Cultivating
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Conflict and Collaboration in Natural Resource Management

edited by Daniel Buckles

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POLICY IMPLICATIONS OF NATURAL RESOURCE CONFLICT MANAGEMENT

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Conflicts over natural resources have always played a role in human society, but recent conditions have led to an increase in their intensity, public profile, and complexity. Policies have paid relatively little attention to the broader perspective of conflict management. It is increasingly important to sort out new mechanisms and institutions to manage these conflicts and resolve them productively in the interests of both long-term sustainability and short-term economic feasibility. This chapter reviews the experiences documented in the case studies and draws lessons from them relevant to public policy in support of conflict management.

The changing policy climate for natural resource conflicts

The policy environment for natural resources management has changed dramatically in recent decades. Population growth, agricultural settlement, and growing trade, investment, and economic activity have increased pressure on all resources. Natural resources once used only locally have been appropriated for the manufacture of industrial products (fibres, oils, timber, minerals) or international foodstuffs (coffee, beef, fruits). Both large-scale resource development for export and local overpopulation cause resettlement of rural resource users to ever more vulnerable and unproductive sites, in search of land suitable for the agriculture on which they base their livelihood.

There are no more "resource frontiers." Virtually every change of land use, new development, or expansion of any resource use now involves conflict (Ayling and Kelly 1997). Natural resource use also continues to be an aggravating factor in armed conflicts around the globe (see Suliman, this volume), and even in cases where the true sources of the conflict may extend beyond disputed resources, resource conflicts are often the most visible and symbolic causes of the dispute (Tungittiplakorn 1995).

Historically, conflicts at the local level were often dealt with through customary or traditional dispute resolution mechanisms. Traditional societies did not necessarily share the instrumentalist perspective of the modern global economy. Conflicts not only took place in an economic context in which risk minimization was generally preferred to profit maximization but were also based on culturally specific notions of value and spirituality that defined the sacred, the secular, and the field of play between these. However, with the breakdown of traditional practices and the penetration of global economic forces to the local level, such conflicts now often come under the jurisdiction of the state. The extending reach of the industrial–consumer society has also transformed the definition of natural resource conflicts (see Chevalier and Buckles, this volume).

In peripheral regions, the state has often acted to assert its authority for reasons of national security, national identity, and nation-building against the interests of local resource users (de Koninck 1994; Michaud 1994). But the state is increasingly constrained in its ability to act unilaterally, even in matters over which it may have constitutional jurisdiction, such as natural resources. Global information flows can quickly place local conflicts on the regional or world stage. Even in isolated and obscure conflict situations, access to telephone, the Internet, and other electronic communication tools makes it increasingly difficult even for the most authoritarian regimes to stop the release of contradictory information or prevent public scrutiny of conflict interventions. This is becoming a thorny problem for policymakers around the world. (Examples of these trends in Southeast Asia are documented by Poffenberger [1990], Laohasiriwong and Kongdee [1995], and Posgate [1998].)

One response has been to increase the effort devoted to resource planning; another has been to revise central policies dealing with natural resource management. The emphasis tends to be on technocratic solutions that establish rules for allocation of resources between conflicting uses. Although these efforts at conflict avoidance are sometimes useful, they are often unsuccessful (and may even be counterproductive). Yet, fundamentally, the key players involved in resource conflicts usually want to resolve them, because the uncertainties surrounding unresolved conflicts increase everyone's commercial and livelihood risks. Appropriate government policies can support the application of innovative conflict management mechanisms.

Public policy as a cause of natural resource conflict

An important initial step in identifying potential policy contributions to the management of local resource conflicts is to recognize the ways public policy can exacerbate such conflicts. There is ample evidence from case studies of how specific policies, government programs, and their implementation have generated or aggravated conflicts, even when the intention was to reduce the conflict. Such contradictions suggest that the nature and dynamics of local resource conflicts are poorly understood and that conventional interventions can be counterproductive.

There are, of course, cases where the direct political interests of central or national elites conflict with those of the local, marginalized poor (Chenier et al., this volume; Fisher et al., this volume). In these cases, the policy tools of the state may be applied in a deliberately one-sided fashion. However, two important lessons can be drawn from these political conflicts:

✦ Even when direct interests clash in the arena of local natural resource use, neither party has a completely free hand. For a variety of reasons, and despite the imbalance of political power, a satisfactory solution for either group may require that both parties reconcile their fundamental interests before either can make use of the contested resources. For example, landowners in Copán, Honduras, came to recognize that in spite of their politically powerful position, their own interests would be better served by selling some of their land than by forcing the government to continue the confrontation (Chenier et al., this volume). In a politically lopsided situation, the tools of the state are not helpful; because of the political conflicts, the government is widely perceived as lacking legitimacy, and any government interventions are likely to exacerbate the problems.

