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The Ecuadorian Condor Bioreserve Initiative

Tim W. Clark [a]; Jonathan Padwe [b]
[a] School of Forestry and Environmental Studies, USA [b] Yale University School of Forestry and Environmental Studies, USA

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SECTION III: THE IMPORTANCE OF EFFECTIVE DECISION MAKING IN CONSERVATION PROGRAMS

The Ecuadorian Condor Bioreserve Initiative: Decision Process Considerations for Effective Conservation

Tim W. Clark
Jonathan Padwe

ABSTRACT. The Condor Bioreserve (CBR) initiative is an attempt by government and non-governmental agencies to manage four ecological reserves and their surrounding areas and populations in Northern Ecuador for sustainability and natural resource conservation. The goal of this paper is to assist the participants at the CBR, and the interested reader, in understanding the decision process in which they are involved; the au-

Tim W. Clark is Professor (adjunct) in the School of Forestry and Environmental Studies.

Jonathan Padwe is a PhD candidate at the Yale University School of Forestry and Environmental Studies.

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thors provide a general framework for understanding decision processes and problem solving approaches. Key issues addressed include *social process*, *decision process*, and the *common interest*. Social process refers to the context within which decision-making takes place, and includes the analysis of participants, their perspectives, values, and strategies, and the outcomes and effects of their interactions. Decision process refers to the various activities which constitute most problem-solving and policy-making processes: initiation, estimation, selection, implementation, evaluation and termination. In our discussion, we take the normative position that for decision processes to result in conservation or sustainability, they must seek to find the common interest. We discuss the difference between special interests and the common interest, and provide some tests to determine whether decision processes in the CBR initiative contribute to the common interest. Finally, we suggest that (1) analysis of existing experience within Ecuador, (2) utilizing the problem-solving framework we have proposed, and (3) widespread diffusion of this knowledge to CBR participants will help policymakers and managers in their attempts to find the common interest and promote conservation and sustainable development.

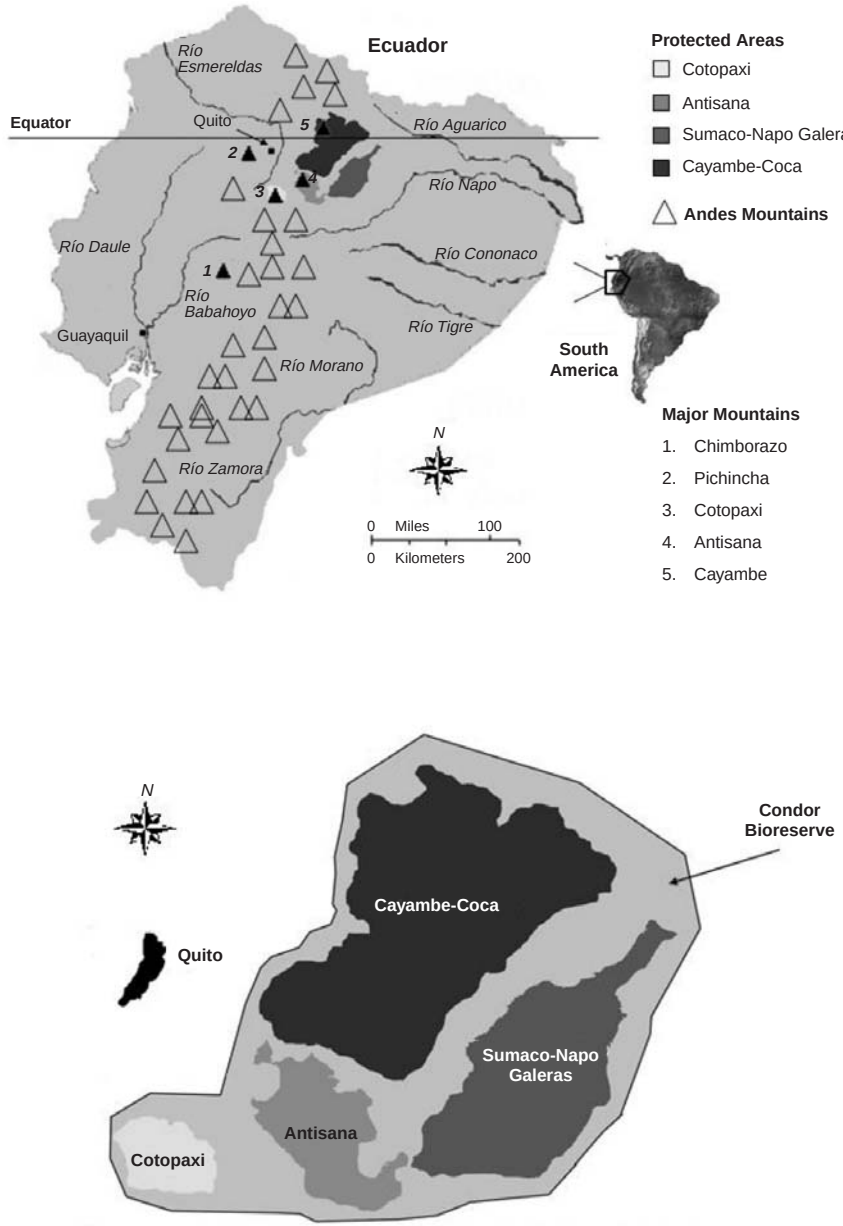
KEYWORDS. Condor Bioreserve, greater ecosystem, human social process, decision process, common interest

INTRODUCTION

The Condor Bioreserve (CBR) is a management concept and programmatic strategy used by government and non-governmental agencies in the administration of four protected areas in the northern Andean highlands near Quito, Ecuador (Figure 1). In attempting to manage an ecosystem at the landscape level, CBR is part of a recent conservation trend and draws on the concept of *greater ecosystem* management, a 20-year-old conservation tool used widely throughout the world (Clark 1999, Grumbine 1994). One prominent example is the Greater Yellowstone Ecosystem in the northern Rocky Mountains of the United States (see Clark and Minta 1994, Clark et al. 1999).[1]

Sustainable conservation within the CBR requires that an effective decision process be put in place. The conventional substantive goals of the CBR decision process are framed in terms of biodiversity conservation and watershed management. The functional process goal is to set in place an adaptive decision system–that is, a decision system that changes over time to incorporate

FIGURE 1. The Condor Bioreserve Initiative, Ecuador.



learning about the nature of the problem, the nature of the decision process, and the effectiveness of decision making. Two questions are central to the decision process. First, how will resources be managed? And second, who gets to decide? How these two questions are addressed depends on many things, including how the decision process is carried out, how the concept of common vs. special interests are understood, and how authority and control are allocated and used. Finding an effective decision process requires that the common interest be clarified, secured, and sustained and that the distinction between authority and control be understood and managed realistically.

