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The Political–Technical Divide and Collaborative Management in Brazil’s Taquari Basin

Thomas G. Safford1

Abstract
Elected officials and managers are both integral players in natural resource management. Politicians and technicians recognize that interdependencies exist, but finding organizational models that effectively integrate the distinct political and technical aspects of these endeavors remains a challenge. In Brazil’s Taquari Basin, leaders formed a watershed-based intermunicipal consortium in an attempt to achieve such integration. The experience of this consortium shows that organizing management around watersheds does not naturally lead to political–technical integration. The institutional separation of political and technical activities within this consortium’s structure generated divergent beliefs about appropriate functions for a watershed-based organization, ultimately impeding collaboration. Efforts to overcome these differences were largely unsuccessful, as the communication strategies employed were based on flawed understandings of the interests and objectives of politicians and technicians, respectively. This study draws on conceptual frameworks from organizational sociology to uncover the social forces that both facilitate and impede collaboration across the political–technical divide.

Keywords
natural resource management, watershed management, environmental planning, collaboration, organizational behavior, Brazil

Investigating the Political–Technical Divide

Natural resource management is often viewed as strictly a technical endeavor. Nonetheless, both politicians and managers have come to recognize that success depends on their combined efforts. Political actors rely on technical guidance to inform policies

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and programs, whereas technicians look to elected officials to pass laws and appropriate funds for project activities. Although both sets of actors are aware of these interdependencies, in practice, integrating these distinct political and technical components remains a challenge (Birkes & Folke, 1998; Redclift, 2005).

Two trends in the natural resources field have important implications for those attempting to harmonize the political and technical aspects of management. First, ecologically defined areas, such as watersheds or forested regions, are increasingly being adopted as management units in an effort to ensure that scientific principles guide both policies and on-the-ground activities (Wondolleck & Yaffee, 2000). Second, a collaborative paradigm has emerged, where governmental and nongovernmental actors partner to manage water, forest, and fishery resources (Clark, Burkardt, & King, 2005; Sabatier et al., 2005).

Social scientists have discovered that factors such as regulatory structures, participants’ attitudes and beliefs, and organizational networks shape the relationships between public sector actors and stakeholder groups engaged in these collaborative management efforts (Bazerman & Hoffman, 1999; Morton, 2008; Wagenet & Pfeffer, 2007). However, less is known about the challenges faced when shifting from politically to ecologically defined management units or the nature of relationships among different governmental actors, who play a central role in both the political and technical aspects of these endeavors (Koonz et al., 2004). This study explores how both the adoption of ecologically defined management units and the structural design of multi-party organizations can both facilitate and impede collaboration among key public sector political and technical actors. Findings suggest that the success of integrated natural resource management may ultimately depend on the nature of interorganizational relationships and the establishment of shared understandings among politicians and technicians that bridge the political–technical divide.

A Collaborative Paradigm for Watershed Management in Brazil

Known for its innovations in environmental governance, Brazil has been at the forefront of collaborative natural resource management efforts (Abers, 2007; Hochstetler & Keck, 2007). In no area is this more apparent than in the water resources sector, where the Brazilian government has actively promoted a decentralized cooperative approach (Abers & Keck, 2006; Arretche, 2000). The 1997, National Water Law encouraged the creation of multistakeholder committees, organized around watersheds, to support locally derived solutions to water pollution and supply concerns (Porto, 1998). Although 154 watershed committees have been formed across Brazil, they are heavily concentrated in the south, southeastern, and northeastern regions, with only five having been established in the predominantly rural center-west of the country (Agência Nacional de Águas, 2008). Uncertainty about the regional appropriateness of this organizational model has discouraged the formation of multistakeholder watershed committees in the center-west. In particular, state and local government actors...
raised concerns regarding the suitability of watershed committees, whose principal purpose is to support the regulation of water use and discharge, for promoting the integrated natural resource management approaches needed in rural agriculture-dominated areas (Ministério do Meio Ambiente, 1999; Safford, 2004). Nonetheless, the absence of watershed committees is not an indicator of inaction or opposition to multiparty approaches in center-west Brazil. Instead, collaborative watershed-based organizations in this region have appeared in the form of intermunicipal consortia focused on integrated planning and natural resource management (Ministério do Meio Ambiente, 1999; Safford, 2004). Across Brazil, local government officials have embraced intermunicipal consortia as mechanisms for promoting cooperative governance and development planning (Calderón & Chaia, 2002; Spink, Bava, & Paulics, 2002). In fact, these consortia have become integral members of many of the watershed committees formed under the National Water Law, bringing with them extensive experience with political and technical cooperation (Formiga-Johnsson & Lopes, 2003; Luchini, 2000). With their regional importance in center-west Brazil, and emphasis on governmental collaboration, intermunicipal watershed consortia are an ideal focus for investigating how organizational dynamics influence the political–technical divide in natural resource management.

