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## Collaborative governance in the CALFED program: Adaptive policy making for California water

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Collaborative Governance in the  
CALFED Program: Adaptive Policy  
Making for California Water

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# Collaborative Governance in the CALFED Program: Adaptive Policy Making for California Water

## Abstract

A new, collaborative model of governance has emerged in the CALFED program, which manages much of California's vast water system. This model emerged out of many years of dialogue among the state's major stakeholders and public agency leaders frustrated by the inability of traditional governance by the three branches—executive, legislative and judicial—to establish significant policy to address the competing needs of the environment and urban and agricultural water users. This paper reports on our research into the history, logic, and workings of this evolving program from its inception as an informal memorandum among agencies in 1994 to its 2004 incarnation with a formal, legislatively established oversight authority. CALFED has unlocked many of the paralyzing stalemates that afflicted California water management in the past; it has built social and political capital among previously warring parties; it has built shared understandings and heuristics among disparate interests and agencies; and it has improved the quality and acceptability of scientific information on which decisions are based. It has allowed just-in-time decision making which is adaptive to rapidly changing natural conditions and needs. The contrast from the traditional governance model to the "CALFED way" involves eight dimensions. Collaborative processes have replaced gridlock and litigation; a comprehensive framework with linkages and balance among activities replaced project-by-project decisions; multipurpose interagency projects increasingly became the norm rather than single agency projects; local and regional solutions were used instead of just centralized decision making; public involvement was greatly increased, with stakeholders playing leadership roles; independent science reviews modified agency- and client-based science; accountability and transparency of decision making greatly increased; and flexible, adaptive management and joint learning replaced mechanistic decision making based on assumptions and mandates. Whether and how this emergent model of governance can be sustained remains to be seen. Obstacles include the expectations and understandings of many who assess it in terms of a machine model of the world and want to remake it into the traditional model. The strength of collaborative governance is its ability to respond to changing conditions and new information and to create new and unanticipated strategies. The emergence of CALFED converges with the growing recognition in public administration and business that organizations faced by uncertainty, complexity, rapid change and fragmentation must create capacity for adaptation and innovation.

Working Paper 2006-01

Collaborative Governance  
in the CALFED Program:  
Adaptive Policy Making for California Water

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## **ABSTRACT**

A new, collaborative model of governance has emerged in the CALFED program, which manages much of California's vast water system. This model emerged out of many years of dialogue among the state's major stakeholders and public agency leaders frustrated by the inability of traditional governance by the three branches—executive, legislative and judicial—to establish significant policy to address the competing needs of the environment and urban and agricultural water users. This paper reports on our research into the history, logic, and workings of this evolving program from its inception as an informal memorandum among agencies in 1994 to its 2004 incarnation with a formal, legislatively established oversight authority. CALFED has unlocked many of the paralyzing stalemates that afflicted California water management in the past; it has built social and political capital among previously warring parties; it has built shared understandings and heuristics among disparate interests and agencies; and it has improved the quality and acceptability of scientific information on which decisions are based. It has allowed just-in-time decision making which is adaptive to rapidly changing natural conditions and needs. The contrast from the traditional governance model to the "CALFED way" involves eight dimensions. Collaborative processes have replaced gridlock and litigation; a comprehensive framework with linkages and balance among activities replaced project-by-project decisions; multipurpose interagency projects increasingly became the norm rather than single agency projects; local and regional solutions were used instead of just centralized decision making; public involvement was greatly increased, with stakeholders playing leadership roles; independent science reviews modified agency- and client-based science; accountability and transparency of decision making greatly increased; and flexible, adaptive management and joint learning replaced mechanistic decision making based on assumptions and mandates. Whether and how this emergent model of governance can be sustained remains to be seen. Obstacles include the expectations and understandings of many who assess it in terms of a machine model of the world and want to remake it into the traditional model. The strength of collaborative governance is its ability to respond to changing conditions and new information and to create new and unanticipated strategies. The emergence of CALFED converges with the growing recognition in public administration and business that organizations faced by uncertainty, complexity, rapid change and fragmentation must create capacity for adaptation and innovation.





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## Introduction

Over the last 10 years a remarkable, large-scale collaboration among 25 state and federal agencies and dozens of stakeholders in California has managed much of the water that serves this state of 35 million people. It is known as the CALFED program, and it represents a leading edge experiment in a new form of governance suited to the pace of change and the fragmentation and conflict of contemporary times and to addressing the competing demands on a limited resource.<sup>1</sup> CALFED has had many successes in building the capacity of the state to make informed and robust decisions in a timely way and in creating social, political, and intellectual capital among formerly warring agencies and stakeholders. The resource has benefited in many ways.<sup>2</sup> Like any experiment, CALFED has its failures and limitations. It challenges the traditional forms of governance—pluralist politics, bureaucratic decision making, and the courts—but

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<sup>1</sup> This paper is based primarily on research conducted between 1996 and 2003, although we have tracked recent developments to a limited degree. The research involved attendance at dozens of CALFED meetings, where we took detailed, nearly verbatim notes. We also conducted dozens of in-depth interviews with participants and staff. Researchers included Catherine Hudzik, Amanda Kobler, Laura Kaplan and Sarah Connick, on whose dissertation this paper is significantly based (Connick, Sarah. 2003. *The Use of Collaborative Processes in the Making of California Water Policy: The San Francisco Estuary Project, the CALFED Bay-Delta Program, and the Sacramento Area Water Forum*, University of California, Berkeley).

The research entailed the review of thousands of documents produced by CALFED, as well as newspaper articles. A thorough search of library databases shows that there is little scholarly work on CALFED and much of what there is remains to be published. One exception is Patrick Wright, "Fixing the Delta: The CALFED Bay-Delta Program and Water Policy Under the Davis Administration," *Golden Gate University Law Review Environmental Law Journal* 31, 4, 331-349, 2001. Unpublished work includes: Jody Freeman and Daniel A Farber, "Modular Environmental Regulation" *Duke Law Review*, forthcoming; Boyd W. Fuller, *Trading Zones: Cooperating for Water Resource and Ecosystem Management When Stakeholders Have Apparently Irreconcilable Differences*, dissertation, Massachusetts Institute of Technology, Dept of Urban Studies and Planning, 2005; David Nawi and Alf W. Brandt, *CALFED Bay-Delta Program: From Conflict to Collaboration*, December 2002, on file with the author; Helen Ingram and Leah Fraser, "Path Dependency and Adroit Innovation: The Case of California Water," University of California, Irvine; Helen Ingram and Barbara Bradley, "Water Sustainability: Policy Innovation and Conditions for Adaptive Learning," draft discussion paper prepared for the SMEP Academy.

<sup>2</sup> Sarah Connick and Judith Innes, "Outcomes of Collaborative Water Policy Making: Applying Complexity Thinking to Evaluation," *Journal of Environmental Planning and Management* 46, 2, March, pp. 177-197, 2003.

it has neither the legitimacy nor the recognition of those familiar institutions. It was invented to fill the governance gaps left after these had produced only stalemate in decades of water management. It fits only uneasily, however, into this traditional governance system. It remains to be seen whether and how this new networked system of distributed intelligence can be managed in a way that can be institutionalized over the long term.

This paper tells the story of CALFED's emergent model of collaborative governance, tracing its history, its logic, and its workings. It looks at major changes it has introduced into California government and politics, at the innovations it has produced, and at the outcomes. It outlines, finally, the challenges CALFED faces today in dealing with major biological, fiscal and political problems and the demands to remake it in a more traditional mold. The question is whether the collaborative heuristics and practices CALFED has developed will persist in the face of the dominant norms and institutions of governance. Like all complex systems, CALFED will have to adapt if it is to be sustainable.

## **Water in California**

In California, natural water distribution is strikingly mismatched to human settlement patterns. Human beings are found in abundance where water is not. In particular, much of the water comes from the northern part of the state as it drains from the Sierra Nevada, while the largest population is in the south and the fastest growing in the central valleys which are also the sites for the state's massive agricultural industry. Six months a year without rain means water must be stored in great quantities. California's natural waterways have been elaborately augmented with dams, canals, aqueducts, and pumps—all the engineering necessities to store and transport massive quantities of water across the vast reaches of the state. The water delivery system's creation and operation has sculpted a landscape of winners and losers and costs and benefits in both human and ecological communities.

This situation has generated conflict and controversy. Indeed, water is the state's most contested resource and, arguably, its most politically conflictual issue. As the saying goes, "In California, whiskey is for drinking and water is for fighting." Most of the state struggles with declining water quality, increasing pressure upon water supply, and environmental degradation. California is home to endangered species of fish and other wildlife which depend on its water. A cottage industry of environmental organizations has emerged to defend nature in many public decision making contexts. Agriculture in California holds a privileged place due to its importance to the economy and the politics. Others outside the core urban, agricultural and environmental players have substantial

but differing stakes in water management, including the business community, tribal nations, farm labor, and watershed communities.

There is much at stake. The San Francisco Bay-Delta supplies drinking water for nearly  $\frac{2}{3}$  of the state's population and irrigation water for millions of acres of California's valuable cropland through the State Water Project (SWP) and the federal Central Valley Project (CVP). The Delta plays a major role in maintaining biodiversity, but the huge project pumping facilities often trap and kill fish. Moreover, the dams interfere with spawning and change the temperature of the water in ways that harm the fish. The water projects supply water to their users via long term water contracts, which are increasingly in dispute as demands on the system increase. Complicating matters is the system of water rights which are complex and often conflicting. Agricultural interests have often been unwilling to compromise or negotiate because of these rights, though their "rights" can be limited when they interfere with protection of the environment. Finally, the state's urban regions continue to grow, and its citizens maintain expectations to own single family houses surrounded by water-hungry lawns. In this context, governing California's water is no small feat.

### **Traditional Governance in California Water<sup>3</sup>**

In California, water governance has traditionally been conducted in three ways. The first is political power brokering among interests in the classic pluralist model. Competing politicians build support from various constituent groups by using political influence to bring about results that meet the needs and desires of these groups. In water, this has typically involved competition among interests and geographic regions for projects such as dams or water treatment plants. Larger questions about what is good policy for the state as a whole or how best to use water are largely ignored in favor of distributing funding according to who has power or entitlement.<sup>4</sup>

The second form of governance has been through a bureaucratic system of public agency decision making. Each agency creates and administers rules and regulations, exercises enforcement or allocates resources according to its comparatively limited mission and mandates. The traditional form of this system does not allow for cross agency interactions or joint problem solving. Agency staff is typically embedded in a hierarchical authority system. Their missions conflict, as one agency protects fish and wildlife and another focuses on

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<sup>3</sup> See Jody Freeman, "Collaborative Governance in the Administrative State," *UCLA Law Review* 45, 1-98, 1997-1998, for an excellent discussion of this traditional model and why collaborative approaches are needed.

<sup>4</sup> For how this process works in regional transportation planning, see Judith Innes and Judith Gruber, "Planning Styles in Conflict: The Metropolitan Transportation Commission" *Journal of the American Planning Association* 71, 2, 177-188, 2005.

agricultural water supply. Since, however, it is the same water that is needed for both fish and agriculture, separate decision making often results in contradictory public actions which harm both missions. Moreover, the bureaucratic decision making system is slow and cumbersome, with the result that action occurs months or even years after the problem is recognized. Sometimes weather, fishery health, or political conditions change so quickly that action is useless or even counterproductive by the time it is actually implemented.

The third form of traditional governance that works together (or in competition) with the first two is the court system. A judiciary interprets the legality and constitutionality of bureaucratic and legislative decisions. Players who are unsatisfied with the results of the political and agency governance mechanisms can seek judicial redress. Indeed, in California they often do just that, and lawsuits or threats of suits stop many public actions. This judicial system does empower certain interests like environmental ones which would otherwise have little leverage, but it is not adaptive. That is, courts must decide things on points of law, using only the evidence presented to them by parties with legal standing. This means that important information or stakeholders who do not have this standing will not be considered. It also means that broader issues outside the contested legal issue will not be considered. A lawsuit could hinge on a technical question such as whether proper procedure was followed, even though the parties care about other issues such as whether the water must be cleaned up. The judge cannot set parties to problem solving about the latter. Increasingly, however, judges are applying more adaptive methods such as bringing in technical masters to come up with solutions or sending cases to mediation, where issues not strictly on the legal table can be addressed.

### **The Bay-Delta Accord and the Creation of CALFED**

The Bay-Delta Accord, which established CALFED, came about as a result of years of frustration and conflict. Starting in the late 1980s, a number of agency decisions under the Endangered Species (ESA) and Clean Water Acts, designed to protect endangered fish and their habitat, curtailed water exports from the Delta. These actions—pursued by different agencies in relative isolation from one another—led to a series of court battles across the state involving water users, environmentalists, and the regulatory and water management agencies. These court battles resulted in unpredictability in water supplies and led to stalemate over water management policy. The last straw came in 1994, when Standard & Poor's "warned bond investors that political gridlock surrounding unresolved environmental issues in the Bay-Delta threatened to downgrade the credit ratings of public utilities throughout the state."<sup>5</sup> The impact of such a downgrading

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<sup>5</sup> California Council for Environmental and Economic Balance. August 1995. "Future of the California Economy and the Bay-Delta Accord." A Policy Briefing Paper. San Francisco.

would be widely felt in public agencies and businesses statewide. Business as usual in the water arena was not working for any of the interests.

CALFED has its origins in dialogues and negotiation efforts during this period among the most powerful water stakeholders. It did not happen overnight, but only after years of building relationships, knowledge, and agreements among stakeholders. It has roots in the San Francisco Estuary Project, a collaborative stakeholder/agency effort to develop a water conservation and management plan for the Estuary starting in the late 1980s.<sup>6</sup> This produced near consensus on a salinity measure of the Bay-Delta's biodiversity capacity. The U.S. Environmental Protection Agency issued it as a federal water quality standard. The Republican state administration, however, contended that it was inappropriate for the federal government to promulgate such a standard when meeting it depended on changing the allocation of water to various uses, which was a state responsibility. In the meantime, the agencies had formed the so-called ClubFed, a collaborative effort of federal and state agencies to work on water issues. The Governor established the Bay-Delta Oversight Council, including the southern California stakeholders who had not been involved in the Estuary Project. He, thus, tacitly acknowledged the importance of stakeholder participation and dialogue, even though he did not support the Estuary Project findings or their implications for state policy. Later, he was to set up a Water Policy Council for state agencies to work together. In parallel with much of this, agricultural, environmental and urban stakeholders were holding a set of discussions known as the Three-Way Process to identify Bay-Delta problems and potential solutions. They built constructive relationships among themselves, agreed on principles for addressing the problems, and provided some of the technical information and alternatives that were used in the Accord.

