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REPORT OF THE TASK FORCE ON ENVIRONMENTAL POLLUTION

A Definition

"Environmental pollution is the unfavorable alteration of our surroundings, wholly or largely as a byproduct of man's actions, through direct and indirect effects of changes in energy patterns, radiation levels, chemical and physical constitutions, and abundances of organisms. These changes may affect man directly, his supplies of water and of agricultural and other biological products, his physical objects or possessions, his opportunities for recreation and the appreciation of nature."

The Problem

From our vast and productive industrial and agricultural establishment and from our domestic activities, rural and urban, huge quantities of diverse materials are dispersed into the air, into the waters, or onto our lands. Whether by-products of our activities or spent substances which have served their intended purpose, these materials persist in the environment. Carried by water or air or articles of commerce, pollutants may produce adverse effects at sites far removed from their sources, interfering with the livelihood or recreation of others, increasing the costs of domestic comfort, of manufacturing or of farming, reducing yields of crops, and in some cases, threatening the health and longevity of citizens who have no direct stake in the production of the pollution which assails them, and who cannot escape its evil influences.

Our generation has altered the composition of the atmosphere on a global scale through the emission of radioactive material and a growing outpouring of carbon dioxide from the burning of fossil fuels. Incomplete combustion of motor fuels burdens our cities with irritants and high levels of carbon monoxide. Three-fourths of the 8 million people in the Los Angeles basin complain about severe eye irritation most of the year. Air pollution is no longer confined to isolated localities. Whole areas are pervaded with harmful and unpleasant materials. Every year, for example, pollution covering the coastal strip from Richmond to Boston causes millions of dollars of damage to crops, is believed to cause some hundreds of excess deaths and covers the whole area with millions of tons of particulate fallout.

In spite of great efforts and accomplishments of the past, water pollution problems are increasing and spreading. Phosphorus and nitrogen, not removed in conventional sewage treatment plants, are causing rank growths of algae and other plants in lakes and waterways. Viruses, particularly of hepatitis, have replaced typhoid fever organisms as significant water borne health hazards. Growing salinity is interfering with agricultural and other

uses of water. Toxic chemicals are finding their way in increasing amounts into natural waters. Massive mortalities of fishes have taken place in rivers, lakes and estuaries. Valuable shellfish and shrimp fisheries are retreating before relentless advances of pollution.

Precious agricultural soils, irreplaceable resources of our nation, are now showing alarming signs of pollution from persistent pesticides applied year after year for the control of insects, weeds, and other pests. Some of these chemicals, often lingering long after application, are (in some instances) taken up by crops, and reach our people's food either directly or through our livestock. The scope and importance of this newly-recognized soil pollution have not yet been adequately evaluated. In one state, however, more than seven percent of the land used for growing vegetables contains so much residue of pesticides that certain crops cannot be grown there without taking up amounts of chemicals beyond the tolerance limits. The majority of our orchard lands contain so much pesticide that they could not be converted to vegetable or forage crops if it were desired to do so. Some lands are so heavily polluted with arsenic, copper, and lead that they will now support no useful vegetation of any kind.

In some irrigated areas of the country, soil pollution from salt is a growing problem.

So far, our soils have been adequately protected from radioactive pollution.

The side effects from the use of pesticides are of real concern. Bees and some other beneficial insects (pollinators, predators, and parasites) are severely reduced in numbers to the detriment of both wild and cultivated plants. Certain invertebrates, as earthworms and some insects, accumulate pesticides. This results in the injury or death of many birds and other animals preying on such contaminated food. Residues of pesticides are now detectable in penguins in the Antarctic, snowy owls in the Arctic, fishes far at sea, as well as in nearly all birds and mammals in the United States. Often more than one pesticide is present. Pesticides have probably caused or contributed to recent drastic declines in eagle, osprey, and related bird populations. The full significance of such side effects is yet to be determined.

Collection and disposal of solid wastes is a serious problem in certain areas. Many cities are exhausting nearby land fill areas. The daily accumulation is more than four pounds per person and transportation to the fills costs more than a billion dollars annually.

