

Applying Classic Organization Theory to Sustainable Resource & Environmental Management

William Ascher
Terry Sanford Institute of Public Policy
Duke University

5th Annual Colloquium on Environmental Law & Institutions
Duke University

April 127-28, 2000

What is there about organization behavior that gives rise to suboptimal, unsustainable natural-resource and environmental policies and practices? Can an understanding of organizational behavior (i.e., organization theory) help to overcome these problems? This brief overview argues that classical organization theory¹ has much to offer, although the role of organizations in natural resource and environmental management raise peculiar issues of time-horizon problems and complexity issues for which organization theory has not been systematically applied.

Six specific problems are the targets for explanation:

1. *Doctrine truncation.* Policies and practices are often guided by decision rules that deviate from the balanced approach needed to pursue sustainable development, defining this term as the simultaneous pursuit of inter-generational equity, intra-generational equity, and respect for natural systems. Sometimes these rules reflect selfishness; sometimes the technical necessities of keeping things simple. Whatever the sources, the doctrine of sensitivity to all of the tradeoffs involved in pursuing sustainable development is often sacrificed to the truncated operational principles such as “maximum sustainable yield,” “maximum value added,” etc.
2. *Short time horizons.* Policies and practices often reflect very short time horizons (“high discount rates”). It is often noted that the time scales of decision-makers as well as natural-resource exploiters tend to be much shorter than the biological time scales of renewal of natural resources. Notwithstanding the great complexity of determining what the time horizons for natural resource exploitation of renewal resources ought to be (in light of the possibility that liquidating or transforming part of the resource stock may be acceptable), few would question the assertion that short-sightedness is often encountered.
3. *Bias for government control.* Governments often take over greater control of natural resource endowments, and the reversibility of these appropriations, even when the outcomes are worse than the status quo ante, often proves to be extremely difficult.

¹ The now “classic” literature is typified by Merton 1940; March and Simon 1958; Selznick 1948; and Thompson 1969. It is important to distinguish between the broader rubric of institutional theory from that of organizational theory. Nevertheless, much of the institutionalist theory (including the “new institutional economics”) is applicable to formal organizations: transactions cost theory, principal-agent theory, etc. Collective action theory is perhaps less relevant insofar as we are addressing formal government organizations that have authority structures that can be used to elicit cooperation without having to rely on voluntary decision.

This is a bias for government control, often reinforced by a presumption of government competence.

4. *Reduction of Diversity.* The actions of resource managers and policymakers often render natural resource endowments less diverse and therefore less resilient.
5. *Resistance to Recognizing Policy Failures.* Governments and resource managers are often very resistant to recognizing and acting upon resource policy failures and unsound practices. Even when outside observers find that policies and practices are clearly suboptimal, recognition and change are slow in coming, if at all.
6. *Lax enforcement.* Resource-exploitation regulations and environmental regulations often suffer from lax enforcement, even when and where they ought to be enforced. Lax enforcement leads to reckless resource extraction and unchecked environmental degradation.

Narrowing the Focus within Organization Theory. Organization theory was developed to account for a very wide range of organizational behaviors and problems, ranging from mundane issues of how to organize work tasks and why personnel quit, to political issues of inter-organizational rivalries. Clearly, not all are relevant to our inquiry. In looking to organization behavior theory to address these problems, our framework centers on two phenomena:

- Organizational reactions to the complexity and uncertainty inherent in resource and environmental management;
- Organizational interests of the agencies and formal institutions involved in resource and environmental oversight, policy-making, management and exploitation.

Focusing on these two phenomena makes sense because each can create perverse organizational behavior with respect to the requirements for sound natural-resource policy and practice. What follows is a schema of propositions from organization theory and their implications for resource policy and practices.

B. Complexity and Uncertainty

Complexity poses numerous risks to the organizations mandated to manage natural resources. We can add uncertainty to complexity because although uncertainty can arise even in simple systems, much uncertainty flows directly from complexity. Moreover, uncertainty, even if not fully derived from complexity, seems to evoke similar organizational reactions and poses similar challenges as complexity. In many instances, complexity challenges the organization's efforts to understand how the ecosystem and social systems will behave in reaction to the organization's actions, weakens the organization's level of control, and creates additional cause for intra-organizational conflicts.

