). Failing such an assurance, that technology cannot be used by the contractor to carry out operations in the Area (Art 5(3)(b)). Variant situations are also provided for (Art 5(3)(c), (d)). The same obligations extend to transferring technology to developing States and groups of developing States, as well as the Enterprise (Art 5(3)(e)). This provision was known as the ‘Brazilian clause’ after the diplomat Sergio Thompson Flores who introduced it. Compulsory dispute settlement was provided for (Art 5(4)). Back-up powers were provided to call on States to ensure that technology transfer happened if the Enterprise was not able to achieve this by itself (Art 5(5)).

These specific provisions were clearly significantly more powerful than the ‘general provisions’ noted above. Even though only, in effect, as a safeguard for the Enterprise, a contractor could be forced into transferring technology in order to be able to carry out deep seabed mining activities⁸². It will be recalled that it was the US which suggested the ‘parallel system’ compromise, which required this technical

82 It is interesting to consider the notion of a sufficient ‘nexus’ between needing to provide proprietary data or technology and being able to serve a given market. If serving the market is nevertheless sufficiently attractive, taking into account all the relevant surrounding factors, then it might be expected that the transfer would be effected. The mandatory transfer of seabed mining technology under Art 5 of Annex III of the Convention would have been one example. Another pertinent example is perhaps the treatment of the test data relating to pharmaceutical products that must be submitted to regulatory agencies before clearance is given to make those products available on the market. See e.g. Art 39.3 WTO/TRIPS Agreement.

assistance to the Enterprise. Some level of comfort was provided by the qualification of ‘terms and conditions’ as being ‘fair and reasonable’ from a ‘commercial’ perspective and indeed on this basis, a list of acceptable examples had been provided in the negotiations by the US delegation⁸³. The crucial factor of remuneration was dealt with in the first such term and called for the establishment of a “price - in specie, in kind or in other appropriate form - which provides a fair return to the owner for the transfer of technology and any related services provided and which may be based on factors such as the cost of developing the technology (including direct research and development costs, overhead and other indirect costs, and taking into account the cost of the total development effort including unsuccessful projects), the risk to which the owner was exposed in developing the technology, the uniqueness of the technology, the profit or benefits to be derived or passed on by the Enterprise and a reasonable profit to the owner”.

Another bounding factor was the fact that these technology transfer obligations were limited in time to ten years following the commencement of commercial production by the Enterprise, in order to ensure that the Enterprise was effectively up and running. This was felt to be particularly important to highlight the exceptional nature of the provisions: “The time limit is important for the industrialized countries because it underlines that mandatory TOT is an exception, exclusively intended to make the Enterprise operational as part of the compromise on the parallel system. This reduces the potential precedent setting effects for other international negotiations relating to transfer of advanced technology to developing countries”⁸⁴. Yet another ‘get out’ from the compulsory provisions was that if the Enterprise was to operate under a Joint Venture agreement, the terms of that agreement would govern any technology transfer arrangements instead.

Nevertheless, despite a degree of compromise having been reached, issues such as forbidding the use of technologies which the owner was

83 Reproduced as Appendix II in Li, *ibid* note 46 pp. 287-288.

84 Li, *ibid* note 46 p. 204

not willing to transfer to the Enterprise or developing States would clearly remain an a problem from the developed State perspective of maximising resource exploitation efficiency.

6.3.5 Marine Research

In much the same way as with technology transfer, the Law of the Sea Convention provides for both general principles for marine scientific research (including Part XIII of the Convention, “Marine Scientific Research”) as well as more specific principles relating to marine scientific research relating to the deep seabed:

Article 87

Freedom of the high seas

1. The high seas are open to all States, whether coastal or land-locked.

Freedom of the high seas is exercised under the conditions laid down by this Convention and by other rules of international law. It comprises, *inter alia*, both for coastal and land-locked States:

[...]

(f) freedom of scientific research, subject to Parts VI and XIII.

Article 256

Marine scientific research in the Area

All States, irrespective of their geographical location, and competent international organizations have the right, in conformity with the provisions of Part XI, to conduct marine scientific research in the Area.

Article 143

Marine scientific research

1. Marine scientific research in the Area shall be carried out exclusively

for peaceful purposes and for the benefit of mankind as a whole in accordance with Part XIII.

2. The Authority may carry out marine scientific research concerning the Area and its resources, and may enter into contracts for that purpose. The Authority shall promote and encourage the conduct of marine scientific research in the Area, and shall coordinate and disseminate the results of such research and analysis when available.

3. States Parties may carry out marine scientific research in the Area.

States Parties shall promote international cooperation in marine scientific research in the Area by:

(a) participating in international programmes and encouraging cooperation in marine scientific research by personnel of different countries and of the Authority;

(b) ensuring that programmes are developed through the Authority or other international organizations as appropriate for the benefit of developing States and technologically less developed States with a view to:

(i) strengthening their research capabilities;

(ii) training their personnel and the personnel of the Authority in the techniques and applications of research;

(iii) fostering the employment of their qualified personnel in research in the Area;

(c) effectively disseminating the results of research and analysis when available, through the Authority or other international channels when appropriate.

What is considerably more problematic from an ‘open’ international

science point of view is that this relatively free approach for the high seas and the deep seabed does not apply in some of the areas of the ocean of most direct scientific interest. Instead, consent is required to a greater or lesser degree from the coastal state depending on whether the research is to be carried out in territorial waters (Art 245) or in the areas of the exclusive economic zone or continental shelf (Art 246).

6.3.6. The 1982 Law of the Sea Convention as a Package Deal

In terms of an appraisal of the 1982 Law of the Sea Convention as it originally stood, it is clear that it reflects elements of the point of view of both developed and developing countries.

It is perhaps the legal and political innovation of the Common Heritage of Mankind principle, as applied to the area of the deep seabed beyond any national jurisdiction, that was the real conceptual innovation. The developing countries fought hard to ensure that Part XI of the Convention reflected a framework that would advance their interests, allowing them not only to share in the wealth that was thought to lie in the vast fields of metallic nodules of the abyssal plains, but also to partake in the exploration and exploitation of those resources on, for once, something like an equal standing with the developed countries. Such provisions for financial and technological assistance had been built into the framework that there was a good degree of optimism on their part that the Enterprise would soon be mining alongside the best companies and States in the world.

Things of course had looked different from the perspective of the developed countries, especially the major naval Powers with the technological capability to carry out seabed mining. Although they looked to benefit from the settlement of such matters as the 'transit passage' through international straits and, for that matter, from the introduction of the EEZ (which had been introduced and championed by the developing countries but which seemed likely to benefit leading developed countries rather more than most developing countries), they remained unhappy with the provisions of Part XI. The whole

'redistributionist' philosophy of the CHM principle did not sit well with the free-market oriented, developed States and they were still unhappy both with their ability to influence decision making within the ISA and with matters such as the artificial limitations on mining to protect developing countries where land-based mining took place. Finally, the provisions on the Enterprise looked simply like having to unfairly arm and finance a competitor.

Nevertheless, overall, the balance of the package that had been arrived at toward the end of over nine years of negotiations had seemingly been one which looked like it could be accepted by all, including the American administration of President Carter. It has been explicitly said, for example, that "There was a trade-off during UNCLOS III in that the US promised that it would support the international regime for deep seabed mining, and in return developing countries would accept free transit through international straits"⁸⁵.

The package deal as it stood, however, never achieved the triumph that many had hoped for it. Despite the tortuous path that had brought the Law of the Sea Convention to the form that it took on 30th April 1982, a domestic development in one of the negotiating States had already thrown a gigantic spanner in the works.

CHAPTER 7 - REAGAN & 1994 AGREEMENT

7.1 The Advent of President Ronald Reagan

Jimmy Carter was comprehensively defeated by Ronald Reagan in the American Presidential elections of 1980. Reagan held firm conservative beliefs and looked, as he saw it, to use the vehicle of tax cuts to reduce the size of government so as to free the private sector from the dead hand of government. Likewise, on the world stage he was a vocal opponent of Communism. In his inaugural address on 20th January 1981 he indicated that, in the context of the economic problems that the

85 Li, *ibid* note 46 p. 105.

United States then faced, “government is not the solution to our problem; government is the problem” and that “It is no coincidence that our present troubles parallel and are proportionate to the intervention and intrusion in our lives that result from unnecessary and excessive growth of government”⁸⁶.

It can have been little surprise therefore that the Reagan administration took a different view on the Law of the Sea Convention negotiations from the Carter administration and that agreement or indeed acquiescence on the terms that had been negotiated was not forthcoming⁸⁷. Just as the tenth UNCLOS III session was about to convene, in March 1981, Reagan had announced that his administration would be carrying out a full review of the draft text so far negotiated for the Law of the Sea Convention. The Reagan administration had smelt “an ideological rat” in the provisions of Part XI as it stood⁸⁸. The points of disagreement that the Reagan administration had with the text as it stood soon became manifest.

"After an NSC meeting late in January 1982, President Reagan did indeed announce the return of the United States to the final Conference session. His statement of 29 January did not present the Conference with an ultimatum, as had been feared, but instead listed six objectives to be achieved by the United States delegation: the Treaty (a) must not deter the development of any deep seabed mineral resources to meet national and world demand; (b) must assure national access to those resources by...qualified entities to enhance United States security of supply, avoid

86 See e.g. <http://www.reaganfoundation.org/reagan/speeches/first.asp>

87 Signs of such had been present before Carter's defeat, for example, Reagan himself had advocated taking a tougher line on seabed mining since 1978. See Schmidt, *ibid* note 57 p. 217.

88 See Anand, *ibid* note 53 p. 188. quoting “Under-Water Treaty: The fascinating story of how the Law of the Sea was sunk”, Nossiter, *Barron's*, July 26th, 1982, p. 10. Naturally, Reagan's position was supported by influential portions of American industry. See e.g. “A view from the industry”, Conrad Welling, “Consensus and Confrontation”, *ibid* note 61 p. 233-235.

monopolization of the resources by the Enterprise, and promote the economic development of the resources; (c) must provide a decision-making role in the deep seabed regime that reflects the political and economic interests and financial contributions of participating states; (d) must not allow for amendments to come into force without the approval of the participating states, including...the advice and consent of the United States Senate; (e) must not set other undesirable precedents for international organisations; and (f) must be likely to receive the advice and consent of the Senate; the Convention should not contain provisions for the mandatory transfer of technology and participation by and funding for national liberation movements.”⁸⁹

The scale of the changes that would be sought as a concrete result of this review nevertheless came as a shock:

"On instructions from Washington, the US delegation presented a 68-page book suggesting amendments to more than half of the seabed provisions of Part XI. After nine long, tedious sessions of the Conference and fourteen years of strenuous negotiating efforts, the United States now wanted to renegotiate essential elements of a package that had already commanded widespread support and near consensus. Stunned by the US announcement, the treaty process came to a grinding halt.”⁹⁰

Despite last minute attempts to mollify the Reagan administration, including appended Resolutions on providing protection for Pioneer Investors ('PIP', being those who had already invested large sums in prospecting operations) as well as establishing the so-called Preparatory Commission ('PrepCom', whose task it was to prepare for the establishment of the ISA in terms, for example, of drafting implementing regulations and managing the pioneer investor issues), in the end it was the United States that lost patience and called for a vote on the text on the 30th April 1982. As noted above, the 1982 Law of the Sea Convention was adopted by 130 votes for to 4 against and 13

89 Schmidt, *ibid* note 57 p. 240.

90 Anand, *ibid* note 53 p. 189.

abstentions. The United States was of course one of these four.

It was not hard to discern President Reagan's position. Part XI was not regarded as having been sufficiently altered to meet the six objections outlined in January of the previous year⁹¹. More bluntly, Ambassador Malone, President Reagan's chief negotiator at the final sessions of UNCLOS III, stated that: "The treaty is fatally flawed and cannot be cured. In its present form it presents a serious threat to vital US national interests and, in fact, to global security. Once more, it is inimical to the fundamental principles of political liberty, private property and free enterprise"⁹².

A practical consequence of the rejection of the Convention was that if the US did not partake in the arrangements of Part XI then the US financial contribution to, for example, the Enterprise, would not occur. Charges that the US was reneging on the 'parallel system' suggested by Henry Kissinger in 1976 were brushed aside. It was said that Kissinger also wanted a 'weighed voting' system in return, which never materialized⁹³. Any suggestion of a link between the Enterprise and 'transit passage' was likewise rebuffed⁹⁴.

