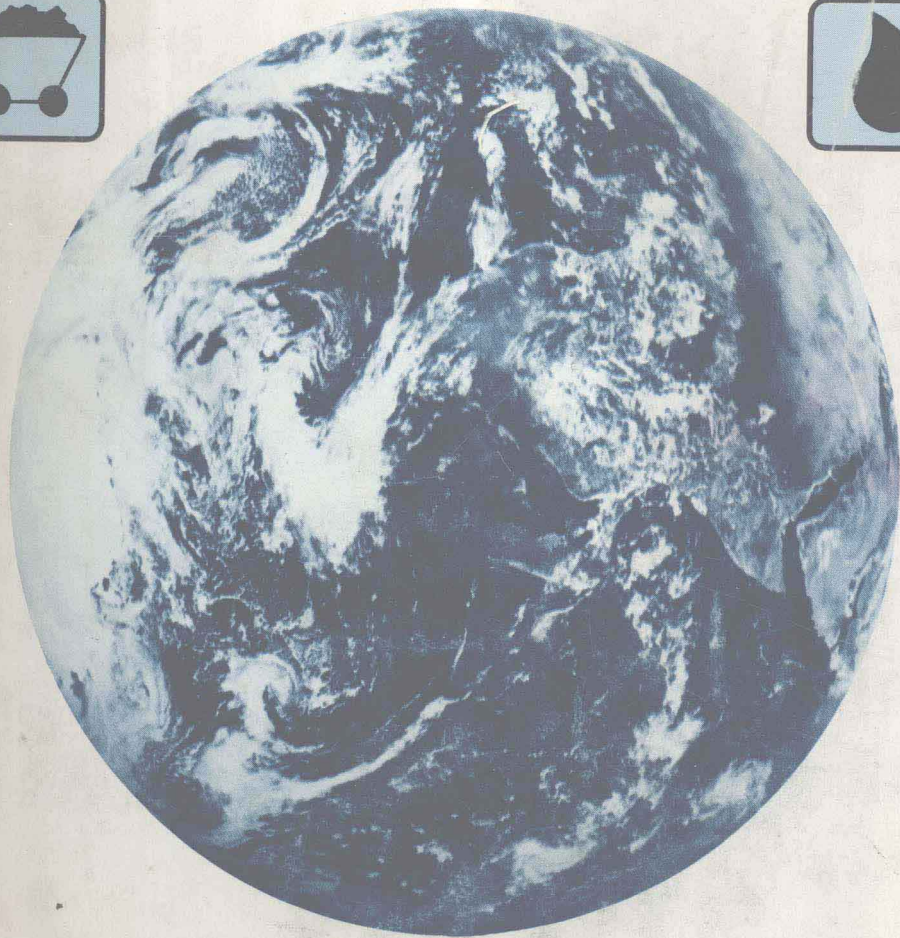
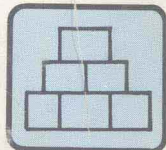
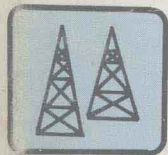


raw materials & foreign policy



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Highlights

The Institute's comprehensive study of the raw materials and foreign policy interaction finds that the world does not face short- or even medium-term physical exhaustion of resources. But the United States and other consumers must expect continuing problems in selected materials—for which they are still not adequately prepared. In America, this unpreparedness reflects the country's unique historical abundance of domestic resources, and the slow pace of adaptation to international developments.

The authors recognize that to eliminate all risks of shortages or international price manipulation would be neither desirable nor feasible because of the excessive costs that would be entailed. But they assess the risks as larger than they need to be. There is a wide variety of policy options which can diminish the threats to U.S. security and well-being and to a healthy and cooperative world economy posed by materials risks.

The analysis suggests that the country is exposed to problems of national significance in aluminum and bauxite, chromium, copper, the platinum group metals and, of course, petroleum, which receives extensive consideration as a critical case. Moderate dangers exist in cobalt, fluorspar, manganese, mercury, tantalum, tin, tungsten, zinc, and natural rubber, while others represent less concern from the policy standpoint, although they may constitute significant problems for specific industries.