Organizations cope with complexity and uncertainty through various modes of structure and adaptation, including departmentalization, specialization, hedging, strategic planning, etc. However, they also have some control over the degree of complexity with which they have to deal, and therefore often try to reduce complexity in an effort to make it

more manageable. To explore what the reduction of complexity may mean, it is useful to distinguish four aspects of complexity:

- Complexity of objectives
- Complexity of intra-organizational procedures
- Complexity of the systems under management
- Complexity of doctrines and approaches.

The simplification of any of these aspects of complexity can result in deviations from sound resource policies and practices. Insofar as the pursuit of sustainable development requires the balancing of objectives – and the continual recognition of the relevant tradeoffs – the simplification of objectives is a direct threat to balanced resource management.

For whatever the degree of remaining complexity, organizations need to cope with complexity through *coordination*. The more that an organization addresses complexity through departmentalization and specialization, the greater its need to coordinate. Without denouncing coordination *per se*, we note that an organization's efforts to secure an adequate level of coordination may detract from the pursuit of the ultimate objectives of sound resource policy and management. This is because coordination requires complexity of intra-organizational procedures; to maintain adequate control and certainty, organization leaders are often prompted to reduce the other dimensions of complexity. This can lead to the neglect of important objectives, truncated doctrines, and deliberate over-simplification of ecosystems.

C. Organizational Interests

Organization theory takes note of the fact that the actors involved in organizations pursue interests that may correspond with neither the formal mandates of the organizations, nor the preferences of those outside of the organization who have the formal authority to set the organization's agenda. The term "organizational interests" is merely a shorthand for these multiple interests of member of the organization, rather than implying, in an anthropomorphic way, that the organization *per se* has interests.

The analysis of these interests is complicated by the fact that organization members may be acting to maximize:

- Personal career advancement within the organization
- Personal aggrandizement outside of the reward structure of the organization (e.g., through corruption)
- Respect and rectitude within the member's profession
- Programmatic objectives
- Strengthening of the agency's standing, discretion and resources.

Various hybrid combinations are also possible.

The extent of discretion of leaders and personnel at various levels affects the degree to which interests can play a role. The interest orientations of the leadership of natural-resource-management organizations have a major impact on the plans and policy

selections of the organization, while the interest orientations of the rank and file organization members often has comparably great influence on the implementation of these plans and policy choices. Therefore the existence of interests creates numerous possibilities for the principal-agent problem to arise in many variants and at many levels. It should be noted that while the principal-agent literature seems to offer simple instruments to bring incentives of agents and principals into line, their applicability is often compromised by the multiplicity of agents' motives, as well as the ambiguity about the identity of the principal. Is the principal the government, the public, or the ecosystem?

Organizational Interests and Jurisdictional Competition. The agency orientation can push resource organizations into reckless extraction. Agency personnel, especially top-level leaders, push for the institutional interests of their agencies; they tend to press for the expanded jurisdictions of their agencies; the ensuing jurisdictional competition among agencies provokes the over-exploitation of natural resources, as each involved agency rushes to stake its claim by engaging in resource exploitation as soon as possible.

Time Horizons. The time horizons of agency personnel tend to reflect both the institutional interests of the agency – if agency leaders hold that orientation – and the promotion and personal reward structures within the agency. The perennial problem, of course, is that many of these rewards are greater when immediate performance is enhanced at the expense of longer-term performance.

Perverse Learning Patterns. Insofar as uncertainty requires adaptation, resource and environmental organizations require the capacity for learning. However, certain organizational interests provoke perverse learning patterns. Many governments appropriated local populations' resource-user rights when depletion seemed excessive; now that governments, particularly in developing countries, dominate many resources, the fact of even greater depletion has rarely resulted in governments learning that their own management is even more problematic. In part, this is because agency and careerist orientations provoke government resource regulators to explain the subsequent failures on the continued efforts of non-governmental rivals to exploit the resources. Sixty years ago Robert Merton (1940) outlined the dysfunctional patterns of organizational learning, especially when organization members, under the sway of both interests and ignorance, generalize lessons to inappropriate situations, and fail to adapt to lessons learned because of the preference for rigidity for the sake of control.

In intra-governmental conflict situations, agencies often try to limit information available to other agencies or non-governmental rivals for influence, putting those with less information at a serious disadvantage. Therefore, insofar as inter-agency competition prompts agencies to monopolize information, other resource-managing agencies and private resource-exploiters will be less well prepared to enforce resource and environmental regulations, determine the optimal rates and modes of extraction, or learn from experience.

