IIASA

options

International Institute for Applied Systems Analysis March '93

Special Issue
Includes:

ANNUAL REPORT 1992

IIASA BOOKS

Science and Sustainability: Selected Papers on IIASA's 20th Anniversary

A selection of 10 representative papers on a wide range of environmental issues presented at IIASA's 20th Anniversary Conference, which brought together practitioners of different disciplines to consider some of the contentious questions raised by the concept of sustainability.

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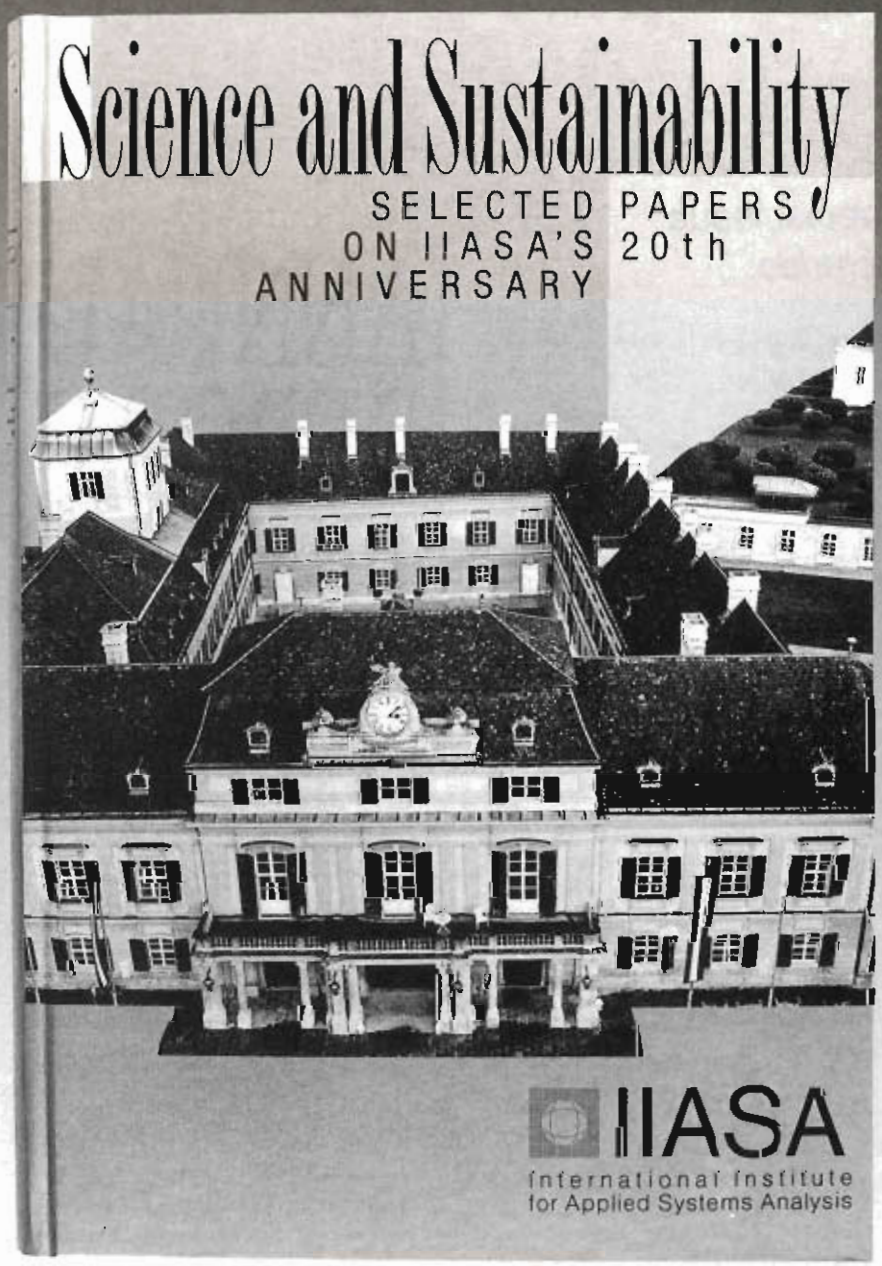

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IIASA is an international, interdisciplinary research institution which draws on the scientific and financial resources of member organizations to address problems of global significance.

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EDITORIAL

The bulk of this issue of *Options* is given over to our Annual Report for 1992, a year in which IIASA experienced many changes. The report shows clearly that, while we continue to build on past achievements, we are increasingly shifting our emphasis to issues of global change in their diverse and complex manifestations.

The rest of the issue contains two features, one looking at IIASA's past, the other pointing to its future. Readers with any interest in the Institute or in international negotiations will be interested in the abbreviated version of a lecture given at IIASA by Professor Howard Raiffa in which he described some of the negotiations that led to the creation of the Institute. How many readers of *Options* know why English is the working language at IIASA, or why it is a nongovernmental institution, even though most of its budget comes (indirectly) from governments? How many realize that the competition to provide a home for IIASA was so intense that it became a factor in an international trade dispute, or that it caused at least one European ambassador in Washington to knock on the doors of the White House?

Professor Raiffa's story gives an unusual glimpse of the business of high-level negotiations and the complex interplay between strong individuals and world events. Despite the political obstacles created by the Cold War, the distinguished persons who created IIASA, including Academician Jermen Gvishiani, McGeorge Bundy, the late Lord Zuckerman, Aurelio Peccei, and Howard Raiffa himself, never lost sight of their goal: to establish an institute that could carry out serious and objective research. We are the beneficiaries of their success.

