

INTER-OFFICE CORRESPONDENCE

900  
P+P

ENVIRONMENTAL  
SCIENCE

FROM: AMB

DATE: March 23, 1971

TO:	RWR	3/25 separate copies	<i>[Signature]</i>
	SW		

COMMENTS:

SUBJECT: Comments on Support of Universities to enable Maximum Focus on Environmental Quality; and Goal, Objectives, and Probable Impact of such a Program

All progressive institutions of higher education are in a state of transition. While many pressures are working in this regard, the broad subject of environmental quality has forceably drawn attention to needed changes.

The crisis in environmental quality at present clearly indicates the need to develop a new breed of problem-solving generalists and environmentally oriented specialists. Hence the difficult problem facing institutions, i.e., how to keep the academic disciplines strong and growing and at the same time reorganize traditional university activities, i.e., teaching at undergraduate and graduate levels, research and service, around the most relevant problems of society. Clear-cut goals must be established in the institutions and these must be relevant to the present era and its problems.

A very large number of institutions are either conducting studies or are actually proceeding in many directions in an attempt to focus on environmental quality. At present, a common belief is that major emphasis should be on coordinated, interdisciplinary, problem-solving approaches at all levels of the traditional university functions of instruction, research and service. To do this effectively will require important and often drastic changes in attitudes and in administrative, academic and other organizational mechanisms. It is most unfortunate that these critical needs come at a time when all institutions are facing a very tight budget situation, which constrains doing what really needs to be done.

cont.

March 23, 1971

A reordering of priorities is called for, but even when this is done there will be important gaps. Concerned institutions that are taking the environmental quality matter very seriously need some extramural help for a few years to accomplish the new goals.

It is almost certain that no single organizational mechanism, plan or procedure will meet the needs of most institutions, and I regard this as a fortunate circumstance. However, the fact is that no single institution really knows how to develop the most effective program. Therefore innovation and experimentation are urgently needed.

Interdisciplinary and multidisciplinary work, that is, the team approach, has come into use in universities only within the last several decades, except for the agricultural sector in those institutions where it exists. Agricultural experiment stations have long provided a model for team research, but even in this instance it has never been employed to the extent needed. This is due largely to the general organization around either disciplinary or interdisciplinary departments, which in many instances are actual barriers to cooperative effort. Additional mitigating factors are the usual human traits of jealousy and envy, and lack of perceptive administrative leadership in many Deans and Directors who do not work hard enough to create the most favorable climate for cooperation across department lines.

During and following World War II, when large sums of federal funds became available, various campus mechanisms were developed to work in certain areas in interdisciplinary and multidisciplinary ways through the organization of Centers, Institutes, Laboratories, etc. Perhaps one of the major limiting factors to their success is the faculty reward system, which constrains faculty members in many ways, but largely through salary and promotion limitation for problem-solving activities and the team approach. Incidentally, most of the federal granting agencies provided funds only for basic research by individuals, which virtually prohibited interdisciplinary team research.

The recognized need to focus relevant campus expertise and resources on environmental quality matters will surely bring about a number of different types of organizational mechanisms and other changes to accomplish the goals. At present, the principal factor that will be most effective in influencing change is the shrill cry for relevance on the part of most students and by many of the younger faculty members. One of the most interesting changes I have heard of recently is the plan to eliminate all departments in a certain large Agricultural Experiment Station and to organize staff and budget entirely around problems. Many other types of organizational changes can be expected.

cont.

March 23, 1971

I believe the decision made by RF officers in late 1969 to provide support for one or more universities to assist in organizing relevant campus expertise around environmental quality is very significant, and will probably provide greater national impact per dollar spent than any other single kind of environmental quality supported program.

Consideration of a plan to assist carefully selected universities in developing a so-called Center of Excellence in Environmental Quality on a regional basis has great merit. A significant aspect of such a plan is that the supported institution would serve as a model for other institutions in the geographic region, and some of the experience gained would be useful country-wide. It is recognized that most major institutions tend to be somewhat jealous of other institutions, particularly those in the same region or nearby. Thus the idea of one institution providing a model has certain psychological limitations. Perhaps the most important factor, however, in a plan of this kind is that other institutions would not likely make the same mistakes as the institution that is innovating in this area. Nevertheless, there will be many undeniably good developments from the so-called model institution, which will be so apparent that other institutions would surely adopt them, perhaps with some slight modifications or even improvements. Another beneficial factor is that under reasonably realistic conditions, the supported institution could serve as a "regional think tank" on environmental matters from which all surrounding institutions could profit.