The central finding is that the dangers posed are more political or qualitative in nature than economic and quantitative. This conclusion is inescapable, largely because raw materials have become a battleground in conflicts over other issues as well as over the allocation of benefits from materials development and use. The subjects of contention range from conservation and ecological policies to the role of multinational corporations and the North-South conflict between industrialized and developing countries, and various commodity stabilization proposals. The "resource power" now being exerted by so many nations, together with the erosion of basic principles of international law wrought by "sovereign absolutism" has inhibited the costly investments needed for the long-range development of raw materials.

The study confirms that the capital, technology, and management skills necessary for productive utilization of the world's resources are to be found in the private sector, and that a strong case can be made for the relative efficiency of market mechanisms. Nevertheless, there will be situations where the national interest requires the use of selected government policy instruments, including tax incentives, national stockpiles, subsidies to trade, and aid pro-

grams. But these powerful tools often have undesirable side effects. Thus they should be used selectively and with caution, and be targeted primarily at problems which are beyond the reach of market forces, such as actions by foreign governments or cartels.

Three broad national policy objectives are recommended:

- America should limit its vulnerability to external pressures by exerting as much control over the nation's materials supply position as is consistent with acceptable economic costs and international political complications. Production and conservation of raw materials—and particularly of petroleum—should be encouraged in parallel with efforts to improve the diversification and reliability of foreign sources. Seabed resources have a significant medium- and long-term role to play in such diversification.

- The United States should seek closer international cooperation on raw materials matters. Ways should be sought to involve the other major consumers, through placing a higher priority on resource questions in our bilateral and multilateral diplomacy than they have customarily had. Special efforts are also needed with major raw materials supplying countries using available bargaining leverage to insure open and reliable access. (The consumer and producer countries warranting particular attention are analyzed in Part III.)

- A coherent foreign economic strategy should be developed by the government, and it must accord greater priority to resource objectives. This effort requires a revitalized foreign economic policymaking focus in the White House to oversee a streamlined grouping of operating agencies, plus a coherent national materials information system and mechanisms to bring government and industry together more effectively in the materials field.

The study recognizes the current strength of OPEC; but it questions the legitimacy of that cartel operation and stresses that defense and deterrence measures against political curtailment of supply must be accelerated—for example by quicker decontrol of domestic oil and gas prices, conservation programs that mean business, and speeded-up development of alternative energy sources. Such measures will also improve the world's ability to undercut OPEC's monopoly pricing power and facilitate a return to a more open market system.

Although the book also takes a firm line against the rhetorical and other excesses of the "New International Economic Order," particularly the notion of a double standard of behavior among rich and poor countries, it advocates expanded voluntary cooperation with Third World countries, and increased foreign assistance programs. These initiatives should give special priority to countries where mutual cooperation is possible on areas of common interest, such as the development and use of natural resources. Strengthening international law and organizations is also an important objective. The Institute's analysis is skeptical as to whether OPEC's success can be repeated in other

