

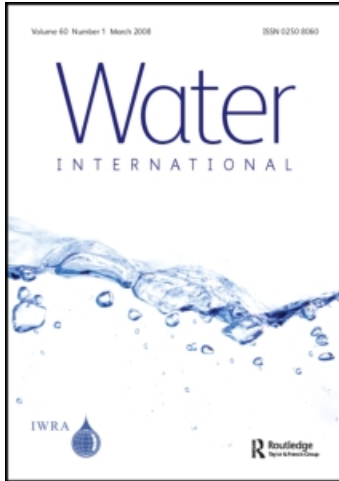
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A book conversation between the editors and a reviewer: “the soft path approach”

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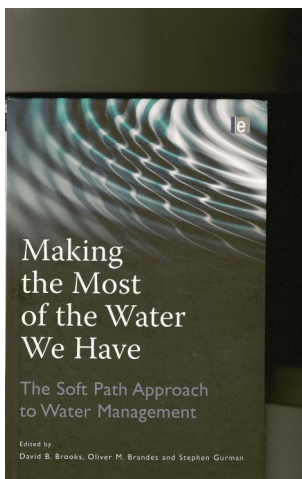
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A book conversation between the editors and a reviewer: “the soft path approach”

Note from WI Editor-in-Chief: *This is the first in what we hope will be a continuing feature of Water International, where we go beyond the conventional book review format for books that we see as thought-provoking and of potential significance to our readership. In the past, we have published as book conversations statements by the author(s) or editor(s) of the book regarding the significance of their work and its essential take-home features. What is new is that we are actually taking steps to launch a conversation, by asking for an outside scholarly assessment that serves not only as a conversation with the author(s) but as an invitation to the readership to participate by sending in reflections for possible publication in subsequent issues. Our inaugural effort is on the soft path. Because of the nature of the topic and the availability of space in this issue, this conversation may be somewhat longer than future ones.*

Making the most of the water we have: the soft path approach to water management

edited by **David B. Brooks, Oliver M. Brandes and Stephen Gurman**
(London: Earthscan, 2009).



Book editors' opening statement: whence cometh water soft paths?

David B. Brooks – Senior Advisor, Friends of the Earth Canada

Susan Holtz – Independent Consultant, Bloomfield, Ontario, Canada

Water efficiency and water conservation are today at about the same place that energy efficiency and energy conservation were in 1980. And their implications for changes in thinking about water policy during the first quarter of the twenty-first century are as significant as those that occurred for energy policy during the last quarter of the twentieth century.

In the early 1970s an ever-growing number of energy megaprojects were under consideration around the globe.

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At the same time, the modern environmental movement was coming of age with newfound political strength and analytical capabilities. Many of the proposals for energy development became the focus of intense conflict among environmentalists, project proponents, policy analysts and politicians. The resulting clash of values and ideas eventually brought about shifts in both the emphasis and the tools used in energy planning. Of these shifts, none has been more far-reaching than the effort, throughout much of the developed world, to give a central role to limiting energy demand.

The renewed attention to saving energy in the last century made for an unusual common interest among economists, physicists, engineers, ecologists, and some sectors of industry. With technical advances that were already available, many recognized that it was simply cheaper to save energy than to provide it – and, as a bonus, environmental damages were reduced all along the production and delivery chain. Somewhat later, a comparable understanding began to emerge for water planning.

However, as interest in reducing energy demand grew, some analysts realized that the savings available through conventional approaches were limited. They began to see that “energy” needn’t be a goal in itself, but could be regarded as a service for which there were many substitutes. The result was the soft energy path, a paradigmatically new analytical method for energy policy development that took as a given the need to maintain healthy ecological systems. The issues it addressed were not so much about technologies *per se* as about their relationship to society’s resilience, adaptability, and goals for social, political and cultural relationships. Its new literature resonated well with the evolving concept of sustainable development, popularly set out in the 1987 Brundtland Report.