As in many other arenas of negotiation over environmental resources, the CBR currently suffers from several problems. Different observers and participants–including the present authors–place different emphases on different aspects of these problems. The range of critiques include the positions that the CBR decision process (1) may be inadequate to resolve the questions of how resources will be used and who will decide, (2) may not adequately consider some information germane to the problems at CBR, (3) may be inadequately flexible, (4) may be under-funded and under-staffed, and (5) may lack broad public support, or appear to primarily serve special interests. The diversity of views has made consensus elusive and led to conflict, which some people expect to grow if the process remains unchanged. Implementing an effective decision process, one that can quickly learn from its own experiences, is key to securing the common interest. This in turn requires sophisticated attention to how the decision process is structured and used, including the kind of leadership involved and how authority and control are allocated and exercised.

This paper explores the CBR decision process, and makes suggestions for how this process might be changed to meet common interest outcomes for the Ecuadorian people. One of the principal aims of this paper is to provide resource managers at the CBR and elsewhere with a set of conceptual tools with which to organize their thinking about natural resource problems. We provide a broad framework for understanding the CBR decision process. Using data on trends which we observed in our research on the CBR, we have proposed ways of understanding the data following this analytical framework. The paper (1) briefly sketches the social dynamics involved (e.g., who are the participants, what are their perspectives), (2) describes what is meant by decision process and common interest, and (3) offers suggestions to best manage the social and decision process for common interest outcomes.

METHODS

Our understanding of the problem–from our observations while in Ecuador and from our reading of the programmatic and policy literature about the

CBR–draws on a policy sciences approach to the social science of natural resource use (see Lindblom and Cohen 1979, Lasswell and McDougal 1992, Clark 2002). In this paper, we seek to identify elements of the decision process at the scale of the CBR project as a whole, and to document our observations with specific examples. Because of the scale of our analysis and the brief field visit that forms the basis of our first-hand knowledge of the project, the general trends and problems identified in this paper would benefit from additional data and future research. An exercise in applied social science, this paper is intended for both an Ecuadorian and international audience, and is written for participants in and out of government involved in the CBR decision process, as well as for students of decision process in natural resources arenas.

As outside observers and researchers, our standpoint is different from Ecuadorians and others active in the CBR project. Active participants typically have life-long experience in the region (or in the international networks which structure the problems, e.g., the northern NGO participants in the CBR project). In contrast, we spent four months studying the CBR, including a 16-day visit to Ecuador in March, 2001. Prior to the trip, our methods were *extensive*–collecting academic and programmatic literature available from institutions, libraries and the internet, conducting conversations with CBR participants and individuals with knowledge of Ecuadorian politics and culture, and discussing first impressions and research with other members of our research team. During our trip, we used *intensive* methods–interviewing, listening to presentations, and field observation. We talked with people working in the Ministry of the Environment's Quito office, administrators, managers, community members, citizens, and farmers. All together, we heard from or talked with 75 people representing over a dozen organizations or perspectives, and visited 20 field sites in 170 hrs.

This paper considers both *conventional* and *functional* views of decision making. Conventional understandings might be considered those views which accept the received set of "everyday" conditions surrounding a subject (the CBR, for instance) as normal. Thus conventional understandings of problems in the decision process would be located at the level of funding priorities, institutional rivalries, tensions among personalities involved in the project, and the like, and would envision problems as the outcomes of social interactions understood at this level. Functional understandings seek to identify trends within decision systems, and to relate them at the level of the decision process. Thus a functional understanding views the phenomena identified by conventional understandings as the product of decision process, competing problem definitions, and other logics of social relations. A "stable frame of reference" is required to analyze any social and decision process at the level of functional understanding (see Lasswell and Kaplan 1950, Clark et al. 2000, Clark et al. 2001). The concepts, categories, and language we have employed in this paper

seek to establish a stable analytical framework, and to allow our observations of the CBR to be understood comparatively.

SOCIAL DYNAMICS

Interaction among people and organized interests in Ecuadorian society make up a social process or context affecting the ongoing CBR decision process. While this context may be conceived of as outside the CBR arena, the larger Ecuadorian and international social dynamics (some of which were described in the introduction to this volume, see Clark et al. this volume) are closely tied to events occurring at the level of the CBR project. Within the CBR arena there are many localized social processes at community and sub-community levels. The problems the CBR hopes to solve cannot be fully understood without knowledge of these social processes (see Vayda 1983). In this section we briefly describe the CBR arena, and provide our understanding of social process within the CBR initiative. Our descriptions are general and should be considered working hypotheses.

The Condor Bioreserve Arena

We use the term *arena* to refer to the interface of two categories of phenomena associated with the CBR. The first is the geographically determined Condor Bioreserve area–its mountains, rivers, páramo, roads, dams, pipelines, towns, and villages. The second consists of the human social elements which map onto this geographical space; however, these are not spatially confined. The human institutional landscape in which decisions that will affect the geographical reality of the CBR are made includes institutions such as NGOs, government agencies, donor organizations, private corporations, village councils, indigenous peoples' organizations, and rural labor unions. Addressing natural resource problems within the CBR presents difficulties because of the many competing interests, diverse perspectives, large geographic areas, varying time scales (i.e., the difference between the incremental nature of species decline and the rapid nature of property transfer or institutional reorganization), and other factors involved.

One key to understanding the context of social process at the CBR is to understand the *constructed* quality of the arena itself. The CBR exists as a construct of human imagination to meet the perceived needs of groups of people. As one representative of The Nature Conservancy (TNC) told our research team, "the CBR doesn't exist!" His point was that the term *Condor Bioreserve* is simply a management category created by TNC and adopted by its partners to refer to the aggregate of four adjacent reserves where these organizations are working (the term is not recognized officially in Ecuadorian law, nor does

it appear on maps of the area). As the trend toward managing the greater ecosystem of the CBR gains momentum, the CBR arena is organizing itself, and a decision process for the allocation of resources and values is becoming clear. Our informant's point about the non-existence of the CBR, in fact, might be taken further–all nature reserves and the laws that regulate them are human constructs. In our view, it is because the existence of the CBR is so completely inscribed in human social relations that interested parties must attempt to understand these relations if the common good is to be achieved. The constructed nature of the CBR arena (as with any arena) effects the decision process that occurs there. The arena is slowly organizing itself for debate, decisions, and management. As the CBR arena organizes and the decision process among participants begins to make itself clear, many institutions and social groups are gravitating to this arena for varying reasons (as discussed below). Overall, we suggest that the arena is under-organized for the effective linkage of people, resources, and authority and control (as discussed below) in decision making.