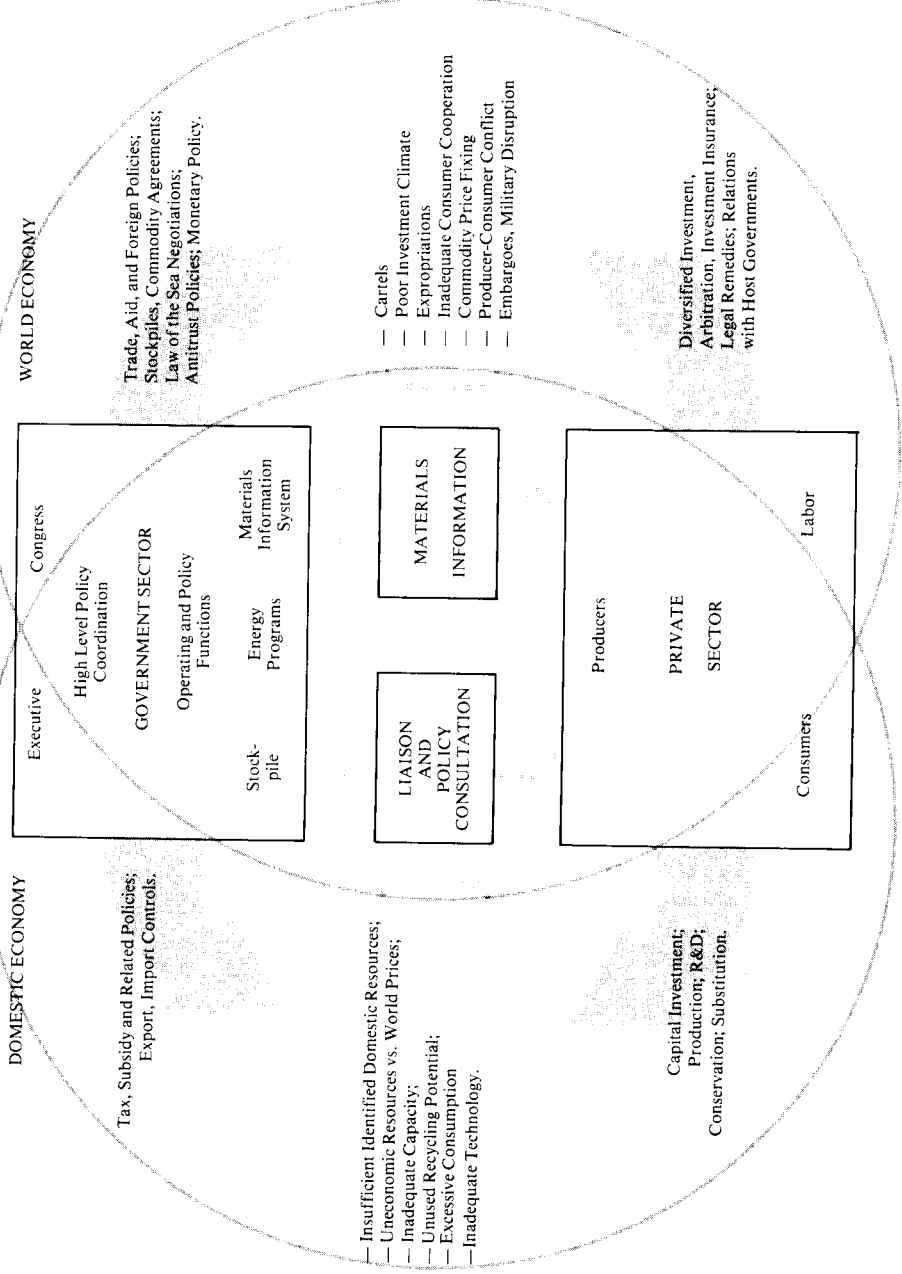
materials; but it stresses that even unsuccessful attempts at emulation can be harmful and destabilizing to the world economy. Compensatory finance and trade preferences are therefore favored over international buffer stocks and commodity price manipulation. But for the long term, an efficient allocation of private capital investment to expand raw material resources and capacity is required.

The book concludes that, with the proper leadership, the United States can reduce raw materials and foreign policy risks to acceptable levels and contribute to a more smoothly functioning and equitable world political economy. But the authors caution that the extremes of panic and sensational prescription *on the one hand, or indifference and complacency on the other*, can reduce our chances of getting through the difficult 15 years ahead with a healthy and cooperative international economic system.

The problems addressed in this two-year interdisciplinary study of industrially vital raw materials can be characterized as economic symptoms of a political disease. But the symptoms are themselves serious enough to warrant consideration of the policy options and programs described, even as the United States tries to develop an imaginative foreign economic strategy for the future which can better cope with the underlying malaise.

The following diagram illustrates graphically some of the interactions involved in meeting these challenges in the raw materials area.

U.S. RESOURCE PROBLEMS AND TOOLS



FOREWORD

The research leading to the publication of this book has been an ambitious project for a newly formed organization. The book itself is an institutional undertaking in a very real sense, for it has been a team effort from its inception, involving many people from various backgrounds and disciplines.

Someone, however, must accept the responsibility for the end product—which necessarily falls to the undersigned as the Institute's president. That responsibility is accepted with regard to any errors or deficiencies; but the credit for what we believe to be a thoughtful and factual analysis belongs collectively to all of those listed in the acknowledgments below.

The International Economic Studies Institute is a publicly supported, tax-exempt, nonprofit research and educational organization. It was created in 1974 and began its operations in the spring of 1975. The Institute is dedicated to interdisciplinary research on international economic problems of concern to Americans. It was established as an independent organization on the recommendation of the Board of Directors of the International Economic Policy Association in order to study long-range and complex problems with as broad a base of support as possible from the general public, business, government agencies, and foundations.

