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Diplomatic and Legal Aspects of Remote Sensing

While the United States favors an open-dissemination system, many other nations seem to favor a prior-consent system.

Abstract: *Initiation of experiments in remote sensing of the earth's natural environment from outer space has intensified interest in the international community to develop additional organizational and legal guidelines for such activity. Several proposals to require the prior consent of states before data about their natural resources can be disseminated have been put forward. On the other hand, the United States in particular has urged that a system of open dissemination is far more likely to promote the common good, and that the proposed restrictions could seriously impair the entire remote sensing program. States favoring restrictions on dissemination argue principally that their own natural resources may be undermined by publication of information about those resources, and that their national security may be threatened by the revelation of military and economic data. Negotiations are continuing in the United Nations where attempts to resolve these differing concerns are the focus of debate in the Outer Space Committee and its subdivisions.*

Introduction

When on July 23, 1972 the United States launched the first Earth Resources Technology Satellite (ERTS), the international community, acting through the United Nations, had for over three years been undertaking studies of the many implications of such remote sensing. The pace of that work significantly accelerated during 1974, and at the recently completed meeting of the Legal Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space nearly half of the entire session was devoted to remote sensing. Because the first United States experimental ERTS has been sending back data, now joined by its successor called LANDSAT, a number of states have become seriously concerned about possible disadvantages resulting from worldwide distribution of data about their territories. This concern has generated a number of specific proposals for comprehensive international regulation of remote sensing from outer space.

The United States together with a few other countries has focussed considerable attention in the United Nations on potential benefits from an open and cooperative system for the international community as a whole and for each individual state. These same countries also have outlined in some detail the potential handicaps and disadvantages which would be likely to result from restrictive or closed-data-dissemination systems. As of this time, it is probably too early to tell what type of system or systems the majority of the members of the United Nations will favor. However, because the outcome of these negotiations could have a substantial impact on the conduct of remote sensing for public use, they warrant the attention particularly of those who work in this field.

The Restrictive Approach: Primary Concerns

Brazil and Argentina have jointly proposed a draft treaty which in essence provides that (a) remote sensing of another country's

natural resources may not be undertaken without the latter country's prior consent; (b) data relating to the natural resources of one state cannot be disseminated to any third state, international organization, or private entity without the express authorization of the state to whom the resources belong, (c) states must not utilize any data obtained from remote sensing of another state's natural resources to the detriment of the latter state; (d) states are entitled to full and unrestricted access to all data obtained through remote sensing of their natural resources; and (e) all states have the right to participate fully in and to have free access to all information from remote sensing of natural resources outside of national jurisdiction. There is also considerable language referring to non-interference with the exercise of a state's permanent sovereignty over its natural resources.

The Soviet Union and France jointly have proposed a set of governing principles which would provide that (a) any sensing state must transmit to a sensed state on mutually acceptable terms information it obtains regarding the natural resources of the latter; (b) that no state which obtains, through remote sensing, information concerning the natural resources of another state shall make that information public without the prior consent of the latter state; and (c) that remote sensing of earth resources shall respect the principle of permanent sovereignty of states over their wealth and resources.

There are of course additional articles in each of these proposals, but these summaries contain the essential operative provisions. These proposals have been tabled, with a fair amount of initial support from other countries, in an environment in which the only practical experience has been the United States' ERTS-1. The data from that satellite has been handled on a basis of open dissemination to anyone who wishes to purchase it at a very modest cost. Many nations, individuals, and organizations have done so, and scores of scientists and other investigators have used the data in their research. The NASA program, even in its earliest experimental stage, has obviously excited the interest and imagination of people around the globe, and as time passes more and more governments are evincing interests in greater cooperative efforts, including construction of their own ground stations. The question then arises: Why, in face of this enthusiasm, does there appear to be broad support for reversing the current approach and adopting a system in which the prior consent of each state in an area would be required before a satellite could turn on its sensors on a pass over that area, or even a system in which data about a geographical region could not be shared without the express prior consent of all states within that region?

Regardless of the fact that some of the most valuable uses of data obtained from remote sensing satellites can be derived from studying it on a regional or even global basis, considerable sentiment exists for making such data available only to the state whose territory it concerns. The primary expressed concern behind this preference is that industrially advanced states or private companies will better be able to interpret the data than will the states in whose natural resources they are interested, and hence will be able to negotiate for those resources with an unfair advantage of greater knowledge about a nation's resources than the nation itself has. Some states simply do not wish to have to deal, before they are ready, with the pressures that would be generated by greater public knowledge about their resources and natural environment. This concern has gone sufficiently deep to elicit arguments such as that sovereignty over natural resources includes complete control over all dissemination and use of information relating to those resources, regardless of where such dissemination or use may take place.

Some states fear that their security would be threatened, not so much by the great military powers as by their own immediate neighbors. Such threats, it is believed, could arise not simply by disclosure of the location of airports, military installations, railroads, and highways but also by availability of data such as crop surveys that have economic implications. In addition, there exists a pervasive if vague and ill-defined feeling that yet another area of national if not personal privacy is being violated and that somehow this results in increased vulnerability.

All of this is taking place in the midst of a most unfortunate but growing international atmosphere of *sauve qui peut* while calling with various degrees of sincerity for more international cooperation. A trend amoung many states toward increased isolation rather than coordination, toward separatism rather than cooperative efforts, toward secrecy rather than the open and mutual exchange of ideas and information, has become evident in many international forums, and unhappily the area of man's progress in outer space has not been immune.