The CBR stretches from the Western Amazonian rainforest to the high Andean mountains, and encompasses a number of distinct ecosystems and natural features, including páramo, montane *Polylepis* forests, volcanoes, and glaciers. The great latitudinal variation has produced high biodiversity over evolutionary time (the ecological features of the area are described in more detail in other papers in this volume and in the academic literature). The formation of the CBR arena is a product of the different histories of the four protected areas that make up its geographic base, and of the institutions and social groups which are participants in the arena. Cotopaxi National Park and the Cayambe-Coca Ecological Reserve are two of several Andean protected areas established in the mid-1970s, relatively early in the history of Ecuador's protected area system (although the Galapagos gained official protection in 1936). In contrast, the Antisana Ecological Reserve was declared in 1993, and the Sumaco-Napo Galeras National Park was officially established in 1994, both during a period of conservation expansion following the Rio Earth Summit. Sumaco-Napo Galeras was declared a UNESCO Biosphere Reserve six years later. Altogether, these protected areas cover a surface area of approximately 761,800 ha (Ulloa et al. 1997, Knoblauch 1997, Lucas 2000).

Human Social Process

We suggest that a problem-oriented approach best serves the needs of managers seeking to understand the politics of resource use in the CBR. A problem, in this sense, is the result of a discrepancy between participants' desired outcomes and the outcomes which are actually produced by decision processes (Dery 1984, Wallace and Clark 1999). It stands to reason, then, that any understanding of a problem relies on an understanding of participants, their

desires, and the context within which they are operating. The mechanics of social process are described theoretically, with an eye towards practical implications (see Lasswell and Kaplan 1950 and Lasswell 1971). Recent work has instructively employed these concepts in natural resources problem solving in the US, Latin America, and elsewhere (see Clark and Wallace 1998, Padwe 2001). We suggest a schema for analyzing this human social process–patterns about the people and organizations involved, their *perspectives*, *values*, *strategies*, *outcomes*, and *effects* of interaction. We have traced a general trajectory of the kinds of factors that should be considered in such an undertaking, and have presented our own initial findings. More research would bring detail to our description; nevertheless, it appears significant to us that the CBR arena is becoming more pluralistic as new people and groups become involved in the self-organizing decision process. As more people are included or see themselves as part of the CBR arena, the arena becomes more differentiated. In such an arena people tend to become more territorial, invoking a more active symbolic politics, as they seek to protect or expand their interests (Lasswell and McDougal 1992).

Participants

Participants include those individuals, groups, and organizations that are officially and unofficially, directly and indirectly involved in the ongoing social and decision process that determines the fate of the CBR. Because the CBR arena is complex and covers a large geographic area, the group of participants is quite heterogeneous. In each realm of activity that characterizes the CBR project, different participants come to the fore. Government agencies with some responsibility range from the President of Ecuador, whose office was responsible for the decrees that established two of the protected areas within the CBR, to the Ecuadorian National Park Service, now called ex-INEFAN (the former Institute of Forestry and Natural Areas, which has oversight over protected areas), and the Quito Municipal Sewage and Water Agency (EMAAP-Q). At the ministerial level, the Ministries of the Environment (Ministerio de Medio Ambiente, where the ex-INEFAN is housed) and of Agriculture and Livestock (Ministerio de Agricultura y Ganadería) play important roles. International governmental groups with some involvement include bilateral aid organizations such as the United States Agency for International Development (USAID, which funded SUBIR and the CBR), the German international development agency (GTZ), the Swiss international development agency (COSUDE) and the Netherlands' international development agency. The principal Ecuadorian non-governmental organizations (NGOs) involved in the project include Fundación Antisana (FUNAN), Fundación Ecológica Rumicocha (FER), and Ecodecisión. Previously, Oikos played a role. Conservation science is ad-

dressed by these groups, and by EcoCiencia (an organization which may no longer be operating in this arena) and the Conservation Data Center (CDC, one of several CDCs with ties to The Nature Conservancy which operate throughout the Americas). International NGO involvement is dominated by The Nature Conservancy, through this organization's Quito branch office. Many of the institutions break down into smaller decision-making units, some of which play a role in decision making in ways that are separate from their larger institutional affiliations. Thus, the group of park guards at the central office of the Antisana Reserve must be considered to have different perspectives, motivations and constraints than the larger Park Service of which their office forms only a small part.

Public and private sector groups, corporations and government entities operating within or close to the geographical area of the CBR must also be considered participants. A simple glance at the map will demonstrate that the Trans-Ecuadorian Oil Pipeline, which runs between RECAY, Antisana, and Sumaco-Napo Galeras, plays an important role in the human ecosystem. The oversight agencies and operating apparatus that supports the pipeline also should be considered a participant. Likewise, the network of roads which provide access to (and divide) the parks, pipeline, and towns in the CBR carry with them an institutional and organizational apparatus with decision-making abilities and impact on CBR activities.

Human populations living in or nearby the CBR likewise participate in decision-making at various levels within the CBR decision process. The towns and villages within the boundaries of the parks at the CBR, or along the edges of the protected areas, all have their own sets of participants, all of whom may be considered participants in the much larger CBR arena (as well as in many different, overlapping arenas). Thus town governments, branches of state and national governance organizations, chambers of commerce, local businesses, groups promoting tourism and other activities, farming cooperatives, and local religious organizations (and their national and international affiliates) all participate. Political parties and membership groups with political agendas, such as rural labor unions or indigenous peoples' political organizations, likewise are participants in the CBR decision process.

The community cheese factory in Oyacachi stands as an example of the kinds of connections which exist between participants. The factory has technical and financial assistance (in the form of loans) from diverse institutions, including Fundación Rumicocha, the Institute for Ecodevelopment of Amazonia (ECORAE), the municipal and provincial councils, and the association of rural cheese factories. The factory competes with a Nestle cheese factory nearby (evidence of participation in the arena by a multi-national corporation), raising the price paid to local people for milk, and thus providing incentives to raise

dairy cattle–an activity with repercussions for environmental management in the CBR.

Although social groups act with cohesion in many instances, all participants are first and foremost individuals. They have patters of attention, sentiment, interest, loyalty, and faith among themselves. Their identifications, or the way they see themselves as members of some aggregate or group, differ from individual to individual and from moment to moment. People with similar perspectives form groups and loyalties and become the political "we/us" in social process (as opposed to "they/them"). The "we" of political interests is at the very heart of all decision processes (see Flores and Clark 2001). Groups are made up of people with shared identities, identities that are formed in part by beliefs held in common by members of the group.

