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A CASE STUDY*

THE DECISION TO BAN DDT

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This EPA decision to bar continued use of DDT in the United States was not a precipitous, unilateral action taken by EPA in a vacuum. To the contrary, the decision followed a long and complex sequence of events and was based on a substantial body of information on the benefits and costs of DDT. The following sections will examine these circumstances in some detail.

DDT: Its Benefits and Costs from Today's Perspective

The benefits and costs of DDT use in the United States were examined in great detail during the 7-month hearing, as provided by FIFRA. The hearing and subsequent decision did not bear on the export of DDT or its use in other countries, where benefit/cost considerations may be quite different from those in the U.S. Approximately 125 witnesses, most of them experts in various fields, produced more than 10,000 pages of transcript and hundreds of exhibits (Wurster, 1973a). From this mountain of information emerge several elements that proved to be essential ingredients in the decision that followed.

1. The Efficacy of DDT - During the nearly 30 years since the large scale usage of DDT began, various factors have reduced the efficacy and essential need for DDT in the United States. Many insect populations, once highly susceptible to the chemical, have become resistant and can no longer be controlled by DDT. Resistance among herbivorous insects that damage crops has not been matched by resistance in carnivorous insects, which help to control the herbivores. Destruction of these natural enemies by DDT, as well as by other insecticides, has frequently aggravated pest problems and elevated non-pest species to pest status (Huffaker, 1971).

5. The Cancer Hazard of DDT — Experiments in at least a half dozen laboratories in Europe and North America have shown that DDT causes tumors in mice, rats and trout (Epstein, 1974; Innes, et al., 1969; Tomatis, et al., 1972). Extensive testimony by authorities in chemical carcinogenesis from the National Cancer Institute and elsewhere indicated that DDT is a carcinogenic hazard to man because it causes tumors in test animals (Epstein, 1970; 1972; 1974; Saffiotti, et al., 1970). This hazard is emphasized by worldwide, universal human exposure to DDT. DDT, and its carcinogenic metabolite DDE may be the most widespread of all man-made carcinogens in the human environment.

Some cancer-causing agents also cause mutations, and evidence was presented at the hearing that DDT causes dominant lethal mutations in rats (Palmer, Green & Legator, 1973). Legator concluded that DDT represents a potential genetic hazard for man.

The DDT industry attempted to refute the carcinogenic and mutagenic hazards of DDT. The evidence presented by the industry, however, was judged inadequate and unconvincing by the EPA decision-makers and the final Ruckelshaus order labeled DDT a cancer hazard for man. The potential carcinogenesis of DDT proved to be a pivotal issue in the hearing and in the final EPA decision.

Why DDT?

The immediate reasons for the banning of DDT by EPA are summarized above. There is every reason to believe that the decision was made on its merits, and that the role of "politics" was minimal.

It has been argued that banning the unpopular DDT was politically expedient, an argument seemingly supported by the pro-DDT recommendations of the Hearing Examiner. Hearing room observations and the transcript demonstrate, however, that the Hearing Examiner had difficulty comprehending the scientific and legal technicalities of the case, and that his rulings were often confused and inconsistent (Gillette, 1971). Decision-makers at EPA completely reversed the Hearing Examiner.

Political arguments could also be used to advance the opposite position, namely, that pressures from powerful congressmen representing agricultural regions should have influenced EPA not to ban DDT. I consider these political arguments largely invalid. The Ruckelshaus decision is well written and reasoned, shows a substantial grasp of the scientific issues in the case, and is thoroughly supported by the transcript record. Many close observers of the proceedings, in fact, considered the evidence overwhelmingly against DDT. It is even likely that had EPA followed the recommendation of the Hearing Examiner, or for any other reason failed to terminate most DDT registrations, such a ruling might well have been reversed in the courts.

A conclusion that DDT was banned on the merits by EPA because the costs exceeded the benefits nevertheless leaves unanswered questions regarding the decision. Why DDT? Why not parathion, arsenates, dieldrin (recently suspended), 2,4,5-T or mirex? Why was the DDT issue before the agency for a decision where so many others were not?