Elizabeth Rieke, one of the principal architects of CALFED and leader of the interagency state-federal team that put together the Accord, describes the situation when she arrived in 1993:<sup>7</sup>

... when I was first drawn into the Bay-Delta conflict, California agricultural, urban, and environmental interests had been fighting for more than a decade over the level of water-quality standards needed to protect the fish and wildlife resources of the Bay-Delta. The fractious debate was over sustainability—sustainability of the

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<sup>6</sup> Judith Innes and Sarah Connick. "San Francisco Estuary Project," Case 5 in *Consensus Building Handbook*. Lawrence Susskind, Sarah McKearnon, and Jennifer Thomas-Larmer, eds., pp. 801-827. Sage Publications: Thousand Oaks, 1999.

<sup>7</sup> The following history of the Accord is drawn primarily from Elizabeth Ann Rieke, "The Bay-Delta Accord: A Stride Toward Sustainability," *University of Colorado Law Review* 67, Spring, 341-369, 1996.

natural environment and sustainability of the economies dependent on water diversions from the Delta...

The debate over water-quality standards was not about the typical end-of-the-pipe restrictions on discharges into a water body; rather, it concerned salinity and flow criteria that would require increased freshwater outflows from the Bay-Delta. Those criteria would necessarily reduce water deliveries to central and southern California users, if not also to northern users (p. 342).

She goes on to explain the importance of the salinity measure to biodiversity in the Bay-Delta.<sup>8</sup>

From the 1970s through the early 1990s, indigenous fish populations in the San Joaquin-Sacramento system experienced dramatic declines due to diversions of fresh water, “reverse flows” created by the large pumping plants, an extended drought, and marked increases in populations of introduced fish species. When freshwater outflows through the Delta...decrease, the low-salinity transition zone is compressed in size and moves upstream into areas unsuitable for nursery habitat and evolution of new tidal marshes (p. 344).

This salinity measure in combination with the listing of some fish species as endangered was, Reike pointed out, a precursor to real limits on water users.

By the spring of 1993, two fish species had been listed under the...ESA, and petitions to list others had been filed. Through the ESA consultation process, the listings had, or would soon, result in restrictions on the operations of the two major water projects, significantly affecting the amount of water they would be able to export to cities and farms (p. 345).

The doctrine of cooperative federalism embodied in the Clean Water Act and other federal pollution control statutes, according to Rieke, meant that:

each state may assert primacy over water-quality decisions by establishing a regulatory framework that meets certain minimum federal requirements. Such a state is then charged with adopting and enforcing its own regulatory program. The components of the state program, however, must comply with federal guidelines specified by statute and rule; U.S. EPA must approve the

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<sup>8</sup> Much of northern California’s freshwater runoff from the Sierra snowpack flows west to the ocean through the Bay-Delta. The transition zone where fresh mountain runoff water meets salty ocean water changes location depending upon how much fresh water is allowed to flow out to the ocean, rather than being diverted to agricultural and urban uses through the pumps of the state and federal water projects.

components. When the state program fails to meet the federal guidelines, EPA is required to step in, reassert federal jurisdiction, and adopt and enforce a substitute federal program (p. 356).

This system, however, was not working in California, as neither state nor federal agencies were fulfilling their obligations. As Rieke tells the story,

The State Water Resources Control Board had repeatedly failed for more than a decade to adopt a water-quality plan adequate to stem the decline in fish populations in the Bay-Delta and its tributaries. More than once...EPA had warned California water officials that more protective standards were required to satisfy Clean Water Act mandates, but EPA had never adopted standards of its own.... EPA had repeatedly deferred to the state process that...continued to devise, but not adopt, new protective proposals (p. 346).

In 1993, the Governor ordered the State Board to withdraw its most recent proposal to establish new water-quality standards for the Bay-Delta. At that point, the U.S. Secretary of the Interior said there was a water-policy leadership vacuum that the federal government would be forced by law to fill.

Only twenty months after this crisis, in summer of 1994, state and federal officials declared that peace had broken out in California's long-running water wars. They announced joint state-federal Principles for Agreement to protect the Bay-Delta's natural resources and to provide reliable water supplies to farms and cities. Joining in the announcement were representatives of the agricultural, business, environmental, and urban sectors. These principles became the basis for CALFED. Although EPA adopted water-quality standards for the Bay-Delta at the same time, the agency committed to withdrawing the federal standards as soon as the State Water Resources Control Board adopted a final Bay-Delta water-quality plan consistent with the agreement. The Accord, according to Rieke, "heralded more water for the environment, less water but more certainty for agricultural and urban users, and a return to state primacy in water-quality decisions" (p. 349).

Rieke offers four reasons that this agreement was possible in the face of anti-federal, anti-regulatory, and anti-ESA rhetoric. One is what she calls a "favorable interest group configuration." There was an emerging commitment of a north-south urban coalition, segments of the agricultural community, and a large group of business leaders to finding a solution that protected the Bay-Delta without undue adverse impact on water supplies. The second reason was the substantial incentive for all Delta water users to support new water-quality standards. The third was the federal strategy designed to leverage the State of California to adopt a new water-quality plan. Finally, Rieke credits "a far-sighted decision by the environmental community to negotiate a compromise with the water users and the state and federal governments" (p. 349-350).



The interest groups all had good reasons to work together. Before 1993, major urban water agencies dependent on Delta diversions had committed to protect the Bay-Delta as part of a package agreement with agricultural and environmental interests. They realized that continued conflict over Delta water use meant continued uncertainty for their water supplies. They did not have to be threatened or cajoled to come to the table. They were ready to deal. These agencies, unlike many smaller ones across the West, had the financial and technical wherewithal to evaluate state and federal proposals for the Bay-Delta and to develop alternatives that allowed them to move tentatively toward supporting a specific plan. At that point,

A north-south urban coalition emerged that developed its own proposal for water-quality standards....By the fall of 1994, the urban coalition and the environmental community, in conjunction with EPA, had developed a relatively solid consensus on water-quality standards. The urban coalition then actively sought agricultural allies for a joint agricultural-urban package of water-quality standards and ESA protective measures. A fragile agricultural-urban coalition emerged, leaving the environmental community on the sidelines, but bringing to the ultimate compromise agricultural support that undoubtedly was a key factor in the Governor's decision to support the compromise (p. 351).

An additional factor in bringing about the Accord was individual leadership.

For example, one agricultural leader took personal risks not often seen in contentious natural resource conflicts. He separated himself from an agricultural alliance traditionally opposed to new water-quality standards, persuaded a group of irrigation districts to join in the effort to find common ground with the urban coalition and ultimately a consensus solution with all major interest groups, and stood by the Agreement even in the face of considerable criticism (p. 352).

The California business community's involvement in water issues was a major part of the favorable interest-group configuration. Its lack of tolerance for gridlock on Bay-Delta water-quality standards and its political muscle helped create the political will among both state and federal officials to break the impasse. Finally, the strength of the California environmental community and its long-term involvement in Bay-Delta issues were critical. Both national and regional environmental groups with significant legal and technical resources participated in the development of the Accord. They played a significant part in maintaining the federal will to produce an agreement with solid protections for the Bay-Delta.

A second key factor leading to the Accord was the strong incentive for water users to support reallocation of some of their water to environmental protection. To protect fish eggs and juvenile fish, limitations frequently had to be imposed on the amount of water the pumps could divert from the Delta. Consequently, water users were significantly invested in the search for Delta solutions. After the state's draft water-quality standards were withdrawn, environmental members of the council charged with overseeing the search for long-term Delta solutions either resigned or suspended their participation. Their message was that without new water-quality standards, they would not agree to a reevaluation of Delta facilities. Urban water users and state water officials turned to the federal government to join in a state-federal partnership to help bring the environmental community back to the table.

The federal strategy was to leverage a state solution to the water-quality problems in the Bay-Delta and its tributaries. Federal analysis of the options had failed to identify another approach, according to Rieke, that would produce enforceable water-quality standards with a high probability of withstanding a court challenge. This conclusion was rooted in the belief that EPA lacked authority to enforce any salinity standards it might adopt for the Bay-Delta and its tributaries. Salinity standards require, not reductions in pollutant discharges, but in freshwater diversions. Federal officials concluded that the authority to reallocate water supplies from California water users to the environment was vested, not in EPA, but in the State Water Resources Control Board.

The components of CALFED—the full-scale effort to coordinate federal activities, the development of a state-federal collaborative approach to Bay-Delta issues, and the inclusion of stakeholders in a variety of forums to evaluate alternative Bay-Delta approaches—were, according to Rieke, a response to the inadequacies of the model of cooperative federalism in the Clean Water Act and the ESA. This model creates tensions between the federal and state governments that are counterproductive to cooperation. In Rieke's view, when EPA exercises its federal oversight role and rejects a portion of a state water-quality program, the agency is substituting its judgment for that of the state water-quality officials. It does so through a formal rulemaking process that includes a traditional public participation mechanism. These procedures frequently create an adversarial relationship between EPA and both the state and the regulated community. Each side stakes out a public position and tends to defend it against all criticism. Both the state and the regulated community feel excluded from meaningful participation in the policy formulation process. The notice and comment procedures do not provide an opportunity for joint exploration of alternatives that would best meet the varying goals of EPA, the state, and the stakeholders. In essence, this set of procedures precludes collaboration. CALFED was the answer to the problem.

In 1994, the State Water Policy Council and ClubFed signed a groundbreaking Framework Agreement—a Memorandum of Understanding in which the state and federal agencies committed to jointly address: 1) substantive and procedural aspects of water quality standard setting; 2) improved coordination of water supply operations with endangered species protection and water-quality standard compliance; and 3) development of a long-term solution to fish and wildlife, water supply reliability, flood control, and water quality problems in the Bay-Delta Estuary. These Principles became known as the Bay-Delta Accord, and they provided the foundation for CALFED.<sup>9</sup>

### **The Organization of CALFED**

CALFED began with 10 agencies, but over time this number more than doubled. At the outset, the agencies included some with highly diverse agendas: the U.S. Bureau of Reclamation and the State Department of Water Resources (DWR), both of which owned dams and had the responsibility for distributing much of the water through the federal and state water projects; the U.S. and California environmental protection agencies, which had regulatory oversight over both of these water agencies, the State Water Resources Control Board (SWRCB), which was responsible for water quality; several state and federal agencies that protected fish and wildlife; and the U.S. Army Corps of Engineers, which was responsible for dredging and alterations to waterways. Other agencies were also involved, including the State Department of Agriculture, the federal Natural Resource Conservation Service, the Western Area Power Administration, and the U.S. Geological Survey, which had research and monitoring responsibilities. This array of players came together despite their competing, and even contradictory, mandates. They were motivated in part by internal organizational needs, such as ensuring the agency's ability to put its appropriations to good use and securing the support of their constituencies and the legislature. The interdependence of their missions, their varied interests, resources, and power created a negotiating space. It provided the opportunity to move forward on agendas that had long been stalled.

CALFED started with an Executive Director and a Policy Group made up of heads of state agencies and high level officials from federal agencies. The Policy Group was directly accountable to the Governor and the U.S. Secretary of the Interior. This group met regularly, presided over by the Executive Director, a former head of the San Diego Water Authority. Top officials represented their agencies in the meetings. This high level participation was remarkable in that it continued for eight years. It was also critical to the effectiveness of CALFED as participants were people who could make decisions and commitments. Though

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<sup>9</sup> <http://calwater.ca.gov/Archives/GeneralArchive/Framework1994.shtml>

the meetings were not open to the public, agency heads quickly conveyed to their constituent stakeholders the gist of each meeting. The meetings were hours long, mostly made up of presentations by technical and engineering staff followed by question-and-answer periods and some discussion. They provided the opportunity for agency directors to get to know one another and to understand each other's perspectives, worries, and objectives. They built social and political capital among themselves as they could freely exchange jokes and comments in ways they could not in public. They also built intellectual capital in terms of shared understanding of water management issues and constraints. These meetings were opened to the public in 2001 when a new Democratic state administration came in. At that point, stakeholders began attending in substantial numbers and not surprisingly, the meetings became more formal with less spontaneous dialogue.

Much of the actual work was done by the Management Team, made up of agency staff at the next level below the agency directors. They worked through what to do about decisions made by the Policy Group, and they prepared briefings. These were the people who, as a practical matter, could turn decisions into action. In addition, CALFED had its own program staff and consultants. As CALFED had no legal standing as an agency until 2003, all the staff was borrowed from participating agencies, particularly the state and federal environmental protection agencies and DWR. This situation was to become a source of anxiety for CALFED staff. They had divided loyalties and were never sure what the future would hold for them. They wanted to have a clear sense of who was in charge, but the Executive Director was only one of the people to whom they were answerable.

In the early years, CALFED was significantly supported by these agency donations of staff time. A major source of support for CALFED came also from state bond issues that key CALFED stakeholders were able to develop and get approved by California voters. Federal funds were provided in the early years, giving CALFED stability for a time. Federal funding dried up in recent years, and as state bond money is running out, CALFED is searching for reliable sources of long term funding.