The Federal Responsibility for Pollution

The land, water, air and living things of the United States are a heritage of the whole nation, and need to be protected for the use of all Americans, both living and the generations yet unborn.

Consequences of pollution created in one locality customarily impinge upon the residents of others without regard for man-made confines of countries and states.

Economic competition for sites of production tends to favor weak regulation, since both abatement and avoidance of pollution usually raise production costs.

The Federal Government, through its administration of public lands, establishments and other large facilities, its qurchases of equipment and supplies, and its responsibilities for waste disposal, has a substantial impact on the economy and is in a unique position to exercise leadership and influence in pollution abatement on a national scale.

For all these reasons the Federal Government has repeatedly affirmed its policy to accept an increasing responsibility for the problems of pollution.

We urge that this be reaffirmed in the broadest terms and at the highest levels, now and in the future, and suggest that it could be well expressed in this form:

"It is our national policy to shield our nation's air, water, soil and living resources from pollution and its consequences and, with this aim in mind, to take such measures as may be necessary to protect these priceless heritages for the benefit of the nation as a whole."

Federal Policy Guidelines

So that the Federal Government contributes more effectively to the implementation of this policy, we urge the adoption of a set of Federal policy guidelines including the following points:

1. The Federal Government should encourage, by legislation and persuasion, the establishment and the operation of interstate compacts or other regional agreements or plans suitable for dealing effectively with the pollution of interstate river basins and estuaries, of air sheds involving large metropolitan areas extending into more than one state, and of water zones involving ocean or lake waters bordering on more than one state.

2. The United States should stand ready to cooperate with its neighbors, both informally and formally, in controlling and abating pollution of international river basins, air sheds, and water zones.

3. The Federal Government should cooperate with, and complement the actions of, state and local governments to preserve from pollution our public recreational and wilderness resources, be these beaches, bays, estuaries, rivers, lakes, mountains, wilderness areas, dunes, islands, parks, monuments, forests, prairies, wildlife refuges, marshes, swamps, or primitive areas.

4. The Federal Government should contribute to the wisdom, effectiveness, and strength of state and local regulations and enforcement concerning all forms of pollution by providing advice, recommending and publishing (alternative) standards suitable for local adoption, stimulating cooperative endeavors, and contributing to the acquisition of relevant knowledge.

5. The Federal Government should contribute to the reduction of pollution through its part in the development and management of economic incentives, broad and non-discriminatory in nature, for the reduction of pollution below the levels required by laws or regulation.

6. The Federal Government should play a major role in providing the scientific, engineering, and technical knowledge and manpower needed to deal effectively with our pollution problems.

7. All agencies of the Federal Government concerned with pollution should recognize the greater effectiveness of knowledge based upon thorough understandings of mechanisms and processes rather than upon collections of individual facts alone, and should strive to advance the time when such thorough understanding is available in each scientific area relevant to their work.

8. The Federal Government should maintain broad monitoring and investigative activities designed to measure and to follow the behavior, accumulation, dispersal and degradation of the most significant pollutants in our soils, air and waters, and to see that the results and details of this work are easily available to the scientific and technical communities.

9. All Agencies of the Federal Government should accept their share of responsibility for identifying those new technical developments whose use on a national scale may have substantial impact upon pollution and for ensuring that thorough studies of the impact of each such development on the environment are made in advance of its widespread use (as was done in the case of nuclear energy and omitted in the case of broad-spectrum chemical pesticides).

10. The Federal Government should set worthy examples in pollution abatement through the practices of its own operations and those of its contractors and suppliers.

11. Every agency of Federal Government should encourage the choice or specification, throughout the nation, of those materials, technologies, and equipments whose use tends to lessen the severity or extent of pollution.

12. In considering its policies with regard to such major problems as transportation and electrical energy production, the Federal Government should give due weight to the relative pollution production of competing approaches.

