Advancing Conservation in a Social Context:

Working in a World of Trade-offs

Final Report

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Executive Summary

In 2007, the Advancing Conservation in a Social Context (ACSC) Initiative, supported by the John D and Catherine T. MacArthur Foundation through a grant to the Global Institute of Sustainability at Arizona State University, undertook a 4-year study to improve the ability of key actors to understand, analyze, and negotiate “trade-offs” in conservation and development. ACSC grew out of a recognition that the conservation community needed to improve its knowledge and understanding of the complexity of the social context of conservation through a dedicated research program exploring both the factors that influence how people understand trade-offs as well as the tools, methods and approaches that they use to resolve trade-offs. By focusing attention on trade-offs, the ACSC Initiative aims to provide guidance for the advancement of conservation in a way that takes into consideration the possibility of conflict and contradiction both within conservation, and between conservation and other social goals.

We believe that trade-offs and the hard choices they entail are the norm. We believe that early, explicit recognition of trade-offs and their complexity can lead – over time – to more sustainable or resilient conservation outcomes. Given the desire to conserve species and ecosystems, it is increasingly important to think through and make explicit trade-offs among different conservation goals and between conservation and other social goals, such as poverty alleviation and economic development. We think trade-off thinking and analyses are important for understanding and communicating the multiple dimensions of conservation initiatives, and that ignoring or obscuring trade-offs can contribute to the profound disappointment and even alienation of important partners in conservation. Acknowledging trade-offs requires resisting the temptation to obscure political realities, flatten multiple dimensions of value into a single term, or ignore marginalized interests or ways of knowing. As scientists, policymakers and practitioners develop methods to identify and calculate trade-offs or adapt tools and methods from other disciplines for use in conservation, we believe that an open and integrative approach to acknowledging trade-offs and embracing complexity would be most effective.

This report is a synthesis of ACSC’s work focusing on the conceptual underpinnings, assumptions, principles, and key factors that we feel are important to understanding, analyzing and negotiating conservation-related trade-offs. The primary participants in ACSC can be found in Annex 1. An outcomes table providing the results of ACSC’s work against its original expected outcomes is presented in Annex 2. Annexes 3 to 6 provide lists of participation in meetings and public fora; publications and academic theses; thematic research and development; and, country research and development respectively. All reports, publications, presentations, etc., resulting from ACSC’s work are held at the Global Institute of Sustainability at Arizona State University, and are available upon request. A full reference library of literature pertaining to the wide range of issues surrounding trade-offs, conservation and development can be found at www.tradeoffs.org/app/Public/Catalog.
1. The Rhetoric of Win-Win and the Reality of Trade-offs

In his 2010 State of the Union address, President Obama advocated increased US investment in biofuels using win-win rhetoric. Analyses of the impacts of bio-fuels policies on the ground, however, have highlighted some of the negative impacts that have gone along with dramatic increases in biofuels investments. U.S. Department of Agriculture research shows maize prices in the USA to be 71% higher in 2010 than in 2005, versus a 55% increase in crude oil prices. Subsidizing the “market” for biofuels cost U.S. taxpayers more than $7 billion in 2009 and it is reported that 41% of the 2010 U.S. corn crop, or 15% of the global crop, will be converted to biofuel. Al Gore has now acknowledged that his position on corn-based biofuel was a mistake. According to a World Bank report, 70-75% of the increase in food prices between January 2002 and June 2008 was related to bio-fuels development and the associated shifts in land use, speculative activity, and trade policies. Biofuels have been identified as a driver of large-scale deforestation in Brazil, Malaysia, and Indonesia, where forested areas have been replaced by sugar cane and palm oil monocultures. In addition to deforestation, biofuel production has been implicated in land tenure conflicts, food security issues, and scarce water availability for local communities. As the trade-offs associated with investments in biofuels have become more and more apparent, initial enthusiasm has begun to dampen and doubt and uncertainty around the future of the industry has grown.

Likewise, REDD (Reduced Emissions from Deforestation and Forest Degradation) has been portrayed as an ideal mechanism for reducing the magnitude and undesirable effects of climate change because it is thought to alleviate poverty, conserve biological diversity, and reduce atmospheric carbon. The release of carbon dioxide from tropical deforestation contributes a significant portion - from 17% to 25% - of global greenhouse gas emissions. Incentives to protect tropical forests are presumed to have the additional benefit of leading to protection of ecosystems and species. Furthermore, the compensation of people, groups, or countries for their efforts to reduce deforestation and forest conversion is a potential stimulus for economic development at local and national levels. In spite of these prospective gains, however, there are losses that could result from REDD policies. REDD could serve as an impetus for industrialized countries to reduce efforts to minimize carbon-emitting behaviors or to reduce investment in clean and renewable energy technologies. Also of concern is that although REDD programs may protect forests in some areas, they may result in forest loss in other areas and in some circumstances may lead to the erosion of diversity if monocultures of fast-growing trees are promoted at the expense of diverse species of slower-growing trees. The social goals that REDD is designed to promote may not be realized if the wealthy, who have more secure tenure than the poor and who have access to larger areas of forest, benefit disproportionately from REDD payments. Additionally, REDD policies could result in the loss of control of forest resources by local communities if newly valuable forests are appropriated by governments or other powerful interests. This could in turn lead to more deforestation, particularly in cases where community-based forms of forest management have been shown to be more effective than other alternatives. Although both the prospective gains and losses involved in REDD are the subject of ongoing debate, and although REDD policies continue to be refined, it seems clear that REDD will involve both gains and losses with respect to multiple values and from a variety of points of view. Simply put, REDD involves trade-offs.
2. Hard Choices: Making Trade-offs between Biodiversity Conservation and Human Well-being

Win-win solutions that both conserve biodiversity and promote human well-being are difficult to realize. Trade-offs and the hard choices they entail are the norm. Resolving trade-offs is difficult because social problems – of which conservation is one – can be perceived and understood in a variety of disparate ways, influenced (in part at least) by how people are raised and educated, their life experiences, and the options they have faced. Pre-existing assumptions about the “right” approach to conservation may make recognizing competing values difficult and obscure important differences in both power and understanding. Such assumptions can limit the resilience of policy and programmatic interventions. Recent conservation debates challenge conservationists to be explicit about losses, costs, and hard choices so they can be openly discussed and honestly negotiated. Not to do so can lead to unrealized expectations, and ultimately to unresolved conflict.

