

FOR DISCUSSION AT MARCH 8, 1974
EXECUTIVE COMMITTEE MEETING

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ENVIRONMENTAL
SCIENCES

FUTURE OF THE QUALITY OF THE ENVIRONMENT PROGRAM

Two questions recently have been raised by Trustees: First, can and should the Quality of the Environment Program be abolished? Second, if Quality of the Environment were to be discontinued as a program could important components of it be accommodated under other programs such as Conquest of Hunger or Conflict in International Relations?

This paper presents a response to those two questions.

The conclusion is that the Quality of the Environment Program should be continued for at least five years on the relatively modest financial scale recommended by the staff to the Trustees Program Committee. The reasons are:

1. While the Quality of the Environment Program has existed only four years, experience gained and investments made reportedly have already placed the Foundation in a leading position among philanthropic organizations in this country in the environmental field, and without significant competition in several aspects of environmental work. There appears to be no other foundation with competence in the biological and social science fields, with contacts nationally and internationally, and with the flexibility of approach which could replace the Foundation as a supporter of work on the high priority environmental problems described in the Q of E Program statement. Conceptually, it is vitally important to retain the title as an indication of Foundation interest.

2. Most components of the Q of E Program could not be accommodated under any other Foundation program.

3. Those environmental components of an agricultural nature (i.e., management of animal wastes, plant resistance to insect pests) have objectives quite distinct from those of Conquest of Hunger which are to increase food production and the incomes of people in the poorer areas of the world.

4. Certain international environmental activities, while highly complementary to those of the Conflict in International Relations Program, are distinct from CIR in purpose.

5. The Quality of the Environment Program is an important component of the spectrum of Foundation interests. Its goals complement those of other programs, all of which are the concern of the entire staff. Therefore, we believe that there is unity in the Foundation's several programs and that scatteration and diffusion of effort is not a problem.

SUPPORTING ARGUMENTS

Since the Trustees established the Quality of the Environment Program in December 1969, staff efforts have focused increasingly on identification of ways by which talent and financial resources can be brought to bear most effectively on the more important and difficult environmental problems, especially those of organizational and long-term nature. Especially, the Foundation has supported universities and state and other agencies in their intrastate efforts to reconcile environmental with other economic and social considerations. Simultaneously, new forms of organization and cooperation are being sought which will permit interdisciplinary and inter-institutional cooperation to continue as needed. A high proportion of major Foundation grants in the environmental area are triple-purpose: They support (a) research on important problems, (b) training of young people, and (c) strengthening of ties between universities and action agencies so that new knowledge can be utilized effectively and with minimum delay.

With Foundation support the Universities of Wisconsin and Minnesota are cooperating with state agencies in developing alternatives for a twenty-county, two-state, depressed area west of Lake Superior. The University of Utah is working on problems, especially of land use, of the inter-mountain Wasatch Front. Oregon State University is exploring alternatives for environmental management of the Willamette Valley. The University of California, Davis, is seeking solutions to problems of land use generally, and of community handling

of local environmental problems particularly, with focus on the Lake Tahoe and foothills area. The Massachusetts Institute of Technology is cooperating with several agencies on protection or improvement of the Massachusetts Bay and the Southeast New England River Basins. A new organization, "Planning Approaches for Community Environments" (PACE), is enabling units of Harvard, the Rhode Island School of Design, MIT, and the University of Massachusetts to work with New England communities on management of local environmental problems; this experimental project now is receiving support from the Department of Housing and Urban Development.

The California Institute of Technology is tracing toxic materials from source to final destination in the air, water, and soil of the Los Angeles area.

Activities such as these would be outside the scope of any of the other six Foundation programs.

From discussions with various authorities across the United States, officers have determined that ways need to be found to enable authorities of many disciplines, and private and public institutions of diverse types, to work in concert on a continuing basis, on major regional (usually interstate) environmental problems of concern to all. The first such cooperative, experimental effort is the Foundation-supported Hudson Basin Project. Another under consideration would involve cooperation among universities and other agencies on problems of the central Rocky Mountain area (where interest is focusing on fossil fuel reserves) and extending down to the Four Corners area of New Mexico,

Arizona, Utah, and Colorado. The lead is being taken by universities in this region. Only modest Foundation financial support would be required but Foundation officers are helping by facilitating discussions among representatives of those state and national, public and private, institutions with major interests in the region - institutions which seek some effective mechanism for continuing cooperation. Such activities could not be accommodated under any other Foundation program.

