Oceans and Law of the Sea

Division for Ocean Affairs and the Law of the Sea

The United Nations Convention on the Law of the Sea
(A historical perspective)

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A Historical Perspective

The oceans had long been subject to the freedom of-the-seas doctrine - a principle put forth in the seventeenth century essentially limiting national rights and jurisdiction over the oceans to a narrow belt of sea surrounding a nation's coastline. The remainder of the seas was proclaimed to be free to all and belonging to none. While this situation prevailed into the twentieth century, by mid-century there was an impetus to extend national claims over offshore resources. There was growing concern over the toll taken on coastal fish stocks by long-distance fishing fleets and over the threat of pollution and wastes from transport ships and oil tankers carrying noxious cargoes that plied sea routes across the globe. The hazard of pollution was ever present, threatening coastal resorts and all forms of ocean life. The navies of the

maritime powers were competing to maintain a presence across the globe on the surface waters and even under the sea.

A tangle of claims, spreading pollution, competing demands for lucrative fish stocks in coastal waters and adjacent seas, growing tension between coastal nations' rights to these resources and those of distant-water fishermen, the prospects of a rich harvest of resources on the sea floor, the increased presence of maritime powers and the pressures of long-distance navigation and a seemingly outdated, if not inherently conflicting, freedom-of-the-seas doctrine - all these were threatening to transform the oceans into another arena for conflict and instability.

In 1945, President Harry S Truman, responding in part to pressure from domestic oil interests, unilaterally extended United States jurisdiction over all natural resources on that nation's continental shelf - oil, gas, minerals, etc. This was the first major challenge to the freedom-of-the-seas doctrine. Other nations soon followed suit.

In October 1946, Argentina claimed its shelf and the epicontinental sea above it. Chile and Peru in 1947, and Ecuador in 1950, asserted sovereign rights over a 200-mile zone, hoping thereby to limit the access of distant-water fishing fleets and to control the depletion of fish stocks in their adjacent seas.

Soon after the Second World War, Egypt, Ethiopia, Saudi Arabia, Libya, Venezuela and some Eastern European countries laid claim to a 12-mile territorial sea, thus clearly departing from the traditional three-mile limit.

Later, the archipelagic nation of Indonesia asserted the right to dominion over the water that separated its 13,000 islands. The Philippines did likewise. In 1970, Canada asserted the right to regulate navigation in an area extending for 100 miles from its shores in order to protect Arctic water against pollution.

From oil to tin, diamonds to gravel, metals to fish, the resources of the sea are enormous. The reality of their exploitation grows day by day as technology opens new ways to tap those resources.

In the late 1960s, oil exploration was moving further and further from land, deeper and deeper into the bedrock of continental margins. From a modest beginning in 1947 in the Gulf of Mexico, offshore oil production, still less than a million tons in 1954, had grown to close to 400 million tons. Oil drilling equipment was already going as far as 4,000 metres below the ocean surface.

The oceans were being exploited as never before. Activities unknown barely two decades earlier were in full swing around the world. Tin had been mined in the shallow waters off Thailand and Indonesia. South Africa was about to tap the Namibian coast for diamonds. Potato-shaped nodules, found almost a century earlier and lying on the seabed some five kilometres below, were attracting increased interest because of their metal content.

And then there was fishing. Large fishing vessels were roaming the oceans far from their native shores, capable of staying away from port for months at a time. Fish stocks began to show signs of depletion as fleet after fleet swept distant coastlines. Nations were flooding the richest fishing waters with their fishing fleets virtually unrestrained: coastal States setting limits and fishing States contesting them. The so-called "Cod War" between Iceland and the United Kingdom had brought about the spectacle of British Navy ships dispatched to rescue a fishing vessel seized by Iceland for violating its fishing rules.

Offshore oil was the centre of attraction in the North Sea. Britain, Denmark and Germany were in conflict as to how to carve up the continental shelf, with its rich oil resources.

It was late 1967 and the tranquillity of the sea was slowly being disrupted by technological breakthroughs, accelerating and multiplying uses, and a super-Power rivalry that stood poised to enter man's last preserve - the seabed.

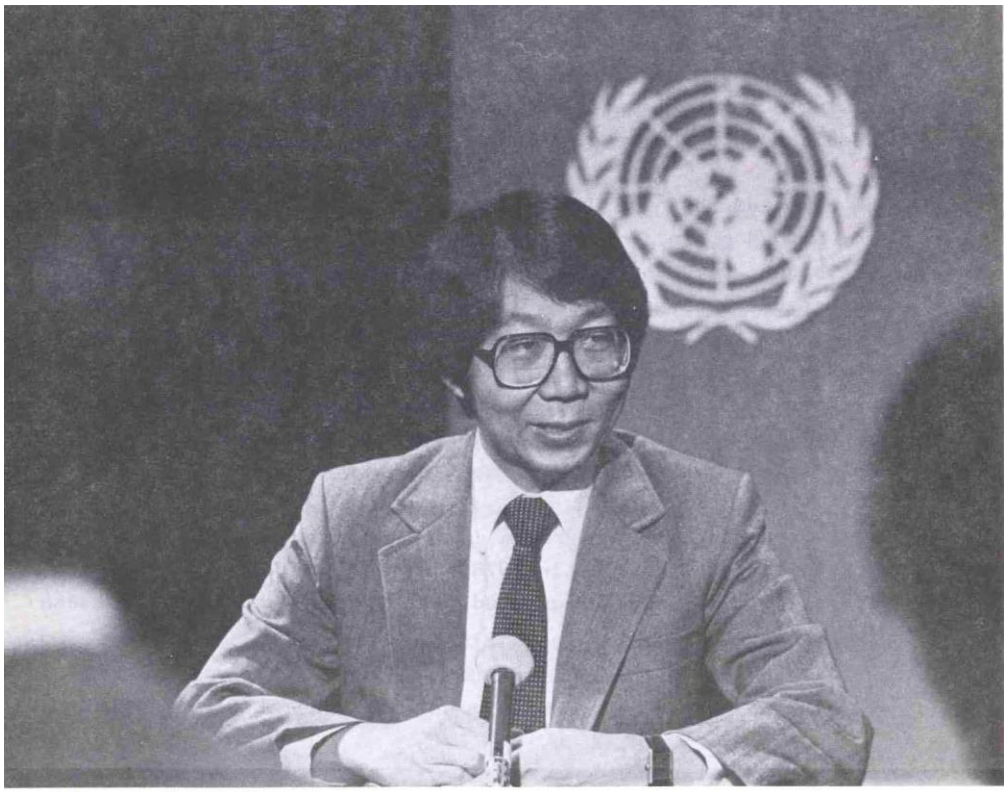
It was a time that held both dangers and promises, risks and hopes. The dangers were numerous: nuclear submarines charting deep waters never before explored; designs for antiballistic missile systems to be placed on the seabed; supertankers ferrying oil from the Middle East to European and other ports, passing through congested straits and leaving behind a trail of oil spills; and rising tensions between nations over conflicting claims to ocean space and resources.