✦ Although fair policy frameworks for natural resource management may be in place, such policies may be ignored or perverted in their implementation under the pressure of influential elites. This situation may persist because of traditional cultural deference, opaque government procedures, or lack of information. Once again, such situations are becoming less tenable, which begins to shift the balance of political power. Policy responses will need to adjust to reflect these changes.

There are a variety of other ways in which the direct actions (or inactions) of policy-driven government agencies can contribute to local resource conflicts.

Uncoordinated planning and investment

Sectoral agencies typically prepare land and resource plans, zoning strategies, and maps that reflect their own objectives; however, these plans may be contradictory at the local level. This is a particular problem in protected areas, where conservation-oriented managers can gain strong international and national political support for excluding other resource users. This is not just a matter of physical exclusion from the protected area, but also, typically, a case of conceptual and ideological exclusion: other interests have often been assumed to be secondary to the ("urgent, imperative, previously overlooked") conservation objectives, and hence it is thought that these other, nonconservationist interests can be ignored by the planners and managers of the protected area.

Each of the case studies dealing with protected areas in this volume provides an illustration of how government officials concentrated on their conservation mandate for the protected areas, paying little attention to the legitimacy of other claimants (Fisher et al.; Oviedo; Weitzner and Fonseca Borrás, this volume). In Bolinao, even the proposal for a protected marine area exacerbated latent conflicts in the community (Talaue-McManus et al., this volume). Similar arguments apply where government agencies are charged with resource planning and investment in their own sectors (for example, forestry, agriculture, mining, industrial development). Within the local community, various resource users are represented within different sectors and receive contradictory signals from different government agencies in dealing with the same resource base. In Uruguay, government incentives for industrial agricultural expansion were in conflict with conservation and other

resource interests (Pérez Arrarte and Scarlato, this volume). Government officials are typically unaware themselves of the conflicts and confusion caused by the contradictory regulations, procedures, and plans of their various agencies (Fisher et al., this volume).

Inadequate information or consultation

Inadequate or obsolete data and a limited understanding of local resource uses are common problems in many developing countries. Sometimes these problems are not recognized (that is, central-government officials think they understand the situation better than they actually do), but often decisions are made in full knowledge that the available data are inadequate. Surprisingly, even in cases where data gaps are recognized, local consultation is seldom attempted as a way to improve understanding before devising or implementing a policy. As a result, plans and programs may actually worsen the problems they are intended to address. For example, in Laos, government policy supporting community resource management was implemented in such a rigid way that village demarcation or boundary changes created new conflicts (Hirsch et al., this volume).

Discriminatory or unclear tenure policies

Many countries have tenure systems for land and resources that either reflect historical inequities in wealth and political power or have been recently modified to encourage large-scale industrial agriculture and capital investment. The interests of small-scale and marginalized farmers have been widely ignored. As a result, these people become involved in disputes over resources that they have traditionally used or managed, but to which they have no legal claim. Such situations have frequently arisen as a direct result of government policies intended to promote industrial agriculture or forest plantations (Posgate 1998; Pérez Arrarte and Scarlato, this volume).

Population displacement and migration

A frequent result of major development projects supported explicitly by government policy is the displacement of resident populations. In many countries, there are also policies supporting (or even forcing) migration and resettlement away from more populous regions to the agricultural frontiers. In addition, a variety of regional development policies are intended to attract voluntary migration to target regions of large countries. There are crucial differences between voluntary and involuntary resettlement, but both can lead to deprivation and conflict, even when they are planned and supported financially by government or other project sponsors (Cernea 1988).

     The resource conflicts that concern us here typically arise at the resettlement site, when migrants establish farms or begin to use resources that had previously been available to local groups. In many cases, the migrants have a different cultural background from that of the local residents. They share no common tradition or recognition of resource values and taboos. They do not share a common social framework to identify resource rights and processes. They are not party to established mechanisms for arbitration, benefit-sharing, and managing common property. They are also highly stressed — typically with little knowledge of the local resource base and limited reserves of food or cash. They are forced to be opportunistic in their use of resources, a situation that can degenerate into open access.

This situation calls for the external imposition of rules and order, together with initial dialogue and monitoring. Yet, governments typically underestimate the impact and disruption caused by resettlement and fail to recognize the conflicts that arise. For example, in the Vangvieng District of Laos, where repatriated refugees were settled without adequate attention to existing resource users, the ensuing conflict made it impossible to introduce pilot projects to improve management (Hirsch et al., this volume).

A piecemeal approach to reform

In response to local natural resource management concerns or conflicts, many governments have introduced tenure reforms, decentralization of administrative authority, or organizational changes in resource management. However, the scope of the reforms is often limited to the sector of the responsible agency (for example, social forestry, irrigation), with the result that closely related local institutions remain unchanged. Thus, for example, reform of the local-government administrative system in the Philippines has given greater authority to local-government units to manage natural resources. However, technical support, planning and coordination, credit, and extension and marketing systems are not equipped to provide the tools to allow them to take advantage of this increased authority. The result can be greater frustration and even increased conflict, as internal factions or adjacent municipalities follow their own interests or struggle to deal with multiple contradictory projects of different agencies (Talaue-McManus et al.; Fisher et al., this volume).

