Intergovernmental Policy Implementation:

Examining Interorganizational Networks and Measuring Network Performance

Mark T. Imperial

Ph.D. Candidate in Public Affairs
School of Public and Environmental Affairs
Indiana University
Bloomington, IN 47405

(812) 855-5971 (W)
(812) 855-7802 (Fax)

mimperia@indiana.edu

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School of Public and Environmental Affairs
Indiana University, Bloomington IN 47405
Telephone (812) 855-7980 Fax (812) 855-7802

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MARK T. IMPERIAL
Ph.D. Student in Public Affairs/Adjunct Professor
School of Public and Environmental Affairs
Indiana University
Bloomington, IN 47405
mimperia@indiana.edu

Abstract This study examines the implementation of a Special Area Management (SAM) plan for the Salt Ponds watershed in Rhode Island. The paper has two objectives. First, it uses the case study to order to draw lessons that can advance our understanding of interorganizational policy implementation. Second, the study demonstrates how the Institutional Analysis and Development (IAD) framework can be used to examine interorganizational policy implementation. The study highlights the challenges associated with measuring network performance and makes several important observations about the polycentric network structure used to implement the SAM plan. The paper concludes by arguing that attempts to synthesize top-down and bottom-up models of intergovernmental policy implementation are misguided. Instead, it argues that greater attention should be given to the "networked" nature of intergovernmental policy implementation. Accordingly, future research should focus on developing theories that help explain interorganizational interactions within polycentric implementation networks. Two of the theories examined in this paper, transaction cost economics and the configurational nature of rule-ordered relationships, appear to have some potential for explaining interorganizational relationships.

Key Words Environmental planning, environmental policy, evaluation, implementation, institutions, institutional analysis, intergovernmental management, and interorganizational networks

Introduction

A central debate in the implementation literature focuses on how to model this intergovernmental process. The "top-down," "forward mapping," or "programmed" approach argues that implementation problems can be minimized through careful and explicit preprogramming of implementation procedures (e.g., Sabatier and Mazmanian 1979, 1983; Mazmanian and Sabatier 1983; Ripley and Franklin 1982; Edwards, 1980; Van Horn 1979; Van Horn and Van Meter 1976; and, Van Meter and Van Horn, 1975). The competing "bottom-up," "backward mapping," or "adaptive" approach argues that effective implementation requires a process that allows policy to be adapted based on the unfolding interaction of a policy with its institutional setting. Bottom-uppers view implementation as the result of a bargaining process,

rather than due to the explicit control of federal decisionmakers (Elmore 1987, 1985, 1982, 1979-1980; Berman 1980, 1978; Browne and Wildavsky 1984; Lipsky 1980; and, Weatherly and Lipsky 1977). The debate has also begun to find a home in research on intergovernmental management (IGM) (Agranoff and McGuire 1998). The top-down model is similar to the principal-agent model (e.g., Chubb 1985) while the bottom-up model is similar to the donor-recipient model (e.g., Pressman 1975).

There are important differences between the two perspectives. Top-downers seem to implicitly accept Wilson's (1887) politics-administration dichotomy by assuming that policy formation and implementation are discrete steps in the policy process; legislators determine policy and administrators implement it. For top-downers like Mazmanian and Sabatier (1983), the ability of a statute to structure implementation is the key to a program's success. Implementation is administration, something separate and distinct from the political process. Bottom-uppers tend to reject the politics-administration dichotomy. Instead, they argue that implementation is politics; policy is what is formulated during the implementation process. Successful implementation results when the participants in an intergovernmental setting reach agreement on the scope and substance of a policy or program. This bargaining process is structured by a number of factors, only one of which is the content of a federal statute.

The two perspectives also reflect a tension between Hamiltonian and Madisonian democracy that pervades public administration research (Kettl 1993; and, Stillman 1991). Some researchers come to the subject of implementation from a fundamentally Hamiltonian bent seeking a strong administrative apparatus and a vigorous state. The task of administrators is to carry out publicly defined goals effectively. Thus, implementation of federal policy requires strong federal control over state and local actions. Implementation is a problem of administration, not politics; national policies should be implemented at state or local levels. Those coming from a Madisonian perspective are wary of too much federal government control. Like Madison, they prefer a delicate balance of power and a less vigorous state (Kettl 1993; and, Stillman 1991). Thus, they are likely to view implementation as a problem of bureaucratic politics and bargaining among actors. Implementation requires adapting national policies to local conditions. Since centralization limits local autonomy, bottom-uppers argue that implementation should occur in a decentralized policy environment.

Even more significant is the fact that both approaches tend to reflect different visions of how our federal system operates in that each model is based, in part, on a normative and prescriptive argument about where power should lie. The top-down model envisions a centrally controlled, hierarchical system of government where the federal government maintains a high degree of control over state and local government actions whether it is through law or the use of money to coerce state and local government actions (Chubb 1985). The bottom-up model is based on a decentralized model in which federal control is decentralized, intentionally or unintentionally, to state or local governments as a result of bargaining, conflict, and compromise. As a result, bottom-up models tend to give too much importance to local autonomy and typically downplay the important role that federal authorities have in shaping state and local policies.

While several scholars have tried to synthesize top-down and bottom-up perspectives (e.g., Matland 1995; Goggin, et al. 1990; Lester, et al. 1987; Sabatier 1991, 1988, 1986, and

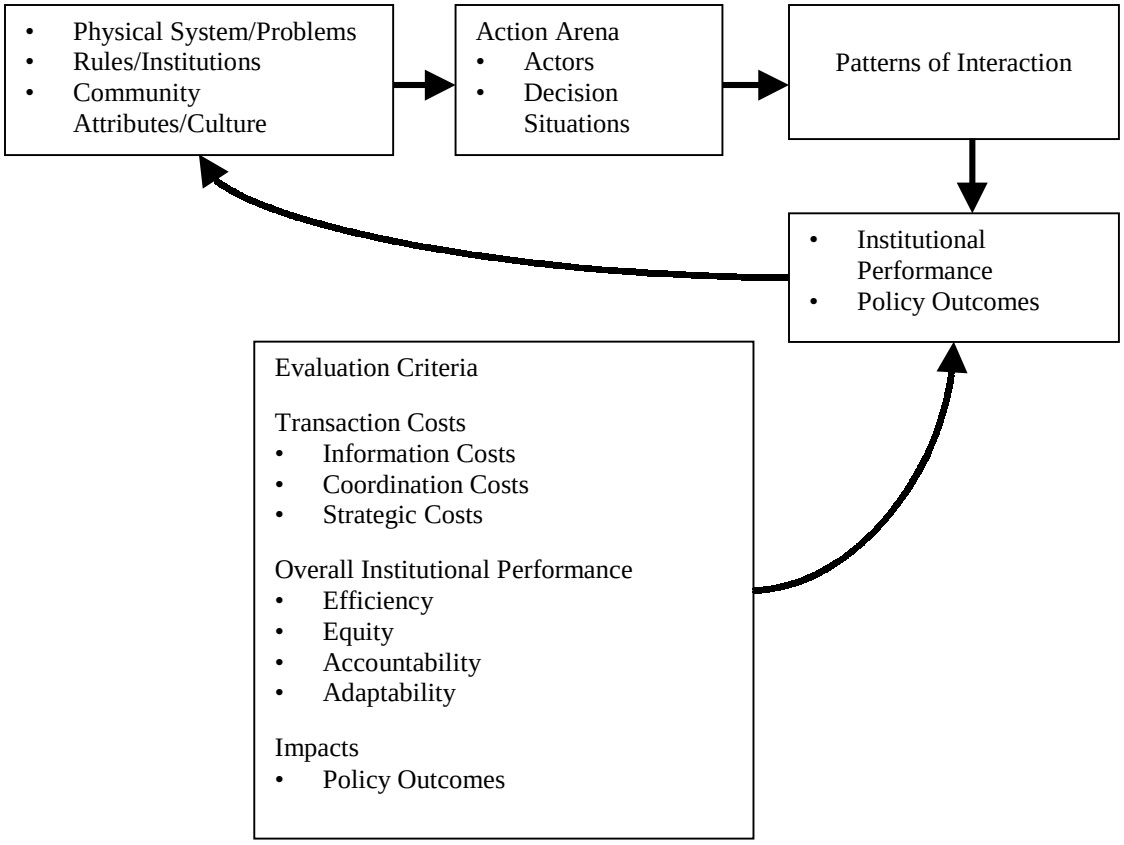
1985; Ingram 1990; and, Elmore 1985), these efforts have not moved most research far from the traditional top-down or bottom-up views of intergovernmental policy implementation. More important though is the fact that neither model is an accurate portrayal of how our federal system of government operates. As Elazar (1987), Ostrom (1994, 1989), Wright (1988), and others have argued, our federal system is polycentric in structure and is composed of overlapping and differentiated authorities. Thus, the top-down and bottom-up approaches often fail to provide a good descriptive model of this intergovernmental process.

