

Appropriating any number of millions or billions of dollars in the hope of achieving a research goal does not in any way determine that the goal actually is attainable. A case in point is the saline water program, which was created specifically with the expectation that it would provide water sufficiently inexpensive to be used for irrigation in our own country. This program now seems destined to become primarily an instrument of aid to other countries so much more in need of water than the United States that they can pay a high cost for it.

A corporation invests in a number of research projects, each selected with the expectation that the benefit to the shareholders will be greater than the cost of the project. When it assumes the functions of a social corporation, the Federal Government has the same basic responsibility to invest in projects which promise to produce more real benefits than their real costs. Neither the corporation-for-profit nor the Government can expect every research project to pay off, but the adequacy of the management in each case will ultimately be judged by the ratio of those which do to those which do not.

For human beings to derive real benefits from scientific research, the results of this research must ultimately be applied by individuals who think like engineers. In the control of pollution this would mean engineering application of science in terms of large quantities of material being processed with high efficiency in equipment that will continue to function for long periods of time, producing a result at an optimum ratio of value to cost. A current criticism of engineering education is that it has been producing too few men capable of transferring the results of scientific research into processes properly engineered for efficient operation.

What are our real needs in the field of pollution control? The most immediate need is for manpower competent to apply the results of scientific investigation to beneficial uses in the—

1. Design, construction and continuing operation of treatment plants for municipal sewage and industrial wastes, employing existing technology and adapting contemporary improvements.
2. Evaluation and regulation at the level of local, State, interstate, and Federal agencies for control of pollution.

Encouraging more young men of ability with an interest in the application of technology to choose engineering training in the field of pollution control is obviously more essential to early progress in this field than the more remote research to develop new scientific information of possible utility.

The next most immediate need is to establish an atmosphere of incentive for industry to innovate improvements in processes and equipment which will compete for use in control of pollution, subject to the ultimate test of the market.

Important, but still third in order of immediacy, is Federal support of the search for new scientific facts upon which the engineer may be able to build new technology which in turn may meet the ultimately decisive test of economics.

Science is "the endless frontier." But until it is applied to the benefit of man, it yields only intellectual values to the few specialists capable of comprehending its findings. A wise government will accordingly be as concerned with encouraging the application of science as it is with the accumulation of new scientific information.