Although it was perhaps the US that was most vocal in its unhappiness with the Law of the Sea Convention as it stood, the US was not completely alone in having problems with it. As noted a number of the Western European states had abstained on the final vote and subsequently, although France did later sign up to the treaty, the UK and (West) Germany did not. As a result, the Law of the Sea Convention was in the difficult position that some of the states with the greatest ability to carry out seabed mining were precisely those states that

91 Schmidt, *ibid* note 57 p. 254.

92 "Who needs the Sea Treaty?" Malone, *Foreign Policy*, Spring 1984, p83, quoted in "The United States and the Law of the Sea: Changing Interests and New Imperatives", Galdorisi, *Naval War College Review*, 1996: 03051.

93 "Consensus and Confrontation." *ibid* note 61, p. 263-264.

94 Li, *ibid* note 46 p. 105.

refused to sign up.

Nevertheless, perhaps then as now, attention focused largely on the actions of the United States, regarded as being the worst offender in respect of walking away from the Convention:

"I think I have a special duty to explain...why it is that, of all the states that have not yet signed the Convention, the criticism of the international community has focused on the United States...although thirty-odd countries have yet to sign the Convention, the United States is the one that has taken a definitive position that it will not sign the Convention. This differentiates it from countries that have not yet decided whether to sign or not...the United States, as far as I know, is the only country that has not only decided not to sign the Convention, but is actively seeking to establish an alternative legal regime to Part XI of the Convention. This effort is naturally viewed by the supporters of the Convention as an attempt to undermine the Convention...the United States government is the only one which has sent abroad a special envoy of a very high status to lobby other governments not to sign the Convention...The person who was sent abroad was Mr. Donald Rumsfeld"⁹⁵

Of course, it is true to say that President Reagan's economic and political philosophy differed greatly from those of his predecessor. Nevertheless, there are those who downplayed the impact of this change

95 Ambassador Koh of Singapore addressing 'US isolation and loneliness' in "Consensus and Confrontation", p. 524. Ambassador Koh indicated more generally that: "I would like to address the sense of increasing isolation on the part of the United States in the multilateral institutions of the world...it is a self imposed solitude, the "Lone Ranger" syndrome...This administration is basically hostile to multilateral diplomacy and to multilateral institutions. It believes essentially that the foreign policies of the United States can best be transacted through bilateral diplomacy in which the United States has a greater leverage than in multilateral institutions.", "Consensus and Confrontation", *ibid* note 61 p. 528.

of administration: “I would like to clarify one misconception on whether the Reagan administration is composed of ideologues and whether the administration’s decision was ideologically motivated...During the transition period between the time that Jimmy Carter was defeated and Ronald Reagan took over, quite a few of us who had been involved as so-called experts in the US delegation during the Carter administration pointed out to the Reagan transition team where the bodies lay in Part XI of the text and why the system wouldn’t work”⁹⁶.

Interestingly, some laid the blame for the Reagan administration’s actions at the door of these previous US administrations:

“The worst defects [of the Convention] to which our colleagues from the United States are now objecting have been introduced by the United States. I will discuss three of them. First is the idea that we should settle in advance every detail of organization and finance for an industry about whose future we admittedly know nothing. This approach has left us saddled with Annex III, which is very difficult to operate with and very difficult to apply technically. That was the US contribution because they lacked confidence in this new International Seabed Authority and did not want to leave any discretionary power to it, and so everything had to be fixed in advance for 25 years. The second heritage problem from the United States is the parallel system, which as any systems analyst will tell you, is the most cost-inefficient system we could have devised. We are stuck with it now and will have to see what to do with it. The third problem is the problem of decision making, which has become so immensely complex that it will be very difficult to operate from a business point of view”⁹⁷.

7.2 The 1982 Law of the Sea Convention as a package deal?

So, broadly speaking, it would appear that although President Reagan was content with 16/17 of the Convention⁹⁸, the remaining 1/17, Part

96 “Consensus and Confrontation.” Hoyle, *ibid* note 61, p. 273.

97 “Consensus and Confrontation.” Borgese, *ibid* note 61, pp. 236-237.

98 Ambassador Richardson indicated that: “People constantly come up to

XI, was so objectionable that it could not be accepted even as a trade off with the remaining portions of the convention.

The apparent difficulty this brought about for the Reagan administration stemmed from the fact that the 1982 Law of the Sea Convention, as noted above, was regarded as a ‘package deal’ par excellence. States could not pick and choose between the different parts of the Convention depending on their view of them. It was all or nothing. The Convention specifically forbade reservations, unless explicitly provided for in the Convention itself (Art. 309). The rights provided under the Convention could not be enjoyed without observing the correlative duties. United States Ambassador Richardson under the Carter administration had said as much⁹⁹. So, how could the United States benefit from those many provisions that were felt important, or indeed vital, for the national interest without saddling itself with Part XI?

The solution was breathtakingly simple. As noted above, States has been talking and acting consistently for long enough in respect of some of the key elements of the Convention, such as the notions of territorial waters, the continental shelf and the EEZ, for them to have become regarded as norms of customary international law. The United States now asserted

me nowadays and commiserate about what they assume to be my distress over the outcome of the Law of the Sea Conference. They are always surprised when I reply “Distress? I’m not sure what you are talking about” The Law of the Sea Conference was an enormous success. Some 120 countries signed the Convention adopted last spring. Only a handful of industrialized countries have not yet joined...it is hard indeed to imagine how 160 countries meeting over 12 years could have come to agree on such a vast array of subjects. Even the United States, as President Reagan has made clear, regards 16 of 17 parts of the Treaty as being quite satisfactory. And I daresay that had he ever looked at the remaining 17th part, he would have concluded that 16/17 of that particular text was satisfactory”, comments in “Law of the Sea” panel discussions chaired by Professor Bernard Oxman, April 14th, 1983.

99 Li, *ibid* note 46 p. 106.

that the other key element of interest, the right of transit passage through international straits, had also now become a norm of customary international law¹⁰⁰. In other words, the United States indicated that it now had the right to exercise transit passage through international straits without needing to sign up to the Convention. By contrast the specific provisions of Part XI on the mining of the seabed, which were rejected as being inimical to the interests of free enterprise, were not regarded as representing norms of customary international law but therefore bound only those who were parties to the Convention. The vital national interests of the United States were therefore safeguarded, it was said, as a matter of customary international law and there would be only disadvantage in signing up to the Convention as it would bring no extra benefit but would entail having to operate under the seabed mining regime of Part XI. James Malone, Chair of the US delegation to UNCLOS III stated that:

“Some claim that by rejecting the LOS Convention the US will lose the navigation rights set out in the Convention, rights the United States sought to secure in a comprehensive LOS treaty. If the US does not accept the seabed mining provisions, so goes the argument, the rights set forth in other provisions of the Convention are forfeited. This is not so. Particularly with regard to navigation rights, the history of the law of the sea has been predominantly a history of customary rules evolving through state practice. In this area the Convention incorporates existing law, which will continue to apply to all States, not because of the treaty, but because of the customary law underlying the treaty. We are confident that we and our allies have the legal basis to protect our navigational interests outside the Treaty”¹⁰¹.

In terms of conducting ‘package deal’ negotiations in good faith, this development must surely have entered the annals of negotiating lore as a

100 The UK apparently took the same view. See Churchill & Lowe, *ibid* note 32 p. 110.

101 Quoted by Li, *ibid* note 46 p. 105, from “The Law of the Sea Convention and Third States.” Lee, *AJIL*, vol. 77, 1983, p. 542.

cautionary tale.

In fact, as will be returned to later on, it was not in fact the case that every advantage that the United States wanted out of the Convention was fully available on the basis of customary international law. Customary international law is inherently less precise and less ‘systematic’ than treaty law and there are certainly disadvantages, where matters of vital national interest are at stake, to rely on the former, rather than have an explicit agreement in the terms of the latter. To take one example, although the concept of the Continental Shelf was accepted as a norm of customary international law, recourse to the Commission on the Limits of the Continental Shelf, in order to stake and legitimize precise claims over Continental Shelf areas was only available to States parties to the Convention. This has come back to haunt the US, as discussed below.

7.3 Unilateral legislation on deep seabed mining

To return to deep seabed mining, the rejection of Part XI was not to say that the Reagan administration wished to leave the rules for deep seabed mining in limbo. In order to provide an alternative to the seabed mining regime of Part XI, the United States maintained, or went back to maintaining depending on your point of view, that seabed mining was an inherent freedom of the high seas:

“...while claiming benefit of the various rules laid down in the Convention as customary law which would serve a wide array of US national interests -the mobility of air and naval forces, commercial navigation, fisheries, environmental protection, scientific research, marine mammals, dispute settlement and more – President Reagan asserted: “Deep seabed mining remains a lawful exercise of the freedom of the high seas open to all nations. The United States will continue to allow its firms to explore and, when the market permits, exploit those resources”¹⁰²

102 Anand, *ibid* note 53 p. 192.

Even before the United States had decided not to sign up to the Convention, looking to the future and in order to put any such activity on some sort of a legal basis, on the 28th June 1980, the US had enacted the “Deep Seabed Hard Mineral Resources Act”, making unilateral provision to authorize US based miners to carry out deep seabed mining. Like minded States followed suit: (West) Germany later in 1980 (Act on the Interim Regulation of Deep Seabed Mining), the UK in 1981 (Deep Sea Mining Temporary Provisions Act) and subsequently France, Italy and Japan. It will be recalled that the US and other developed countries had voted against the 1969 Moratorium Resolution. These States entered into the relatively informal arrangement that became known as the Reciprocating States Regime (also called the mini-treaty arrangement)¹⁰³. In order to harmonise as far as possible claims arising under these national instruments, agreements were also entered into between these (and other Western European States) to help avoid or otherwise settle conflicts including an Agreement concerning Interim Arrangements relating to Polymetallic Nodules of the Deep Seabed (1982) and a Provisional Understanding Regarding Deep Seabed Matters (1984). The USSR has also enacted legislation similar to those of the Reciprocating States and in 1987, a similar agreement was entered into between them and the USSR, the so-called “Midnight Agreement”.

Given that the US and others had still been involved in negotiations at UNCLOS III at the time when it enacted this legislation, many states regarded these legislative enactments with great suspicion and hostility and indeed as a breach of the requirement to negotiate in ‘good faith’¹⁰⁴.

It will be recalled from Chapter 5 above that all these countries had cast their vote in favour of, and were therefore to the relevant extent bound

103 See e.g. “The Issue of National Legislation”, Li, *ibid* note 46 Chapter III. An interesting issue is that France and Japan seemed to pursue negotiations under both the Convention framework and the Reciprocating States regime framework, see “Consensus and Confrontation”, *ibid* note 61 p. 231.

104 See e.g. Li, *ibid* note 46 pp. 88, 92-93.

by, the 1970 "Declaration of Principles Governing the Seabed and the Ocean Floor, and the Subsoil thereof, Beyond the Limits of National Jurisdiction". Under that Declaration, in addition to the agreement over the designation of the seabed area as the Common Heritage of Mankind, it had been agreed that the exploration and exploitation of the resources of that area could only be carried out under an international regime, which was to be subsequently agreed upon, including provision for the equitable sharing of the benefits from such exploitation. How, therefore, could these unilateral declarations and limited reciprocating regimes be squared with the proposals for a comprehensive international regime?

In the first place, as noted above, the developed States did not agree with the developing States about the legal effect of the earlier Declaration, viz that it was, by itself, capable of establishing new norms of customary international law. In the second place, however, these instruments were characterized as temporary measures, in order to provide the incentive necessary to stimulate activity in the area, pending the settlement of a regime under the Law of the Sea negotiations. In any case, it was argued that the regime established under the Reciprocating States arrangement, based on the freedom of the high seas, was not inconsistent with the earlier Declaration, at least during this interim period, and that there was no claiming of sovereignty over the deep seabed *per se* but merely the granting of exclusive rights so as to permit the necessary mining activity¹⁰⁵.

What is particularly interesting though is that rather than any straightforward freedom of the high seas discussed at the very beginning of the thinking about seabed mining, there was seemingly at least one concession in these pieces of national legislation to the concept of the Common Heritage of Mankind and the 1970 Declaration of Principles, in that they make provision for the payment of royalties from the mining entities concerned into a “trust” fund, for example, holding funds until the relevant State incorporates itself into the ISA framework¹⁰⁶. One

105 See e.g. Chuchill & Lowe, *ibid* note 32 pp. 233-235.

106 In the case of the U.S. legislation see e.g. 30 U.S.C. § 1472, although it seems that the US Trust Fund was wound up in 1990 under the

example of a royalty level is set at:

(a) an amount equal to 3-75 per cent. of the value of the hard mineral resources recovered in pursuance of the licence during any prescribed period ; or

(b) if the value of the hard mineral resources so recovered cannot be ascertained under paragraph (a) above, 0.75 per cent. of the value of any manganese, nickel, cobalt, copper, phosphorus or molybdenum, (" the elements ") or any compound containing any of the elements, found in those hard mineral resources¹⁰⁷.