A gathering body of evidence indicates that, across a variety of places and contexts, trade-offs can and do occur between different conservation objectives (such as biodiversity and ecosystem services), and between human livelihoods and conservation. Yet it remains rare that the full range of relevant trade-offs are acknowledged in communications with funders, policy-makers, and the public, or explicitly discussed as conservation interventions are undertaken. On the contrary, the pressure to act, and the undesirability – at least from a politicians’ or donors’ point of view - of acknowledging possible downsides and losses can lead conservationists to feel the need to offer optimistic win-win scenarios about the feasibility of addressing multiple agendas. Failing to be open and explicit about trade-offs can thus occur even when conservation practitioners are themselves quite aware of some of the potential downsides of a given scenario or proposal.

As initiatives propelled by win-win optimism are scaled-up and replicated, and as the realities of trade-offs are experienced either by actors expecting to “win” or by those not considered in the equation at all, the stage seems set for a vicious cycle of optimism and disenchantment. To continue to feed this cycle benefits neither nature nor people. A new challenge, and a new set of debates, therefore, must emerge for conservationists to find ways to identify and explicitly acknowledge the trade-offs and hard choices that are involved in advancing conservation in specific places and through specific approaches.

So how should analysis and communication regarding trade-offs within conservation, and between conservation and other social goals proceed? In particular, how can such analysis and communication operate in a way that provides an opening for grappling with the full range of values and dynamics that shape what may be lost and what gained when conservation decisions are made and implemented?

3. Background and Problems with Win-Win Approaches to Conservation

Win-win language has become common among international organizations (multi-lateral and bilateral aid agencies, and development and conservation organizations) to describe the simultaneous achievement of positive conservation and development outcomes. The use of this language has been most pronounced in policy discourse regarding the link between the environment
and poverty reduction. Relieving poverty through a renewed focus on this link is acknowledged today as the primary goal of many development efforts including the Millennium Development Goals, the UNDP-EC Poverty and Environment Initiative, and the Convention on Biological Diversity. Most development assistance agencies are hesitant to support conservation initiatives unless links to reducing poverty can be demonstrated. Meanwhile, conservation organizations have increasingly added efforts to address poverty reduction in their conservation initiatives.

Win-win approaches to conservation have the appearance of being ethical, efficient, and highly marketable. They appear to be ethical in the sense that they acknowledge the dual moral imperatives of protecting the earth’s natural systems and ameliorating human poverty. They appear to be efficient in the sense that they seek to create and/or capitalize on synergies between local needs and desires and regional and global conservation priorities. And they appear to be marketable in the sense that the promise of no losses to biodiversity and human well-being in a single approach makes for popular political discourse and good copy for grant writing. Unfortunately, while the marketability of the win-win concept remains robust, it remains quite doubtful that it is an adequate descriptor of the outcomes that are possible, or actually occur.

3.1 Problems in Achieving Win-Win Outcomes

After more than twenty years of international conservation experience, initiatives that produce win-win outcomes appear to be the exception as opposed to the rule. Only rarely have initiatives realized outcomes that demonstrate how natural resources can be managed in ways that achieve benefits for local people while sustaining local and global biodiversity conservation.

On the conservation side of the equation, criticisms by ecologists of integrated conservation and development initiatives center on the idea that humans usually, although not always, improve their condition by simplifying nature to the detriment of its biological diversity. Integrated projects that rely on extraction and use of the natural resource base have been critiqued as fundamentally ecologically unsound; initiatives in buffer areas have been critiqued for exacerbating negative ecological impacts by acting as growth magnets and encouraging people to migrate into project areas; and the narrow focus of integrated projects on the relatively low-impact activities of local people has been critiqued for failing to engage with powerful external interests that may play a stronger role in driving conservation problems.

On the human well-being side of the equation, attempts to link economic benefits to conservation and development initiatives have been criticized for not being extensive enough or quick enough in arriving; for being unable to provide the range of income-generating, labor-intensive activities that satisfy the livelihood needs of local people; for a failure to distribute benefits effectively, with benefits disproportionately going to more powerful interests rather than the poorest groups or others that actually use or rely on the natural resource in question; and for coming into conflict with existing livelihood strategies.

In general, understanding and communicating projects and policies as win-win does not provide a broad enough view of the multiple dynamics and complexities of most conservation and
development scenarios. The two examples (biofuels and REDD) presented at the beginning of this report are cases in point.

Many similar examples of the need to move beyond win-win thinking could be given. For example, a recent review of projects supported by the Global Environment Facility found that expectations of win-win situations proved unrealistic in most cases. Most GEF projects in the biodiversity portfolio involve some form of restriction of existing patterns of resource exploitation, which generally leads to a loss of livelihood and development opportunities for at least some individuals or groups. Indeed, the fact that many such programs also promote alternative non-natural resource-based income-generating activities such as shops and restaurants, etc., is an implicit acknowledgement of trade-off relationships, but the trade-offs involved are rarely made explicit or systematically evaluated.

3.2 Backlash to Win-Win

The mixed record of initiatives and policies designed to achieve win-win results has important implications for the ways in which conservation and development professionals engage with each other and the communities they work with. Frustrated expectations have led to a backlash against conservation from some groups with human development and rights as their central focus, while fuelling sentiment within certain corners of the conservation field to turn away from the plight of communities adjacent to protected areas and resume calls for a more protectionist approach. The disagreements are typical of an increasing polarization of positions – it is not just indigenous people or development specialists versus conservationists, but protection versus people and parks versus development.

Parts of the practitioner and academic communities are beginning to call into question the assumptions underlying win-win approaches as a result of the growing recognition that many situations on the ground involve competing, rather than complementary, social, economic, and ecological goals. Skeptics argue that the very idea of integrated conservation and development is conceptually flawed, and that many of the practical difficulties experienced by such approaches are the result of unrealistic assumptions about this integration and its benefits.

3.3 Towards Trade-offs and Hard Choices

Over the last few years, several writers in conservation and related areas have pointed to the importance of acknowledging and analyzing trade-offs as an antidote to win-win framing. The essence of trade-off thinking is the idea that, when some things are gained, others are lost. Acknowledging trade-offs thus implies acknowledging not only the gains but also the losses – real, potential, and perceived – incurred by various choices and actions in the domains of conservation and development.