Responding to Social and Environmental Change in the Taquari Basin

One of the center-west’s most prominent intermunicipal consortia is organized around the Taquari River Basin located in the states of Mato Grosso do Sul and Mato Grosso (Figure 1). Municipal officials formed this watershed consortium, known as Consórcio Intermunicipal para o Desenvolvimento Sustentável da Bacia Hidrográfica do Taquari (COINTA),¹ to promote a coordinated response to pressing development and environmental concerns (COINTA, 1997). The Taquari Basin is a sparsely populated agricultural area covering 78,000 sq. km. Approximately 150,000 people reside in the region, spread over 12 municipalities—10 in Mato Grosso do Sul and 2 in Mato Grosso (Instituto Brasileiro de Geografia e Estatística [IBGE], 2001).² The lowland portion of the watershed encompasses 36% of the world’s largest wetland, the Pantanal (Empresa Brasileira de Pesquisa Agropecuária [EMBRAPA], 1997). Virtually the entirety of the Pantanal portion of the basin lies within the municipality of Corumbá.

Beginning in the 1970s, the upper basin developed rapidly, with ranching and extensive high-input agriculture covering the landscape. In contrast, subsistence activities, fishing, and low-density ranching continued much as they had for decades in the lowlands (IBGE, 1996). These distinct development patterns mirror demographic differences, with the uplands dominated by recent migrants from southern Brazil and the lower delta populated by traditional pantaneiro communities. Studies of colonization in other areas of the center-west region have shown that southern migrants have distinct land use and associative traditions that have important implications for natural resource management (Jepson, 2006). In the Taquari Watershed, the divergent social
and development trends in the upper and lower basins created a sociocultural divide that influenced both COINTA’s membership and the interactions among political and technical actors in the region.
Intensified development of the uplands brought environmental as well as social change. Unplanned agricultural expansion led to growing water withdrawals, pollution from agro-chemicals as well as severe problems with erosion (Padovani, Carvalho, Galdino, & Viera, 1998; Viera, Galdino, & Padovani, 2000). Agro-pollution and the exponential increases in sedimentation degraded important fish habitat, whereas altered hydrologic regimes negatively affected *pantaneiro* communities dependent on the consistent flood and ebb of the river (EMBRAPA, 1997). Because of the scale and complexity of these problems, the small municipal governments in the basin lacked the necessary administrative and technical capacity to address these concerns alone. Leaders in the region saw an intermunicipal consortium as the solution to these challenges. They believed COINTA would create a forum where both politicians and technicians could share information, collaboratively solve environmental problems, and together promote sustainable development across the Taquari Watershed (COINTA, 1997).

**Organizing Management Through an Intermunicipal Consortium**

In February of 1997, the Intermunicipal Consortium for the Sustainable Development of the Taquari Basin was officially formed. The consortium’s organizational structure is a simple one that reflects its dual political and technical objectives (Figure 2). With its emphasis on fostering collaboration among municipal governments, COINTA’s central component is the Council of Municipalities whose members consist of the mayors from municipalities located within the Taquari Basin. The council’s primary functions are to coordinate development policies, prioritize management activities, and approve joint plans and projects (COINTA, 1997).

![Diagram](http://jed.sagepub.com)
Below the council is the executive secretariat that runs the day-to-day operations of COINTA, supporting the work of both its technical and political divisions. The coordinator of the executive secretariat informs the Council of Municipalities about the consortium’s ongoing activities and also directs the work of the Technical Committee that is made up of the lead technicians from the natural resource departments in the participating municipalities. This committee provides technical guidance to the council and oversees the implementation of consortium-sponsored projects. It also plays key roles in developing capacity-building activities and facilitating information sharing among municipal technicians.

COINTA’s structure creates distinct organizational spheres for political and technical actors, and this separation has important implications for collaboration among and between mayors and technicians. The consortium has no permanent staff beyond an administrative assistant overseeing the executive secretariat. Both the mayors and the lead technicians maintain their positions within their affiliated municipal governments and then work cooperatively on policies and programs through the consortium. Member municipalities contribute annual dues that support COINTA’s administrative functions, whereas funding for projects comes exclusively from competitive grants received from state, federal, and international development agencies.

At its conception, COINTA had two additional organizational components. A fiscal council, made up of assemblypersons from each municipality, was to monitor and assist with the consortium’s finances. Although assemblypersons were to be integral actors in the consortium’s activities, they only participated sporadically. In practice, the fiscal council exists only on paper, and its oversight responsibilities have fallen primarily to the executive secretariat. Finally, COINTA’s founders recognized the need to link the consortium’s activities with the broader population in the region. They included a plenary body composed of interested individuals and civil society groups in the initial organizational structure as a mechanism for gathering public feedback about COINTA’s work. Nonetheless, plenary sessions were only held during the consortium’s 1st year, and public participation has not been a regular part of COINTA’s activities (COINTA, 2001). As neither the fiscal council nor the plenary are functional components of the consortium, the focus of this study is on organizational dynamics within and across the core political and technical spheres, the Council of Municipalities and the Technical Committee.

Investigating Organizational Dynamics

Interorganizational relationships play a central role in shaping the beliefs of individual organizational actors as well as the behavior of collections of organizations involved in common endeavors (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). To analyze these organizational dynamics, sociologists have studied distinct sets or “fields” of organizations. Organizational fields represent communities of organizations that have common interests and whose members interact frequently as a part of their involvement in similar activities (Scott, 2008). Fields can also encompass organizations that share
mutual concerns and issues, such as public-sector agencies tasked with managing natural resources (Hoffman, 2001; Hoffman & Ventresca, 2002). The emphasis of field-level analysis on the formation of shared beliefs and the interactions between different organizational actors make this an ideal analytical unit for investigating political–technical collaboration within the COINTA management experience.

