The Development of the Antarctic Treaty System

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ABSTRACT. This paper will examine the evolution of the Antarctic Treaty from the perspective of governance, looking at the Antarctic Treaty as a mechanism for anticipating, identifying, and responding to new circumstances or activities requiring common action. It will inevitably touch upon both substance (what has been achieved under the Antarctic Treaty) and process (how it has been achieved). As such, it will address the story of the development of the Antarctic Treaty into what is now known as the Antarctic Treaty System.

THE TREATY

Negotiation of the Antarctic Treaty of 1959 may be viewed as an effort to provide for a system of governance for scientific research in the most remote and inhospitable region of the planet. In fact, its direct antecedent was the International Geophysical Year (IGY) of 1957–1958. The IGY confirmed the unique opportunities for scientific research of worldwide importance offered by Antarctica and the importance of international cooperation to take advantage of those opportunities.

The IGY grew out of proposals for a third international polar year, with a priority accorded to research in the Antarctic. Antarctica was the least studied region of the planet, and earlier polar years had concentrated on the Arctic. Rapid advances in technology and logistics, spurred in part by World War II, opened previously unavailable opportunities to pursue geophysical and other sciences in the extreme conditions of Antarctica.

Twelve nations joined in the IGY's cooperative program of research and associated logistics support activities in Antarctica: Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, the Soviet Union, the United Kingdom, and the United States. The IGY represented an unprecedented and extremely successful program of scientific collaboration. Groundbreaking research was carried out in a variety of disciplines, including geology, glaciology, geomagnetism, meteorology, and upper-atmosphere physics.

For IGY activities to go forward in Antarctica, its planners had to deal with the political realities of Antarctica in the mid-twentieth century, including, specifically, the potential for international conflict there. Such potential arose first from

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disputes over territorial sovereignty in Antarctica and second from the ideological and military competition between the United States and its allies and the Soviet Union and its allies that emerged from World War II (the cold war).

The issue of territorial sovereignty, the legal status of Antarctica, did not become a major issue during the first century of human activities in and around the continent. In the twentieth century, however, seven countries asserted claims to territorial sovereignty to parts of Antarctica. These were Argentina, Australia, Chile, France, New Zealand, Norway, and the United Kingdom. Three of these claims overlap. Basically, Argentina, Chile, and the United Kingdom all claim the Antarctic Peninsula as their territory. Moreover, a significant part of Antarctica, Marie Byrd Land, was unclaimed. These seven countries participated in the IGY. Other nations, including the other five IGY participants (Belgium, Japan, South Africa, the Soviet Union (Russia), and the United States), neither asserted nor recognized claims to territorial sovereignty.

The stationing of military forces in the Antarctic Peninsula during World War II to counter possible German use of the area as a base for naval operations created tensions between Argentina and the United Kingdom that continued to grow in the postwar decade, raising fears of actual conflict.

On the global level, the question of governance of Antarctica was raised in the United Nations, and a proposal was made for some type of UN trusteeship over the continent. That idea was rejected by claimant countries. Another idea that emerged was for an eight-nation condominium to oversee Antarctica, with the seven existing claimants plus the United States (which presumably was to claim Marie Byrd Land) as the overseers.

This latter idea drew a strong reaction from the Soviet Union. Citing both early Russian explorations and more-recent Soviet scientific activities, the Soviet Union warned that it would disregard any decisions on Antarctica in which it did not take part. The Soviet position raised the prospect of cold war competition and conflict being added to the disputes over territorial sovereignty.

In the face of this political climate, the IGY planners, essentially, their national academies of science, opted for including the Soviet Union fully in the scientific programs and persuaded their governments to temporarily set aside their differences over territorial sovereignty. In return, IGY participants undertook to share in advance plans for all scientific investigations and to make fully available the results of such activities after their completion.

The informal arrangements worked out for the IGY were so successful, and the resulting research so productive, that the scientists pressed their governments to establish them on a continuing and binding basis. As a consequence, the United States took the initiative to convene a conference of the 12 IGY countries. Negotiations initiated in mid-1958 bore fruit with the signing of the Antarctic Treaty on 1 December 1959. It entered into force on 30 June 1961.

The Antarctic Treaty's basic objectives center upon the freedom of scientific research and scientific cooperation in Antarctica and reserving Antarctica exclusively for peaceful purposes. These objectives are converted into binding obligations in the operative articles of the Antarctic Treaty.