To address these shortcomings, a growing number of researchers are now examining the role that interorganizational networks play in policy formation and implementation. Research refers to the network phenomena in a variety of ways such as issue networks (Heclo 1978), mandated networks (Raelin 1980), implementation structures (Hjern and Porter 1981), interorganizational policy systems (Milward 1982), intergovernmental management (e.g., Agranoff 1996, 1986; Agranoff and McGuire 1997; Gage1990; and, Mandell 1990), institutional arrangements (e.g., Ostrom, et al. 1993), managed networks (Wright 1983), federations (Provan 1983), advocacy coalitions (e.g., Sabatier and Jenkins-Smith 1993), and, policy networks (e.g., Bressers, et al. 1995; Marin and Mayntz 1991; and, Rainey and Milward 1983). Unfortunately, while the process of implementation in networked settings is clearly a practical concern, the process is not well understood. Nor is the pragmatic concern of managing in these settings (Mandell 1990). There is no consensus on definitions, concepts, or the methodological approach to studying the structure of interorganizational networks (IONs). Some approaches examine interorganizational relationships involved in policy formation (e.g., Sabatier and Jenkins-Smith 1993) while others focus on the implementation process (e.g., Hjern and Porter 1981). It is unclear how IONs influence the behavior of actors within a network. It is also unclear how one "manages" or changes an ION. Moreover, few studies have examined the performance or success of IONs (e.g., Provan and Milward 1995).

The paper has two objectives. First, it uses a case study of implementation in a networked setting in order to draw lessons that can advance our understanding of interorganizational policy implementation (Rose 1993). Second, the study demonstrates how the Institutional Analysis and Development (IAD) framework developed by Elinor Ostrom (1990, 1986) and her colleagues (e.g., Ostrom, et al. 1994; Ostrom, et al. 1993; Blomquist 1992; and, Kiser and Ostrom 1982) can be used to examine interorganizational policy implementation.[1]

The case study examines the implementation of a Special Area Management (SAM) plan for the Salt Ponds watershed in Rhode Island. The case was selected for several reasons. First, it is an example of a multi-party, multi-issue situation where various state and local officials are trying to improve interorganizational coordination and integrate their policies and programs. This allows one examine how implementation activities are constrained, influenced, and shaped by a number of different state statutes. Most implementation research examines only one statute. Second, the Salt Ponds SAM plan has a rich history with nearly 14 years of implementation experience. This allows one to view interorganizational policy implementation using a longitudinal approach. Most implementation research is cross-sectional in nature. Third, the implementation literature often advocates either a top-down (i.e., centralized, hierarchical model) or bottom-up (i.e., decentralized, hierarchical model) approach to interorganizational policy implementation. This case study examines implementation in a polycentric setting; there is no

Figure 1: The Institutional Analysis and Development (IAD) Framework



Source: Modified from Ostrom, Elinor, Roy Gardner, and James Walker. 1994. *Rules, Games, & Common-Pool Resources.* Ann Arbor, MI: The University of Michigan Press.

top or bottom to the interconnected network of actors involved in policy development and implementation. Finally, the case focuses on the implementation experience that is often ignored by researchers; state- and local-level policy implementation which has not occurred as the direct result of a new federal or state statute.

Preparation of the Case Study

The case study was developed using a variety of data sources including research publications,[2] government reports,[3] newsletters, and memoranda. Interviews were also conducted with key actors involved in the SAM plan's development and implementation. The author was also involved as a participant-observer having worked for two organizations discussed in the case.[4] The data was analyzed using systematic qualitative techniques (Miles and Huberman 1994; and, Patton 1990) and the IAD framework [Figure 1] guided the analysis.

The IAD framework is a theoretical framework that has been used to guide the analysis of interorganizational relationships in a variety of settings such as groundwater, common pool resources (CPRs) (e.g., irrigation systems, forests, fisheries, etc.), metropolitan organizations, rural infrastructure development, and macropolitical institutions. Institutions are defined as "enduring regularities of human action in situations structured by rules, norms, and shared strategies, as well as by the physical world. The rules, norms, and shared strategies are constituted and reconstituted by human interaction in frequently occurring or repetitive situations (Crawford and Ostrom 1995, 582)." Institutions include families, churches, local governments, government agencies, and most organizations since they are defined by rules, norms, and shared strategies (Ostrom, et al. 1993, 6). Institutions promote socially beneficial outcomes by helping actors resolve "social dilemmas" resulting when individually rational actions aggregate to produce socially irrational outcomes. Therefore, institutional arrangements provide the means to resolve collective action problems (Firmin-Sellers 1995, 203).

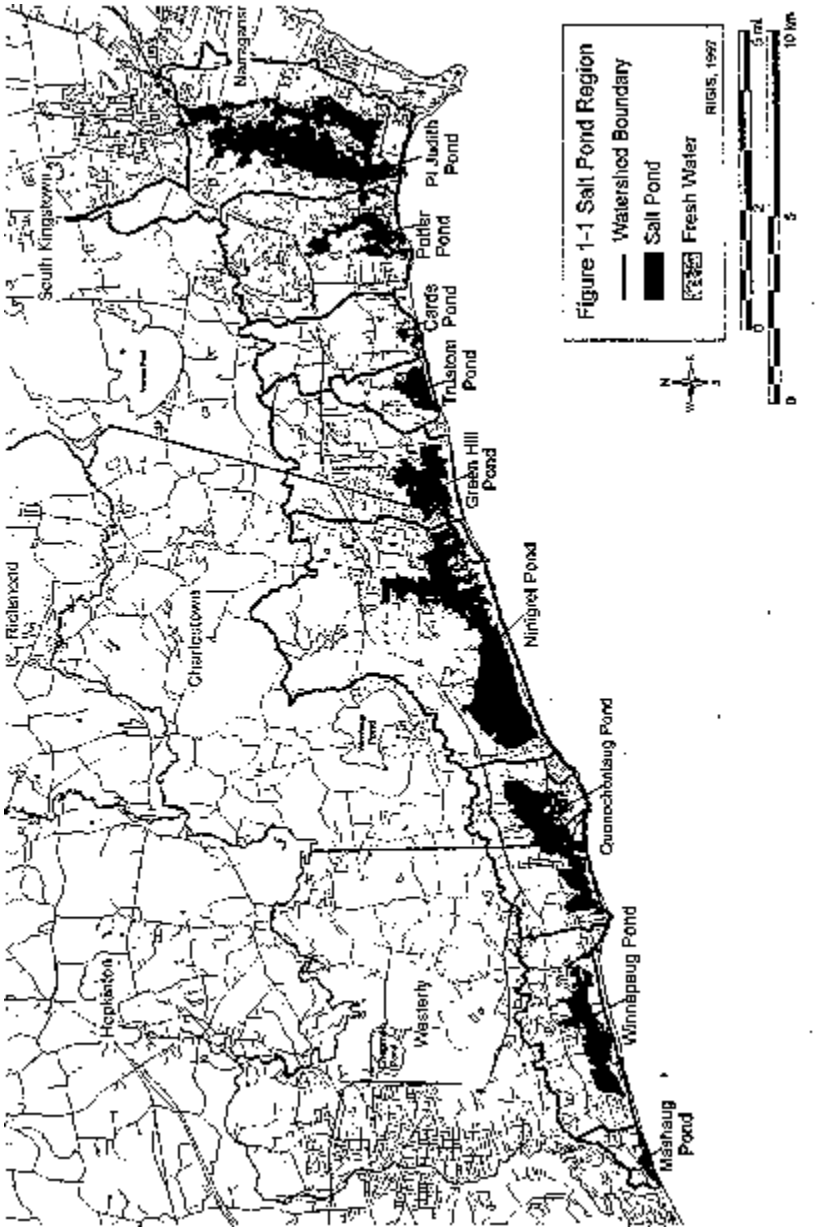
What differentiates institutional analysis from most forms of organizational analysis is the focus on rules. Rules are an implicit or explicit attempt to achieve order and predictability among humans (Ostrom 1986). Rules are prescriptions that forbid, permit, or require some action or outcome and the sanctions authorized if the rules are not allowed (Crawford and Ostrom 1995). Rules can be formal (e.g., laws, policies, regulations, etc.) or informal (e.g., social norms). Since "rules are not self -formulating, self-determining, or self-enforcing" (V. Ostrom 1980, 312), they are formulated in human language and subject to problems of lack of clarity, misunderstanding, and varied interpretations. The stability of rule-ordered interactions therefore depends upon the development of shared understanding of rules (Ostrom, et al. 1994, 40). This often requires building trust by monitoring and enforcing rules. Enforcement can take the form of formal (e.g., cease and desist order, civil penalties, criminal penalties, etc.) or informal (e.g., a verbal comments or facial expressions demonstrating displeasure) sanctions.

Institutional analysis is therefore an attempt to examine a problem that a group of individuals (or organizations) face and how the rules they adopt address a problem. The IAD framework does not advocate a particular type of institutional arrangement (e.g., markets or hierarchies) nor does it rely on a single measure of institutional effectiveness. Rather, the IAD framework draws attention to the various factors that influence institutional design: the physical characteristics of the system and the nature of problems; the culture of the individuals (organizations) trying to solve problems; and, the institutional setting that the individuals (organizations) are embedded within (Ostrom 1990, 55).