The Cold War is over, but the need for an institution devoted to international, interdisciplinary research on environmental, economic, and technological issues has never been greater. We believe that IIASA has a place in the landscape of global environmental change research, which is why we invited representatives of a score of institutions active in the field to a two-day meeting. Our goals were to explore ways to collaborate, to discuss some of the problems of global change research, and simply to get to know each other. A brief report on that meeting begins on the next page.

Peter E. de Jánosi
Director

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FEATURE

Global Environmental Change Institutes

Perhaps the most important challenge facing modern science is to advance humanity's understanding of environmental change. In February research managers from 17 institutes met at IIASA to review their institutions' activities in the field and to explore opportunities for further collaboration. This article summarizes some of their comments.

Following introductory remarks by Peter E. de Jánosi, participants gave short summaries of their institutes' work. During the remaining two-thirds of the meeting there was no formal agenda. Discussions ranged along many aspects of research on environmental change, including relations with policy makers, the difficulty and importance of conducting interdisciplinary analysis, and links to scientists and policy makers in the developing world (all institutions represented are in Northern, technologically advanced countries).

Michael Chadwick questioned whether, in general, the scientific community is adequately addressing the global-change concerns of policy makers. As an example he cited the lack of research on many of the points raised in Agenda–21. The "fashionable, somewhat easy items," including climate change and biodiversity, have been addressed in many places in many ways, he said, while others have been left untouched.

Within certain issues there are gaps, especially in the integration of various kinds of (mostly disciplinary) knowledge into assessments useful to policy makers. In the case of climate change, for example, participants agreed with N.D. van Egmond's comment that a disproportionate effort is being made to advance our knowledge of physical factors while social and economic forces are largely being neglected.

This theme — the need for more and better integration of ecological and economic analyses — was expressed frequently by Yuri Pykh, Yuri Izrael, and others. Robert Fri pointed out that scholars in many countries are trying to develop economic tools that can accommodate a broader range of criteria, including environmental factors, but it is a difficult problem.

The good news, said Richard Richels, is that in recent years more scholars have come to appreciate the importance of integrative, multidisciplinary analysis of complex problems. Such an appreciation was lacking during the acid-rain debate in the US a decade ago, when officials complained that the science of the issue was muddy; not so, said Richels, the scientific understanding of the problem was considerable, but it was not assembled into policy-focused, integrated assessments.

There was considerable discussion of the difficulty of promoting integrated, policy-oriented analysis. Participants generally agreed with Willy Østreng that "there is no such thing as interdisciplinary analysis," that it is more correct to speak of *multi*disciplinary analysis.

George Golitsyn said that the key to success in such endeavors is teamwork. Pykh added that not all scholars are temperamentally suited to multidisciplinary teamwork. Robert Serafin said that they must be willing to listen, to expose themselves to unusual scrutiny, and to compromise their disciplinary instincts; they must avoid telling others that "what I have is what you need."

Karl-Göran Mäler said that, while cooperation was essential, team members should not be forced out of their own disciplines, adding that multidisciplinary teams work best when focused on concrete problems and projects. Fri said that teams should comprise senior people who are secure in their own discipline. He added that, in preparing the final report, the team leader almost invariably imposes an integrative framework based on his or her disciplinary understanding.

Serafin reported that while many institutions conduct multidisciplinary research, IIASA is the only one he knows that is committed by its charter to multidisciplinary, multinational science. Similar ideas were expressed many times by others: IIASA's uniqueness was a consistent theme of the meeting. Pykh said that the Institute was an ideal focus for international, multidisciplinary analysis of environmental change issues. Richels suggested that future IIASA Calls for Proposals might be developed and issued jointly with other institutions; this would foster inter-institutional links and allow them to pool resources. Kazuya Ode stressed the importance of networking and IIASA's role as a meeting place.

Ode also called for development of a data base of individuals and institutions involved in research on global change. His suggestion was widely viewed as one of the clearest and most constructive proposals of the meeting. There was no clear agreement on the scale and exact purpose of such a data base, but many participants said that, at least in its initial form, it should be limited to an international directory of personnel and institutions active in environmental change issues.

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Chadwick said that in the 1970s a broadly comparable directory of parties interested in acid rain issues had proved useful.

Participants agreed that communication between the research community and policy makers remains inadequate. Several speakers called for greater efforts to contact policy makers directly, and offered examples. Østreng said that his colleagues invested several years of work developing links to policy makers in the Indian government, particularly in the bureaucracy, in order to influence decisions regarding proposals to mine the seafloor off the Indian coast.

Richels said that his institution occasionally hosts informal dinners with bureaucrats, politicians, and political aides in an attempt to anticipate what they will need to know and when they will need to know it. The idea is to first involve policy people in the development of research agendas, "then periodically go back to them for sanity checks."

Fri said that researchers should not underestimate the indirect influence on policy of methods development. The work may not be glamorous, he said, but it influences the way that data are dealt with, especially at the bureaucratic level, which in turn influences the ways that policy makers perceive problems and react to them.

Van Egmond and Østreng noted the more direct influence of the mass media on government.

There was considerable discussion of institutional links with developing countries. Ode cited projections that by 2050 60 percent of the world's population will be living in Asia, mostly in less developed countries; he called for special efforts to involve this region in the world scientific community.

Participants cited a long and varied list of institutional links to developing countries and noted the variety of active and potential collaborating institutions. Michele Colacino reported that a 1992 IGBP report lists 53 national global change committees; but he stressed the importance of further capacity-building in developing countries. Discussants noted two problem areas.

In Africa many good NGOs are in dire straits. Chadwick said that the African Center for Technology in Kenya has effectively closed; Zimbabwe Environmental Research Organization is also suffering severe financial problems. Both institutions had collaborated effectively with several of the institutions represented.