The relationships among actors within organizational fields affect the formation of commonly held beliefs about appropriate organizational practices (Astely & Van de Ven, 1983; Hall & Tolbert, 2005). These beliefs become “rationalized” as members of the field mutually reinforce particular ideas and perspectives as a part of their interactions. Sociologists have investigated the origins and implications of these field-level rationalized beliefs by tracking common patterns in the development of organizational structures and practices among actors engaged in shared endeavors (Scott, 2008). Collectively rationalized beliefs are not static; rather they are continuously shaped and re-formed by interorganizational relationships (Hall & Tolbert, 2005; Hoffman, 2001). The manner in which information is shared or “framed” within organizational fields also influences beliefs about suitable organizational structures and approaches (Lounsbury, Ventresca, & Hirsch, 2004; Zald, 1996). As strategically framed messages about appropriate organizational practices resonate among actors involved in similar endeavors, they tend to be widely adopted, leading to a narrowing of ideas and approaches within these communities of organizations (DiMaggio & Powell, 1983; Scott, 2008).

Through in-depth analysis of the COINTA organizational field, this study will show how the composition of organizational actors within the consortium leads to distinct sets of shared beliefs about its structure and function which in turn affect organizational relationships. Additional data will illustrate how collectively rationalized beliefs among COINTA’s political and technical actors influence perceptions about appropriate management approaches, while also leading to flawed framing strategies designed to promote political–technical integration. Finally, this investigation will highlight ways in which applied organizational analysis may support on-the-ground efforts promoting collaborative natural resource management that bridges the political–technical divide.

A Case-Study Analysis of the COINTA Organizational Experience

Given the distinct organizational, social, and ecological context in the Taquari Basin, an in-depth case-study design was chosen to research the COINTA organizational experience (Yin, 1989). A range of tools were used to collect data, including in-depth interviews, extensive content analysis of project and planning documents, and participant observations at meetings convened by the consortium.

In 2001, interviews were conducted with the sitting mayors in 8 of the 10 municipalities in the Mato Grosso do Sul portion of the Taquari Basin.³ In addition, mayors from two of these municipalities who had lost reelection in 2000 were also interviewed as they had been integral players in the development of the consortium. Fourteen technical actors from municipalities in the region also agreed to be interviewed. They
included the lead technicians in all 10 Mato Grosso do Sul municipalities as well as four additional individuals who had previously held these positions prior to electoral changes in 2000. As the two municipalities located in the state of Mato Grosso did not participate in either the development of COINTA or its management activities, neither political nor technical actors from Mato Grosso were contacted for this study.

Observation data were collected at a series of consortium-sponsored events between 2001 and 2002. These included two deliberative sessions of both the Council of Municipalities and the Technical Committee. COINTA’s coordinator also granted access to meeting minutes and attendance lists for all of the consortium’s technical and political events from its inception, enabling analysis of both patterns of participation and consideration of different substantive themes. Finally, a variety of reports, technical studies, and internal memos were important sources of contextual data that offered insights into different political and technical concerns as well as the nature of collaboration among members of the COINTA organizational field.

Data gathered using these three methods were coded and analyzed using a pattern-matching technique where empirical patterns in organizational actors’ beliefs and behavior are compared with predicted ones (Bitektine, 2008; Trochim, 2000; Yin, 1989). In this instance, patterns in both the beliefs and behavior of political and technical actors involved with COINTA were matched against theoretical constructs regarding intra- and interorganizational relationships and the formation of collectively rationalized beliefs (Scott, 2008).

This approach enabled both intra- and intergroup comparisons of mayors’ and technicians’ conceptualizations of the overall structure of COINTA as well the appropriate relationship between the different functional divisions of the consortium. In addition, patterns were mapped in the language used to describe particular technical and political elements of the consortium’s activities, such as the use of a watershed-based management approach. This method was used to pinpoint occasions where strategic framing shaped different actors’ views regarding both the consortium’s organizational practices and particular on-the-ground activities. The pattern-matching methodology is an effective tool for examining levels of consensus between distinct groups involved with shared endeavors, such as the political and technical actors engaged in collaborative management of the Taquari Basin (Bitektine, 2008; Trochim, 2000).

Membership in the Taquari Intermunicipal Consortium

Although COINTA’s founders initially hoped that all 12 municipalities in the Taquari Watershed would join the consortium, only 9 elected to participate. The two municipalities located in the state of Mato Grosso and the lowland municipality of Corumbá all chose to forego membership. Because of the lack of transportation connections and their geographic location in a neighboring state, little effort was made to involve the two Mato Grosso municipalities. However, Corumbá covered nearly half of the basin and was a key player in regional governance, thus this municipality was actively encouraged to join COINTA. Descriptions of efforts to recruit Corumbá illustrate how
highly rationalized conceptions about the appropriate structure and functions for the consortium constrained attempts by both political and technical actors to promote collaboration across the Taquari Basin.