This is potentially a very interesting and important development as it seemingly establishes, albeit not in the form that many developing countries sought, at least some recognition of the Common Heritage of Mankind principle. This point will be returned to below in Chapter 11.

In fact, the national legislation may have availed mining entities from these states little, even if seabed mining had potentially been a practical proposition at that time. Seabed mining is a capital intensive activity¹⁰⁸. It is highly unlikely that lenders would provide capital for such an activity as seabed mining without having some degree of guarantee of return on that capital. That in turn requires a degree of confidence as to

provisions of that section, without having collected any royalties due to the fact that there was no relevant deep seabed mining in the relevant period. The equivalent UK legislation seems to provide for much the same, see e.g. Deep Sea Mining (Temporary Provisions) Act 1981, ss.10 (1), (5) &(6).

107 See e.g. Deep Sea Mining (Temporary Provisions) Act 1981, s. 9(1).

108 One estimate of the costs involved in the mining of one deep seabed site was given in May 1977 in Congressional testimony by Marne Dubs of the Kennecott Corporation. A likely investment was indicated of "more than \$2.5 billion between startup and commercial recovery for one site in the Clarion-Clipperton zone, between Hawaii and the US West Coast". Quoted in Galdorisi, *ibid* note 92 at footnote 27.

security of the exclusive rights granted over the mining site. It seems to have been generally agreed that the title provided under these national enactments was not sufficiently secure to warrant lending. Even under the mini-treaty arrangements, such claims would have only been agreed amongst the States party to those arrangements and would not be effective against entities from third States. The requisite degree of security could likely only be found in a universally agreed instrument¹⁰⁹. A cloud continued to hang over the legality of the US legislation. Indeed, Ambassador Koh of Singapore stated that:

"...An alternative regime to the Law of the Sea Convention is unacceptable because it would take resources that are part of the common heritage of humankind and that belong[s] to all of us. If the United States does engage in seabed mining through an alternative regime, I will challenge it by bringing an action to the International Court of Justice. If the United States does not obey the decision of the International Court, the United States will find it very difficult to convince the world that it is a nation that upholds the rule of law"¹¹⁰

Quite what the United States would have done in the event of an adverse

109 Li, p. 111. quotes *the Economist* as observing that seabed miners "almost certainly will not rely on the national legislation that has been adopted by half a dozen States or on the faint possibility of a 'mini-treaty' concluded between such States. Huge investments that seabed mining requires would be in great jeopardy if the activity was not covered by a globally recognised code of law. An international regime, however unattractive its terms, would still be better than no regime at all". However, Brian Hoyle, Director of the Office of Ocean Law and Policy of the Reagan administration State Department, indicated in 1985 that "The bankers with whom we have talked think the Law of the Sea Convention is not a regime under which investment can be made. They think the regime under the Convention imposes too much regulation, too much bureaucracy, and too great a risk", "Consensus and Confrontation", *ibid* note 61 p. 250.

110 "Consensus and Confrontation", *ibid* note 61 p. 253.

decision remains an open question¹¹¹. In fact, as will be discussed below, the legality of the US regime under international law has never had to be tested.

7.4 The 1994 Agreement

The late 1980s and early 1990s was a time of remarkable geo-political change, including the collapse of the Soviet Union¹¹² and, as a result, collapse in belief in centrally planned economies and the perceived triumph of societal systems based on liberal democracy and the free market economy¹¹³.

111 David Colson, assistant legal advisor for oceans and international environmental and scientific affairs at the Reagan State Department stated in 1985 that “I do not believe I could work for the United States if I believed that the United States was not committed to the rule of law or, as Ambassador Koh said, that we might be hypocrites. I can only assume that if the United States is confronted with a legal challenge to our deep seabed mining practice outside the Convention, even in the form of a request for an advisory opinion, we would not avoid the challenge, and we would meet it with legal skill and great vigor...I agree that if this were to be an adverse decision, it would be a severe test of our national fiber. I can only say that if the United States did not accept such an adverse decision, I would reluctantly but happily come back and eat my humble pie and retract what I said earlier, that the United States remains committed to the rule of law. I suppose that it would also be a watershed for me, and I would probably have to come back in my personal capacity rather than as a representative of the US government”, “Consensus and Confrontation”, *ibid* note 61 p. 261. The March 2005 decision of the US to withdraw from the jurisdiction of the ICJ following an adverse judgment over the Protocol to the Vienna Convention on Consular Relations is perhaps of some interest here.

112 The Berlin Wall ‘fell’ on November 9th 1989. The Soviet Union was dissolved on December 26th 1991.

113 Francis Fukuyama published “The End of History and the Last Man” in 1992 outlining his thesis that the end of the Cold War may signal

As far as the 1982 Law of the Sea Convention was concerned, neither the United States, nor a number of other like-minded countries such as the UK and Germany¹¹⁴, had signed. It was regarded as an unsatisfactory situation that precisely those industrialised states who had the greatest capability of seabed mining (and, not to put too fine a point on it, the deepest pockets, since the bills arising under Part XI only had to be paid by those States who were party to the Convention) had declined to adhere to UNCLOS III because of objections to the regime it established for that very matter.

The lack of these states within the UNCLOS III framework had not perhaps caused as great a rupture as might have been expected though. As noted above, dire consequences had been predicted if the US and others had gone ahead to mine outside that framework. In fact, push had not come to shove as it had become recognised that the earlier predictions for seabed mining had been vastly overstated. There had been no goldrush. The point at which seabed mining was expected to become practical from an economic perspective was put off into the early years of the twenty-first century¹¹⁵.

the final triumph of liberal democracy as the end point of human ideological development.

114 West Germany (the Federal Republic of Germany) and East Germany (the German Democratic Republic) had become re-unified on 3rd October, 1990.

115 “Writing for the Independent Panel on the Law of Ocean Uses in 1994, Professor Charney of Vanderbilt University commented, ‘The likelihood of early deep seabed mining for minerals is bleak. Recent economic conditions and the use of substitutes have depressed minerals demand, while alternative cheaper land based sources of some nodule minerals have been identified. There is little doubt that the market will not make deep seabed mining economically viable before 2025 and probably much later than that’. In any case, it appeared that should seabed mining of nodules ever become of genuine strategic importance to the United States, or market prices improve, plentiful supplies were available in the shallow waters of national two-hundred-mile exclusive economic zones”, “Provisional

This lack of activity was considered by some to provide an opportunity to revisit the questions that had caused the industrialised states to stay out. The changed political and economic circumstances provided a degree of flexibility to do so. Expectations had apparently been raised as to the possibility of getting everyone on board due to the departure of President Reagan and his replacement by the more receptive administration of (the first) President Bush.

In terms of the optimal forum in which to begin any such talks, the discussions within the context of the PrepCom had not been able to deal with these issues on as a matter of substance (relating instead to, for example, the settlement of Pioneer Investor disputes) and in any case the US had decided not to participate in these.

Accordingly, in July 1990 the Secretary-General of the United Nations, Javier Perez de Cuellar, took up the baton and launched informal consultations to see what could be done to bring the industrialised states within the UNCLOS III framework. Given that it was largely their objections to Part XI, the seabed mining portion of the Convention, which had kept them out, it was obvious that right at the top of the agenda would have to be thinking about how to change this treaty regime so as to make it acceptable to all. Discussions continued throughout the remainder of Perez de Cuellar's term and carried on after 1992 under the next Secretary-General, Boutros-Boutros Ghali.

To a great extent, agreement was eventually reached on modifying those provisions that had not found favour with the industrialised states, replacing objectionable provisions with ones that better suited their economic philosophy. This is not to say that the US and its allies managed to move all the way back to the simple licensing regime that they had first suggested. Instead, although the basic institutional structures established under Part XI remain substantially similar, there have been sufficient changes to the mode of operation of the elements of

Application of the Agreement Relating to the Implementation of Part XI of the 1982 United Nations Convention on the Law of the Sea," quoted in Galdorisi, *ibid* note 92 at footnote 26.

this structure to make the regime substantially more acceptable to all¹¹⁶. The accommodation reached finds concrete form in the "Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982", adopted by the General Assembly of the United Nations on 28 July 1994 with 121 votes in favour, none against and seven abstentions. Part of the impetus to find an acceptable amendment to the 1982 Convention was that the Convention was due to enter into force on the 16 November 1994 and, for legal reasons to do with the mechanism for amending the Convention once in force, it was thought greatly advantageous to reach an agreement on amendment by other means before its entry into force¹¹⁷. There are some interesting issues associated with the legal nature of this agreement. It might be imagined that if the Law of the Sea Convention was going to be amended that it would have to be done in accordance with the provisions of the Convention on amendment. Instead, although the 1994 Agreement styles itself a mere 'implementation' agreement, it very clearly amends the Convention, deleting certain provisions and introducing others, as is discussed in the following section. Nevertheless, for all practical purposes, it was

116 The triumph of this exercise of diplomatic power on the part of the industrialized countries in the 1990's provides a remarkable contrast with the situation painted by Ambassador Richardson back in the late 1970's and early 1980's, "A representative of the United States, or any state for that matter, attending a multilateral conference is dealing from a position of very little leverage. None of us – not the representatives of the Soviet Union, the United States, and certainly not those from small states – has at our disposal any significant capacity to induce agreements between countries by bringing to bear extraneous pressures. Could you imagine the head of the US law of the sea delegation going to the head of the Agency for International Development and suggesting that we cut off some minor bilateral aid program to country X in sub-Saharan Africa because that country has refused to support our law of the sea position?", comments in "Law of the Sea" panel discussions chaired by Professor Bernard Oxman, April 14th, 1983.

117 Li, *ibid* note 46 p. 242.

accepted as having modified the 1982 Law of the Sea Convention as proposed¹¹⁸. The Agreement was opened for signature on the 29th July 1994. Nearly seventy states, including the United States, the United Kingdom, France, Germany and Japan, signed. The changing geopolitical circumstances are explicitly reflected in the preamble to the General Assembly Resolution to which the 1994 Agreement is annexed, "...Recognizing that political and economic changes, including in particular a growing reliance on market principles, have necessitated the re-evaluation of some aspects of the regime for the Area and its resources..." and in the preamble to 1994 Agreement itself, "Noting the political and economic changes, including market-oriented approaches, affecting the implementation of Part XI".

CHAPTER 8 - CHANGES WROUGHT BY 1994 AGREEMENT

Before looking at some of the substantive changes that the 1994 Agreement brought about, as a preliminary matter, it must be emphasized that the 1994 Agreement did not seek to make any fundamental changes to the general principles of the resources of the seabed as the Common Heritage of Mankind.

8.1 The principle of the Common Heritage of Mankind reaffirmed

The preamble to the 1994 Agreement recites "reaffirming that the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction (hereinafter referred to as "the Area"), as well as the resources of the Area, are the common heritage of mankind". Section 4 of the Annex to the 1994 Agreement provides that "Amendments relating to this Agreement and Part XI shall be subject to the procedures contained in Articles...provided that the principles, regime and other

118 See e.g. Churchill & Lowe, *ibid* note 32 pp. 20-21 or "The New Deep Seabed Mining Regime." Nelson, *the International Journal of Marine and Coastal Law*, vol. 10, No. 2, 1995, pp. 192-193.

terms referred to in article 155, paragraph 2, of the Convention shall be maintained and the rights referred to in paragraph 5 of that article shall not be affected". Article 155(2) of Convention provides:

The Review Conference shall ensure the maintenance of the principle of the common heritage of mankind, the international regime designed to ensure equitable exploitation of the resources of the Area for the benefit of all countries, especially the developing States, and an Authority to organize, conduct and control activities in the Area. It shall also ensure the maintenance of the principles laid down in this Part with regard to the exclusion of claims or exercise of sovereignty over any part of the Area, the rights of States and their general conduct in relation to the Area, and their participation in activities in the Area in conformity with this Convention, the prevention of monopolization of activities in the Area, the use of the Area exclusively for peaceful purposes, economic aspects of activities in the Area, marine scientific research, transfer of technology, protection of the marine environment, protection of human life, rights of coastal States, the legal status of the waters superjacent to the Area and that of the air space above those waters and accommodation between activities in the Area and other activities in the marine environment.

These general principles therefore remain not only intact¹¹⁹ but preserved for the future. This is important as there had perhaps been some doubt as to the ability of the concept to survive after the failure of the US to sign the 1982 Law of the Sea Convention, "The notion that the resources of the deep seabed as the "common heritage" of all humankind caught the imagination of many persons as a way to bridge the gap between the rich and the poor by bringing forth a new resource that could be used to expand the world's wealth especially for the benefit of the developing nations. Presidents Johnson and Nixon embraced this idea in the 1960s and early 1970s...and the world community adopted this idea in a formal declaration in the 1970...Today, in a less idealistic time, the developed world looks

119 See Nelson *ibid* note 118.

skeptically at this idea and cites it as another example of governmental interference with the free market system”¹²⁰.

