

tually all of the bills before the Congress that are directed toward problems of environmental quality are directed toward problems that are encompassed by the U.S. plan for participation in the IBP.

Isn't what we are talking about, then, the R. & D. component of this tremendous program of environmental control which is involved in air pollution, water pollution, ground pollution, and many other things which has become catastrophic in its nature but about which we have lacked any kind of a consistent understanding of the basic factors?

If the IBP will provide the R. & D. component, it could, in itself, save many times the amount of money that would be required to justify the action which is going into these things.

Mr. DADDARIO. Well, the watershed study falls within the recommendations this committee made when it completed its pollution reports last year: That we needed to in fact do just this kind of thing in order to be able to meet some of the challenges which face us.

Dr. BLAIR. Yes, sir.

Mr. DADDARIO. And I think we are talking about baseline environment studies, early warning systems and technology assessment, the side effects, positive and negative, that should come about, all fall within the purview of these recommendations you make.

Mr. BROWN. We are talking about standards for air pollution today, but we cannot establish standards without an understanding of the ecology of the particular area or the whole airshed that we are concerned about. And this seems to me moving in the direction of providing that kind of information to justify the regulatory function of the Congress.

Mr. DADDARIO. Dr. Blair, how do you see the availability of people of the kind who will either come into being or who will be attracted from present endeavors so that this program can be in fact successful?

I wonder if you and Dr. Ripley are so far apart. You are really both talking about getting the kind of support by which you will attract the types of people who can do this kind of work. The only difference is you think you need more money.

Dr. BLAIR. Mr. Chairman, whether we have a successful IBP or not, we are going to be concerned with environmental quality. This problem is with us and I think it is going to be solved. Either way, we are going to face a shortage of trained people.

I recently made an estimate—and I think your staff has a copy of this estimate—of our current production of ecologists in this country. This is sort of a shotgun estimate on the basis of a questionnaire that has a large standard error, but it comes to not much over an average of a hundred Ph. D. level ecologists produced per year.

Now, however the concern for environmental quality develops, this is not going to be adequate, and this in time is going to call for increased training of ecologists. I canvassed the top institutions, of which about 20 produce most of the ecologists in this country, and the universal answer was that naturally if we are to double our production of ecologists it is going to cost twice as much in facilities and faculty, and this is a reasonable estimate.

So the answer is we cannot right now, on the basis of current levels of support to training in this field, adequately supply the demand whether we have IBP or not.