CALFED provided for public involvement primarily through a Bay-Delta Advisory Council (BDAC) chartered under FACA, made up of nongovernmental stakeholders, drawn from agriculture, environmental justice, business, tribal, and other interests. This committee expanded over time to include more stakeholders as they began to see things were happening at CALFED. The stakeholders' interests and positions were also highly diverse and some seemed irreconcilable. Even within the main groups—urban, environmental, and agriculture—there was great diversity. Urban water users cared more about water quality, while agricultural users cared more about supply reliability. All the stakeholders supported environmental restoration, as they recognized this as central to their other objectives, but they differed on what kinds of projects they supported and on

their priority. Environmentalists had different concepts of water use efficiency than farming interests and had bitter disputes over this.<sup>10</sup> Nonetheless, considerable common ground has been found or created. Interests all stakeholders shared, for example, were concern about accountability and transparency as well as about getting assurances that their needs would be met in the long term. They wanted to know that if they made commitments and took actions, they could be assured others would as well.

BDAC became a forum for stakeholders to air concerns and a sounding board for policy and agency ideas. Agencies looked to BDAC, in the words of one participant, as a group where they could “gauge the likely zone of agreement” and “vet proposals [to] find out if you’re in the range of a deal.” BDAC meetings in different parts of California also served as a “moving road show” for CALFED to present its ideas to the public and try to win support. These meetings were conducted in a conventional meeting format, often dominated by lengthy statements by stakeholders and little opportunity for collaborative dialogue. Stakeholders soon realized that, at best, their ideas might be heard, but they were merely advisory. BDAC was a forum for stakeholders to blow off steam and not a place for developing plans or strategy. Policy Group members did not attend. Some of the movers and shakers among stakeholders did not participate. CALFED staff we interviewed believed that BDAC did not have the right composition or mission to serve as a formal consensus-seeking body that could truly participate in deal-making.

CALFED also appointed a series of subcommittees to BDAC which ended up doing much of the work on developing the long term plan that was to become the Record of Decision (ROD). These focused on ecosystem restoration, assurances, finance, water use efficiency, water transfers, drinking water, and watersheds. Their composition varied by topic, but all included a diverse set of knowledgeable stakeholders, experts, and agency personnel and as few as one member of BDAC. The groups had varying degrees of success, with those that could reach agreement providing policy guidance to the Policy Group. One group, for example, created the process for reviewing funding proposals and developed much of CALFED’s watershed program. Others were less successful, like the water use efficiency group, which broke down in conflict.

In addition to BDAC and its working subgroups, CALFED used many other types of groups and interagency teams, some of which were short-lived and others of which still are in place today. CALFED involved a shifting set of ad hoc groups, engaging over time hundreds of players and typically building trust and joint learning as well as finding creative solutions to issues or setting direction.

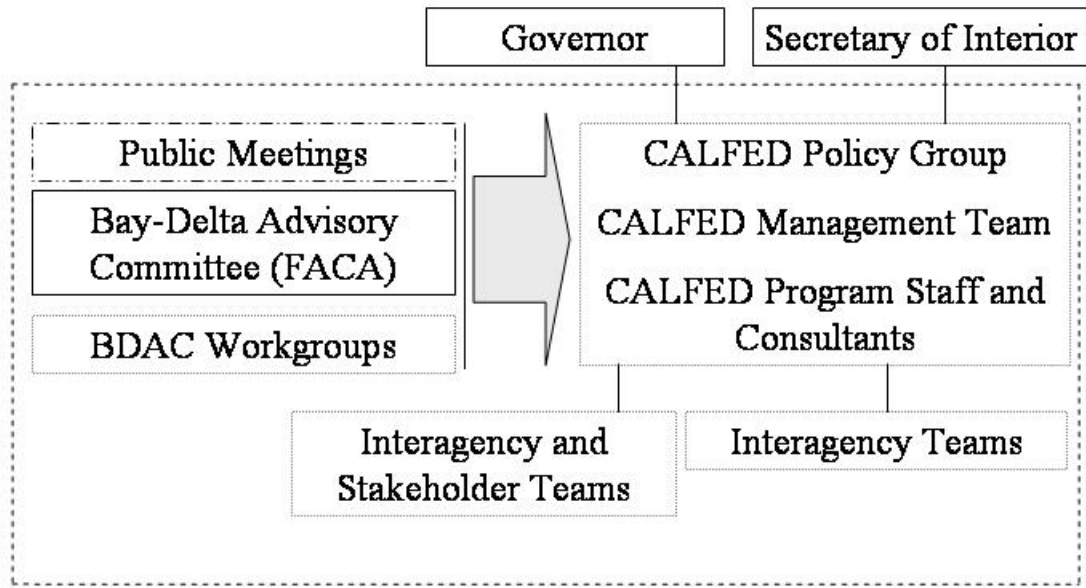
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<sup>10</sup> An excellent account of these disputes can be found in Boyd Fuller, *op. cit.*

These diverse groups also built confidence in CALFED among the interested communities. The structure they set up is roughly depicted in Figure 1.

Figure 1.<sup>11</sup>

## The CALFED Structure 1995-2003



The small working committees played key roles in what became CALFED’s system of distributed intelligence and adaptive policy making. These work groups offered forums for ideas to be aired, developed, tested, and improved. The groups created many of the processes and ideas that have carried forward till today. Four interlinked groups, in particular, have played a central role in CALFED. These four groups collectively provided advice to the Policy Group about changes in operations of the water projects—for example, when a fishery seemed threatened. Their recommendations were usually followed. These were the Operations (Ops) Group, which coordinated operations of the water projects; the No Name Group, which evaluated alternatives with regard to water supply; the Data Assessment Team, which looked at the effects of water diversions on fisheries; and a coordinating team made up of members of the other groups. These work groups operated on a real-time basis and reacted quickly to

<sup>11</sup> Connick, op.cit., p. 174.

changing conditions. Stakeholders and agency staff around the state provided indicators about fish or water levels, which they monitored in their areas. The groups met by conference call when conditions required and worked together to analyze the implications of the data. This is in stark contrast to the traditional governance style, where decisions would have to await complex modeling, formal rule making, and public comment.

Though this process did not follow conventional practice, it had a remarkable degree of legitimacy among stakeholders because they were engaged in it themselves and the effort was so transparent. Even when the Ops group made a recommendation that turned out to be premature and cost the water purveyors a good deal, it did not lose this legitimacy. Those most adversely affected by the mistake spoke up publicly at the Policy Group meeting to say that, even though the results of the recommendation were not good, the collaborative process was the right way to do it. They wanted to learn from the mistake, but not to change the process. Other similarly mixed groups became directly advisory to the staff and Policy Group, though they technically reported to BDAC. This system of decentralized mixed groups has continued to be central today to the work of CALFED. Some have been more effective than others. Some have lasted and others have been disbanded. The groups were not professionally facilitated, so their success depended on the effectiveness of their members and the degree of conflict associated with the issue. Collectively, they represent CALFED's distributed intelligence system, as they learn through their dialogue, develop workable ideas, and tap into the larger stakeholder communities represented on them.

### **What CALFED Did: 1994–2000**

Critical to the degree of success that CALFED had was the fact that the agencies had an agreed-on framework for working together on an agreed-on set of issues. They did not start with a set of detailed procedures nor with goals. No one had to pre-commit to anything. They could develop their collaboration in their own way and rely on trial and error. The CALFED planning approach “can be best understood as one that emerged from a tension between the need to comply with the procedural mandates for agency decision making and the desire to [have] a long range planning process for an extremely complex resource system using extensive stakeholder involvement.”<sup>12</sup> Agencies were constrained by federal and state laws which, ironically, while trying to assure public involvement, interfered with the potential for the open-ended, evolving, collaborative dialogue they would need to engage in and interfered with their ability to incorporate stakeholders directly in the dialogue. California's Bagley-Keene Open Meeting Act, along with the Ralph Brown Act, called for administrative procedures that involved noticing

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<sup>12</sup> Connick, *op. cit.*, p. 180.

of meeting topics ahead of time and following pre-specified procedures. In addition, the National Environmental Policy Act (NEPA) and California's equivalent (CEQA) called for linear, stepwise processes, which are at odds with the dynamic of collaborative dialogue, which naturally goes back and forth between such things as idea generating and considering implementation issues. To comply with these procedural mandates, Phase 1 of CALFED was set up to follow standard early steps: defining problems, identifying possible actions, and refining them into alternatives for evaluation. Staff held public workshops and meetings, and there were extensive discussions among the agencies. This phase produced a mission statement, definition of problem areas and program, identification of critical conflicts, the definition of the geographic solution area, the articulation of a set of general objectives and solution principles, and three alternatives.

The NEPA/CEQA steps involved defining issues first, then getting scientific agreement, and then deciding and implementing. This is not, however, the way collaborative processes work. In practice, defining issues or problems sufficiently to address them takes considerable time and only occurs once agreement begins to emerge on solutions. Many things seem to be done simultaneously. Participants begin to become aware of the complexities and uncertainties in the issues. Staged decision making has its advantages, but it did not assure that decisions over the course of the program would produce the balanced outcomes necessary to resolve conflicts. To make CALFED work, there would have to be a package of actions with linkages among them and assurances to all the parties that their needs would be met. This could not be done in a linear way.

These steps did provide a useful start, though the linear approach was eventually replaced. The problems and objectives they developed were broad enough to allow working through the complexities later, while still setting some direction and reducing areas for conflict in the shorter term. Though issues and objectives proliferated as participants became more engaged, these four remain core to the CALFED program (Table 1), and they are widely accepted among participants.

The solution principles CALFED developed in Phase 1 did provide useful guides to further discussion (Table 2). Establishing such principles early on follows best negotiation practice.<sup>13</sup> These criteria for choosing actions can be agreed on in principle comparatively easily. After that, the principles offer a way of comparing proposed actions and resolving conflict comparatively objectively.

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<sup>13</sup> Roger Fisher, William Ury and Bruce Patton, *Getting to Yes: Negotiating Agreement without Giving In*. 2<sup>nd</sup> Edition, Penguin Books, New York, 1991.



**Table 1: The CALFED Problem Areas and Objectives<sup>14</sup>**

<b>Problem Areas</b>	<b>Objectives</b>
Water Quality	To provide good water quality for all beneficial uses.
Ecosystem Quality	To improve and increase aquatic and terrestrial habitats and improve ecological functions in the Bay-Delta to support sustainable populations of diverse and valuable plant and animal species.
Water Supply Reliability	To reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system.
Levee System Integrity	To reduce the risk to land use and associated economic activities, water supply and the ecosystem from catastrophic breaching of the Delta levees.

**Table 2: CALFED Solution Principles<sup>15</sup>**

<b>Principle</b>	<b>Application</b>
Affordability	An affordable solution will be one that can be implemented and maintained within the foreseeable resources of the CALFED Bay-Delta Program and stakeholders.
Equity	An equitable solution will focus on resolving problems in all problem areas. Improvements for some problems will not be made without corresponding improvements for other problems.
Implementability	An implementable solution will have broad public acceptance, legal feasibility and will be timely and relatively simple compared with other alternatives.
Durability	A durable solution will have political and economic staying power and will sustain the resources it was designed to protect and enhance.
Reduction of Conflict	A solution will reduce major conflicts among beneficial users of water.
No Significant Redirection of Impacts	A solution will not solve problems in the Bay-Delta system by redirecting significant negative impacts, when viewed in its entirety, in the Bay-Delta or other regions of California.

<sup>14</sup> CALFED Bay-Delta Program, September 1996, *Phase I Final Report*, Sacramento, California, pp. 4, 6.

<sup>15</sup> Adapted from *ibid.* p 4.

## The Record of Decision

A critical step for CALFED was the collaborative creation of the Record of Decision (ROD)<sup>16</sup> in 2000 that was to be the basic plan for the next 30 years. It covered the full range of topics CALFED had addressed to that point, from ecosystem restoration and levees, water storage and supply reliability to governance. There was much that remained to be filled in at that point, but participants felt that, because a new federal administration was taking over, they should document what had been agreed to thus far. CALFED never sought legislative adoption of the plan. The ROD was a policy document which was taken to the State Water Resources Control Board, a quasi-judicial agency to get approval of the water standards. Other than this, the ROD was an agreement without the force of law behind it, but with an understanding among the players that they needed to jointly implement it.

Agencies and stakeholders had put the ROD together with ample collaborative dialogue and negotiation over 5 years that was highly inclusive of interests. But reaching closure was difficult with so many players and with very little professional facilitation assistance. In the end, the final drafting process came down to a series of closed-door negotiating sessions with a handful of representatives of the most powerful stakeholder groups. This evolved into a final conversation between state and federal political leaders. A high-level CALFED staff person described for us the process of reaching closure on the ROD:

...[The negotiation of the ROD] had the appearance of a backroom deal, but in fact, it was the result of an incredibly open transparent process...We studied for 10 years. We did a huge EIS/EIR [federal Environmental Impact Statement / California Environmental Impact Report]. [To work on the ROD, one political leader] tried the collaborative model. He had people sitting around table wordsmithing, but it failed because it went to lowest common denominator language. Everyone had qualifiers and weasel words. The phrase ‘CALFED-speak’ entered the lexicon in derogatory manner, meaning that to get everyone to agree you’d end up with mush...It fell apart. Then [another political leader’s team] came in and led negotiations. They said, ‘We’ve heard everyone out, let’s get [the state] together with feds [without the stakeholder representatives] and just do it.’ It was very controversial, but we would never have been able to do it with stakeholders at the table. We made tough decisions...What happens is you get the moderates from each camp negotiating, you get this far, but you need

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<sup>16</sup> CALFED Bay-Delta Program, “Programmatic Record of Decision”, August 28<sup>th</sup> 2000. Sacramento California.

<http://calwater.ca.gov/Archives/GeneralArchive/RecordOfDecision2000.shtml>

someone to come in to cut the final deal. [Leaders] come in to nail that last five percent; all sides can call it a victory and go home... We say, “Boom! This is how it’s going to be. We have a senator behind the approach.” So [the stakeholders] don’t have much choice. A lot of people didn’t like CALFED, but when they were told [to support it] by [Senator] Feinstein and [Governor] Davis, and found their own moderates liked it, that was our formula... Everyone has something in the ROD they like and everyone has something in the ROD they don’t like. After so many years of gridlock, the only way to move forward was to move forward across the board in a balanced way.