The second problem is in the states that have succeeded the USSR. Soviet research institutions were centered in Russia, leaving most of the new republics with little or no research infrastructure. Fri said that his organization's efforts in Ukraine, in contrast to its work in the developing world, had to begin with the identification of individuals: "The object is to *create* institutions."

The meeting ended with a brief discussion of a possible follow-up. Izrael suggested a workshop on ecological economics. Serafin suggested that it might be better if potential participants, especially those from institutions with a specialized focus, could come to the meeting prepared to answer two questions: first, "What are the two or three most important questions confronting my discipline or institution in regard to, say, climate change?"; and second, "What are the two or three most important questions that I have for other disciplines and institutions?" There was a consensus that such an approach might prove useful, particularly if the focus was less on the issues of global change per se than on the research tools needed to get at those issues.

At the close of the meeting de Jánosi thanked participants and invited them to send to him their comments on the meeting. Such comments, he said, will be helpful in planning IIASA's future.

List of Participants

Tibor Asbóth
Hungarian Committee for Applied Systems Analysis, Budapest

Michael J. Chadwick
Director, Stockholm Environment Institute, Stockholm

Michele Colacino
Director, Italian Institute for Atmospheric Physics, Rome

Wolfgang Cramer
Potsdam Institute of Climate Impacts Research, Berlin

Kazimierz Dobrowolski
Director, Institute of Ecology, Łomianki, Poland

Robert W. Fri
President and Senior Fellow, Resources for the Future, Washington, DC

George S. Golitsyn
Director, Institute of Atmospheric Physics, Moscow

Yuri A. Izrael
Director, Institute of Global Climate and Ecology, Moscow

Markku Kanninen
Project Manager, The Finnish Research Programme on Climate Change (SILMU), Helsinki

Karl-Göran Mäler
Director, The Beijer Institute, Stockholm

Kazuya Ode, Senior Vice President; *Koji Nagano*
Central Institute of Electric Power Industry, Tokyo

Willy Østreng, Director; *Steinar Andresen*, Research Director
Fridtjof Nansen Institute, Lysaker, Norway

Othmar Preining
Institute of Experimental Physics, University of Vienna

Yuri A. Pykh
President, Center for International Environmental Cooperation, St. Petersburg

Helmut Rauch
President, Foundation for the Advancement of Scientific Research, Vienna

Richard Richels
Director for Energy Analysis and Planning, Electric Power Research Institute, Palo Alto, CA, USA

Karlheinz F. Schmidt-Bleek
Wuppertal Institute of Climate–Environment–Energy, Wuppertal, Germany

Robert J. Serafin
Director, National Center for Atmospheric Research, Boulder, CO, USA

N.D. van Egmond
Director/Environment, Netherlands National Institute of Public Health and Environmental Protection (RIVM), Bilthoven

FEATURE

In the beginning, . . .

The early years of IIASA, as recalled by its first director.

Howard Raiffa, IIASA's first director, was also a key figure in the negotiations that led to the Institute's creation. This is an edited transcript of a talk that he gave at IIASA.

The IIASA charter was signed in London in October 1972, but the history goes back six years earlier. In 1966 the American president, Lyndon Johnson, gave a rather remarkable speech — this was during the Cold War — in which he said it was time that the scientists of the United States and the Soviet Union worked together on problems other than military and space matters, problems that plagued all advanced societies, like energy, our oceans, the environment, health. And he called for a liaison between the scientists of East and West.

He enlisted McGeorge Bundy to pursue the topic. Bundy had been an adviser to presidents Kennedy and Johnson, but before that he was Dean of the Faculty of Arts and Sciences at Harvard. Bundy knew me because I would go from department to department at Harvard, doing my decision thing.

One of the first things Bundy did was to commission a report from the Rand Corporation. Roger Levien, the second director of IIASA, wrote that report, and it was very positive. Unfortunately it got lost in the shuffle, but it was a necessary step: it gave the United States a green light to go ahead.

Bundy met Jermen Gvishiani — Gvishiani was the deputy minister of the Soviet State Committee on Science and Technology — and he was delighted with the reaction.

Bundy and Gvishiani realized that if IIASA was going to be stable, it should be multilateral, not bilateral. Since it was to be multilateral, Gvishiani pushed for inclusion of the German Democratic Republic. This was embarrassing for the United States: the US didn't recognize East Germany. Our first crisis. It was surmounted by deciding governmental. How lucky!

What that meant was not very clear, because the intention was that governments would finance the center. For the US it meant that the National Academy of Sciences got into the act. The money went from the National Science Foundation, which is governmental, to the academy, which is nongovernmental: they sort of laundered the money.

On a Saturday afternoon early in 1967 I got a call from Bundy at home, saying that he was in Cambridge and could he meet me the next day; he would like me to do some consulting. I said, 'What kind of consulting? For pay or *pro bono*?' He said, 'It's *pro bono* but it won't take long.' I figured out that, since then, I have worked on IIASA affairs 15,000 hours.

Opening Moves

The work in '67 and '68 was all directed toward the first planning

Representatives of IIASA's 12 founding nations sign the IIASA Charter, 4 October 1972, at the Royal Zoological Society, London.

meeting in Sussex, England. This meeting was also to include the UK, Italy, and France; Poland and the GDR would be there, and one other country from Eastern Europe. The question was, would it be Hungary or Czechoslovakia. Discussions went back and forth and back and forth, and at the last minute they had to decide: it was Bulgaria.

I remember working long hours preparing the Sussex meeting. We started on a Saturday morning in June '68. On Friday we got a cable from the Soviet Union saying that the Soviet Union, Poland, and the GDR would not attend: there was a crisis over Berlin, and the US had done something unforgivable.