Unbalanced Pursuit of Mandated Objectives. One of the most acute problems for governmental organizations entrusted with resource management responsibilities is the tendency to neglect some aspects of their multi-objective mandates in favor of those aspects that conform to the agencies' standing and resources.² It is therefore often a major structural mistake to place multiple functions within the same agency, when the pursuit of these functions entail tradeoffs among one another and with the institutional standing of the agency. In such cases it may be better to have agencies with simpler mandates, and bring the issue of how to trade off among objectives to a higher level within government, where, in any event, the officials are likely to be more directly accountable to the citizenry. It is frequently at the level of the cabinet and the legislature that the dialectic of balancing objectives for sustainable development needs to be determined.

D. Conclusions

The acid test of organization theory's utility for guiding resource management reform is whether it can 1) reveal promising avenues of reform; and 2) warn of the likely failure of otherwise seemingly plausible reforms. It is striking that the classic organization behavior conceptions can account for so many of the problems of resource management; and that the frameworks – even in the highly simplified form outlined above – yield so many leads on how to achieve reforms. Later theories have been more prominent in deriving reform directions: principal-agent theory calls for higher levels of monitoring, and adapting incentive structures to bring the interests of the organizations' leaders and personnel in line with the principal's objectives. Transaction theory³ suggests that government organizations often shirk enforcement to avoid high transactions costs. Yet the same advice is easily derived from classical organization theory. It tells us of the promise in:

- Establishing simpler, non-competing mandates
- Providing information to many governmental and non-governmental actors
- Restructuring intra-governmental arrangements to reduce the opportunities for inter-agency jurisdictional conflicts
- Restructuring organizational incentives to create longer time horizons for government leaders and personnel
- Liberalizing to reduce rent-seeking alliances that promote corruption.

Organization theory can also warn us about quixotic reform initiatives that run counter to the constraints imposed by organizational behavior:

- Assigning conservation objectives to the mandates of resource-exploiting state organizations
- Government appropriation of resource-user rights to enhance conservation
- Streamlining information collection and dissemination for the sake of efficiency
- Embracing ecosystem management that emphasizes centralized control and reliance on technical information.

² March and Simon (1958) identified this phenomenon, and the related phenomenon of goal substitution.

³ As epitomized by, for example, by North 1990.

Table 1. Organizational Behaviors and Outcomes

Challenge	Behavioral Response	Outcome(s)
<i>Complexity & Uncertainty</i>	Simplification/routinization	Reduction of diversity Doctrine truncation
	Hyper-coordination Preference for predictability	Over-centralization Over-centralization Neglect of local user rights Short time horizons
	Focus on short-term outcomes Rigidity for the sake of control	Short time horizons Inadequate learning
<i>Interests</i>		
a. Agency orientation	Jurisdictional competition	Short time horizons Neglect of local user rights Doctrine truncation
	Emphasis on standing-enhancing components of multi-objective mandates	
	Extraction for budget enhancement	Excessive extraction
	Neglect of enforcement Focus on immediate successes Monopolization of information	Lax enforcement Short time horizons Perverse learning Lax enforcement Suboptimal extraction
	Rent-seeking-based alliances Pursuit of long-term agency survival	Lax enforcement Long time horizon
b. Careerist orientation	Focus on immediate success Simplification/routinization	Short time horizons Doctrine truncation Reduction of diversity
c. Individualist orientation	Low effort	Lax enforcement Short time horizon
	Corruption	Lax enforcement

References

Aharoni, Yair. 1982. "State-owned Enterprise: An Agent without a Principal," in Leroy Jones, ed., *Public Enterprise in Developing Countries*. Cambridge: Cambridge University Press.

Allison, Graham. 1971. *Essence of Decision: Explaining the Cuban Missile Crisis*. Boston: Little Brown.

March, James G., and Herbert A. Simon. 1958. *Organizations*. New York: Wiley.

Merton, Robert K. 1940. "Bureaucratic Structure and Personality," *Social Forces* 18, 560-68.

North, Douglass. 1990. *Institutions, Institutional Change, and Economic Performance*. Cambridge: Cambridge University Press.

Selznick, Philip. 1948. "The Foundations of the Theory of Organization," *American Sociological Review* 13, 25-35.

Thompson, Victor Alexander. 1969. *Bureaucracy and Innovation*. Tuscaloosa: University of Alabama Press