Vague policy direction

Policies drafted by central-government officials may be poorly communicated to the local-government agencies responsible for their implementation. Thus, a regulation that may be clear to the officials who developed it and the political authorities who approved it may be interpreted entirely differently by local implementing officials. The sense and intent of the national-level legislation may not be an overriding concern for local officials dealing with the practicalities and constraints of their own situation. Neighbouring districts may implement the same laws or regulations in contradictory ways, leading to new conflicts among resource users who were accommodated under previous arrangements (Hirsch et al., this volume).

Inadequate support for reforms

Some elements of reformed or enlightened resource management frameworks can be found in most of the cases described in this volume. However, such reforms are almost always inadequately supported. Decentralization of authority is not accompanied by adequate funding, training, or capacity-building among the officials charged with implementing the policies. As a result, enlightened policies may either fail to be implemented or be implemented very differently at the local level than intended by the policymakers.

An essential element in effective policy responses to natural resource conflicts is the ability to recognize and anticipate these kinds of counterproductive government activities. Avoiding or correcting such problems will result in a solid policy base on which to build conflict management processes in natural resource administration. Some of the problems are deeply entrenched in the political system, but simply recognizing them can be a major step on the road to conflict management.

Innovative policy responses

The parties involved in resource conflicts often press governments to intervene directly to resolve them. One rationale for this can be found in economic theory. In complex natural resource disputes, it is usually neither feasible nor economically attractive for the parties directly involved to organize conflict resolution efforts. Transaction costs are high and many of the benefits do not accrue to the participants themselves, so government involvement is justified on a "public-good" basis. Governments also typically have constitutional and legal authority in the specific field of natural resource management and may, therefore, be legally obliged to intervene in cases of conflict. In many cases, the state is also one of the claimants to contested resources.

However, precisely because the state is not a disinterested party, its role in resolving natural resource conflicts can be limited. The parties in conflict may not perceive the state to be a legitimate arbitrator. But the state may be a crucial stakeholder because of its statutory responsibilities for natural resource management. Regardless of its role in the conflict, the support of the state may be essential to successful outcomes because of its powers of enforcement and support for collateral implementation efforts (for example, investment, training, technical advice). This dilemma has several important policy implications. First, the role of the state and its agents in natural resource management is likely to have to change to respond to the need for better conflict management. Second, innovative mechanisms to resolve natural resource conflicts are likely to lead to policy support for new institutions and processes outside the formal realm of state authority and the emergence of new actors and skills to manage conflict situations. Third, the importance of procedural transparency and access to information in resolving conflicts begins to define how these roles, players, and processes are likely to have to interact and how policies can foster or impede such interaction.

Sweeping guidelines that policymakers can apply across the board when confronted with volatile local natural resource conflicts are unlikely to emerge. A principal lesson from the experiences described in this book and elsewhere is that conflict resolution and local management of natural resources rely on locally specific solutions. There are few general rules for the kinds of interventions that might be appropriate, although useful diagnostic tools are available for evaluating the nature of the conflict and the potential for facilitating various kinds of solutions (for example, Bush and Opp, this volume; Ramírez, this volume). Policy responses should recognize and empower local stakeholders to become more effective in assessing their own needs, negotiating with other resource users, understanding and interpreting technical assessments of resource quality, and implementing consensus solutions. In short, much progress can be made in conflict management through policy responses that improve *governance* at the local level.

The role of research as a catalytic tool

The cases demonstrate repeatedly how information plays a catalytic role in conflict management. The process of exposing, validating, and sharing information about the resource base and its use is, in all cases, a crucial first step in the process. Typically, the various parties in conflict do not share a common set of data (for example, Oviedo, this volume; Pérez Arrarte and Scarlato, this volume). Although information alone is insufficient to lead to a resolution of resource conflicts, it is a prerequisite in building consensus-based plans. Information collection improves the understanding of all parties and engages the attention

of those at the periphery of the issues. It also requires the engagement of all parties in providing, often contradictory, information.

Because the offended parties in a conflict are unlikely to share information openly, they have to be treated with respect and dignity to gain their participation. Meeting this requirement is an excellent way to start any consensus-based conflict management process. Participatory research methods that give a large degree of control and initiative to the groups and individuals who provide information in the first place can be useful tools in helping information collection agents (for example, government officials) change their own attitudes about the various parties to the conflict. Research can also provide a method for politically weaker stakeholders to elucidate their needs and validate assumptions about the conflict situation, as well as potential solutions, thereby providing a more robust basis for an eventual resolution (Chenier et al., this volume).