Now, more than three decades later, some water analysts, ourselves among them, are striving to achieve the same paradigmatic shift in approach for fresh water. The literature in support of this new approach is still modest in size, and the book, *Making the most of the water we have: the soft path approach to water management*, which is discussed in the review below, is the first attempt to reach a global audience. Its contents reflect the fact that water soft path concepts are little known outside the United States and Canada, though some of the seminal ideas appear in such documents as the European Water Framework. More importantly, the book recognizes that soft paths are more than an analytical method, and that, if they are to become a force in policy-making, they must also be recognized as a human vision toward a sustainable future and as a useful planning tool for the achievable present. Our original intention in preparing the book was to bring soft paths to the attention of water professionals and specialists, both those who involve themselves in water policies and those who implement water practice. However, as we wrote and edited chapters, we realized that its reach had to be much wider. In a sense, we are all involved in water policy to a degree that we are not for energy policy, and therefore we wrote also for that massive body known as stakeholders, but with particular aim at those who influence stakeholders, as with educators, the media and non-governmental organizations.

Noting that interest in soft energy paths waned as energy prices fell in the 1990s, the editors of the book and many of the chapter authors are determined to keep water soft paths in the forefront of policy-making – first in the industrial nations, then in the less developed and still largely agricultural countries. To that end, they took two steps that were neglected with soft energy paths. First, they made governance a central concept in the water soft path approach. Why do some water policies continue to receive support while others languish? What is needed is not merely to prove that saving water is cheaper than delivering water, but to implement the measures that can achieve the savings. Second, instead of waiting for the world to come to them, water soft path analysts went to

look for opportunities to introduce soft path thinking in jurisdictions where water policy is up for discussion. To that end, and given that the case study work for water soft paths took place in Canada, some of the authors in the book reviewed below are currently at work with several Canadian urban areas and provincial governments to see what role soft paths might play in future water policy. It is premature to discuss the results of their efforts, but one can say that they reflect a growing concern not just for a safe water system but for one that is both sustainable and affordable.

Several years ago, in a brief history of the soft energy path, we wrote:

Never before – and only rarely since – had environmentalists developed a hard-headed vision for an entire sector of the economy. Analytically, it meant designing rigorous scenarios that took into account real-world constraints, and making choices for those scenarios that were not always ideal, yet kept sight of over-riding environmental and socio-economic goals. Psychologically, it meant behaving like a decision maker rather than a critic. . . . For social critics, this is not the most comfortable stance . . . but it provides a model for public policy debate that is especially valuable in the more recent context of sustainable development, and almost essential for environment-related issues where there are a multitude of problem sources and varying consequences of dealing with them, and where there is no one best route to achieving economic, social, and environmental goals (Holtz and Brooks, 2003, p. 217).

We, along with the other editors and all the chapter authors, have created this book in the hope that, 20 or 30 years from now, someone will write about water soft paths in that same way.

Reviewer's initial response: the vision and its implementation

Edna Loehman – Professor Emeritus, Purdue University

This book presents a new water management paradigm, the soft path for water. It is the first book to present a comprehensive view of the soft path and focuses on water solutions: not just technologies but also analysis methods and governance. The importance of this book is its vision and attempt to persuade readers – stakeholders, educators, the media, non-governmental organizations (NGOs), and water managers – to adhere to the soft path paradigm. As stated in the Introduction: “if [the soft path is] to become a force in policy making, [it] must be recognized as a human vision toward a sustainable future . . .”

The book is organized in three sections: Part I, Water soft paths as human vision; Part II, Water soft paths as analytical method; Part III, Water soft paths as planning tool. In my opinion, these three divisions devolve into only two aspects: the vision and its implementation. Because it has many authors and relies on case studies, it is not actually a “blueprint” or unified text for what the soft path is and how to achieve it. Perhaps the authors felt it is more important to present the paradigm in a timely way than to wait to develop a more unified presentation. More detailed comments about the vision and its implementation follow.

Soft path as a vision

Before I read this book, I had a pre-conceived notion of what “soft path” meant in contrast to a hard path: I thought that “soft” meant a focus on non-structural and small scale approaches, rather than a focus on supply management through construction of new supply systems. Reading this book showed me that my view was too narrow: there is a vision that overarches the techniques.