The Antarctic Treaty applies to the area south of 60°S latitude, including all ice shelves, but nothing in the Antarctic Treaty is to prejudice or in any way affect the rights, or the exercise of the rights by any state, under international law with regard to the high seas within that area (Article VI). Freedom of scientific investigation in Antarctica and cooperation therein as applied in the IGY shall continue (Article II). To promote such cooperation, the parties to the Antarctic Treaty agree to share information regarding plans for scientific programs in Antarctica in advance of the research activities, to exchange scientific personnel between expeditions and stations in Antarctica, and to ensure that the observations and results of scientific research in Antarctica are shared and made freely available (Article III.1). There is also provision for the establishment of cooperative working relations with those specialized agencies of the United Nations and other international organizations having a scientific or technical interest in Antarctica (Article III.2).

Antarctica shall be used for peaceful purposes only; military activities are prohibited, including the establishment of military bases and fortifications, military maneuvers, and the testing of weapons (Article I). Nuclear explosions and the disposal of radioactive waste in Antarctica are also prohibited (Article V).

In support of these basic obligations, the Antarctic Treaty provides for a system of on-site inspection (Article VII). Each party has the right to designate observers with free access to all areas of and to all stations and installations in Antarctica to ensure observance of the provisions of the Antarctic Treaty.

Articles I and V establish Antarctica as a nuclear-free zone of peace. An important objective of these provisions was to remove the threat of cold-war-generated conflict from Antarctica. The Soviet Union, as an important player in polar science, had participated in the IGY, but there was concern that its inclusion in the governance of Antarctica

would bring cold war competition and conflict to the area. The zone of peace provisions respond to this concern.

Perhaps even more importantly, achievement of the Antarctic Treaty's substantive objectives required that it deal with the basic disagreement over the legal and political status of Antarctica: the issue of claims to territorial sovereignty. As mentioned, 7 of the 12 original parties to the Antarctic Treaty (Argentina, Australia, Chile, France, New Zealand, Norway, and the United Kingdom) assert claims to territorial sovereignty in Antarctica. Three of these claims overlap. The other five original parties to the Antarctic Treaty (Belgium, Japan, South Africa, the Soviet Union (Russia), and the United States) neither assert nor recognize claims to territorial sovereignty. Two of the five, the United States and the Soviet Union, although neither asserting claims nor recognizing the claims of others, maintained that their past activities in Antarctica gave them the basis for making claims in the future if circumstances dictated. The Antarctic Treaty addresses this disagreement in the juridical accommodation reflected in Article IV.

Nothing in the Antarctic Treaty is to be interpreted as a renunciation of previously asserted rights of or claims to territorial sovereignty in Antarctica and any basis of such claim or as prejudicing the position of any party regarding recognition or nonrecognition of claims. No activities taking place while the Antarctic Treaty is in force shall constitute a basis for asserting, supporting, or denying a claim to sovereignty in Antarctica or create any rights of sovereignty there. Further, no new claim or enlargement of an existing claim may be asserted while the Antarctic Treaty is in force.

Article IV is sometimes described, not surprisingly, as freezing the respective positions on territorial sovereignty. In the sense of preserving a balance in these positions I would agree.

Equally important, Article IV's juridical accommodation, combined with the other substantive provisions of the Antarctic Treaty, allows its Parties to agree on how activities actually take place in Antarctica. The Antarctic Treaty applies what has been called a bifocal approach, which permits application of common sets of obligations to those activities with which the Antarctic Treaty deals and in a way that each side, claimant and nonclaimant alike, can view as consistent with its basic legal position.

This bifocal approach can be illustrated by the example of a scientist from the United States undertaking research in the area claimed by New Zealand. New Zealand would assert that in exercise of its sovereignty over this area, it has the exclusive right to authorize scientific research there and to determine conditions for its conduct. As a party to the Antarctic Treaty, however, New Zealand can take the position that it has given its consent for scientists of other Antarctic Treaty parties to carry out research in its claimed area provided that they observe the obligations applicable to such research set forth in the Antarctic Treaty.

The United States, on the other hand, would disagree with New Zealand's interpretation since, in the U.S.'s view, there is no territorial sovereignty in Antarctica. It would assert, therefore, that pursuant to its jurisdiction over its nationals wherever they are, it has the exclusive right to authorize research by U.S. scientists anywhere in Antarctica and determine conditions for their conduct. As a party to the Antarctic Treaty, however, the United States can take the position that it has exercised this exclusive jurisdiction in authorizing the research and requiring observation of the obligations on such research set forth in the Antarctic Treaty.