It has been proposed that Foundation "Fellowships in Environmental Affairs" be established to assist in the preparation of young people for leadership roles in management of environmental problems of complex types. This activity would not fit within any other program and such individuals are essential if the country's long-range need for environmental policy makers and managers is to be met.

The Foundation, because of its expertise in the biological sciences and the importance of the subject, has supported research to improve man's understanding of food chains and of concentration in these chains of chemical materials toxic to animals and man. Further, the Foundation has encouraged studies of small watersheds - as at the Stroud Laboratories of the Philadelphia Academy of Sciences - and to link such work with other investigations of streams and rivers and their watersheds. Related research has been supported at Resources for the Future (Delaware River Basin), at Pennsylvania State University for development of an aquatic ecosystems research unit and at the University of Missouri on methods of analysis for minor elements in soil and organic matter. A first, reportedly useful conference, which brought together some 40 people of diverse disciplines working on several waterways and watersheds, was held in November at the

Stroud Laboratories. Support of such studies and cooperative activity would not fit into other Foundation programs.

Several grants now in force assist work on biological purification of waste waters and the utilization of minerals, nutrients, and the improved water for useful purposes. The Woods Hole Oceanographic Institution and the City University of New York are attempting to remove nutrients from effluents with marine plants and animals. Michigan State University is being assisted with its experimental program of biological improvement of municipal waste waters in an ingenious experimental system which progressively purifies bodies of water connected in series. The University of Florida is attempting to use cypress swamps as disposal areas in an effort to strip nutrients for support of vegetation and to use soil-filtered water for recharge of reduced groundwater supplies. Earlier, the University of Arizona was assisted in explorations of the use of soils as filters for various industrial gases. All of these projects are of regional or national importance. Such activities would not fit other Foundation programs.

During the past three years, the Foundation has supported cooperation among leading universities on four different approaches to insect control which might lessen the dependence of the United States on persistent (nonbiodegradable) insecticides. The four include work on sex-attractants (or pheromones) at Cornell, Northwestern, and California at Berkeley and Riverside; on juvenile hormones at Harvard, Cornell, and McGill; on biodegradable pesticides at Illinois, Cornell, and California at Riverside and Berkeley; and on plant resistance to cotton insects at Texas A&M, Mississippi State University, the University

of California at Davis, and at the USDA station at Brownsville. These lines of research are targeted in part at destructive insect populations of the United States and are designed to offer ways to maintain agricultural yields and improve human health while displacing use of undesirable pesticides; they would not contribute directly to increased crop yields in the poorer countries. Consequently, support of such work (now about \$500,000 annually) under Conquest of Hunger would be inappropriate.

A series of grants have supported work on management of major pollutants to minimize adverse effects on the environment. The University of Illinois is investigating the management of nitrogen on farm crops as it affects both crop yields and release of nitrogen to surface and groundwater. Cornell is receiving assistance for its work on animal wastes. Case Western Reserve University is concerned with management of waste phosphorus on a regional basis. These studies, important to the United States or other areas where nutrient usage is intensive, animal populations concentrated, or household usage of phosphates high, would not soon contribute importantly to goals of Conquest of Hunger.

Internationally, there has been relatively little Foundation activity in the environmental field. There are three reasons for this. First, initial attention was intentionally focused on problems of the United States where environmental problems associated with affluence and high rates of resource use are acute. Second, officers felt that the Foundation should gain experience and develop a record of dealing successfully with problems at home before venturing abroad on any substantial scale. Third, the high priority needs internationally were not at all clear until the

Stockholm Conference on the Environment. Nevertheless, the Foundation has provided modest support for such activities as (1) the initial program of the International Institute of Environmental Affairs (London), (2) an international marine biology training program at Duke University, (3) the excellent report of the Study of Critical Environmental Problems (SCEP), and (4) MIT efforts to define toxic substance problems in the atmosphere and oceans. Such international activities as these are important and now can and should be expanded. For the most part they would not qualify for support under the Conflict in International Relations Program.

In a sense, the Foundation's support of environmental work at American universities, even though focused on problems of the United States, is of international significance. It is at these universities that many of the world's environmental leaders of the future will be trained. It is important that these institutions find appropriate ways of offering improved and relevant learning experiences, and the Foundation has attempted to assist them to do just that.