Remember, these negotiations went on during the Cold War, the time of Vietnam and the Czechoslovakian revolt, and still they culminated in the creation of IIASA. In my view, this is really remarkable.

We talked a little in Sussex about whether we should start an institute without the Soviets. The decision was that no one would take it seriously. So we went home — that was the end of it. Then in November of '68 there was a communique from Gvishiani saying, 'What's happening? Why is there no more action?' No apology.

The next meeting was June '69 in Moscow. Nothing much was accomplished until Gvishiani, Bundy, and a few others went for a walk in the woods, and made three momentous decisions.

The first decision was that it should be an English-language institute; that was a suggestion by Gvishiani, which was remarkable. Second, they decided that the director would be an American and the chairman of the governing council would be from the Soviet Union; we sort of surmised that Gvishiani would take the job. Third, they agreed that the institute would be in the UK; Sir Solly Zuckerman was instrumental in that. The British Admiralty would move out of a place in Sussex and make it available.

Decline and Resurrection

Then in the early '70s a hundred Soviet diplomats were expelled from the UK. That seemed to be the end — relations between the Soviet Union and the UK were frigid. It was the French who got us out of the doldrums. They made rousing statements about the importance of the center, and they offered the headquarters of SHAPE [Supreme Headquarters Allied Powers in Europe] at Fontainebleau — France had a problem with NATO and SHAPE had moved to Belgium.

These negotiations went on during the Cold War, the time of Vietnam and the Czechoslovakian revolt, and still they culminated in IIASA. This is really remarkable.

It was gorgeous; lots of historical rooms. But when we said, 'Is it possible to put up blackboards?' 'Blackboards? On this beautiful tapestry? No, no, no.' 'And computers and the library?' 'No no, you have to keep everything as it is.' That was the beginning of negotiations. Later they became more malleable.

So the French resurrected the negotiations. Bundy telephoned [US secretary of state Henry] Kissinger; I was there during the conversation. They both thought that it would be politically embarrassing to have a Republican administration sign off with Bundy, a Democrat, as their representative. So the chief US negotiator became Philip Handler, president of the National Academy of Sciences. I was the only one transferred from the Bundy team to the Handler team, because I was apolitical.

From 1970 to 1972 the big activity was to write a charter. For the US it was embarrassing to have a multilateral institute dealing with advanced industrialized societies and not have Japan. So the US insisted that Japan be included. Sir Solly objected, saying, 'If we have Japan, why not Canada or Australia?' This was the compromise.

There had to be balance between East and West, so we invited Hungary and Czechoslovakia. Then we found that Japan didn't want in: the whole purpose of expanding was to get Japan, but Japan wasn't a player. I went to Japan, tried to twist arms and got nowhere, I thought. A month before the charter was signed, we got a cable: 'Where does Japan send its money?'

Name Games

I have a folder from '68 and it says *International Center for the Study of Problems Common to Advanced Industrialized Societies*. That was decided in Sussex, when the Soviets weren't there. And they objected: 'What do you mean by advanced industrialized society?' So we said, 'Well, we'll have a Center for Research of Common Problems.' And they said, 'What do you mean by common problems?' We said, 'We'll have a Center for Research.' 'And why should it be research and not training?' 'We'll have a Center for Study.' 'Should it be a center or an institute? Should it be written cent*er* or cent*re*?' 'We'll have an institute.'

Names kept pouring out. Cybernetics was the favorite word for Eastern Europeans. Management science, operations research, policy analysis — all kinds of names, but every suggestion had an objection.

In the '60s I wrote a book called *Applied Statistical Decision Theory*, and everybody said, 'What

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do you mean by applied statistical decision theory?' So I got an idea: call it applied systems analysis, because nobody will know what it means. We had a clean slate.

The Polish delegation was excited because they wanted to study the central nervous system. Applied systems analysis didn't mean that: it had something to do with management and policies and societal implications, rather than individual implications.

Some of the key issues in the charter had to do with selection of scientists, the size of the institute, finances, clearance of publications, areas of research, and voting systems. One possible showstopper was the selection of scientists. The US, the UK, and the Western Europeans were adamant that it be done by the directorate and not by the council, that countries could not send scientists to IIASA without the directorate's approval. A wise choice; but I'm biased.

Gvishiani liked the idea, but he was under constraint back home. A compromise was worked out: the Soviets would submit long lists of names and the institute could select from the lists; if there was no one on the list to satisfy IIASA, the lists would be extended. It took maybe six months of intense debate to come to this compromise.

The Question of Size

We had in mind that the institute would start with 60 to 80 full-time-equivalent senior scientists. The idea was to grow to 100, maybe 200. The US said that it would put up $2 million a year and, if the experiment worked, it would increase its contribution.

We made a fundamental error thinking it would be easy to ratchet up the contribution. The people who were involved in creating the institute went out of power and other groups came in; it's very hard to get another group to raise the funding. That was a terrible error.

We never expected the Soviets to match the $2 million from the United States, but they said they would – in convertible currency. So the idea was to have a two-tiered system: a third from the Soviet Union, a third from the United States, and a third from the six other member countries.

> *That's the way with every charter: it's a contingency plan if things fall apart. If things don't fall apart, you don't pay much attention to the charter.*

When membership expanded to twelve, the new members had to put up the same amount as the original six in the second tier. East Germany insisted that they match the contributions of West Germany, and we ended up with Bulgaria paying the same amount of dues as Japan.

There was to be majority voting except on key issues, where the Soviets would essentially have veto power. To my knowledge, the only real vote by council was the location of the institute. All the other decisions were made by consensus of the quainter type: you talk, talk, talk, then you formulate something that everybody can sign off.