United States Position

It is perhaps easier for the United States

than for many other countries to advocate, with conviction, an open-data-dissemination system. On one level we are accustomed to a society which teaches, if not always perfectly applies, the theory that the greatest good for the greatest number of people can be obtained by the open and free exchange of ideas and information. We obviously do not have exclusive rights to that theory, but nonetheless it seems to be a principal tenet of our system and to be as valued here as anywhere.

On another level, although it may be debatable whether we have relatively more to gain from an open-dissemination system than do other states, it does seem apparent that either on the realistic or fantastic levels we have much to gain and little to lose. We have already without inhibition published data from ERTS-1 covering the entire United States, and that data is available to anyone who wishes to purchase it.

We do happen to believe as well that the international community as a whole and other nations in particular also have much to gain by increasing their knowledge about themselves, their regions, and their world. It is our view that a restrictive-data-dissemination policy requiring the prior consent of each state could impair and perhaps eliminate remote sensing programs of the type we have been discussing, and could in fact ensure rather than avoid the unequal access to information that is so feared by many. Even if the technical difficulties of separating images or data along political boundaries could be overcome, the economic cost of doing so appears to be prohibitive. That cost is enhanced by the likelihood that complete regional, let alone global, agreement will hardly be attainable, and hence complete regional or global data would hardly ever be available.

United States representatives have on several occasions stated that this country has no interest in forcing data from our remote sensing systems on anyone else. If much of the rest of the world prefers either to participate in no system or to establish another system on a restrictive dissemination basis, we would consider it most unfortuante for everyone, but we would be willing to proceed with our experiments and, if the decision were made, with an operational program on a unilateral or bilateral basis without trying to compel anyone else to obtain our data.

It is our firmly held belief that the 1967 Outer Space Treaty endorses the right of all states to use outer space for remote sensing as well as other peaceful purposes, and we are not inclined to agree to restrictions on our right to do so. We have also stated in the United Nations that if the United States decides to move to an operational remote sensing system paid for by American taxpayers we would certainly anticipate that under The National Aeronautics and Space Act of 1958 the data derived would be available to American citizens. If this is the case, common sense and human nature make it inevitable that others would obtain at least parts of that data, resulting in unequal and discriminatory dissemination, and enhancing rather than reducing the ground for fears of unequal bargaining positions in international negotiations.

On the question of control over natural resources, we agree that the state within whose territory they lie has the right to control their exploration and extraction from that territory. We assert that right for ourselves and do not challenge it for others; however, we reject the equation of control over resources with control over all information relating to those resources. Such an equation is in our view unrealistic and impossible to apply, and would have the most unfortunate effects if attempted.

Where Do We Go from Here?

We are now fully engaged in both the Legal and the Scientific and Technical Subcommittees in the United Nations in efforts to find acceptable solutions to these differing views and concerns. Considerable confusion still exists in this dialogue; we do not yet have agreement on a common terminology, let alone common expectations about the capabilities of foreseeable remote sensing systems or the implications of the development of such systems.

There is as well a basic divergence of views on how to begin to address these problems. Some countries believe that a new legal regime should be agreed to before any operational program comes into existence, and hence that any such program would then be tailored to conform to that regime. Others have pointed out that significant advantages would arise from looking first at various organizational schemes which the international community might wish to adopt. Only after agreement is reached on how to handle remote sensing systems and data would legal guidelines be adopted to secure conformity with the preferred organizational scheme.

Fears have been expressed on either side: on the one hand that technological progress would outpace policy considerations, creating a *fait accompli*; and on the other, that adoption of legal standards before it is clear what is technically practicable and useful

would create artificial and perhaps irrelevant guidelines to future development of remote sensing.

Both views reflect reasonable concerns and in a typical, if not particularly efficient, compromise the UN Outer Space Committee has decided to proceed with both the legal and organizational analyses simultaneously, each keeping in close touch with the other. The Secretary-General has been asked to undertake a number of feasibility studies of possible organizational approaches and the Legal Subcommittee is evaluating a variety of legal principles.

The greatest hazard in the path of developing constructive and general agreement in these areas is that an organizational or legal scheme will be adopted too quickly, more on the basis of an instinctive feeling of vulnerability than on a reasoned assessment of the long-term interests of states and of the long-term direction which the international community may wish to pursue. However, it has been quite correctly pointed out that even now, as a result of ERTS-1, there are in the public domain data covering nearly all of the earth's surface. For topographical analysis, integral to the search for natural resources, much data is already irretrievably circulating.

Unless, as some have suggested, we decide this path is economically or technically not worth pursuing, neither the United States nor others will call a halt to technological progress in this area of space applications. Moratoriums in comparable contexts are occasionally proposed, but they are neither universally feasible nor popular.

The debate in the United Nations is centered around efforts to resolve apparently conflicting pressures: the dangers of moving too quickly to be wise in the view of some, or too slowly to be effective in the view of others. At the very least, we are aware that our efforts to reach an acceptable solution carry the heavy burden of encouraging or inhibiting the application of this new technology. Which to choose, and in what particular way to do so, will be for the foreseeable future a continuing challenge to scientists, technicians, politicians, and lawyers alike.

Short Course on Remote Sensing Fundamentals and Applications and Forum on Closing the "Data-Information Gap" Characterizing Remote Sensing for Environmental Monitoring and Resource Management

March 9-11, 1976

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The one day forum, featuring invited speakers, will identify the nature, form and severity of the real and perceived mismatches between existing remote sensing technology and its productive application to environmental monitoring and resource management problems at the local to statewide level. Forum is sponsored by the Conversation in the Disciplines Program of the State University of New York.

Presented in cooperation with the Central New York Region of ASP. Thomas M. Lillesand, conference director. For more information, registration forms and hotel room applications, contact:

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