The Institute initiated its program by extending the International Economic Policy Association's research into U.S. natural resource requirements and foreign economic policy. IEPA's work on this topic resulted in an interim report issued in July 1974, and a supplementary report on petroleum in May 1975. These projects were conceived before the 1973 oil crisis brought the resource problems into the world's headlines. The studies benefited substantially from the advice of IEPA's Committee on Natural Resources, whose members volunteered their expertise on the materials-related problems to the Institute. They are listed in Appendix D. The invaluable contributions of committee members are gratefully acknowledged, but they must be spared any responsibility for the book's conclusions.

The Institute's first publication on resources was the inaugural paper in its *Contemporary Issues* series, an essay by former Ambassador Harald Malmgren on "The Raw Material and Commodity Controversy." This study was followed by Professor Ingo Walter's investigation of "International Economic Dimensions of Secondary Materials Recovery." In the spring of this year, the data base which had been constructed for the project, comparing the published supply and demand forecasts of critical industrial raw materials,

was issued as a separate research compendium, which has also been drawn on extensively in this book.

The Institute's future schedule features a two-year study program on "International Transfer of Technology" which will apply the same interdisciplinary approach to several related issues. The study will include the interaction of technology transfer with defense and arms control, the U.S. and international economies, economic development, and the legal environment. Work in the area of resources will also continue through a program to monitor new developments and problems, as well as the status of action on various recommendations, such as those to be made by the National Commission on Supplies and Shortages. It is contemplated that "Raw Materials Developments" will be published periodically in the *Contemporary Issues* series, which will also be a principal vehicle for disseminating research findings on international technology transfer.

Our efforts in this book have been devoted to the *interaction* of raw materials and foreign policy rather than to the problems of either component *per se*; for we believe this interaction to be one of the major public policy issues facing this country—and indeed the world. We have aimed at a balanced assessment of the problems, their future probabilities, and the potential options for U.S. policies. And we have tried to do so as members of a professional task force, eliminating, to the extent possible, personal, institutional, ideological, or partisan biases. But complete elimination of opinion is neither feasible nor desirable, if anything worthwhile is to be said. All of the participants in this effort share the hope that the book will be useful—to other researchers and to policymakers whether in the academic world, business, or government; and also to the journalist, general reader, and student of public affairs who wants the facts on a complex set of problems in a commonsense perspective.

ACKNOWLEDGMENTS

Over and above the vital financial support noted in the frontispiece, the Institute owes much to its trustees (listed on page iii) for their sound advice and encouragement, and to the many busy individuals who took time to review and comment on portions of the manuscript. We wish to thank, in particular, those who attended the Institute's September 1976 review conference. Their names are set out in Appendix E. However, since some are government officials, it should be made clear that as with the trustees, none of them bears any responsibility for the book's contents. But their thoughtful comments and criticisms have helped us to improve it substantially, for which we are most grateful.

The overall director of the project, Donald E. Schwab, is also the author or coauthor of several chapters. Dr. Jacob Kaplan, the Institute's senior expert consultant in this field, provided valuable comments and counsel on the entire

analysis and contributed the vital historical dimension in the first four chapters. He was aided substantially in this task by the research efforts of Julien D. LeBourgeois. Other primary contributors were Charles P. Ries, whose versatile talents were drawn on in several different chapters; and John Borland, whose factual analysis was largely responsible for the research compendium and for several individual country sections.

Consultants Richard C. Raymond and Stanley R. Sloan made major contributions, respectively, to the seabed and European sections. Mr. Raymond also helped in the early stages of the raw materials research as did Steven T. Ernst and Mary C. Choksi, and W. Andrew Osterman supplied much of the analysis on Japan.

My fellow Institute officers—Ronald L. Danielian and N. Ethelyn Thompson—have worked tirelessly on the project, with the latter also handling the publication and production arrangements. Albert P. Toner, as Institute consultant, not only contributed substantively to several sections, but edited the entire manuscript with great skill—and patience. Finally, Lois Lynch, Mary K. Whitaker, and editorial assistant Melissa Maholick, deserve credit for supervising the transformation from manuscript to finished book. The Institute thanks them all for contributions well above the call of duty.

Washington, D.C.

