

and the whole region." The 1979 annual report of the United Nations Environment Programme says that the insect resistance problem "could seriously and adversely affect the efficiency and economy of pest control operations on a global scale, with corresponding grave effects on both world health and world food production."

Much of the discussion centered on plans to minimize such overuse through

integrated pest management, which involves a variety of pest control strategies such as pesticides, insect predators, and chemical hormones. Frank del Prado, an environmental official from Surinam (near Guyana), reported that "integrated or harmonized pest control is a beautiful expression, but with little or no skilled expertise, it is something we can forget at this moment." Participants at the conference agreed to develop training pro-

grams and assistance programs so that it becomes a more realistic alternative.

Several departing conferees criticized the conference for concluding, as most such conferences, only that more money, more study, and better coordination are needed to solve the problem—here, pesticide overuse. But the real progress lay in State's very willingness to hold the conference, and to promise continued attention.—R. JEFFREY SMITH

Scientists Organize for UNCSTD and After

Consultation on science and technology issues for UN meeting seen as step to broader involvement in work on development

A familiar complaint is that UN special meetings are so "politicized" as to minimize chances for real progress. That lament is being heard about the approaching UN Conference on Science and Technology for Development (UNCSTD), which comes as a kind of finale to a cycle of major UN meetings on global issues in the 1970's. However, UNCSTD, like earlier conferences on the environment, population, women, and human settlements, will, after all, be an intergovernmental conference and it is hardly surprising that the rules of that particular game will apply.

It is inevitable, therefore, that diplomats and other government officials will dominate the official proceedings in a way that will limit the influence of scientists and others with technical contributions to make, even if such people are members of official delegations.

For UNCSTD, however, scientists who have seen themselves as outsiders in the UN's political milieu, have made the most serious effort to date to organize in order to make an impact not only on the conference itself but, in the longer run, on problems of development.

In the past, the International Council of Scientific Unions (ICSU) and other "nongovernmental" international scientific organizations have provided scientific advice and cooperated with UN-based intergovernmental scientific agencies on specific programs. Generally, however, they have shied away from involvement in UN "political" activities. During preparations for UNCSTD, a group of international scientific organizations under the aegis of ICSU have taken on a consultative role similar to that played by nongovernmental organiza-

tions—so-called NGO's—which have regular ties with the UN.

Over the years, a system has developed under which NGO's interested in international issues can participate at least indirectly in the UN process. The system has been formalized to the point where such NGO's can achieve official recognition by the UN or its specialized agencies and gain the right, for example, to contribute papers or even have representatives on the floor when debates are in progress.

At major UN conferences in the 1970's the NGO's most visible activity has been in conducting alternative "forums" which coincided with the meetings. Although doubtless regarded as serving a safety-valve function by some UN officials, the forums have provided critiques of the main meetings and have not infrequently influenced the proceedings.

For UNCSTD in Vienna in late August, not one but two forums are planned. A now-traditional forum is scheduled to run during the 10 days of the meeting. Its agenda will reflect the broad range of social, economic, and technical issues that concern the NGO's.

This year, in addition, a 1-week colloquium known as Forum A will be held immediately preceding the conference and will focus much more narrowly on scientific and technical issues affecting development. This colloquium will be sponsored by ACAST (the UN Advisory Committee on the Application of Science and Technology). Scheduling of this separate meeting is taken to be evidence of a new serious interest by scientific organizations and individual scientists in development problems.

What sparked the scientists' effort ini-

tially was a widespread conviction that UNCSTD would concentrate on political and economic issues, such as the transfer of technology and regulation of the operations of multinational corporations (*Science*, 1 June). This impression was reinforced by comments by UNCSTD Secretary General Frank Joao da Costa early in the preparatory period. In some countries, scientists and other technical experts also felt they had little impact on the preparation of national papers which were to shape the conference agenda.

Those with experience in international scientific organizations assume that scientists from industrial countries and less developed countries (LDC's) can meet as colleagues and discuss problems of development without assuming the adversary roles cast for them in the so-called North-South dialogue.

On the whole, that seems to be how it worked when, at the invitation of ICSU, 19 international organizations representing scientific and engineering disciplines joined in an effort to contribute to preparations for UNCSTD. The specifics were left to a steering committee headed by Thomas F. Malone of Butler University, foreign secretary of the U.S. National Academy of Sciences.

Malone sees a double motivation among the scientists participating in the effort. First, they were concerned that a major conference on science and technology for development seemed likely to take place "with no informed science and technology input."

The second point is less clear but no less important, says Malone. He says he thinks "We are witnessing the addition of a new dimension to the scientists' traditional preoccupation with advancing

knowledge—that is, applying knowledge to development.”

While Malone sees ample signs of this new concern among scientists he concedes that he cannot fully answer the question of why it is happening now. However, he suggests that at least part of the reason is scientists’ growing awareness that “man has perturbed life processes.”