This experience of not reaching agreement until the last possible minute is not uncommon in negotiations or collaborative dialogues. People have to make hard decisions, which they avoid until absolutely necessary. It may also take outside pressure from powerful players to reach closure. Because they did not make the final decision, participants were spared from facing criticism from some of their constituencies for aspects of the plan. This process did, however, mean that the ROD was not as fully worked out as it could have been. On the other hand, CALFED was a dynamic adaptive process which continued to evolve in the ensuing years.

## **The Environmental Water Account**

While there were a number of important innovations in CALFED, we focus on one, the Environmental Water Account (EWA) which best exemplifies collaborative governance and the ways it can provide for adaptive management of a resource. EWA was born in dialogues of Ops and its associated groups, and it was designed for the special conditions of California water. EWA emerged in 2000 out of the frustration of participants because they could not assure water for unanticipated environmental needs while also protecting the reliability of the supply for other users. It was supported by almost all major interests because it seemed to help both the environment and water users. It is a new type of program for which CALFED had no models, so building EWA has been a learn-by-doing process. EWA is complex, multifaceted, and designed to operate at a pace that mirrors changes in the fisheries and water conditions. The state Legislative Analyst’s Office (LAO) in 2001 described its understanding of EWA.

The objective of the program is to acquire water for endangered species protection and recovery and to hold this water in reserve to use when endangered species need it most. The goal is to reduce the likelihood of fishery agencies placing new restrictions on the

operations of state and federal water projects that could reduce deliveries to agricultural and urban users.<sup>17</sup>

The report went on to contend that EWA should be not be established until the costs, benefits, and impacts were determined; the state role, especially in funding, was agreed on; the operations, governance, acquisition and use of water were resolved; how to facilitate water transfers and provide storage capacity was determined; and how to hold the program accountable to the legislature was determined. The Analyst's Office approach was very much in the traditional governance model—namely, everything should be worked out in detail before anything is started. They wanted formal legislation to establish the program and already had funding proposals including “beneficiary pays.” It is highly likely that if this advice had been followed there would be no EWA today because there were so many thorny and controversial issues, some of which have not yet been resolved. Instead, EWA began operating without legislative authority, simply as a collaborative program. It evolved and developed along the way, resolving some but not all issues.

A more nuanced description of EWA is offered by one of the original architects of EWA, Alf Brandt.<sup>18</sup>

The CALFED EWA creates a water supply for fishery needs without relying on regulatory edicts. Instead, its operators in state and federal agencies acquire water for the environment from existing water right holders or from maximizing the use of water project facilities. With this water supply at their disposal, state and federal water project operators can make timely, critical adjustments in operations to make water available to fulfill the needs of listed species and project contractors while preventing reductions in deliveries due to such adjustments. These adjustments either use the CALFED EWA's assets directly for reservoir releases and instream demands, or indirectly to compensate project water users for reductions in project diversions (p. 427-428).

The concept, as Brandt saw it, was about flexibility, being able to deal with the resource as a whole, and finding ways to capitalize on sharing the resource.

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<sup>17</sup> Legislative Analyst's Office. “Environmental Water Account: Need for Legislative Definition and Oversight,” LAO Report. Sacramento, January 29, 2001.

<sup>18</sup> Alf Brandt, “An Environmental Water Account: The California Experience,” *University of Denver Water Law Review* 5, Spring 2002, 426-456. The following description draws on this article along with Hudzik, op.cit.

The premise behind an environmental water account is that it provides an efficient and flexible mechanism to acquire and use water assets to adjust water project operations in response to changing hydrology and fishery needs. An environmental water account allows maximum flexibility to respond to the changing needs of the fishery and the ecosystem as a whole, working better than fixed prescriptive standards that restrict water project operations for the benefit of several particular listed species. Such an account can share the benefits of wet hydrology and new facilities, allowing both the ecosystem and water users to enjoy improved conditions.

EWA works rather like a banking system. The participants develop water “assets” by acquiring water or by the use of excess project pumping or storage capacity and increased project yield arising out of operations adjustments at times when listed species are not at risk. EWA can also borrow water, if pumping can be reduced in one year without affecting that year’s deliveries. If the following winter is wet enough, the water debt may be repaid by increased pumping during periods of high Delta outflow. The water assets can be used either directly for instream water needs or indirectly to compensate water project users for reduced diversions that result in reduced water deliveries. Alternatively, EWA managers may call for reduced state and federal water project pumping in the Delta to reduce take at the pumps or to support fish migration to the ocean. Although the EWA promotes recovery of listed species, its assets may be used for any reason that supports the fishery, including preventing fish take limits at the pumps from being exceeded. The assets therefore may help avoid endangering the fish as well as support their recovery. Thus, EWA is anticipatory rather than solely a reactive effort.

Setting seasonal pumping restrictions by biological opinion under the ESA, as would have been done under the traditional governance model, does not allow for a quick response to constantly changing hydrologic and fishery conditions. Under the earlier regime, only when project operations exceed ESA take limits do the fishery agencies seek pumping reductions. At that late stage, the required reductions are often substantial, as well as too late to prevent the excess take. With EWA water as collateral, the fishery agencies can call for early and moderate pumping reductions instead, which are less problematic for other water users.

Running the EWA has become one of CALFED’s most important activities. It involves extensive data gathering and detailed modeling, done in a transparent and collaborative way. It uses computer modeling of the water flows and fish impacts, and gaming and simulations among the stakeholder experts to develop and improve the models, as well as to anticipate scenarios. Stakeholders can and do question data and bring new information and insight into the process.

Participants share their knowledge and understanding, which in turn become part of the analysis.

According to CALFED's independent review panel, the EWA has resulted in a variety of significant outcomes.<sup>19</sup> These are all results that would be difficult, if not impossible, to achieve in the traditional governance model. First, the panel asserted that the EWA had done an effective job of assuring supply reliability to the water contractors, while providing an acceptable level of fish protection that was probably higher than could have been attained by the fixed standards that would have been used in the traditional governance model. Second, the report contended that EWA was a successful experiment in management policy change because agencies and stakeholders, instead of feuding, worked together in real-time collaboration to provide water for fish protection. Moreover, wildlife management agencies and water operations agencies in the process came to understand each other's needs and perspectives. Third, the panel found that, despite the technical and political complexity of acquiring environmental water in a timely and economic manner, the process was functioning smoothly. The report also said that the ability to make timely, reasonable decisions in the presence of scientific uncertainty had become one of the hallmarks of the EWA program. Importantly, too, the panel found that scientific knowledge was advanced in the process of implementing EWA and that new insights were incorporated into improved models. These, in turn, fueled critical and creative thinking and formed a basis for more effective management. The gaming and modeling, the report said, were valuable in identifying unanticipated consequences of proposed actions and allowing rapid management response. EWA also increased integration and communication among California's four major environmental water programs. Finally, the panel noted that management criteria have grown more complex in moving away from using a single indicator (usually fish take at the pump, a simple measure which works with a traditional regulatory approach) to looking at multiple, interrelated dynamics of the fish populations.

### **Creation of the California Bay-Delta Authority**

The BDAC Assurances Subcommittee was charged with developing ways to assure the stakeholders that their agreements would be kept—that other stakeholders and agencies would do their parts. However, the group was unable to agree on specific ways to assure that the different components of any proposal would be implemented. The only idea they could agree on was that some type of formal governance structure was needed to assure that the different components of any proposal would be implemented. The committee was not satisfied with the

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<sup>19</sup> Review of the 2003-04 Environmental Water Account (EWA) submitted by the 2004 EWA Review Panel, submitted 1/17/05. Review of the 2003-04 Environmental Water Account (EWA) submitted by the 2004 EWA Review Panel, submitted 1/17/05.

oversight the Policy Group could offer, recognizing that agencies are autonomous and that leaders can and do change, especially in the 30-year period of the plan. Even if the various agencies benefit today by holding up their part of the bargain, conditions change. The stakeholders wanted some kind of entity that could keep the agencies' "feet to the fire." Accordingly, CALFED disbanded the Assurances Subcommittee, replacing it with a Governance Work group, co-chaired by an environmental and an agricultural stakeholder.

According to Connick,<sup>20</sup> "The Policy Group was, at first, quite cool to the concept of a new governance structure... most agency leaders expressed their views that the creation of another agency or entity would not make interagency coordination any easier, and that the idea was infeasible." Others thought federal and state decision makers would be reluctant to fund new entities over time and that funding would go to the agencies as before. The stakeholders, however, contended that the issue was accountability and coordination and that a new authority was the only way to get it. Not surprisingly, CALFED staff liked this idea because they believed that the agencies did not feel genuine ownership of the CALFED program nor of the staff who worked on it. They liked the idea of having just one board of directors to which to answer. In June 1999, the California Environmental Trust convened a one-day workshop for a select group of legislators, stakeholders, Policy Group members, and outside experts. They had presentations from academics and government officials familiar with other large scale multi-agency, state federal partnerships to help identify the options.

After further discussions and a first failed bill, two years later the California Bay-Delta Authority (CBDA) was passed by the legislature. Its membership included a combination of public members from major regions appointed by the Governor in consultation with the Secretary of the Interior, two at-large members appointed by leaders of the state legislature, a member of the Bay-Delta Public Advisory Committee (BDPAC) (which replaced BDAC under the CBDA) and the directors of six of the most important agencies on the federal side and six on the state side. Chairs of key state legislative committees were ex-officio members. (See Appendix 1). Presumably if these people agreed, actions would be implemented.

Ironically, the new organization was not set up with authority over the agencies, which remained free to fulfill their own mandates. CBDA did, however, have some leverage as it was made up of the leaders of the key agencies and there was peer pressure to keep agencies to the agreements developed in CALFED. Ironically also, however, according to some staff, during the first full year of operation of CBDA (2004), preparing for making formal presentations to the regular Board meetings seemed to drain agency and CALFED staff attention

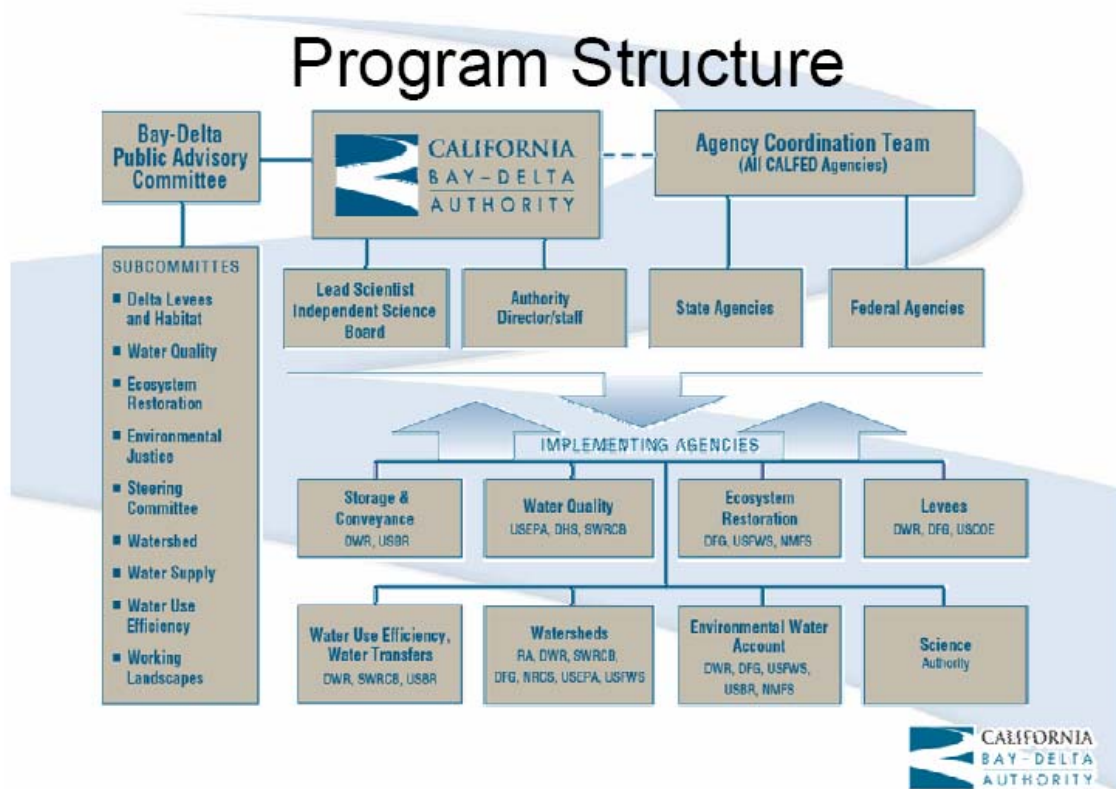
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<sup>20</sup> op. cit., p. 244.

away from their coordination and joint planning functions. Public members of the Board were unfamiliar with many of the issues and needed considerable education. Early on, CBDA began holding joint meetings with BDPAC, the new stakeholder committee. These meetings helped Authority members as BDPAC members were highly knowledgeable about the issues. Thus far, it remains unclear what kind of role CBDA may play in leadership of CALFED’s collaborative effort. In a sense having a formal, at least ostensibly hierarchical, authority is in contradiction to the largely horizontal coordination and co-evolution that had been going on. The idea of creating institutionalized formal structures in this type of networked, self-organizing system is at best paradoxical.

The CALFED program itself continued, however, more or less as before, having become, if anything, more complex as more and more responsibilities and issues have been placed on its table. (See Figure 2. Program Structure). It remains a flexible, networked system relying on distributed intelligence. While a full assessment of its results will require a longer period after it has addressed some of the challenges it faces, it has changed practices, norms and heuristics of those involved in California water management. These have been labeled by some as “The CALFED Way.”

Figure 2. CBDA Program Structure





## Eight Elements of the CALFED Way

It's filtering down, the CALFED way; it's getting better. . . . [when CALFED first started] you'd have whole [agency] departments that just hated CALFED, but now we're integrated [into the agencies] . . . what we're doing is infecting the whole process.