In our experience, the real power of the trade-off concept lies in its ability to bring diverse actors to the common recognition – one not forthcoming when problems are framed as win-win – that hard choices are being faced. Choices, because there are different options, each with their own suite of
possible outcomes with respect to human well-being as well as the diversity, functioning and services provided by ecosystems over space and time. *Hard*, because each choice - even the best or “optimal” one- involves loss in some way; a loss that for at least some of those affected is likely to be a significant one.

Hard choices in the conservation-development nexus arise for a variety of reasons. They are faced when there are trade-offs to be made between different interests and priorities, between long-term and short-term time horizons (where typically biodiversity conservation as a long-term objective is traded off against short-term economic benefits such as conversion to agricultural land), and between benefits at one spatial scale and costs at another. Importantly, many times choices are made implicitly, without even knowing that something is being overlooked or given up because there is a lack of knowledge or the right people are not at the negotiating table. The notion behind the push to think and communicate in terms of trade-offs is that making these more explicit will result in better designed, more resilient, and more sustainable initiatives (and/or the capacity to recognize when and why this may not be possible).

### 3.4 Challenges to Trade-offs Thinking

Because so much funding has been predicated on producing win-win outcomes, acknowledging the problems with this way of thinking poses certain organizational risks. External social, political and economic forces often undercut local conservation responses, and most actors in the field have not developed the tools required to anticipate and address these larger conflicting factors. Additionally, there are few mechanisms or institutions able to adequately assess and distribute costs and benefits between competing interests once trade-offs are identified.

Furthermore, while acknowledging that accomplishing either conservation or human well-being objectives is extremely difficult, there continues to be a general poor understanding among practitioners, in both theory and practice, of the ecological and social complexities within which conservation interventions are carried out. This incomplete theoretical understanding, traceable in part to limited integrative and interdisciplinary approaches and expertise in many conservation organizations, research and policy groups, and donors, and also the urgency with which organizations perceive this problem, is exacerbated by the rhetorical elegance of the win-win paradigm. The win-win paradigm appeals to donors and avoids the potentially divisive political requirements of understanding and confronting explicit trade-offs between competing stakeholders. Even when win-win outcomes fail to materialize, there is little direct pressure for self-correction in the face of disappointing outcomes because conservation actors are not typically held accountable to those who are sometimes negatively affected by their decisions, and donor agencies have often already moved on to a new favoured conservation paradigm.

The emergence of a new paradigm and altered practice, a possible outcome of a greater focus on trade-offs, will require conservation actors to negotiate with unfamiliar interest groups and perhaps compromise on deeply held positions if they are to succeed in a complex world of contradictory perspectives. Such a shift will not be easy, but the research we have undertaken convinces us that it is necessary.
4. The Advancing Conservation in a Social Context Research Initiative

In 2007, Advancing Conservation in a Social Context (ACSC), supported by the John D and Catherine T. MacArthur Foundation through a grant to the Global Institute of Sustainability at Arizona State University, undertook a 4-year research initiative with the goal of improving the ability of key actors to identify, analyze, and negotiate conservation and development trade-offs. The project came out of a growing recognition that initiatives designed to simultaneously advance biodiversity conservation along with other social values and goals were not working out as had been hoped for or intended. By focusing attention on trade-offs, the ACSC initiative aimed to provide guidance for the advancement of conservation objectives in a way that takes into consideration the possibility of conflict and contradiction both within conservation, and between conservation and other social goals.

The initiative focused attention on specific cases in four countries: Peru, Tanzania, Vietnam, and the United States. It also looked at selected global conservation policies and practices starting with three workshops on “Rethinking Trade-offs” that were designed to help define a thematic research agenda for ACSC by drawing from recent scholarly and practical advances across a range of disciplines on how to approach conservation and development trade-offs. Three broad topic areas were identified for further exploration:

- Values and Ethics (Convener: Bryan Norton, Georgia Institute of Technology)
- Ecosystem Services and Resilience (Convener: Ann Kinzig, Arizona State University.)
- Politics of Knowledge (Convener: Peter Brosius, University of Georgia)

Within these topic areas participants sought to cast a wide net for ideas, concepts and issues that might be especially important or compelling for ACSC’s thematic research agenda.

Participants in ACSC represented several leading national and international environmental organizations, as well as academic departments and centers oriented around interdisciplinary approaches to conservation and sustainability. The inclusion of scholars from the humanities (e.g. philosophers and historians) was a significant new step in ACSC’s effort to draw from a wide variety of disciplinary perspectives. The initiative combined synthetic research with a series of local, national, and global-level workshops in which information was gathered, ideas were shared, and frameworks and guidelines were developed for ongoing work and its dissemination.

5. Synthesis & Discussion

5.1 Guiding Principles

It is generally accepted in the literature on participatory processes that no actor or organization with its own well-defined goals and preferences—and for most conservation organizations this is still the protection of biodiversity—can act as the legitimate convener of a process designed to reconcile competing goals. However, we believe a shared foundation of guiding principles can help actors from a variety of backgrounds with multiple perspectives and different kinds of power to work together to
identify, analyze and negotiate trade-off decisions, or at least to better understand the gaps that stand in the way of such decisions.

We have identified a set of principles that have emerged from theoretical discussions and practical engagements over the course of the ACSC research initiative. They have provided a foundation resulting from ACSC’s own experience in which researchers and practitioners from a variety of countries, organizational contexts, and academic disciplines have been able to improve their understanding and develop better ways to discuss and address trade-offs in specific conservation and development initiatives and approaches. These principles were designed with the aim of being relevant, meaningful, and salient for the variety of intellectual and interest-based perspectives that intersect in complex conservation scenarios.

While each principle we propose deserves in-depth discussion, our goal is to articulate them simply and in such a way that can catalyze both agreement on a place to start and an opening for discussion and more rigorous analysis. Our overall suggestion is that analytical approaches to understanding trade-offs, and attempts to communicate and discuss them, should start with a process of reflecting on these starting principles, and potentially formulating others.

ACSC Guiding Principles:

Trade-offs

- In conservation and development, trade-offs are the norm.
- Paying attention to trade-offs in conservation involves simultaneously examining the losses and gains associated with conservation plans and policies.
- More explicit acknowledgment of trade-offs, and the hard choices they entail, may lead to more resilient and sustainable conservation outcomes.