The answers involve a long, complex history dating back into the 1940's. They involve public frustration with a pesticide regulatory structure dominated by agribusiness interests and unresponsive to environmental and public health

considerations. The DDT issue was symptomatic and symbolic of a far greater syndrome, a syndrome partially responsible for the spawning and development of the public interest movement. The events that caused EPA to make a decision on DDT occurred largely outside of government. They formed an integral part of the history of public interest and environmental law. These events are worth examining, for without these citizen activities there would have been no DDT decision.

History of the DDT Issue

1. Before Silent Spring - Warnings of the environmental hazards of DDT were sounded almost simultaneously with the widespread introduction of the chemical in the mid-1940's (Cottam & Higgins, 1945; Hotchkiss & Pough, 1946). At the time, however, DDT was being hailed as the miracle chemical that had stopped malaria, typhus and other diseases, saved millions of lives, and helped win World War II. Testing requirements and procedures were crude and superficial. The time was not ripe for concerns about birds, fish or "the environment."

The 1950's became the decade of mass spray programs to "eradicate" various insects -- the gypsy moth, the fire ant, the Japanese beetle, the spruce budworm -- programs now generally considered to have been failures at best and disasters at worst. Documentation of the environmental hazards of DDT (and certain other pesticides) became substantial, as did the frustration of conservationists concerned with such problems. But the conservation movement was weak, disorganized and politically impotent, and the public interest movement had not begun. The time had not yet arrived for effective pesticide regulation or environmental protection.

all pollutants. These strategy decisions of late 1967 were to prove important, for substantial progress toward achievement of these objectives was to occur and the DDT issue was ultimately to be placed before a Federal agency (EPA) that did not at that time exist.

One week after incorporation, EDF took legal action against DDT and dieldrin in Michigan (Carter, 1967). The action brought about considerable public education, placed additional information before government decision-makers, blocked the use of DDT on elm trees in 55 Michigan cities, and ultimately was catalytic in Michigan becoming the first state to ban DDT.

A unique water pollution law and the invitation and strong support of a statewide conservation organization brought EDF litigation against DDT to Wisconsin late in 1968 (Carter, 1969; Wurster, 1969b). A quasi-judicial hearing before the Wisconsin Department of Natural Resources resulted; it spanned six months, consuming 27 days with the testimony of 32 witnesses and produced 3,000 pages of transcript. It was the most exhaustive inquiry up to that time on the DDT issue, and it resulted in the banning of DDT in Wisconsin.

3. Federal Litigation Against DDT - Having successfully curtailed DDT in three states, EDF sought Federal action. Representing itself, the National Audubon Society, the Sierra Club and the West Michigan Environmental Action Council, late in 1969 EDF filed a legal petition with the U.S. Department of Agriculture (USDA), then responsible for pesticide regulation, seeking cancellation and suspension of all DDT registrations. Another petition requested the U.S. Department of Health, Education and Welfare (HEW) to repeal DDT tolerances in human foods. With the appearance of new evidence, this was the first involvement of the potential carcinogenesis of DDT and its public health implications. ~~Prior actions had been based exclusively~~ on environmental and wildlife evidence.

The USDA petition was ignored and the HEW petition was denied, so EDF took the cases to the U.S. Court of Appeals for the District of Columbia. On May 28, 1970, the Court remanded both petitions to the two agencies involved, ordering them to reconsider the issues and respond. USDA responded by denying the petition without reasons, and again EDF took the case to the appellate court. For the second time the Court remanded the case to the agency, this time ordering reconsideration with reasons to support the decision.

After USDA again denied the petition, EDF for the third time went to the Court of Appeals, asserting that the reasons given for denial led to the opposite conclusion, namely, that the reasons mandated that cancellation notices be issued. Again the Court agreed with EDF. Immediately prior to the final court decision, pesticide regulation was consolidated under the newly created EPA, which then became the recipient of a court order resulting from the EDF litigation against USDA and HEW. On January 7, 1971, the Court ordered EPA to issue notices of cancellation for all registrations of DDT. A week later EPA complied with the order, setting in motion the cancellation process which included a study by a committee of scientists, the 7-month public hearing, and the final decision by EPA that terminated the registrations of DDT.