Any resolution of a conflict situation must rely on a detailed understanding of the idiosyncracies of each unique local context. Such understanding is always time-consuming to obtain, never transparent, usually much more complex than anticipated, and best learned from the mouths and experience of the local people themselves. Therefore, the process by which information is collected, validated, analyzed, and shared is a fundamental element of any natural resource conflict management exercise.

But the importance of information in the conflict management process does not end with its collection. Many of the cases emphasize the importance of the timely *sharing* of information and the use of it to build links between interest groups or between local and central authorities to better define interests and engage various stakeholders in the process (Fisher et al., this volume). Transparency of information and analysis is essential to building and maintaining the trust needed to identify mutual interests and develop consensus-based decision-making.

New approaches to administration

In many cases, the state's conventional role of administering and arbitrating natural resource use has come under such pressure through conflict situations that the nature of the administrative mechanism has had to be changed. This kind of change may be implemented on an experimental or pilot basis in a few test cases, but it will eventually involve statutory changes in the authority of the responsible agencies. Two kinds of administrative change can be described: devolution of authority from central to local governments and comanagement.

These innovations are broadly consistent with a number of other trends affecting public administration, which vary from country to country but include the following:

◆ Structural-adjustment programs that require cuts to central-government spending in the name of fiscal restraint;

◆ Efforts to make government more responsive to specific local or regional conditions, in the interests of greater effectiveness and accountability;

◆ A stronger role for civil society and various public organizations in influencing the public-policy agenda;

◆ More vocal policy commentary by an increasingly educated public, with better access to information; and

◆ Fewer alternatives for local livelihoods among people affected by central policy decisions.

Although the specific approaches, policy rationale, and context vary from one country to the next, it is striking that these kinds of changes are under way in many jurisdictions with widely varying political systems (Tyler 1995).

The case studies in this volume include good examples of this kind of change. In Costa Rica, the government had to abandon its independent administrative authority over the Cahuita protected area in the face of persistent and effective local action. The initiative to demand more say in the uses of the protected area and in its day-to-day management clearly originated from the community and was resisted by state authorities. The novel comanagement mechanism that was developed to resolve this conflict has provided important lessons to both the professional reserve managers acting as agents of the state and the community itself as it grapples with its new responsibilities (Weitzner and Fonseca Borrás, this volume). This administrative model has already become an alternative to the traditional protected-area management approach in Costa Rica. It may be further refined and formalized as experience is gained, and it may be replicated in other situations, where appropriate.

In the Philippines, in contrast, formal administrative devolution of natural resource management and jurisdiction preceded the development of the local institutions needed to exercise such management authority. In the case of coastal marine resources, where resource mobility, jurisdictional boundaries, overlapping tenure, and navigational uses compounded the management issues, the problems were especially acute. The development of a novel local environmental-planning body, featuring multiple stakeholders and a consensus-based decision process, offered local governments a new mechanism for exercising their resource management authority (Talaue-McManus et al., this volume).

The adoption of local comanagement by the powerful state forestry departments in India illustrates both the potential and the hazards of this kind of administrative reform (Kant and Cooke, this volume). The reforms have formalized a role for the community in forest management but have done so in a centralized and bureaucratic fashion. Unlike the other cases, where the initiative and structure of innovations came largely from the communities themselves, the new administrative structure for joint forest management (JFM) was standardized by the state and applied in a "cookie-cutter" fashion to thousands of diverse and heterogeneous village situations. In some cases, it has worked reasonably well; in others, it has failed utterly. Ironically, for an initiative that was intended to address problems of conflict between village forest users and the state (in its role as manager of the forest lands), JFM has typically *not* developed tools or processes for conflict management. The result is that persistent local conflicts over forest use, management processes, accountability, and equity threaten the feasibility of this approach.

Recognition of the legitimacy of multiple stakeholders

Typically, under state management systems, resource rights are recognized for only a single user or a small number of users. These entities are issued licences, titles, or other legal documents to certify their claim on the resources. In exchange, the state taxes the commercial gains from exploitation of these resources. These arrangements are most often formulated so that large-scale industrial resource users can have access to the volume of raw material they need to be competitive in international markets. However, in reality the

resources are often shared by multiple users, who may have large- or small-scale, extractive or nonextractive claims on them.

The inevitable conflicts cannot be resolved if the state recognizes only one set of legitimate users. Indeed, that practice may exacerbate a latent conflict situation (Suliman, this volume). A crucial policy step is to recognize that there are multiple stakeholders, with varying degrees of legitimacy, in any situation of contested resource use. Resolution of conflict situations will require their engagement and commitment to solutions.

In the Galapagos Islands, for example, management of the protected marine areas could not be effective without the development of a consensus-based plan that involved the commercial fishing and tourist industries (Oviedo, this volume). Although the powerful protected-area managers, who had strong international support, assumed a consensus on resource management objectives, there was actually a wide range of heterogeneous views and conflicts even between diverse groups in the fishing community. Until all of the relevant stakeholders were recognized and sat down together to reach consensus on management, attempts to enforce the authority of the state and its official management plans only increased the tension and conflict.