Interview data from both the mayor and the lead technician from Corumbá point to a pattern of opposition to COINTA based on perceived incompatibilities between the consortium’s structure and the interests of their municipality. These two actors shared a belief that COINTA’s organizational design did not account for the geographic, environmental, and social differences in the upper and lower basins. As the mayor stated, “The municipality of Corumbá is unique. We have an urban center as well as rural populations spread across hundreds of hectares. Our people’s needs are different than the upper Taquari.” The lead technician also differentiated Corumbá from others areas of the watershed suggesting that the “unique ecology” of the Taquari lowlands and the need to support fishermen as well as ranchers were management challenges other municipalities had not faced. Patterns in these two actors’ language consistently separated Corumbá’s experience from that of the rest of the basin, highlighting a shared rationalization across the political–technical divide that their municipality was socially and ecologically distinct.

These beliefs are not unfounded. Corumbá has the largest most diverse population in the region, covers an area equal to the upper basin municipalities combined, and includes the inimitable Pantanal wetlands. Nonetheless, COINTA’s institutional structure focuses on ensuring equality rather than accommodating distinct needs. Within the Council of Municipalities, each member is allotted a single vote, irrespective of size, population, or management concerns. When asked to assess this arrangement, both political and technical actors from Corumbá suggested that COINTA’s organizational design was a clear attempt to favor upper basin municipalities and “reduce Corumbá’s influence.” Conversely, there was a distinct pattern in the responses of mayors from the upper Taquari that highlighted the importance of regional equity and the proven effectiveness of COINTA’s institutional model. As Coxim’s mayor stated, “COINTA was founded on principles of democracy and equal rights for small and large municipalities alike. This model has been successful in Paraná and São Paulo, so why shouldn’t it work here in Mato Grosso do Sul?”

As beliefs about the appropriateness of COINTA’s structure were so highly rationalized among upper basin actors, it became logical that they attempted to use these arguments to encourage Corumbá to join the consortium. When asked how they attempted persuade Corumbá to participate, all but one of the upper basin mayors indicated that they had emphasized COINTA’s “democratic structure” and the “success of this design in other regions.” As one mayor indicated, “Honestly, I can’t comprehend that Corumbá’s mayor thinks COINTA’s structure is unjust. What could be fairer than equal representation? I think the experiences in other areas of Brazil demonstrate that consortia offer benefits to all types of municipalities.” What upper basin actors failed to recognize was that the consistent use of these same arguments, and the unanimity in their collectively rationalized beliefs, was in fact one of the principle factors that the mayor from Corumbá cited as justification for not participating. Politicians in the upper
and lower basin shared concerns about development impacts and municipal administra-
tion, but differences in their core beliefs about the consortium’s structure impeded
collaboration in spite of the functional affinities among these actors.

**Emphasizing Technical Solutions to Overcome Social Differences**

Divergent beliefs about the consortium’s structure played an important role in shaping
COINTA’s membership. Nonetheless, underlying sociocultural differences also mar-
ginalized Corumbá and distanced them from the upper basin municipalities. Both
Corumbá’s mayor and lead technician were from long-residing *pantaneiro* families
with roots in the region’s traditional ranching and fishing communities. These two
individuals cited a different “land ethic” among recent arrivals in the upper basin and
newcomers’ inability to understand either environmental conditions in the Pantanal or
the *pantaneiro* culture. As the lead technician stated, “Nature is in the *pantaneiro*’s
soul. Ranchers here understand that if you destroy the river you destroy your future.
Our upland ‘friends’ from southern Brazil have not learned this lesson.”

While sociocultural differences distanced Corumbá from other members of
COINTA, the common social experiences of upper basin actors united them. All but
one of the mayors and two of the technicians in these municipalities were from immi-
grant families, creating a cultural kinship among both political and technical actors. In
their interview responses, both mayors and technicians cited “common family and
cultural connections” as an important factor facilitating collaboration among members
of COINTA. Unfortunately, what these actors failed to recognize was that their kin-
ship only further marginalized Corumbá and discouraged this municipality from
joining the consortium.

Upper basin technicians understood the sociocultural differences in the basin but
were convinced that shared technical objectives would enable them to effectively
collaborate with Corumbá. As one technician stated,

> During our meeting with the lead technician from Corumbá we focused on dis-
> cussing problems with sedimentation and how we could work together to solve
> them. We purposely didn’t talk about politics or social differences. Then the fol-
> lowing week he told me on the phone that he didn’t think it was in Corumbá’s
> interest to join COINTA. This simply didn’t make sense.

Just as the framing strategy focused on “democracy” used by political actors was
flawed, so was that used by technicians emphasizing strictly technical issues. Corum-
bá’s lead technician indicated that upper basin actors did not understand his munic-
ipality, and that after the meeting described above, he had become more convinced of
this. Technicians from the upper Taquari believed that deliberately avoiding social
differences, and focusing narrowly on technical concerns, would facilitate Corumbá’s
involvement. In practice, it had the opposite effect.
Both mayors and technicians involved with COINTA lamented the fact that Corumbá never became a member, but they hoped their organization’s success would eventually convince Corumbá to join. Functional affinities existed between politicians and technicians in the upper and lower basins, but the consortium’s structure and flawed framing strategies reinforced sociocultural differences and impeded collaboration across the watershed. Nonetheless, with 9 municipalities participating, the consortium represented a significant portion of the Taquari region. Rather than being a basin-wide organization, COINTA’s membership reflects the social and organizational realities in the municipalities that chose to join. At the time of its conception, there was in fact a bridge between upper basin political and technical actors, as they shared a belief in the value of an intermunicipal consortium for addressing the region’s concerns. Nonetheless, analysis of COINTA’s operation illustrates that implementing an integrated political–technical approach proved to be more difficult.