4. The Important Precedent of DDT - The EDF Federal litigation against DDT set a wide variety of important precedents in the development of environmental law. These cases gave citizen organizations standing to bring such actions, and they mandated that Federal agencies cannot ignore well-documented, legitimate petitions from private citizens. Furthermore, the Court required the agency to give adequate, supportive reasons for its response and finally, when the reasons proved inadequate, discretion was lifted from the agency and it was ordered to initiate the cancellation process. ~~Throughout these proceedings~~ the Court served as watchdog.

Although FIFRA had become law in 1947, DDT was the first pesticide to undergo the full cancellation process. In 24 years of administration of FIFRA by USDA, no pesticide had ever been cancelled over the objection of the manufacturer. There was not even a precedent for the way in which such proceedings were to be conducted.

From this brief history it is clear that public interest law played a central role in the DDT decision by William Ruckelshaus on June 14, 1972. Without the persistent Federal litigation brought by EDF, the DDT matter would not have come before the agency and no decision would have issued.

Editorial Comments and the Vision of Hindsight

The DDT issue epitomized the inadequate regulation of pesticides by Government that persisted for nearly three decades. The cancellation of DDT made permanent changes in the regulatory process applicable to all pesticides. Government insensitivity to environmental and human health considerations no longer applies to EPA, an agency now responsive to these values.

The adversary cancellation process proved advantageous to EPA in reaching its ultimate decision. Extensive testimony by competent experts developed a record that could be carefully studied, cross-examination highlighted weaknesses in such testimony, and briefs from all parties analyzed, condensed, summarized, argued and digested this volume of information to facilitate the decision-making process. The procedures developed appear to have worked well. Dieldrin, another hazardous, carcinogenic chlorinated hydrocarbon insecticide, has undergone the same cancellation process with a comparable result (Wurster, 1971; 1973b). The decisions of the Hearing Examiner and the Administrator are exceptionally competent documents, further demonstrating the vast improvement in regulatory procedures and responsiveness that has occurred.

DDT appears in retrospect to have been the optimum choice as a vehicle for establishing these precedents. The case against DDT was strong and well documented eight years ago when litigation began, and it has strengthened continuously since then. Nothing has occurred to cast doubt on the validity and wisdom of the Ruckelshaus decision to terminate DDT registrations. To the contrary, various new information has still further supported it.

One wonders why it took Government so many years to reach a decision that seemed obvious five or even ten years earlier. Perhaps the most useful lesson to be learned from the DDT issue is the essentiality of citizen involvement in the processes of government. The history of the DDT issue suggests that citizen participation and pressures are essential ingredients in the achievement and maintenance of effective and responsive democratic institutions.

- Primack, J. & F. von Hippel, 1974. Advice and Dissent, Basic Books, New York.
- Ruckelshaus, W. D., 1972. Consolidated DDT hearings: Opinion and order of the Administrator, Federal Register 37 (131), 13369-76.
- Tomatis, L., et al., 1972. The effect of long-term exposure to DDT on CF-1 mice, Int. J. Cancer 10, 489-506.
- Woodwell, G. M., 1970. Effects of pollution on the structure and physiology of ecosystems, Science 168, 429-33.
- Wurster, C. F., 1969a. Chlorinated hydrocarbon insecticides and the world ecosystem, Biological Conservation 1, 123-9.
- Wurster, C. F., 1969b. DDT goes to trial in Madison, BioScience 19, 809-13.
- Wurster, C. F., 1971. Aldrin and dieldrin, Environment 13 (8), 33-45.
- Wurster, C. F., 1973a. DDT proved neither essential nor safe, BioScience 23 (2), 105-6.
- Wurster, C. F., 1973b. The case against aldrin, dieldrin, Audubon 75 (6), 121-4.
- Wurster, C. F., 1972. Effects of insecticides, Chapter 9 in The Environmental Future, N. Polunin (Ed.), Macmillan Press, London.