The creation of a forum in which stakeholders could legitimately represent their interests and contribute equally to the resolution of the conflict situation was also an essential element of success in the case in Bolinao, Philippines (Talaue-McManus et al., this volume). There, stakeholders representing diverse interests within the community first had to organize to be able to select representatives to participate in the multistakeholder group. The planning process undertaken by this group was also consensus based and required the group to deal with intense conflicts that, in the past, had been dominated by the powerful elites of the community. A mark of the success of the process was that the local government recognized the group's value and sought to regularize the multistakeholder body, even after the original conflict had been resolved.

New roles for government officials

The kinds of change discussed above often involve major shifts in the role of government officials. The conventional duties of natural resource management officials include collecting and analyzing data on resource use, administering official resource tenures, planning and establishing targets, providing direction to local officials and resource users, etc. However, administrative innovations to support conflict management will require these officials to learn a whole new set of skills. Policies to support these new roles will be essential if innovative conflict resolution mechanisms are to contribute to community-based natural resource management. The new roles are facilitative, rather than directive. Although sanctions may still be needed, government officials will have to become accustomed to sharing power. In developing resource management plans, they must master participatory and consultative methods. Rather than being experts who make administrative decisions, officials will need to be more like advisors who can help communities in conflict to distil facts, identify common interests, and reach a consensus. This change is not a minor retooling; it involves a fundamental paradigm shift.

In India, the implementation of joint forest management has been greatly hampered by the lack of recognition that a fundamental change is required from the professional forest managers (Kant and Cooke, this volume). It is only to be expected that local forest officers, whose status and power come from their administrative control of resource management and use, will be reluctant to share the authority to make these decisions,

regardless of the formal directions they receive from their superiors. Attempts to identify local innovations to improve resource management in Laos quickly focused on the crucial role of district officials in facilitating, leading, and supporting community resource management planning (Hirsch et al., this volume). The key to introducing a successful local management process and to recognizing its potential to contribute to conflict management was the training and skills development provided to the district agriculture and forestry officers, in combination with their enthusiasm and commitment. In a variety of cases, formal government agencies responsible for resource planning and administration were forced to adopt new consultative roles, new decision-making processes, and changes in their conventional planning and coordination mechanisms. When such reforms proved particularly difficult for the government or when formal government agencies faltered in their new roles, the conflict management process also faltered (for example, Pérez Arrarte and Scarlato, this volume).

New roles for independent mediators

There are many limits to the kinds of roles that even the most reform-minded government can play in conflict management. The state's responsibilities for natural resource management mean that it is almost never a disinterested party in resource conflicts and may often be an important cause; the skills needed to support conflict management processes are not those for which government officials have been trained; and the requirements for sharing power and ensuring equal standing of stakeholders with formal and informal claims do not always sit easily with officials who have spent most of their careers enforcing only one set of resource claims. Thus, policies that support conflict management must recognize the crucial importance of a new set of actors in resource management: external mediator–facilitators independent of government.

This role is perhaps not so new after all. Most traditional societies recognize and value the role of mediator, distinct from the authority of elders or leaders, as a matter of practical social necessity (Chevalier and Buckles, this volume). The context of mediation is crucial. In many Asian cultures, it is extremely difficult for governments to be involved in mediation processes, particularly senior officials, as a result of the social imperatives of status, deference, and authority. Therefore, with no direct stake in mediation processes or outcomes, senior officials can be dismissive of results obtained through efforts at a lower level. One solution in the Asian context is to build linkages between organizations with similar experiences and to build them from the grass-roots level back up to government agencies and policymakers, as ways of converging on consensus when mediation is culturally difficult (Fisher et al., this volume).

Government policies can create opportunities for mediation during disputes. However, they must include mechanisms for judging the prospects of success at the outset and adopting contingencies to ensure the mediators' security if situations deteriorate. For example, where one or more parties is intransigent or believes its objectives can be achieved unilaterally, mediation is unlikely to succeed. Situations can change quickly, and many conflict situations are extremely volatile.

The role, tasks, required skills, and modus operandi of a successful mediator will depend on the specific context of any dispute. Although a North American perspective would tend to emphasize neutrality and impartiality (based on our legal dispute resolution system), strongly traditional societies might adopt a quite different approach, in which neutrality and impartiality may be inappropriate (Chevalier and Buckles, this volume).