Each side, therefore, can assert that the research is taking place in a manner consistent with its legal position. In spite of the differences in their legal positions, however, each side agrees that the research go forward under commonly agreed conditions.

The bifocal approach is a basic element in Antarctic governance. It reflects a fundamental principle of restraint by all parties, in effect, recognition that the effort to determine which position is to prevail on the question of territorial sovereignty or jurisdiction in Antarctica is not only unnecessary but also undesirable. Removal of this imperative also removes a potentially potent source of conflict.

The Antarctic Treaty includes a mechanism to develop specific measures to implement or further elaborate its substantive obligations. Article IX provides for regular meetings of the parties for the purpose of consulting together on matters of common interest concerning Antarctica and developing recommended measures in furtherance of the principles and objectives of the Antarctic Treaty (called Consultative Meetings).

In this regard, there are two other important elements in establishing the basis for achieving and building upon the Antarctic Treaty's substantive obligations: the activities criterion and consensus decision making. Participation in the Consultative Meetings is open to the 12 original parties (all of whom had initiated scientific programs in Antarctica during the IGY) and to any other country that becomes party to the Antarctic Treaty during such time as that party demonstrates its interest in Antarctica by the conduct of substantial scientific research there. Decision-making competence, therefore, is linked to research activities in Antarctica. Those parties participating in Consultative Meetings with decision-making authority are known as Consultative Parties.

Measures recommended at Consultative Meetings become effective when approved by all Consultative Parties. Under the rules of procedures for Consultative Meetings, recommendations for such measures require approval of all representatives present. These rules have been applied, in practice, on a no-objection or consensus basis.

The Antarctic Treaty's consensus-based decision-making system adds important political reinforcement to the juridical accommodation set forth in Article IV. Each party is provided the assurance that it cannot be outvoted on decisions that could affect the issues of sovereignty dealt with in Article IV.

The activities criterion, tying decision-making authority to actual activities in Antarctica, is an important stimulus for cooperation there. Decisions on activities in Antarctica are taken by those actually carrying them out: an incentive to base decisions on the common and shared experience of Antarctica and a deterrent to politicizing issues. This activities criterion tends to restrain possible abuse of the power to object in consensus decision making.

These legal and political provisions have been essential ingredients in the practical achievement of the objectives that lie at the heart of the Antarctic Treaty. Antarctica has been and remains an effective zone of peace and the scene of cutting-edge scientific research.

THE EVOLUTION OF THE ANTARCTIC TREATY

The success of the Antarctic Treaty in securing Antarctica as an area free of conflict and the scientific understanding of the continent and surrounding waters promoted by the Antarctic Treaty have been preconditions for extending the experiment, i.e., for the evolution of the Antarctic Treaty as a system of governance. It is important to remember that the Antarctic Treaty was, at the outset, a limited-purpose agreement. It dealt with freedom of scientific investigation in Antarctica and establishing it as a zone of peace. The legal and political accommodations in the Antarctic Treaty applied to these obligations and activities related thereto but did not apply to activities not mentioned in the Antarctic Treaty, such as the exploitation of resources.

At the same time, the drafters of the Antarctic Treaty anticipated the need for its future evolution in providing for the regular Consultative Meetings to adopt recommendations in furtherance of the principles and purposes of the Antarctic Treaty (Article IX). This is also reflected in the provision for establishing cooperative working relationships with international organizations having a scientific or technical interest in Antarctica (Article III, paragraph 2). Interest in Antarctica as a basis for interaction with other organizations, a variation on the activities criterion, has been an important theme in the evolution of the Antarctic Treaty.

In addressing the evolution of the Antarctic Treaty, the role played by the Scientific Committee on Antarctic Research (SCAR) should also be highlighted. A nongovernmental body and member of the International Council of Scientific Unions (now the International Council for Science), SCAR originated as a scientific mechanism for coordinating activities in Antarctica for the IGY. Following the IGY, it became a permanent body to provide a continuing means for coordinating and facilitating scientific research activities and for identifying scientific priorities in Antarctica.

Science has played a key role in the evolution of the Antarctic Treaty. The results of scientific research and observations in Antarctica have contributed importantly to the definition of issues that require intergovernmental agreement and are an important basis for evaluating the intergovernmental response to such issues once identified. SCAR has been central to this aspect of the Antarctic Treaty's evolution by providing a valuable source of scientific advice and peer review for the Antarctic Treaty and from a nongovernmental perspective.