The Salt Ponds SAM Plan

This case examines a network of public and nongovernmental actors' involved in developing and implementing a Special Area Management (SAM) plan for the Salt Ponds watershed located along the southern coast of Rhode Island. The Salt Ponds, as they are known locally, are a string of nine brackish coastal lagoons separated from the ocean by a low narrow strip of barrier beach islands. Their watershed encompasses approximately 82.4 km^2 and is contained within the municipalities of Narragansett, South Kingston, Charlestown, and Westerly [Figure 2]. The ponds are shallow, poorly flushed, and the freshwater input is primarily from groundwater and surface runoff. This makes them valuable as fish and shellfish nurseries but

Figure 2: Rhode Island's Salt Ponds Region



Source: Coastal Resources Management Council (CRMC), *Rhode Island Salt Pond Region: A Special Area Management Plan (Machaug to Point Judith Ponds)* (Wakefield, RI: CRMC, 1999), 1-2.

also susceptible to eutrophication and bacterial loading. Historically, the ecology of the ponds has also been influenced by the stabilization of inlets, dredging of channels, the installation of onsite sewage disposal systems (OSDSs), and alterations of the quality and quantity of freshwater inflow resulting from development activities. The low, narrow barrier beaches also

make the region particularly susceptible to coastal erosion and storm damage from winter storms (i.e., Nor'easters) and summer hurricanes.

There is a strong regional identity among the area's residents. The watershed boundary closely follows coastal highway U.S. 1. This helps make the watershed a somewhat distinct and recognizable. The Salt Ponds have long supported commercial and recreational fisheries and one of the major fishing ports in New England, the Port of Galilee, is located in the watershed. As a result, many residents have a connection to the commercial fishing industry. A large portion of the population is also directly or indirectly involved in the area's growing tourist industry. During peak summer weekends an additional 165,000 people enjoy the region's recreational amenities. Accordingly, a large proportion of the population has an interest in maintaining the area's environmental quality. Residents are also politically active and the New England tradition of home rule is very much part of the region's political culture. One community still holds well-attended financial town meetings. Residents have also demonstrated a strong desire to maintain the region's rural and historic character.[5]

Until a four-lane highway provided easy access to the area in the 1950s, the region remained relatively undeveloped. However, between 1950 and 1980 residential development increased threefold. By the late 1970s, the Salt Ponds region began to experience a number of the environmental problems affecting coastal areas in the United States:

- Loss of habitat and impacts due to development in and adjacent to critical habitat;
- Declining fish and shellfish stocks;
- Increased shellfish closures due to bacterial contamination;
- Excessive nitrogen loadings and pathogens from OSDSs;
- Stormwater runoff increased sedimentation and nutrient loading to the ponds;
- Stabilized breachways changed salinity regimes and caused sedimentation problems;
- Storm damage from hurricanes and winter storms; and,
- Conflicts among resource users.

There was also a general belief among the public that government was not responsive and that agency decision-making was cumbersome, contradictory, and time-consuming.[6]

The Institutional Arrangement Governing the Salt Ponds Ecosystem

When one examines and interorganizational networks, it is important to understand how the rules (e.g., statutes, regulations, policies, zoning ordinances, permit decisions, etc.) of various organizations interact with one another since they can place constraints on adopting future rules (Ostrom, et al. 1994, 44). To simplify the discussion, the analysis focuses on the actions of the key actors: University of Rhode Island (URI) Coastal Resources Center (CRC); Rhode Island Coastal Resources Management Council (CRMC); Rhode Island Department of Environmental Management (RIDEM); Statewide Planning Program (SPP); and, the municipalities of Narragansett, South Kingston, Charlestown, and Westerly. The nonprofit organizations Save-The Bay, Pond Watchers, and the Salt Ponds Coalition also played roles. Others played minor roles such as the National Oceanic and Atmospheric Administration (NOAA), the Environmental

Protection Agency (EPA), the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, various developers, individual residents, and the newspapers.

One of the most important actors was the CRC. It was created, in part, to assist the CRMC with the development of its federal coastal zone management (CZM) program. Over the years, the CRC has emphasized the importance of stakeholder involvement and constituency building in its technical assistance programs, both domestically and abroad. Historically, the CRC also played an important role in helping to develop new policies and programs for the CRMC. The CRMC was created in 1971 with the charge to balance resource conservation with the needs for development and use of coastal resources. The CRMC has approached fulfilling this mandate by maintaining a constant balance between planning, management, and regulation. The Salt Ponds SAM plan is an important attempt to try and achieve this balance.

The CRMC is a legislative agency delegated broad authority to develop whatever policies and programs the agency deemed necessary to fulfill its mandate. The initial focus was not to create a new bureaucracy. Instead, the Council relied on staff of the Department of Natural Resources (soon to become the Department of Environmental Management) and other state agencies to review and comment on development proposals. In fact, the CRMC did not have its own technical staff until 1986. Major permit decisions are decided by a 16 member Council composed of politicians and citizens appointed by the Governor, Lieutenant Governor, and the Speaker of the House. The formula determining representation on the Council is quite complicated and ensures that all regions of the state and communities of different sizes are represented. The membership includes both citizens and elected officials. While the structure of the Council has opened up the agency to charges of being political, during several high profile and controversial projects the agency demonstrated a surprising capacity to resist overt pressure brought by the Governor and major interest groups. The CRMC also focused on building a constituency to support its policies and programs and has been effective in maintaining strong relations with the state legislature.

With assistance from the CRC, the CRMC developed the Rhode Island Coastal Resources Management Program (RICRMP) which received federal approval in 1978. The program has been substantially revised several times since its inception. The RICRMP contains rules that regulate all development along Rhode Island's 401 miles of shoreline. It also regulates certain activities (e.g., power generation facilities, chemical and petroleum processing facilities, and mineral extraction activities) on a statewide basis and other activities located in the watersheds of poorly-flushed estuaries like the Salt Ponds. All federal, state, and local development projects are also subject to the CRMC's review and approval. The permit review process is open with opportunities for both written comment and public testimony at hearings for all major development projects. The process is similar to the one used by local governments when reviewing development projects.

The Rhode Island Department of Environmental Management (RIDEM) is the state agency responsible for implementing the regulatory programs administered by the EPA. The agency is saddled with multiple and sometimes conflicting mandates and pressure from the EPA and the regulated community. Of particular interest to this study are the RIDEM's programs regulating water quality, freshwater wetlands, and the installation of onsite sewage disposal

systems (OSDSs). Unlike the CRMC's programs that try to balance conservation and development in coastal areas, the RIDEM's programs focus on protecting human health and the environment on a statewide basis. This leads to some conflict between the RIDEM and the CRMC in areas where there is overlapping authority and responsibility. The RIDEM's programs also tend to be more "bureaucratic." Opportunities for public involvement in permit decisions are more limited. Responsibility for the review of projects is divided among different divisions and it is not uncommon for a single development project to be reviewed by several divisions who may disagree the merits of a project. Moreover, RIDEM's enabling legislation is more restrictive which limits their ability to adopt new policies and programs. It should also be noted that since the CRMC's inception, the RIDEM has mounted several unsuccessful attempts in the legislature to gain control of the Council and its programs. As a result, there has been a good deal of political conflict between the two agencies even though RIDEM staff conducted the technical review for projects before the Council until 1986 (Robadue, et al. 1986).

The Department of Administration's Division of Planning and the Statewide Planning Council administer the Statewide Planning Program (SPP). The SPP provides technical assistance to local governments and state agencies. The SPP reviews comprehensive land use plans to ensure that they are consistent with state requirements and the policies contained in the State Guide Plan. It is important to note that the RICRMP and Salt Ponds SAM plan are elements of the State Guide Plan and all three documents are part of the CRMC's federally approved coastal program. There have been fewer instances of political conflict surrounding the relationship between the CRMC and the SPP. The only major conflict in recent years concerned whether the CRMC's regulations had to be consistent with the policies contained in the State Guide Plan. When the conflict arose, at the prompting of the CRMC, the state legislature adopted legislation clarifying that the CRMC's authority superseded all other state agencies.

The final set of key actors is the municipalities of Narragansett, South Kingston, Charleston, and Westerly. Prior to the SAM plan's development, local officials lacked the technical expertise and information necessary to adequately review the impacts of development projects resulting from OSDSs, erosion, stormwater runoff, and habitat alteration. Local officials typically relied on the staff working for state agencies and the information provided by permit applicants. Some communities lacked comprehensive land use plans while others were outdated. The communities had relatively unsophisticated zoning ordinances that didn't consider how land use activities impacted water quality and habitat. Moreover, there was little integration of local policies concerning the extension of sewer lines, the protection of habitat, and the acquisition of open space. Other problems included the poor management of recreational boating activities and the lack of public access to the shoreline. Accordingly, local communities played a relatively minor role in managing the impacts resulting from coastal development.