The crucial characteristic of an effective mediator–facilitator in natural resource conflicts is credibility with the main parties in the dispute, whether that credibility comes from technical expertise, professional experience, social status, kinship, or wisdom ("authority" is usually a poor criterion for selecting mediators). A successful mediator–facilitator is likely to be highly skilled in this practice and to have no direct economic stake in the outcome of the conflict. The mediator–facilitator typically understands the nature of "community development" and its associated tasks of negotiation, leadership development, and education. These tasks and skills help in the process of identifying stakeholders and facilitating productive interaction. In some cases, formal institutions with mandates for mediation in disputes may already exist and may be adapted to play a crucial role in the resolution of resource conflicts. For example, in the case of the Cahuita protected area, the government ombudsperson provided a legitimate channel for public complaint and took the initial steps toward a consensus solution (Weitzner and Fonseca Borrás, this volume).

In both Indonesia and Honduras, the mediator role was played by a technically competent nongovernmental organization (NGO). The engagement of the mediators arose in different ways in each case. The Nusa Tenggara Uplands Coalition was initiated and led by an NGO that saw the need to shift its position from one of advocacy to one of facilitation, trying to improve and develop its mediation skills as it went along (Fisher et al., this volume). In Honduras, the NGO was asked to become involved initially because of its strong technical skills, its clear independence of the interests in the dispute, and its international credibility and connections (Chenier et al., this volume). But reliance on NGOs is not always appropriate: the important factor is the competence and credibility of the mediator. In the Galapagos, professional mediators were hired to facilitate the multistakeholder discussions on management of the marine reserve (Oviedo, this volume). In all cases, the successful outcomes were attributed in part to the crucial contributions of the mediators–facilitators.

The importance of a trained, skilled mediator in facilitating the conflict management process may appear to be self-evident. However, among technocrats who have not been exposed to the practice of conflict management, the need for such skills is far from obvious, and the need for these skills and tools becomes self-evident to policymakers only after they have seen them in action. For example, the first formal dispute resolution training program in Thailand was established recently at Khon Kaen University, with minimal support from external donors. Various administrative elements of the Thai government had been embroiled in increasingly bitter disputes with the public over the past decade, yet there had been few attempts to develop tools and methods to deal with these conflicts more effectively. In the short time since its inception, the new program has trained thousands of Thai officials, at the expense of the Thai government, and its methods have been praised and widely adopted (Armstrong 1998).

A policy framework for management of natural resource conflicts

The experiences described above suggest an outline of the kind of public policy framework in which natural resource conflict management can best be applied. The core of this framework is the recognition of the need to engage the key parties, rather than abstracting data, analyzing, and generating expert-driven technical solutions: "The innovative and practical ideas required to solve difficult issues are more likely to be revealed if those who are

affected by the resolutions are given some responsibility for designing them" (Grzybowski 1998, p. 92). Conflict management requires acceptance, especially by government agencies but also by other parties, of the need for mutual responsibility and joint problem-solving.

Administrative coordination

The first element of a policy framework is better local coordination of natural resource administration. Planning by sectoral agencies should be closely linked and coordinated at the local level, where conflicts typically arise. Such coordination is likely to involve an enhanced role for the local-government administrators, external groups, or both. In some cases, where local administrators lack the required skills or other resources, coordination might be handled by technically competent and committed NGOs or by a special agency (or commission) at a senior level of government assigned specifically to carry out this function. The coordinating function may be ongoing or aimed at addressing a specific conflict situation. This function may be ameliorated by the development of specialized tools for coordinating spatial and resource data (databases, geographic information systems, expert systems).

Information-sharing and communications

The importance of shared information was stressed in many cases. Sharing of information can result from better administrative coordination by sectoral agencies, when these groups actually have data to share. Or it may result from specific research, undertaken by credible independent parties. Information-sharing can increase transparency, build trust, resolve issues of fact, and distinguish these from issues of interest. The process of undertaking research and sharing information can also serve as a valuable means to identify and engage various stakeholders.

Stakeholder identification and analysis

Stakeholder recognition may arise from information exchange or through research. The recognition of a range of stakeholders with legitimate interests may in itself be an act of redistributing political power, if the state has previously assumed sole responsibility for management decisions. The application of specialized analytical tools to diagnose the range of interests and the capacity of various stakeholders strengthens the ability of mediators to guide the process (Ramírez, this volume).

Engagement of a legitimate intermediary

A legitimate intermediary may be an outside mediator, a credible independent public agency (for example, ombudsperson), or a culturally appropriate "insider." Conflict management is a process rather than a specific package of standard solutions. The process needs expert guidance from individuals and institutions able to gain the trust of all parties. In many cases, it is impossible for the government to play this role, and public policy must make provisions for the recruitment of external professionals. It is also often impractical for the courts to play this role, even where a well-developed and independent judiciary

exists. The issues are typically not amenable to legal definition and adjudication, and attempts to define them in terms of narrow "rights" through formal legislation are both clumsy and inflexible.

A process of interaction

Information-sharing and stakeholder identification represent the beginnings of an interaction process. Depending on the depth and severity of the conflict, it may not be possible to begin interaction on any of the specifics. Building trust and shared understanding can start with peripheral, less controversial issues. Interaction may take a variety of forms, depending on the context and the actors involved, from multistakeholder consultations (roundtables) to formal negotiations or mediation.