A Watershed Consortium for Organizing Governance

Although COINTA’s membership did not represent the entire Taquari Basin, mayors and technicians from its affiliate municipalities collectively believed in the utility of an organization linked to this hydrologic unit. However, the way political and technical actors’ conceived of a “watershed consortium” differed substantially. When asked to identify the advantages of a watershed-based organization, mayors consistently referenced its value in fostering regional integration. As Alcinópolis’ mayor indicated, “For isolated municipalities like this one, a basin consortium connects us to our neighbors, enabling us to combat common development and administrative challenges.” In comparison, technicians rarely discussed organizational issues. Their responses emphasized the importance of a watershed-based management approach to the environmental problems in the Taquari Basin. The statements of the lead technician from Pedro Gomes capture these beliefs, “A watershed-based approach is fundamental. The Taquari ecosystem doesn’t stop at the municipal boundary, so it is a necessity that we develop integrated projects across the basin. COINTA enables us to achieve this.”

The social processes driving these distinct conceptions of the benefits of a watershed-based consortium have important implications for collaboration across the political–technical divide. Although they strongly supported the idea of a basin consortium, none of the 10 mayors cited the need for integrating project activities across the watershed as a principle factor motivating them to join COINTA. When asked about approaches to basin-wide problems such as erosion and sedimentation, politicians highlighted the economic implications of these concerns and emphasized the need for collectively addressing uncontrolled development. Interview data also reveals that political actors rarely discussed the hydrologic connections between municipalities or the importance of coordinating remediation measures across the basin. All but one of the mayors did identify “facilitating technical collaboration” as a benefit of a watershed-based organization. However, analysis of their specific
responses uncovers a pattern where these beliefs were paired with the need for coordinated regional governance rather than integrated watershed management.

These responses are at odds with COINTA’s founding documents, where there is repeated mention of the need for a watershed-based approach to resolve environmental problems across the Taquari region (COINTA, 1997). These differences between interview responses and archival materials illustrate how the use of the same terminology can mask unique interpretations of these terms by political and technical actors. When asked about the prevalence of technical language related to hydrologic and environmental conditions in the founding documents, mayors fit these references into their collectively held beliefs about watersheds as effective organizing units. Seven of the mayors stated that a watershed-based approach was just a synonym for a “regional-planning approach.” There was also a clear pattern by which all but one mayor returned to discussing the success of watershed-based municipal consortiums in other regions of Brazil when asked about the technical benefits of a watershed-based organizational model. The uniformity of these responses highlights strong isomorphic tendencies in the beliefs of political actors involved with COINTA.

Perhaps the most telling data about political actors’ views regarding a watershed-based organization can be found in their knowledge of the Taquari Basin itself. Each mayor was asked about their understanding of the hydrologic and ecological characteristics of the basin. Although most mayors generally understood the notion of a watershed, only two linked specific environmental problems to basin-wide ecosystem processes. Interestingly, the political actors who provided the most detailed descriptions of watershed features pointed to conversations with technicians about COINTA projects as the source of this knowledge. As the mayor of São Gabriel do Oeste stated, “I knew the Taquari River ended up in the Paraguai River, but it wasn’t until our lead technician discussed COINTA’s EMBRAPA project with me that I understood how the river connected our erosion problems to Camapuã’s.” Interactions with technicians increased some mayors’ awareness about the need for a watershed-based management approach, but most still did not associate technically oriented watershed concerns with the activities of the Council of Municipalities. Mayors consistently identified these aspects of COINTA’s work as exclusively the domain of the Technical Committee, and they did not directly associate them with their governance or policy-making efforts.

Observation data from meetings of the council illustrate how these distinctions were reinforced during internal discussions among mayors involved with COINTA. On the surface, agenda items such as “discussion of regional sediment management program” would suggest that the council assessed technical strategies for addressing basin-wide problems with erosion (COINTA, 2001). However, while observing the discussion of this agenda item, mayors actually spent 15 minutes talking about road construction and permitting. The only mention of actually managing sediment was a suggestion that they should ask technicians to come up with “new outreach activities” to help educate farmers about this problem. Intraorganizational interactions like these played an important role in shaping conceptions of the distinct technical and political aspects of a watershed consortium. In practice, political actors cognitively separated
their beliefs about the utility of a watershed-based organization for regional governance from technical discussions of a watershed-based management approach.

A Watershed Consortium for Integrating Natural Resource Management

In contrast to mayors, the lead technicians involved with COINTA were uniformly aware of the hydrologic boundaries and ecological connections across the Taquari Basin. They shared a belief that the region’s environmental problems required an integrated watershed-wide management strategy and that the consortium was a vehicle for implementing such an approach. The discussion of the degradation of the river’s headwaters by Costa Rica’s lead technician exemplifies this pattern, “Deforestation around the river’s source is a problem for all of us. Whether here in Costa Rica, Alcinópolis, or Camapuã, destroying the headwaters will affect communities throughout the basin, so we must all work together to protect these springs.” All 14 technicians specifically mentioned the need for “integrated watershed-based management” across the Taquari region, and 11 paired their description of issues such as sedimentation and water quality with explicit references to the necessity of a “basin-wide strategy” for resolving them. When asked about the consortium’s role in these efforts, technical actors consistently cited COINTA’s importance in facilitating the implementation of this basin-wide management approach. Interactions between technicians through the consortium’s activities reinforced these collective beliefs. During meetings of the Technical Committee, technicians relied almost exclusively on rationale grounded in basin-wide ecological processes when assessing potential project interventions.