Scale

- Different social and ecological values manifest at different scales, and trade-offs occur both within and between scales.
- Successful negotiation of trade-offs will come only with reasonable attention to political, social, economic, and ecological dynamics at multiple spatial and temporal scales, and are critically dependent on interactions across these scales.
- In some cases, dynamics operating at one scale may prevent or constrain successful negotiation of trade-offs at another.

Context

- Approaches to understanding and negotiating trade-offs should respect the co-evolution of natural and human history.
- Analytical tools and methods should be applied with sensitivity to the political, economic, institutional and social contexts in which decisions about conservation and development occur.
- There are no panaceas or one-size fits all solutions nor are there necessarily solutions with long-term staying power: decisions and strategies will have to be revisited as new knowledge emerges, and as the social, political, economic, and ecological contexts change.
Pluralism

- Trade-offs are experienced and understood from a variety of legitimate perspectives. At the root of many long-standing disputes are differing models, metaphors, and ways of understanding the complexity of trade-off decisions.
- Each perspective highlights certain trade-off dimensions and obscures others. Better formulation of problems can occur when new ways of understanding conservation and development trade-offs are developed collaboratively and iteratively with the input of multiple voices and multiple perspectives.
- Diligence is necessary to ensure that the voices of affected parties are heard, understood and respected.

Complexity

- Human and natural systems are inextricably linked.
- Many important environmental and developmental issues will always involve uncertainty.
- All models and analytical tools for understanding conservation and development issues engage in some form of simplification of complexity, and none provide a comprehensive picture.

5.2 Key Factors

Our research to date has focused on improving our understanding of the world in which conservation decisions are made at the international, national and local levels. We have done this through a focus on three countries’ national context (Peru, Tanzania and Vietnam), and triangulated those findings with case studies of policy interventions, field initiatives, and other types of research including round-table discussions and thematic workshops (see Annexes 5 & 6). From this work we have identified a set of key factors that we see as core to understanding and acting upon conservation and development choices. These key factors serve to help provide a more complete picture of the contexts, institutions and organizations that influence how people think about and act on trade-offs within conservation, and between conservation and other social goals. We believe that an improved understanding of the nature of trade-off decision-making is important to help donors, strategists, and evaluators as well as practitioners, policy-developers, teachers and students openly discuss and honestly negotiate the complexities inherent in the social context of conservation. From our research we have identified nine key factors.

5.2.1 Key Factor: Institutions play a significant role in shaping the perception of conservation and development trade-offs and how they are acted upon

Institutions are required to create the conditions for effective management of ecosystems. Where these institutions exist they often face significant barriers. Where they do not exist, they need to be created. As a result, understanding institutions is essential to understanding the challenges of trade-off decision making.

Institutions are important for understanding trade-off decisions in several ways. We define institutions as the “rules of the game” – the sets of rules and norms that regulate human behaviour and interaction. Eleanor Ostrom, who was a participant in the conceptualization of ACSC, developed a three-tier model of institutions that distinguishes between operational, collective choice and constitutional levels. At the operational level, institutions resolve conservation and development conflicts by establishing the rights and duties of involved agents. At the intermediate or collective
choice level, institutions govern choices. At the constitutional level, rules create agents, such as citizens, organisations and governmental entities, as well as fora in which institutional choices are made.

Upper level (constitutional) rules serve to shape institutional alternatives and choices at lower (operational and collective choice) levels. For example, we found in our analysis of the Arctic National Wildlife Refuge (ANWR) that participation in environmental decisions has largely taken place through citizenship which vests agents with certain political rights. To bring greater voice to the decision-making process these rights have evolved into more collective forms of stakeholder group (indigenous community, conservation NGO, industry lobby, etc.) participation such as redress in the court system by native communities against Phillips Petroleum to block oil exploration in the Beaufort Sea. These upper level (constitutional) rules manifest themselves most clearly in the case of ANWR in the checks and balances within the U.S. Constitution that have allowed President Clinton to veto Congressional approval to open ANWR to exploration and drilling (1996), the need for Congressional authorization to drill (1980) and the right of court action between the federal government and states to decide where choice lies (Supreme Court ruling in 1997). Figure 1 provides a timeline of institutional interactions related to ANWR. All in all, these upper level rules allow for different groups to pursue their interests in the context of an institutional framework that provides institutional arrangements (rules) to mediate conflict over use of ANWR in Alaska.

Figure 1: Timeline of significant institutional events impacting trade-off decision-making in the Arctic National Wildlife Refuge, Alaska
The power of different agents is also affected by institutions that constitute them and facilitate their pursuits by granting particular rights, duties, powers and immunities. These agents can also mobilise power gained in certain areas to forward their interest in others. For example in Peru, the rights conveyed to indigenous groups for land has allowed them to better organise and oppose development of their lands in terms of mineral development, oil exploration and conversion to monocultures. This, however, does not change the reality that in many cases power remains hidden in ways we outline in Key Factor 5.2.3 below.

At a more pragmatic level, institutions play a significant role in shaping the perception of conservation and development problems and how they are acted upon. For example, Abbott and McElwee in their study for ACSC found that international commitments and institutions do affect national decision-making through complex informal mechanisms. Politically, for example, they lead national governments to adopt laws and policies and create bureaucracies that may modify decision-making even without a strong commitment to their enforcement or implementation. They also provide reference points that civil society organizations may use strategically to organize, make demands on government, and cooperate with government (e.g., indigenous people in Peru). Subjectively, they may lead citizens and officials to internalize concepts such as biodiversity and come to accept their value. These informal mechanisms are more difficult to identify, but important to understand, especially in connection with efforts to “reform” global environmental governance.

Institutions are embedded in the specifics of culture, history and social practices, which vary substantially across different social settings. For example, in Vietnam a historical perspective on institutional changes in government policy covering three different periods – 1960 to 1975, 1976 to 1985 and 1986 to present – showed that major policy trends (or shifts) during that period resulted in institutional changes at different levels. These changes included the establishment of conservation institutions and a greater role for civil society in decision-making. In Tanzania, whereas many rights and responsibilities have been conveyed to the individual or community, much of the decision-making power continues to rest with traditional authorities whose interests often do not coincide with that of the community.