As a result of the work of Antarctic Treaty Consultative Meetings, a wide range of measures have been adopted to extend the principles and purposes of the Antarctic Treaty to human activities in Antarctica and to avoid adverse impacts of those activities. These include measures on the facilitation of scientific research and logistic support thereof; conservation of Antarctic fauna and flora and protection of the Antarctic environment; designation of protected areas, historical sites, and monuments; cooperation in meteorology, telecommunication, and emergency response; air safety; tourism; and the operation of the Antarctic Treaty itself.

A perhaps even more important impetus of the evolution of the Antarctic Treaty to what is known as the Antarctic Treaty System was the effort to deal with possible resource activities in Antarctica: first, Antarctic marine living resources and, second, Antarctic mineral resources.

ANTARCTIC MARINE LIVING RESOURCES

The preservation and conservation of living resources in Antarctica was cited in the Antarctic Treaty itself as

a subject for measures to be adopted at Antarctic Treaty Consultative Meetings (Article IX, paragraph 9(f)). Recommendation I-VIII, adopted at the First Antarctic Treaty Consultative Meeting in 1961, recognized the urgent need to conserve and protect living resources in the area of the Antarctic Treaty.

A first result was the Agreed Measures for the Conservation of Antarctic Fauna and Flora adopted in 1964. The agreed measures were aimed at ensuring that human activities in Antarctica, then primarily scientific research and associated logistics support activities, did not adversely affect Antarctic fauna and flora. They prohibited the taking of native species except for compelling scientific purposes and set forth far-reaching measures to avoid harmful interference with populations of such species and to protect their habitats. The reach of the measures was to the continent and its ice shelves, not to adjacent offshore waters.

The second major initiative to deal with marine living resources was a new agreement designed to deal with the possible reemergence of commercial exploitation of seals, in particular, crabeater seals. It was recognized that any effort to reinitiate commercial exploitation of seals would need to cover pack ice areas of the high seas. In light of the potentially differing interpretations of the application of a measure adopted under the Antarctic Treaty to the high-seas areas (Article VI), the Consultative Parties, therefore, with significant scientific input from SCAR, set out to negotiate a freestanding agreement on pelagic sealing.

The resulting Convention on the Conservation for Antarctic Seals (CCAS), concluded in 1972, established sealing zones and precautionary catch limits in those zones; SCAR was designated as the scientific advisory body for the convention. Commercial-scale sealing, in fact, did not emerge. Nonetheless, CCAS represents one of the first, if not the first, international effort to put into place a mechanism to regulate commercial exploitation of living resources before the initiation of those activities.

SCAR identified and synthesized data and information on the pack ice seal populations and provided the scientific framework for the precautionary approach to conservation included in CCAS. It also promoted and coordinated study and understanding of the Antarctic marine ecosystem as a whole. This work, brought together in SCAR's Biological Investigations of Marine Antarctic Systems and Stocks (BIOMASS) Program in 1976, spotlighted the central role played by Antarctic krill (shrimplike crustaceans) in the Antarctic marine ecosystem. It also identified the potential of krill for human consumption as well as the potentially severe impacts of large-scale harvesting not only on krill populations themselves but also on the numerous other species dependent upon krill.

As a result of the pioneering research on the Antarctic marine ecosystem coordinated by SCAR, in 1977 the Consultative Parties agreed to initiate negotiation on an agreement to "provide for the effective conservation of the marine living resources of the Antarctic ecosystem as a whole" (Recommendation IX-2 [London, 1977]).

A special negotiating process was established, in part, because it was widely recognized that the form of the regime would need to be, like CCAS, a freestanding convention. This recognition also reflected commitment to cover the entire marine ecosystem, which extends north of the area of the Antarctic Treaty (north of 60°S latitude). The negotiations were initiated in 1978 and were concluded in 1980.

The Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), which entered into force in 1982, is a principal component of the system built upon the Antarctic Treaty and reflects the innovative and precedent-setting character of its parent. CCAMLR is the first international agreement that defines its area of application by reference to an ecosystem and seeks to describe the components and spatial extent of that ecosystem.

The northern limit of the CCAMLR area is defined by reference to the Antarctic Convergence, or Polar Front, an oceanic transition zone that separates colder Antarctic waters from subantarctic waters to the north. It forms an environmental barrier that many species do not cross and is considered the northern limit of many Antarctic species. CCAMLR sets forth geographic coordinates that approximate the location of this zone for regulatory purposes.