The depth of these collectively rationalized beliefs influenced technicians’ initial support for the consortium as well as their efforts to sustain it. The content of reports produced by the Technical Committee repeatedly emphasized the necessity of a watershed-based natural resource management approach (COINTA, 1998a, 1998b, 1999, 2000). Through their work with COINTA, technical actors became acutely aware of the severe social and environmental implications of uncontrolled natural resource development throughout the Taquari Basin. In this instance, it was the nature of the problems facing the region, and the perceived necessity of a watershed-wide management strategy, which became the principle force behind technicians’ involvement with COINTA. This emphasis on integrated management is a marked difference from political actors who valued the consortium as a mechanism for coordinating regional governance.

Both politicians and technicians in the Taquari Basin saw a watershed-based consortium as the necessary vehicle for addressing their distinct concerns, and this helped facilitate the smooth operation of COINTA during its early years. If governance activities and on-the-ground management could in fact be carried out separately, these differences in mayors’ and technicians’ beliefs might have led to a highly effective intermunicipal watershed consortium. However, the political and technical aspects of natural resource management are interdependent. COINTA’s experience confronting the organizational challenges inherent to these areas of overlap highlights how
organizational structures and functions, and the nature intergroup relationships, play key roles in shaping the political–technical divide in natural resource management.

Challenges Communicating Across COINTA’s Political–Technical Divide

Although COINTA’s political and technical divisions largely operated independently, when actors from the two areas came together, the complexity of the political–technical interface became apparent. Interview data show that the technicians faced difficulties when presenting technically rational activities to the Council of Municipalities. All 14 identified problems “translating” the details of integrated watershed management activities into terms the mayors could understand. In some instances, these efforts were effective and others not. Three mayors cited information they received from technicians when discussing their support for erosion-control initiatives implemented through COINTA. Conversely, two other mayors explicitly stated they were often “confused by technical terms” and suggested the Technical Committee’s attempts to justify particular activities based strictly on their necessity as part of a watershed-based management approach was not a sufficient rationale. One mayor’s comments capture this challenge, “I’m a farmer, not a scientist. I don’t know how I can use all this data about ‘the environment’ to help the people of this municipality.”

Meeting minutes from the council provide additional evidence of these incongruities and highlight flaws in the framing strategies focused on addressing these differences. Over the period 1997-2001, the principal topics of discussion were problems related to municipal administration and the need to foster sustainable development across the Taquari region (COINTA, 2001). New legislation affecting municipal budgeting, shortfalls in local property taxes, and other issues not directly related to watershed management dominated their agenda. These were the most pressing problems that mayors faced at the time, and as they shared a belief in COINTA’s central role in fostering administrative collaboration, it was logical that the council focused on these issues. In contrast, there was only minimal consideration of integrating natural resource-management activities.

Where watershed-wide concerns did appear in meeting minutes, they were almost always associated with the Technical Committee reporting to the council on project development, new interventions, and cooperative activities among technicians (COINTA, 2001). These consultations were normally followed by a discussion of possible funding sources and potential barriers to implementation. At the two observed sessions of the Council of Municipalities, there was a marked hesitance by technicians to engage in any discussion of the political implications of management projects. This tactic appeared to frustrate a number of mayors and inhibited political and technical actors alike from collectively rationalizing the utility of a watershed-based consortium for addressing administrative as well as technical concerns. At one meeting, a detailed technical presentation about hydrology and sedimentation did not receive a single follow-up question. Conversely, discussion of a new culvert system that was presented...
as a solution to both road maintenance challenges and basin-wide sedimentation problems, elicited numerous inquiries about ways this more “sustainable” form of development could aid rural communities while also addressing this regional environmental concern.

Technical actors that made effective presentations to the council were conscious of the importance of framing their activities in an accessible manner. As one lead technician stated,

Politicians aren’t interested in scientific details. I wish they were, as environmental management should be about technical solutions to problems, but a bunch of data isn’t going to help them respond to the people and I guess we need to understand that.

These actors also suggested that efforts by technicians to “educate” mayors about the merits of a watershed-based management approach had not been successful. Members of the Technical Committee had unanimously supported such a strategy, but in practice their consensus had little effect in generating additional support among mayors for this technically rational approach.

The institutional separation of the Council of Municipalities and Technical Committee, and the highly structured nature of their interactions, impeded the development of a collectively rational management approach that bridged the consortium’s political and technical divisions. However, it is in COINTA’s on-the-ground activities, and its evolution as an organization, that the broader implications of these asymmetries in beliefs on collaborative natural resource management appear.