Perspectives

Each participant at the CBR has a perspective. Used in our sense, a perspective may include a number of different, and indeed conflicting, ideas, feelings and beliefs about a problem. It is unlikely that any participant shares exactly the same perspective on the CBR concept. Some individuals' ideas may favor parts of the concept, other ideas (perhaps held by the same participant) may tend to oppose certain parts of the concept. If the CBR is to achieve lasting success, then enough people must come to share perspectives which have enough in common that a common belief emerges in support of a greater ecosystem approach to CBR. Building this shared perspective requires understanding and working with people's identifications, expectations, and demands. Perspectives thus rest on basic beliefs (or myths) that are matters of consensus. Leaders–those individuals at the forefront of building shared perspectives–must understand these dynamics if they are to create an equitable system for resource management.

From our observations, it seems that perspectives are emerging in support of the CBR, at least among institutional participants and their close *allies*–villagers we met who were associated with small-scale development projects, community park guard projects, and the like. The Nature Conservancy, perhaps the single most important institution promoting the greater ecosystem idea the CBR, identifies the challenge for people interested in promoting the CBR as that of overcoming natural resource problems (e.g., soil loss, poor water quality, erosion of biodiversity) by building the capacity of all partners to protect this vast area, promote sustainable economic development within local communities, and gain adequate long term funding (TNC n.d.). In this case, developing capacity may be taken to mean developing the kind of shared perspectives and skills among people which will be required to understand and

solve problems cooperatively. This requires effective leadership and an educational strategy (see *Strategies*, below).

The success of the CBR may be gauged in part by the level of agreement among perspectives of the various participants. Symbolic politics plays a role in the formation and vocalization of these perspectives, and forms an element of the decision process. Thus, as arenas of political conflict intensify, political slogans or particular vocabularies which express those ideas may come into common use. It is also important to bear in mind that perspectives, and therefore the strategies, of parties involved in any arena may change over time. There may be a trajectory from initial positions based on principle toward more expedient positions, based on deal-making and the securing of marginal benefit for one's position within the decision process. As time goes on principled interests typically become subordinated to expediency in complex, dynamic arenas like the CBR.

Values

All the things people desire, aim for, and seek can be functionally described in a single system of value classification (Bell 1997). In our use of this system, we recognize that people try to maximize *well-being*, *respect*, *affection*, *enlightenment*, *power*, *wealth*, *rectitude*, and *skill* for themselves. For example, in the CBR many participants seek more influence over the decision process–they seek to insure that their own perspectives and value outlooks dominate. Attempts to dominate decision making processes (perhaps justified by appeals for expediency) are indicative of individual desires for power. When participants seek improved living conditions, epitomized in attempts to ensure a safe water supply, the value of well-being is brought to the fore. All participants, regardless of the value or mix of values they seek, want an improved value position in their lives and in the process that determines the kind of life they will lead. The human social process everywhere is one in which values are shaped (produced) and shared (enjoyed) (McDougal et al. 1980, Lasswell and McDougal 1992).

In the sense in which we are using the concept, the medium of exchange in all human interactions, including the CBR arena, is values–the things and events in life that people desire, aim at, wish for, or demand. Within our framework, eight basic values are recognized which people seek in varying degrees and intensity. It is these values and how they are produced and enjoyed that are at stake for all participants in the CBR arena. There is no ranking or hierarchy of preference among the values. *Power* refers to participation in decision making. *Wealth* refers to control of resources. *Enlightenment* is the accumulation of knowledge. *Skill* refers to the acquisition and exercise of talents of all kinds–professional, vocational, or artistic. *Well-being* is safety, health, and

comfort. *Affection* is love, intimacy, friendship, loyalty, and positive sentiments among family, friends, and community. *Respect* is recognition, freedom of choice, and equality. *Rectitude* is participation in forming and applying norms or responsible conduct (ethics). For an understanding of decision process within the CBR, it is vital that the interested observer seek to understand what values are held by the participants, how those values are being used, and which values are sought by whom, and how, both symbolically and substantively.

Generally speaking, all participants in the CBR decision process are focused on the source of greatest expected deprivation for them in terms of values (e.g., power, wealth, well-being, respect, and other values). To apply this framework, we suggest empirically mapping each participant's demands (or claims), in order to assess those values which each participant sees as the most likely deprivations for him/her/the group (see below). The values people hold, and the value deprivations they seek to overcome, are symbolized in various ways in society as discussed above. To take a simple example, respect is symbolized by shaking hands in greetings. A verbal greeting accompanying a hand shake–"how are you"–similarly expresses a series of values (respect and affection). Much of human social existence is carried out through the use of symbols of all kinds. In the CBR case, symbols in wide use include such concepts as *the Condor Bioreserve*, *sustainability*, and *biodiversity*. The kinds of symbols circulating in any social and decision process, especially among the most powerful, often reflect actual power relations.

Strategies

The Nature Conservancy uses science, education, and diplomacy to achieve its value demands, as do many other groups. Strategies are the approaches used to manage resources (the values of power, money, knowledge, skill, etc.) to achieve demands. We recognize four kinds of strategies, all of which are evident in the CBR decision process. These are the *educational*, the *diplomatic*, the *economic* (goods and services), and the *militant* (ranging from threats to mild to strong violence) strategies. Strategies are set depending on the values a person or group has, and what is needed to obtain their objectives and required to mobilize the requisite support of other people by dividing opponents, retaining or winning allies, and by neutralizing the opposition.

In the CBR, symbol-rich strategies are widely used through education, diplomacy, economic, and militant means. In general, institutional participants in the CBR favor diplomacy and education over economic or militant strategies. The latter two strategies are more costly (for different reasons) than diplomacy and education. Village level participants, on the other hand, may respond better to economic incentives than to symbolic strategies. Several en-

trepreneurial individuals we met during our tours of micro-lending projects, for instance, used the opportunity of our visit to make demands for the expansion of lending, the increase of caps on the maximum amount of the loan, etc. The range of strategies available to any participant is limited by the intensity of commitment to objectives and strategies used by other participants, potential allies, and opponents.

In assessing the use of strategies, it is important to pay special attention to the most powerful participants in the arena. The strategies adopted by these parties may have greater effect than those of the less powerful participants. The strategies of powerful participants differ in significant ways from those with less power (in this case, we might think of power as the ability to establish rules and structures which will affect the system). For instance, the most powerful participants tend to be skilled in interpersonal relations (diplomatic and public relations), skills which they use to their own strategic advantage. They also tend to make decisions about the use of science without having scientific skills themselves, or to make decisions about agricultural practices or market activities, without relying on those activities for their own livelihoods. The distance of decision-makers from the outcomes of the decisions they make is one of the key attributes of power within an arena such as the CBR.