The oceans were generating a multitude of claims, counterclaims and sovereignty disputes.

The hope was for a more stable order, promoting greater use and better management of ocean resources and generating harmony and goodwill among States that would no longer have to eye each other suspiciously over conflicting claims.

Third United Nations Conference on the Law of the Sea

On 1 November 1967, Malta's Ambassador to the United Nations, Arvid Pardo, asked the nations of the world to look around them and open their eyes to a looming conflict that could devastate the oceans, the lifeline of man's very survival. In a speech to the United Nations General Assembly, he spoke of the super-Power rivalry that was spreading to the oceans, of the pollution that was poisoning the seas, of the conflicting legal claims and their implications for a stable order and of the rich potential that lay on the seabed.



Ambassador Tommy Koh, President, UN Convention on the Law of the Sea. *(UN Photo)*

Pardo ended with a call for "an effective international regime over the seabed and the ocean floor beyond a clearly defined national jurisdiction ". "It is the only alternative by which we can hope to avoid the escalating tension that will be inevitable if the present situation is allowed to continue", he said.

Pardo's urging came at a time when many recognized the need for updating the freedom-of-the-seas doctrine to take into account the technological changes that had altered man's relationship to the oceans. It set in motion a process that spanned 15 years and saw the creation of the United Nations Seabed Committee, the signing of a treaty banning nuclear weapons on the seabed, the adoption of the declaration by the General Assembly that all resources of the seabed beyond the limits of national jurisdiction are the common heritage of mankind and the convening of the Stockholm Conference on the Human Environment. What started as an exercise to regulate the seabed turned into a global diplomatic effort to regulate and write rules for all ocean areas, all uses of the seas and all of its resources. These were some of the factors that led to the convening of the Third United Nations Conference on the Law of the Sea, to write a comprehensive treaty for the oceans.

The Conference was convened in New York in 1973. It ended nine years later with the adoption in 1982 of a constitution for the seas - the United Nations Convention on the Law of the Sea. During those nine years, shuttling back and forth between New York and Geneva, representatives of more than 160 sovereign States sat down and discussed the issues, bargained and traded national rights and obligations in the course of the marathon negotiations that produced the Convention.

United Nations Convention on the Law of the Sea - key provisions

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The Convention

Navigational rights, territorial sea limits, economic jurisdiction, legal status of resources on the seabed beyond the limits of national jurisdiction, passage of ships through narrow straits, conservation and management of living marine resources, protection of the marine environment, a marine research regime and, a more unique feature, a binding procedure for settlement of disputes between States - these are among the important features of the treaty. In short, the Convention is an unprecedented attempt by the international community to regulate all aspects of the resources of the sea and uses of the ocean, and thus bring a stable order to mankind's very source of life.

"Possibly the most significant legal instrument of this century" is how the United Nations Secretary-General described the treaty after its signing. The Convention was adopted as a "Package deal", to be accepted as a whole in all its parts without reservation on any aspect. The signature of the Convention by Governments carries the undertaking not to take any action that might defeat its objects and purposes. Ratification of, or accession to, the Convention expresses the consent of a State to be bound by its provisions. The Convention came into force on 16 November 1994, one year after Guyana became the 60th State to adhere to it.

Across the globe, Governments have taken steps to bring their extended areas of adjacent ocean within their jurisdiction. They are taking steps to exercise their rights over neighbouring seas, to assess the resources of their waters and on the floor of the continental shelf. The practice of States has in nearly all respects been carried out in a manner consistent with the Convention, particularly after its entry into force and its rapid acceptance by the international community as the basis for all actions dealing with the oceans and the law of the sea.

The definition of the territorial sea has brought relief from conflicting claims. Navigation through the territorial sea and narrow straits is now based on legal principles. Coastal States are already reaping the benefits of provisions giving them extensive economic rights over a 200-mile wide zone along their shores. The right of landlocked countries of access to and from the sea is now stipulated unequivocally. The right to conduct marine scientific research is now based on accepted principles and cannot be unreasonably denied. Already established and functioning are the International Seabed Authority, which organize and control activities in the deep seabed beyond national jurisdiction with a view to administering its resources; as well as the International Tribunal for the Law of the Sea, which has competence to settle ocean related disputes arising from the application or interpretation of the Convention.

Wider understanding of the Convention will bring yet wider application. Stability promises order and harmonious development. However, Part XI, which deals with mining of minerals lying on the deep ocean floor outside of nationally regulated ocean areas, in what is commonly known as the international seabed area, had raised many concerns especially from industrialized States. The Secretary-General, in an attempt to achieve universal participation in the Convention, initiated a series of informal consultations among States in order to resolve those areas of concern. The consultations successfully achieved, in July 1998, an Agreement Related to the Implementation of Part XI of the Convention. The Agreement, which is part of the Convention, is now deemed to have paved the way for all States to become parties to the Convention.