Drilling down to detail, the general change in philosophy between the 1982 Law of the Sea Convention and the 1994 Agreement was reflected in important substantive changes to the operation of the regime. Instead of spelling out at great length how the amended regime is to operate, the 1994 Agreement instead takes more of an evolutionary approach, providing for general, market-based, principles.

Section 1.2 of the Annex to the 1994 Agreement provides that “In order to minimize costs to States Parties, all organs and subsidiary bodies to be established under the Convention and this Agreement shall be cost-effective. This principle shall also apply to the frequency, duration and schedule of meetings”. Section 1.3 provides that “The setting up and the functioning of the organs and subsidiary bodies of the Authority shall be based on an evolutionary approach, taking into account the functional needs of the organs and subsidiary bodies concerned in order that they may discharge effectively their respective responsibilities at various stages of the development of activities in the Area”.

8.2 Changes to the ISA Institutional Machinery

In terms of the institutional decision making arrangements, the previous arrangement under Article 161(1) of the Convention are modified under Section 3 to further accommodate the developed countries demands for a more adequate reflection of their interests. The powers of the Council are notably increased vis-à-vis the Assembly such that the Assembly is in effect left only to approve or disapprove Council recommendations. A general rule of decision making in the organs of the Authority by consensus is introduced but for those decisions that are still to be made by a majority vote, a system of “chambered voting” is introduced such that an overall majority of say, two-thirds, will not be sufficient, if the measure in question is opposed by a majority in any one of the

constituent chambers of the Council, as discussed above in Chapter 6. The issue of an explicit seat on the Council for the United States is addressed under Section 3.15 insofar as a Council seat is now guaranteed for “the State, on the entry into force of the Convention, having the largest economy in terms of gross domestic product...”.

The overall thrust of the voting system established under the 1982 Law of the Sea Convention as modified by the 1994 Agreement has been put in the following terms: “Broadly speaking, the more important a decision is for seabed mining interests the more it is insulated from simple majority decision making within the Authority”¹²¹.

The Economic Council has been subsumed within the Legal and Technical Committee and a new Finance Committee has been introduced.

The 1994 Agreement also addresses the funding of the ISA, insofar it is provided that the general UN budget will cover costs until one year after the 1994 Agreement enters into force (i.e. till 1997) and only thereafter did States parties to the Convention begin to pick up the bill, until such time as the ISA can pay for itself.

8.3 Activities in the Area

Changes were made to the ends to which activity in the Area was supposed to take place. The various provisions of the 1982 Law of the Sea Convention dealing with production policies, aimed for example at trying to protect the positions of land based producers, are substantially amended under Section 6. As was the case more generally with commodities, as discussed in Chapter 2, the changes sought by the developed countries had the effect of replacing the *sui generis* framework for seabed mining of the Convention with GATT rules, and replacing a price stabilisation regime with a fund to cushion land-based producers impacted by the bringing of seabed minerals to the world

120 “Consensus and Confrontation.” *ibid* note 61 p. 548.

121 Churchill & Lowe, *ibid* note 32 p. 245.

market. Any notion of a (nickel) production ceiling has therefore been abandoned. Specifically, under Section 6.1 (a) and (b) “Development of the resources of the Area is to take place in accordance with sound commercial principles” and “ the provisions of the General Agreement on Tariffs and Trade [GATT], its relevant codes and successor or superseding agreements shall apply with respect to activities in the Area”, and Section 7 provides for the establishment of a fund, according to the determination of the Council, to cushion the impact of seabed mining on land-based developing country producers.

Significant alteration to the nature and expected mode of operation of the Enterprise has been effected under Section 2. For the time being, the Enterprise is not to be set up as an independent entity. Instead, as provided for by Sections 2.1 and 2.2, the Secretariat is to take on the now more modest functions of the Enterprise¹²² until such time as the Council decides otherwise. As provided for by Section 2.2, initial activity to be undertaken under the auspices of the Enterprise shall be carried out

122 Specified under Section 2.1 as comprising:

- (a) Monitoring and review of trends and developments relating to deep seabed mining activities, including regular analysis of world metal market conditions and metal prices, trends and prospects;
- (b) Assessment of the results of the conduct of marine scientific research with respect to activities in the Area, with particular emphasis on research related to the environmental impact of activities in the Area;
- (c) Assessment of available data relating to prospecting and exploration, including the criteria for such activities;
- (d) Assessment of technological developments relevant to activities in the Area, in particular technology relating to the protection and preservation of the marine environment;
- (e) Evaluation of information and data relating to areas reserved for the Authority;
- (f) Assessment of approaches to joint-venture operations;
- (g) Collection of information on the availability of trained manpower;
- (h) Study of managerial policy options for the administration of the Enterprise at different stages of its operations.

under the form of Joint Venture agreements. Commensurate with something of a scaling down of expectations as to the Enterprise, there have been changes to both the financial and technical assistance that the Enterprise can expect. Under Section 2.3, the previous obligation for States Parties to fund at least one mining site for the Enterprise has been deleted. The technology transfer provisions are discussed in the following section.

In terms of the financial terms in contracts that were felt to be overly burdensome for applicants, under Section 8, the fees to be paid by an applicant are significantly lightened both in terms of initial fees (halved from \$5000,000 to \$250,000) and annual fees (the quantum of which is to be settled by the Council) thereafter. Also, these annual fees now only run from the “date of commercial production” rather than the “date of entry into force of the contract” as was previously the case. It is provided that the system of payments to the Authority “shall be fair to both the contractor and the Authority” and “shall not be complicated [or] impose major administrative costs on the Authority or on a contractor”.

8.4 A Different Technology Transfer Regime

Of vital importance to the United States and other developed countries that had not signed on to the 1982 Law of the Sea Convention, the obligation relating to any mandatory technology transfer has also been removed. The complex provisions of Article 5 of Annex III of the Convention are simply deleted. It will be recalled that this was one of President Reagan’s explicit requirements for any US agreement to an amended text. Henceforth technology transfer under the combination of the 1982 Law of the Sea Convention and the 1994 Agreement is to be governed by free-market principles and the effective protection of intellectual property rights. Specifically, Section 5 provides:

1. In addition to the provisions of article 144 of the Convention, transfer of technology for the purposes of Part XI shall be governed by the following principles:

(a) The Enterprise, and developing States wishing to obtain deep seabed mining technology, shall seek to obtain such technology on fair and reasonable commercial terms and conditions on the open market, or through joint-venture arrangements;

(b) If the Enterprise or developing States are unable to obtain deep seabed mining technology, the Authority may request all or any of the contractors and their respective sponsoring State or States to cooperate with it in facilitating the acquisition of deep seabed mining technology by the Enterprise or its joint venture, or by a developing State or States seeking to acquire such technology on fair and reasonable terms and commercial terms and conditions, consistent with the effective protection of intellectual property rights. States Parties undertake to cooperate fully and effectively with the Authority for this purpose and to ensure that contractors sponsored by them also cooperate fully with the Authority;

(c) As a general rule, States Parties shall promote international technical and scientific cooperation with regard to activities in the Area either between the parties concerned or by developing training, technical assistance and scientific cooperation programmes in marine science and technology and the protection and preservation of the marine environment.

2. The provisions of Annex III, article 5, of the Convention shall not apply.

Accordingly, the Enterprise and developing States more broadly are now left to acquire technologies on the open market. In the event that, for example, the technology is not available on the open market, the Authority may only attempt to facilitate the acquisition of that technology on fair and reasonable commercial terms and conditions and “consistent with the effective protection of intellectual property rights”. It remains one of the tasks of the Authority to acquire technology and

scientific knowledge under, for example, Article 144 of the Convention. It is perhaps worth noting again that technology transfer under the provisions of Article 5 of Annex III was specified to be governed by the terms of a Joint Venture agreement, if there were one, and that the scaled down Enterprise is now only initially permitted to operate under such agreements.

CHAPTER 9 - LAW OF THE SEA & DEEP SEABED TODAY

One of the most remarkable things about the diplomatic *tour de force* that was the 1994 Agreement, it that it still wasn't enough to bring the US on board.

President Bill Clinton submitted the combination of the Law of the Sea Convention and the 1994 Agreement to the United States Senate for its advice and consent in late 1994. Important reasons why he believed such advice and consent ought to be provided included the preservation of the “right of the US military to use the world oceans to meet national security requirements and of commercial vessels to carry sea-going cargoes” (e.g. the stabilization of the territorial sea at 12 miles with the exceptions for innocent passage and transit passage in international straits) and the provision of “an exclusive economic zone out to 200 nautical miles from shore”¹²³. Taking into account the changes wrought by the 1994 Agreement, Part XI was no longer regarded as objectionable by the administration.

Nevertheless, the necessary advice and consent was not forthcoming.

A considerable head of steam finally seems to have been building in Washington to push for ratification of the 1982 Law of the Sea Convention as modified by the 1994 Agreement but there are still

123 “Congressional Record, 103rd Congress, 2d Sess. 1994, S14475, Statement of the President, 6 October 1994, p. 1”, quoted in Galdorisi, *ibid* note 92 at footnote 9.

powerful forces ranged against it.

On February 25th, 2004 the Senate Foreign Relations Committee (SFRC), under the Chairmanship of Senator Richard Lugar, voted nineteen for to zero against to send the ratification Resolution to the full Senate for advice and consent¹²⁴. On December 17, 2004, President Bush urged "Congress to provide its advice and consent to this treaty as early as possible in the 109th Congress." Condoleeza Rice also expressed strong support for the ratification of the Convention at her confirmation hearing before the SFRC on January 18, 2005. Security issues are high up the list of reasons for the strong push for ratification, especially the need for the US Navy to range freely across the seas of the planet and specifically through international straits without interference. General Myers, Chairman of the US Chiefs of Staff, last year underlined the importance of securing ratification from the military point of view. The importance of the notion of 'transit passage' and the uncertainty of relying on it as a customary international norm rather than a treaty norm has been discussed above.

Nevertheless, there is still strong opposition from a number of Republican Senators, led by Senator James Inhofe, as well as long standing opposition from conservative thinkers such as the journalist William Safire and Doug Bandow, Senior Fellow at the Cato Institute, but previously a Reagan administration deputy representative to UNCLOS III during the Reagan administration. Following the SFRC hearings under Senator Richard Lugar, subsequent hearings of a seemingly considerably less enthusiastic nature were held by the Senate Environment and Public Works Committee, under Senator Inhofe, and the Senate Armed Service Committee, under Senator Warner, and it is not clear that there is now any swift movement expected. The opposition to the push for ratification tends to downplay the role of the Law of the Sea Convention in securing freedom of movement (apart from the fall back to customary international law there is also a notable reliance

124 See e.g. Senator Lugar's website on this matter at: <http://lugar.senate.gov/sfrc/seastatements.htm>

instead on the use of shows of force, or rather "operational assertions", in the event that there is a need to keep straits open) and instead focuses again on Part XI of the Convention, the International Seabed Authority and the Common Heritage of Mankind principle. In other words, very much a revival of the Reagan point of view. The tone is strident¹²⁵: "...[I]n Washington bad ideas never die. They simply lie dormant, waiting for a sympathetic bureaucrat or politician to revive them. Moreover, international treaties attract State Department negotiators like lights attract moths...Although the revised LOST is not as bad as its predecessor, it would still create a Rube Goldberg system - with International Seabed Authority, Enterprise, Council, Assembly and more - that is guaranteed to become yet another multilateral boondoggle..."

BOX 4 - The application fee and annual fee system here is similar to that for the patent system, with its patent application fee and annual renewal fees (for example to be paid from the third year after the date of filing the application). These changes are perhaps equivalent therefore to deciding that patent office fees are far too high and burdensome, which some patent applicants assert, especially small and medium sized entities, and that as a result the application fee is halved, and the requirement to pay annual renewal fees (of an amount to be decided) is put off till commercial exploitation takes place.

A discussion of a number of the features of the 1994 Agreement, including the provisions on "technology transfer, one of the most odious

125 See Bandow's April 8th 2004 testimony to the United States Senate Committee on Armed Services, "The Law of the Sea Treaty: Inconsistent with American Interests". See also e.g. Cato Institute Foreign Policy Briefings No.29 ("Do not endorse the Law of the Sea Treaty", Bandow, January 27, 1994), No.32 ("Faulty Repairs: The Law of the Sea Treaty is Still Unacceptable", Bandow, September 12, 1994) and now No. 552 ("Don't Resurrect the Law of the Sea Treaty", Bandow, October 13th, 2005).

redistributionist clauses from the original convention”, concludes with:

“All in all, the LOST remains captive to its collectivist and redistributionist origins. It is a bad agreement, one that cannot be fixed without abandoning its philosophical presupposition that the seabed is the common heritage of the world's politicians and their agents, the Authority and Enterprise. The issue is not just abstract philosophical principle, but very real American interests, including national security. For these reasons, the Senate should reject the treaty.”