As Peter Gleick states on p. 53 of this book: “. . . there is, as yet, less than full agreement on the characteristics of the soft path – indeed . . . there is still a healthy discussion under way about the definitions, components, and implementation of a “soft path”.

Gleick (2002, 2003) and David Brooks (2005, Brandes and Brooks 2006) have been key in defining and implementing the soft path for water. Gleick is the President of the Pacific Institute which addresses water and development issues while upholding equity, economy, and the environment (www.pacinst.org). Brooks, in Bott *et al.* (1983) first worked on applying the soft energy path for Canada and has been a pioneer in applying soft water path concepts for Canada. He serves as Senior Advisor for fresh water for Friends of the Earth Canada. Both bring years of experience to the subject of this book.

The first chapter gives four principles that make a “soft path” for water different from a “hard” one:

- (1) Treating water as a service rather than an end.
- (2) Making ecological sustainability a fundamental criterion.
- (3) Matching the quality of water delivered to the use.
- (4) Backcasting: planning from desired outcomes to how it can be achieved.

In my opinion, the second principle is the most distinguishing element to explain the difference between hard and soft paths. I would like to see even a stronger statement of this environmental ethic, namely that humans should set limits on their consumption of water (and other earth resources) if it is necessary in order to sustain the earth as we know it. In other words, the soft path for both water and energy means to have a light touch on the Earth.

The first and third principles can be subsumed under the label of efficiency more broadly defined as “non-wastefulness”; the term non-wastefulness was used by Hurwicz (1973) to mean minimizing the resources needed to achieve social optimality. Satisfying the human needs associated with water services has to do with the objectives for social optimality, while the quantities/ qualities for meeting these needs have to do with the means which should be conserved in light of their opportunity costs. Thus, these two principles could be adopted even by traditional water managers if they recognize non-wastefulness as socially desirable. The fourth principle is discussed below in the context of a planning process for the soft path; the backcasting method is not unheard-of in other applications.

Sustainability is a stronger goal than conservation, which could merely mean saving water without the ultimate goal of maintaining ecosystems. Although both may use the same conservation tools, the soft path is distinguished from “demand management” (see p. 10 of the Introduction) because of its emphasis on sustainability. Gleick in chapter 1 says that: “The hard path, by not returning enough water to the natural world, ultimately harms human and other ecological use(s) downstream.”

The soft path concept was first described by Amory Lovins for energy. The extension of the soft path concept for energy to water is not one-to-one, as discussed in several chapters in this book. For water, “sustainability” replaces “renewability” as a key goal of the soft path. Whereas “mining” or extraction is a common aspect of energy resources, water is less commonly mined. Through the water cycle, water is renewable on a global scale. However, its temporal, location, and quality aspects can be heavily impacted by water withdrawals.

Both efficiency and a focus on service were also principles for the soft energy path. Matching the quality of water to the nature of its use has to do with efficiency of supply: it is wasteful to use high quality of water (such as groundwater) for low quality uses such as

waste flushing. Treating water as a service rather than an end also has to do with efficiency: we only use what is necessary to provide the service in question (e.g. providing aesthetic gardens by selecting plants with low water needs; using water-efficient clothes- and dish-washing machines). The point is made that people care about the services provided, not the quantity of water used; thus they will accept a reduced quantity with the appropriate technologies for showers, garden watering, and other activities.

Underlying the focus on service rather than needs is the hypothesis that human needs can be met without harming natural systems with the appropriate soft technologies; thus society should accept a soft path because it would allow for both social goods of meeting human and natural system needs. Lovins' writings, especially his *Foreign Affairs* article (1976), attempted to persuade government, industry and academic circles that energy needs could be acceptably met – at less cost than the hard path – via the soft path. For water, the hard path is certainly failing and wasteful, e.g. through leakage and evaporation of large dams. The brief case studies of this book indicate that water demand along a soft path could be cut by about 50% while continuing to meet needs. However, support for “success” of the soft path – especially in light of population growth and climate change – is still incomplete.