Science has vastly accelerated the doubling time of the per-person capacity to transform resources into the ingredients of the “good life,” says Malone. But problems have been created by the applications of science. He mentions the problems associated with nuclear energy, CO₂ in the atmosphere, genetic engineering, and the threat to privacy posed by vastly enhanced data processing capacities. He believes that the scientific community is now more disposed to address such problems and that the issue of science and technology for development is included.

ICSU and other international scientific organizations earlier included development among their concerns—ICSU has had two committees dealing with the subject for some years (*Science*, 5 November 1976)—but they have not been able to muster the resources or concentrated interest of their members necessary to be effective in the field. Evidence that things have changed is seen in the fact that the prestigious Pugwash group, founded mainly to open an East-West dialogue on arms control issues, has

susceptible to attack through science and technology.

The aim of the symposium was not only to produce practical proposals for UNCSTD but also to make plans for continuing involvement of scientists in development activities. Malone says he is confident that the effort is “more than a one-time event.” He and his colleagues are thinking in terms of a 10-year commitment and the intention is to hold a meeting 6 months after UNCSTD to talk about details.

The symposium recommendations will be discussed at the ACAST colloquium in Vienna, and there is expected to be a direct carry-over since the ACAST colloquium is scheduled to make formal recommendations to the big meeting. Some participants in the ACAST colloquium, or Forum A, will afterwards serve on regular UNCSTD delegations and others will take part in Forum B that will be held during the meeting.

Forum B is being planned by a committee of the conference of NGO’s, the official organization of recognized consultative groups. The committee is chaired by Karim Ahmed, a member of the staff of the Natural Resources Defense Fund in New York. The program for the 10-day meeting will include 30 to 40 sessions covering a broad spectrum of issues. One focus will be increasing Third World “self reliance,” which covers issues ranging from improving LDC access to technology to achieving a higher level of research in LDC’s and shifting

group, the NGO’s have a reputation of being idealistic or ideological and, by and large, of being placed left of center on the international political spectrum. The NGO’s in general empathize with LDC anger and aspirations in economic matters and tend, for example, to share the LDC’s generally negative attitude toward transnational corporations.

Appropriate technology is seen by its advocates as a way to overcome the limitations of the LDC’s infrastructures and lack of investment capital and as a means of eluding entanglement with multinationals. Among LDC officials and businessmen, however, there are still many who are suspicious of appropriate technology because they persist in regarding it as second best. For this reason, a serious effort is being made to explain the concept in a way that will convince the skeptics that small is not only beautiful but also effective for the LDC’s.

The alternative forums at previous UN meetings have welcomed NGO’s not recognized by the UN and in general have fostered a free exchange of views. Again, a daily newspaper will be published by the forum to provide news and, if the past is a guide, to needle the performers in the UNCSTD center ring into action.

There has been talk of a “counter-forum,” a sort of alternative alternative meeting. And Vienna at the time of the conference is said to be the destination of European antinuclear protesters and other activists. There is some anxiety about attention being diverted to issues which are of more import to industrial countries than to the LDC’s. However, the NGO leaders are regarded as good negotiators and there is hope that the distractions will be kept within bounds.

As to what can be expected from UNCSTD, it is worth recalling that Maurice Strong, the prime mover of the 1972 Stockholm conference on the environment, suggested that on the basis of his experience, the purpose of a UN world meeting is to draw world attention to a problem and, perhaps, to create a mandate for action.

The new policies, new funding, and new organizations agreed on by governments as a result of the conference may prove to be modest. But if scientists come out of their UNCSTD experience with a serious commitment to engage in development work in a nongovernmental way that has been effective in other realms of international scientific cooperation, that would mean a mandate that might well be made to work.

—JOHN WALSH

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made development problems a serious interest and is one of the 19 organizations cooperating in the group led by ICSU.

The major effort of the group to date was organization of an International Symposium on Science and Technology for Development in Singapore in January. Participants included some 130 scientists—including social scientists—engineers, and technologists from both industrial countries and LDC’s. Malone says the meeting was notable for a lack of confrontation along either North-South or East-West lines. The group, for example, discussed “new kinds of instrumentalities” needed to enable LDC’s to make better use of science and technology. And it did get down to specifics, identifying problems of rural areas

R & D focus to problems important to LDC’s rather than industrialized countries.

Energy problems and their implications for LDC’s are on the agenda and these include discussion of how nuclear power ties in with the arms race and nuclear proliferation.

NGO publications indicate that appropriate or alternative technology will have a prominent place at the forum. Enthusiasm for appropriate technology, in fact, is a common NGO characteristic. Most of the NGO’s are based in the industrial countries and are in the mold of American and European public interest organizations. They represent a wide range of concerns—arms control, human rights, health and nutrition, environment. As a