—CALFED staff

“The CALFED way” is a term used by CALFED staff, participants, and observers as shorthand for the difference between the new way of doing governance and the old. Former Executive Director, Patrick Wright, used a table in public presentations which made this comparison along seven dimensions which we use as a basis for describing much of what has changed in water policy making with CALFED. We have added our own eighth element, comparing mechanistic decision making to adaptive management. (See Table 3.)

**Table 3: Comparison of Governance Before CALFED and After<sup>21</sup>**

<b>Before CALFED</b>	<b>After CALFED</b>
Gridlock and litigation driven process	Collaborative process
Project-by-project decisions	Comprehensive framework with linkages and balancing requirements
Single agency, single purpose projects	Multiple purpose, interagency projects
Centralized decision making	Emphasis on local and regional solutions
Limited public involvement	Extensive public involvement and leadership
Internal agency science; no peer review	Independent science reviews
Limited or no accountability or transparency	Public governing body and planning and tracking systems
Mechanistic decision-making based upon assumptions and mandates	Flexible, adaptive management and learning

<sup>21</sup> Elements 1-7 of this chart are taken from a presentation given by CALFED Executive Director Patrick Wright at the California Bay-Delta Authority transition workshop in Sacramento, CA, July 21, 2003. Element 8 was added by the authors.

## **Shift from Gridlock and Litigation to Collaboration**

With the complex array of regulatory and operating agencies affecting California water, coordination and communication between agencies is critical, but before CALFED, very little of either took place. Each of these agencies had historically been accustomed to acting independently to accomplish its own mission and mandates. Each agency has its own legal counsel advising it on its obligations, and each is separately accountable to the Governor and the state legislature, or the President and Congress, as well as to their influential constituents, and the court of public opinion. Conflicts between agency actions were often identified only after the fact and resolved adversarially through either litigation or political maneuvering.

To complicate matters, this system was full of barriers to the information sharing that might prevent conflict. These barriers included compartmentalization of information, where each agency is its own silo and may contain a host of programs that may not share information even internally. Turf wars between agencies, created in part by the drive to protect funding or consolidate political support, also prevented cooperation. Agencies were reluctant to release information that could later be used in litigation or in another adversarial context. Even when agencies have been willing to share information, their hierarchical structures and behavioral norms hindered communication. Even language is a barrier, as are organizational culture and differing practices. In the words of one agency staff person,

The way the various agencies work, irrespective of what they're doing—it's almost like being in Europe and going to different countries. The language changes, the culture changes, how you're treated changes. It's really true....[now] it's getting better, and CALFED is part of what's making it better because they're not isolated [any more].

CALFED has made unprecedented steps toward improvement in interagency communication and coordination. The CALFED agencies, together with stakeholders, created the ROD, the EWA, the ecosystem restoration effort, and countless other small and large collaborative projects. CALFED provides an ongoing set of forums for coordination, and it has created a shared expectation of cross-agency communication about any project or action related to the ROD. A good example of ongoing interagency coordination is the list of Integrated Key Milestones, which plots on a common timeline and tracks the progress of several pivotal elements of the ROD being conducted by various agencies. This tracking helps ensure that the timing of elements is coordinated and enables balanced progress across all fronts, while minimizing the chance that a major action will be delayed because a necessary antecedent was not completed. In another example, prior to CALFED the state and federal water projects were operated fairly

independently of one another, even though their actions affected many of the same consumers and habitats. Now, in addition to consulting with one another, operating agencies regularly consult with agencies which have responsibility for endangered species protection. State agencies have historically been much more likely to coordinate and communicate with other state agencies than with federal agencies, and vice versa, but that too has changed. This new level of coordination is illustrated by the following quote from a high-level staff member in the state water project.

[Before CALFED], we prepared our forecast of [water project] operations, did what we thought was necessary for water supply, flood control, and fish protections. Then we had annual, maybe semi-annual, fish coordination meetings. We sat down with the fish agencies once a year to go through our project operations plans. [We would] say, “Here’s what we’re planning on doing to protect the fisheries,” and get input from them...Nowadays, we hardly make any change in operation without giving the fish agencies a call and talking with them to see what the impacts [of our proposed actions] are. We’re in constant coordination with them, daily...All of our plans of operation are coordinated to achieve this balance of the fishery needs and water supply...It’s a huge change.

In addition to the intentional, practical coordination that is now occurring among agencies, simply being exposed to one another on a regular basis has helped the agencies to work together. CALFED serves as a sort of cultural exchange program, where state and federal workers learn about the laws and norms of each other’s world. An agency staff member noted,

You have high level state and federal people one-on-one talking, and the more of that the better. [They are] establishing relationships, establishing trust, and not posturing as much probably.

Stakeholder involvement appears to have been beneficial not only for agency-stakeholder relationships and planning, but also for stakeholder-stakeholder communication. One stakeholder told us,

There is a broad base of participants in CALFED: those that are getting funding; those that are going to hearings; those that are members of committees. We’re forced to listen to each other. [One stakeholder] is interested in agriculture and he’s on the water use efficiency committee, but he’s also listening to water quality and other Delta issues that he doesn’t have to deal with directly. I come in with a conservation background and I am beginning to

appreciate some of the other issues. CALFED is causing individuals to collaborate on the whole program.

A high-level CALFED staff person described CALFED's collaboration in the following way:

I would say that the goal from the beginning has not been consensus. In fact, [an Executive Director of CALFED] abolished that word after becoming director! We recognize we need broad-based support. There is a big difference between broad-based support and having a consensus. If the test is, "Do we have broad-based support?" one only has to look at the support among the stakeholders for funding in the legislature and in Congress—particularly compared to other natural resources issues.

CALFED operates within a complex, politicized system. The various parties retain all their legal rights and responsibilities, and occasionally both public and private players still bypass in whole or in part the common problem-solving table, invoking their rights and responsibilities. Not all parties in the California water policy arena are CALFED supporters, and some of these continue to pursue their interests primarily through legal and political channels, bringing lawsuits and going directly to the legislature with their proposals. Nevertheless, CALFED has made progress in moving a highly polarized system toward a model of policy-making that is coordinated, communicative, and informed by a diversity of interests and options. As one agency staff person put it,

CALFED's biggest accomplishment is that all the agencies, at all levels, are communicating. At the technical, management, even political, levels there's a real understanding of each other's issues, and, as with most things, when you understand each other's issues, you start trying to find solutions that work for both of you, instead of you want it all, and you want it now. Education and communication is really what has changed us away from that religion<sup>22</sup> viewpoint. Even the most staunch religionist types that are still around have learned that they have to work with others because it just doesn't work anymore. Going to the Governor and saying, 'This is bad; we can't have this,' is no longer a tool that works effectively in California water issues.

From this quote, and those below, we can see that the norms of doing business in California water policy have changed in the CALFED era, becoming norms that favor collaborative action and make it more difficult to work through

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<sup>22</sup> "Religion" is a term used by CALFED's first Executive Director and others to refer to the hardened positions of some stakeholders who were accustomed to arguing their case and standing behind rigid demands.

the old political and litigious channels for single-interest gain. The change has shifted the system from gridlock and litigation towards collaboration, as three stakeholders told us in their own ways,

...[D]id we [stakeholders] have an adversarial relationship [before CALFED]? I guess, to a degree, we did. Do we [now] have totally aligned interests—probably not, but for the time being, it seems that most of the parties see that we are in a mode where everyone’s interests are being accommodated to a sufficient degree to keep everyone together. And whether we’ve accomplished everything that everyone wants to see, so far we certainly haven’t, but everybody’s looking ahead and seeing that the prospects are still good. As long as you’ve got some people around that remember how things used to be—and now I’m thinking about after several species were listed and we got to the point where we’d have these periodic confrontations over listed species take, which would get pretty messy—as long as there are people around who remember that, then what we’re doing now seems imminently preferable and more effective.

...So the good part about CALFED, and why it will always be here in my opinion, is that we set a ring. You step in that ring, you can fight like crazy. But we know the rules of the fight in the ring. You get outside that ring and you’ve got everybody that’s in that ring against you.”

...[In 2002], a group went to Washington, D.C., made up of an irrigation agency, an environmental organization, a recreational fisheries group, and environmental justice representative, all walking around Congress saying, ‘We, as a group, support CALFED and some of the CALFED solutions.’ That was shocking to people in Washington. They couldn’t believe what they were seeing. And I think we’ll start to see more of that.

### **Shift from Project-by-Project Decisions to Comprehensive Framework with Linkages and Balancing Requirements**

Nearly two dozen federal and state agencies have regulatory or management responsibility for some aspect of the Bay-Delta. This structure poses a challenge to the efficient management of the Bay-Delta’s resources. Beginning in 1995, the CALFED program provided a forum in which the agencies could develop a single, comprehensive plan that would serve their common purposes. That plan is described in the August 2000 Record of Decision. The CALFED program now serves as a forum through which the agencies coordinate their actions and evaluate their progress. Each agency implements those elements of

the plan that help it meet its statutory responsibilities, and for which it has legal authority and funding.<sup>23</sup>

The second element that distinguishes the CALFED way is a move from agencies making decisions that affect the Bay-Delta on a project-by-project basis,<sup>24</sup> to all agencies working within the ROD. The ROD is an integral element of governance in CALFED, often referred to by CALFED leadership as the program’s “bible.” Until CALFED, there was neither a master plan nor common criteria to guide agencies’ selection of the projects that would shape the Bay-Delta system. One agency might complete a project, only to have that work undone by another agency. For example, an environmental restoration project might be compromised or destroyed by a subsequent project to raise or reinforce a levee for flood protection. Different agencies also had different views of what changes might be desirable, particularly in the controversial arena of water storage—e.g., the creation or enlargement of dams and reservoirs.

The agencies and stakeholders developed an incremental, anticipatory approach, where interlinked elements of the program moved forward guided by agreed-on performance measures, principles, and heuristics. This allowed environmental restoration to proceed quickly while the rest of the actions in the plan proceeded according to an agreed-upon timeline and milestones. This was a departure from earlier practice, where restoration would have to await mitigation funding from projects. In the past, environmentalists often took adamant stands against any project because they had no confidence that the mitigation plans would be implemented.

While stakeholders may not have liked everything they saw in the ROD, they largely accepted both the plan itself and what it implied for the rules of engagement in California water governance. They did so recognizing that accepting the whole package would benefit individual interests by advancing the collective interest. One stakeholder explained the logic of this:

It’s different than how we used to try to get 50 percent plus 1 to roll the opposition politically... When [the ROD] was introduced in June 2000, Governor Davis and Senator Feinstein both said none of the stakeholders were going to like everything in this program, but they need to accept and support the whole, because the whole

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<sup>23</sup> [http://calwater.ca.gov/AboutCalfed/adobe\\_pdf/web\\_statement\\_on\\_calfed\\_governance.pdf](http://calwater.ca.gov/AboutCalfed/adobe_pdf/web_statement_on_calfed_governance.pdf) (June 2001)

<sup>24</sup> In this context, “project” refers to actions that physically alter California’s water delivery system in order to achieve an intended result. Examples of projects include restoration of vegetation, geomorphic changes to river beds and banks, changing (adding, removing, expanding) water delivery or treatment mechanisms, and changing fish passage or hatchery elements.

will advance the state's interest and all collective interests of the parties. That was pretty gutsy. That takes discipline.

But he also acknowledged that his view was not universally accepted, as others continued to play by the old rules.

And we're not entirely there yet. There are those in the environmental community that are very open and say, "I'm going to try and kill the stuff I don't like and promote the stuff I do like." [There are] some cells in the water supply community in which the same sentiment prevails. And we need the Governor and the Secretary of the Interior cracking a whip over the rest of us, reminding us that the ground rules have changed. Cherry picking is not allowed. You accept the program as a whole.

The logic of the comprehensive framework is that stakeholders cannot stop the fighting or even get what they want unless they can agree on a package and there is a high level authority legitimizing it. The partnership and plan embodied by the ROD have thus far been quite durable, and the concept of balance remains key. The CALFED program is under constant pressure to ensure that the implementation process does not favor one interest over others. Measuring and defending program balance seems to be almost an obsession for CALFED.

### **Shift from Single-Agency, Single-Purpose Projects to Multiple-Purpose Interagency Projects**

The third element of the CALFED way is a shift from single agencies pursuing single-purpose projects, to coordinated efforts to focus on better "bang for the buck," multiple-purpose projects. This effort to achieve efficiency is missing from the traditional paradigm of governance via interest group pressure and pork barrel funding. The idea is to capitalize upon opportunities for one project to meet several objectives. Whereas in the past, grants for projects were offered and administered by different agencies, each with its own requirements and timelines, CALFED developed an integrated process for much of agency grant making. This system pools the different pots of grant money from various agencies under one set of requirements, one submission and review process, and one timeline. Projects funded through the coordinated process had to be designed to help to meet CALFED objectives—the more the better. Selection of projects was done through an extensive, competitive process, instead of by single agency judgment or political patronage. Each project was screened through three levels of review—administrative, regional, and a panel of independent scientists—and there were ample opportunities for public comment. Final selection was made by a panel composed of scientists, agency experts, and stakeholders. Not infrequently, promising projects that did not meet the process criteria or standards and were returned with suggestions for improvement and resubmitted, presumably

improving the quality of new proposals. One agency staff person described the effect that CALFED has had upon his program:

As part of CALFED, we committed to integrate some of our programs [into the common grants process]. This is changing the way we solicit restoration projects. Before CALFED, our program managers would huddle and say to our constituents, ‘What can you do for us?’ Now they have to go through this broader process. They have to submit proposals through CALFED, in higher detail and with much more review. The decisions still are made by the funding agencies, but if we want to fund something that CALFED hasn’t said is a priority, then the bar has been set much higher.

Not all participants supported the coordinated grants process. When grant programs from multiple agencies were first coordinated, there were administrative problems to work out, and all those involved have had to learn new procedures and build new relationships. Some applicants complained about the extra time and effort required by the coordinated process, viewing the additional requirements as “another set of hoops to jump through.” There have been problems with the grants process due to California’s 2002 budget crisis, which created a staffing shortage, complicating grants administration. In 2004, the coordinated grants process was examined and refined by CALFED to address many of the problems.