Outcomes

Outcomes may be understood as the short-term results of decisions. Unlike effects, which in our terminology refer to the long-term changes in trends and underlying processes of decision making, outcomes are the specific products that emerge from the social process. There are many outcomes, both symbolic and substantive, of the social process occurring in the CBR arena. Outcomes have different consequences for different participants. Some participants are left better off, and others worse off. Some gain in power, wealth, and respect whereas others loose out. Ideally, the reason to have a productive decision process is to maximize beneficial outcomes for all people, the entire region, and country. This is what is meant by a decision process in the common interest. We suggest that an attempt to understand the CBR arena, and to understand the trends in decision making for the common good, should thus include an analysis of the various outcomes that have been created within the CBR initiative.

If we think of the social process as one in which the CBR arena is coming into existence, and different participants are emerging to take a role in the decision process of this arena, then a first important outcome is the existence of the idea of the CBR, and the possibilities this opens for more equitable decision making in the common interest. Another outcome is that the CBR is now on the public agenda within Ecuador and internationally, receives financial

and technical support from donor organizations, and serves as a case study for students of conservation and development.

A key consideration, when thinking about the outcomes which emerge from the formation of the CBR arena, is that they have the potential to be either positive or negative for particular participants. While the creation of an organizational structure may have the outcome of directing attention to participation and communal processes, it may also lead to structures dominated by extra-local organizations with disproportionate power in decision making and considerable distance from the effects of the decisions which are made. For people whose livelihood decisions have been made based on the expectation of certain kinds of power within decision making over the use of resources, the outcome of CBR organization may seem particularly unfair. Therefore, the common interest, which is ethically the basis for all decision process, must be grounded in self-knowledge about differential outcomes and effects.

Effects

What might be the long-term effects of these social dynamics in terms of participants, their perspectives, values, strategies, and outcomes? Proponents of the CBR call for innovation–new perspectives and new practices in conservation and resource use. Given the amount of investment and institutional activity that is being marshaled for the CBR process, it is clear that the CBR will have far reaching consequences for social organization if it successful. It is possible that the operation of national-level institutions within the CBR will benefit most residents and users of the area, and aid in the conservation of natural resources. Certainly, local people may be able to benefit from the available credit, investments in education, and access to markets which many of the CBR activities promote. And, if institutions are able to carry through on their stated intentions of empowering communities to make decisions about the use of the lands, forests and rivers on which they depend for their livelihoods, village-level participants may indeed benefit from involvement in the CBR decision process.

At the same time, the possibility must be considered that new and existing institutions or social arrangements will disenfranchise some participants in the CBR. Many institutions operating in the CBR arena are legitimated not by electoral processes involving the residents of the CBR, nor by consensus-building processes aside from consultation, but rather derive their legitimacy because of their access to international donor agencies, government bureaucrats, and business interests. It would be naïve to disregard the potential disempowering effects of these developments for those participants who do not have access to such influential sources of power. Effects, then, refers to the

long term–to trends which today's decision process will amplify or mute in a more or less permanent way.

Given the current social process within which the CBR is organizing, innovations and social change initiated under the rubric of *sustainability* will likely be partially incorporated and partially rejected by different participants. For those interested in understanding the CBR arena, we would suggest that long term effects be addressed with these caveats in mind (caveats suggested by other papers in this volume). An analysis of effects, as part of an effort to understand social process, would thus consist of tracking the changes over time to the status and satisfaction of the various participants in the process. Such an analysis might include an analysis of whether each participant feels that the process has added to the wealth, enlightenment, skill, well-being, affection, respect and rectitude afforded to each participant. Individual participants' views should be solicited on the nature of particular projects, rules, and political processes that affect them. Their ideas about the future of the CBR, and their role in that future, should be addressed. Such a program would entail, on the level of the entire CBR project, the kinds of monitoring suggested for various smaller projects conceived of under the CBR umbrella (see Ulfelder et al. 1997:37).

DECISION PROCESS

Decision process is used to address conflicting interests and claims, ideally in the common interest. Decision process is the means by which conflicting claims and counterclaims (about shaping and sharing of all the values) are settled. Decision processes can vary greatly in their fairness. For instance, in oligarchic organizations, decision processes are not inclusive, and can be assumed to benefit the few elites who dominate the process. Other kinds of decision process can be more democratic or inclusive. This requires that decision process provide opportunities for full participation, and that it be comprehensive, open, fair, factual, and timely. We assume that conservation and social equity will best be served by decision processes that are inclusive, and take issues of fairness seriously. While it may be possible that decisions made more through force than through consensus will result in the outward appearance of conservation, we argue that conservation exists as a goal for human society and must be sought largely insofar as it contributes to the well-being of people. Decision processes, then, are beneficial insofar as they contribute to the common interest.

Just what is the CBR *decision process*? In general terms, a decision process is the ongoing interaction of people in their efforts to achieve what they value (i.e., power, wealth, knowledge, skill, respect, affection, well-being, and recti-

tude). It is a never-ending, value-laden process. People organize themselves in various ways to address what they see as important problems. In natural resources management, different people and groups want to use natural resources in different ways depending on their value outlook. Decision making about natural resources–regardless of whether it is about biodiversity, forestry, water, or some other environmental good, service, or idea–is part of a larger social process in which people, despite differences, struggle to clarify, secure, and sustain their own interests. What is in the interest of the individual may also be in the interest of the community, although this is not necessarily the case. Nor can we assume that individuals are rational actors, performing cost-benefit analysis in every situation to determine what is in their best interest. Even though we can talk of a single CBR decision process, there are in fact many hundreds of smaller ones, some quite site (or issue) specific.

The Process

Understanding management of the CBR (or any specific management issue within the CBR) as a decision process is an important tool for analysis of problems and their resolution. In practice, decision process in a natural resources setting boils down to two basic questions: How are natural resources to be used? And, who gets to decide? Seeking the common interest in decision making requires balancing the benefits of different kinds of resource uses in the best interest of all of those affected by the use.

Although decision processes occur in innumerable settings throughout all of human society, they can be understood to follow similar patterns. Much research has gone into analyzing the different elements of decision process: starting the process; planning, promotion, and open debate; setting guidelines or rules; implementation; appraisal and review; and ending or succession. The six phases making up the process are described below (see Brewer and deLeon 1983, Clark et al. 2001). Although decision processes tend to move through phases, the six decision activities do not follow a rigid sequence. Often, different activities overlap–participants may begin planning almost as soon as a decision process has been initiated, and other participants may already have been involved in a problem for a long time, and may have moved into other decision functions.