So we spent years worrying about the delicacy of the voting system, and it was never used. I understand that's the way with every charter: it's a contingency plan if things fall apart. If things don't fall apart, you don't pay much attention to the charter.

We had a trivial issue that became not so trivial. The Soviets wanted to get rid of the phrase 'advanced societies.' The US State Department, for some reason, got hooked on the phrase and said that if we deleted it from the charter they would hold up funding. We did what I call creative obfuscation and came up with the term 'modern societies.' That negotiation, believe it or not, took six months. It was a really trivial issue.

In the closing months before the charter was signed, Sir Solly suggested that the best way to clarify legal points was to give it to some group that was not English-speaking, because they would be very particular about the language. So they gave it to the Quai d'Orsay in France. The charter got a clean bill of health, except the phrase 'modern societies' was underlined: 'What does this mean?' It took another three months to convince them that it was all right to leave it.

Choosing a Home

Let's go back to the location. First, we thought it would be in Britain. Then, when the Soviets were expelled from the UK, the alternative was SHAPE headquarters. But there were problems with that, so we decided to explore other possibilities. Austria got involved and we also got invitations to settle in Italy, the Netherlands, and Switzerland.

The location committee – I happened to be on it – looked at SHAPE headquarters versus this dilapidated schloss in Laxenburg and said it was a close call. France came back and said, 'If you don't like SHAPE, we will build you a new institute in Lyon or Marseille.' And we tilted toward France.

The Austrians sweetened their offer a little, and we went back and forth. Then the issue of tax exemption came up. France said, 'There's no problem because you will have an international treaty.' The US State Department said, 'Absolutely

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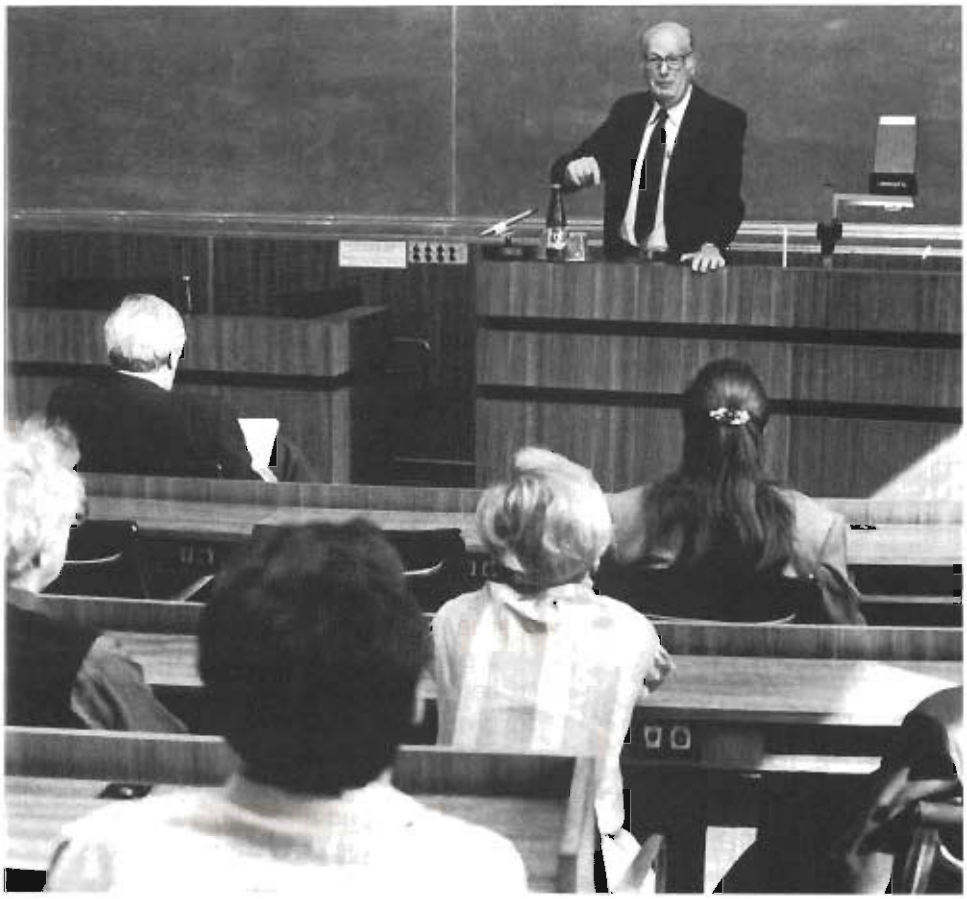

Howard Raiffa at IIASA, recalling the negotiations that led to the Institute's creation.

no treaty!', because the German Democratic Republic was involved. So Austria's chances went way up.

Then France came back and said, 'Look, we need a treaty to give you tax exemption, but we can have a treaty between Poland and Italy and then the rest of you can come along.' The US said 'Fine,' but West Germany said 'Absolutely not,' because a treaty would be implicit recognition of the GDR. The Germans wanted it in Austria rather than France.

At the time there were some trade negotiations between France and Germany, and France said, 'We'll sweeten the trade point if you allow the institute in France.' Germany said 'Fine.' It appeared that we were going to France and that I was going to be the director; I started studying French. This was in the summer of '72.

The vote was to be taken in London in October. Two or three days before the meeting, the French ambassador went to the White House and asked for a postponement so that France could sweeten its offer — that's how intense the negotiations were.

Around that time the National Academy of Sciences surveyed US scientists about whether they preferred Austria or France. It was close, but many of the scientists who preferred France would not go to Austria as a second choice. The problem was a perception of anti-Semitism in Austria. Some of the scientists in the US, mainly Jewish scientists, were worried.