Demands for Institutional Change

The growing environmental problems and the possible siting of a nuclear power plant along the shores of Ninigret Pond helped generate a growing awareness that additional management measures were needed to protect the Salt Ponds ecosystem. These concerns were expressed during the public hearings on the development of the CRMC's Rhode Island Coastal Resources Management Program (RICRMP). The public's general concern was that the

Table 1: Major Events in the Development of the RICRMP and the Salt Ponds SAM Plan

Events in the Development of the RICRMP	Events in the Development of the SAM Plan
▪ 1971 CRMC State Enabling Legislation ▪ 1972 Federal Coastal Zone Management Act ▪ 1975 RICRMP Adopted ▪ 1978 Federal CZM Program Approved ▪ 1983 RICRMP Substantially Revised ▪ 1988 Harbor Management Program Adopted ▪ 1990 RICRMP Revised Again ▪ 1993 New RICRMP Regulations for Stormwater, Erosion and Sediment Control, and Wetlands Mitigation ▪ 1994 New Buffer Zone Requirements	▪ 1975 Public Hearing on the RICRMP ▪ 1979 Ecological History Conducted ▪ 1979 – 1984 Multi-Disciplinary Research Study ▪ 1983 – 1984 Salt Ponds Advisory Committee ▪ 1984 SAM Plan Adopted by the CRMC ▪ 1986 Westerly Added to the SAM Plan ▪ 1994 Denitrification Requirements for a Sub-Watershed Added to the SAM plan

RICRMP would not adequately address the problems facing Salt Ponds region. They argued that a more comprehensive approach was needed to manage the region's ecological resources. The CRMC agreed and as it had in the past, turned to the CRC for technical assistance in developing a comprehensive management plan for the Salt Ponds (Olsen and Lee 1993, 1991).

Developing the Salt Ponds SAM Plan

From 1979 to 1984, federal funds received by the CRMC and the CRC were combined to support a research program that led to the formal adoption of the Salt Ponds SAM plan in 1984 [Table 1]. While a detailed discussion of the planning process is beyond the scope of this paper, it is useful to briefly discuss four aspects of the CRC's approach that seemed important to their success.[7] First, the process began with a review of the region's ecological and cultural history. This proved to be a good way to involve and educate residents in the region at the onset of the planning process. It also provided staff with an opportunity to learn more about the culture of those who would be affected by the plan. Second, the CRC was effective in coordinating scientific research on a number of water quality, sedimentation, and overfishing problems. The CRC was also able to keep the research focused on issues important to state and local decisionmakers. Third, the CRC identified one integrating problem around which the SAM plan was developed. The research suggested that the density of OSDSs needed to be controlled in order to limit the nitrogen loadings to groundwater. In some areas, the well water had already become nonpotable. The concern was that continued development and the installation of accompanying OSDSs would lead to eutrophic conditions and increase shellfish closures due to bacterial contamination. To be effective, the SAM plan would have to manage the density of OSDSs associated with future development in order to limit nitrogen loadings.

Finally, the CRC was effective in building a constituency to support the SAM plan's development and implementation. The CRMC created an advisory committee composed of various stakeholders including local and state officials and members of various interest groups. The group worked intensively between 1983 and 1984. The group first developed a detailed

synthesis of the research findings that would be included in the management plan. The advisory committee then formulated a set of management measures. The major challenge proved to be convincing municipal officials that they had the authority and capability to manage the impacts of development in the watershed. To build local support, CRC staff organized a series of dinner seminars attended by members of local town councils, planning boards, and zoning boards. Bringing the officials together provided an opportunity for them to build a shared understanding of the problems they faced. It also helped build trust between the CRC's staff and local officials (Olsen and Lee 1993, 1991).

The effectiveness of the CRC's constituency building approach is evidenced by the fact that it met with limited opposition at the final public hearing. The Salt Ponds SAM plan was formally adopted by the CRMC in November 1984. Approximately one year earlier, a new statewide RICRMP was adopted and some of the policies recommended in the SAM plan were adopted on a statewide basis. Accordingly, it is important to look at both sets of rules when examining the governance of the Salt Ponds region.

Concurrent with the process of adopting the SAM plan, the CRC worked with local officials to enact zoning changes that would implement the plan's policies. A series of reports were prepared for communities detailing proposed zoning changes (Olson, et al. 1982a, 1982b). As a result, Narragansett, South Kingston, and Charlestown amended their zoning ordinances to make them consistent with the SAM plan's requirements. Westerly was reluctant to amend its zoning ordinances and had minimal involvement in the plan's development. However, based on the experience of the other three municipalities and pressure from nongovernmental organizations, Westerly decided to join the management plan. The CRC prepared recommended zoning changes and these changes were amended to the plan in 1986 (Collins 1985). Westerly then adopted almost all of the recommended zoning changes. The only changes rejected by Westerly were in a tourist area that serves as an important local revenue source.

Implementing the Salt Ponds SAM Plan

The SAM plan recommended state and local officials, university researchers, and homeowners to take a variety of actions [Table 2]. The CRC envisioned the SAM plan as a sort of "constitution" that would bind the actors to a set of prescribed actions and guide future efforts to manage the region's ecological resources. This is exactly the effect that the plan had on the CRMC and local governments and to some extent RIDEM.

Local governments revised zoning ordinances to be consistent with the SAM plan's OSDS density overlays. Local officials prioritized sewer extensions and other infrastructure investment in a manner consistent with the plan's policies. There have been no large-scale proposals to invest in public infrastructure that would substantially increase the density of development in the watershed. Moreover, a review of municipal comprehensive land use plans indicates that, for the most part, local policies are consistent with the SAM plan's density requirements. In some instances, the comprehensive plans actually recommend policies more restrictive than those contained in the SAM plan.

Table 2: Problems and Recommended Actions Contained in the Salt Ponds SAM Plan

Problem	Actions Recommended/Adopted
Decision-making	- Recommends coordinated permitted review process for state and local permits[b]
Nonregulatory initiatives are uncoordinated and ad hoc	- Recommends an action committee chaired by the CRMC to identify annual priorities and coordinate non-regulatory initiatives[c]
Water Quality Problems from Residential & Commercial Development	- SAM plan establishes density overlays[a] - Municipalities changed zoning[a] - Established priorities for sewering[a] - Improved stormwater and erosion controls[a]
Water Quality Problems from Excessive OSDS Loadings	- SAM plan establishes density overlays [a] - Construction setbacks and buffer zone requirements[a] - Recommends establishment of wastewater management districts[d] - Recommends use of denitrification systems in some areas[e]
Loss of Habitat	- Limits extension of public water and sewer lines where encourages further high density development[a] - Identifies wetland and other habitat restoration sites[g] - Identifies critical habitat areas[a] - Buffer zone requirements[a]
Stabilization of Inlets	- Limit further dredging[a] - Maintain catchment basins at each inlet - Promotes use of tide gates where practicable
Overfishing and Habitat Degradation	- Proposed modifications in catch limits - Proposed creation of fishing stewards to monitor stocks - Habitat protection and water quality measures[a]
Hurricane and Severe Storm Damage	- Construction setbacks on barrier beaches[a] - Prohibit construction on undeveloped and moderately developed barrier beaches[a] - Prohibits expansion of public infrastructure in many barrier beach areas[a]
User Conflicts and Loss of Open Space	- Water use zoning to protect critical areas and priority uses[a] - Proposed improving public access[f] - Identified priority sites for preservation and restoration[g]

[a] Implemented

[b] Different review process adopted

[c] Operated initially but then gradually faded out when most of the recommendations were implemented or it was determined that they either couldn't be implemented or were not a good idea

[d] Only implemented by Narragansett

[e] Limited by unavailable technology. Denitrification requirements are now starting to be added to the SAM plan

[f] Implemented by the Harbor Management Planning initiative and changes in how public access sites are reviewed by the Council

[g] Used permit stipulations to preserve and restore sites (e.g., Coastal America project near the Port of Galilee)

A number of changes also occurred at the state-level. The CRMC enforced many of the plan's requirements through its permit review process. New rules included increased buffer zone and setback requirements, density requirements for large projects, and more stringent stormwater and erosion control requirements. The SAM plan became a component of the State Guide Plan that required future decisions by federal, state, and local agencies to be consistent with the plan's policies and recommendations. The RIDEM also adopted new requirements for the siting and design of onsite sewage disposal systems (OSDSs) statewide as well as more stringent requirements in the Salt Ponds region.

The resulting institutional arrangement is complex. Municipalities review development projects in their towns and they control most decisions regarding infrastructure development. The CRMC reviews all projects within 200 feet of the most inland coastal feature (e.g., beach, bluff, coastal wetland, shoreline, etc.). The CRMC also reviews all subdivisions of six units or more, large commercial projects, and any development activity generating more than 2 acres of impervious surface in the watershed. The RIDEM reviews any project that discharges pollutants to coastal or inland waters, alters or impacts freshwater wetlands, or require an OSDS. Accordingly, the municipality, the CRMC, and one or more divisions within the RIDEM review most large development projects in the watershed.

Given the complexity of the institutional arrangement, it should not be surprising that one of the plan's major recommendations was for the enactment of a "coordinated" (i.e., centralized) state and local permit review process. As originally envisioned, the CRMC would have served as a permit coordinator sending applicants to appropriate agencies and coordinating the flow of information between agencies. At the time, the CRMC had limited staff capabilities and it would have coordinated a number of development activities that had little impact on coastal resources. There were also problems concerning a lack of information about the requirements of other regulatory programs. Accordingly, the review process did not develop as envisioned.