I am very enthusiastic about the four campuses that have been funded already, and also about the good possibilities of the Illinois campus proposal which is now under consideration. It is hoped that favorable consideration will be given additionally to one campus in each of the following areas: mid-Atlantic coast, southern, mid-central, and northwest. Such a plan, while ambitious, would complete a network of universities that have different problems, and the work done by any one campus would be complementary to that of the other campuses in the network. Because of the enormous stake that agriculture has in environmental quality, I believe there would be great merit in selecting universities that have strong Colleges of Agriculture and Agricultural Experiment Stations. Actually, agriculture doesn't really know how significantly conventional production activities may be contributing to deterioration of the quality of the environment.

\*

\*

\*

cont.



March 23, 1971

The Goal, Objectives, and Probable Impact of a potential RF program to support development of a regional network of Centers of Excellence on Environmental Quality at selected universities.

Goal: Improvement in the quality of the environment through assistance to carefully selected universities, thereby enabling them to more effectively contribute to the solution of environmental quality problems.

The optimum situation would be to provide support for a period of three to five years for one university in each of eight to ten general geographical regions of the country. Support of universities would greatly enhance their already substantial capabilities and accelerate their commitment to become Centers of Excellence in Environmental Quality. Such a network of universities could serve as models for other institutions in the country, most of whom are either actively developing some kind of a quality of the environment program or are planning such programs.

Objectives: The following general objectives are requisite to accomplishment of the above indicated goal:

1. To encourage the institutions through RF support and through reordering of priorities on use of their own resources to marshal expertise on all relevant aspects of biological, physical and social sciences, and the humanities, in order to focus on environmental quality problems of the state and region through undergraduate and graduate teaching, research, and service.

2. To encourage an interdisciplinary, coordinated, mission-oriented and problem-solving approach in all relevant areas.

It is especially important to fully involve the social sciences and humanities in all appropriate aspects.

3. To encourage the universities to establish a new administrative unit for the environmental quality effort. This unit should have strong leadership and prominent campus visibility. It should have effective administrative and scientific advisory committee mechanisms.

The faculty rewards aspect of participants in the unit should be largely determined by the unit's administration with appropriate faculty advice.

4. To encourage the universities to innovate and experiment boldly in all areas.

cont.

March 23, 1971

Only through experimentation will the most effective types of programs and procedures be developed.

5. To encourage "think tank" and other procedures on campus to take advantage of student, faculty, and community interests and to benefit from all available inputs.

6. To encourage "think tank" and other procedures by the supported universities involving participation of all interested universities and colleges in the region.

7. To encourage a joint meeting once each year involving all supported campuses for discussion of progress and future plans.

Probably RF should arrange for these meetings, which would be held preferably on a host campus, but which could be held at RF headquarters. Invited to attend these meetings would be the Leader of each campus program and the principal campus administrative officer to whom the leader reports, and perhaps others. Such meetings would be helpful to all campuses in the network, since circumstances are somewhat different on each campus and no two campuses would have identical programs.

Probable Impact of Campus Programs: The chief campus administrative officer on each of the four campuses now being supported expects their program to show enough promise by the end of the third year period that future support will be forthcoming from the state legislature, organizations of citizens within the state, and from federal agencies. In fact, they believe that failing extremely adverse economic conditions, additional support will be provided before the end of the three-year period of the RF grant, and furthermore, that the programs will be showing such promise that funds for expansion will become available.

The impact from modern training and effective service at all levels to better cope with environmental quality problems would surely be enormous.

It can be confidently expected that the multiplier effect from RF support will be very great in at least two specific areas as follows:

1. Results from the network of innovative Centers of Excellence at selected universities will rapidly develop information on most effective types of administrative campus mechanisms, curricula at all levels, and community-services activities, etc., to provide maximum focus on environmental quality matters by the many other educational institutions concerned in this very important area.

cont.

March 23, 1971

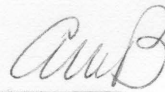
And, incidentally, campus experience in all aspects of focusing on environmental quality will surely have useful spin-offs of value to the campus in reorganizing for other major thrusts. Some prominent educators believe that present conventional types of campus organization must be changed drastically to meet the challenge of rapidly changing societal needs.

2. Successful campus programs on quality of the environment are bound to attract the relatively large sums of money really necessary to most effectively cope with the environmental quality crisis.

I have the very firm belief that few, if any, other opportunities exist for the expected great impact that is practically certain to result from support of the indicated network of universities.

There isn't much of a gamble involved in supporting higher education and service to society at carefully selected institutions, particularly in the new and burgeoning area of environmental quality.

On a hypothetical basis, if ten universities were supported at \$750,000 each for three years, the total would be \$7.5 million, or \$2.5 million per year. At the end of three years, some of the supported universities almost certainly would have developed very unique aspects of their programs that would warrant continued support for perhaps another two years. This might total an additional \$2.5 million, and bring the grand total to \$10 million for the entire program over the five-year period, or an average of \$2 million per year. This particular program should be completed and terminated at the end of five years.

  
A. M. B.