Timothy W. Stanley
President

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INTRODUCTION

The “materials and resources crisis” has been the subject of debates, studies, and news media coverage across the country. Out of that process more questions have been raised than answered. They often can be formulated in terms of alternatives:

- Is human society risking the near-term exhaustion of important non-renewable resources, or will the abundance of materials in the earth’s crust continue far into the future, making current problems primarily political in scope?
- Does OPEC’s success pose a strategic threat to the industrial countries, one which may well be emulated by others, or is oil unique in its cartelization potential? Viewed in the long term, how significant is even OPEC’s leverage?
- Should the New International Economic Order be considered a fundamental challenge to the world’s political, economic, and legal systems, or is it a transitory exercise in rhetoric?
- Should the resolution of North-South economic issues claim an overriding priority on the U.S. agenda, or should that priority be accorded to efforts to solidify West-West, or even East-West relations?
- Are market forces still the most efficient and desirable means of guiding economic activity, or do new conditions warrant the plethora of proposals for international commodity agreements implying buffer stocks, government subsidies, and regulatory measures?
- Is strong government intervention now required on many materials problems to safeguard the public interest against “shortages,” or would such intervention do more harm than good except in extreme cases, such as political actions by foreign governments?

Other examples could be given, but these questions are a representative sampling of the main issues addressed in this book. Our research has answered some of the questions affirmatively and others negatively, while in a few cases, the evidence remains inconclusive.

To set the stage for the analysis that follows, it is useful to review the contesting forces of continuity and change in the world’s political economy especially as they affect investment, production, and trade in raw materials.

Our industrial civilization would have been inconceivable without metallic minerals and mechanized energy. But modern lifestyles could not have been attained without such other ingredients as research and innovation, skilled workers and management, physical plant and equipment, agricultural development and water supplies. Indeed, mineral products have been more amply available than many other resources.

To categorize metals and fuels as “nonrenewable” is to create a problem by definition. For human history has no experience which is applicable. Actually, shortages of renewable commodities have thus far exerted more restraint on economic growth than has the lack of nonrenewable materials. Despite many

cases of particular resource problems, more than a century of sustained industrialization in the world economy provides no record of economic cataclysms linked to resources. Final production and consumption of goods have increased significantly over time, with neither supply nor price of minerals proving a significant impediment.

Recently, however, important changes have emerged which could threaten the future adequacy of minerals and fuel supply. Essentially they reflect the destabilizing of long-established institutional arrangements for foreign minerals production and distribution. The result has been exaggerated fears and hasty prescriptions. Part of the problem, of course, is its novelty for the United States—as contrasted with most European countries and Japan which have long been sensitive to the problems of achieving adequate supplies of imported materials at reasonable prices.

There are five major reasons why the interaction of foreign and materials policies has now risen to prominence, even though it commanded relatively little attention over the past few decades.

1. The perception of dependence on the United States for security commitments, military and economic assistance, and access to private capital has been declining in other countries, with a commensurate decline in their attention to U.S. views about international economic arrangements.

2. The demise of the colonial system and the related numerical explosion of the U.N. membership on a one-country-one-vote basis has given the developing countries a sense of community and power that they hope to exploit to their economic advantage. Newly sovereign, they question traditional international economic and legal arrangements and hope to devise new ones that will maximize their concept of “resource power.”

3. There has been a sizable rate of growth of demand for imported materials over the past two decades, particularly in Western Europe and Japan. During the 1972-74 boom, world production proved insufficient to satisfy demand in the major industrial economies, intensifying individual efforts to arrange for secure supplies at reasonable prices.

4. Until recently, U.S. investment in energy resources abroad served primarily to provide low-cost supplies for our allies and trading partners in Europe and Japan. The transformation of the United States itself into a major importer facilitated OPEC's emergence as a powerful element. Private U.S. firms, however large and multinational, could no longer handle such sovereign political power when applied on a concerted basis.

5. The success of the OPEC cartel has inevitably brought emulators hoping to achieve comparable results with such commodities as bauxite, copper, and phosphates. It has also stimulated uncertainties on the part of importing countries—uncertainties which themselves have had an economically destabilizing effect, especially in the case of oil.