What emerged instead was an informal review process. A town requests a review, often before detailed site plans have been developed. The CRMC's technical staff arrange a meeting with local officials and developers to discuss the project. The meetings take place informally and are designed to provide a forum for communication and negotiation so that all involved gain a better understanding of each other's interests. It is also limited to projects that parties believe require coordination and where the interests of all agencies are likely to be affected (e.g., large subdivisions and commercial development). This minimizes coordination costs. Conducting the reviews during the early stages of the development process saves developers time and money by allowing them to incorporate state and local concerns during the design phase. It also facilitates the review of projects during the later stages of the development process because officials are familiar with the project and many of their concerns have been addressed. More importantly, the review process improves communication between the CRMC, local officials, and developers. This helps build trust and keeps the parties informed about changing policies. It helps maintain a shared understanding of the plan's requirements over time. In fact, the coordinated process proved to be so successful that the CRMC entered into cooperative agreements with other communities outside the watershed. Moreover, the coordinated review process became the basis for new statewide requirements for the review of subdivisions (R.I.G.L. §45-23).

It should be noted that while the RIDEM's staff are invited to participate, historically their attendance has been sporadic. There are two possible causes for their reluctance to participate. First, the costs in terms of staff time (i.e., meeting time and travel time from Providence) were perceived to be greater than the benefits. Second, the RIDEM has been reluctant to informally comment on development proposals until an official agency position has been determined. As a result, the informal review process has been less effective in building trust between the aforementioned parties and the RIDEM. It is also unlikely that the review process proposed in the SAM plan would have met with the same RIDEM resistance.

Evolution and Adjustment of the Intergovernmental Network

While many changes occurred shortly after the plan's adoption, others, like the informal review process, evolved incrementally over time. It is worth mentioning a few examples because they illustrate Ostrom's (1990, 137) observation that the development of interorganizational networks often occurs in a "incremental, sequential, and self-transforming" manner. For example, lessons learned during the SAM plan' implementation led to another revision of the RICRMP in 1990. Since 1990 it has also been revised to include new stormwater and erosion control requirements, formal wetland mitigation requirements, and substantially revised buffer zone policies (Desbonnet, et al. 1995). The plan also stimulated the development of a SAM plan for the Narrow River watershed that is located adjacent to the Salt Ponds in 1986. The Salt Ponds SAM plan also served as a catalyst for the development of the Harbor Management Program (HMP) that is implemented in conjunction with local municipalities. The HMP helps communities improve the management of recreational boating activities, identifies public access sites for the CRMC's designation, and integrates local land use planning with the CRMC's regulatory policies. The CRMC also underwent major organizational changes in the years following the adoption of the Salt Ponds SAM plan. It hired its first Executive Director and acquired its own technical staff in 1986. Today, the agency has its own permit review staff and has taken over much of the policy development work previously done by the CRC.

The SAM plan also served as a catalyst for institutional changes at the local level. Municipalities stepped up their efforts to make sewer extensions. Several towns adopted conservation ordinances to protect habitat areas (e.g., wetlands) and address erosion and stormwater problems. Conservation commissions were created to apply these ordinances and they routinely use the information contained in the SAM plan to justify their decisions. For example, South Kingston routinely requires the installation of denitrification OSDSs to protect wetlands or when applicants apply for variances even though the CRMC or the RIDEM may not require the systems. The plan helped stimulate the adoption of state enabling legislation that authorized wastewater management districts. As a result, Narragansett became the first municipality in the state to adopt a wastewater management district. Finally, all municipalities were required by statute to prepare comprehensive land use plans. All four communities prepared comprehensive land use plans that embraced and built upon the SAM plan's policies and recommendations. Accordingly, these communities now play an active role in managing the region's ecological resources.

Evaluating Implementation Success

The question that naturally arises at this point is whether the implementation of the Salt Ponds SAM plan was a success? Little agreement exists among researchers on how to measure implementation success. Measures which are frequently cited include compliance (e.g., Mazmanian and Sabatier 1983), feasibility (e.g., Linder and Peters 1987), effectiveness (e.g., Lippincott and Stoker 1992), level of effort (e.g., Thompson and Scicchitano 1985), policy outputs (e.g., Ringquist 1993a), or outcomes (e.g., Rinquist 1993b). However, many of these measures fail to capture the intergovernmental nature of the process and are less useful for examining networked settings.

This analysis takes a slightly different approach and examines network performance using criteria contained in the IAD framework. There are three advantages of using the IAD framework to examine implementation success (i.e., institutional performance). First, the IAD framework contains no normative bias with respect to how policies should be implemented. Second, it relies on a variety of evaluative criteria to identify the strengths and weaknesses of the different institutional arrangements (e.g., markets, centralized hierarchies, decentralized hierarchies, and polycentric arrangements) that can be used to implement policies. Finally, unlike many studies of interorganizational policy implementation, the IAD framework draws attention to the transaction costs associated with interorganizational relationships.

Transaction Costs Associated with the Implementation Network

The IAD framework draws attention to three interrelated transaction costs associated with interorganizational policy implementation: (1) coordination costs; (2) information costs; and, (3) strategic costs (Ostrom, et al. 1993) [Figure 1]. Coordination costs include those invested in negotiating, monitoring, and enforcing agreements. Information costs are those associated with searching for and organizing information and the errors resulting from an ineffective blend of scientific and time and place information. Strategic costs result from asymmetries in information, power, or other resources such that some obtain benefits at the expense of others. Common strategic costs include free-riding, rent-seeking, shirking, and corruption (Ostrom, et al. 1993). Transaction costs are likely to increase as the number of bargaining partners and routine interactions increase (Levi 1990, 403). They can also increase when asymmetries of information and power exist. Thus, as jurisdictional complexity increases and the actors' interests become increasingly heterogeneous, transaction costs are likely to increase.

During the planning process, coordination costs were consistent with those expected in an interorganizational planning effort dealing with complex problems and affecting a variety of stakeholders. It is unlikely that any other approach would have substantially reduced coordination costs. The CRC was also effective in coordinating the efforts of scientists and building a constituency that supported the SAM plan. These efforts certainly helped facilitate the plan's initial implementation. Moreover, the informal permit review process has proven to be a low cost means of coordinating the review of development projects.

Information costs were also kept relatively low. The planning process was effective at coordinating scientific research and keeping it focused on issues important to decisionmakers.

The efforts to synthesize the information paid dividends during the implementation phase when the information contained in the SAM plan began to be used by state and local officials when making land and water use decisions. The CRC's constituency building approach also reduced information asymmetries by focusing on the development of a common understanding of the causes and effects of problems between the key actors. The RIDEM, CRMC, and local officials have also benefited from other efforts to obtain information related to the management of the Salt Ponds. The Salt Pond Watchers, a volunteer water quality monitoring organization, has been very active and is acknowledged to be the best source of surface water quality data for the watershed. The RIDEM, CRMC, and local governments also benefit from the scientific and social science research conducted by graduate students and faculty at University of Rhode Island that is located a short distance from the watershed.

The strategic costs also appear to be relatively low. In part, this can be attributed to the fact that the Salt Ponds watershed is composed of nine subwatersheds that are often contained within a single town. This helps limit potential free-riding problems because it is not possible for one town not to act and then benefit from the actions of the other three. Moreover, each town gets a return on their investments in infrastructure (i.e., sewer lines, stormwater ponds, etc.) because the water quality in the adjacent ponds often improves. The major strategic costs can be attributed to the RIDEM's failure to actively embrace many of the SAM plan's recommendations. The RIDEM is probably best characterized as a reluctant partner which resisted implementing many recommendations and often only did so after being criticized by Save the Bay, CRC, the CRMC, and local officials.

There are several explanations for the RIDEM's reluctance to embrace the SAM plan's implementation. First, while protecting the Salt Ponds is a major priority for the CRMC and the local governments, this is just one of many watersheds that the RIDEM has to worry about. Second, the periodic policy conflicts between the RIDEM and the CRMC has probably had an adverse impact on the SAM Plan's implementation. Finally, traditionally the RIDEM's internal organization has been segmented by media (e.g., air, water, etc.) and program with priority given to regulatory programs. This made it difficult to orient the RIDEM's efforts towards protecting individual watersheds and their unique problems. This has changed over the last several years. The RIDEM has improved its planning capacity and has begun to adopt the watershed approach advocated by the EPA. As a result, coordination between the RIDEM and the CRMC in issues related to the Salt Ponds has improved. Coordination has also improved between RIDEM and communities in other watersheds around the state.

Overall Performance of the Interorganizational Network

While focusing on transaction costs provides a useful way to examine network performance at different points in time, it is also useful to examine performance over a sustained period. The IAD framework suggests that overall performance be evaluated from a variety of different perspectives and highlights the fact that there are likely to be tradeoffs among the criteria that are used (Ostrom, et al. 1993; and, Blomquist 1992). One way to view institutional performance is in terms of efficiency. Efficiency is defined here in administrative terms and includes the costs associated with administering a management program. In general, the network appears to demonstrate a moderate level efficiency. The transaction costs are relatively low and

the informal review process appears to be effective. There is also a relatively high degree of compliance by local governments and permit applicants with the SAM plan's requirements. The main losses of administrative efficiency are those related to RIDEM's sporadic participation in the review process.