Interestingly, one potentially complicating recent development, in terms of matters returning to haunt the US, has arisen out of the effects of global climate change. Present day developments in the Arctic are being reported with more than a few overtones of the same ‘goldrush’ fever that originally inspired the seabed mining debate:

“...the Arctic is undergoing nothing less than a great rush for virgin territory and natural resources worth hundreds of billions of dollars. Even before the polar ice began shrinking more each summer, countries were pushing into the frigid Barents Sea, lured by undersea oil and gas fields and emboldened by advances in technology. But now, as thinning ice stands to simplify construction of drilling rigs, exploration is likely to move even farther north. Last year, scientists found tantalizing hints of oil in seabed samples just 200 miles from the North Pole. All told, one quarter of the world's undiscovered oil and gas resources lies in the Arctic, according to the United States Geological Survey. The polar thaw is also starting to unlock other treasures: lucrative shipping routes, perhaps even the storied Northwest Passage; new cruise ship destinations; and important commercial fisheries. "It's the positive side of global warming, if there is a positive side," said Ron Lemieux, the transportation minister of Manitoba, whose provincial government is investing millions in Churchill. If the melting continues, as many Arctic experts expect, the mass of floating ice that has crowned the planet for millions of years may largely disappear for entire summers this century. Instead of the white wilderness that killed explorers and defeated navigators for centuries, the world would have a blue pole on top, a seasonally open sea nearly five times the size of the Mediterranean. But

if the Arctic is no longer a frozen backyard, the fences matter. For now it is not clear where those fences are. Under a treaty called the United Nations Convention on the Law of the Sea, territory is determined by how far a nation's continental shelf extends into the sea. Under the treaty, countries have limited time after ratifying it to map the sea floor and make claims. In 2001, Russia made the first move, staking out virtually half the Arctic Ocean, including the North Pole. But after challenges by other nations, including the United States, Russia sought to bolster its claim by sending a research ship north to gather more geographical data. On Aug. 29, it reached the pole without the help of an icebreaker - the first ship ever to do so. The United States, an Arctic nation itself because of Alaska, could also try to expand its territory. But several senators who oppose any possible infringement on American sovereignty have repeatedly blocked ratification of the treaty.”¹²⁶

Given that the US is not a party to the Convention it cannot make similar representations to those of Russia to the Commission on the Limits of the Continental Shelf and neither can it elect a US citizen to sit on that body. If the situation in the Arctic weren't bad enough it seems that, as a result of climate change, resources that were previously in US waters are, literally, moving out:

“Snow crabs, for example, appear to be moving away from Alaska, north and west toward Russia, as the sea ice retreats. They depend on nutrients that sink to the bottom from algae growing under the ice. The valuable fishery could eventually move entirely out of American waters, some federal fisheries scientists said. The fishing industry, a business where surviving one year to the next is the main worry, has largely not taken notice of the changes, although American crab boats are finding they have to steam farther and farther to haul in a decent catch. "If the crabs move over into the Russian zone," said Glenn Reed, the president of the Pacific Seafood Processors Association in Seattle, "there's not much to be done about that except hope they come

126 “As Polar Ice Turns to Water, Dreams of Treasure Abound.” *New York Times*. October 10, 2005.

back someday."¹²⁷

Given the weighty forces on each side of this debate in Washington it will be interesting to see how the matter progresses.

For its part, the rest of the planet is getting on with life within the framework of the Law of the Sea Convention. There are now some 149 States party to the 1982 Law of the Sea Convention (Estonia became the 149th on 26 August 2005)¹²⁸. The International Seabed Authority is up and running¹²⁹. Subsea mining activities are beginning to take place but seemingly within the boundaries of EEZs rather than out in the abyssal plains¹³⁰.

CHAPTER 10 - CHM IN OTHER CONTEXTS

One obvious preliminary matter is whether the CHM principle could or should be extended to living resources. Proposals were made early on to bring fisheries within the ambit of the concept, particularly before the EEZ concept had made its appearance¹³¹.

A more recent development however is the discovery of the remarkable ecosystems surrounding the deep sea vents, where life depends for its energy on chemosynthesis rather than photosynthesis, has opened up new vistas for biological, and biotechnological, research. These deep vents are mainly located in the mid-ocean ridges. Expeditions have

already set sail to retrieve organisms from the high seas and sequence their genes¹³². Similar attention is being paid to the organisms of the deep vent communities. To the extent that they may have a commercial, as well as scientific value, the same questions arises as with mineral resources of the deep seabed: who may own them? There may, for example, be some located within the boundaries of an EEZ, in which case the 'living resources' provisions of the EEZ regime may apply. Otherwise though, although the vents themselves may be part of the seabed, living resources associated with them would fall outside the ambit of the definition of the resources of the deep seabed for the purposes of Part XI of the Convention. Is it the case that these living resources of the deep vent communities can simply be investigated and their genetic resources appropriated as a freedom of the high seas, subject to, for example, the need for appropriate conservation guidelines? Should these resources be brought within the ambit of the CHM principle? As yet there is no distinct framework for the living (and genetic) resources of the deep seabed¹³³.

10.1 The 1967 Outer Space Treaty and the 1979 Moon Agreement

It is perhaps not too surprising that another area in which the concept of the CHM has been discussed is that of outer space. The planetary natural resources that have so far been available to mankind are of course only a tiny fraction of the natural resources in the rest of the solar system and more broadly the rest of the universe¹³⁴. Whether and to what extent

127 Ibid.

128 http://www.un.org/Depts/los/convention_agreements/convention_agreements.htm

129 See e.g. <http://www.isa.org.jm>

130 For example, Neptune Minerals, plc. recently successfully floated on the Alternative Investment Market (AIM) in London with the aim of exploring an area of some 400 sq. km (including 12 volcanic seamounts) within New Zealand's EEZ, for Seafloor Massive Sulphide (SMS) deposits.

131 See e.g. Oda, *ibid* note 64 p. 688.

132 Note e.g. Craig Venter's recent ocean sampling / sequencing expeditions.

133 For a recent review see e.g. "Deep Sea Genetic Resources in the Context of the Convention on Biological Diversity and the United Nations Convention on the Law of the Sea", Korn, Friedrich & Feit, BfN (Federal Agency for Nature Conservation), Skripten 79, 2003, available at: www.bfn.de/09/skript79.pdf

134 To make a few crude comparisons of energy and matter availability, our sun has a total power output of some 4×10^{26} W, compared with the 3.6×10^{11} W that the Earth's nuclear reactors were capable of

mankind will be able to carry out the exploitation of these resources in the medium to long term is a difficult question but it is at least sufficiently conceivable that legal arrangements for such activity have already been discussed.

The most important international agreement so far reached concerning off-planet matters is perhaps the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space¹³⁵, also simply known as the Outer Space Treaty. Article 1 provides that: “The exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all other countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind. Outer space,

putting out in 2002 (DOE/IEO), and the nearest of the gas giants of the Solar System, Jupiter, has a mass of some 1898×10^{24} kg, over 300 times that of the mass of the Earth. As an immediate matter, concerned by anthropogenic climate change, proposals have been made for orbital or Moon-based solar power arrays that could collect solar energy and then beam that to the Earth’s surface using microwaves. In the longer term, apart from, for example, conventional minerals, there are many other raw materials of interest in the Solar System. One example is Helium-3, proposed as a clean fusion fuel source, which is believed to exist in large quantities in the Lunar surface and in vast quantities in the atmospheres of Jupiter, Saturn and Uranus. On space resources in general, see e.g. the Colorado School of Mines, which holds an annual Space Resources Roundtable: relevant papers are available at <http://www.mines.edu/research/srr/>. In the even longer term, if humanity ever manages to solve its immediate basic needs problems and is looking for something more challenging, thinking about harnessing the power output of the sun to re-assemble most of the raw material in the Solar System into a shell enclosing the sun, a so-called “Dyson Sphere” (see Dyson, “Search for Artificial Stellar Sources of Infrared Radiation,” *Science*, 131, No. 3414, June 1960, pp. 1667--1668), which would solve humanity’s energy and resource requirements for the foreseeable future, would probably do the trick.

135 Doc. A/Res/2222 (XXI), 25 January 1967.

including the moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies. There shall be freedom of scientific investigation in outer space, including the moon and other celestial bodies, and States shall facilitate and encourage international cooperation in such investigation”. Article 2 provides that “Outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means”. Article 4 provides that “...The Moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes...”.

Accordingly, a situation similar to that established under the Law of the Sea Convention can be seen, in that the Moon and other celestial bodies are the ‘province of all mankind’, cannot be appropriated, any exploration and exploitation thereof must be carried out for the benefit of all countries and must be for peaceful purposes. However, these are rather more hortatory statements than those in the Law of the Sea Convention and there is no more specific recitation of a CHM concept or detailed machinery to put an international regime into effect. On the contrary the emphasis is perhaps rather more on the free use of space, akin to the freedom to the high seas. It may be recalled that the fact that areas of space cannot be owned *per se* under this Treaty, an application of the *res communis* principle, is not necessarily a disincentive to the activities of the private sector as concepts such as ‘usufructuary rights’ will still permit exploitation of an area even in the absence of outright title to that area¹³⁶.

136 It is perhaps worth recalling the timing of this 1967 Outer Space Treaty in the light of the space programs of the US and USSR at the time, i.e. engaged in a race to the Moon. It is interesting to speculate what may have happened if there were no such race but if one of them looked liked they were going to reach the Moon unchallenged. Consider if the Moon had instead been treated under the principle of *res nullius*, or rather *terra nullius*, and that after making that first landing in *Mare Tranquillitatis* on July 20th 1969, instead of the landing plaque reading “Here men from the planet Earth first set foot

Although the Outer Space Treaty does not go so far as to mention the CHM principle in the same terms as the Law of the Sea Convention, the other relevant space related agreement, the 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies¹³⁷, also known as the Moon Agreement, certainly does:

Article 1.

1. The provisions of this Agreement relating to the moon shall also apply to other celestial bodies within the solar system, other than the earth, except in so far as specific legal norms enter into force with respect to any of these celestial bodies.
2. For the purposes of this Agreement reference to the moon shall include orbits around or other trajectories to or around it.
3. This Agreement does not apply to extraterrestrial materials which reach the surface of the earth by natural means.

Article 11.

1. The moon and its natural resources are the common heritage of mankind, which finds its expression in the provisions of this Agreement, in particular in paragraph 5 of this article.
2. The moon is not subject to national appropriation by any claim of sovereignty, by means of use or occupation, or by any other means.

upon the Moon, July 1969 A.D. We came in peace for all mankind.", it read "Here men from the United States first set foot upon the Moon, July 1969 AD. We claim the Moon in the name of President Richard Nixon and the American people". Or for that matter, bearing in mind the provisions of Article 1(2) of the Moon Agreement, if Yuri Gagarin had advanced claims on behalf of the USSR on the 12th April 1961 when he became the first human to enter Earth orbital space. Of course to acquire such rights, there is always a question of the effectiveness of the occupation and possession.

137 UNGA Resolution 34/68, 5th December 1979.

3. Neither the surface nor the subsurface of the moon, nor any part thereof or natural resources in place, shall become property of any State, international intergovernmental or non-governmental organization, national organization or non-governmental entity or of any natural person. The placement of personnel, space vehicles, equipment, facilities, stations and installations on or below the surface of the moon, including structures connected with its surface or subsurface, shall not create a right of ownership over the surface or the subsurface of the moon or any areas thereof. The foregoing provisions are without prejudice to the international regime referred to in paragraph 5 of this article.
4. States Parties have the right to exploration and use of the moon without discrimination of any kind, on the basis of equality and in accordance with international law and the provisions of this Agreement.
5. States Parties to this Agreement hereby undertake to establish an international regime, including appropriate procedures, to govern the exploitation of the natural resources of the moon as such exploitation is about to become feasible. This provision shall be implemented in accordance with article 18 of this Agreement.
6. In order to facilitate the establishment of the international regime referred to in paragraph 5 of this article, States Parties shall inform the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, of any natural resources they may discover on the moon.
7. The main purposes of the international regime to be established shall include:
 - (a) The orderly and safe development of the natural resources of the moon;
 - (b) The rational management of those resources;
 - (c) The expansion of opportunities in the use of those resources;
 - (d) An equitable sharing by all States Parties in the benefits

derived from those resources, whereby the interests and needs of the developing countries, as well as the efforts of those countries which have contributed either directly or indirectly to the exploration of the moon, shall be given special consideration.