Setting Limits

The dispute over who controls the oceans probably dates back to the days when the Egyptians first plied the Mediterranean in papyrus rafts. Over the years and centuries, countries large and small, possessing vast ocean-going fleets or small fishing flotillas, husbanding rich fishing grounds close to shore or eyeing distant harvests, have all vied for the right to call long stretches of oceans and seas their own.

Conflicting claims, even extravagant ones, over the oceans were not new. In 1494, two years after Christopher Columbus' first expedition to America, Pope Alexander VI met with representatives of two of the great maritime Powers of the day - Spain and Portugal - and neatly divided the Atlantic Ocean between them. A Papal Bull gave Spain everything west of the line the Pope drew down the Atlantic and Portugal everything east of it. On that basis, the Pacific and the Gulf of Mexico were acknowledged as Spain's, while Portugal was given the South Atlantic and the Indian Ocean.

Before the Convention on the Law of the Sea could address the exploitation of the riches underneath the high seas, navigation rights, economic jurisdiction, or any other pressing matter, it had to face one major and primary issue - the setting of limits. Everything else would depend on clearly defining the line separating national and international waters. Though the right of a coastal State to complete control over a belt of water along its shoreline - the territorial sea - had long been recognized in international law, up until the Third United Nations Conference on the Law of the Sea, States could not see eye to eye on how narrow or wide this belt should be.

At the start of the Conference, the States that maintained the traditional claims to a three-mile territorial sea had numbered a mere 25. Sixty-six countries had by then claimed a 12-mile territorial sea limit. Fifteen others claimed between 4 and 10 miles, and one remaining major group of eight States claimed 200 nautical miles.

Traditionally, smaller States and those not possessing large, ocean-going navies or merchant fleets favoured a wide territorial sea in order to protect their coastal waters from infringements by those States

that did. Naval and maritime Powers, on the other hand, sought to limit the territorial sea as much as possible, in order to protect their fleets' freedom of movement.

As the work of the Conference progressed, the move towards a 12-mile territorial sea gained wider and eventually universal acceptance. Within this limit, States are in principle free to enforce any law, regulate any use and exploit any resource.

The Convention retains for naval and merchant ships the right of "innocent passage" through the territorial seas of a coastal State. This means, for example, that a Japanese ship, picking up oil from Gulf States, would not have to make a 3,000-mile detour in order to avoid the territorial sea of Indonesia, provided passage is not detrimental to Indonesia and does not threaten its security or violate its laws.

In addition to their right to enforce any law within their territorial seas, coastal States are also empowered to implement certain rights in an area beyond the territorial sea, extending for 24 nautical miles from their shores, for the purpose of preventing certain violations and enforcing police powers. This area, known as the "contiguous zone", may be used by a coast guard or its naval equivalent to pursue and, if necessary, arrest and detain suspected drug smugglers, illegal immigrants and customs or tax evaders violating the laws of the coastal State within its territory or the territorial sea.

The Convention also contains a new feature in international law, which is the regime for archipelagic States (States such as the Philippines and Indonesia, which are made up of a group of closely spaced islands). For those States, the territorial sea is a 12-mile zone extending from a line drawn joining the outermost points of the outermost islands of the group that are in close proximity to each other. The waters between the islands are declared archipelagic waters, where ships of all States enjoy the right of innocent passage. In those waters, States may establish sea lanes and air routes where all ships and aircraft enjoy the right of expeditious and unobstructed passage.

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Navigation

Perhaps no other issue was considered as vital or presented the negotiators of the Convention on the Law of the Sea with as much difficulty as that of navigational rights.

Countries have generally claimed some part of the seas beyond their shores as part of their territory, as a zone of protection to be patrolled against smugglers, warships and other intruders. At its origin, the basis of the claim of coastal States to a belt of the sea was the principle of protection; during the seventeenth and eighteenth centuries another principle gradually evolved: that the extent of this belt should be measured by the power of the littoral sovereign to control the area.

In the eighteenth century, the so-called "cannon-shot" rule gained wide acceptance in Europe. Coastal States were to exercise dominion over their territorial seas as far as projectiles could be fired from a cannon based on the shore. According to some scholars, in the eighteenth century the range of land-based cannons was approximately one marine league, or three nautical miles. It is believed that on the basis of this formula developed the traditional three-mile territorial sea limit.

By the late 1960s, a trend to a 12-mile territorial sea had gradually emerged throughout the world, with a great majority of nations claiming sovereignty out to that seaward limit. However, the major maritime and naval Powers clung to a three-mile limit on territorial seas, primarily because a 12-mile limit would

effectively close off and place under national sovereignty more than 100 straits used for international navigation.

A 12-mile territorial sea would place under national jurisdiction of riparian States strategic passages such as the Strait of Gibraltar (8 miles wide and the only open access to the Mediterranean), the Strait of Malacca (20 miles wide and the main sea route between the Pacific and Indian Oceans), the Strait of Hormuz (21 miles wide and the only passage to the oil-producing areas of Gulf States) and Bab el Mandeb (14 miles wide, connecting the Indian Ocean with the Red Sea).

At the Third United Nations Conference on the Law of the Sea, the issue of passage through straits placed the major naval Powers on one side and coastal States controlling narrow straits on the other. The United States and the Soviet Union insisted on free passage through straits, in effect giving straits the same legal status as the international waters of the high seas. The coastal States, concerned that passage of foreign warships so close to their shores might pose a threat to their national security and possibly involve them in conflicts among outside Powers, rejected this demand.

Instead, coastal States insisted on the designation of straits as territorial seas and were willing to grant to foreign warships only the right of "innocent passage", a term that was generally recognized to mean passage "not prejudicial to the peace, good order or security of the coastal State". The major naval Powers rejected this concept, since, under international law, a submarine exercising its right of innocent passage, for example, would have to surface and show its flag - an unacceptable security risk in the eyes of naval Powers. Also, innocent passage does not guarantee the aircraft of foreign States the right of overflight over waters where only such passage is guaranteed.