Network performance can also be judged in terms of equity. There are two important aspects of the "equity" concept. First, the principal of fiscal equivalence holds that those who benefit from a service should bear the burden of financing it. Thus, those who derive greater benefits are expected to pay more. Second, redistributional equity is concerned with structuring program activities around differential abilities to pay. Important considerations here are the equality of the process as well as results. It is important to remember that an efficient program is not necessarily a fair program. While efficiency would dictate that resources be utilized where they produce the greatest benefit, equity concerns can lead to different resource allocations.

The interorganizational network used to implement the SAM plan appears to satisfy both criteria reasonably well. An important feature of the informal review process is that the parties are not required to participate. This may distribute costs in a more equitable fashion because the parties participate when they receive some benefit. Arguably, the problem with the proposed review process was that it imposed disproportionate costs on the CRMC. The proposed policy changes also did not create redistributional concerns among the towns. Each town saw the benefit of its investments in infrastructure (e.g., sewer extensions) and the plan's policies didn't channel development and tax revenue into one town at the expense of the others.

Institutional performance can also be evaluated in terms of accountability. Government officials should be held accountable for their actions. It is also important for participants within interorganizational networks to have opportunities to monitor each other's behavior. The CRMC and local government permit review processes are open and provide opportunities for individuals and nongovernmental organizations (e.g., Salt Ponds Coalition, Save the Bay, etc.) to play an active role in monitoring decisions related to the SAM plan's implementation. The informal permit review process is another example where participants can monitor others actions. The main area where accountability could be improved would be to open up the RIDEM's permit review processes to more public scrutiny.

The IAD framework also suggests viewing network performance in terms if its adaptability over time. Unless an interorganizational network can respond to changing environmental conditions, performance is likely to suffer (Ostrom, et al. 1993, 112 - 116). The interorganizational network in the Salt Ponds region has proven to be quite adaptive. Some changes occurred in response to experiences with the plan's implementation (e.g., new stormwater, erosion control, and wetland mitigation requirements) while others occurred in response to changes outside the watershed (e.g., statewide harbor management program and land use planning requirements). Other changes occurred as a result of new information and changes in technology. For example, when the SAM plan was adopted, the technology for denitrification OSDSs was quite limited. As technology developed and surface water quality data suggested a continued decline in surface water quality in several small embayments due to nitrogen loadings and bacterial contamination, the CRMC and RIDEM adopted new denitrification requirements that were incorporated into the SAM plan.

The overall performance of the network appears to be effective when viewed from these different perspectives. But perhaps the most important measure of success is the fact that federal, state, local officials, nongovernmental organizations, and the public appear satisfied with its performance over the last fourteen years. Attention of local and state officials remains focused on protecting the Salt Ponds region. Local officials like the informal review process that evolved, so much so that new statewide subdivision review requirements are modeled on the process. Environmental groups such as "Save the Bay," "Pond Watchers," and the "Salt Ponds Coalition" continue to be supportive. The SAM plan has also been touted as a success by the EPA, the NOAA, and the RIDEM's Narragansett Bay Project. Thus, there appears to be a high degree of satisfaction with the network's performance.

Network Performance from the Perspective of Individual Actors

Up until this point, the analysis has examined the performance of the entire interorganizational network. However, the network can also be examined from the perspective of the individual actors located within the network. While not the focus of this analysis, it is important to note that judgements about network performance might change when you examine the network from the perspective of only one actor because one actor's costs are often another's benefits. This is an important factor influencing interorganizational relationships. Several examples illustrate the point. The RIDEM and the CRMC receive information benefits at the expense of costs incurred by the URI researchers and the Salt Ponds Watchers. The coordination costs incurred by the CRMC and RIDEM during the informal permit review process translate into information benefits for local governments making land use decisions. Since the CRMC issues permits after developers receive permits from the RIDEM and the local government, they incur strategic costs when either the RIDEM or the local government shirk their responsibilities and issue variances or special exceptions for projects that should be denied. In these situations, the RIDEM and local governments enjoy strategic benefits while the CRMC incurs costs.

There are also differences in terms of the overall performance criteria. The CRMC and local government decision-making processes are more accountable than the RIDEM's. Both processes are open and all large projects have public hearings. However, the RIDEM's permit approvals are all done administratively and the appeals process is more cumbersome. There are also major differences between the RIDEM, the CRMC, and local governments in terms of their adaptability. The CRMC has proven to be the most adaptable. It changes its regulations frequently, often in as little as a few months. The RIDEM lies at the other end of the spectrum. The RIDEM changes its regulations infrequently and it often takes several years to do so. The local governments cover the full range of this spectrum. It is important to consider these dynamics and the asymmetric relationships that result because they can cause conflicts. For example, while the CRMC is often frustrated by the time it takes RIDEM to change regulations, the RIDEM becomes frustrated and distrustful of the CRMC because it has trouble maintaining a clear understanding of their current regulations.

Examining Policy Outcomes

Thus far, the discussion has not addressed the question of whether policy implementation improved the health (i.e., water quality) of the Salt Ponds ecosystem. It is interesting to note that while touted as a success by government actors, environmental organizations, and citizens, until recently there were no good groundwater monitoring data that could be used to evaluate the success of the density overlay policies. Clearly, the determination of the plan's "success" was related more to network performance than it was to the knowledge that the policies actually "worked" and achieved desired policy outcomes. Moreover, most of the policy changes that occurred after 1984 had little connection to changes in environmental conditions. The major exception being the OSDS denitrification requirements.

Because the Salt Ponds is fed primarily by groundwater, surface water quality data does not completely tell one whether the SAM plan's density policies were effective in controlling nitrogen loading to groundwater. Surface water quality, as defined by nitrogen levels and pathogens, appeared to improve or stay the same in some areas while in others it declined. These conditions fluctuated from year to year making it difficult to discern clear trends. There was also no groundwater monitoring due to the lack of funding.

In 1994, the CRMC obtained funding to examine the SAM plan's implementation. As part of this effort, the CRC monitored groundwater quality at the same wells monitored during the SAM plan's development. While there is only one year's monitoring data to compare with the early 1980s, the study conducted by the CRC indicates that the policies appear to be working. Groundwater quality has improved or stayed the same in many areas and the projected impacts at current buildout levels are mostly within an acceptable range. For the most part, the density requirements appear to be managing nitrogen loadings in a relatively effective manner (Ernst 1996; and, Ernst, et al. 1996).

Implications for Future Research

It should be clear from the analysis that it would be difficult to understand the development and implementation of the Salt Ponds SAM plan without utilizing a network perspective. Neither the top-down or bottom-up models provide a compelling explanation for the implementation of the SAM plan. In this case, there is no true top or bottom to the network. Instead, a polycentric network of actors who were constrained by a variety of federal and state statutes formulated and implemented policy. Consequently, the implementation of the SAM plan's policies contributed to the implementation of federal and state statutes. Unfortunately, this intergovernmental perspective is largely ignored by traditional implementation research that focuses on only one statute. The following sections review some of the important lessons and observations about intergovernmental policy implementation that emerge from the analysis.

Developing Interorganizational Networks

The analysis reveals two important observations about developing and changing interorganizational networks. First, the case study demonstrates the importance of constituency building, particularly the importance of trust and credible commitments. If individuals and

organizations do not believe that others will follow through on their commitments, they will be less likely to make institutional changes (Ostrom 1990). For example, it is unlikely that the CRMC would have adopted the SAM plan unless they believed that local governments would change their zoning. The case also demonstrates that effective constituency building requires developing a shared understanding of problems, the meaning of policies, and how they should operate. This appears to be an important reason why the CRC was able to convince local governments to make the zoning changes necessary to implement the SAM plan. The case study also demonstrates the difficulty of building trust and maintaining credible commitments when the participants are engaged in larger institutional conflicts as was the case between the RIDEM and the CRMC.

Second, the case demonstrates that two types of changes can occur in network structure. Network participants can choose, either individually or collectively, to change the rules, monitoring, or enforcement procedures of individual organizations so that different behaviors are encouraged or constrained (Levi 1990, 407). Changing these rules can alter the interorganizational relationship by motivating actors to adopt different strategies and behaviors. For example, the CRMC and local governments' adoption of the SAM plan and its policies on OSDSs spurred the RIDEM to develop new statewide siting and design standards. Moreover, changes in an organization's rules can change the outcomes of networks (Ostrom, et al. 1994, 299). For example, when the CRMC or the RIDEM changes their policies it presumably has an affect on policy outcomes (i.e., improved ecosystem integrity). Network actors can also choose, either individually or collectively, to alter the nature of interorganizational interactions. For example, the CRMC currently requires developers to have all other necessary federal, state, and local government permits. This requirement introduces a fairly regular pattern of interaction among these organizations. If the CRMC removed this requirement, it would alter the pattern of interaction and introduce new information, coordination, and strategic costs for network actors.

