

USING TECHNICAL DATA FOR STATE AND LOCAL GROUNDWATER POLICY MAKING

Leon E. Danielson
North Carolina State University

Technical data provide information used in groundwater policy making, both defining problems and issues and evaluating alternative policies and consequences. Data and information needs are great because of complexities in analyzing issues related to groundwater quality and potential contamination. A broad range of data and information is needed for sound policy making, from very basic information such as descriptions of aquifers to highly complicated evaluations of the risks of groundwater contamination and adverse health effects. Furthermore, data needs vary depending on the stage of the policy cycle and the audience or level of government involved.

Technical Data Considerations

Quantity of Technical Data

The supply of groundwater quality data is expanding rapidly. Information on resource use, water modeling and monitoring has increased in recent years because of the high priority being given the issue, and states are expanding their analyses, water testing and water monitoring programs.

This increase in data presents both problems and opportunities. It can improve decision making if converted to information for policy makers, but also can swamp offices responsible for organizing and evaluating the data. Perhaps the main challenge for agencies and policy makers is to establish priorities for data collection and analysis.

Diversity of Technical Data

More multidisciplinary involvement by hydrogeologists, toxicologists and soil scientists is required in groundwater analyses because the sources of groundwater contamination are numerous and their impacts are complex. As a result of this complexity, data are more technical and bigger gulfs may exist between data and useful information for policy making. This makes information more difficult

to provide. Obtaining policy consensus, that is, "Getting to Yes" (Fisher and Ury), also is more difficult because data may be interpreted differently by different policy makers.

Data Fragmentation

Groundwater programs and data are both horizontally and vertically fragmented, being located within different agencies, departments and sections and at local, state and federal levels.

In North Carolina's Department of Environment, Health and Natural Resources, under the Resource Conservation and Recovery Act (RCRA), the underground storage tank program is in the Groundwater Section, the solid waste monitoring program is in the Solid Waste Section and hazardous waste monitoring is in the Hazardous Waste Section. Yet all of these programs are relevant to groundwater. To obtain information in North Carolina about the five major Environmental Protection Agency (EPA) laws affecting groundwater, it is necessary to go to eight different state agencies.

Data often are not computerized, especially local government data. State agencies may be computerized, but the work often is done on mainframe systems, thus complicating interagency data access and integration. In addition to having a variety of different formats, state agencies rarely have data retrieval organized in a form useful to local governments (e.g., by county). For these reasons, organizing groundwater data for policy makers is a monumental task, and the capacity, in terms of manpower needed for data collection, organization and interpretation, is inadequate in most situations.

Fragmentation provides an opportunity for someone, perhaps policy specialists, to provide educational efforts with an overall perspective. Additional contributions could include improvements in coordination and communication through efforts to bring agency representatives together.

Data Versus Information

Roberts and Butler differentiate between data and information. Data is "a representation, often numeric, of facts. Information is data evaluated in the context of a particular decision" (p. 1041). Data become information only upon being used in the process of making a decision (Everest). At that point, data take on value (Danielson, et al.).

The challenge for public policy specialists is to distinguish between, and focus upon, data that can be converted to information. The real question is whether data or information is provided. Agencies have reams of data. Most are collected to meet regulatory, permitting and reporting requirements but are not analyzed and interpreted to be useful in developing policy. Generally, agencies at both

the national and state levels need help converting their groundwater data to information useful to local policy makers.

Groundwater Quality Data vs. Resource Use Data

Since all data related to the groundwater issue cannot be collected, efforts should concentrate on data that will affect decision making. Roberts and Butler suggest that resource use data (land data and water use data) are more useful than water modeling and monitoring data for local policy making because they are less costly and because they provide information for prevention of groundwater contamination, not just for remedial efforts. The resource use approach helps identify, characterize and set priorities for existing or potential problems, and helps identify alternative management options since it focuses on conflicts that may exist between land use activities and groundwater contamination.

The Value of Coalitions

The activities of the Kellogg groundwater coalition project have provided access to personnel, programs and data of state and federal agencies. It has allowed discovery of, and access to, a wealth of current and historical data, agency research and information, and developing policies.

Coalitions help set priorities, help identify state-specific data and informational needs, and allow extension to improve its role in providing information to policy makers.

The coalition process also has fostered development of new audiences such as the Southern Legislative Conference and local government associations. In many cases, these new audience groups are the people who will be making the groundwater quality protection decisions at state and local government levels.

Implications for Coalition Building

Today's extension audiences are broader and include many non-traditional vested-interest groups that have larger and increasing roles in policy making at state, local and national levels. Under these circumstances, there is need for larger, broader coalitions to represent all sides of the issues more fully. It is also advantageous to have representation from agencies providing data for policy making. These agencies often are interested in seeing their data used, have analytical and educational needs and are willing to assist in the process. However, they may not be familiar with extension's mode of operation, and we need to convey information on extension's public policy program.

In addition, there is need for more technical representation on coalitions because today's issues are more complex. Extension specialists cannot and should not try to be experts on everything. One way to utilize the expertise of others is to involve them in the coalition.

Implications for Extension and Policy Specialists

Through contact with federal and state agencies having responsibilities in the rapidly evolving area of groundwater quality protection we perceive a lack of interagency planning and coordination and a lack of analytical capacity to handle the workload. Though they possess a wealth of technical data, in these days of tight budgets, state and federal agencies have a difficult time providing information needed in making policy choices.

A useful role for public policy educators may be to help integrate and interpret data from numerous sources, to help ask critical questions and to help convert technical data into information that can be used by policy makers.

To fulfill this role, policy specialists must 1) overcome the advantage technical disciplines appear to have in obtaining federal and state funds for education and research, and 2) recognize that other disciplines may not immediately embrace the public policy education process. At a recent extension water quality work group meeting in North Carolina one question asked was, "What is this policy stuff anyway?" It takes effort, communication and a selling job on our part, to get extension involved in groundwater education programs. Thus, the task ahead for public policy educators is to be able to sell the public policy process as well as teach it.

REFERENCES

- Danielson, Leon E., E. Gaynell, M. Meij, and Charles W. Abdalla. "Increasing the Value of Technical Data for Making Groundwater Policy Decisions." *Proceedings, Conference on Water: Laws and Management*, pp. 10B-15-10B-22. Tampa FL: American Water Resources Association, 1989.
- Everest, Gordon C. "Database Management Systems Tutorial." *Readings in Management Information Systems*, eds. Gordon B. Davis and Gordon C. Everest, pp. 164-187. New York NY: McGraw-Hill Book Company, 1976.
- Fisher, Roger, and William Ury. *Getting to Yes*. Boston: Houghton Mifflin Company, 1981.
- Roberts, Rebecca S., and L. Mathis Butler. "Information for State Groundwater Quality Policymaking." *Nat. Res. J.* 24(1984): 1015-1041.