In fact, the issue of passage through straits was one of the early driving forces behind the Third United Nations Conference on the Law of the Sea, when, in early 1967, the United States and the Soviet Union proposed to other Member countries of the United Nations that an international conference be held to deal specifically with the entangled issues of straits, overflight, the width of the territorial sea and fisheries.

The compromise that emerged in the Convention is a new concept that combines the legally accepted provisions of innocent passage through territorial waters and freedom of navigation on the high seas. The new concept, "transit passage", required concessions from both sides.

The regime of transit passage retains the international status of the straits and gives the naval Powers the right to unimpeded navigation and overflight that they had insisted on. Ships and vessels in transit passage, however, must observe international regulations on navigational safety, civilian air-traffic control and prohibition of vessel-source pollution and the conditions that ships and aircraft proceed without delay and without stopping except in distress situations and that they refrain from any threat or use of force against the coastal State. In all matters other than such transient navigation, straits are to be considered part of the territorial sea of the coastal State.

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Exclusive Economic Zone

The exclusive economic zone (EEZ) is one of the most revolutionary features of the Convention, and one which already has had a profound impact on the management and conservation of the resources of the oceans. Simply put, it recognizes the right of coastal States to jurisdiction over the resources of some 38 million square nautical miles of ocean space. To the coastal State falls the right to exploit, develop, manage

and conserve all resources - fish or oil, gas or gravel, nodules or sulphur - to be found in the waters, on the ocean floor and in the subsoil of an area extending 200 miles from its shore.

The EEZs are a generous endowment indeed. About 87 per cent of all known and estimated hydrocarbon reserves under the sea fall under some national jurisdiction as a result. So too will almost all known and potential offshore mineral resources, excluding the mineral resources (mainly manganese nodules and metallic crusts) of the deep ocean floor beyond national limits. And whatever the value of the nodules, it is the other non-living resources, such as hydrocarbons, that represent the presently attainable and readily exploitable wealth.

The most lucrative fishing grounds too are predominantly the coastal waters. This is because the richest phytoplankton pastures lie within 200 miles of the continental masses. Phytoplankton, the basic food of fish, is brought up from the deep by currents and ocean streams at their strongest near land, and by the upwelling of cold waters where there are strong offshore winds.

The desire of coastal States to control the fish harvest in adjacent waters was a major driving force behind the creation of the EEZs. Fishing, the prototypical cottage industry before the Second World War, had grown tremendously by the 1950s and 1960s. Fifteen million tons in 1938, the world fish catch stood at 86 million tons in 1989. No longer the domain of a lone fisherman plying the sea in a wooden dhow, fishing, to be competitive in world markets, now requires armadas of factory-fishing vessels, able to stay months at sea far from their native shores, and carrying sophisticated equipment for tracking their prey.

The special interest of coastal States in the conservation and management of fisheries in adjacent waters was first recognized in the 1958 Convention on Fishing and Conservation of the Living Resources of the High Seas. That Convention allowed coastal States to take "unilateral measures" of conservation on what was then the high seas adjacent to their territorial waters. It required that if six months of prior negotiations with foreign fishing nations had failed to find a formula for sharing, the coastal State could impose terms. But still the rules were disorderly, procedures undefined, and rights and obligations a web of confusion. On the whole, these rules were never implemented.

The claim for 200-mile offshore sovereignty made by Peru, Chile and Ecuador in the late 1940s and early 1950s was sparked by their desire to protect from foreign fishermen the rich waters of the Humboldt Current (more or less coinciding with the 200-mile offshore belt. This limit was incorporated in the Santiago Declaration of 1952 and reaffirmed by other Latin American States joining the three in the Montevideo and Lima Declarations of 1970. The idea of sovereignty over coastal-area resources continued to gain ground.

As long-utilized fishing grounds began to show signs of depletion, as long-distance ships came to fish waters local fishermen claimed by tradition, as competition increased, so too did conflict. Between 1974 and 1979 alone there were some 20 disputes over cod, anchovies or tuna and other species between, for example, the United Kingdom and Iceland, Morocco and Spain, and the United States and Peru.

And then there was the offshore oil.

The Third United Nations Conference on the Law of the Sea was launched shortly after the October 1973 Arab-Israeli war. The subsequent oil embargo and skyrocketing of prices only helped to heighten concern over control of offshore oil reserves. Already, significant amounts of oil were coming from offshore facilities: 376 million of the 483 million tons produced in the Middle East in 1973; 431 million barrels a day in Nigeria, 141 million barrels in Malaysia, 246 million barrels in Indonesia. And all of this

with barely 2 per cent of the continental shelf explored. Clearly, there was hope all around for a fortunate discovery and a potential to be protected.

Today, the benefits brought by the EEZs are more clearly evident. Already 86 coastal States have economic jurisdiction up to the 200-mile limit. As a result, almost 99 per cent of the world's fisheries now fall under some nation's jurisdiction. Also, a large percentage of world oil and gas production is offshore. Many other marine resources also fall within coastal-State control. This provides a long-needed opportunity for rational, well-managed exploitation under an assured authority.

Figures on known offshore oil reserves now range from 240 to 300 billion tons. Production from these reserves amounted to a little more than 25 per cent of total world production in 1996. Experts estimate that of the 150 countries with offshore jurisdiction, over 100, many of them developing countries, have medium to excellent prospects of finding and developing new oil and natural gas fields.

It is evident that it is archipelagic States and large nations endowed with long coastlines that naturally acquire the greatest areas under the EEZ regime. Among the major beneficiaries of the EEZ regime are the United States, France, Indonesia, New Zealand, Australia and the Russian Federation.

But with exclusive rights come responsibilities and obligations For example, the Convention encourages optimum use of fish stocks without risking depletion through overfishing. Each coastal State is to determine the total allowable catch for each fish species within its economic zone and is also to estimate its harvest capacity and what it can and cannot itself catch. Coastal States are obliged to give access to others, particularly neighbouring States and land-locked countries, to the surplus of the allowable catch. Such access must be done in accordance with the conservation measures established in the laws and regulations of the coastal State.