Evolution of Interorganizational Networks

This analysis illustrates the utility of utilizing a longitudinal approach which views interorganizational policy implementation as a dynamic process where policies are continuously transformed by implementing actions over time (Majone and Wildavsky 1979; Browne and Wildavsky 1983; and, Kirst and Jung 1982). Unfortunately, the assumption that policies are implemented against a static set of circumstances underlies a great deal of previous research. While analytically convenient, it neglects the fact that implementation is a dynamic and constantly changing process (Wittrock and deLeon 1986, 48; Lester, et al 1987; and, Pressman and Wildavsky 1984, 121). Accordingly, without utilizing a longitudinal perspective the analysis would miss many of the important lessons that emerge from the evolution of the interorganizational network used to implement the SAM plan.

This study illustrates that the enactment of a program often signifies the starting point of an evolutionary process of experimentation, goal definition, and the search for an appropriate implementation strategies (Mazmanian and Sabatier 1983, 267). Accordingly, it is not uncommon for the interorganizational networks associated with intergovernmental policy implementation to develop and operate in ways unintended by policy designers (Pressman and Wildavsky 1984, 116). The analysis also supports the observation that most changes in network

structure tend to be incremental rather then totally reconstructive or destructive. Changing network structure often involves a series of small steps that have low initial costs. Because the process is incremental and sequential, early successes can be achieved before participants need to make larger investments. Each change in the network then transforms the incentive structure in which future strategic decisions are made (Ostrom 1990, 137). This can make it easier to get political support. It also allows participants to develop and enhance their capacity for managing complex problems. The initial changes created by the SAM plan reduced complexity, allowed learning to occur, and provided the foundation upon which future institutional changes were built. For example, an incremental change such as requiring denitrification OSDSs in a small sub-watershed allowed the organizations to experiment with new policies before requiring them on a broader scale.

The case study also reveals how intergovernmental networks both constrain and enhance what you can do in the future. Thus, their development over time appears to have a path dependent quality. For example, the density overlays resulting from the plan's implementation allowed other policies such as denitrification requirements to be linked to the density requirements. At the same time, the density overlays constrain future choices. It would be difficult to radically change the current density requirements because legal rights to develop at these levels exist. Municipalities have also made long range planning and infrastructure investment decisions based on current densities. It is important for practitioners to recognize that a policy choice can reduce the possibility of achieving an optimal solution when the solution exists in the policy space cut off early in the process of developing policies (Ostrom, et al. 1994, 325). Therefore, practitioners should give careful consideration to how a proposed policy change might constrain future policy choices.

Polycentric Interorganizational Networks

Previous implementation research typically demonstrates a preference for either top-down (i.e., centralized) or bottom-up (i.e., decentralized) approaches to intergovernmental policy implementation. These preferences are often supported with a truncated analysis that fails to consider the full range of transaction costs associated with policy implementation. In fact, the polycentric network governing the Salt Ponds watershed has been criticized for not having a centralized coordination mechanism and for having too much duplication and overlap of government authority (Ernst 1995; and, Olsen and Lee 1993, 1991).

This case study suggests that researchers should guard against jumping to the conclusion that fragmentation and duplication of authority are always "bad" things. Clearly, excessive fragmentation or duplication of authority can be important problems. However, too many researchers neglect the positive aspects associated with polycentric networks and the fact that they can be just as effective as centralized or decentralized networks. The criticism that the duplication and fragmentation of authorities or the lack of a centralized coordination mechanism decreases effectiveness is simply not supported by the analysis. In fact, it can be argued that an effort to centralize decision making could increase transaction costs. Centralized governance arrangements and large bureaucracies often:

1. Become increasingly undiscriminating in its response to diverse demands;

2. Impose increasingly high costs on presumed beneficiaries;
3. Fail to proportion supply to demand;
4. Allow public goods to erode by failing to prevent one use from impacting others;
5. Become increasingly error-prone and uncontrollable to the point where actions deviate from public purposes and objectives; and,
6. These problems can be compounded to the point that remedial actions actually exacerbate rather than ameliorate problems (V. Ostrom 1989, 56).

Holling (1995, 1978) also noted that rigid, centralized attempts to manage ecosystems often lead to their collapse. Thus, there is reason to question the assumption that a centralized arrangement will result in more effective natural resource management. Moreover, given the local home rule tradition and the turf battles between the RIDEM and the CRMC, an effort to centralize decision making could have reduced the likelihood of the SAM plan's implementation.

It is also important to recognize that our federal system of government is polycentric in structure (V. Ostrom 1994; Wright 1988; and, Elazar 1987). This type of institutional arrangement can offer distinct advantages over centralized systems of government (V. Ostrom 1994, 1989). Polycentric arrangements allow for specialization and take advantage of economies of scale (Blomquist 1992, 340). For example, RIDEM has a technical staff with a high degree of specialization in evaluating the siting and design of OSDSs, the CRMC has technical staff specialized in evaluating impacts to water quality and coastal resources, and local officials have expertise with respect to zoning and building code requirements. The fact that each agency reviews the same project could be viewed as "wasteful duplication and overlap." However, it can also reflect they type of functional specialization that minimizes costs through economies of scale (Blomquist 1992). If one agency were to review all aspects of a project, it would still have to develop each area of expertise.

The advantages of functional specialization should not be discounted. It is important for practitioners to recognize that functional specialization can improve the quality of the information used to make management decisions. In the previous example, the RIDEM maintains detailed information regarding OSDS siting and design, the CRMC has access to information on coastal resources, and local governments have access to information concerning the local impacts of a development project. A centralized network could be used to obtain this information. However, large centralized (i.e., hierarchical or bureaucratic) systems often have difficulty collecting, acting upon, and communicating information. They are also vulnerable to information distortions. Therefore, centralized arrangements often have higher information costs than those with a polycentric structure.

The fact that the CRMC, RIDEM, and local officials may disagree on the merits of a project could be viewed as a "costly fragmentation of authority." Instead, it simply guarantees that the interests represented by different institutions like RIDEM, CRMC, and local governments will be deliberated. This deliberative process is arguably more "democratic" than simply giving one agency the authority to impose its will on others. Moreover, organizing governance arrangements on different scales makes it possible to include only those decisionmakers affected by decisions. Important information about preferences is included while extraneous information is excluded. This reduces information and coordination costs.

Polycentric arrangements can therefore be the opposite of what analysts might predict as being "wasteful," "uncoordinated", and "inefficient". Instead, organizations contract with one another to perform specialized services (Blomquist 1992). This can lower coordination costs once the interactions become standardized. The symbiotic nature of interactions can also lower the probability that actors will engage in strategic behavior.

The conflicts and turf fights that took place between CRMC and RIDEM could be viewed as "wasteful". However, they could also be described as a constructive debate over different ideas and policies for addressing complex problems. This competition of ideas can be valuable and previous research suggests that an "institutionally rich environment" improves the prospects of solving complex problems (Blomquist 1992, 360; and, V. Ostrom 1994, 258). It can stimulate the diffusion of ideas, information, administrative processes, and policies which then enables others to solve similar problems in different programs and other geographic areas (Rogers 1995). For example, the analysis demonstrates how the informal review process diffused to towns outside the watershed and was ultimately adopted statewide.

The Configurational Nature of Interorganizational Relationships

In order to understand how a polycentric network operates, it is important to understand the configurational nature of interorganizational relationships. In this case, to understand how the Salt Ponds watershed is "managed" you must first understand how the rules (e.g., statutes, policies, regulations, zoning ordinances, etc.) governing the behavior of the CRMC, RIDEM, and local governments interact with one another. In other words, the way one organization (or set of rules) operates depends upon how it interacts with related organizations (Firmin-Sellers 1995;and, Ostrom 1986). It is also important to recognize that these rules operate at different levels; one set of rules is often nested in another set of rules that defines how the first set of rules can be changed (Kiser and Ostrom 1982).

Previous research suggests that three levels of rules can cumulatively affect the action and outcomes obtained: operational rules; collective-choice rules; and, constitutional-choice rules (Kiser and Ostrom 1982). Operational rules include decisions about when, where, and how to do something, who should monitor the actions of others, how actions should be monitored, what information should be exchanged or withheld, and what rewards and sanctions will be assigned to combinations of actions and outcomes (Ostrom 1990, 52). Collective-choice rules influence operational activities and outcomes by determining how operational rules can be changed and who can participate in these decisions. Constitutional-choice rules influence operational rules and outcomes by determining who is eligible to participate and the rules used to develop and change collective-choice rules which in turn affects the set of operational rules (Ostrom, et al.1994, 46). The processes of appropriation, monitoring, and enforcement occur at the operational level. At the collective choice level are activities such as policy-making, management, and the adjudication of decisions. Governance and modification of constitutional decisions and collective-choice rules occurs at the constitutional level (Ostrom 1990, 52).