8. All the activities with respect to the natural resources of the moon shall be carried out in a manner compatible with the purposes specified in paragraph 7 of this article and the provisions of article 6, paragraph 2, of this Agreement.

As summarised above in Chapter 5, the essential elements of the CHM principle as applied to a given area were that (i) the area is not subject to appropriation of any kind, whether public e.g. by a State or private e.g. by a Corporation; (ii) the management of the area must be carried out by and on behalf of all humanity, or rather as a practical matter, by ‘trustee’ representatives thereof; (iii) any benefits flowing from such management must be shared amongst all humanity; and (iv) the use of the area must be limited to peaceful purposes. Articles 11(2) and (3) correspond to the first element; Article 11(5) provides for the establishment of an international management regime “as such exploitation is about to become feasible” which largely corresponds to the second element, albeit without referring to all humanity *per se* and being on a prospective basis; and Article 11(7)(d) largely corresponds to the third element, although again, instead of specifying a sharing among all humanity *per se*, it speaks of a sharing among the States parties with particular attention being paid to developing countries and those that have contributed to the exploration of the moon. Article 3 corresponds to the fourth and final element. Accordingly, the Moon Treaty does reflect a similar concept of CHM to that of the Law of the Sea, although it does seem rather less true to the lofty notion of the common heritage of all humanity (e.g. Articles 136, 137(2), Law of the Sea Convention), and instead focuses on a concept of CHM that is defined on the more narrow terms of this Agreement to embrace only States parties (c.f. Articles 11(1), 11(7)(d), Moon Agreement).

Unsurprisingly therefore, discussions have taken place on moon mining

activities which parallel and draw comparison with those relating to the mining of the seabed¹³⁸. A distinction is drawn in these discussions between the impact of the Outer Space Treaty, which, as noted above, is seen by the developed States as able to be consistent with their view of free markets, and the Moon Agreement 1974, which is not. A Report of the United States National Commission on Space concluded, for example, that the Moon “Treaty’s provisions for the use of natural resources on other celestial bodies suggest a collectivized international regime analogous to the seabed mining regime in the Law of the Sea Treaty. Such a regime could seriously inhibit American Enterprise in space.”¹³⁹. It is noted however that even among those opposed to an international regime on the lines of the ISA that some element of benefit sharing is still foreseen: “Nations undertaking the large investment to exploit resources of outer space should share the benefits with the remainder of the world. Those nations, however, should be the ones to determine when and how those benefits are shared”¹⁴⁰.

There is a dramatic contrast between the number and nature of States that have signed and ratified the Outer Space Treaty (98 as of 1st Jan 2005) and those that have signed and ratified the Moon Agreement (11 as of 1st Jan 2005)¹⁴¹. The inclusion of the CHM principle is said to be the major cause of this disparity¹⁴². One very important factor here must be that the Moon Agreement stands by itself, unlike Part XI of the Law of the Sea Convention, which is part of a package deal. To the extent that developed States could be drawn into accepting the CHM principle in return for developing States accepting the transit right, that package deal effect does not exist in the Moon Agreement. That would explain

138 See for example “The Commercial Exploitation of Mineral Resources in Outer Space.” Milton L. Smith (Director of Space and International Law, Air Force Space Command, Colorado Springs), *Space Law: Views of the Future*. Kluwer Law and Taxation Publishers.

139 Smith, *ibid* note 138 p. 53

140 Smith, *ibid* note 138 p. 55.

141 <http://www.oosa.unvienna.org/SpaceLaw/treatystatus/index/html>

142 Joyner, “International Law in the 21st Century”. Rowman & Littlefield, 2005, p. 244.

why the developed States have not been enthusiastic but it seems that virtually no developing States are either. It may well be that since very few developing States yet have interests in space that it was simply premature to settle on the terms reflected in the Moon Agreement. One obvious counter-example is that of China. Concrete plans have recently been announced for China to return humans to the Moon for the purposes of establishing a long term presence there. A particular focus is the mining of He-3¹⁴³. This has the potential to spark off classic inter-State or regional rivalry, as the discussion generated in the US, Japan, Russia, Europe and India demonstrates. As always, the principle of ‘first come, first served’ is likely to look more or less attractive depending on you are the first comer, or not.

An interesting example of the developed countries being on the receiving end of a unilateral claim from developing countries over a vital natural resource comes with consideration of Earth’s geostationary orbit. Geostationary orbit (GSO), some 36,000 km above the equator, is where satellites need to be located if their position relative to the point below on the Earth’s surface is to remain constant, an important consideration for their transmission ‘footprint’. Seven equatorial States (Brazil, Colombia, Ecuador, Indonesia, Kenya, Uganda and Zaire) issued the Bogota Declaration on December 3rd, 1976, under which they laid claim to the GSO as a natural resource over which they respectively had sovereign rights, making reference to the CERDS among other instruments. Any conflict with the non-appropriation provisions of the 1967 Outer Space Treaty was apparently rejected on the basis that the GSO was not considered part of ‘outer space’ Nevertheless, to a great extent perhaps because this is a weak argument, the claim has gained little traction, although it is still under discussion.

10.2 The Antarctic Treaty System¹⁴⁴

143 c.f. note 134 above.

144 A good introduction to the politics (as well as pretty much every other aspect) of Antarctica is Pyne, “The Ice.” Phoenix, 2004.

The Antarctic has been subjected to claims of sovereignty, sometimes in conflict, over portions of territory by seven States, Argentina, Australia, Chile, France, New Zealand, Norway and the United Kingdom. However, such treatment of the Antarctic in terms of the traditional terra nullius approach, was overtaken by a rather different model (which is perhaps ironic as for once the territory claimed under the principle was truly unoccupied). An unprecedented international program of scientific enquiry was undertaken in the International Geophysical Year (IGY) project of 1957-1958, overseen by the International Council of Scientific Unions. The seven claimant states plus Belgium, Japan, South Africa, the US and the USSR undertook extensive joint activities. Despite the Cold War tensions it seems that the political ‘blank sheet’ nature of the Antarctic helped matters along. This cooperation helped to bring about the 1959 Antarctic Treaty, which has subsequently evolved into the set of agreements now known as the Antarctic Treaty System (ATS), under which instruments the Antarctic has been governed for nearly half a century as a true global commons space.

As with the Outer Space Treaty, although there was a strong reflection of constituent features such as use “in the interest of all mankind” for peaceful purposes, open scientific research and non-appropriation, the ATS does not establish Antarctica as the CHM *per se*. There was however a concerted attempt in the 1980s to do so:

“Little did the Maltese representative in the UN General Assembly realise that as early as 1967, when he had argues that the seabed and its resources beyond the limits of national jurisdiction should be proclaimed the common heritage of mankind, that the seed was sown for a later initiative on the ‘Question of Antarctica’ in the UN. Eventually some fifteen years later, the results of the Third UN Conference on the Law of the Sea (UNCLOS III) served as a stimulus for certain developing countries to link the common heritage of mankind concept to the legal and political status of the Antarctic. Dissatisfied with the outcome of UNCLOS III (...concern[ing] the considerable extension of the continental shelf regime, on the one hand, and the refusal of major industrialised countries to agree with Part XI...), a group of developing

countries, led by Malaysia, launched in the early 1980s a critique of the ATS in the UN¹⁴⁵

However, on inspection, there are likely to be significant differences between the activities undertaken on the deep seabed and those in Antarctica, which will impact whatever the CHM principle would mean, if applied to the case of Antarctica. For example, since one of the prime goals of the Antarctic governance framework is to preserve the pristine environmental conditions, although there was some thinking along these lines in the late 1980s, industrial mining is not now permitted¹⁴⁶, even if resources such as minerals or oil and gas have been located¹⁴⁷. This brings about a difficulty with the third element of the CHM concept, that of sharing royalties from the mining activities among all humanity. However, it is perhaps the case that benefit sharing can be regarded in a broader light than merely financial gain.

An Antarctic Treaty System Secretariat was established in Buenos Aires

145 Vidas. "An Overview." Chapter 2 in *Governing the Antarctic: The effectiveness and legitimacy of the Antarctic Treaty System*. Cambridge University Press, 1996, p. 51.

146 The previously negotiated 1988 Convention on the Regulation of Antarctic Mineral Resource Activities was in fact abandoned in favour of the Protocol on Environmental Protection to the Antarctic Treaty in June 1991, forbidding exploration or mining in Antarctica for at least 50 years. Reportedly it was the need to secure the Green vote in a forthcoming Tasmanian state election which led to an about turn on the part of Australia's Prime Minister, scuppering the Convention. See comments of Woolcott AC, "The Continuing International Importance of the Antarctic Treaty", 40th Anniversary Conference, Virtual Institute of Antarctic Studies, at www.vias.studies.aq/publications/40th/contents.html.

147 The resource in which Antarctica abounds is, of course, ice, the continent holding some seventy percent of the world's fresh water in frozen form. This may yet be of some interest given the shortages of fresh water which the world has begun to experience and which look only to worsen.

in 2004¹⁴⁸.

10.3 Other examples

There are many other examples of resources that have been claimed as being part of the CHM or described in very similar terms such as the 'common concern of mankind' or the 'common province of mankind', most often it seems in a hortatory or purely speculative sense. Expansive claims have been for the CHM principle to apply to "science and technology" in a general sense and indeed "all the unclaimed wealth of this Earth" (this latter, the Prime Minister Mahatir of Malaysia). The following are just a few more examples:

(i) Radio frequencies:

"The idea of vesting ITU [International Telecommunications Union] with property rights and more management powers over radio frequencies (and orbital slots) could be studied from a perspective of analogies with another international regime. For example, the international regime for the deep seabed resources was originally designed under the 1982 United Nations Convention on the Law of the Sea. This regime was modified by the Agreement Relating to the Implementation of Part XI of the Convention on the Law of the Sea, which entered into force on 16 November 1994. Under the new regime, the seabed resources that are declared to be the "common heritage of mankind" would be exploited by an international body in cooperation with the private sector. Perhaps this model could inspire a similar approach that the ITU member States might take by vesting the ITU with more management powers over the radio frequencies (and orbital positions) and by transforming itself as an International Telecommunication Regulatory Authority, somewhat similar to the Federal Communications Commission of the US."¹⁴⁹

148 See www.ats.org.ar

149 Jakhu, "International Regulatory Aspects of Radio Spectrum Management (Implications for Developing Countries like India)",

(ii) Food Resources¹⁵⁰

(iii) The Human Genome:

Article 1 of the 1997 UNESCO Universal Declaration on the Human Genome and Human Rights provides that, “The human genome underlies the fundamental unity of all members of the human family, as well as the recognition of their inherent dignity and diversity. In a symbolic sense, it is the heritage of humanity.”

Plant Genetic Resources have also been treated as the common heritage of mankind¹⁵¹.

(iv) Culture:

Article 1 of the 1966 UNESCO Declaration of the Principles of International Cultural Cooperation provides that “1. Each culture has a dignity and value which must be respected and preserved. 2. Every people has the right and the duty to develop its culture. 3. In their rich variety and diversity, and in the reciprocal influences they exert on one another, all cultures form part of the common heritage belonging to all mankind.”

CHAPTER 11 - LEGAL ANALYSIS OF CHM TODAY

The concept of the Common Heritage of Mankind is certainly a

Centre for the Study of Regulated Industries publication, McGill University, available at: <http://www.law.mcgill.ca/institutes/csri/paper-jakhu-international.php>

150 Bedjaoui, “Are the world’s food resources the common heritage of mankind?”, *The Indian Journal of International Law*, 1984, pp. 459-467.

151 See e.g. Thomas. “Common Heritage to Common Concern: Preserving a Heritage and Sharing Knowledge.” *The Journal of World Intellectual Property*, May 2005, pp. 241-270.

remarkable one. One difficulty with it however is that it is such an expansive idea, that evidently means so many different things to so many different people, that it is perhaps difficult to speak of “the” concept.