Two trends are common; on the one hand there is a move towards devolution, which has given rise to community-based approaches to natural resource management. On the other hand, discourses of global environmental change promote global approaches to environmental problems. In reality it makes no more sense to valorise the community as the best defender of conservation in all cases than it does to claim that national governments or the global community are in the best position to protect nature. Discussion about which institutions are appropriate to govern biodiversity conservation and maintain ecosystem services must move beyond the false dichotomy of community versus central government.

It is important to distinguish between those who make decisions and those who are subjected to decisions. This influences the efficiency, effectiveness, equity and legitimacy of trade-off decision-making. If the voice and priorities of the subjects of such decisions are not engaged in the decision-making process, the likelihood of resulting decisions being effectively implemented is small. The best option to address the mismatch between decision-makers and decision-recipients is the use of
inclusionary decision-making processes in which multiple interests are negotiated in an attempt to reconcile trade-offs.

Some key attributes for successful conservation institutions are:

- Authority, ability, and willingness to restrict access and use
- Wherewithal to offer incentives to use resources sustainably (including compensation and/or not using resources at all)
- Technical capacity to monitor ecological and social conditions
- Managerial flexibility to alter the array of incentives and the rules of access so as to cope with changes in the condition of the resource or its users

Institutional diversity is necessary to tackle complex environmental issues; lessons from local and global resource management highlight the challenges that exist for managing large scale environmental or global commons resources. For example, scaling up increases the number of participants makes organising, agreeing and enforcing rules more difficult, and increasing cultural diversity means finding shared interests and understandings problematic (see Key Factor 5.2.2 below). It is clear that trade-off decisions with conservation and between conservation and other social goals must be addressed simultaneously at multiple levels. However, it remains unclear how local level bottom-up participatory approaches to trade-off decision-making can articulate with national and international top-down regulatory strategies. For example, international institutions are important fora for interactions among interested groups. This should be one of the main avenues through which local actors can push back against win-win assumptions. However, ACSC’s work on international institutions and event ethnography suggests that many of these fora are attended primarily by “global elites,” rather than by people knowledgeable about and engaged in local issues (see Key Factor 5.2.4). As a result, they adopt norms that reflect global issues and perspectives, and do not work as well as they could in transmitting local feedback regarding the cost of these decisions. (For that matter, they are also less effective in transmitting conservation norms downward.) A number of projects try to increase local representation in global fora, but many focus on particular local groups, especially indigenous peoples. At the same time, there are informal ways of transmitting local views to international institutions, just as there are informal ways of transmitting global norms to national or local decision-makers.

Many existing institutions at both the global and national levels have been mandated to address biodiversity conservation and the maintenance of ecosystem services, but face a variety of challenges in doing so related in part to the need for greater cooperation across sectors and the need for coordinated responses at multiple scales. In particular, existing global and national institutions are not well designed to deal with the management of common pool resources, a characteristic of biodiversity conservation and ecosystem services. Issues of ownership and access to resources, rights to participation in decision-making, and regulation of particular types of resource use can strongly influence biodiversity conservation and maintenance of ecosystem services and are fundamental determinants of who wins and who loses from changes in ecosystems.
5.2.2 Key Factor: An effective process in trade-off decision-making requires sound environmental governance

Environmental governance is the set of regulatory processes, mechanisms and organizations through which various actors influence environmental actions and outcomes. Governance is not the same as government. It includes the actions of the state and, in addition, encompasses actors such as communities, the private sector, and NGOs. International accords, national policies and legislation, local decision-making structures, transnational institutions, and environmental NGOs are all examples of the forms through which environmental governance takes place. Because governance can be shaped through non-organizational mechanisms as well, for example, when it is based on market incentives and self-regulatory processes, it becomes near ubiquitous in influencing conservation outcomes.

ACSC research revealed four elements as being core to environmental governance and ultimately key to an effective process in trade-off decision-making. These are representation, legitimacy, capacity and institutional function.

5.2.2.1 Representation

Representation is about who participates in decision-making processes. Participation may improve the quality of decisions because it allows for better understanding of impacts and vulnerability, the distribution of costs and benefits associated with trade-offs, and the identification of a broader range of approaches to specific contexts.

One of the key challenges in trade-off decision-making processes has been the elusive goal of identifying and involving different stakeholders, and balancing competing interests. These span interest organizations, government, private sector, donors, NGOs, and at scales from local to international. Over the last twenty years, the conservation sector has understood the need to increase participation and involve relevant stakeholders. However, the challenge has been figuring out what this means and how to implement it. Brandon and Wells, in their study for ACSC, found that NGOs have taken on a wide variety of roles spanning conservation and development, from direct (contractual) responsibility for managing protected areas to providing what could be viewed as basic development investments (clinics, schools), that are typically the responsibility of government. In most of the sites reviewed, there has been a change in the scale of conservation activities extending out from core protected areas, which has meant that in most cases many more stakeholders have had to be included in decision-making processes. As projects include more stakeholders they become more complex. Figure 2 illustrates relationships among different stakeholders in the Amboseli Biosphere Reserve, Kenya.
The result of Amboseli’s complexity of stakeholder participation was:

“There were a huge variety of stakeholders including parks staff, women’s groups, and local politicians, Maasai pastoralists and elders, serious NGOs, group ranches members, and County Council members. To reach agreement on revenue-sharing took 298 meetings; and after the first disbursement another 70 meetings were held."

This raises important questions including: what mechanisms exist to ensure increased and fair participation in light of increasing numbers of stakeholders? What are the ways that uniform messages can be transmitted across large areas, and elicit similar levels of participation from different groups in complex settings, such as when there are different languages and cultures represented across a large area? How can transparency be maintained in these processes? How can adequate participation be achieved with relative efficiency in negotiation?

Another important aspect was that representation became more problematic with increased stakeholder participation. For example, at Beza Mahafaly, Madagascar, the community was unable to reach consensus about the process for participating in decision-making over funds set aside from
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tourism revenue, debating which villages should be represented, how representatives would be chosen or elected, etc. Common questions about representation include: should some groups have greater participation or say than others? What different “weight” should divergent interests get, for example, women’s groups, farmers associations, tourism employees, hunters, conservation organizations, etc.?

A great deal of literature exists on stakeholder participation. Ultimately, the effectiveness of stakeholder participation and who is represented at the decision-making table depends on whether it makes any difference in decision-making, whether it contributes to the establishment and achievement of objectives, and whether it provides an opportunity to work through difficult issues rather than avoid them. At the same time, such factors cannot be used as a justification to limit participation.

