Appendix B: Lessons From NAPAP

Congress passed the Acid Precipitation Act in 1980, thereby establishing an interagency task force to plan and oversee a 10-year National Acid Precipitation Assessment Plan (NAPAP).[1] The purpose of NAPAP was to increase understanding of the causes and effects of acid precipitation through research, monitoring, and assessment activities. NAPAP was intended to be useful to policymakers-the program emphasized the timely development of science for use in decisionmaking.[2]

NAPA.P was one of the most ambitious multiagency programs ever focused on a particular problem. Annual budgets ranged from approximately $17 million at the beginning of the program to just over $300 million at its end. Although NAPAP succeeded in its research efforts, it did not provide policy relevant information in a timely manner. This appendix focuses on the question of whether NAPAP's failure to be more "policy relevant' has lessons for the USGCRP.

When founded, NAPAP consisted of 10 task groups, each with a single agency serving as the coordination contact. Task groups included:

1. natural sources of acid precipitation,
2. human sources of acid precipitation,
3. atmospheric processes,
4. deposition monitoring,
5. aquatic effects,
6. terrestrial effects,
7. effects on materials and cultural resources,
8. control technologies,
9. assessments and policy analysis, and
10. international activities.

In 1985, the assessments and policy analysis task group was disbanded-a decision that reduced the value of the program to decisionmakers.

Policymakers looked to NAPAP for straightforward analyses of the acid rain "problem.' However, NAPAP sponsored research did not approach acid rain as a unified issue. Rather it examined the subject at a multidisciplinary and subdisciplinary level with little emphasis on synthesis of findings.

> The program reported findings in excruciating disciplinary detail, an approach which was not especially helpful to non-specialist decision makers. The disciplinary pluralism of NAPAP also allowed policy advocates to pick and choose among NAPAP's reported findings, emphasizing facts or uncertainties supporting a particular position while de-emphasizing others. NAPAP

[1] NOAA, USDA, and EPA jointly chaired the task force which also consisted of members from DOI, HHS, DOC, DOE, DOS, NASA, CEQ, NSF, and TVA along with representatives of the Argonne, Brookhaven, Oak Ridge, and Pacific Northwest National Laboratories and *four* Presidential appointees.

[2] Oversight Review Board of the National Acid Precipitation Assessment Program, *The Experience and Legacy of N.MAP, Report* to *the Joint Chairs Council of the Interagency Task Force on Acid Deposition,* April 1991.

lacked an extra-disciplinary perspective that would have allowed it to characterize acid rain as a problem, non-problem, or something in between.[3]

Assessment and policy analysis research develops and uses quantitative methods to organize and communicate scientific and other information in ways that allow comparison of policy choices. These methods include decision analysis, benefit-cost analysis, risk analysis, and technology assessments. The NAFAP task group on assessments attempted to begin early in the program to develop integrated assessment methodologies and to perform multiple assessments throughout the program to assure policy relevance. For example, plans for a 1985 report included an assessment of the current damages attributed to acid deposition, an uncertainty analysis of key scientific areas, and an analysis of the implications of uncertainty for policy choices. The authors of the 1985 report were also tasked to develop a framework of the methodology for subsequent integrated assessments in 1987 and 1989.[4] However, NAPAP management changed in 1985 as did the focus of the program. The assessments task group was disbanded and responsibility for assessments moved under the &rector of research. The new director repeatedly delayed the 1985 assessment, until it was finally released (with much controversy) in 1987. The 1987 and 1989 integrated assessments were never produced. At that point, it was uncertain whether NAPAP would produce even one assessment. NAPAP ceased funding for the integrated assessment modeling because the Interagency Scientific Committee decided that they would prefer to spend limited funding on other research.

Although NAPAP eventually produced an integrated assessment in 1990, its lateness diminished its utility to policymakers formulating amendments to the Clean Air Act.[5] In addition, the effectiveness of the 1990 integrated assessment was limited as NAPAP officials either failed to execute, or underfunded, important ancillary assessments. This included, for example, an evaluation of the economic effects of acid deposition on crops, forests, fisheries, and recreational and aesthetic resources, and a determination of the implications of alternative policies.[6]

In its report to the Joint Chairs Council of the Interagency Task Force on Acidic Deposition, the Oversight Review Board (ORB) of the National Acid Precipitation Assessment emphasized strongly that an assessment function be given primacy throughout an interagency prograrn.[7] The ORB key recommendation on lessons learned about the interface between science and policy was to give assessment primacy over research since "science and research findings per se have little to offer directly to the public policy process, [and] their usefulness depends on assessment, defined as the interpretation of findings relevant to decisions."8 ORB also outlined nine other suggestions that any program with such a close interface between science and policy should follow:

1. Match institutional remedies to problems.
2. Obtain and maintain political commitment.
3. Take steps to assure continuity.
4. Configure organization and authority to match responsibility.
5. Give assessment primacy.
6. Provide for independent external programmatic oversight.
7. Understand the role of science and how to use it.
8. Take special care with communication.
9. Prepare early for ending the program.

The insights gained from the experiences of NAP' were not considered when designing the U.S. Global Change Research Program (USGCRP)-a much larger program on both a temporal and spatial scale than NAPAP. Some argue that USGCRP is following the same path as NAPAP-good research will come from

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`j Hernck and **Jamieson,** *The Social Construction of Acid Rain: Some Implications for Science/Policy Assessment,* paper presented at the 18th annual meeting of the Society for the Social Studies of Science, Purdue, Nov. 19-21, 1992.

[4] Interagency Task Force on Acid Precipitation *Annual Report 1982 to the President and Congress* (Washington, DC: National Acid Precipitation Assessment **Program,** 1982).

[5] U.S. Congress, Government Accounting Office, *Acid Rain: Delays and Management Changes in the Federal Research Program* **GAO/RCED-87-89** (Washington, DC: U.S. General Accounting Office, April 1987).

6 Ibid.

[7] Oversight Review Board, op. cit., footnote 2.

[8] Oversight Review Board, op. cit., footnote 2, **1191:26.**

USGCRP, but the results will not be used to inform policy, and decisions concerning global change will be made with little more knowledge than that available today.[9] The logical questions to ask are: Why didn't Congress use the experiences of NAPAP in formulating legislation for USGCRP? and How should incorporation of lessons from NAPAP be integrated into USGCRP and future multiagency programs?

[9] E.S. Rubin, L.B. Lave, and M.G. Morgan, ''Keeping Climate Research Relevant,'' *Issues in* Science *and Technology,* vol. 8, No. 2, Winter 1991-1992, pp. 47-55.