These interactions are best built on traditional practices or dispute resolution mechanisms, when vestigial traditional institutions exist and can be modified to include the parties and context of the contemporary problem (Lindsay 1998). As participants on all sides of the issue learn more at each successive stage of interaction, issues can become more clearly focused and the likelihood of successful resolution of the conflict will increase. When methods are used to increase transparency at each step by sharing information, reviewing conclusions, and discussing evidence openly, all participants can increase their commitment (CORE 1994).

A legal framework and procedural equity

For the process to move from ad hoc crisis management to systematic practice, some sort of legislative umbrella is required. The intent would be to confer some legitimacy and structure on the process without overly constraining it. Participation must be voluntary, but at the same time, mechanisms should also be found to ensure the commitment of all parties (especially the government) to a mutually agreed course of action.

Although many traditional cultures have agreed to social procedures for addressing resource disputes, there can be difficulties in building on these as legal instruments ("traditional law"). Traditional law is not law in the statutory sense, but rather a range of dynamic social conventions. It may not measure up to increasingly rigorous standards of transparency and fairness and may suffer from lack of recognition in cases of cross-cultural disputes. Thus, although traditional dispute resolution processes provide strong clues for the design of interactions to construct mutual solutions, they may not be helpful as a basis for robust and generalizable enabling statutes.

Issues addressed by such an umbrella statute may include criteria for fairness and procedural equity to ensure that reasonably affected parties can participate fully, the nature of procedural oversight and appeals, and access to information and tools to make sense of it. This may also require provision of certain minimal resources to enable all parties to participate (funds for travel, translation, printing, communications, independent analysis).

Strong local government

Local governments are typically not well qualified or equipped to deal with conflict interventions. Strengthening of skills, oversight procedures, increased transparency, and provision of expertise will all be needed to improve the ability of local government to cope with these issues. Appropriate resolution of conflicts through properly mediated interventions

can strengthen the legitimacy of local governments by clarifying roles and mandates and by providing for local enforcement of consensus-based solutions to the benefit of affected parties (for example, Truong 1998; Oviedo, this volume).

External support

There are many areas in which external support for a local conflict management process is vital: information collection, validation, and sharing; skills development; mediation; legitimizing outcomes. Such support is particularly important once a conflict management process has generated a positive outcome. Implementation of consensus-based conflict solutions will usually require services, investment, monitoring, and feedback. In many cases, local resources for these activities are insufficient, and external support, whether from the state or from other donors, will be essential, particularly in the early phases. Resolutions of serious conflicts are always initially fragile, and policies should recognize the need for flexible but urgent support under these conditions.

Research

In most of these dimensions of policy response, there is an important role for locally driven, applied interdisciplinary research to determine the basis of a shared data set, adapt tools for administrative coordination, identify and analyze stakeholders, experiment with various procedural innovations, and develop new institutional forms and enabling statutory tools at the local and senior-government levels. These areas of research require a wide range of expertise in fields ranging from natural sciences through information technologies, behaviourial sciences, economics, and law. The research methods and the results generated will not fit within a single discipline but will require a synthesis of the methods and procedures of several disciplines. These processes are premised on principles of mutual learning and change and adaptability through interaction, which are very similar to those employed in the practice of participatory action research (PAR). Recent experience using interdisciplinary PAR in the rebuilding of societies that have suffered violent conflict has demonstrated the effectiveness of rigorous and neutral research in contexts analogous to, if even more severe than, those of local natural resource conflicts (Stiefel 1998).

Time

The management of natural resource conflicts, through application of some of these tools and the interaction of the parties directly involved will require time. Information-sharing, representation, negotiation, argument, acceptance — each step requires time, and there is no shortcut to a solution. Under pressure from political or economic interests, this factor is often neglected.

Challenges in creating a supportive policy environment

Successful conflict management requires cooperation among the various stakeholders and identification of mutually dependent actions and interests. Parties design their own solution cooperatively. This approach to problem-solving is *not* consistent with the reductionist view of the modern technocracy. We have elaborate systems of specialized study,

training, analysis, and institutional organization for choosing the "best solution" on technical, economic, political, religious, or even multivariate grounds. We do not have well evolved systems to foster and support stakeholders in decisions to design solutions collaboratively. In the absence of such systems, even the stakeholders themselves often back away from the responsibility and expect somebody else (often the state) to solve the problem.

Any of the policy innovations described above would support the application of conflict management tools and methods, such as the ones described in the case studies. Taken as a package and implemented together, these measures would amount to a powerful commitment, not only to consensus-based conflict management, but also to a new community- and user-centred paradigm of natural resource management. However, change agents, whether inside or outside government agencies, should be aware that introducing a new paradigm is a lengthy and painful process. Changes are never easy. The case studies suggest that it may often be the central government that is most resistant to these kinds of innovation (Pérez Arrarte and Scarlato, this volume). Most of the required changes involve government agencies delegating, devolving, or relinquishing some of their authority over natural resource management and use. It is rare for any public agency to voluntarily reduce its power; those who try to implement such innovations must recognize the difficulties they face.