Resource managers can use the analysis of decision process as part of a larger framework for mapping natural resource problems in which they are involved, and can gain valuable insights into the nature of these problems as a result. Such work has been carried out in other conservation arenas. For example, the way decision process activities were actually carried out in Australian koala (*Phascolarctos cinereus*) conservation was described by Clark et al. (2000), who used decision process analysis to identify various problems. This

study also suggested ways each activity could be carried out more effectively for better conservation outcomes. Other conservation issues have also been mapped (see Clark et al. 2000, Clark et al. 2001). We suggest that the participants in the CBR decision process would find it useful to undertake such an exercise in greater depth than we are able to do based on our short field time and exposure to the CBR arena. The interrelated activities that make up the CBR decision process can be described in general terms and mapped in detail from in-depth study. This volume examines various decision processes, though not completely or in realistic depth desired for actual management.

The following is a general look at decision activities, making reference to the CBR arena. The first decision process activity, *initiation*, refers to the constellation of events that come together to define the beginning of a process designed to make decisions. Generally, decisions are made to resolve problems, and the initiation phase encompasses the realization by various actors that a problem exists and something must be done about it. In the case of the CBR, as participants seeking to use the CBR area for different purposes–such as ranching, household agricultural production, biodiversity conservation and urban water production–came into conflict with each other, they began to realize that they were engaged in a problem that would require decisions to be taken for its resolution. There is, necessarily, something of an origin story inherent in the idea–in practice, it is difficult to pin down with any certainty exactly when a decision process begins. Some approximation of this moment is a useful fiction for policy-makers, however. Thus, while the CBR itself has a number of beginnings (the arrival of the first humans, the arrival of Spanish rule, independence, etc.), we might say that as a policy concept, the CBR was launched though the collection of statements, press releases, and actions of the more powerful participants. Initiation was by the NGO community–a fact that has specific implications for the kinds of participation and management that are possible in the area (see Padwe this volume, Ulfelder et al. 1997).

The second decision process activity, *estimation*, describes the actions of various participants who engage in research and discussion about a problem or agenda–who estimates the facts, dimensions, seriousness, causes, and directions of a problem. Participants in problems engage in estimation in order to define the possible solutions to a problem; the options for solving a problem (the policies which can be adopted) result from the collection and analysis of information about the problem. Estimation is not a neutral activity. Rather the kinds of knowledge produced about a problem, and the kinds of knowledge that are considered important to produce, reflect the underlying assumptions and biases of the participants involved in the estimation activity. Often these biases may remain masked, and individual participants may not be aware that the strength of the convictions governs the kinds of knowledge which they believe to be neutral. For instance, the idea that conservation of natural resources

is in the best interest of all participants may be a point of departure for conservation organizations beginning research and discussion which comprises the estimation activity. Other participants may not share this assumption, and may create knowledge about a problem that departs from a much different set of assumptions. In seeking to have the knowledge they produce or endorse accepted by other participants, individual participants apply power. For instance, conservation organizations may use their resources (including wealth, scientific knowledge, access to media, etc.) to promote the forms of knowledge and the findings which they believe to be most important. For decision processes to result in more equitable outcomes, it is important that knowledge be shared as fully as possible and be openly debated by the participants. In so far as possible, underlying assumptions and biases should be made explicit. Constructive debate can help to promote trust and cooperation. Estimation activities are quite apparent within the CBR arena–they include the production of working papers, management plans, scientific research, conferences, community meetings, and discussion and gossip among participants.

Generally, following the production of a series of possible policies, decision processes enter a *selection* phase, in which a policy option is chosen for resolving a problem and guiding future activities. Decisions are made by individuals with authority and control, and specify the guidelines, rules, or laws for the behavior of participants who use the CBR. Authority in this case means the legal mandate to set and enforce rules; control refers to the actual ability to influence the behavior of participants in the arena (see below for a discussion of authority and control). For policies to be effective in democratic or consensus-driven systems, the authority to set and enforce rules depends on popular involvement in the creation of those rules and popular endorsement of the forms of authority used to enforce them. At the CBR, representatives of village-level organizations, local, state, and national elected representatives, corporations and non-governmental organizations all have different forms of authority and control. From our initial research, we would suggest that the selection activity at the CBR has yet to produce consensus about a set of policies to govern the use of natural resources in the arena. However, in some parts, the project participants have reached agreement about the nature of the problem and the steps they will take to resolve it (community agreements signed between local conservation NGOs and community councils reflect one such area). To be most realistic and useful, the rules, when they are set, should be specific about goals, contingencies, sanctions, and resources required (Clark 2002).

Once decisions have been made as to which policies will be adopted, the decision process enters the *implementation* phase, during which chosen policies are put in place and enforced. In order for policies to have their desired outcomes, implementation must be dependable, even-handed, realistic, and

timely, and conflicts over the implementation of policies must be resolved in ways that are deemed fair by the consensus of the participants. A number of projects and policies are currently being implemented in the CBR, some of which are described in this volume.

Fifth is the *appraisal*, or evaluation, activity. Even when decisions are made on the basis of the best information and with high degrees of consensus, they may not adequately address the problem in the ways predicted during the estimation phase. Furthermore, initial conditions may change, requiring shifts in policies. As problems and decision processes that seek to address them progress, participants should seek to evaluate the ways that the decision process has or has not addressed the problem. A large literature on adaptive management discusses the appraisal activity (e.g., Margoluis and Salafsky 1998). As with the estimation phase, whether or not the policies implemented are meeting the needs of the participants depends largely on how well the problem was estimated, goal clarity and specificity, and the point of view of the appraiser. Appraisal should be undertaken with the same caveats in mind that guide estimation activities. The PALOMAP study (Ulfelder et al. 1997) represents one form of appraisal within the CBR initiative. Carrying out such evaluations is an important part of the decision process, but the effectiveness of such work depends on the ways that the lessons learned from such exercises are returned to the participants and used to redirect and improve policy making and management.

The final phase of decision process, *termination*, occurs when the original problem is solved, or when the participants determine that a certain decision process is unable to solve the problem and they move on to other issues. Often, if a decision process is successful, the institutions that were formed to address the problem remain, actively carrying out the duties assigned to them during the process. Thus, even when problems have effectively been solved, some part of the decision process remains active, allowing participants to remain involved in management on a routine, ongoing basis.