In these circumstances, the United States must balance a diversity of interests—economic, political, and ultimately strategic—in managing its foreign materials policy. The needs of the U.S. economy and its industrialized trading partners must be weighed against the interests of developing countries which

are significant sources of supply. Moreover, conflicts concerning raw materials can weaken the unity of both consuming and producing countries in dealing with China and the Soviet Union on other issues. It may not be possible to assure adequate supplies at reasonable prices under arrangements that strengthen cooperation with both supplying and other importing countries. To the extent feasible, however, this is the objective toward which our international materials policy should be reaching. Complete independence of foreign sources, if physically possible, would be prohibitively costly for American society and impossible for allied countries. All parties' interests would be served by a stable framework for expanded international trade in raw materials, as well as in other goods and services. But such desiderata must be balanced against a need to maintain and develop bargaining leverage against producers seeking to maximize their short-term gains *vis-à-vis* consumers and deterrence against those who would further move the world toward anarchy in the legal aspects of international economics.

The philosophy of this book might be stated as follows: Risk and uncertainty permeate human relations. Sensible national policy, therefore, consists of efforts to minimize dangers, rather than to eliminate them at whatever cost, for the cost of reducing one set of uncertainties may involve increases in others, as well as possible reductions in material and social welfare.

The factual assessments underlying this study of critical industrial raw materials suggest that the risks are greater than they need to be. This book is therefore about the pros and cons of policies for the nation which would reduce these risks and enhance the capacity of the United States to pursue its domestic and international goals.

Recent years have seen demands for radical changes in the institutional structures affecting global resources. Notwithstanding ideological rhetoric, the issue is really the distribution of benefits from the production and use of natural resources. The problems lie more in the realm of changing international relations and domestic politics than in the longer term questions of the abundance of resources in the earth's crust and the technology of production. Both of the latter questions provoke interminable debate and generally divide participants into pessimists and optimists. Straining for a vision of the distant future, each beholder finds a reflection of his own predilections in the crystal ball. The historical record offers no applicable experience. Although statistics can be projected, the results only predict what might happen if certain assumptions hold true. They concern the probable evolution over many decades of such unknowns as technology, tastes, and international structures.

In the present state of the art, we know of no one—least of all ourselves—equipped to foresee such matters with sufficient clarity to advocate near-term behavior which could prove very costly to this generation and the next, and which might only forestall future problems which may be overtaken anyway by yet unforeseen events.

This book considers the period to 1985, with which current policy choices are most concerned. By focusing on practical choices and possibilities, we

hope to illuminate ways of at least alleviating, if not resolving, major problems that are currently perceived.

The book begins with the three chapters of Part I: "A Historical Perspective." This is an interpretive history of how the United States arrived at its current position of concern about the supply of raw materials. It seeks to explain the evolution of our growing dependence on foreign sources of supply for some materials—and why the nation has hitherto shown so little interest in the subject. It reviews and evaluates certain policies that have already been tried to solve raw materials problems on an international scale. Part I also traces the evolution of foreign views and behavior, particularly in the governments of developing countries that have occasioned most of the recent outburst of concern.

Part II of the book emphasizes the uncertainties of the available demand and supply projections, and draws on 26 detailed material profiles previously published by the Institute¹ to examine the potential problems surrounding industrial raw materials vital to the U.S. economy. The last chapter of Part II considers possible policy objectives for the United States and identifies the tradeoffs which are inevitably involved.

Part III looks at a set of critical international relationships with the producing countries, cartels, and other consumers in the materials field. It addresses in considerable detail the problems of oil and OPEC, as well as the international controversy over seabed resources.

Reducing raw materials risks by policies and programs which might help to attain the objectives noted above, as well as strengthening international law and procedure, is the subject of Part IV. Its seven chapters tackle particular functional areas, including the role of multinational private enterprise and foreign assistance.

Finally, the Conclusions analyze the structural and organizational implications of a U.S. international materials strategy, and bring together the book's overall recommendations.

The book is admittedly a kind of hybrid of foreign policy and raw materials considerations, intended for two types of audiences. It aims to set out the known facts of the resources problem for the benefit of social scientists and policymakers—and general readers. It also attempts to give the materials specialists a broader international and policy framework against which to apply their expertise. The unifying questions throughout are how to minimize national risks in the search for raw materials in the current world environment, and how to improve that environment so as to avoid otherwise undesirable national policies to secure adequate supplies.

¹International Economic Studies Institute, *Basic Data for Estimating U.S. Mineral Requirements and Availability: A Research Compendium* (Washington, IESI, February 1976).