At one end of the spectrum is the ‘strong’ form of CHM principle envisaged by Dr. Pardo and the developing countries of the G-77 during the NIEO for application to the deep seabed. Inevitably, given the changes that blew through the world in the 1980s and 1990s, much of the strength of this view of the CHM principle has been sapped: “...Although the area of the deep seabed beyond the limits of national jurisdiction is still called and declared as the common heritage of mankind, the term has lost its original meaning and substance when it symbolized the interests, needs, hopes and aspirations of a large number of poor peoples. The principle has lost its lustre and soul...”¹⁵². This change is not just the result of the increasing dominance of free market thinking however. The invention of the EEZ and its inclusion in the Law of the Sea Convention robbed much of the riches of the ocean from the zone of the international regime under the CHM principle. With the dwindling expectations of the wealth associated with this zone alone, as the dreams of an El Dorado on the abyssal plains faded, came a dwindling of practical impact that the concept was likely to have. This by no means indicates that the CHM itself withered away completely however. Far from it:

“When looked at from the vantage point of the mid-1990s, we see that in no other time in history of the common heritage of mankind was there such clear support from industrialized states as today. During the negotiations of the 1994 Agreement on the Implementation of the Seabed Provisions of the Convention on the Law of the Sea, which was finally adopted as a General Assembly Resolution, it became unequivocal that no state was against the basic notion of the common heritage of mankind. Similarly the Moon Treaty came up for review in the General Assembly in its 49th Session. Although no decisive action

152 Anand, *ibid* note 53 p. 196.

was taken, it was clear that major space-faring nations are not against the common heritage principle at this abstract level, just as in the LOSC. However, it must be emphasized that the support of “the then major persistent objectors” such as the US and the UK does not indicate a U-turn in their policy out of the blue, but does display a radical change in the implication of the common heritage of mankind that is in line with the two-decade-old demands of the industrialized states.”¹⁵³

So, the resolution of this apparent paradox is the fact that the meaning ascribed to the CHM concept has been managed away from the dreams of the developing countries in the 1960s and early 1970s to a more free market friendly position. Instead of any free standing, self-evident definition of the CHM, it has fallen to be determined by how it was implemented in the deep seabed area in the Law of the Sea Convention, and it was only the amendment to that Convention wrought by the changes of the 1994 Agreement that brought the developed States on board. As is clear from the above however, the CHM concept is still regarded with sufficient disdain by influential portions of the American political sphere that its continuing presence in the Law of the Sea Convention as amended is still contributing to the blocking of efforts for the US to ratify the Convention.

As far as the reflection of the CHM principle applied to the resources of the deep seabed is concerned therefore it is perfectly proper to note that it certainly achieved normative value under international treaty law in the terms now provided for in the Law of the Sea Convention. To what extent it has achieved normative value under customary international law is a harder question to answer:

“While NIEO aspirations and the common heritage concept remain linked philosophically, the prospects for realizing either have dimmed markedly over the past three decades. It is true that the CHMP has emerged as a legitimate treaty-based principle of international law. That the UN Law of the Sea Convention entered into force in 1994 attests to

as much. Even so, the CHMP still lacks acceptance as a customary legal norm sustained and substantiated by state practice”¹⁵⁴

It is perhaps unsurprising that the principle of the CHM has not been so hallowed by state practice. Quite simply, there is no deep seabed mining to be creating a large body of such practice. Nevertheless, there is something that can perhaps be pointed to as evidence that at least certain elements of the concept has gained some binding force: the unilateral, national legislation that was enacted by the developed States to provide for a deep seabed mining regime more in accordance with their thinking.

It will be recalled that the four elements widely regarded as constituting the CHM principle are (i) the area is not subject to appropriation of any kind, whether public e.g. by a State or private e.g. by a Corporation; (ii) the management of the area must be carried out by and on behalf of all humanity, or rather as a practical matter, by ‘trustee’ representatives thereof; (iii) any benefits flowing from such management must be shared amongst all humanity; and (iv) the use of the area must be limited to peaceful purposes. The national legislation did not treat the seabed as capable of being claimed outright i.e. it rejected *res nullius* based claims, and provided instead the degree of exclusive right thought necessary to permit mining activity (again c.f. the concept of usufruct). Although there were disputes, an argument can be made that element (i) is present. There is far more disagreement on element (ii). The sort of international regime envisaged by the developing countries, administering the resources of the area for all mankind, including production limits if felt necessary, was a far cry from the maximally efficient market oriented regime favoured by the developed countries. Nevertheless, it is the case that the provisions of the national legislation and the Reciprocating States arrangement could be said to be some form of international regime. What is perhaps most interesting is that the national legislation did reflect element (iii) of the CHM principle, in terms of charging a ‘benefit sharing’ royalty, which certainly need not have been the case if the deep seabed mining was truly regarded as

153 Baslar. “The Concept of the Common Heritage of Mankind in International Law.” Nijhoff, 1998, pp. 348-349.

154 Joyner, *ibid* note 142 p. 220.

being an exercise of the freedom of the high seas, in the context of an application of a *res communis* principle, as had been argued. As noted above in Chapter 7, the national legislation provided for the setting up of Trust Funds to hold the royalties levied that system, pending transfer to the ISA at a later date. Of course, it may be the case that these countries would deny they were under any obligation to provide for any such fund and it is also true that the scale of these royalties and the manner in which the royalty levying scheme was to be implemented were matters subject to national decision making rather than any internationally agreed scheme. Nevertheless, the case must have strengthened for asserting that, notwithstanding their supposed ability to enact unilateral legislation, they felt they were obliged to reflect a degree of benefit sharing as a consequence of observing the CHM principle¹⁵⁵.

There are reasons to believe that similar schemes would be enacted if the mining of the Moon or other bodies in the Solar System becomes feasible, as noted above in Chapter 10. It is not unduly surprising therefore to note opinions expressed that this element (iii) of the principle of the CHM should be regarded as having been elevated to the status of a customary international law norm level (although whether it has been elevated so far as to become regarded as a *jus cogens* norm is perhaps a different matter), for example:

“Strong support for *jus cogens* back-up comes from Hannikainen, according to whom sharing of benefits, as an element of the common heritage of mankind, should be a part of peremptory norm.

There are weighty grounds for the argument that all States are under the peremptory obligation to share a ‘reasonable’ part of the benefits derived from their exploitation of the resources of the international seabed either with the international community or with developing

155 It is not at this moment clear how the obligation to share benefits under the continental shelf regime, in respect of exploitation of mineral resources beyond 200 nautical miles, which developed States were supposed to accept, is being treated.

nations.”¹⁵⁶

Moving toward the other end of the spectrum, there are a wide variety of different forms in which something like the CHM principle is called on, some of which reflect a ‘weak’ CHM principle and others of which refer, for example, to the common concern of mankind or the common province of mankind. Often these references are intended in a merely hortatory fashion. It must be true however that even such a reference sets a tone and helps to establish a framework for the particular norms that are set down in each such case. Nevertheless, the binding effect, such as it is, of the strong form of the CHM principle is not present.

CHAPTER 12 - A LANDSCAPE OF INVENTIONS

12.1 Introduction

As has been noted at several points above, there are evident similarities between the regime of exclusive rights established under the Convention, and specifically in respect of deep seabed mining rights, and Intellectual Property Rights regimes. As noted above, given the origin of the embryonic patent system in German mining rights systems, this was not a wild stab in the dark.

Accordingly an interesting thought experiment goes as follows¹⁵⁷. What if, instead of considering the territory of the deep seabed as the area to be governed under the Common Heritage of Mankind principle, a hypothetical area of an ‘invention landscape’ were considered in the equivalent way (i.e. the strong form of the CHM principle). That is to say, imagine, for example, a landscape covered with a grid, where each grid square contains a discrete invention. To discover each new

156 Baslar, *ibid* note 158 p. 366.

157 As outlined above in Chapter 10 there have been proposals to treat Science and Technology as the CHM. However, the present author has not seen the following specific thought experiment noted before but, as seems entirely possible, if it has, it will be interesting to compare the reported results.

invention involves “exploring” the landscape in much the same way as areas of the seabed are explored (in fact this “prospecting” model is perhaps a closer approximation to pharmaceutical R&D today, “discovering” a useful molecule after High Throughput robotic Screening of millions of candidates, than an approach involving a true “inventive step”). In both cases it will take effort and resources to carry out the prospecting / R&D. Of course there are differences too. The deep seabed may be treated largely in terms of a two dimensional surface. Two such areas cannot be in the same place at the same time. The interconnection of inventions is rather more complex. But, for the purposes of this experiment, imagine such a simplified form, e.g. each grid square of a biomedical invention landscape corresponds to a different molecule which may be used as an intervention against a given disease.

If we ‘crank the handle’ of this thought experiment, and apply the CHM principle, what comes out?

12.2 The Biomedical Invention Landscape

12.2.1 Essential Elements

It will be recalled that there are at least four essential elements of the concept, and some add a fifth, for any area considered subject to the CHM principle:

- (i) the area is not subject to appropriation of any kind, whether public e.g. by a State or private e.g. by a Corporation;
- (ii) the management of the area must be carried out by and on behalf of all humanity, or rather as a practical matter, by ‘trustee’ representatives thereof;
- (iii) any benefits flowing from such management must be shared amongst all humanity; and
- (iv) the use of the area must be limited to peaceful purposes.

- (v) scientific research in the area must be able to be carried out freely, so long as the area is not thereby compromised in any way, and the results openly published, for the benefit of all humanity.

Applying this thinking to a biomedical invention landscape, in a very rough and ready fashion, something like the following might be thought to emerge.

Firstly, it will not be permissible for any private or public entity to ‘own’ outright any of these biomedical inventions. These inventions are all regarded as the Common Heritage of Mankind. It would still be permissible however to grant limited exclusive rights for exploitation purposes over the or each invention in question for a limited period of time. This is interesting insofar as it indicates that the application of the CHM principle does not necessarily rule out something like the patent system.

Secondly, biomedical inventions would have to be managed for the benefit of all humanity. This requires consideration not only of how best to use the biomedical inventions in question for that portion of humanity alive today but also how best to use those inventions with an eye to the future. The ‘rational use’ of biomedical inventions from an optimal public health point of view would become an inherent feature of the system¹⁵⁸. To take one example, as new areas of the invention landscape were explored and evaluated and as new interventions against infectious diseases were therefore discovered, it would be necessary that those new interventions be optimally managed for the benefit of all humanity, entailing deployment and use of good quality medicines such that, for example, the emergence of resistance is delayed as far as possible. A critical issue is that nature of the regime that would be established to effect this management, on trust for all humanity, as discussed in the following section.

158 See e.g. <http://www.who.int/medicines/en/>

Thirdly, the benefits from these biomedical inventions must be shared amongst all humanity. Benefits are to be widely conceived and are not limited to a share in any financial gain from any exploitation.

Fourthly, biomedical inventions must only be used for peaceful purposes.

Fifthly, scientific research must be able to be freely carried out and the results of this research, freely published in accordance with the scientific method, for the benefit of all humanity.

12.2.2 Nature of Regime

The nature of the regime is of course one of the most vital questions, discussed at length above in Chapter 5 in the context of the deep seabed. Again, in a rough and ready fashion, something like the following might be thought to emerge as equivalents.

Model I: At one end of the spectrum would be the ‘maximalist’ regime. An International Biomedical R&D Authority (IBA) would be set up under a Biomedical R&D Convention to manage biomedical R&D on behalf of all mankind. This Authority would have an Assembly, of all States Parties to the Convention, a Council, of a smaller number of States parties elected from the Assembly, very likely specialised advisory Committees under the authority of the Council, a Secretariat, and some means of settling disputes. The IBA would have an operational arm, the Enterprise, which would carry out biomedical R&D under the auspices of the IBA, which would set the priorities for which areas of the biomedical landscape were to be explored at which stage. Scientists and technologists from all States parties would be able to work in the Enterprise and have the chance to carry out exploration / R&D at the highest level, thus providing non-financial benefits in terms of international capacity building. Pre-existing public and private entities engaged in biomedical R&D would no longer be able to carry out biomedical R&D by themselves, instead they would continue operating as contractors for the Enterprise. Those entities that had already invested significant amounts in biomedical R&D could be

provided with special treatment as ‘pioneer investors’, including the payment of appropriate sums on fair and reasonable commercial terms to buy them out of their investments on behalf of the Enterprise. The end to which this first regime is implemented is notionally not the maximal efficiency of biomedical R&D, or maximal profitability of biomedical R&D but rather the maximally beneficial management of biomedical R&D, from the perspective of all humanity.