Antarctic marine living resources are defined as the populations of all species of living organisms found south of the convergence, and the Antarctic marine ecosystem is defined as the complex of relationships of Antarctic marine living resources with each other and with their physical environment.

CCAMLR is also the first international agreement to incorporate an ecosystem approach to the management of living resources. CCAMLR defines its objective as the conservation of Antarctic marine living resources, with conservation understood to include rational use of such resources.

The ecosystem approach is set forth in three obligations applicable to harvesting activities (Article II, paragraph 3, of CCAMLR). All such activities are to be conducted so as to (1) maintain populations that are the target of harvesting at healthy levels (preventing their decrease to

levels below those necessary to ensure stable recruitment), (2) maintain ecological relationships between harvested, dependent, and related populations of Antarctic marine living resources and restoration of depleted populations to meet the first standard, and (3) prevent irreversible change (not potentially reversible over two or three decades) in the Antarctic marine ecosystem as a whole.

CCAMLR recognizes that the implementation of an ecosystem approach to conservation and management is data dependent. Therefore, CCAMLR includes extensive and detailed provisions on data collection and reporting, both as obligations of the parties and as priority functions of the institutions.

With respect to institutions, CCAMLR represented a significant evolution in the Antarctic Treaty system. It establishes a commission to determine management measures, a scientific committee to provide advice to the commission, and a secretariat to serve both. Substantive decisions in the commission are taken by consensus of its members, and membership is also based on an activities criterion, in this case, harvesting of or substantial research on Antarctic marine living resources.

CCAMLR draws directly upon the juridical accommodation reflected in Article IV of the Antarctic Treaty and applies it to assertions of maritime jurisdiction south of 60°S latitude derived from claims to territorial sovereignty there. The parties also set forth understandings to reflect the fact that there is recognized sovereignty and recognized maritime jurisdiction in the CCAMLR area north of 60°S latitude.

CCAMLR also incorporates imaginative provisions to deal with the divided competence between the European Union (EU) and its member states with respect to matters covered by CCAMLR. The EU and relevant member states are members of the commission, but with safeguards against double voting.

CCAMLR's provisions for a scientific committee merit attention. The members of the Scientific Committee, as with most regional fisheries bodies, represent governments rather than serving in an individual expert capacity. However, in addition to carrying out such activities as may be directed by the commission, the committee is accorded specific and independent functions to develop the basis for implementing CCAMLR's ecosystem management approach. The committee's relationship with SCAR, also provided for in CCAMLR, has operated to reinforce the independence of the committee. As noted earlier, SCAR, in effect, acts as a peer-review body of the committee's work. The fact that many of the scientists representing governments are also active participants in SCAR has contributed to the objectivity of the committee's deliberations.

An important challenge to the successful implementation of CCAMLR arose at the outset, in the start-up of the Scientific Committee. The committee was charged with recommending agreed rules of procedure for its operation to the commission for final approval. The issue turned on whether the consensus decision-making system provided in CCAMLR for the commission should also apply to the Scientific Committee. Several parties took the position that a consensus of all committee members was required for the provision of scientific advice or recommendations to the commission. This position could have prevented the commission from receiving any advice; it could have deprived the commission of the understanding of where and why scientific views diverged, and it would have involved the Scientific Committee in political decisions, properly the purview of the commission. The majority of members expressed fundamental objection to this position. The resulting impasse prevented the adoption of rules for over a year. Those opposed to subjecting the Scientific Committee's advice to consensus decision making held firm, however, and prevailed at the committee's second meeting. The relevant rule (Rule 3, Rules of Procedure of the Scientific Committee) provides the following:

- Scientific recommendations and advice to be provided by the Scientific Committee pursuant to the Convention shall normally be determined by consensus.
- Where consensus cannot be achieved the Committee shall set out in its report all views advanced on the matter under consideration.
- Reports of the Scientific Committee to the Commission shall reflect all the views expressed at the Committee on the matters discussed.
- If a Member or group of Members in the Committee so wishes, additional views of that Member or group of Members on any particular questions may be submitted directly to the Commission.
- Where the Committee takes decisions, it will do so in accordance with Article XII of the Convention.

Resolution of the dispute in this fashion was critical to establishing a healthy interaction between the scientific and technical requirements for management and the political process for taking management decisions. Getting the science-policy interaction right is necessary to ensure that risk and uncertainty are given proper weight in management decisions; CCAMLR's ability to do so has been a key

element in the success it has had in the ongoing attempt to put ecosystem management into practice.