Coastal States have certain other obligations, including the adoption of measures to prevent and limit pollution and to facilitate marine scientific research in their EEZs.

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Continental Shelf

In ancient times, navigation and fishing were the primary uses of the seas. As man progressed, pulled by technology in some instances and pushing that technology at other times in order to satisfy his needs, a rich bounty of other resources and uses were found underneath the waves on and under the ocean floor - minerals, natural gas, oil, sand and gravel, diamonds and gold. What should be the extent of a coastal State's jurisdiction over these resources? Where and how should the lines demarcating their continental shelves be drawn? How should these resources be exploited? These were among the important questions facing lawyers, scientists and diplomats as they assembled in New York in 1973 for the Third Conference.

Given the real and potential continental shelf riches, there naturally was a scramble by nations to assert shelf rights. Two difficulties quickly arose. States with a naturally wide shelf had a basis for their claims, but the geologically disadvantaged might have almost no shelf at all. The latter were not ready to accept geological discrimination. Also, there was no agreed method on how to define the shelf's outer limits, and there was a danger of the claims to continental shelves being overextended - so much so as to eventually divide up the entire ocean floor among such shelves.

Although many States had started claiming wide continental-shelf jurisdiction since the Truman Proclamation of 1945, these States did not use the term "continental shelf" in the same sense. In fact, the

expression became no more than a convenient formula covering a diversity of titles or claims to the seabed and subsoil adjacent to the territorial seas of States. In the mid-1950s the International Law Commission made a number of attempts to define the "continental shelf" and coastal State jurisdiction over its resources.

In 1958, the first United Nations Conference on the Law of the Sea accepted a definition adopted by the International Law Commission, which defined the continental shelf to include "the seabed and subsoil of the submarine areas adjacent to the coast but outside the area of the territorial sea, to a depth of 200 metres, or, beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the natural resources of the said areas".

Already, as the Third United Nations Conference on the Law of the Sea got under way, there was a strong consensus in favour of extending coastal-State control over ocean resources out to 200 miles from shore so that the outer limit coincides with that of the EEZ. But the Conference had to tackle the demand by States with a geographical shelf extending beyond 200 miles for wider economic jurisdiction.

The Convention resolves conflicting claims, interpretations and measuring techniques by setting the 200-mile EEZ limit as the boundary of the continental shelf for seabed and subsoil exploitation, satisfying the geologically disadvantaged. It satisfied those nations with a broader shelf - about 30 States, including Argentina, Australia, Canada, India, Madagascar, Mexico, Sri Lanka and France with respect to its overseas possessions - by giving them the possibility of establishing a boundary going out to 350 miles from their shores or further, depending on certain geological criteria.

Thus, the continental shelf of a coastal State comprises the seabed and its subsoil that extend beyond the limits of 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 miles from the baselines from which the territorial sea is measured, where the outer edge of the continental margin does not extend up to that distance.

In cases where the continental margin extends further than 200 miles, nations may claim jurisdiction up to 350 miles from the baseline or 100 miles from the 2,500 metre depth, depending on certain criteria such as the thickness of sedimentary deposits. These rights would not affect the legal status of the waters or that of the airspace above the continental shelf.

To counterbalance the continental shelf extensions, coastal States must also contribute to a system of sharing the revenue derived from the exploitation of mineral resources beyond 200 miles. These payments or contributions - from which developing countries that are net importers of the mineral in question are exempt - are to be equitably distributed among States parties to the Convention through the International Seabed Authority.

To control the claims extending beyond 200 miles, the Commission on the Limits of the Continental Shelf was established to consider the data submitted by the coastal States and make recommendations

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Deep Seabed Mining

Deep seabed mining is an enormous challenge that has been compared to standing atop a New York City skyscraper on a windy day, trying to suck up marbles off the street below with a vacuum cleaner attached to a long hose.

Mining will take place at a depth of more than fifteen thousand feet of open ocean, thousands of miles from land. Mining ships are expected to remain on station five years at a time, working without a stop, and to transfer the seabed minerals they bring up to auxiliary vessels.

At the centre of the controversy were potato-sized manganese nodules found on the deep ocean floor and containing a number of important metals and minerals.

On 13 March 1874, somewhere between Hawaii and Tahiti, the crew of the British research vessel HMS *Challenger*, on the first great oceanographic expedition of modern times, hauled in from a depth of 15,600 feet a trawl containing the first known deposits of manganese nodules. Analysis of the samples in 1891 showed the Pacific Ocean nodules to contain important metals, particularly nickel, copper and cobalt. Subsequent sampling demonstrated that nodules were abundant throughout the deep regions of the Pacific.

In the 1950s, the potential of these deposits as sources of nickel, copper and cobalt ore was finally appreciated. Between 1958 and 1968, numerous companies began serious prospecting of the nodule fields to estimate their economic potential. By 1974, 100 years after the first samples were taken, it was well established that a broad belt of sea floor between Mexico and Hawaii and a few degrees north of the equator (the so-called Clarion Clipperton zone) was literally paved with nodules over an area of more than 1.35 million square miles.

In 1970 the United Nations General Assembly declared the resources of the seabed beyond the limits of national jurisdiction to be "the common heritage of mankind". For 12 years from then, up to 1982 when the Convention on the Law of the Sea was adopted, nothing tested so sorely the ability of diplomats from various corners of the world to reach common ground than the goal of conserving that common heritage and profiting from it at the same time.

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The Exploitation Regime

Having established that the resources of the seabed beyond the limits of national jurisdiction are the common heritage of mankind, the framers of the treaty faced the question of who should mine the minerals and under what rules. The developed countries took the view that the resources should be commercially exploited by mining companies in consortia and that an international authority should grant licenses to those companies. The developing countries objected to this view on the grounds that the resource was unique and belonged to the whole of mankind, and that the most appropriate way to benefit from it was for the international community to establish a public enterprise to mine the international seabed area.