13. Especially since pollution problems appear, develop, and grow rapidly, the organization and operations of the Federal Government should be reexamined

frequently and modified as needed to improve abatement and control of pollution.

14. The Federal Government should inform all the people of the United States about the character, severity, extent, and significance of our nation's pollution problems, both present and anticipated.

RECOMMENDATIONS

We recommend to the President that he:

(1) Issue a policy directive to heads of all agencies and offices of the Federal Government to the effect that:

(a) It is the Federal policy that the operations of the Government demonstrate the best principles and practices of preventing and abating all kinds of environmental pollution.

(b) Heads of agencies and offices are instructed to examine their operations and responsibilities with a view toward instituting or improving operational practices that will implement this Federal policy, both with respect to direct agency operations and those conducted through contracts and cooperative agreements.

(c) Heads of agencies and offices are instructed to institute procurement practices which will insure that specifications for equipment for government use will provide for minimizing contributions to the pollution burden of the country. For example, as technical developments provide means for lessening pollutants from motor vehicle exhausts, these developments should be included in specifications of motor vehicles purchased by the government.

(2) Appoint a task force including individuals competent in economics, science, law, engineering, and public affairs, to consider and recommend the best means of utilizing economic incentives in reducing pollution below the levels enforced by local authorities. This committee should consider the comparative advantages of effluent charges and other legal and administrative devices which might serve the desired purposes and should make recommendations concerning legislation.

(3) Reaffirm Presidential support of the recommendations in the report of the President's Science Advisory Committee entitled "Use of Pesticides", dated May 15, 1963.

A. In the Executive Office of the President

In order to provide for early identification of broad problems involving pollution, and to avoid gaps and unbalances in their study, we recommend that:

(1) The Federal Council for Science and Technology establish a Committee on Pollution Problems, composed of its own members.

(2) The National Academy of Sciences - National Research Council be asked to establish an Environmental Pollution Board, to be supported by government grant, and that this Board meet jointly with the FCST Committee at least once a year to discuss both the existence and importance of newly recognized broad problems and current changes in the apparent importance of those previously recognized.

(3) This Committee and this Board establish joint panels to identify the natural major portions of each of the most pressing broad problems, and the general character of new knowledge or techniques needed to study or ameliorate them.

B. In all Departments and Agencies concerned with pollution.

We recommend that:

(1) Means should be found to utilize the experience and technological skills of private industry to develop devices and processes for measurement and control of environmental pollution. Search for such means should include a careful review of Federal patent policies with reference to Government supported research and development.

C. In Departments and Agencies having responsibility for both enforcement and research related to pollution.

We recommend:

(1) That each Department or Agency give careful consideration to providing a more adequate separation, both administrative and budgetary, between its research and development activities on the one hand and its investigative and enforcement activities on the other, having due regard for the advantages of mutual support and for any special circumstances that may exist.

D. In the Department of Agriculture.

We recommend that the Department:

(1) Adopt the principle that -- in all proceedings concerning the registration of pesticides for agricultural use, whether the registration be initial, or at the prescribed interval for reregistration, or questioned

or reopened because of new evidence -- the burden of proof is deemed to fall on the registrant.

(2) Ensure that reregistration proceedings at prescribed intervals are conducted carefully and without prejudice from the approval of registration for the previous term.

(3) Take particular note of persistence beyond that necessary in determining whether registration of a pesticide for a given use is in the national interest.

(4) Give greatly expanded attention to all forms of cultural and biological control of pests.

(5) Give substantial attention to the study of the natural degradation of pesticides and the development of more rapidly degradable pesticides.

(6) Give substantial attention to the development of pesticides active against narrower classes of organisms.

(7) Give substantial attention to appropriate portions of coordinated studies of the flow of a few representative pesticides from their initial application through inorganic and living systems to their degradation, incorporation in human tissue, or long-term deposition.

(8) As soon as authorized by law, actively pursue a program of competitive grants open to all universities and designed to provide basic knowledge, expansion of training, and closer scientific relations between the staffs of the Department and all the universities.