Conflict Over Technically Rational or Politically Expedient Projects

As the consortium’s on-the-ground activities had significant political and technical implications, the organizational processes surrounding the selection and prioritization of projects vividly illustrate the political–technical divide in natural resource management. On the surface, these differences do not appear to shape project selection within COINTA. Interview data from both mayors and technicians show a pattern linking project selection to “technical evaluations” rather than “political considerations.” Nonetheless, this apparent consensus masked distinct beliefs about the prioritization of the consortium’s projects. Follow-up questions with mayors illustrated that, although they supported assessing the technical merit of projects, it did not necessarily mean they believed interventions should be chosen strictly based on their technical relevance.

Mayors shared with technicians an understanding that each project should be “technically sound,” but these politicians also believed activities should be implemented in each of the member municipalities. As the mayor of Campaú indicated, “COINTA should bring projects to all of its members. I agree it is necessary for technicians to
develop ‘well-designed projects’, but there must be places for ‘well-designed projects’ in every municipality, right?’ As mayors believed technical assessments should inform project selection, they delegated the identification of COINTA’s initial pilot projects to the Technical Committee. Interview data illustrate that technicians interpreted this delegation of authority as signifying that mayors shared technicians’ belief that projects should be implemented in areas of the Taquari Basin experiencing the most severe environmental problems. In reality, what political actors believed was that technically sound projects would eventually be implemented in each of the consortium’s municipalities. These fundamental differences in beliefs about project activities eventually led to a political–technical fracture over time.

The evaluation of the consortium’s initial round of projects provides compelling evidence of this emerging schism within COINTA. Ultimately, it was not a difference of opinion about these projects’ failure or success against particular metrics that shaped relationships between mayors and technicians. Rather it was the way shared beliefs influenced the type of evaluation data collected and how project results were communicated that brought to light fundamental differences between political and technical actors. As the functional operation of COINTA’s on-the-ground activities fell to the Technical Committee, technicians independently designed the evaluation approach for these initiatives. Project documents show that the assessment frameworks they developed detailed incremental environmental improvements against technical benchmarks, emphasizing the long-term benefits of the watershed-based management approach technicians believed was central to COINTA’s programs (COINTA, 1998b, 1999).

Unfortunately, these evaluations in no way spoke to the core beliefs of political actors, who were concerned with the socioeconomic as well as environmental implications of new sustainable development activities. All but two of the mayors cited the “lack of information about the social benefits from the projects” and “inadequate results” when asked to assess the outcome of these projects. Technicians evaluated these pilot initiatives in a different manner, voicing a consistent pattern of frustration that the mayors had not provided the necessary funding for the chosen technical approaches and that political actors failed to understand the “long-term environmental benefits” from the watershed-based management approach. As one technician stated, “What do politicians expect from these projects? The river can’t be transformed in a year. With the little money we had, I actually think we achieved great results. They need to understand that integrated watershed management takes time.” This divergence in beliefs led to a gradual erosion of support for the consortium’s projects within both the political and technical spheres. These initiatives were not meeting the regional development objectives of political actors, and technicians considered them inadequate within their basin-wide management approach.

Based on these unsatisfactory outcomes, the consortium set aside efforts to promote truly integrated collaborative initiatives, focusing back on discrete political and technical planning efforts that built on the strong collective beliefs among mayors and technicians, respectively. COINTA continues to be an important organizational entity advancing regional coordination among municipal leaders and facilitating information.
sharing and cooperation among technicians. However, COINTA’s lack of success integrating governance and on-the-ground management does not necessarily mean this objective is out of reach. Addressing the existing environmental problems and promoting more sustainable development in locales like the Taquari Basin will require the combined efforts of political and technical actors. What the results from this study illustrate is that the structure of multiparty organizations and the nature of intra- and interorganization relationships may hold the key to achieving this critical political–technical collaboration.

**Discussion: The Organizational Origins of the Political–Technical Divide**

COINTA's founders adopted an organizational model they believed would encourage collaboration among elected officials and resource managers who all shared a commitment to improving social and environmental conditions in the Taquari Basin. However, the structure they chose inadvertently fostered the formation of narrow sets of collectively rationalized beliefs within the political and technical spheres of the organizational field. The strength of these common beliefs meant that they took on an almost ideological character, which inhibited the ability of both mayors and technicians to comprehend the perspectives of the other group. Institutionalizing both the functional roles and the nature of interactions among these actors became a major impediment to political–technical collaboration in the Taquari region.

These patterns are consistent with the institutional isomorphism and the narrowing of beliefs found by sociologists examining field-level organizational behavior in other settings (DiMaggio & Powell, 1983; Scott, 2008). Nonetheless, the COINTA case suggests that in addition to structural designs and intergroup relationships, contextual factors such as social and cultural connections also play an important role in shaping organizational dynamics. In the Taquari region, sociocultural bonds united political and technical actors in Corumbá in opposition to the consortium, whereas the common immigrant background of upper basin mayors and technicians brought them together in support of COINTA. Although these social forces impeded the integration of the upper and lower basins, the fact that mayors and technicians within the two respective areas shared similar views about formation of the consortium suggests that sociocultural ties can aid in bridging the political–technical divide.