Implementation of the soft path

The fourth principle above has to do with a process (both analytical and social) for achieving the soft path. Gleick's definition of the soft path in chapter 4 is also about the process of the soft path: water providers should work with the community to develop water management in a way that is not top-down.

In this book, the process of creating a soft path plan for water is described in a short appendix and is briefly illustrated with cases from Canada in part 2 of the book. Nearly the same process – termed “soft path analytics” – was concurrently described by Brooks and Holtz (2009). “Analytics” is described from the viewpoint of a planner who would have to prepare various types of information to develop and execute a soft path plan. However, executing a planning process – to define a “desired future” and how to get there – requires more than the efforts of a planner: it would require interdisciplinary efforts for information development and policy design, public participation to express preferences and help create alternatives, and governance to put plans into action. Sorely needed for the soft path is a more complete blueprint of process.

Backcasting and the planning process. Backcasting – a key distinguishing feature of planning for the soft path – is referred to throughout the book as a primary feature for soft path implementation. For backcasting, futurist thinking first identifies possible goals and then identifies the technology, policies and incentives that would be needed to achieve these goals. Soft path goals should focus around water quality and sustainability in the face of climate change. Chapter 8 states that “this visioning step may prove to be the most difficult part of the soft path approach. . . . This difficulty in defining a reasonable target future for water use should not dissuade practitioners from pursuing a soft path for water” (p. 107).

In contrast, planning for traditional supply management has been less complex: balancing supply with a given demand has been the goal, and structural alternatives are compared to identify which one most efficiently meets the given demand. It is claimed that traditional planning studies have a shorter time framework than a soft path (Brooks and Paehlke 1980), yet US Army Corps projects were often analyzed in terms of effects lasting 100 years!

Backcasting should be imbedded in an overall planning process. As stated by Gleick (2002): “The soft path requires governments, communities, and private companies to collaborate to meet water-related needs, rather than merely to supply water.” Only in recent years has public participation (PP) been considered desirable in a planning process for water management, and government applications of PP have often been more a matter of public comment than true participation. Except for brief discussion of multi-stakeholder involvement in chapter 12, this book sheds little light on public participation and the planning process.

To help further develop the soft path planning process, it would be useful to consider other planning approaches with similar philosophies in terms of their techniques and successes. Some are found in academic literature while others are from an applied arena. A similar “backward” approach is “value focused thinking (VFT)” (Keeney 1992). Keeney suggests that for VFT, one should start with what is desired, rather than restricting attention to the available alternatives, and then let values guide the creation of better alternatives. However, the evaluation methods he developed are quite formal and quantitative. There are also methods of “soft operations research” and interactive planning approaches (Bordley 2001) that may be relevant.

One process of clear relevance is integrated water resources management (IWRM) which has brief mention in the book. This process has been used around the world; it combines stakeholders, governments and multiple disciplines in making water management decisions to achieve desired purposes. As described by the Global Water Partnership Toolbox (<http://www.gwptoolbox.org>), IWRM “recognizes that exclusively top-down, supply led, technically based and sectoral approaches to water management are imposing unsustainably high economic, social, and ecological costs on human societies, and on the natural environment . . . [IWRM is] a process of change which seeks to shift water development and management systems from their currently unsustainable forms . . .” This website also contains a number of international case studies of IWRM applications that could be usefully examined for elements of success.

Another example is that of the Sacramento Water Forum (www.waterforum.org), discussed below, which used stakeholder participation to design programs that will “maintain the long term sustainable yield of the groundwater basin, conserve municipal and industrial water use, and protect fish in the American River basin.” Other general process frameworks of relevance are processes for “deliberative democracy” and Vision 2020 applied by municipalities in the US. True integration of stakeholders in planning has been accomplished by “deliberative democracy” applied to Stakeholder Ecosystem Governance under the US Endangered Species Act (www.ssc.wisc.edu/~wright/deliberative.html).

Alternatives: technology choices and incentives. Lovins (1976) described the soft path for energy as that resulting from using “soft technologies” which are decentralized and less structural than large-scale power plants. Because of his background in physics and engineering, technology has been a focus of his work.