Although it is beyond the scope of this paper to analyze the operation of CCAMLR, since its entry into force in 1982, it should be noted that CCAMLR's Commission has been at the international forefront of the complex task of converting ecosystem management into practical measures, in precautionary, risk-based management of fisheries; in establishing healthy science-policy interaction; in dealing with harmful fisheries practices, in particular, seabird bycatch; and in coming to grips with illegal, unreported, and unregulated (IUU) fishing, through such measures as its innovative catch documentation scheme.

ANTARCTIC MINERAL RESOURCES

Following the completion of the negotiation of CCAMLR in 1980, the Consultative Parties turned their attention to the issue of Antarctic mineral resources, an issue that had emerged in the mid-1970s to threaten the Antarctic Treaty's experiment in international governance.

This challenge derived from inferences that there were valuable mineral resources in Antarctica and was driven by worldwide concern over possible resource scarcity, in particular, fears of oil shortages following the formation of the Organization of Petroleum Exporting Countries (OPEC). Governments and resource companies, therefore, sought to determine the resource potential of previously uninvestigated regions, including the most remote areas of the planet, such as Antarctica.

The search for valuable resources in Antarctica was certainly not a new phenomenon. The appetite for new sealing and whaling grounds was an important element in the exploration of Antarctica from the outset. The pattern of harvesting followed by overharvesting of marine mammal populations became an all-too-familiar feature in the history of Antarctica.

Dealing with possible exploitation of mineral resources, however, was viewed as more difficult than managing living resources. They are not renewable and were perceived as more valuable. Moreover, the authority to manage and profit from mineral resource development is one of the most jealously guarded aspects of sovereignty. Here again, it should be recalled that the Antarctic Treaty is a limited-purpose agreement and its imaginative governance provisions did not extend to possible mineral resource activities.

Under these circumstances, the Treaty Parties decided that it was necessary to have a mechanism in place for determining the acceptability of mineral resource development in Antarctica before, rather than after, any valuable deposits were identified. Research on basic geological and geophysical processes in Antarctica was inexorably expanding information about the possible occurrence of mineral resources. Reaching agreement on what to do after any such deposits had been identified could have proved impossible.

Therefore, in 1981, the Consultative Parties agreed to negotiate a regime to deal with possible oil development and mining in Antarctica. As with the case of CCAMLR, their objective was to conclude a freestanding agreement, separate from, but closely tied to, the Antarctic Treaty, and they established a special negotiating process to that end.

The resulting negotiations were extraordinarily complex and difficult, as well as fascinating for those like myself who took part in them. They were initiated at a time of deep division, east/west and north/south, over international economic and resource distribution issues that focused international attention on Antarctica. They also became the catalyst for concerted environmental campaigns within many of the Consultative Parties opposing any possible Antarctic mineral resource activities. Environmental groups called for designating Antarctica as a world park in which mineral resource development and perhaps other commercial activities would be prohibited.

The growing power of this environmental movement was obscured by the progress being made in the negotiations, and in 1988, after seven years of intense bargaining, the Consultative Parties adopted the Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA). Its adoption by consensus was a remarkable negotiating achievement.

This consensus, however, was short-lived. Shortly after adoption of CRAMRA, Australia and France announced that they would no longer support it and would work instead for a permanent prohibition of mineral resource activities in Antarctica. It became clear that the ratifications necessary to bring CRAMRA into force would not be forthcoming.

CRAMRA, though it has been shelved, included environmental standards, including unique sufficiency of information criteria as a precondition for making decisions, arguably the most stringent standards ever developed for possible resource activities. Many of its provisions have served as precedents for subsequent environmental agreements.

The problem with CRAMRA, however, was that it could be seen to allow the possibility of mineral development. Even the term "regulation" in its title was taken to imply that mineral resource exploitation would inevitably

flow from CRAMRA, a reality by no means foreordained in its substantive provisions. Nonetheless, this possibility, however remote, became the catalyst for an effective public campaign against CRAMRA. Environmental organizations concerned with Antarctica recognized the extraordinary emotive value and popular appeal of declaring Antarctica forever off-limits to mineral resource development. The force of this movement proved to be irresistible.

The demise of CRAMRA converted what had been a challenge to the Antarctic Treaty's system of governance into a potential crisis. Some observers characterized it as a significant failure of the Antarctic Treaty system and questioned the viability of the treaty as a mechanism for dealing with environmental protection. There certainly was deep division among the Consultative Parties. The division was not just over a ban on mineral activities.