Model II: Toward the middle of the spectrum, instead of only having such a body as the Enterprise, there could be a parallel system where, although the Enterprise carries out biomedical R&D, other public and private entities are also permitted to do so. The IBA could still be involved in determining which areas of the biomedical landscape were to be investigated as a matter of priority but it would be public and private entities that would respond with applications for claims to certain areas that they had been exploring. In outline, following exploration, such entities would submit an application claiming exploitation rights over that area, i.e. that invention, which would have to include the necessary information and data. If the IBA judged that the application met the requisite standards, including not conflicting with earlier claims, then exclusive exploitation rights could be granted over that invention, for a limited period of time. In this way, the IBA under this second regime looks something like a combination of an international health body, setting R&D priority areas, and a patent office, granting exclusive rights over inventions in the chosen areas. In this way, instead of a patent office simply granting patents within the context of a patent law framework, the IBA would have a degree of control that could be exercised alongside such granting activity such as determining which areas of invention should be prioritised for patentability, or other obligations that applicants would have to fulfill in order to obtain grant. One example would be a ‘banking’ system whereby each applicant has to provide two potentially viable biomedical inventions, one of which the IBA will grant rights to the applicant in respect of, and the other of which is provided to the Enterprise, for further investigation. Another might be the mandatory submission of the exploratory / R&D data, which could be subsequently handled under a

number of different approaches, the default position of which would likely be open publication. Another might be a requirement to provide certain R&D related services to the Enterprise. Both public and/or private entities could take part in the exploration / R&D activities, and could, with the necessary skills, move to a demonstration of the viability of a newly discovered intervention. Hybrid arrangements, such as public private partnerships or public entities utilising private sector subcontractors, could also be imagined. It may be that commercial exploitation is permissible, and accordingly, if and when commercial exploitation is successful, royalties are collected by the IBA, helping to achieve independence for the IBA as well as acting as a source for funds to be shared amongst all humanity but especially developing countries. An alternative could be that private entities are permitted to carry out such exploration / R&D activities as lead to the demonstration of a viable new medicine but that the Enterprise then takes over as the exploitation end of the operation. It could be imagined that such 'pioneer investor' private entities are bought out on fair and reasonable commercial terms and that the Enterprise would then be in position to decide whether to exploit on the basis of a commercial product or on a not-for-profit basis.

Model III: At the other end of the spectrum is a system where a much more meager framework is established. In this case, there is no Enterprise, only the existing public and private enterprises engaged in biomedical R&D. They range over the biomedical landscape and as they make discoveries they notify their claims. A minimal system is provided for settling conflicting claims. A royalty would still be payable on commercial exploitation for benefit sharing amongst all humanity. This regime is, in effect, a totally free market based regime with only a minimal patent office to register, but not examine, claims between entities as to the granting of exclusive rights over newly discovered interventions. Entities will be able to carry out exploration unfettered by the intervention of any guiding agency and exploration in this third regime will likely therefore be carried out predominantly in those areas of the biomedical landscape which are likely to be most profitable.

12.2.3 Different Approaches

It is perhaps fair to imagine that the system which we have today is somewhere between the second and third cases. Clearly we have patent offices to resolve conflicts between successive claims, which must be a necessity given the complex manner in which patent claims may interrelate. However, apart from the influence of public or private funds to make adjustments to the attractiveness of different areas of exploration / R&D, private entities are left to prioritise their exploration / R&D efforts in terms of highest return on capital invested. It is of course expensive to carry exploration / R&D within the biomedical invention landscape. Generating the data to demonstrate that an invention is going to be viable is particularly expensive. It is commonly believed that to take a biomedical invention from discovery through to the market costs anywhere between tens of millions, hundreds of millions or even of the order of a billion dollars. This is a rather smaller sum than that estimated (on 1977 figures) to take a deep seabed mining site from exploration to a successful commercial exploitation, some \$2.5 billion, but it will be readily be agreed that both sums are very large. Left to their own devices private entities will likely therefore seek to prospect in the areas of the biomedical invention landscape where the greatest profits are to be made. This will be where the greatest return can be achieved at the lowest risk, the ocean equivalent of locating a financially lucrative resource in shallow water. By contrast there will be other areas of the biomedical invention landscape which, although potentially of enormous benefit to humanity, are not financially sufficiently valuable, or are too risky, the ocean equivalent of locating an essentially low value resource, or a resource in very deep water.

The key overarching issue, in terms of considering what might happen if it were decided that the biomedical invention landscape were to be treated as an area in accordance with the principle of the Common Heritage of Mankind, is perhaps simply therefore the extent to which free market logic dominates the biomedical R&D agenda. The developed States, with relatively rich markets, have generally believed the free market and the patent system to work efficiently in encouraging private entities to carry out the R&D which meets their public health

needs (although there are certainly now emerging problems needing to be addressed, not least the soaring overall healthcare costs of this model). They have of course applied different degrees of adjustment to the model, whether in terms of public input to basic research, or capping prices and hence returns, but overall the bulk of the R&D is expected to be done by the private sector. By contrast, the free market and the patent system on their own do not obviously work well for the public health needs of the poor, or poorer developing States, which includes the bulk of humanity. Of course there are many degrees of variation and circumstance, but in general it must be true to say that many in the developing world would prefer a global biomedical R&D system whose agenda was oriented more toward overall benefit of humanity, rather than simply maximal profit.

Although it is not the intention of this paper to settle on particular solutions to policy problems, or indicate whether the intellectual property or CHM systems are superior in general, or to what extent the application of the CHM principle may lead to practical solutions, including overall efficiency and compliance with present day treaty arrangements, it is clear that the thought experiment above indicates that there are perhaps a variety of possibilities for models that could, for example, subsume patent rights within a larger purposive CHM framework.

In the absence of such a shift to a new model, attempts to move private sector entities engaged in biomedical R&D to address the health needs of the poorer sections of humanity will need to continue relying on mechanisms such as public or private ‘market making’ injections of resources, or various forms of interoperation between the public and private sectors (including true partnerships and ‘virtual firm’ subcontractor models).

Practically speaking, looking back over the arc of fortune that developing countries have experienced between the 1950s and now, it is clear that they are unlikely to be in a position to obtain the subsuming or replacing of the present exploration / R&D model, based to a great

extent on the WTO/TRIPS Agreement, within a new and larger policy framework, unless the developed countries also became convinced that that was the way to go too. Concerns about sovereignty still run very strong in a number of developed countries, pre-eminently the US, and whether they would be willing to surrender control to a greater ‘planetary public health management framework’ remains to be seen.

The following section examines in mere outline a few examples, or proposed examples, where such thinking may be relevant. It should be noted that although there is clearly a great degree of similarity between the outcome of the application of the CHM model and ‘Global Public Good’ considerations, these will not be discussed further here.

12.3 Biomedical examples of CHM-like thinking?

12.3.1 Oseltamivir (Tamiflu)

The recent developments as regards avian flu (and specifically the H5N1) virus seemingly indicate that countries are willing to subsume free market considerations within a broader public health framework, taking into account the needs of humanity as a whole, when they deem it necessary. Given that no country, developed or developing, can regard itself as free from the menace of a pandemic of this sort, there seems to be a far greater degree of cooperation over avian flu and oseltamivir than has been seen with, for example, HIV/AIDS and anti-retroviral medicines. The World Health Organisation (WHO) seems to have assumed the pre-eminent position in terms of managing planetary responses to potential outbreaks of such pandemics, following the handling of the SARS virus in 2004, which must be challenging from a sovereignty perspective for many countries. It seems that States and, to a degree, private entities are moving toward regarding oseltamivir as a common resource and, for example, are discussing (compulsory) licensing measures and/or moving portions of their respective stockpiles to those countries on the front line who are most in need¹⁵⁹.

159 See e.g. http://www.who.int/csr/disease/avian_influenza/en/
<http://www.cptech.org/ip/health/tamiflu/index.html>

12.3.2 HIV/AIDS Vaccine Enterprise

This is a particularly interesting example, for at least two reasons. In a notable 2003 paper¹⁶⁰ a number of leading scientists called for the establishment of an HIV/AIDS Vaccine Enterprise. The thrust of the suggestion was that the disparate efforts currently being undertaken planet-wide to create one or more effective HIV/AIDS vaccines are likely doomed to fail since the scale on which they were being undertaken was simply not adequate to match the challenges of HIV/AIDS. Accordingly, the plan for the Enterprise was to form a gigantic 'grid', where each present R&D effort would form a node in that grid. The Enterprise would then be in a position to coordinate these efforts to bring about a far more effective overall response. Following extensive consultations, a Strategic Scientific Plan was published in February 2005¹⁶¹, indicating that:

The motivation behind the proposal for a Global HIV/AIDS Vaccine Enterprise was the recognition that development of an HIV vaccine remains one of the most difficult challenges confronting biomedical research today. Fortunately, scientific progress has created new opportunities that could be harnessed more effectively through global coordination and collaboration. These new opportunities include an expanded HIV vaccine candidate pipeline, improvements in animal models, a growing database from clinical trials, and the availability of new quantitative laboratory tools that make comparisons among vaccine studies feasible. Confronting major roadblocks and harnessing these new opportunities requires an effort of a magnitude, intensity, and design without precedent in biomedical research, with the Human Genome Project as a potentially useful model. More specifically, the critical scientific insights generated by the creativity of individual investigators, as well as small groups and individual networks, could be

significantly augmented by a properly organized, managed, and systematized international effort targeted on the design and clinical evaluation of novel HIV immunogens. An international collaborative effort that addresses a shared scientific plan, provides information exchange among groups, links clinical trials with standardized laboratory assays and evaluation in animal models, applies new knowledge to improvements in vaccine design in an iterative manner, and supports a transparent process for decision making in all aspects of vaccine discovery, design, development, and clinical testing will prove critical to success.

The Global HIV/AIDS Vaccine Enterprise represents a novel paradigm to seek and identify international agreement on the critical roadblocks for developing an HIV vaccine and on creating a shared scientific plan that addresses those roadblocks. The Enterprise proposes to coordinate efforts at a global level, facilitate use of common tools and technologies, and help ensure access to optimized resources. Furthermore, the Enterprise approach is a way of behaving as a global community of problem-solvers, more openly sharing information, ensuring that the shared scientific plan is implemented, and basing decisions on evidence rather than advocacy.

The intellectual property aspects of the Plan were outlined as follows:

Given the Enterprise focus on stronger collaboration, data sharing, and use of common materials and reagents, an intellectual property (IP) framework that facilitates this "enabling environment" is crucial for success. While IP issues may arise throughout the vaccine development process, at present the top priority is to stimulate early stage research and vaccine design by increasing scientific freedom to operate and sharing of data and biological materials.

Specific areas for further consideration include: (1) minimizing restrictions on freedom of operation, perhaps by early stage covenants not to litigate and followed by later stage agreements based on true valuations of IP; (2) sharing of information (including clinical trial

160 Klausner, RD, Fauci AS, et al: The need for a global HIV vaccine enterprise. *Science* 300:2036, 2003.

161 *The Global HIV/AIDS Vaccine Enterprise: Strategic Scientific Plan*. vol. 2, Issue 2, Public Library of Science (PloS) Medicine, February 2005.

data), materials, expertise, trade secrets, and platform technologies in a protected and secure manner while also remaining in compliance with national laws devised to prevent monopolies and insider trading; (3) recognizing the contribution of different countries to HIV vaccine development through approaches that assure affordable access to successful vaccines; and (4) maximizing access to essential technologies and inventions.

It is striking that the framework established under the Plan bears more than a passing resemblance to what would result from considering HIV/AIDS vaccines as the CHM in the manner undertaken as a thought experiment in the section above. It is perhaps simply the result of recognizing that some coordinating entity needs to guide HIV/AIDS R&D efforts in a more managed fashion than the market can alone achieve, especially as regards the sharing of information and data between parties, if resources in the fight against HIV/AIDS are likely to be best deployed. The fact that the project vehicle is called the (HIV/AIDS Vaccine) Enterprise, the same as its quasi-namesake in the deep seabed area, perhaps already gives a nod in that direction.

The Human Genome Project, mentioned above in Chapter 10, is also of course of great interest as another example.

12.3.3 The Medical Research and Development Treaty (MRDT)

Proposals for an MRDT have recently been made by Love and Hubbard¹⁶².

In similar fashion to the HIV/AIDS Vaccine Enterprise, although seemingly not derived from any CHM thinking, it seems fair to say that MRDT appears to be an excellent example of the subsuming of present day intellectual property thinking within a larger purposive framework, in much the same way as the CHM thought experiment above. Article 2.1 of the draft MRDT provides for the Objectives of the Treaty:

Members seek to promote a sustainable system of medical innovation that will:

- i. ensure adequate and predictable sources of finance for medical research and development,
- ii. allocate fairly the costs of supporting medical research and development,
- iii. identify priority areas of research and development,
- iv. encourage the broad dissemination of information and sharing of knowledge, and access to useful medical inventions,
- v. enable medical researchers to build upon the work of others,
- vi. support diversity and competition,
- vii. utilize cost effective incentives to invest in promising and successful research projects that address health care needs,
- viii. enhance the transfer of technological knowledge and capacity in a manner conducive to social and economic welfare and development, and
- ix. promote equitable access to new medical technologies, so that all share in the benefits of scientific advancement.

In focusing on the needs of, and setting an R&D agenda in respect of, all humanity, and in terms of matters such as sustainability, the institutional architecture established under the treaty, and the incentivisation of open public goods, open research, technology transfer and exceptionally productive and useful products, the aims and objects of the MRDT are likewise similarly aligned with those of the principle of the CHM.

¹⁶² <http://www.cptech.org/workingdrafts/rndtreaty.html>