5.2.2.2 Legitimacy

The complexity associated with increased stakeholder participation raises a number of questions regarding the degree of representation reflected by those who participate, to whom they are accountable, and ultimately, of the legitimacy of the process. Governments at national levels tend to have geopolitically driven interests that often conflict with the well-being and livelihood interests of many of their citizens. Local governments are not necessarily any more representative of or more accountable to local stakeholders than are more centralized ones. Independent voices such as those of NGOs may play an important role in supporting efforts at the community level and in developing innovative policy approaches, but they usually represent narrower interests and are not representative of the wider community of stakeholder interests. Nor do they create substitutes for democratic processes. In the case of ANWR clear checks and balances between the different branches of government demonstrate how power cannot be concentrated in one branch or amongst a single interest group. This is illustrated in Figure 1 through the veto power of the President (1996), drilling only being allowed with Congressional authorization (1980), and the U.S. Supreme Court ruling on coastal drilling and states’ rights (1997). The legitimacy of the process keeps participants involved and active.

The perception of rural people about the effectiveness of government and its ability to meet their needs is illustrative. In Tanzania, ACSC surveyed local communities about their perceptions of government and its representation of their interests. Respondents had the view that government is present (90%; n=102) but believed them not to be representing their interests (74%). Respondents perceived the roles of government as protecting the environment and generating income. The failure of government to aid conservation and development was attributed to non-involvement of local communities, lack of assistance from protected area authorities, lack of conservation education and awareness, illiteracy of village leaders and a general lack of resources (Table 1).

Additionally, for villagers, the legitimacy of government was challenged due to acts of corruption. For example, the inconsistent and unclear criteria for compensation for property lost in the extension of Ruaha National Park prompted speculation among affected community members that the whole exercise was bogus and was governed by corruption. The community members were suspicious that
district officials who were involved in the payment process were dishonest. This was depicted by contradictions that emerged in payments. Some eviction victims who had fewer assets were paid more than those who had many assets. Some who owned nothing were highly paid. One villager gave an example of some people who owned good houses with corrugated iron sheets who received only TAS 500,000 while TAS 1,500,000 was paid to others who owned grass-thatched huts. It was surprising that a list for payment with specified sizes of farms had names of people whom they knew had no farms while names of some who owned up to 10 acres were missing.

Legitimacy relates to the extent to which processes and decisions are acceptable to participants on the basis of who makes and implements the decisions and how. It can be gained or compromised through the process of trade-off decisions whether they are explicit or, more likely, implicit. Open, fair and inclusive processes serve to aid legitimacy.

Table 1. Perception of government legitimacy by local communities in Tanzania

<table>
<thead>
<tr>
<th>Village</th>
<th>Governance structures in place?</th>
<th>Form of government</th>
<th>Effective?</th>
<th>Why not effective?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Idunda</td>
<td>89</td>
<td>11</td>
<td>Village government office, Ward office, environment committee</td>
<td>20</td>
</tr>
<tr>
<td>Ikoga Mpya</td>
<td>85</td>
<td>15</td>
<td>Village government office, Ward office, environment committee, natural resources management committee</td>
<td>25</td>
</tr>
<tr>
<td>Mkwaja</td>
<td>90</td>
<td>10</td>
<td>Saadan National Park, environmental committee, natural resources management committee</td>
<td>30</td>
</tr>
<tr>
<td>Matipwili</td>
<td>95</td>
<td>5</td>
<td>Saadan National Park, village land committee, village executive officer, Kipaku forest</td>
<td>29</td>
</tr>
<tr>
<td>Average</td>
<td>90</td>
<td>10</td>
<td></td>
<td>26</td>
</tr>
</tbody>
</table>

5.2.2.3 Capacity

Capacity to govern is the ability of institutions to respond effectively to the needs of their constituents. A high capacity for governance results in better chance of an effective response. We found that institutions that lacked skills, information, and resources necessary for implementing environmental policies were unlikely to be successful regardless of the degree of support or enthusiasm expressed. In Vietnam, an analysis of the decision process for developing ecotourism in Bai Tu Long National Park shows a lack of personnel and staff qualifications related to conservation and development. The capacity gap is demonstrated by the fact that Review Council for Environmental Impact Assessment has only one among nine members with an environmental background, even though law stipulates that the Council must have over 50% of its members with
expertise related to the proposed development. We found that in Vietnam local government in general does not have sufficient capability and human resources to play its role in effective management of protected areas. This is clearly the case in Phong Dien and Bac Huong Hoa Protected Areas, the boundaries of which have yet to be clearly defined, resulting in the invasion of land for farming and other economic purposes.

The Abbott and McElwee study for ACSC found that the national agencies that serve as focal points for international conventions are under-resourced and lacked scientific and technical capacity. For example, in Vietnam an office with only three people was responsible for the implementation of both CBD and Ramsar, along with other national laws pertaining to biodiversity. The scientific authority for CITES, which must issue a non-detriment finding for every export of specimens of flora and fauna in Appendix I and II, was for several years in Peru a single individual, a full-time professor at the national agricultural university, who did the CITES work on his own time, in his university office, with the help of his departmental secretary, and with no additional resources provided by the relevant ministry; in Vietnam the scientific authority consists of four people working on all species.

With such limited resources and capacity, focal points are often dependent on NGOs, in particular for assistance in trying to meet international obligations. For example, much of the work on listing threatened species or identifying species of special concern falls to the CITES authority, but since that authority often lacks sufficient capacity, the NGO TRAFFIC carries out much of this work with its own funding within Vietnam. In the CITES management authority in Vietnam the four staff members referred to above were being paid by TRAFFIC and not by the government. TRAFFIC had also provided up-to-date computers and sent some staff overseas for training.

ACSC’s assessment of the effectiveness of the capacity of institutions to govern found that the existing skills and resources possessed by many institutions responsible for the implementation of a proposed course of action (policy, etc.) did not match the relative skills and resources required to implement the action. This gap between what is available and what is required constrains effective action in light of limitations in capacity. As responses vary across different scales, the capacity to undertake action depends on institutions that operate at these different scales: international, national and local. Our experience is that capacity to govern and the ability of institutions to undertake their mandate is often assumed but rarely realized in conservation and development. This serves as a significant constraint on the process of effective trade-off decision-making.