But Austria was clearly the right choice. Symbolically it was fantastically appropriate. The reception that we got from [president Rudolf] Kirchschläger and [chancellor Bruno] Kreisky and the facilities were absolutely right. Even the French agreed, years afterwards, that we made the right choice.

Setting an Agenda

The issue of global modeling was very intense. Some people thought it was the main purpose of IIASA. Aurelio Peccei, who was president of the Club of Rome, was a strong advocate. So was the Canadian representative. But Lord Zuckerman insisted that there be nothing about global modeling and he threatened to pull out The Royal Society. The enmity between Sir Solly and Peccei was very severe.

The compromise was that IIASA itself would not do any work on global modeling, but would host a series of conferences to review contributions to global modeling and document the results. I think it was a good compromise.

There was great controversy about the research program. The Eastern Europeans and some of the Western countries — I think it was the UK and Japan — thought that the council should have full control. Others argued that the council should indicate broad areas of research but leave the details to the directorate.

Everybody agreed that there should be only three or four projects — you can't have a small institute and lots of projects — but everybody thought that their proposal was right. So we compromised on seven or eight. Later, some of them were given benign neglect.

The US insisted on a project on population. Gvishiani said, It's a terrific subject, but it's going to cause trouble at home — the line is that it's a capitalist problem, not a communist problem. So we stayed away from population.

In the early years every country reviewed IIASA's program. After three years the Soviets had a review and said that the selection of projects was imbalanced because there was nothing on population. Gvishiani and I laughed, and we agreed that we should start a new project on food and agriculture and weave in problems of population. A

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creative compromise.

One of the big issues was the political relevance of research. There was a feeling that IIASA was an experiment in bringing people together from different countries and different ideological positions, so don't rock the boat. In 1974 I proposed to the council that IIASA invite groups interested in the Law of the Sea to spend the summer at IIASA. IIASA scientists would be available to build models of, say, the economics of mining manganese nodules, but IIASA would not take a position. It would be a venue for the negotiators to mix informally.

That was voted out as being too controversial and too political; today I think it would happen.

There was a lot of discussion about project-specific support. The feeling was that this sort of support shouldn't be more than 25 percent of IIASA's budget.

A big issue was the selection of scholars. Some said that we should get a cadre of career people. The decision was made that the norm would be appointments for one or two years, occasionally four or five years: no career appointments. We decided on a one-salary system for scientists, with salaries competitive for Italy, Germany, and France. I believe that solution was right but it was tough to administer.

When I came here I got a cool reception from the director general of UNIDO because IIASA was East–West oriented, and the UN North–South oriented. Later we became friends. He was an Egyptian, and he invited me to go to Cairo to see if he could replicate a national applied systems analysis institute. And he was interested in having Egypt become a member of IIASA.

At that time the feeling was that IIASA's membership should grow to about 20. So the compromise was, Israel and Egypt could enter jointly. I went to Israel and Egypt and got their agreement that, yes, they would enter and work together. This was remarkable: it was before Sadat went to Jerusalem. But at the last minute it didn't work out — not because of Israel's participation, but because the Soviet Union and Egypt had a falling out.

> *I went to Israel and Egypt and got their agreement that, yes, they would enter IIASA and work together. This was before Sadat went to Jerusalem.*

Start-up Problems

At the beginning the council transferred something like $200,000 to my personal bank account in Boston and I was given freedom to hire people and write checks. The trouble was that these checks had to be endorsed by Alex Letov, the deputy director. I was in the United States and Letov was in Moscow — it would take three weeks, if at all, to get a check for $50.

So I opened a personal account and the Ford Foundation gave me a discretionary fund of $300,000. I would spend money without authorization and then go back to the council and say, 'Did I do right or wrong?' And they said, 'You did right.' And I said, 'Well, put the money back into the fund.'

One of the things that I did at the beginning was spend money for the *Holzhaus*, the lodge, so that we could have some place to put scientists. [Schloss Laxenburg was not fully restored until 1976.]

When the Austrian government was trying to sweeten their deal they offered an apartment for the director in the *Altes Schloss*. But when the time came, they said they didn't realize that the schloss was signed off by the Ministry of Education. They were embarrassed: Was there anything else they could do in lieu? And we said, 'How about giving us an athletic complex?' They said, 'Sure, in the park we will build you tennis courts and a swimming pool and a sauna.'

When the time came, the Austrian universities said, 'Why are you building these facilities for IIASA? You don't do the same for us.' And they had to back out. Austria was not supposed to pay the first three years of dues, and because of this embarrassment they paid. So it actually cost them a lot more.

We had some land in the park and it was not clear whether we were going to keep it. So I used my discretionary fund to build some tennis courts; that sort of secured it.

At the signing ceremonies in London, Sir Solly opened by saying that scientists wouldn't start working in Laxenburg before 1975. He was wrong: by 1975 we had a sparkling array of talent working on problems of energy, ecology, water resources, and methodology.

It was a remarkable time. I got all sorts of advice, mostly saying, 'You're an academic, you don't know the ropes, you need seasoned administrators.' I took gambles on a young group of secretary/administrators, and we fumbled along. In retrospect, I wouldn't change a single appointment. ■

In Memoriam

Solly Zuckerman

Lord Zuckerman, former chief scientific adviser to the British government, a Life Peer of the United Kingdom, a central participant in the negotiations that led to IIASA's creation and a prominent figure during its early years, died 1 April 1993.