In contrast, this book has little organized discussion of technologies that may be relevant for achieving a soft path for water. Although examples of technologies are mentioned in part 3, a chapter dedicated to relevant alternatives would seem to make the book more complete.

While water-saving appliances and toilets are examples of decentralized technologies that could help balance demand with “no new water”, larger scale technologies such as desalination and recycling/reuse would seemingly play an important role in areas with very limited freshwater supplies. That is, sustainability may very well require large-scale “high tech” that may require large government involvement for investment!

Similarly, there is no dedicated chapter about non-structural demand management methods such as water pricing, tax credits, and other incentives for supporting water conservation (see Cantin *et al.* 2005, for a review of methods). For example, Michelsen *et al.* (1999) found that the combination of water pricing with education could be very effective for conservation.

Analysis methods. The described process (see Annex) contains analytic elements that are not very different from a traditional water balance study: develop a demand projection for the local area and review water supply options. The decision support tool briefly described in chapter 8 and Figure 8.2 – the Water Soft Path Scenario Builder – develops and uses quantitative information about use by sector to help make demand projections and evaluate alternatives. “No new water” is the target of case studies. The Scenario Builder compares a soft path to “business as usual” (BAU), similar to comparing alternatives to the “base case” or “without” case in traditional planning to identify benefits and costs. Results are presented only in terms of water use for BAU, demand management, and soft path technologies and practices. Again, urban, watershed and province applications are more illustrative than helpful.

Not mentioned is benefit–cost (B–C) analysis, a method long associated with water project development. B–C analysis has been controversial because of issues of quantification of environmental and other non-monetary effects and the discount rate for valuing future effects. It should be noted that much is being altered in B–C methodology, such as including – at least in theory – income effects and the value of ecosystem services. B–C analysis can still be useful – even though imperfect – for planning if it is embedded in a planning process as a tool for comparing alternatives and developing new alternatives, rather than as a hard-and-fast decision rule.

Governance and change. This book proposes ecological governance (EG) (chapter 5) as a critical piece for turning plans into decisions and investment. Governance concerns who should execute a planning process (e.g. a government agency or a water utility), how stakeholders would be involved (e.g. advisory only or involved in decisions), and setting rules/regulations and incentives. EG is presented only in general terms in chapter 5, and part 3 contains examples from a variety of countries with various approaches to governance and planning.

Lovins (1977) explained that the most profound difference between the soft and hard paths is socio-political: both paths entail social change “but the kinds of social change for a hard path are apt to be less pleasant, less plausible, less compatible with social diversity and freedom of choice, and less consistent with traditional values than are the social changes which could make a soft path work.” For energy, Lovins called for “small, decentralized, renewable sources closely matched to end use needs” (Tugwell 1980, p. 107). Morrison and Lodwick provide an extensive list (72 sub-categories) of potential impact differences for energy, in the broad categories of socio-political impacts, conflict and equity impacts, economic impacts, quality of life impacts, and environmental impacts. For example, the soft path for energy was described as leading to more public participation and democratic decision-making.

Morrison and Lodwick’s categories may not fully apply to water. While decentralization is a distinguishing element for the energy soft path, water supply is by its nature decentralized or localized, and water management has traditionally been at a local level or less than at a watershed scale. Soft water management may need to be scaled up to the watershed level for sustainability reasons, as is suggested in chapter 18: “. . . the watershed scale . . . is

critical as the soft path quickly blurs from water management to broader issues of governance and collective social decision-making . . .” (p. 259).

Brandes in chapter 5 (p. 69) suggests linking watershed governance to a new paradigm of “democratic experimentalism” which focuses on “how policy and practice can be made more responsive to innovation while promoting resilience essential in complex and integrated systems.” A relevant question raised by Tugwell (1980) for energy but also relevant for water is: how much government/regulation may be required for achieving sustainability? As more soft path applications are developed by the authors of this book, the outcomes will be useful to answer these questions. The answer will be important – as in the case of energy – to determine acceptability of the soft path.