Thus, the gamut of proposals ran from a "weak" international authority, noting claims and collecting fees, to a "strong" one with exclusive rights to mine the common heritage area, involving States or private groups only as it saw fit. The solution found was to make possible both the public and private enterprises on one hand and the collective mining on the other - the so-called "parallel system".

This complex system, though simplified to a great degree by the Agreement on Part XI, is administered by the International Seabed Authority, headquartered in Jamaica. The Authority is divided into three principal organs, an Assembly, made up of all members of the Authority with power to set general policy, a council, with powers to make executive decisions, made up of 36 members elected from among the members of the Authority, and a secretariat headed by a secretary-general.

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Technological Prospects

Unfortunately, the road to the market is long, hard and expensive. The nodules lie two to three miles - about 5 kilometres - down, in pitch-black water where pressures exceed 7,000 pounds per square inch and temperatures are near freezing. Many of the ocean floors are filled with treacherous hills and valleys. Appropriate deep-sea mining technology must be developed to accommodate this environment.

Many mining systems have been tried, and some have appeared more promising than others. For a while, hydraulic suction dredge airlifts and a continuous-line bucket system were thought to be a promising answer to the mining dilemma. Another system, the so-called shuttle system, involves sending down a remotely operated, Jules Verne-like vehicle, with television "eyes" and powerful lights, to crawl over the ocean floor, gobble up and crush nodules and resurface with its catch.

Today, the continuous-line bucket system, where empty buckets are lowered to the bottom of the ocean and later raised, partially filled with nodules, has been discarded because of low recovery rates. The shuttle system has been shelved because its operational and investment costs far exceeded the costs of more conventional approaches. However, this system is thought to be the technology of the future. Thus, the current focus is on the hydraulic suction and dredge method. But there are a number of technological problems to be worked out before it will be ready for commercial application.

Keeping a steady ship position, since a vessel cannot anchor 5 kilometres above the sea floor and making sure that the pipe does not snap or that the recovery vehicle is not lost or permanently stuck on the ocean floor are among the many headaches involved in developing the necessary technology for commercial exploitation.

Extracting metals from the nodules is another task altogether. All agree that this phase will be the most expensive, even if only at the initial investment stage. Technologically, however, processing does not pose as much of a challenge as the recovery of manganese nodules. That is because it is thought that the two processing techniques applied to land-derived ores - heat and chemical separation of the metals - will apply just as well to the seabed resources.

Because of their porous nature, recovered nodules retain a great deal of water. Heat processing would therefore require a great amount of energy in order to dry the nodules prior to extracting the metals. It is for that reason that some believe that chemical techniques will prove to be the most efficient and least costly.

Moreover, processing would involve such waste that special barren sites would have to be found to carry out operations. Yet, others believe that the economic viability of seabed mining would be greatly enhanced if a method is devised to process the nodules at sea, saving enormous energy costs involved in the transfer of nodules to land-based processing plants.

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The Question of Universal Participation in the Convention

Prospects for seabed mining depend to a large degree on the market conditions for the metals to be produced from seabed nodules. While one of the driving forces behind the Convention on the Law of the Sea was the prevailing belief in the 1970s that commercial seabed mining was imminent, today the prospects for the inherently expensive process of mining the seabed have greatly receded with changing

economic and other conditions since the early 1980s. Indeed, some experts predict that commercial mining operations are not likely to begin until well after the year 2000.

A number of important political and economic changes have taken place in the 10 years that have elapsed since the adoption of the Convention, some directly affecting the deep seabed mining provisions of the Convention, others affecting international relations in general. In the meantime, the prevailing economic prognosis on which the seabed mining regime was built has not been realized.

The Convention on the Law of the Sea holds out the promise of an orderly and equitable regime or system to govern all uses of the sea. But it is a club that one must join in order to fully share in the benefits. The Convention - like other treaties - creates rights only for those who become parties to it and thereby accept its obligations, except for the provisions which apply to all States because they either merely confirm existing customary law or are becoming customary law.

However, as its preamble states, the Convention starts from the premise that the problems of ocean space are closely interrelated and need to be considered as a whole. The desire for a comprehensive Convention arose from the recognition that traditional sea law was disintegrating and that the international community could not be expected to behave in a consistent manner without dialogue, negotiations and agreement.

In this context, it must be underscored that the Convention was adopted as a "package deal", with one aim above all, namely universal participation in the Convention. No State can claim that it has achieved quite all it wanted. Yet every State benefits from the provisions of the Convention and from the certainty that it has established in international law in relation to the law of the sea. It has defined rights while underscoring the obligations that must be performed in order to benefit from those rights. Any trend towards exercising those rights without complying with the corresponding obligations, or towards exercising rights inconsistent with the Convention, must be viewed as damaging to the universal regime that the Convention establishes.

The adoption of the Agreement on Part XI has eliminated this threat. With nearly all States now adhering, even on a provisional basis pending ratification or accession, to the Convention, the threat to the Convention has been eliminated. The Agreement has particularly removed those obstacles which had prevented the industrialized countries from adhering to the Convention. Those same countries have either ratified the Convention or submitted it for their internal legislative procedures. Even more important, is their active participation in the institutions created by the Convention and their strong support for the regime contained in it.

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Pioneer Investors

The Preparatory Commission for the International Seabed Authority and for the International Tribunal for the Law of the Sea was established, prior to the entry into force of the Convention, to prepare for the setting up of both institutions. The Preparatory Commission proceeded with the implementation of an interim regime adopted by the Third United Nations Conference on the Law of the Sea, designed to protect those States or entities that have already made a large investment in seabed mining. This so-called Pioneer Investor Protection regime allows a State, or consortia of mining companies to be sponsored by a State, to be registered as a Pioneer Investor. Registration reserves for the Pioneer Investor a specific mine site in which the registered Investor is allowed to explore for, but not exploit, manganese nodules. Registered Investors are also obligated to explore a mine site reserved for the Enterprise and undertake

other obligations, including the provision of training to individuals to be designated by the Preparatory Commission.