The Consultative Parties that first advocated a permanent ban on mineral resource activities called for a new comprehensive agreement on the protection of the Antarctic environment. This comprehensive convention not only would prohibit mineral resource activities that were not covered by the Antarctic Treaty but would also apply to activities directly regulated by the Antarctic Treaty, e.g., facilitation of science and associated logistics in support of science, tourism, and other visitation. There were also proposals to substitute a qualified majority system for consensus decision-making procedures. The effect of these proposals was to call into question the Antarctic Treaty as the framework for governance.

Under these circumstances, the Consultative Parties returned to the negotiating table. The crisis was overcome through agreement on the Protocol on Environmental Protection to the Antarctic Treaty, sometimes called the Madrid Protocol, which was concluded in 1991 and entered into force in 1998.

The Madrid Protocol, which forms an integral part of the Antarctic Treaty itself, incorporates a prohibition on mineral resource activities in Antarctica along with provisions strengthening and rationalizing the Antarctic Treaty's framework for environmental protection.

Specifically, the Madrid Protocol, in addition to including the minerals ban (Article 7), elaborates environmental principles applicable to human activities in Antarctica and sets out mandatory rules in a series of annexes. These include the following:

- Annex I on Environmental Impact Assessment, which requires that the environmental impact of proposed activities in Antarctica be assessed before they take place;
- Annex II on the Conservation of Antarctic Fauna and Flora, which prohibits taking of taking of native animals and plants without a permit (available only for compelling scientific purposes); prohibits harmful interference with native populations; prohibits introduction of nonnative species; and basically strengthens and extends the Agreed Measures of 1964;
- Annex III on Waste Disposal and Waste Management, which provides for strict regulation of waste disposal and waste management at stations and field camps, including the requirement that most types of waste must be removed from Antarctica, a ban on open burning of waste, and prohibition of the introduction of polychlorinated biphenyls (PCBs), polystyrene packaging, pesticides, or nonsterile soil into Antarctica;
- Annex IV on Prevention of Marine Pollution, which prohibits disposal into the sea of oil, chemicals, including plastics, and garbage (other than food waste) from ships and stations; sets forth restrictions on disposal of sewage and food waste; and calls for prompt and effective response to accidents and environmental emergencies; and
- Annex V on Protected Areas, which provides for establishment of Antarctic Specially Protected Areas (ASPA), areas of outstanding wilderness, scientific, and environmental value that require a management plan and permit for entry (available only for compelling scientific purposes), and of Antarctic Specially Managed Areas (ASMA), areas where human activities need to be coordinated, requiring management plans but not permits for entry.

The Madrid Protocol provides for additional annexes to be negotiated and incorporated into this framework in the future. Annex VI on Liability from Environmental Emergencies has been concluded but has not yet entered into force. The Madrid Protocol also includes provisions for compulsory settlement of disputes regarding interpretation or application of its provisions, matters relating to Article IV of the Antarctic Treaty excepted.

The conclusion of the Protocol on Environmental Protection to the Antarctic Treaty, which, as previously noted, forms an integral part of the Antarctic Treaty, represented the restoration of consensus among the Consultative Parties on the issue of mineral resources and environmental protection in Antarctica. As with CCAMLR, the Madrid Protocol represents a major expansion in the Antarctic Treaty System by extending the Antarctic Treaty's system of governance.

Moreover, the negotiations over the 10-year period leading up to the Madrid Protocol were a catalyst to the elaboration of the techniques of Antarctic governance. That decade witnessed major changes in the participation and operation of the Antarctic Treaty System, what has been called the "greening" of the system. The intense interest generated by the issue of Antarctic mineral resources played an important part in the emergence of new actors seeking to play a role in Antarctic matters.

In 1959, the 12 countries that had negotiated the Antarctic Treaty were, in effect, responsible for the governance of Antarctica. Those 12—the Consultative Parties and only those parties—participated in the Consultative Meetings held under the Antarctic Treaty. During the first two decades of the operation of the Antarctic Treaty, only one acceding party to the Antarctic Treaty, Poland, had sought and achieved recognition as a Consultative Party (in 1977).

This situation changed dramatically with the emergence of the issue of potential development of mineral resources in Antarctica. By the conclusion of the Madrid Protocol in 1991, the number of Consultative Parties had doubled to 26. Among the new Consultative Parties were a number of developing countries, including Brazil, India, and China. There are now 28 Consultative Parties.