Decision processes are functioning poorly: (1) when they inadequately assess the nature of the problem and the possible solutions that may result in the amelioration of the problem; (2) when debate about information is confused, unrealistic, and inequitable; (3) when rules are made or enforced haphazardly or unrealistically, ignoring the needs and desires of participants or the possible constraints on their abilities to change their actions; and (4) when appraisal fails to let decision makers and participants understand what is working, what is not working, and why. Each decision activity is an opportunity to upgrade the quality of the process. The successful accomplishment of such goals as conservation, sustainable development, and participation within the CBR initiative will only be possible when decision processes are well organized and are sufficient to meet these challenges. For this reason, we believe that orga-

nizing and improving the ongoing decision process for the CBR is the principal challenge in the arena today.

Conflict and Settling Differences

Successful conservation requires attending to the many demands or claims people make on one another. The presence of conflicts within a social process is an indicator that claims are not being fully reconciled. Such a state of affairs is indeed normal in most social processes, and the question for policy-makers is what level of conflict is acceptable, and at what point does conflict threaten to derail collective problem-solving. As could be expected, then, we found evidence of conflict during our assessment of the CBR project. For example, several individuals claimed that they or their organization originated the idea of using community park guards; at issue here is the value of respect and demands for it. In another example, an indigenous community we visited is concerned that the EMAAP-Q municipal water project threatens to submerge their lands behind small dams, and to deprive them of their traditional rights to water in their territory, and they seek monetary compensation for this infringement; at issue here, too, is the value of respect, and also wealth. A successful decision process depends on finding ways to address and resolve divergent claims.

Claims can be characterized depending on (1) which values are at stake, (2) what phase and characteristic of the social context is involved, and (3) the types of decision-maker involvement. First, the values at stake are classified according to the eight categories of power, enlightenment, wealth, skill, respect, well-being, affection, and rectitude. Second, the phase and characteristic of the value process is important. For example, claims relate to the role participants demand for themselves in decision processes. Claims are largely about wanting full participation for all purposes, for access to a particular situation, and for new interactive situations. These are all claims to value shaping and sharing. These claims can be classified as claims about the participation, situation, values, strategies, and outcomes. Claims about outcomes usually pertain to specific outcomes. For example, some claims are about wanting better and more open debate in planning. Other claims are about the need for better laws, rules, and plans. Other claims are about better enforcement of laws, rules, and plans, as well as better administration and conflict resolution. Other claims are about improved evaluations and publication of results. And other claims are about ending old unsustainable practices and moving on to more sustainable ones. All claims are about value shaping or sharing. Third, claims are about the involvement of decision-makers. These have to do with the extent and mode of participation demanded of the community decision-making system. A community's decision-making system may be re-

quired to carry out constitutive decision making, to involve the courts, to pass better laws or rules, to increase its administrative role, or to carry out sanctions to correct old ineffective policy.

By mapping the pattern of claims and counterclaims, it is possible to gain insight into the CBR decision process or any process of decision making. Functionally, a claim is a demand by one party on a decision-maker that will affect the value position of that party or other people. A successfully mounted claim can bring increased wealth, power, respect, knowledge, skill, well-being, affection, and rectitude. For example, a claim to be compensated financially brings wealth. If a claim is included in decision making, it brings power to the claimant. It was beyond the scope of our study to map the diverse claims and counterclaims being made in the CBR arena. However, patterns of claims and counterclaims should be mapped. A clear understanding of who is making what claims or counterclaims opens opportunities for better conservation outcomes.

Common and Special Interest

Ideally, decision processes serve as a means of discovering the common interest and making decisions that serve the common interest. Finding the common interest, however, is itself a process of balancing competing special interests. The common interest is part of a continuous "process of balancing, accommodating and integrating the rich diversity of culture, class, interest and personality that characterizes the earth-space arena" as a whole, and many smaller arenas as well, including the CBR arena (McDougal et al. 1980:207). In the CBR case, as elsewhere, the values people seek and their expectations about how they can use resources to achieve their values determine the material and symbolic significance of natural resources to them. Thus, one interest group sees the CBR primarily as a water factory to fix the water shortage in Quito, whereas another group sees the CBR principally as a refuge for biodiveristy. Each participant's particular goals and agendas for the resources at the CBR represent the special interest of that participant. Participants holding competing special interests, however, form part of a larger community, which needs to be maintained. The *common interest*, then, is that set of goals which is widely shared by a community and which participants seek on behalf of the whole community. It is our hope that awareness of these issues can help CBR participants attempt to create a decision process which serves the common interest. Here, we take a normative stance–decision processes that attempt to serve the common interest are, to our way of thinking, preferable to those that do not. Yet we believe that policy-making is an inherently normative activity. Following along this line of thinking, we take the position that achieving sustainability or conservation is not desirable when the common in-

terest is not sought at the same time. It is difficult to imagine that CBR participants can achieve the common interest (or attempt to) if natural resources are not used sustainably. Below, we provide some suggestions for how participants can attempt to identify the common interest and create policy solutions that seek to serve it.

Common Interest Criteria

We assume, therefore, that seeking sustainability for the CBR is in the common interest. We also hope we have made clear that it does not necessarily follow that the vision of sustainability held by one participant or group of participants (the NGO community, for instance) is necessarily the correct vision of how the common interest can be served. The common interest can only be clarified within the particular context of the community decision process. Several authors have suggested tests to determine if decision making is taking place in the common interest. Cromley (2002) lists three criteria: First, is the decision process inclusive and open to broad participation? Second, does it meet the valid expectations of participants? Third, as decisions are implemented or practically tested, is the process responsive and adaptable in achieving participants' goals as the context changes?

These are the three tests suggested by Lasswell (1971:85-87)–procedural, substantive, and practical–to determine if decision making is in the common interest. *Procedural tests* recognize that inclusive and responsible participation in the decision process serves the common interest. To apply this, (1) consider whether participants–who may or may not be authorized officials–are representative of the community as a whole. If not, the policy is unlikely to reflect the interests of those excluded. (2) Consider also whether the participants are responsible, in the sense that they are willing and able to serve the community as a whole, and can be held accountable by the community for the consequences of their decision. If not, the participants may serve various parts of the community at the expense of the community as a whole.

Substantive tests recognize that the common interest depends upon the valid and appropriate interests of community members. To apply this, (1) consider whether personal or group expectations are warranted by the evidence available. If not, such an interest should be considered invalid. (2) Consider also whether the value demand is compatible with more comprehensive goals (e.g., democracy, consensus). If not, discount the interest as an inappropriate special interest. Finally, consider whether the community or interest group that a participant represents has signed off on a policy, indicating their expectation that the policy serves the common interest. If the community rejects the policy, the rejection may signal room for improvement from a common interest standpoint. Majority rejection of a policy or decision should not be con-

fused with individual rejections–it is to be expected that policies will not be unanimously adopted by all participants and groups. While common interest decision making coincides with majority acceptance of particular policies, a tension exists between majority rule and the tyranny of the majority. Majority interests should not override the rights of individuals–rights which are themselves established by consensus about community norms.