Part of the problem is that the changes suggested above are inconsistent with the conventional self-image of a modern professional, expertise-based organization. Professionals in the public service are employed on the basis of their specialized expertise. They expect to analyze technical information and make professional judgments about "optimal" solutions to complex problems. They do not expect to turn over problem-solving to groups of local people or "outsiders." However, the government officials most directly responsible for local resource management must adopt a facilitative role, requiring new knowledge and skills, to support participatory and consensus-based conflict management processes. The magnitude of the change required should not be underestimated. Changes in organizational structure, job titles, and job descriptions are easily accomplished on paper, but changes in attitude and assumptions can only be achieved over the long term.

Reorganization and human-resource changes will have to recognize the internal incentive systems of the public agencies involved (promotions, transfers, awards) and restructure these in support of the new policies. The perceived loss of certain direct authorities and independent decision-making powers will be highly threatening to individuals and the organization as a whole. In any bureaucracy, conceding line authority (that is, the ability to spend money on local projects and make decisions about what happens on the ground) is dangerous. It reduces not only the agency's direct influence with clients but also its relative power within the government. Career prospects and promotion paths will be threatened. One way to tackle these problems is to identify them explicitly and ensure that a reformed resource management agency, along with the professionals within it, receive the greatest possible credit for their successes and for the difficulty of their task, in the face of diminished fiscal impact and political authority.

The perception that the package of policy measures discussed above might "weaken" traditional resource management agencies can also be addressed by reinforcing the importance of state agencies' continuing to play a legitimate role in protecting public interests. In a number of respects, the adoption of policies more supportive of conflict management approaches will actually increase the importance of certain administrative roles,

particularly in relation to coordination of various resource agencies, validation and provision of information, and monitoring of consensus-based management outcomes. All of these activities can build on the traditional roles of these agencies.

The devolution of conflict management and resource-planning authority will also require that the government adopt monitoring (not control) procedures to ensure that public interests are represented and protected from narrow parochial interests. For example, many natural resource problems cross local political boundaries, and consensus decisions within one jurisdiction may be detrimental to those "downstream." Policy innovations to provide more opportunities for conflict management will still have to take place within a framework that ensures comprehensive resource management, administrative fairness, and effectiveness (CORE 1994). This will continue to pose both technical and professional challenges.

Thus, many of the obstacles to introducing these policy innovations can be seen as challenges of presentation and perception. There will be a continuing need for strong central professional expertise and leadership, in spite of the loss of some direct authority and control at that level. But there will also be a need for new skills and behaviours to ensure the introduction and successful application of conflict management to address natural resource conflicts.

Unresolved issues

A number of difficulties remain in our policy framework. A central issue is resolving the dynamic between local actors, including local governments, and the state. Mutually devised, multistakeholder consensus-based conflict resolution puts both responsibility and initiative in local hands. Yet, there must remain a strong and legitimate role for the state. For example, several cases demonstrate that the community alone cannot implement or enforce solutions without the sanction of senior government (Hirsch et al.; Talaue-McManus et al., this volume).

The community also needs the authority of the state to strengthen its ability to deal with large and powerful external interests, such as multinational corporations. It would be helpful to describe and report on other mechanisms to provide community stakeholders with the tools and support needed to engage on a more equitable basis with the state and external interests (NGO networks and consortium-building have been suggested in some cases, for example, Fisher et al., this volume).

The policy interventions needed to support a mature conflict management system are costly and will require effort over a long period. They involve a lot of organizational learning and retooling, not only within the administrative system but also among the participants in each conflict. Participatory methods, research, information-sharing, and better communications will all require time, staff support, and expertise. The high costs of attempting these methods (combined with the even higher costs of failure) suggest the need for broader and more systematic sharing of experience. What are we learning about how to do this better? How can we improve practices, develop supportive information management tools, improve skills, strengthen local institutions, and select and train mediators? What are the key contextual parameters influencing the success of various mediated processes? How transferable are successful innovations within the same country, the same culture, or across cultures? A strategic research and networking effort would help governments identify best practices and resource materials.

Natural resource conflict is not going to go away. Permanent resolution of these conflicts is not likely. Management of the inevitable resource conflicts is important as a public good in the economic sense and, therefore, merits policy support. But there are no magic solutions, no quick technical fixes. The challenge for governments is to create opportunities for new institutions and processes supportive of mutual solutions and joint responsibility, redefine their own roles and foster new ones in these processes, and encourage the creativity and courage needed to learn from the experience of these new institutions and roles.

Acknowledgments

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