5.2.2.4 Institutional function

Sound environmental governance depends not on how any one institution performs or how any one set of actors interacts, but on how they interact and perform as a whole (also see Key Factor 5.2.1). Unfortunately, most environmental governance regimes are not conducive to the development of coordinated or synergistic approaches to collective environmental problem-solving. The complexities of the issues involved, as well as the political nature of policy-making, mean that actions are often negotiated in relative isolation. For example, in Peru decision-making and conflict resolution over the use of natural resources are generally achieved on the basis of negotiations, pressure and resistance between the state, local and foreign investors, conservationists, civil society, and local stakeholders. It has become customary that, faced by problems related to natural resources, roundtables are installed to address the problems. In these roundtables the State attempts to solve the problems on
a one-by-one basis without undertaking substantive reforms that address the causes of the high levels of conflict registered in socio-environmental issues. The explanations provided by the government, companies and consultancies on “conflict resolution” are symptomatic in that they minimize the problems to failures in “communication strategies”, without even hinting that there may be broader structural problems in the processes used to reach consensus. Negotiations are often carried out by specialized ministries or departments in fora that are completely detached from other policy-making meetings and events. In such isolated contexts the consensus-building process that is necessary for effective integrative linkages between sectors is difficult. Ignoring these integrative linkages has created institutions that are ineffective because they attempt to deal with very complex, interrelated systems in piecemeal ways. In response, instilling stronger mechanisms that facilitate inter-linkages, as well as intra-linkages between and across institutions (vertically from local to global and horizontally between institutions at the same level) could improve effectiveness.

5.2.3 Key Factor: Indirect and hidden power relations influence trade-off decisions

Power can be defined in many ways. For ACSC, the key element is the capacity to influence the outcome of events. In the context of trade-off decisions, power can be thought of as the capacity to have meaningful (effective) input into making and implementing decisions about how natural resources are used and managed. Having a meaningful role does not mean that an actor makes all decisions, but that his/her interests are given serious attention in negotiations. Meaningful decision-making also involves implementation. If a decision cannot be implemented or enforced, then the role in decision-making does not involve effective power.

While some aspects of power are obvious (like that vested in the State to make laws or the courts to interpret them), other forms of power are indirect or hidden. In the last few decades, scholars have come to recognize that the contours of power are often more implicit. The processes through which power works are not always direct and they operate more through consent than coercion. Examples of this type of power include: (a) the power to control a decision, (b) the power to set issues and agendas, and (c) the power to determine how self-interest is viewed. In the realm of conservation, the decision to implement a protected area by forcefully displacing people is an example of the conventional understanding of power. Developing a map of global biodiversity hotspots or ecoregions that implicitly places major funders and/or conservation organizations in the position of being “key actors” fits the second definition of power.

Conservation is inherently political, but different actors locate politics in different domains. It is easy to see the explicit site-based politics, as occurs in the establishment and enforcement of boundaries, the restriction on subsistence activities or the negotiation of benefits. But a much more implicit form of politics exists at other “sites” as well; applying reserve selection algorithms, making maps of protected areas or ecoregions, establishing monitoring and evaluation frameworks, or using decision-support tools – all the things that go into “deciding what to save.”

To really understand power, we need to dig deeper to locate and understand the less obvious, more indirect ways in which power works. The analysis of power is particularly relevant in cases where:
• There are significant historical or contextual inequities between different actors involved in a trade-off.
• Differently positioned actors in a trade-off have different levels of access to particular kinds of knowledge.
• The definition of a problem that leads to a trade-off decision is not shared by the various actors who affect, or are affected by, that decision.
• There is little or no overlap in the networks of actors involved in a trade-off decision, resulting in constrained flows of knowledge.
• Values are being negotiated by one set of actors at the expense of another set of actors.
• Categories are being imposed by one set of actors in setting the terms for a trade-off decision that may not be acceptable to another set of actors.
• Simplifications or aggregations overlook or obscure the complexity of local contexts.

For example, in Peru the government has spoken out against those who oppose specific mining and hydrocarbon projects in an effort to stifle public debate. Stakeholders opposing mining and hydrocarbon exploitation are labelled as terrorists and communists. In this debate the patriotism of the critics is also questioned and the accusations include betraying Peru’s aspirations for development. In light of the outcry against these resource exploitation projects, the government has declared twenty mining projects as being of “national interest.” This effectively frames the debate as one of national security. This is also seen in the framing of discourse on oil exploration in ANWR where pro-exploitation interests promote national security and national energy independence, while depicting anti-exploitation interests as unpatriotic and against national interests.

In many societies, trade-off decision-making has little to do with an explicit social consensus on claims and values, and more to do with the exercise of various forms of power. These include:

• power of position (having authority, being in a position to make or influence decisions)
• power of knowledge (having information unavailable to others)
• personal power (being personally forceful, persuasive)
• household power (being from a well-connected family)
• group power (being a member of an ethnic, religious or other type of group that has a dominant social position or, for example, being male in male-dominated society)
• economic power (commanding financial and other economic resources in overwhelming amount with respect to the resources of others)
• political power (having a powerful supportive constituency or access to political leadership)
• legal power (having strong expert legal counsel, or privileged access to courts)
• coercive physical power (having police or military backing or weaponry)

These forms of power are often implicit or hidden rather than explicit. ACSC has found that trade-off decision-making is more often a reflection of dominant socio-economic thinking than of the level of ecosystem knowledge. Actors who can exercise various types of power, do so to overcome, distort or impose upon often more legitimate claims. For example, in Peru, the former CITES management authority indicated that powerful exporters not infrequently go over the head of the agency, to the minister or even the office of the president, if they do not receive a CITES export permit in the first instance from the management authority. The use of political connections relates to broader issues
of governance, including transparency, corruption, and other aspects of the rule of law (see Key Factor 5.2.2 above).

ACSC’s interest in how power affects trade-off decisions has contributed to recognition of the need to look at different stakeholders and actors at all levels, from the state to the community. In this context we see pluralism as an important element in improving the ability of key actors to identify, analyze and negotiate trade-offs. While trade-offs are experienced and understood from a variety of legitimate perspectives, different groups and interests use differing models, metaphors, and ways of understanding the complexity of trade-off decisions. These perspectives highlight certain trade-off dimensions and obscure others. ACSC research indicates that improved formulation of problems can occur when new ways of understanding conservation and development trade-offs are developed collaboratively and iteratively with the input of multiple voices and multiple perspectives.