This case suggests that the embedded nature of a rule systems can influence interorganizational relationships. The CRC envisioned the SAM plan as a sort of "constitution" which would bind the actors to a set of prescribed actions. This is exactly the effect that the

Table 3: Examples of How Selected Rules in the Institutional Arrangement Operate at Different Levels

Rules	CRMC	RIDEM	Division of Planning	Local Government	Builder
State Constitution	C	C	C	C	C
RICRMP	CC	CC	CC	C	C
SAM Plan	CC	CC	CC	C	C
CRMC Permit	OR	NE	NE	NE	C
RIDEM OSDS Regulations	OR	OR	NE	CC	C
State Guide Plan	CC	CC	CC	C	CC
Local Comprehensive Plan	NE	NE	NE	CC	C
Local Zoning Regulations	NE	NE	NE	CC	C

C = Constitutional Rule, CC = Collective Choice Rule, OR = Operational Rule, NE = No Effect

SAM plan had on local governments and to some degree RIDEM. Table 3 illustrates how various rules operate at different levels and influences the interactions of the different network actors. For example, the SAM plan serves as a collective choice rule for the CRMC because it contains rules that guide agency decision making. However, the SAM plan serves as a constitutional rule for the RIDEM, local officials, and builders because it contains rules which constrain their ability to develop collective choice rules. A CRMC permit on the other hand serves as an operational rule for the CRMC, a collective choice rule for the RIDEM and local officials, and a constitutional rule for developers. The nested nature of rules has another important implication for practitioners because it suggests that the process of institutional change is facilitated when key actors have the authority to organize and change networks. For example, the CRMC and the local governments had the authority to implement recommended changes in land use policies. However, the RIDEM's rule-making is subject to more constraints and it took longer for them implement some changes such as new OSDS regulations. While the RIDEM could be criticized as being a reluctant partner in the SAM plan's implementation, it could also be argued that the constraints placed on the agency by the legislature (e.g., restrictive state statutes) limit it's ability to fully implement the SAM plan.

Evaluating Network Performance

One of the interesting observations emerging from the analysis was the disconnect between network performance and policy outcomes. In this case, the performance of the interorganizational network was more important than policy outcomes with respect to determining implementation success. An interesting question is whether this is a widespread phenomena. However, the finding does suggest that researchers should be cautious about equating improved interorganizational coordination with improved policy outcomes. Although it is often assumed that improved coordination enhances programmatic success, there is no reason to suspect that the two are necessarily related. For example, one could have an inefficient interorganizational network (i.e., high transaction costs) which produces desired policy outcomes

or have an efficient interorganizational network (i.e., low transaction costs) which fails to yield desired outcomes. The more troubling situation would be when the participants in an interorganizational network prefer an efficient arrangement (i.e., low transaction costs) even though it fails to achieve desired policy outcomes.

Summary and Conclusion

This analysis demonstrates the importance of using a network-based approach to examine intergovernmental policy implementation. A lack of understanding of how networks function can lead to inappropriate policy recommendations and decrease programmatic success. The analysis also demonstrates that the IAD framework can be a useful analytical tool for examining interorganizational relationships. It draws attention to the configurational nature of interorganizational relationships. It also draws attention to the important roles that rules and transaction costs can play in influencing interorganizational relationships. Perhaps most importantly, the IAD framework does not bias the analysis towards either a top-down or bottom-up approach to analyzing interorganizational policy implementation.

Developing effective interorganizational networks is clearly a complicated and difficult task. Even if the organizations are relatively homogenous and their members are well informed about the nature of problems, it is likely that strong incentives exist which cause key actors to act opportunistically and resist the changes in network arrangements that are necessary to solve complex problems (Ostrom 1990, 210). Accordingly, the development of a "satisfactory" network can be considered as a significant achievement regardless of whether the network actors are able to achieve an optimal policy solution (Ostrom, et al. 1994, 325). Accordingly, the achievements in the Salt Ponds region are notable and worthy of attention. Unlike many other regional watershed management plans of its day, the Salt Ponds SAM plan has not found a dusty home on the shelves of state and local officials. It continues to be an important mechanism for managing land and water use decisions in the Salt Ponds region.

In our federal system, the capacity (e.g., knowledge, power, and resources) to solve complex problems is often widely dispersed across a set of actors located at different levels of government. "Indeed, it is often difficult for any one actor, or group of actors, to manage, or manipulate, the flow of problems and solutions onto the political agenda in the first place. Thus, there are complex multi-actor processes for both the identification, definition and resolution of policy problems, and for the implementation of policy (Bressers, et al. 1995, 4)." Therefore, any model of intergovernmental policy implementation should account for the polycentric structure of our federal system and recognize that effective intergovernmental policy implementation is really a question of proper institutional design; finding the right balance between federal (vertical) and local control (horizontal) control in order to collectively achieve federal, state, and local objectives (Elmore 1985). In some cases, a top-down (i.e., centralized) or bottom-up (i.e., decentralized) approach may be effective. However, given the polycentric structure of our federal system, it is likely that a great deal of interorganizational policy implementation occurs within polycentric networks.

Thus, the choice between a top-down (i.e., centralized) or bottom-up (i.e., decentralized) model is a false one. The polycentric nature of our federal system introduces a much greater

diversity of network arrangements that are used to implement policies. Therefore, it is unlikely that the future of implementation research lies in continued attempts to synthesize the top-down and bottom-up perspectives. Rather, it likely lies in giving greater attention to the interorganizational nature of policy implementation. Specifically, attention should be given to developing and refining theories that help to explain interorganizational interactions within polycentric implementation networks. Two theories examined in this paper, transaction cost economics (e.g., Alexander 1995; and, Williamson 1985) and the configurational nature of rule-ordered relationships (e.g., Ostrom 1990; and, Kiser and Ostrom 1982), appear to have some potential for helping to explain interorganizational relationships.

Unfortunately, many researchers continue to view implementation as an "administrative" problem instead of as one of "governance" involving multiple organizations located at different levels of government. While researchers recognize that "games" are played during the implementation process (e.g., Bardach 1977), most research emphasizes the moves of only one player. Top-downers examine the moves of federal players and argue that these are the most important while bottom-uppers argue that the moves played by state and local officials are the most important. This is like trying to learn the game of chess by looking at the moves of either the white or black pieces. But to be good at chess, you must understand how the moves and strategies of the white pieces interact with the black.

Researchers also need to broaden their focus beyond the initial implementation of a federal or state statute and examine the much wider range of implementation activities that occur. Unfortunately, most research still displays *federalitis* and is largely preoccupied with federal programs at the expense of state and local programs. Research also tends to examine how a federal statute structures the implementation of "new" federal and state programs. This leads researchers to neglect the longitudinal aspects of policy implementation and to ignore the "implementation" activities that do not occur in direct response to some federal or state statute. In this regard, researchers need to recognize that implementation and administration are really two sides of the same concept.

Moreover, while the policy environment in which implementation occurs has evolved and changed, the approach to studying implementation and the theoretical questions asked by researchers has not. Elmore (1985) argued that there is a tendency for programs to accumulate around policy problems over time. Evidence of this trend can be seen in the growing importance researchers place on intergovernmental management (e.g., Gage and Mandel 1990; Agranoff 1989, 1986; and Wright 1988) and networks (e.g., O'Toole 1997, 1996a, 1996b, 1993a, 1993b; Provan and Milward 1995; Alter and Hage 1993; and, Provan and Milward 1982).

In some respects, the fundamental nature of the implementation "problem" has changed to one of networking various programs and modifying existing programs given competing federal, state, and local policy objectives. In essence, it is like adding new players to games that are already in progress. This raises different theoretical different questions than starting a new game. It also increases the likelihood that games will be played at various levels such that they are "nested" within one another. Accordingly, O'Toole (1997, 1996a, 1996b) and others (e.g., Bressers, O'Toole, Richardson 1995; Provan and Milward 1995; and, Marin and Mayntz 1991) argue that a network perspective is important to improve our understanding of

interorganizational policy implementation. This will help avoid what Hjern and Porter (1981) call the 'lonely organization syndrome'. It will also help to keep research focused on questions important to practitioners trying to manage in interorganizational settings. It should also improve the predictive power of our theories and lead to improved policy implementation. Accordingly, it is time for researchers to recognize the networked features of interorganizational policy implementation and to develop new theoretical models for explaining this phenomena.

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Notes

[1] A detailed discussion of the Institutional Analysis and Development (IAD) framework is beyond the scope of the paper. For more discussion of the IAD framework see Crawford and Ostrom (1995), Ostrom, et al. (1994), Ostrom, et al. (1993), Ostrom (1986, 1990), Blomquist (1992), Sproule-Jones (1993), and Kiser and Ostrom (1982).

[2] These include Ernst (1996, 1995), Ernst, et al. (1996), Olson and Lee (1993, 1991, 1985, 1982), Robadue, et al. (1986), Boothroyd, et al. (1985), McGilvray, et al. (1985), Thorne-Miller and Harlin (1984), Thorne-Miller, et al. (1983), Nixon and Pilson (1983), Nixon, et al. (1982), Harlin and Thorne-Miller (1981), and Lee (1980).

[3] These include Collins (1985), NOAA (1985), CRMC (1990, 1985), Olson, et al. (1982a, 1982b), and Brown, et al. (1974).

[4] The author worked as a research assistant with the CRC from 1989 to 1991. The author worked as a policy analyst for the CRMC from 1991 - 1994.

[5] See Olsen and Lee (1993, 1991), CRMC (1985), and Lee (1980) for more discussion of the region

[6] For more discussion see Ernst (1995), Olsen and Lee (1993, 1991), CRMC (1985), and Lee (1980).

[7] See Olsen and Lee (1993, 1991) for more discussion of the planning process.

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