### **Shift from Centralized Decision Making Toward an Emphasis on Local and Regional Solutions**

The fourth element of the CALFED way was a shift toward more local and regional initiative and problem solving. In recognition that a top-down, centralized form of management was unlikely to be supported by local governments, the ROD committed to relying on local leaders and organizations for advice and support for designing and implementing projects affecting their communities. This represented a fundamental change in governance, from a model of centralized, expert planning, which had prevailed in the heyday of California water supply development, toward a decentralized model of local community initiative and engagement with project planners in the early stages. One stakeholder gave an example of the change in attitudes and practices:

There are agencies all across California that collectively are spending billions of dollars on a new direction on managing water...[P]art of what’s happening, inevitably and desirably, is a decentralization of a lot of the responsibility. Thirty years ago, you looked at two agencies in this state when it came to water supply—the California Department of Water Resources and the [federal] Bureau of Reclamation. They were going to build dams on all of the rivers as necessary. Well, that plan got blown away by the



environmental revolution, but today you still have a lot of people whose mindset is in decades past, thinking that only new reservoirs can account for future water supply reliability. They haven't gotten the fact that CALFED is part of the revolutionary change where you're pushing responsibility for water supply reliability down to the regional level. We're meeting supply primarily through this more decentralized approach, and that's the wave of the future.

CALFED staff boiled down their regional strategy to six components:<sup>25</sup>

- Provide technical and fiscal support to regional efforts;
- Conduct statewide grant programs that require scientific, regional and public review;
- Establish CALFED regional coordinators and agency regional teams;
- Conduct regional workshops and outreach meetings;
- Track [ROD] implementation information on a regional basis; and
- Integrate regionally developed goals, objectives, and performance measures into CALFED implementation efforts.

To fulfill this agenda, staff created partnerships with local governments and leaders in each of five major geographic regions in the state critically affected by the ROD. Partnerships in each region defined their own local priorities, and now each promotes and selects projects that help meet their local objectives as well as CALFED's. Hundreds of projects and millions of dollars have been directed at least in part by these regional partnerships. This model is in line with the idea that CALFED governance is a distributed intelligence network, where problem solving and decision making happens in local nodes according to local conditions. This regional approach has contributed to capacity building and understanding of water issues throughout the state.

### **Shift Toward More Extensive Public Involvement and Leadership**

The fifth element of the CALFED way is increased public involvement and leadership. CALFED has attempted to integrate public involvement into just about every aspect of the program. It is still not uncommon to hear stakeholder complaints that parts of the inner workings of CALFED, including some high-level policy discussions, are closed to non-agency personnel. However, CALFED as a whole is markedly more open to and inclusive of public involvement than any one of its member agencies now or in the past. The major groups of public

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<sup>25</sup> [http://www.calwater.ca.gov/AboutCalfed/CALFED\\_Standard\\_Presentation\\_2005/Presentation\\_2005\\_Regional.htm](http://www.calwater.ca.gov/AboutCalfed/CALFED_Standard_Presentation_2005/Presentation_2005_Regional.htm)

stakeholders involved in CALFED, their interests, and the diverse means CALFED has employed for public involvement are described in some detail in Connick.<sup>26</sup>

The most obvious vehicles for public involvement in CALFED have been its public advisory committees, BDAC and BDPAC. BDPAC was designed to include more of the “movers and shakers” in California water policy than were in BDAC and to be more of a working committee that makes recommendations and designs actions, working with staff. This was in contrast to BDAC’s sounding board and advisory role. The BDPAC has also served as a combination watchdog and cheerleader to ensure that the ROD was properly implemented. The Bay-Delta Authority itself includes public members, including the chair of BDPAC, as part of its formal governance structure. Its many workgroups and agency problem-solving teams include diverse and knowledgeable stakeholders. To involve the broader public, CALFED has held regular public workshops and forums to test ideas and take comment.

CALFED has been flexible and experimental in its design and use of working groups, assembling groups to work on problems, institutionalizing the groups that worked well, and disbanding or modifying those that did not work well, or simply ending them when a task is complete or evolves significantly. CALFED staff select the members with the tasks in mind and try to be inclusive. One CALFED staff member said,

Almost always you put combinations [of] stakeholders and agencies together. It depends on the issue and the region. [We mix in people]...as we learn who’s affected and who’s interested...If someone wants to be at the table, they are there.

CALFED has been so successful at encouraging public involvement and leadership and spreading the idea of collaboration that people are advancing its objectives outside the program. An agency staff member offered the following example:

[Take a] large [water] agency and an agricultural agency. [The large water agency would] like to trade high quality for low quality water because it blends and increases total supply. That [type of program is] mentioned in ROD, but you don’t need CALFED for that. You just need those two agencies to get together. Some of the best programs are going to be cherry-picked off and happen outside CALFED. But CALFED’s existence has sparked relationships that would be beneficial to both. The Bay Area Blending Program is another good example. Some Bay Area agencies [are historically] more fractured than southern California

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<sup>26</sup> Connick op. cit. pp. 187-189, 202-211.

agencies. Now they've formed together. You don't need CALFED to do that one either. They just never considered doing it before. People would dredge up old projects and combine them with an idea of today, and [now] you've got something that works. Some institutional memory has survived in a new form in CALFED.

### **Shift from Internal Agency Science to Independent Science Review**

According to the CBDA web site:

The goal [of the CALFED Science Program] is to ensure that the best possible scientific information guides decision making within every aspect of the program, while results of CALFED activities are closely evaluated. Providing science relevant to decision making requires two things: building a conduit between experts and managers so the most current knowledge relevant to a problem can be directly communicated, and providing an unbiased scientific review of information gathered to define and evaluate program activities. Oversight of data collection and ecosystem monitoring, along with scientific review of assumptions underlying program strategies and the effects of program actions, is essential.<sup>27</sup>

The sixth element of the CALFED way is the effort to improve the quality and accuracy of information that was used in decisions. This project was a key element of the ROD (p. 74), which said that the CALFED Science Program would “bring world class science to all elements of the program.” It said that performance measures and indicators would track progress of each element. Its purpose, according to the ROD, was “to provide a comprehensive framework and develop new information and scientific interpretations necessary to implement, monitor and evaluate the success of the...Program...and to communicate to managers and the public the state of knowledge of issues critical to achieve CALFED goals.” The ROD went on to say the “overarching principle of the Science Program is adaptive management. Adaptive management is defined as using and treating actions as experiments with a level of risk commensurate with the status of those species involved and bringing science to bear in evaluating the feasibility of those experiments. New information and scientific interpretations will be developed through adaptive management, as the programs progress, and will be used to confirm or modify problem definitions, conceptual models, plan research and implement actions.” The ROD demanded innovation and the Science

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<sup>27</sup> [http://science.calwater.ca.gov/sci\\_across/science\\_across.shtml](http://science.calwater.ca.gov/sci_across/science_across.shtml)

Program was to play a key role. This program itself is a case study in adaptive management and experimentation as it tries to fulfill its mission.<sup>28</sup>

CALFED is unique in California (and perhaps in the country) in providing a government-sponsored home for developing such independent science for use in agency decisions. Before CALFED, scientific research to support California water public policy determinations was conducted largely by agency scientists or consultants to the agency. As might be imagined, no matter what agency sponsored the study, this system could generate a good bit of controversy and accusations of “advocacy science.” For many reasons, scientists working for particular clients or agencies often produce results that tend to support their employers’ objectives. This is seldom because they deliberately alter the data, but there is so much leeway in science in terms of assumptions, methods, and data sources that different scientists can quite legitimately come up with contradictory conclusions.<sup>29</sup> A high-level Science Program staff member told us his hopes:

I hope the science program creates an environment where people can talk about these things that’s not the old science-advocacy environment, where technical arguments were used and spun for various political ends. We’re telling the scientists, ‘Your job is not to determine whether information is sufficient—that’s a value judgment. Your job is to describe what we do know and what we don’t know.’ And I tell the staff in the agencies, ‘Your job is not to ask the scientists to make that [policy] decision for you—you need to retain that responsibility. What [scientists] can do is tell you what’s out there, and the ramifications of building certain things. And then you need to publicly make your call.’

The model of the Science Program was largely built on a positivist epistemology that underpins the so-called “rational” model of policy making. The idea is that science should be objective and separated from the political and policy making processes. Scientists should present their data in a neutral way, and the policy makers should be influenced by it. This fits with the idea of bureaucratic and regulatory governance the way it has been typically practiced, except that the Science Program tries to replace the advocacy science associated with particular functional agencies and stakeholders with science produced by independent scientists. In keeping with this model, the Science Program assembled and oversaw teams of experts from academia and the private sector, to conduct and/or

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<sup>28</sup> For a description of the Science Program, see Kim A. Taylor, Katharine L. Jacobs, Samuel N. Luoma, “CALFED: An Experiment in Science and Decisionmaking” *Environment* 45, 1, Jan/Feb, 30-42, 2003.

<sup>29</sup> For an account of how these scientific differences arise in negotiated rule making, see Connie Ozawa, *Recasting Science: Consensual Procedures in Public Policy Making*, Westview Press, Boulder, CO, 1991.

review research. These experts worked with the agencies and provided a check upon the natural predispositions of agency- and client-based science. The Program set priorities, requested research proposals for long term studies, set up a peer-reviewed on-line journal, and held annual science conferences designed to share knowledge. The staff sought out experts who knew their fields well and could articulate what everybody thinks. These experts would write white papers, which in turn, would be peer reviewed and perhaps a workshop would be held. The Science Program also established the Independent Science Board, modeled on National Academy of Sciences boards, with national level experts. It was to review specific issues within CALFED and give a stamp of approval or provide insights into how to do things better.

One staffer described how the Program worked in an adaptive way, learning as it went along:

We've iteratively designed the program and tried to make certain things happen, and we're constantly revising the techniques we use to try and get to the goals we've established. .... I hope that there's a more open exploration of boundary conditions and ideas and pushing and testing things... We can learn a lot from small places where CALFED has invested a lot of money. When we know we're actually going to do something, we treat it as an experiment. We put things in place, and then do some basic process-oriented research.

Despite the aloof, neutral science model of some of the rhetoric, this staffer's role was in part to negotiate with the scientists to help them create knowledge that would be usable in on-going decisions. In this respect, the approach was closer to a social constructionist approach than one that presumed neutral science could access truth.

One of the things that we do is to frame questions for outside researchers and experts to become involved. We have to explain to them what we want them to do,... what kinds of comments are appropriate, and what aren't. We need to elicit information that's going to be right on target with respect to management needs without telling them that we're constraining them.

As this staffer saw it, "One of our chief goals is to be the go-to people that describe the state of certainty and knowledge from the research community in an unbiased fashion." The idea was that the science would not be "spun" by any interest group, including agency staff. In addition, the goal was to try to communicate what the research community disagrees on and help policy makers focus on most important factors.

To deal with the need to look at the big picture, a CALFED-wide executive board was set up. A staff member explained how agencies take a piecemeal approach:

The agencies are very, very good at slicing and dicing and giving out pieces of things to do within individual programs. They're very, very, very bad at looking at, for example, is what you're doing in water use efficiency going to help the ecosystem?

The approach they followed was to invest in research that could build CALFED's information capacity. One staff member told us,

We're looking at the studies that we could do as kind of a portfolio—things that can yield information on a fairly short time frame, like analysis of existing data sets.

The Science Program, through its various review panels, has done some independent assessment of CALFED's performance, as the ROD intended. Science program staff had to “try to kick it back” (development of performance measures) to the agencies and work with them because they did not feel they could do something so big. So far, few, if any, performance measures have been agreed on or used by the agencies.

The Science Program model has had some successes. It has been used effectively for after-the-fact review of projects and for reviewing inputs into modeling efforts critical to the protection of endangered species. It has enlisted staff from different agencies in, for example, developing a joint research agenda for the endangered delta smelt. The Science Program did produce changed practices and attitudes according to one lead staff member.

I do see some change, I see people talking more. . . I see people who didn't want to talk to each other because they were in different agencies actually trying to chip in on joint research. I've seen much broader acceptance of outside researchers. [A high level staff member] said to me, ‘You know what? You guys are really good; you're not just giving us science, you're giving us stuff that's really useful. Your science is really helpful to us.’

The concept of having science that is trustworthy to all is essential to collaborative governance. This particular science model, however, fits at best uneasily with CALFED's collaborative style. The Science Program is in CALFED but not of it. It is not integrated with this new-style networked institution for the most part. CALFED is a rapidly moving, real-time water governance system, but the Science Program operates on its own time. Collaborative governance requires a more nimble and responsive science. Of course, CALFED has consultants and its work groups, who do operate in a

comparatively nimble way. The Science program can and does review this work, but again, not in a very timely way.

The Science Program has suffered from the declining funding of CALFED so it cannot do all that was promised in the ROD, which intended that the Program be funded at \$50 million a year. Instead, it has gotten less than that annual figure over four years. In the face of declining funding with no indication of improvement, the first Science Program director left and was replaced by a second who proposed a rather different model for the program. He proposed being more “responsive” to agency needs,<sup>30</sup> emphasizing review, science oversight and program assessment, improving science communication for management purposes, and increasing staff so they could do more things in-house. While this vision did make some sense in the CALFED context, it was not uncontroversial. Some thought it would mean the program would not be as independent and it could end up doing tasks that would be more like contract consulting than independent science. This second program director resigned in frustration with the agencies after only a year, and at this writing, the Program’s future direction remains somewhat uncertain.