Case studies

Part 2 of the book has brief examples from Canada, while in part 3 there are international case studies from England, the European Union, Australia, South Africa, India and the Middle East, and North Africa. These cases are only briefly described in terms of water reforms in each, i.e. they are not explicit examples of the soft path approach. In my opinion, a few more extensive case studies would have been more helpful to demonstrate implementation: what processes and analysis methods were used to develop change in these countries?

No specific US case is included. There are many relevant examples around the country, e.g. “locally led conservation” at the watershed level supported by the Natural Resources and Conservation Service of the USDA. The previously mentioned Sacramento Water Forum is a large planning effort with many stakeholders with the twin goals: “to provide a reliable water supply up to the year 2030” and “to preserve the Sacramento region’s environmental crown jewel, the lower American River”; it resulted in important agreements and new institutions.

Concluding remarks

The message of this book concerns making a change in the way humans see their relationship to water. Readers who adopt the vision of the water soft path will hopefully follow the lead of Gleick, Brooks, and the other authors in this book to influence water planning processes, investment in technologies, and governance toward the goals of sustainability for both human and natural systems.

A novelty and strength of this book is that it combines often disparate elements: philosophy, analysis, and process/ governance. The review comments above repeatedly called for specificity and more detailed comparisons in these elements. This is a tall order which cannot realistically be met in one small book, especially since “The Great Work” is still at a beginning. The authors of this book should have their work cut out for several more books!

In the meantime, change is happening, and it may not be necessary to explicitly espouse the soft path to achieve improved planning and increase investment in water conservation and water quality. Especially in water-short regions, efficiency – non-wastefulness – is now a goal even among traditional water managers. For water as for energy, as Robinson (1982, p. 40) pointed out, policy-makers may reject the soft–hard distinction while adopting soft path type policies.

Along these lines, it is exciting to note the recent proposed changes to principles and standards for water resource planning by all federal government agencies in the United States. (Council on Environmental Quality, 2009) The proposed document states that

“all Federal water resources implementation studies shall: A. Protect and restore natural ecosystems and the environment while encouraging sustainable economic development; B. Account for ecosystem services; C. Avoid the unwise use of floodplains, flood-prone areas and other ecologically valuable areas; D. Utilize watershed and ecosystem based approaches . . . ”

I am sure the authors of this book would applaud these new goals of water planning.

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Response

Susan Holtz

Edna's right. Although we could have focused more attention on models for implementation and the participatory planning/visioning process, there are real constraints of time, space and money. Furthermore, I think there are two cogent reasons not to include a lot more in this book. One is that there is a huge literature and body of experience in participatory processes in other fields and policy areas. This material can and doubtless will be tapped when needed in water planning. The other reason is that many key water-planning decisions are local or regional, although some are national or sub-national. Processes that are

effective in these many different decision-making jurisdictions vary so widely with scale and with different cultures, political institutions, economies and geographies – even within a place like rural Ontario, let alone in different countries or regions – that no single model for participatory planning is applicable everywhere.

However, I will also add that in my opinion, the participatory visioning/planning step is one of the real bottlenecks in widespread adoption of the soft path approach. This is because for anyone in authority, opening the door to such a process is always troublesome. It is expensive and complicated, it slows things down, and it can be socially and sometimes politically polarizing and disastrous. (I speak as a consultant who has run a number of such participatory processes.) Despite the fact that valuable new perspectives and facts usually emerge at the end, albeit with lots of repetitious un-useful material, authorities almost always are pushed into such a process. It is only when an issue or decision is so divisive and difficult that such a politically buffering process is usually undertaken.

The costs of making a decision without broad public participation must be very great to outweigh the expense, slowness, complexity and rise in political temperature that such a process entails. Consequently, unless there is a perceived water crisis of some sort, this step will be difficult to implement at all, let alone implement effectively. And the more pressing the issue, the more difficult it is to develop wide public buy-in to a cohesive vision. I don't doubt that a whole book on case studies on this aspect alone of water soft path work would be useful.

WATER INTERNATIONAL INVITES BRIEF CONTRIBUTIONS TO THIS CONVERSATION ON: Making the most of the water we have: the soft path approach to water management. Please send them to iwrapubs@gmail.com.