The Preparatory Commission had registered seven pioneer investors: China, France, India, Japan, the Republic of Korea, and the Russian Federation, as well as a consortium known as the Interoceanmetal Joint Organization (IMO). With the Convention in force and the International Seabed Authority being functioning, those pioneer investors will become contractors along the terms contained in the Convention and the Agreement, as well as regulations established by the International Seabed Authority.

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Protection of the Marine Environment

Thor Heyerdahl, sailing the Atlantic in his papyrus raft, Ra, found globs of oil, tar and plastics stretching from the coast of Africa to South America. Parts of the Baltic, Mediterranean and Black Sea are already so polluted that marine life is severely threatened. And waste dumped in the Pacific and Atlantic Oceans has washed up on the shores of Antarctica.

In the United States, long stretches of beaches are often closed because of medical and other waste washing up on shore. And every time an oil tanker is involved in an accident, the world's pulse quickens a bit in fear of a major catastrophe, In fact, every time a tanker cleans its tanks at sea, every time a factory channels toxic residues to coastal waters or a city conveniently releases raw sewage into the sea, every time a service station changes the oil of an automobile and pours the waste oil into the sewers, the oceans become a little more polluted. Eventually, scientists fear, the oceans' regenerative capacity will be overwhelmed by the amount of pollution it is subjected to by man. Signs of such catastrophe are clearly observed in many seas—particularly along the heavily populated coasts and enclosed or semi-enclosed seas.

There are six main sources of ocean pollution addressed in the Convention: land-based and coastal activities; continental-shelf drilling; potential seabed mining; ocean dumping; vessel-source pollution; and pollution from or through the atmosphere.

The Convention lays down, first of all, the fundamental obligation of all States to protect and preserve the marine environment. It further urges all States to cooperate on a global and regional basis in formulating rules and standards and otherwise take measures for the same purpose.

Coastal States are empowered to enforce their national standards and anti-pollution measures within their territorial sea. Every coastal State is granted jurisdiction for the protection and preservation of the marine environment of its EEZ. Such jurisdiction allows coastal States to control, prevent and reduce marine pollution from dumping, land-based sources or seabed activities subject to national jurisdiction, or from or through the atmosphere. With regard to marine pollution from foreign vessels, coastal States can exercise jurisdiction only for the enforcement of laws and regulations adopted in accordance with the Convention or for "generally accepted international rules and standards". Such rules and standards, many of which are already in place, are adopted through the competent international organization, namely the International Maritime Organization (IMO).

On the other hand, it is the duty of the "flag State", the State where a ship is registered and whose flag it flies, to enforce the rules adopted for the control of marine pollution from vessels, irrespective of where a violation occurs. This serves as a safeguard for the enforcement of international rules, particularly in waters beyond the national jurisdiction of the coastal State, i.e., on the high seas.

Furthermore, the Convention gives enforcement powers to the "port State", or the State where a ship is destined. In doing so it has incorporated a method developed in other Conventions for the enforcement of treaty obligations dealing with shipping standards, marine safety and pollution prevention. The port State can enforce any type of international rule or national regulations adopted in accordance with the Convention or applicable international rules as a condition for the entry of foreign vessels into their ports or internal waters or for a call at their offshore terminals. This has already become a significant factor in the strengthening of international standards.

Finally, as far as the international seabed area is concerned, the International Seabed Authority, through its Council, is given broad discretionary powers to assess the potential environmental impact of a given deep seabed mining operation, recommend changes, formulate rules and regulations, establish a monitoring programme and recommend issuance of emergency orders by the Council to prevent serious environmental damage. States are to be held liable for any damage caused by either their own enterprise or contractors under their jurisdiction.

With the passage of time, United Nations involvement with the law of the sea has expanded as awareness increases that not only ocean problems but global problems as a whole are interrelated. Already, the 1992 United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil in 1992, placed a great deal of emphasis on the protection and preservation of the oceans' environment in harmony with the rational use and development of their living resources, thus establishing the concept of "sustainable development" embodied in Agenda 21, the programme of action adopted at the Conference.

The necessity to combat the degradation and depletion of fish stocks, both in the zones under national jurisdiction and in the high seas and its causes, such as overfishing and excess fishing capacity, by-catch and discards, has been one of the recurrent topics in the process of implementation of the programme of action adopted in Rio de Janeiro.

In this respect, among the most important outputs of the Conference was the convening of an intergovernmental conference under United Nations auspices with a view to resolving the old conflict between coastal States and distant-water fishing States over straddling and highly migratory fish stocks in the areas adjacent to the 200 nautical-mile exclusive economic zones. This Conference adopted the 1995 Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks which introduces a number of innovative measures, particularily in the area of environmental and resource protection obliging States to adopt a precautionary approach to fisheries exploitation and giving expanded powers to port States to enforce proper management of fisheries resources.

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Marine Scientific Research

With the extension of the territorial sea to 12 miles and the establishment of the new 200-mile EEZ, the area open to unrestricted scientific research was circumscribed. The Convention thus had to balance the concerns of major research States, mostly developed countries, which saw any coastal-state limitation on research as a restriction of a traditional freedom that would not only adversely affect the advancement of science but also deny its potential benefits to all nations in fields such as weather forecasting and the study of effects of ocean currents and the natural forces at work on the ocean floor.

On the other side, many developing countries had become extremely wary of the possibility of scientific expeditions being used as a cover for intelligence gathering or economic gain, particularly in relatively uncharted areas, scientific research was yielding knowledge of potential economic significance.

The developing countries demanded "prior consent" of a coastal State to all scientific research on the continental shelf and within the EEZ. The developed countries offered to give coastal States "prior notification" of research projects to be carried out on the continental shelf and within the EEZ, and to share any data pertinent to offshore resources.