Integrating independent science into long institutionalized practices of agencies will not happen overnight, if at all. Developing a model for independent science in a fast-moving collaborative decision-making process is a challenge. It may be wishful thinking or even completely paradoxical to imagine that this marriage can be made. The best practices that have been developed for collaborative policy dialogues involve what has been called “joint fact-finding,”<sup>31</sup> where scientists with different affiliations and lay stakeholders come together to jointly assess data and come to agreement on knowledge about an issue. This then reflects both lay and scientific knowledge and understandings, and it is very likely to be used. This kind of effort is built on a very different epistemological foundation than is the Science Program. Underlying the joint fact-finding approach is the idea that knowledge is socially constructed. Scientists have contributions to make, but no unique access to truth. Scientists representing different viewpoints and stakeholders with different knowledge of the practical realities can work together to construct a joint understanding of the relevant facts. When this can be achieved, collaborative processes can move forward with the necessary basis for building agreement. This kind of joint discussion did occur in the EWA and some of the subgroups, but it is not the central conception of the Science Program. In that program, the scientists are not even chosen

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<sup>30</sup> California Bay-Delta Authority Meeting, June 8, 2005.

<sup>31</sup> See John R. Ehrmann and Barbara L. Stinson, “Joint Fact-Finding and the Use of Technical Experts,” Chapter 9 in *The Consensus Building Handbook: A Comprehensive Guide to Reaching Agreement*, Lawrence Susskind, Sarah McKearnon, and Jennifer Thomas Larmer eds., Sage Publications, Thousand Oaks, CA, 1999.

collaboratively by the participants, much less engaged in their deliberations, though some scientists consult with the agencies. In our view, the Science Program is a worthy idea, but it needs to be rethought to be more effective for a collaborative setting.

### **Shift Toward Greater Accountability and Transparency Through a Public Governing Body with Planning and Tracking Systems**

[Transparency] has become the norm in little ways. The fact that now you routinely have public meetings where state and federal agencies discuss in public what they're doing is really different.

—CALFED staff member

CALFED was predicated on a notion of opening up the workings of various agencies to each other and to the public so that better coordination and joint problem-solving could occur. This idea, simple on paper or in a public speech, is difficult to put into practice in any hierarchical bureaucratic and political system, let alone one so contorted with conflict. As one CALFED staff member put it,

It's very hard for the powerful agencies to give up a grip, to relax that grip at all. And hiding things—doing it their way and not being open—I don't think it's intentional or corrupt, but it's very much a part of the culture.

Still, accountability and transparency are qualities that various parties in CALFED have advocated from the outset, and program staff and leaders have publicly aspired to. They see these qualities as necessary for building trust and making headway on water problems. CALFED has achieved a substantial shift in the direction of accountability and transparency.

The switch from coordination by the Policy Group to oversight by the Authority is significant. In the past, the Policy Group voluntarily held dialogues and negotiations among its members. Now the Authority has decision-making power to direct its staff's implementation of the program. Here is how one staff member, anticipating the switch from Policy Group to Authority, described the expected change:

They [Policy Group give advice but] don't have ownership of [CALFED staff work]. They can complain just like the stakeholders about the CALFED program when it's not going well. But if it's going well, then they take more ownership so it can be frustrating. I think [the new Authority] will be much different—they'll be accountable. I mean there won't be any question that we will have a board of directors. They'll be more distant [than the Policy Group], but it will be clearly their responsibility...It



becomes much more of an accountable process. What they advise and decide on, they will have much more of an investment in the program going on under them.

Many important CALFED issues have been publicly presented and discussed at CBDA meetings thus far, and reports on these are available on its web site, providing much greater public access to what is decided than under the Policy Group. So it is accountable in this respect, but without oversight over the budget of any agency or authority over their actions (especially federal agency decisions as it is technically a state agency), it is not really accountable in a substantive way. The Authority cannot compel any of the CALFED agencies to make particular decisions. CALFED staff contended, however, that the power of the Authority lies in the fact that implementing agencies review and “approve” agency work plans.

Agencies are essentially coming to the Authority for a finding of consistency with the ROD. The significance of this review process is the peer pressure factor. Agencies must be accountable in public if they go against the recommendations of the Authority.

A stakeholder described the importance of the Authority in the following way:

What the governance structure is about is how all these agencies are applying their discretion. Each has a great deal of discretion as to how it lives up to its underlying responsibilities and authorities. And in CALFED, you’re asking those agencies to apply their discretion in favor of the balance as defined by the umbrella organization. That means doing things differently than they otherwise would.

Peer pressure is likely not the ironclad assurance that many stakeholders wanted for the CALFED governing structure, yet public review and peer pressure at this level is a significant stride toward making state and federal agencies more accountable to each other’s interests and to joint planning. The CBDA, at least potentially, serves as an institutionalized mechanism for implementing the ROD under the watchful eyes of partners and other interested parties.

### **Shift from Mechanistic Decision Making Toward Flexible, Adaptive Governance and Learning**

To the seven elements of the CALFED way cited by staff in their public presentations, we add an additional element: CALFED’s embrace of adaptive management and learning, both formal and informal. Governance in an era of uncertainty, rapid change, conflict, and complexity requires flexible systems that have distributed problem-solving capability, are rapidly responsive to new information and changing conditions, and that share information and decision

making. These are the characteristics that enable system learning and progression to higher levels of performance.<sup>32</sup> Collaboration itself is fundamentally based on the notion that parties must be able to learn from one another and that this learning will affect behavior.

One of CALFED's prominent qualities is its ability to generate and maintain multiple loci of action and creativity. One high level agency representative observed:

All the stuff you'd call CALFED products—legislation, bonds, the ROD—did not emanate out of formal CALFED agency cooperation structure.

Instead, he noted that CALFED leaders took ad hoc actions outside the structure. This suggests how permeable is the boundary between what is inside CALFED and what is outside. CALFED is a nucleus of activity and interaction, but it instigates and generates spin-off activities where the participants use CALFED heuristics, motivated by CALFED objectives and understandings even outside the CALFED forums.

CALFED has been successful at encouraging learning, creative problem-solving, adaptation, and innovation in small-scale workgroups. Many of the elements of the CALFED way, such as increased collaboration, emphasis on public involvement, and a shift toward local and regional solutions, are part of the adaptive framework staff use. Formal adaptive management is an explicit part of the CALFED science program's paradigm. Informal learning and adaptation is generated by CALFED's network structure, diverse participants, and collaborative norms. A CALFED staff person gave an example of a learning experience made possible through the collaborative process:

In 2001, several agencies were preparing to review the use of water from the Environmental Water Account (EWA)... Part of the review involved looking at a particular species, the winter-run Chinook. Under the Endangered Species Act, the amount of allowable "take" [kill] at the water pumps of any species is determined by the size of the population of that species in that year. As they prepared for the review, staff from several agencies began talking with one another about what some felt was a flawed methodology for estimating the winter-run Chinook population. As personnel from different agencies discussed with one another the alternative methods of estimating populations, they uncovered

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<sup>32</sup> There is a substantial literature on complexity originating in computer science, meteorology, physics and biology. Robert Axelrod and Michael D. Cohen (*Harnessing Complexity: Organizational Implications of a Scientific Frontier*, New York: The Free Press, 1999) have translated the ideas for the social sciences.

faulty assumptions that had prevented the use of a better method of estimating. The agencies subsequently changed a rule in order to allow for the more accurate count method to be used.

In the words of the staff person who provided this example,

[One of the co-chairs of the CALFED Policy Group] loved it. He couldn't believe that the agencies actually talked to each other and changed their minds—but that's adaptive management! One of the things you gain from a review, it forces the people who are being reviewed to talk to each other and prepare and think about what they're doing.

### **Challenges Facing CALFED**

In fall of 2005, CALFED is facing its greatest crisis. Whether it is adaptive and creative enough to deal with the concatenation of problems facing it today and emerge stronger, or whether it will become weaker and less effective in the effort remains to be seen. This crisis has already revealed some of CALFED's institutional limitations. It also reveals how fragile the public acceptance and understanding of collaborative governance is. The old way was not working, but at least it was familiar. The test will be to see whether the collaborative model can continue in the face of the doubts that have emerged among the political players and whether the CALFED way is sufficiently institutionalized for its collaborative heuristics to continue.

CALFED had considerable success in its pre-ROD planning phases and in getting cooperation among agencies and stakeholders on many tasks, such as ecosystem restoration, real-time management of operations, managing the EWA, and developing a path forward for many large and small issues. Its stakeholder participants have been able to build the public support necessary to raise billions of dollars in state bond issues to support CALFED projects and operations. It has weathered two changes in governors and one change in presidents. It has achieved a sort of balance and understanding among most players that has allowed it to move forward on many fronts. This is true although there remain some dissatisfied stakeholders and some major unresolved issues, like whether storage of surface water can be increased or whether the beneficiary pays model can be used to support EWA.

Today, the bond funding is nearly gone; the state legislature has provided no commitment to funding CALFED over time; and federal funds ceased for a considerable time and are not as yet assured over time. CALFED staffing has dropped from 120 at the peak to about 75 today. Before agreeing to add funds for CALFED, state legislators are looking for results and performance. CALFED has documented its projects and outlays, and such things as acre feet of water saved, but has not yet done the more difficult task of demonstrating its impacts on the

environment and on water users. In the meantime, a crisis of the Delta fisheries seems imminent. The food web on which the fish depend has itself collapsed for reasons that so far are not understood. The delta smelt, regarded as a crucial indicator fish, is in trouble. These facts were apparently known by many scientists long before they were brought forward publicly, much to the chagrin of the elected officials and others on the CBDA.

To add to the problems, the federal government's Bureau of Reclamation began proposing to increase water deliveries through its water contracts. Under the Republican administration, two other watersheds suffered from what critics contend was an excessive increase of water deliveries, so alarm bells quickly went off among environmentalists and state agency directors. Some water users, however, felt that the whole point of CALFED was to make more water available to them. It soon emerged that the National Oceanic and Atmospheric Administration (NOAA), which is required to give scientific opinions about possible harms to endangered species before federal agencies can take such action, had recommended against it. Then NOAA scientists were apparently asked to redo their report. Not surprisingly, a huge outcry from environmentalists ensued. In the meantime, state legislators have proposed to only provide "life support" funding for a year until they are convinced that CALFED deserves funding. A good deal of money has been spent, and they are not convinced it has been worthwhile.

The state's Little Hoover Commission held a day-long public hearing reviewing CALFED's record in late August 2005 in which political leaders of CALFED made statements about their assessment of the effort.<sup>33</sup> Bennett Raley, the former assistant secretary of the U.S. Department of Interior for water and science, faulted CALFED for failing to arrive at a consensus on increasing surface water storage, the most conflictual and difficult issue facing the organization. He said, "I do not believe that the authority is capable of grappling with and making recommendations on the tough issues." Former Governor Pete Wilson said the effort had fallen way behind expectations and contended it was "losing ground," and was nowhere near "preparing us for the next drought." Gary H. Hunt, the chairman of CBDA and of BDPAC, agreed that his agency is largely toothless. He said CALFED "needs to be reconstituted, given more authority, or we have to take a look at whether the authority should continue to exist." He pointed out, however, that CBDA still has achieved some significant successes, coordinating projects—valued at \$3 billion—that have added 500,000 acre-feet to the state's water delivery system and maintaining or improving some 700 miles of levees, among other items. He also noted, "We have kept the various factions in water at the table—they haven't been going to court," Hunt said.

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<sup>33</sup> "Delta Water Agency takes it on the chin" by Andy Furillo, *Sacramento Bee*, August 26, 2005.

This type of networked, rapidly changing organization that works through collaboration is not readily understandable for those who see the world in the traditional mold of government by formal authority and bureaucratic hierarchy. The legislators on CBDA and other leaders have expressed a serious lack of confidence in CALFED. They want to know why they did not hear sooner about the dire conditions of the zooplankton and Delta smelt. Some Hoover Commission members have been mystified by the shifting and hard-to-define structure of CALFED. A news article<sup>34</sup> contended that members of the Hoover Commission were “confused and frustrated Thursday after wading into the Byzantine world of California water.” It reported that one commissioner said, “I would recommend to the governor that they not spend a penny of that [money] until somebody understands what’s going on.”

Still, the article reported that, overall, “most decision makers remain convinced CALFED is a good idea that has had successes.” Bruce Babbitt, former U.S. Interior Secretary, conservation leader, and key architect of the ROD, said, “[CALFED] may have had major positive results” but that “expected rises in sea level will mean that some time soon the state would be pumping salt water into the California Aqueduct” (which sends water to southern California). He contended that it was time to let go of old conflicts and to consider solutions not considered in the past. Essentially, he argued that it was time for the players to think “out of the box.”

The Little Hoover Commission in late 2005 published its report on the CALFED program.<sup>35</sup> The report provides an excellent, thoughtful analysis based on extensive interviews with participants and scholars. It identifies strengths of CALFED, particularly its collaboration and coordination in the early years. It identifies many of the dilemmas CBDA faces, particularly its ambivalent mission of oversight and coordination and its mandate to set priorities and be accountable while lacking authority to make anything happen. Its recommendations include resurrecting the Policy Group as a more effective model for coordination than the CBDA. Despite the insights in the report about the workings of CALFED, the other recommendations basically propose subsuming CALFED into a largely traditional governance model, with a lot of talk about authority; accountability; clear, predefined goals; performance measures; and exhortations for top-down leadership. Yet these traditional concepts of governance are incompatible with collaborative approaches and, indeed, may destroy the very qualities that make them effective. CALFED is not an organization, but a multiplex of loosely linked agencies each of which has its own authority and goals. Like all collaborations, CALFED has to develop its own mission and shared purposes through its internal

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<sup>34</sup> Mike Taugher, “Global Warming Cited as Threat to Delta,” *Contra Costa Times*, 8/26/05.

<sup>35</sup> Little Hoover Commission, “Still Imperiled, Still Important: The Little Hoover Commission’s Review of the CALFED Bay-Delta Program,” November 2005. [www.lhc.ca.gov](http://www.lhc.ca.gov).

negotiations. Like all collaborations, it cannot prespecify outcomes, but must focus on problem solving and moving from a situation that is unsatisfactory to the players to one that is more satisfactory. CALFED's model, even with the Policy Group, still left many issues unresolved, such as funding, how to keep agencies working together, and how to demonstrate value to the public and the legislature. We believe that instead of trying to fit CALFED into a traditional governance box, the solutions to these problems should be ones that mesh with collaborative governance.