The negotiations also gave impetus to efforts by acceding parties to the Antarctic Treaty (those parties that had not achieved consultative status, or Non-Consultative Parties) to secure involvement in the work of Consultative Meetings, calls for opening Consultative Meetings to observers, and efforts in the United Nations by countries not party to the Antarctic Treaty, led by Malaysia, to challenge the legitimacy of the Antarctic Treaty. The Consultative Parties successfully responded to each of these challenges in a manner that extended and strengthened the Antarctic Treaty's system of governance.

First, in 1983, agreement was reached that Non-Consultative Parties had the right to participate in Consultative Meetings as observers with the ability to take part in discussions without decision-making powers. This agreement put an end to the anomalous situation in which parties to the Antarctic Treaty who had accepted their obligations but had not, or had not yet, met the activities criterion for consultative status had been unable even to attend Consultative Meetings. There are now 19 Non-Consultative Parties to the Antarctic Treaty.

Second, in 1987, agreement was reached on providing for attendance at Consultative Meetings by international organizations, both intergovernmental and nongovernmental. Representatives of components of the Antarctic Treaty System (SCAR, the Commission for the Conservation of Antarctic Marine Living Resources, and the Council of Managers of National Antarctic Programs) are entitled to attend as observers. In addition, experts may be invited from international organizations that may contribute to the work of Consultative Meetings, based on the provisions for establishing cooperative working relations with international organizations set forth in Article III, paragraph 2. At the most recent Consultative Meeting (ATCM XXXII, held in the United States in 2009) observers and experts from 14 international organizations (intergovernmental and nongovernmental) attended.

Finally, the Consultative Parties coordinated a unified response to the campaign in the United Nations that questioned the legitimacy of the Antarctic Treaty system as a forum for dealing with mineral resources or other issues of concern to the international community. In reply to contentions that the Antarctic Treaty was a closed club based on an undemocratic decision-making system, the Consultative Parties took the position that issues relating to Antarctica were appropriately dealt with only by consensus, whether within the Antarctic Treaty's mechanisms or in the United Nations General Assembly.

Consensus could not be achieved at the assembly, and those questioning the legitimacy of the Antarctic Treaty sought the adoption of General Assembly resolutions by majority vote. The Consultative Parties responded by not participating in such votes. Faced with a united front of Consultative Parties and with ongoing growth and diversification in the make up of the Consultative Parties themselves, the United Nations debates took on an increasingly hollow character. Finally, in 1994, consensus was achieved (following the conclusion of the Environmental Protocol and set forth in preliminary fashion in the agenda of the 1992 Earth Summit in Rio de Janeiro). This consensus involved international recognition of the legitimacy and value of the Antarctic Treaty System as a system of governance coupled with emphasis on the fulfillment of the obligations of Antarctic Treaty Parties to provide information about the operation of the Antarctic Treaty and the scientific research it promotes.

ANTARCTIC GOVERNANCE AFTER 50 YEARS

The entry into force of the Protocol on Environmental Protection to the Antarctic Treaty in 1998 and its implementation in the decade that followed, including the related establishment of the Antarctic Treaty Secretariat,

mark the evolution of the Antarctic Treaty from a limited-purpose, albeit unique and precedent setting, agreement into an overall system of governance. Among international instruments, the Antarctic Treaty has been uniquely successful in achieving its objectives. It has done so during five decades of rapid and significant change, not only in the international landscape but also in the numbers and interests of those participating in the Antarctic Treaty itself. Its innovative and precedent-setting conflict resolution and disarmament provisions and its guarantees of freedom of scientific research remain relevant and vital today. These achievements constitute the most important results of 50 years of operation of the Antarctic Treaty and make it one of the most successful efforts at conflict prevention and political cooperation in modern history.

This same dynamism has been reflected in the evolution of the Antarctic Treaty System, in particular, CCAMLR. The provisions, practices, and conservation measures of CCAMLR continue to be widely emulated worldwide as a model and inspiration for efforts to conserve fishery and other living resources.

The governance elements that derive from the Antarctic Treaty itself, in particular, the bifocal approach reflected in Article IV, consensus-based decision making, and the activities criterion, provide essential bases for Antarctic problem solving, whether under the Antarctic Treaty or in subsequent instruments built upon the Antarctic Treaty. I would also add to the suite of techniques that characterize Antarctic governance the ecosystem management approach of CCAMLR as well as the precautionary, risk-based management techniques and the process of science-policy interactions that have evolved under it. A final element is reliance on the results of scientific research and observations in Antarctica as a basis for Consultative Party action and for evaluating the effectiveness of such action once implemented.