The final provisions of the Convention represent a concession on the part of developed States. Coastal State jurisdiction within its territorial sea remains absolute. Within the EEZ and in cases involving research on the continental shelf, the coastal State must give its prior consent, However, such consent for research for peaceful purposes is to be granted "in normal circumstances" and "shall not be delayed or denied unreasonably", except under certain specific circumstances identified in the Convention. In case the consent of the coastal State is requested and such State does not reply within six months of the date of the request, the coastal State is deemed to have implicitly given its consent. These last provisions were intended to circumvent the long bureaucratic delays and frequent burdensome differences in coastal State regulations.

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Settlement of Disputes

Provisions for the settlement of disputes arising out of an international treaty are often contained in a separate optional protocol. Parties to the treaty could choose to be bound by those provisions or not by accepting or not accepting the Protocol. The Convention on the Law of the Sea is unique in that the mechanism for the settlement of disputes is incorporated into the document, making it obligatory for parties to the Convention to go through the settlement procedure in case of a dispute with another party.

During the drafting of the Convention, some countries were opposed in principle to binding settlement to be decided by third party judges or arbitrators, insisting that issues could best be resolved by direct negotiations between States without requiring them to bring in outsiders. Others, pointing to a history of failed negotiations and long-standing disputes often leading to a use of force, argued that the only sure chance for peaceful settlement lay in the willingness of States to bind themselves in advance to accept the decisions of judicial bodies.

What emerged from the negotiations was a combination of the two approaches, regarded by many as a landmark in international law.

If direct talks between the parties fail, the Convention gives them a choice among four procedures - some new, some old: submission of the dispute to the International Tribunal for the Law of the Sea, adjudication by the International Court of Justice, submission to binding international arbitration procedures or submission to special arbitration tribunals with expertise in specific types of disputes. All of these procedures involve binding third-party settlement, in which an agent other than the parties directly involved hands down a decision that the parties are committed in advance to respect.

The only exception to these provisions is made for sensitive cases involving national sovereignty. In such circumstances, the parties are obliged to submit their dispute to a conciliation commission, but they will not be bound by any decision or finding of the commission. The moral pressure resulting was argued as being persuasive and adequate to ensure compliance with the findings. The Convention also contains so-called "optional exceptions", which can be specified at the time a country signs, ratifies or accedes to the Convention or at any later time. A State may declare that it chooses not to be bound by one or more of the mandatory procedures if they involve existing maritime boundary disputes, military activities or issues under discussion in the United Nations Security Council.

Disputes over seabed activities will be arbitrated by an 11-member Seabed Disputes Chamber, within the International Tribunal for the Law of the Sea. The Chamber has compulsory jurisdiction over all such conflicts, whether involving States, the International Seabed Authority or companies or individuals having seabed mining contracts.

The United Nations and the Law of the Sea

Throughout the years, beginning with the work of the Seabed Committee in 1968 and later during the nine-year duration of the Third United Nations Conference on the Law of the Sea, the United Nations has been actively engaged in encouraging and guiding the development and eventual adoption of the Law of the Sea Convention. Today, it continues to be engaged in this process, by monitoring developments as they relate to the Convention and providing assistance to States, when called for, in either the ratification or the implementation process.

The goal of the Organization is to help States to better understand and implement the Convention in order to utilize their marine resources in an environment relatively free of conflict and conducive to development, safeguarding the rule of law in the oceans.

In this context, the Division for Ocean Affairs and the Law of the Sea (DOALOS) of the United Nations Office of Legal Affairs helps to coordinate the Organization's activities and programmes in the area of marine affairs. It is active in assisting and advising States in the integration of the marine sector in their development planning. It also responds to requests for information and advice on the legal, economic and political aspects of the Convention and its implications for States. Such information is used by States during the ratification process, in the management of the marine sector of their economies and in the development of a national sea-use policy.

The United Nations also gives assistance to the two newly created institutions - the International Seabed Authority and the International Tribunal for the Law of the Sea.

The Future

The entry into force of the Convention, together with extended jurisdiction, new fields of activity and increased uses of the oceans, will continue to confront all States with important challenges. These challenges will include how to apply the new provisions in accordance with the letter and spirit of the Convention, how to harmonize national legislation with it and how to fulfil the obligations incumbent upon States under the Convention.

Another major challenge will be to provide the necessary assistance, particularly to developing States, in order to allow them to benefit from the rights they have acquired under the new regime. For example, a great many of the States that have established their EEZs are not at present in a position to exercise all their rights and perform duties under the Convention. The delimitation of EEZ, the surveying of its area, its monitoring, the utilization of its resources and, generally speaking, its management and development are long-term endeavours beyond the present and possibly near-term capabilities of most developing countries.

The United Nations will continue to play a major role in the monitoring of, collection of information on and reporting on State practice in the implementation of the new legal regime. It will also have a

significant role to play in reporting on activities of States and relevant international organizations in marine affairs and on major trends and developments. This information will be of great assistance to States in the acceptance and ratification of the Convention, as well as its early entry into force and implementation.

A number of new duties falls upon the Secretary-General of the United Nations. These include the depositing of charts and coordinates showing the maritime limits of coastal States and servicing of the Commission on the Limits of the Continental Shelf The Secretary-General is also called upon to convene meetings of States Parties to elect the members of the International Tribunal for the Law of the Sea and to adopt its budget. Meetings of States Parties may also be called for a Review Conference dealing with the provisions on deep seabed mining or for amending the Convention.

The United Nations will continue to strengthen the cooperation that has developed over the last two decades among the organizations in the United Nations system involved in marine affairs. Such close cooperation would be of great benefit to States, since it would avoid duplication and overlapping of activities. It would also help to coordinate multidisciplinary activities related to the management of marine affairs.

With the passage of time, United Nations involvement with the law of the sea is expected to expand as awareness increases that not only ocean problems but also global problems as a whole are interrelated.