All Foundation grants to institutions have had as one purpose a contribution to the solution of important problems. But, the ultimate purposes of such grants go still further. They are intended to assist the institutions concerned to create a strengthened capacity to deal effectively with the succession of environmental problems which must be confronted over the coming decades, and to train specialists and leaders for the future.

The Foundation's work under the Q of E Program is not its only contribution to preservation and enhancement of the environment. Indeed, several programs contribute in significant ways. Reduction of population growth rates, increases in rural farm productivity and incomes, control of major diseases such as schistosomiasis, identification of ways to deliver health care to people at low cost, education of young people at universities assisted abroad, and preservation of plant genetic resources are but a few of the examples which could be listed. Therefore, even if the Foundation were to discontinue the Quality of the Environment Program, there would remain important contributions of these types.

Concern for environmental deterioration appears to be receding at this time, or at least is being overcome by worries about the energy shortage and food scarcity and prices. Nevertheless, the environmental problems are real and deserve continuing attention. Relatively few private foundations are involved in a significant way nationally or internationally. A report titled "Philanthropy and the Environment" was published in September 1973 by the Conservation Foundation. It was underwritten in part by the Council on Foundations and listed major contributors to solution of environmental problems in 1970:

<u>INSTITUTIONS</u>	<u>ASSETS</u>	<u>ENVIRONMENTAL GRANTS</u>
The Rockefeller Foundation	\$ 757,000,000	\$3,300,000
The Ford Foundation	2,900,000,000	3,200,000
The Andrew W. Mellon Foundation	234,000,000	380,000
Greater Cleveland Assn. Foundation	2,000,000	165,000
American Conservation Foundation	1,000,000	164,000
The Haas Community Fund	88,000,000	118,000
Spaulding-Potter Charitable Trust	6,000,000	110,000

In 1972, the environmental grants of the first three foundations were: Rockefeller Foundation, \$3,281,369; Ford, \$2,838,105; and Mellon, \$163,000.

Fifteen other foundations were listed as having made environmental grants totaling \$10,000 to \$103,000 during 1970.

Clearly The Rockefeller Foundation is a leader among foundations in investment in the environmental field generally, and without doubt leads by far in work on biological and organizational aspects of environmental concerns. It is crucial that the Foundation not relinquish its concern or its leadership role.

The National Science Foundation became an important supporter of research on environmental problems with the establishment a few years ago of its program "Interdisciplinary Research Relevant to Problems of Our Society" (IRRPOS), later reorganized and renamed "Research Applied to National Needs" (RANN). However, NSF-RANN now is unable to support much, if any, new research because of Congressional requirements that RANN increase to at least 25% of its budget its investments in research on new energy sources. University representatives report that it is increasingly difficult to find funds in any amount for environmental work from either public or private sources. And, support of training of young people is sharply reduced in most scientific fields, including those important from the environmental standpoint.

The tentative spending guideline for Quality of the Environment is \$12 to 16 million over the next five years, out of a total of \$220 to 270 million for all Foundation activities. On an annual basis this is an average of \$2.8 million out of a total of about \$49 million for the seven programs, or, about six percent of the Foundation's annual investment.

All Foundation programs, including Quality of the Environment, are the joint responsibility of the entire staff, and all disciplinary groups are involved in efforts to make each one a success. For example, each proposed appropriation is discussed and approved by interdisciplinary committees before review by some thirty major Foundation officers at docket conferences. Only those actions considered by these assembled officers to be important and of high quality are cleared for presentation to the Trustees.

Although the programs might appear to be independent - because goals, reports, organization and budgeting are structured by program - they are in fact quite interdependent and complementary. Many important activities are at the interfaces amongst programs. This is particularly true, for example, for Quality of the Environment and programs in Conflict in International Relations, Conquest of Hunger, Population and Health, and others including Arts, Humanities and Cultural Values. The various programs, then, represent a continuum, a spectrum, of Foundation concerns rather than isolated, competing activities. This makes the Foundation's interdisciplinary, cooperative approach to all programs an imperative one.

Any judgement of the importance of the Quality of the Environment Program relative to other Foundation activities is a matter for the Trustees. Those of us who have been close to the Q of E Program can be expected to be biased. However, an attempt has been made to present fairly the case for continuation of the Program for at least five years.