Members of COINTA believed they could replicate the successes of other Brazilian intermunicipal consortia when they adopted an identical organizational structure. Nonetheless, their chosen design reinforced underlying differences within the political and technical aspects of natural resource management. The institutional separation of the Council of Municipalities and the Technical Committee led to an increasing homogeneity in the views of actors within the two spheres. These belief patterns were a powerful integrative force within the political and technical branches of COINTA. However, this uniformity of beliefs within the Council of Municipalities and the Technical Committee, respectively, led to ill-conceived framing strategies that actually
discouraged rather than facilitated collaboration. Both mayors and technicians strongly believed in the utility of a watershed-based consortium. Nonetheless, the highly structured interactions between mayors and technicians meant that these actors did not understand that for one group COINTA’s mission was to foster cooperative intermunicipal governance, whereas the other saw the consortium as a vehicle for implementing an integrated watershed-based management approach.

Although the Council of Municipalities signed off on projects prioritized based on technical criteria, their backing masked cognitive processes that reformulated these technical assessments to fit politicians’ interests in ensuring that “technically sound” projects would be implemented in each of the member municipalities. Because COINTA’s organizational design limited the interactions between political and technical actors, neither group fully understood these underlying misperceptions. This led to framing strategies that were internally rational to the members of the Council of Municipalities and the Technical Committee but ultimately did little to foster understanding and collaboration across the political–technical divide. Strategic framing can help create synergies among actors with distinct sets of beliefs, but the effectiveness of these efforts is highly dependent on the establishment of collaborative interorganizational relationships (Scott, 2008; Zald, 1996).

Organizational Relationships and Future Collaborative Natural Resource Management

Collaborative decision making has been defined as a process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible (Gray, 1989). Multiparty organizations can play an important role in bringing together groups with diverse interests and perspectives to collaboratively address environmental concerns. Nonetheless, collaborative natural resource management not only depends on bringing together different types of organizations but also requires assimilating the political and technical aspects of these activities.

The complex interface between regional governance and integrated natural resource management exemplifies how difficult this synthesis can be, as political decisions about development often are in conflict with conservation and mitigation measures. In Brazil’s Taquari Basin, local government actors resisted the national trend to create a multistakeholder watershed committee and rather chose an alternative type of organization, an intermunicipal consortium. They believed this was the most appropriate organizational model for regional concerns that necessitated an integrated political-technical approach.

Ultimately, COINTA’s ambitious organizational and resource management goals were never met. Truly collaborative interactions did not occur, and although mayors and technicians independently developed powerful collectively rationalized beliefs, a common vision for the sustainable development of the Taquari Basin never emerged. Nonetheless, the consortium remains an active and vibrant organization supporting
mayors in addressing the challenges of municipal administration and technicians in their capacity-building activities and efforts to tackle emerging environmental concerns. These endeavors reflect and reinforce the collective beliefs of actors within the consortium’s political and technical spheres. The ongoing operation of COINTA appears to focus on meeting these discrete needs rather than forwarding an integrated political–technical approach to basin-wide problems. The political–technical divide still exists in the Taquari Basin, but now it is a conscious one.

In spite of their recognition of this divide, political and technical leaders consistently voiced a hope that the lofty goals of the consortium could one day still be achieved. To accomplish these objectives, they will first and foremost need to consider alternative organizational approaches for advancing political–technical collaboration. Although mayors and technicians are central players in natural resource management, the COINTA experience illustrates the difficulty they face when attempting to collaborate on their own. It is possible that had the two nonfunctioning elements of the consortium—the plenary and fiscal council—been fully implemented, the isomorphic tendencies in the beliefs of political and technical actors might have been avoided.

The experience of watershed committees in Brazil illustrates that stakeholder groups with diverse interests and expertise can bring new ideas and approaches to multiparty processes (Abers, 2007). Had COINTA’s plenary body contributed such collaborative inputs, outcomes may have been different. The plenary could have linked civil society groups with interests as diverse as farmers unions interested in development with NGOs concerned with environmental conservation. By encouraging dialog among groups with such wide-ranging perspectives, the plenary might have served as a platform for mayors and technicians to discuss shared interests and synergies across the political–technical divide. In addition, a fully implemented fiscal council, overseeing on-the-ground projects, might have facilitated regular collaborative interactions between assemblypersons and technicians, leading to a shared appreciation of the political and technical implications of different project activities.

The COINTA organizational experience should not be read as an indictment of intermunicipal consortia or attempts to integrate the political and technical aspects of natural resource management. Rather it illustrates the importance of understanding patterns of divergence and convergence in political and technical actors’ beliefs and examining how organizational structures can both facilitate and impede collaborative interactions. By learning from experiences in places like the Taquari Basin, politicians and technicians in other regions may together be able to establish the synergies COINTA was trying to achieve. Actors engaged in these multiparty processes need to focus less on highlighting the political importance or technical rationale for particular activities and concentrate on truly collaborative interactions that foster learning about new aspects of their shared concerns. Politicians need to understand the broader technical rationale for on-the-ground activities, and technicians must recognize that political considerations are an integral part of successful management efforts. Social scientists have an opportunity to support this process by providing expanded analysis of the role
organizational dynamics play in both creating and bridging the political–technical divide in natural resource management.

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**Notes**

1. Consórcio Intermunicipal para o Desenvolvimento Sustentável da Bacia Hidrográfica do Taquari.
3. The mayors of Sonora and Bandeirantes were contacted, but were unwilling or unable to contribute to this project.

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