

ORIGINS OF THIS *UPDATE* ISSUE

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At the Spring 1999 UCOWR Board meeting Duane Baumann, the Executive Director of UCOWR, suggested that the turn of the millennium would be an appropriate time to have senior scholars and practitioners in the field of water management reflect on the scholarly and applied achievements and shortcomings of the past half century. A collection of these short, reflective essays could then be published as a special issue of *Water Resources Update*. Duane asked me to consider how such an effort might be organized. After some time, I agreed to organize the project, being sure that the benefits would be quite remarkable, but substantially underestimating the costs – all in the proudest traditions of water project evaluation.

A list of possible contributors was compiled in consultation with others, with the full realization that any list would be incomplete and would omit very important actors in the water arena. Indeed that is the case. Some on the list could not be contacted. Others were too over-committed to contribute, while some were physically not up to the task. Nonetheless, the idea was received with enthusiasm by all. For me, it has been a great pleasure to be in touch once again with old friends, some after a hiatus of many years.

The charge to the contributors was to assess what of importance has happened over the past half century: the new problems that have surfaced; the old problems that have been dealt with successfully; the developments in theory and methodology and the advances in application; as well as the shortcomings and failures to improve things. A tight space limit was imposed, but it was suggested that each writer devote one paragraph to how they had found their way into the water field, as well as appropriate space to their own contributions.

The result is a collection of 20 essays that range from recitals of important personal experiences to methodological and theoretical issues and broad policy concerns. The essays contain important insights, syntheses of water policy history, personal anecdotes, and lots of humor. Duplication of subjects and events was inevitable, but in these recitals we find differing views and

interpretations, differing evaluations and insights. The proof is in the reading. Editing of the essays has been minimal in order to preserve the original style.

Before proceeding to more substantive subjects, allow me to take to heart my own suggestion of reciting how I happened upon a career in water resources. As noted in a letter to the contributors, it was a “fluke.” As an assistant professor of economics at Purdue University in 1960, I had an invitation to attend a seminar and tour sponsored by the barge industry. Finding that little study of the inland waterways had been carried out, I applied for a Ford Foundation junior faculty grant to study this industry (money was easier to come by in those days). At the same time, Resources for the Future (RFF) had made a grant to the Transportation Center at Northwestern University to undertake a similar study. For unforeseen reasons, the Center had to delay the start of the study and it was mutually agreed that the funds should be made available to me and graduate students at Purdue. My RFF project managers were John Krutilla and Allen Kniesse who were wise advisors and who became close friends. When Allen started *Water Resources Research* (American Geophysical Union) with the famous and beloved Walter Langbein, I was invited to contribute part of the project findings to the first issue of that journal. I guess the work impressed RFF since Allen invited me to Washington to discuss the possibility of becoming director of their water program. I’ve been in deep water ever since.

In the paragraphs remaining, I will try to identify and interpret issues that appeared several times in the essays. The reader will have to judge whether or not these are the most important issues. Responsibility for interpretation is solely mine.

SOME MAJOR THEMES

A recurring theme has been the contesting strategies for water project evaluation: benefit/cost analysis in terms of present values (PVNB) *versus* multiple objective approaches and trade-off (Paretian) analyses. The strategy

chosen by mainstream economics in the 1960's was to extend techniques for monetizing a wider range of nonmarket benefits and costs, while sticking with the PVNB criterion. The alternatives include various interpretations of "multiple objective" evaluation and trade-off analysis in which nonmonetized objectives can be described and quantitative trade-offs calculated. The bases for multiple objective approaches are shown to precede the Flood Control Act of 1936 which is usually taken as the official mandate for benefit/cost analysis. That act itself states (from Henry Caulfield) that federal participation is called for "if benefits to whomsoever they accrue are in excess of the estimated costs, *and if the lives and social security of people are not otherwise adversely affected.*" The latter part of the quote is usually omitted when the mandate for benefit/cost is invoked. The famed Green Book of 1950 allowed for nonefficiency objectives, as did nearly all subsequent government documents.

The abolition under the Reagan administration of the Water Resources Council and the related river basin commissions is seen as the loss of 50 years of bipartisan federal and state cooperation in water resources planning and pollution control. A strong need is felt for a similar federal body to coordinate large-scale planning and to identify research priorities. Yet, institutional and political developments have been in the direction of decentralization, increasing state responsibilities, watershed management with grassroots bargaining, all in place of decision making by centralized expert bodies. In connection with this movement, social scientists should be crafting information and decision support systems to help grassroots bargaining parties expand their horizons.

The importance of interdisciplinary analyses of water issues is emphasized many times. The domination of water planning by engineers through the 1940's continued to the time of the landmark Harvard Water Program. The last 30 years has seen the "de-engineering" of river basin planning and management. Interdisciplinary skills are necessary for coordinated supply-side, demand-side analysis and design. The importance of broadly trained staff at all levels is important. The shift of analysis from deterministic models and calculations to stochastic models and sophisticated probability analysis has required new talents in the water field.

Protecting public values in the face of expanding roles for water markets appears as an important issue. "Real" costs are associated with all types of change, including the secondary impacts of water projects and large water transfers. Some of these costs involve the long-term unemployment of human resources (especially in connection with agricultural-to-urban transfers) while others involve social and cultural disruption and the loss of tax bases that support social services. Quite different views are taken of this issue. One view is that any attempt to oversee or restrict water transfers is an erosion of property rights that has a negative and potentially large effect on wealth generation and is undesirable; that these are merely "pecuniary" effects acting through the market to transfer resources to better uses. The other view is that the concept of "welfare" includes more than monetary income flows, so that appropriate policy should take cognizance of these nonmonetary dimensions. Invoking the "public trust doctrine" like in the Mono Lake case is seen as extreme and very likely capricious but "a civilized nation cushions the inevitable transition for those caught in the vise of shifting priorities and purposes." The relationship of water to equity and civil society is acknowledged to be seriously neglected.

Several points in the policy area are emphasized. One is the need to coordinate water policy with land use policies. The importance of integrated water quality/water quantity planning and management comes through "loud and clear." The fact that U.S. actions are usually crisis driven (e.g. the response to the 1993 floods) at the expense of long term planning is mentioned more than once. Questions about the watershed approach (at sub-river basin levels) are raised: while these efforts have the advantage of grassroots participation and bargaining, their goals are likely to be narrow and unrelated to broader river basin concerns. Perhaps finally, the importance of academic water-related education for both professionals and the general public is repeatedly mentioned. Our research, too, must be relevant and not overly focused on abstract mathematical models, a trend to which Walter Langbein (as founding co-editor of Water Resources Research) once exclaimed, "Ach! More flute music!" (quoted by Allen Kneese).

Now, on to the important reading.*

- * A panel of authors from this issue will present a discussion and debate, "Wisdom of the Elders: A Retrospective Look at Water Resource Accomplishments and Unfinished Tasks," at the UCOWR Summer meeting in New Orleans, July 31-August 3, 2000.