Practical tests recognize that the common interest depends upon adjusting policy in light of new insight and experience. Even a policy formulated through an inclusive process, and accepted by an inclusive range of responsible participants, may fail to serve the common interest. In such cases, the community as a whole, like any person or group, may be mistaken about the expected consequences of policy, or about their own value demands, and the mistakes may become apparent only after policy implementation has begun. To apply the practical test, consider the experience that follows implementation in order to identify opportunities for improvement. Where in the decision process are the main opportunities to make participation more representative and more responsible to the community as a whole? What interests should be discounted as no longer valid or appropriate? What emerging or otherwise neglected interests should be integrated into the next community policy? As these questions suggest, specific opportunities for improvements are assessed at the margin according to concrete experience within a particular problem-solving context–and not according to an abstract ideal which is sought in all contexts.

RECOMMENDATIONS

A variety of activities can be carried out to help find the common interest in the CBR decision process (see Clark 1999). Workshops are one recommended way to develop skills needed in sustainability programs (Hanna 1994). These capacity-building workshops should teach interdisciplinary, problem-solving approaches and leadership skills to the staffs of government agencies and NGOs, community leaders and students. The experience of one workshop effort designed for natural resources professionals that was carried out over five years was described by Clark (2002, Appendix). Evaluations by participants and the instructor concluded that this kind of workshop enhanced the professional problem-solving skills of workshop participants. Within the context of an ongoing workshop–or within a similar forum at which all participants at the CBR are able to communicate, building trust and respect for one another while at the same time improving their own problem-solving skills–a number of activities can help to promote common interest decision making.

Participants in the CBR initiative have experience with successful conservation efforts, both within the smaller units of the CBR (the four protected ar-

eas), and in other arenas where they have been involved. Our principal suggestion is that CBR participants should seek to understand how these successes were accomplished. This means analyzing those cases with recourse to the framework we have provided here, and attempting to harvest lessons and diffuse this learning to the larger CBR community to inform management decisions and policy-making in the CBR arena. Large organizations, such as TNC, are networked with partners who have undertaken similar problems to varying degrees of success. Individual local programs with similarities to the specific efforts at the CBR can be identified, described, and critically reviewed to determine the reasons for their success (see Clark 1996). For example, past successes could include a situation in which a natural resource user or agency seriously considered wildlife conservation when planning a new development, or one in which a government agency devised a roads management plan to protect wildlife habitats. These field-tested models can be used to find best practice standards that can be adapted and replicated elsewhere once they are spelled out. Using cases from the region will help CBR participants to recognize the similarities and differences with their own problems, and to adapt the lessons learned. Constructive, positive examples of best practices can inspire and inform better conservation practices on an ongoing basis. Key questions include (1) In what respects did existing policy and policy processes succeed or fail to clarify, secure, and sustain the common interest? (2) What factors were responsible for the successes and failures? (3) What alternatives might resolve the problem in the common interest, in this context and in others like it?

Participants should seek to disseminate their analyses of successful efforts as widely as possible. Case studies or stories can be one source of information for people in other arenas who can then adapt them to their local circumstances. Governments and NGOs can help to enable the ongoing communication of experiences, practices, and examples. These strategies may include formal organizational structures, such as intergovernmental and NGO task groups assigned to evaluate specific management issues, or less formal ones such as management networks (or electronic forums) among citizens and small groups. In situations where participants don't have access to these resources, or in cases where it is unlikely that technical reports will effectively communicate experiences (such as may be the case with rural communities), efforts should be made to give individual and group representatives the opportunity to talk with the participants of successful endeavors.

This *practice-based* strategy stands in contrast to the *scientific strategy*, which is often promoted as the solution to sustainability problems (see Ziegelmayer et al. this volume for a more in-depth discussion of practice based and scientific strategies). Scientific strategies, in our use of the term, refer to the drive to accumulate more and more scientific knowledge about a particular

problem before taking policy actions to resolve a problem. Often, participants look to science to provide the true picture of a problem, but such hopes are misplaced when empirical observations are subject to multiple interpretations. The limitations of traditional science in resolving complex policy problems has been outlined by many authors (e.g., Clark 1993). Importantly, scientific knowledge is not impartial or value-free, but must be considered highly political. At their worst, scientific problem-solving strategies are embraced by bureaucratic organizations seeking to stall any decision-making that may expose them politically. At best, such strategies may be misguided, and in effect may hinder decision processes, allowing decision processes to become more complex as additional participants enter the arena. In both cases, too much scientific knowledge can prevent practical decision making from occurring. The key to improvement in the CBR arena is to make the best use of the science that is available, and not to depend solely on science to resolve complex policy problems. Grounding the use of science within a context-specific, problem-oriented decision process constitutes a practice-based problem-solving approach.

CONCLUSION

In this paper, we have laid out a framework for understanding the decision process in which participants in the CBR are involved. We have linked our analysis to bibliographic materials that we believe will assist decision-makers in the CBR to better understand the nature of problem-solving approaches to policy making. Several concepts are important for understanding this framework of analysis. We introduced the concept of the CBR *arena* to refer to the geographical and social area within which decisions are made, affecting the use of natural resources and human social interactions. We introduced the idea of *human social process*, a term encompassing the participants in a problem, their desires, goals, values and perspectives, and the context within which they make decisions. Likewise, we introduced the concept of *decision process*, a series of activities through which a problem passes, from initiation to termination, which are characteristic of most problem solving efforts. Finally, we introduced the idea of the *common interest*, and suggested that achieving sustainability in the CBR requires that decision processes be encouraged to serve the common interest. To accomplish that, we have made some basic suggestions for applying this framework through the analysis of similar problems and the dissemination of the results of that analysis.

Several of the case studies found in this volume take initial steps towards understanding CBR activities and problems in light of this or similar problem solving approaches. We hope that our collective effort will assist CBR participants in solving the important natural resources problems which affect them.

NOTE

1. The CBR represents the first time that the greater ecosystem concept has been used in Ecuador. This derives in part from the funding history of the CBR: the CBR is a late phase of SUBIR, a large USAID funded conservation effort which provided support for conservation areas in Ecuador. SUBIR 1 and SUBIR 2 (initiated in 1992 and 1995, respectively) funded various NGOs in Ecuador to assist the government in park protection and sustainable development activities. The integration of the CBR project evolved partly within the funding process for the renewal of the SUBIR program. (See Lanfer this volume for a discussion of landscape level conservation and institutional cooperation in the CBR.)

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