CONFERENCES

Forthcoming Meetings

IIASA will sponsor or cosponsor the following scientific meetings:

June 21–23: Risk and Fairness, Laxenburg, Austria. (Contact: *Joanne Bayer*)

June 22–24: International Energy Workshop, Laxenburg, Austria. (Contact: *Leo Schrattenholzer*)

July 8–9: Technology and Environment Network, Laxenburg, Austria. (Contact: *Arnulf Grübler*)

July 12–23: Approximation of Stochastic Optimization Problems, Laxenburg, Austria. (Contact: *Georg Pflug*)

August 30–September 2: Modeling of Environmental Dynamics, Sopron, Hungary. (Contact: *Vladimir Veliov*)

September 27–29: Advances in Methodology and Software in DSS, Laxenburg, Austria. (Contact: *Marek Makowski*)

September 30–October 1: The Use of Neural Nets for Decision Support, Laxenburg, Austria. (Contact: *Marek Makowski*)

December 17–21: Evolutionary Game Dynamics in Biology and Economics, Laxenburg, Austria. (Contact: *Karl Sigmund*)

Economic Instruments for Air Pollution Control

October 18–20, Laxenburg Conference Center, Austria

The program comprises sessions on:

- *National studies: theory and models*
- *National experience and practice*
- *Parallel sessions for individual presentations*
- *International studies: theory, models, and practice*
- *Applications for SO_2 in Europe*

Speakers include:

- *P. Bohm (Stockholm University)*
- *F. Førsund (Oslo University)*
- *G. Hughes (World Bank, Washington)*
- *T. Jones (OECD, Paris)*
- *K.G. Mäler (Stockholm School of Economics)*
- *J.B. Opschoor (Free University, Amsterdam)*
- *T.H. Tietenberg (Colby College, Maine, USA)*
- *T. Zylicz (Beijer Institute, Stockholm)*

For further information contact: Ger Klaassen
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Telefax +43 2236 71313

NEWS

Appointments

Petr Aven (Russia) has rejoined the Economic Transition and Integration Project on a part-time basis following a year of absence, during which he served as Minister of Foreign Economic Relations of the Russian Federation.

Dominique Foray (France), from the Ecole Centrale Paris, and a member of IIASA's Dynamics of Technology Project in 1988–89, has joined the Environmentally Compatible Energy Strategies Project on a part-time basis.

Kenneth Strzepek (USA), from the University of Colorado at Boulder, and an IIASA research scholar 1980–82, has joined the Water Resources Project.

Kalev Sepp (Estonia), from the Department of Geography of the University of Tartu, has joined the Risk Analysis and Policy Project.

In Memoriam

Alexander A. Papin (Russia), director of the Institute for Physical and Technological Problems of Energy in Northern Areas at the Kola Science Center of the Russian Academy of Sciences and a research scholar with IIASA's Energy Program from 1978 to 1982, died 27 December 1992.

Kenneth Boulding (USA), Distinguished Professor of Economics Emeritus at the University of Colorado, a former president of the American Economic Association, and a long-standing supporter of IIASA, died 18 March.

PUBLICATIONS

Now available from your regular book supplier or directly from the publisher.

User-Oriented Methodology and Techniques of Decision Analysis and Support. J. Wessels, A.P. Wierzbicki, editors. Springer-Verlag, Berlin/Heidelberg/New York. ISBN 3-530-56382-2.

Reports

Available from Robert McInnes, IIASA Publications, for the amounts indicated.

Point and Diffuse Loads of Selected Pollutants in the River Rhine and its Main Tributaries. H. Behrendt. RR-93-001. US $12.

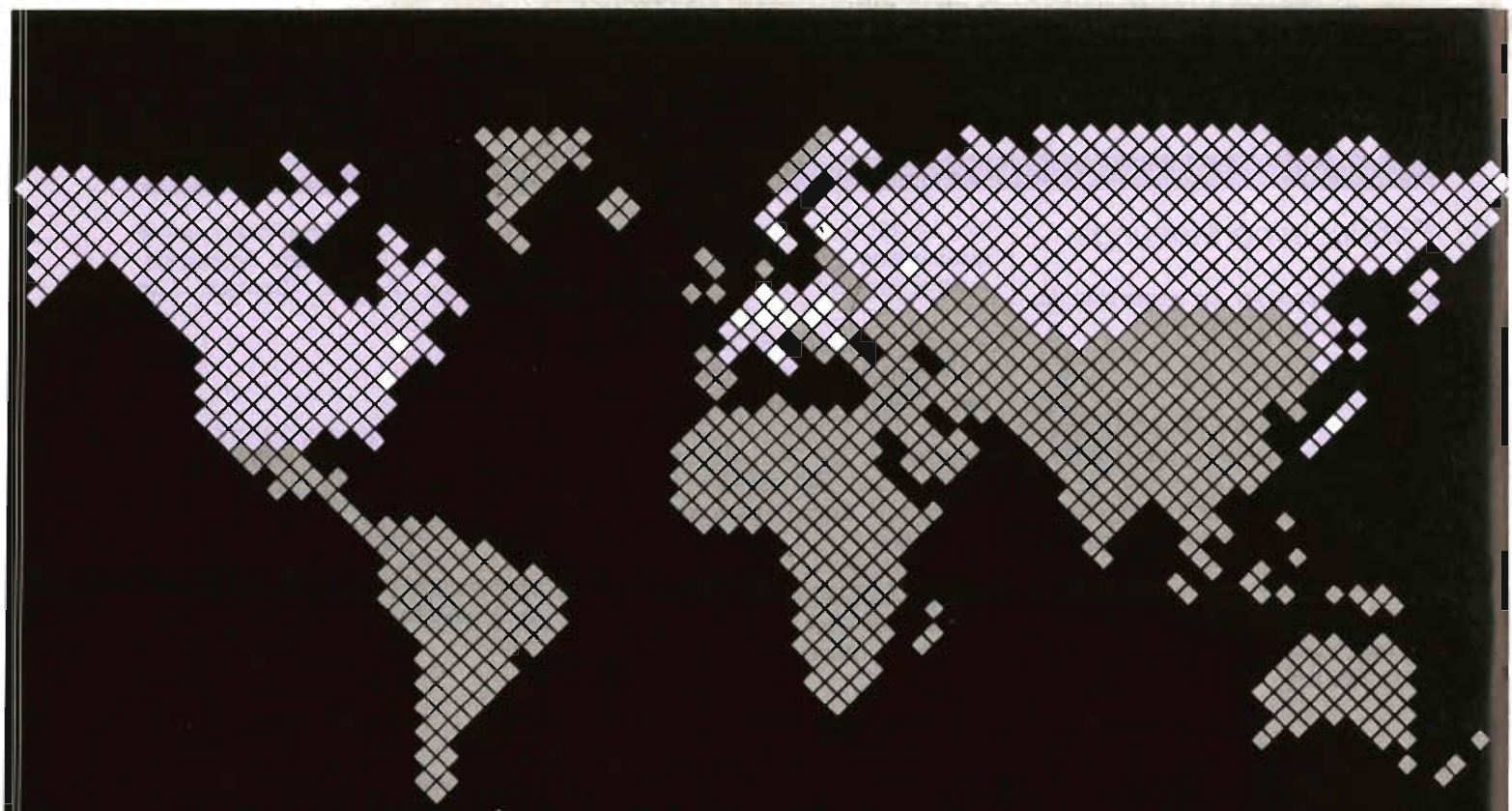
Wind-induced Sediment Resuspension and its Impact on Algal Growth for Lake Balaton. R.A. Lüttich Jr., D.R.F. Harleman, L. Somlyódy, L. Koncsos. Reprinted from *Limnology and Oceanography* (1990) 35(5):1050-1067 and *Ecological Modeling* (1991) 57:173-192. RR-93-003. US $10.