In one sense, the course of events in the last year or two can hardly be blamed on CALFED. Natural factors, political power, and agendas outside CALFED have been at work. On the other hand, maybe CALFED should have been able to forestall this set of problems. The Science Program, for example, was ostensibly set up to prevent this sort of dispute over science. Yet NOAA did not get its findings reviewed by the Science Program, though it is a partner in CALFED. Moreover, the Bureau of Reclamation, one of the core agencies in CALFED, did not review its plans for shipping more water south through CALFED and did not bring them to the CBDA until after it had held its own hearings. CBDA members made clear they felt the decision should have been brought to them first. The agencies remain autonomous, however, and cooperation with CALFED is voluntary despite CBDA. The expectations of transparency in CALFED and the way it has helped various agencies and groups to have a forum for discussion of such issues has made considerable trouble for the Bureau, however, which may affect its future decisions.

There is no simple solution. CBDA cannot be given authority over all these agencies and cannot preempt the prerogatives of political leadership. The most it can do is to create norms of cooperation and consequences for not cooperating. It needs to do more to measure its outcomes, rather than just its outputs. It needs to rethink the Science Program, which is framed by a traditional model of neutral science at one remove from policy making. Science needs to be integrated into a fast-moving collaborative decision making process if it is to have an impact. Ultimately, the contradiction between oversight authority and managing collaboration remains unresolved.

## **Summary and Reflections**

The CALFED program represents a leading edge example of a new form of collaborative governance. It engages directly more than two dozen federal and state agencies, along with a wide array of prominent stakeholder interests, in establishing water policy and management principles and practices, designing and implementing grant programs, and even in day-to-day water management decisions. It began as an ad hoc collaboration across agencies, largely in response to the listing of endangered and threatened species in the San Francisco Bay-Delta

and to court decisions requiring that more water be released to protect the fish. These events created new uncertainty among California's water users and new environmental concerns, and provided the trigger for state and federal agencies to work together. Over its lifespan, CALFED has evolved to become an increasingly complex, networked system designed to address many water-related issues.

Since 2003, CALFED has not been an ad hoc collaboration, but one that operates under a new California Bay-Delta Authority (CBDA). In its 10 years, the program has changed institutions and practices for managing California's water from isolated, slow, and often contradictory decision making by narrowly focused agencies to joint learning and timely action across levels of government and agencies. It has incorporated the knowledge and creativity of diverse stakeholders in its problem-solving working groups, giving them significant new influence. It has increased transparency and accountability in policy making as well as scientific knowledge about the Bay-Delta. Its participants helped get public approval for billions in state bond money which, along with federal funds, has supported CALFED, restored habitat, and provided grants around the state for water-related projects.

The continuing dialogue among CALFED's groups has produced a new shared mission and understanding among agencies, along with new norms and practices. There has been agreement on fundamental points, including that the ecosystem is at the center of competing demands, that water supplies are not reliable, that water quality degradation makes it difficult to make a drinking water standard and that Delta levee failures threaten all water uses.<sup>36</sup> It has established practices of independent science review to reduce the use of advocacy science in policy making. It has resulted in new forms of grant-making based on merit and on the degree to which a proposal meets CALFED's collaboratively developed criteria and objectives. It has devolved initiative and responsibility to regions, which now collaboratively develop their own approaches to their water issues. It has resulted in modifications to the rigid, top-down regulatory strategy previously used by agencies. It has produced new habits of communication and participation across traditional barriers, and a new emphasis on tracking and accountability. Many of these practices, however, have begun breaking down in the face of declining funding and lack of the state and federal leadership at the highest levels that were so important in the creation of CALFED and so important in sending the message that collaboration was necessary.

CALFED produced many innovations in water management including the EWA, coordinated grant-making based on shared criteria among the dozens of public agencies, and real-time management of water operations by diverse

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<sup>36</sup> From the CBDA web site, [http://calwater.ca.gov/AboutCalfed/CALFED\\_Standard\\_Presentation\\_2005/Presentation\\_2005.htm](http://calwater.ca.gov/AboutCalfed/CALFED_Standard_Presentation_2005/Presentation_2005.htm)

stakeholder-agency groups. CALFED also produced important and concrete outcomes. As the current Chair of the California Bay-Delta Authority testified to the state's Little Hoover Commission, CALFED coordinated projects valued at \$3 billion, added 500,000 acre-feet to the state's water delivery system, maintained and improved some 700 miles of levees, and kept the various factions at the table instead of in the courtroom.<sup>37</sup>

For the long term, CALFED has built the capacity of California's water decision making system. It has built social, political, and intellectual capital which has changed the content, process, and outcomes of California water management. It has broken the paralysis in water policy making that preceded it and turned the California water wars into skirmishes. It has modified, but not usurped, decision making by agencies and political officials. Nonetheless, it faces continual challenges from political pressures, agency agendas, complex ecosystem dynamics, and unhappy stakeholders. Collaborative governance fits uneasily into the traditional practices of government, politics, and adversarial legalism, though it is more compatible than the traditional system with complex ecosystem management.<sup>38</sup>

Whether and how CALFED's emergent model of governance can establish itself for the longer term remains to be seen. Its biggest obstacle is the understandings and expectations of many outside CALFED, who assess its workings and products in terms of a machine model of the world, where a program is specifically designed to produce particular outputs. The strength of collaborative governance is its ability to respond to changing conditions and new information and to do new and unexpected things. Current challenges, as the Bay-Delta fishery seems on the verge of collapse, will test CALFED's adaptive learning capacity, its influence and its staying power. At this writing, at least two major efforts are underway to assess CALFED's governance system, one by the state's Little Hoover Commission and another by CALFED itself. This is as it should be. The novelty of CALFED and the way it is breaking new ground in governance makes it critically important that serious assessments be done to learn from the experience and make corrections. This paper is an effort to understand the governance model that has emerged in CALFED.

CALFED is an on-going experiment in collaborative governance. It emerged as a result of a consensus of agency leaders in California that the existing model for managing water in the state was insufficient to the challenge. The job was not getting done. Unlike traditional governance structures, CALFED was not established by legislation. Instead, the structure emerged out of the voluntary

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<sup>37</sup> Furillo, *op. cit.*

<sup>38</sup> John S. Dryzek, *Rational Ecology: Environment and Political Economy*, Basil Blackwell, Oxford, 1987.



interaction of leaders from many agencies and stakeholder groups. It is a self-organizing network that is adaptive in real time and still evolving. It relies on collaboration rather than on hierarchical authority. For many who look at this through the lens of traditional ideas about governance and authority, this “structure” is mystifying. As one member of the state’s Little Hoover Commission exclaimed, “I have no concept in my mind as to who is running this ship. I don’t get it.”<sup>39</sup>

The CALFED system is more adaptive than the earlier model of water governance because it is more permeable to outside ideas and to information about emerging changes in its political or natural environment. Its networks extend into many communities and stakeholder groups, each with differing knowledge and perspectives. These networks can provide rapid feedback on how things are working in the field and on new challenges. As participants challenge one another, offer one another unfamiliar information, and create shared understandings, they can produce new strategies for dealing with thorny issues. Innovation emerges from such free flowing, networked systems among interdependent agents because it brings diverse ideas into play along with diverse needs. Innovation is often the only way to address challenges. Patterns of this sort are well documented in the literature on complexity science, which offers many insights for understanding collaborative governance and how, why and under what conditions it works.<sup>40</sup>

In CALFED, multiple state, federal, non-profit, and private parties have created an innovative hybrid of traditional governance and interest-based collaboration to address some of California’s most intractable and contentious water policy issues. CALFED exists today as a venue for agencies and stakeholders to work together on a common strategy. It is also a network of more and less informal forums among diverse players, where lines of communication are kept open and information is exchanged in a transparent way. The ensuing creativity feeds upward and radiates outward into real action throughout the system. In the end, the particulars of CALFED’s structure and history are less important than the fundamental values and concepts of governance that have changed. As one key stakeholder put it,

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<sup>39</sup> Taugher, op. cit.

<sup>40</sup> See, for example, Axelrod and Cohen, op. cit.; Fritjof Capra, *The Hidden Connections: Integrating the Biological, Cognitive, and Social Dimensions of Life into a Science of Sustainability*, New York: Doubleday, 2002; Ralph D. Stacey, *Complexity and Creativity in Organizations*, San Francisco: Berrett-Koehler Publishers, 1996; Peter M. Allen, “A Complex Systems Approach to Learning in Adaptive Networks,” *International Journal of Innovation Management*, (June 2001) Vol. 5, No. 2 (pp.149-180); and Bill McKelvey, “Energising Order-Creating Networks of Distributed Intelligence: Improving the Corporate Brain,” *International Journal of Innovation Management*, 5, 2, June, pp. 181-212, 2001.

There was a movement afoot for a while to kill [CALFED]... I would say to [those who want to kill it], if you do, then you'll have to reinvent it. We can't function independently in this estuary anymore.

When looked at through the prism of traditional public administration and policy analysis, the proliferation of teams and communications among CALFED agencies looks messy indeed. One important team even called itself "the No-Name Group," in ironic recognition of the plethora of working groups and acronyms. A former California Resources Agency Secretary summed up CALFED governance: "It's an authority with no authority, with a governmental structure that only a mother could love."<sup>41</sup>

There is growing recognition by scholars that the frustration with traditional governance that was a catalyst for the emergence of CALFED is a concern for many public agencies. In a recent survey of the status of public administration, Donald Kettl noted that new problems are confronting the field based upon the complexity, uncertainty, rapid change, and fragmentation in society. "The challenge facing government administrators in the twenty-first century," he says, "is that they can do their jobs by the book and still not get the job done."<sup>42</sup> He found that the challenge "requires understanding that fundamental transformations have occurred in governance, and that these transformations challenge both administration and policies" (p. 25). He argues that "government must not only devise new strategies for managing public programs effectively in a globalized and devolved policy world, but it must also build the capacity for pursuing these strategies" (p. 146).

In another recent review of traditional governance reform efforts, administrative law scholar Jody Freeman argues that these do not respond to the most serious weaknesses of the present system. She suggests the reforms are inadequate because they are based on an adversarial administrative decision-making process driven by interest representation. She proposes instead a model of collaborative governance. Collaborative governance, according to Freeman, requires joint problem solving, broad participation, provisional solutions, the sharing of regulatory responsibility across the public-private divide, and flexible, engaged agencies.<sup>43</sup>

Large-scale collaborative efforts comparable to CALFED are also taking place, for example, in the multi-state region of Chesapeake Bay and in Florida's

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<sup>41</sup> Quoted in Furillo, *op. cit.*

<sup>42</sup> Donald F. Kettl, *The Transformance of Governance: Public Administration for Twenty-First Century America*, Baltimore: Johns Hopkins University Press, 2002, p. 22.

<sup>43</sup> Jody Freeman, "Collaborative Governance in the Administrative State," *UCLA Law Review*, 45, 3, 1-98, 1997.

world famous Everglades. Eight case studies of similar collaborative governance efforts to manage water in Florida are documented in a new book.<sup>44</sup> Other forms of public collaborative governance include numerous examples of policy consensus building, community visioning, participatory budgeting, negotiated rule making, and networking among social service delivery agencies.<sup>45</sup>

Some of the early experiments in public collaborative governance coincided with recognition of many in the business community that adaptive governance was required for success in high velocity industries. As early as 1984, futurist and business consultant Alvin Toffler noted that, “Instead of being routine and predictable, the corporate environment has grown increasingly unstable, accelerative, and revolutionary... The adaptive corporation, therefore, needs a new kind of leadership. It needs “managers of adaptation equipped with a whole set of new, nonlinear skills.”<sup>46</sup> More recently, studies in the technology industry have focused attention on the evolution of collaborative modes of governance in industries dealing with complexity, uncertainty and rapid change. For example, one study comparing success for six companies in computer technology found that the most successful in adapting to continuous change worked with a combination of clear management responsibilities and defined project priorities, but left other decisions up to the product design teams. They relied on extensive communication across projects and a wide variety of low-cost probes of the future, rather than on formal plans or reactive behavior.<sup>47</sup> Another study of 72 projects in the computer industry showed that fast adaptation was pivotal for product innovation and strategic competence. Traditional strategies that involved centralized decision making, formal plans, conflict avoidance, minimal analysis and information, and rewards for schedule keeping were less successful than processes which used adaptive strategies such as experiments, extensive testing, frequent milestones, and multifunctional teams.<sup>48</sup>

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<sup>44</sup> John T. Scholz and Bruce Stiftel (editors), *Adaptive Governance and Water Conflict: New Institutions of Collaborative Planning*, Washington, D.C.: Resources for the Future, 2005.

<sup>45</sup> David E. Booher, “Collaborative Governance Practices and Democracy”, *National Civic Review*, 93, 4, 32-46, 2004; Judith E. Innes and David E. Booher, “Collaborative Policy-Making: Governance through Dialogue,” in Maarten A. Hajer and Hendrik Wagenaar (editors), *Deliberative Policy Analysis: Understanding Governance in the Network Society*, Cambridge, UK: Cambridge University Press, 2003.

<sup>46</sup> Alvin Toffler, *The Adaptive Corporation*, New York: McGraw Hill, 1984, p.2.

<sup>47</sup> Shona L. Brown and Kathleen M. Eisenhardt, “The Art of Continuous Change: Linking Complexity Theory and Time-Paced Evolution in Relentlessly Shifting Organizations,” *Administrative Science Quarterly*, 42, No. 1, 1-34, 1997.

<sup>48</sup> Kathleen M. Eisenhardt and Behnam N. Tabrizi, “Accelerating Adaptive Processes: Product Innovation in the Global Computer Industry,” *Administrative Science Quarterly*, 40, 1, 84-110, 1995.

Public agencies, like businesses, must create capacity for adaptation and innovation to address the challenges of uncertain, complex, fragmented, and rapidly changing environments. California leaders are now engaged in a discussion about the future of CALFED's governance. Some of this discussion, so far, seems to assume that traditional government authority is required. This paper offers a different perspective. It suggests that the most effective reforms will be those that enhance the collaborative governance capacity of the CALFED experiment.

# California Bay-Delta Authority