E. In the Department of Health, Education and Welfare.

We recommend that:

(1) The Secretary appoint a Panel to study thoroughly and in detail, the merits of one or more National Environmental Health Centers operated on contract by universities or by industrial corporations along lines represented by three national laboratories thus operated for the Atomic Energy Commission. The merits of such a plan should be compared with the merits of one or more such centers operated directly by the Public Health Service, and with the merits of other approaches. Particular attention should be paid to the feasibility, under each organizational plan, of obtaining sufficient scientific leadership, management skill, and high-quality scientific and engineering manpower. The report of this study should be submitted for Presidential review before a decision is made on funding the center.

(2) The Department give substantial attention to appropriate portions of coordinated studies of the flow of a few representative pesticides from their initial application through inorganic and living systems to degradation, incorporation in human tissue, or long-time deposition.

(3) The Department give substantial attention to the metabolism and natural degradation of organic compounds, including pesticides.

(4) In its work on mechanisms of toxic action, metabolism, and natural degradation, the Department give special attention to any work which seems likely to contribute to the development of more rapidly degradable effective pesticides.

(5) The Public Health Service accomplish such administrative and budgetary changes as may be required to place under central scientific direction, unified budgeting and single administration, at the Robert A. Taft center, all research and development in, or supporting, environmental health now conducted in the Cincinnati area and to establish strong ties between the resulting Taft center and university scientific communities.

(6) As soon as such a reorganization has been effected, the Public Health Service actively strengthen the Taft center by:

(a) Constructing additional central laboratories to replace makeshift, temporary, and scattered facilities now in use.

(b) Taking better advantage of the scientific leadership now spread through the center, both in research and recruitment.

(7) The Public Health Service expand its program of support for the training in universities of professional, scientific and engineering personnel needed to staff our nation's environmental health centers and other institutes, programs and activities involving research, training, monitoring, enforcement, investigation, engineering, design and management in the environmental health and pollution areas.

(8) The Public Health Service lead major engineering and scientific organizations to work actively, both on their own account and as advisors to the Federal Government, on problems related to standards of air and water quality.

F. In the Department of the Interior.

We recommend that:

(1) Substantial attention be given to appropriate portions of coordinated studies of the flow of a few representative pesticides from their initial application through inorganic and living systems to their degradation, incorporation in human tissues, or long-term deposition.

(2) The Department should devote a larger share of its effort to work relevant, directly or indirectly, to the abatement and control of pollution.

(3) The Department should conduct baseline ecological studies and surveys which would allow assessment of the biological changes in the environment due to human actions.

(4) As soon as authorized by law, the Department actively pursue a program of competitive grants, open to all universities and designed to provide basic knowledge, expansion of training, and closer scientific relationships between the staffs of the Department and all the universities.

G. In the National Science Foundation.

We recommend:

(1) That in expanding their program of training grants beyond Engineering, the Foundation give special attention to the pure and applied environmental sciences.

H. In the Congress.

We recommend that draft legislation be submitted which will:

(1) Authorize the Departments of Agriculture and the Interior to award, on a competitive basis, extramural grants to universities and other qualified institutions for research and research training in scientific and engineering fields supporting their missions.

(2) Authorize the Departments of Health, Education and Welfare, of Agriculture, and of Interior to provide grants up to 100% of cost to universities or other non-profit institutions for the construction, remodeling and equiping of facilities needed for projects, institutes, or centers to be devoted to research and research training in environmental health, the environmental sciences and engineering.

(3) Substantially increase or remove the budgetary ceiling on pesticide research by the Fish and Wildlife Service.

(4) Repeal legislation requiring review by congressional committees of individual research grant applications prior to award. (Modification of certain Congressional practices may also be necessary.)

(5) Authorize any of the administrative actions recommended above which requires new statutory authority.

COMMENT

In order to provide guidance as to the considerations involved in many of these recommendations, we are appending material also intended to form a basis for further study and recommendations.

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