Transboundary Air Pollution in Europe: An Interactive Multicriteria Tradeoff Analysis. A. Stam, M. Kuula, H. Cesar. Reprinted from *European Journal of Operational Research* (1992) 56(2):263-277. RR-93-004. US $10.

Summary of IPCC/EIS–IIASA International Workshop on Energy-Related Greenhouse Gases Reduction and Removal, 1–2 October 1992. A. Grübler, N. Nakićenović, A. Schäfer. SR-93-001. US $10.

Cost-Effective Strategies for Reducing Nitrogen Deposition in Europe. M. Amann, G. Klaassen. SR-93-002. US $7.

Energy in the 21st Century: New Challenges and Goals. L. Bennett, T. Müller, J.W. Byam, A. Miremadi, Y. Sinyak. CP-93-003. US $7.



◆ Capital Cities of NMO Countries

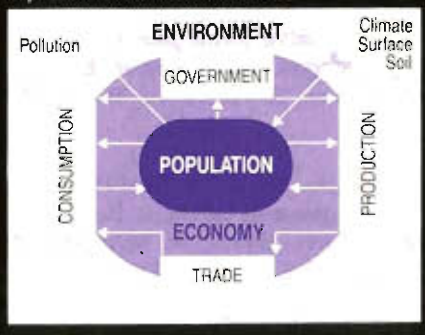
IIASA

International Institute
for Applied Systems Analysis

IIASA's ROLE

The International Institute for Applied Systems Analysis is an international, nongovernmental research institution sponsored by scientific organizations from 15 countries. IIASA's objective is to bring together scientists from various countries and disciplines to conduct research in a setting that is non-political and scientifically rigorous. It aims to provide policy-oriented research results that deal with issues transcending national boundaries. Resident scientists at IIASA coordinate research projects, working in collaboration with worldwide networks of researchers, policymakers, and research organizations.

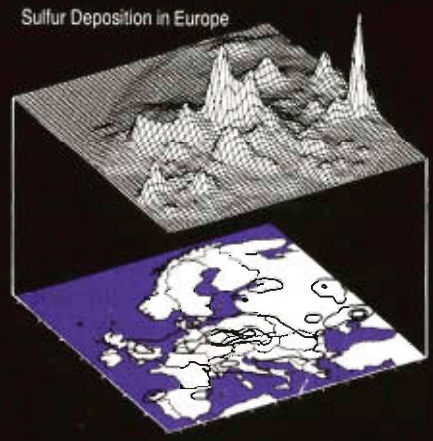
Population /Environment Interactions



RESEARCH

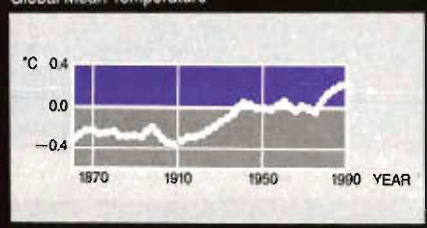
Recent projects include studies on global climate change, computer modelling of global vegetation, heavy metal pollution, acid rain, forest decline, economic transitions from central planning to open markets, the social and economic implications of population change,

Sulfur Deposition in Europe



processes of international negotiations, and the theory and methods of systems analysis. IIASA applies the tools and techniques of systems analysis to these and other issues of global importance.

Global Mean Temperature



MEMBERSHIP

IIASA was founded in 1972 on the initiative of the USA and the USSR, and now also includes eleven European countries, Canada, and Japan. IIASA has member organizations in the following countries: Austria, Bulgaria, Canada, the Czech and Slovak Federal Republic, Finland, France, Germany, Hungary, Italy, Japan, the Netherlands, Poland, the Russian Federation, Sweden, and the United States of America.

FURTHER INFORMATION

Further information about IIASA and its work is available from: The Office of Communications, International Institute for Applied Systems Analysis, A-2361 Laxenburg, Austria, Telephone (02236) 71521-0.