There are, however, risks involved in pluralist approaches. One is that the stakeholders most likely to negotiate effectively are those with power and influence, precisely those who probably already dominate decision-making. Those least likely to achieve their desired outcomes will tend to be the poor and politically marginalised — people who are already relatively disempowered. There are a number of reasons for this:

- Negotiations cost time and money, especially when they involve large commercial interests or government bureaucracies. Some negotiations continue for months or even years and people from rural communities (especially poor people) cannot afford to commit the large amount of time required, losing income while they do so. They frequently cannot afford to pay for professional support (such as lawyers). Some stakeholders simply have more staying power during protracted negotiations or court processes.

- Negotiations often take place in an atmosphere dominated by technical language or legal frameworks inaccessible to the poor and to non-specialists.

- Where stakeholders come from different sub-groups within a community, wealthy local people are more likely to have good working relationships with and influence on government agents and decision-makers.

- The parameters or criteria for decisions and decision-making are often set in advance by non-local actors. For example, government policies may limit the room for negotiation and rule out meaningful solutions (also see Key Factor 5.2.4 below).

- Community participation is often in the form of attendance by community representatives, sometimes appointed in some way by the community and sometimes selected or appointed by outsiders. Expectations of the role of representatives, even when they are regarded as legitimate by a community, may vary. For example, in Tanzania, representation by local leaders was seen by outsiders as having a right to reach agreement on behalf of a community, whereas community members viewed them as mere intermediaries.

Peoples and groups inevitably exist within social and political configurations of inequitable power relations, and this shapes their ability to act in the world. Such power relations include the legitimacy of different forms of knowledge-making, the unequal distribution of knowledge, forms of
agency that may be hidden, anti-politics, fugitive values, and many of the other aspects of contemporary thinking about power. Thus, trade-off methods that assume clarity and commensurability of the trade-off objects themselves (through the processes of exchange through which trade-offs are made; the institutional cultures in which they are justified and made; and the very idea that the making of trade-offs themselves is or can be a visible or transparent decision process) is likely false. The best that can be done is to try and level the playing field. ACSC has found that accommodation that genuinely reflects the interests of groups involved in negotiating trade-offs is most likely to occur where a combination of state and civil society governance institutions provide for:

- the discovery and transformation of values and interests through mutual learning among interest groups,
- iterative cycles of bounded conflict and negotiation,
- public, transparent decision-making,
- checks and balances in decision-making among groups, and
- explicit support for disadvantaged interest groups.

In this context of often highly skewed opportunities for satisfactory negotiated outcomes for many poor or disempowered groups, creating a more level playing field for landscape-level negotiations is crucial. ACSC, working with IUCN, James Cook University in Australia and the MDP program at Columbia University, has been working to further develop visualization techniques with rural communities – especially those members who are disempowered. Visualization techniques have been developed as a very simple way to communicate visions and perceptions of possible future landscapes by using images (drawings, graphics, photos, animation etc). With ACSC support a manual on Visualization Techniques has been developed as facilitators from different institutions (NGOs, university researchers, government staff, and small associations of local communities) have shown an interest in applying different visualization methods as part of their work. They see visualization applications in planning and understand better the complexity of the situations and conditions of the place where they work or live. These “rich pictures” also complement other support from photography and video as baseline data and enable us to visualize changes in a landscape. We have also found that visualization can also complement other tools such as system modelling for instance with STELLA, the Poverty Toolkit, Capital Assets Indicators, CRiSTAL (Community-based Risk Screening Tool – Adaptation and Livelihoods), and the Decision Theatre at Arizona State University.

5.2.4 Key Factor: Critical temporal events shape policy discourse and decisions about trade-offs within conservation and between conservation and other social goals

Every four to ten years there are significant events that take place that focus the attention of the world’s decision-makers on a set of key environmental issues (e.g., the climate change conference in Copenhagen; CBD CoP 10 in Nagoya) or the program of an international organization (e.g., IUCN’s World Conservation Congress). These events play an especially important role in setting conservation and development priorities for international institutions, governments, donors and NGOs in terms of what gets funded and the transmission of norms. An issue that emerged from ACSC’s work was the need to better understand the role that critical temporal events like the IUCN World Conservation Congress (WCC) or the Convention on Biological Diversity CoP process play in
conservation decision-making and the negotiation of conservation and development trade-offs across scales. We found that these events are significant in understanding how global conservation and development agendas are shaped and executed. While events such as the IUCN WCC are presented as fora in which formal decision-making processes are carried out, there are an equally significant number of informal processes that play a crucial role in determining how conservation and development trade-offs are made (also see Key Factor 5.2.3 above).

To improve our understanding of the role and importance of temporal events in shaping policy discourse, ACSC helped develop the concept of collaborative event ethnography. It was felt that an ethnography could provide a useful tool to ACSC that would bring together social scientists and conservation practitioners; evaluate the mixed success of conservation and development projects; and address issues of complexity that affect conservation outcomes. A detailed study was made of the IUCN World Conservation Congress in Barcelona in 2008 and this work has been continued with studies of events in Peru and of the CBD CoP 10 in Nagoya, Japan, with funding from the National Science Foundation.

ACSC’s collaborative event ethnography at the IUCN WCC highlighted a number of key aspects about how critical temporal events influence policy discourse and decision-making:

**Communication:** The structure (agenda and theme) of these events is a key aspect in facilitating communication and helping attendees navigate a complex schedule. Often, the structure acts as a barrier to the kind of communication and interaction that might encourage dialogue between actors with different ideological orientations toward conservation and development. At the IUCN WCC the event structure had a channelling effect, encouraging like-minded participants to ‘travel’ with each other through the event and reducing the likelihood that there would be engagement in more productive and creative interactions that bring diverse audiences together. Consistently, the same people showed up to similarly themed sessions.

**Translation:** Translation emerged as a significant issue, most directly during the process of developing consensus texts on motions to be considered by the event (also see Key Factor 5.2.5 below). For example at the IUCN WCC, three motions had been consolidated into one. The three original motions were in English, French, and Spanish, while the consolidated motion was only available in English. The result was that a large number of participants were unaware of the final text, and left out of the final discussion and decision.

**Process:** Most of these large temporal events are hosted by secretariats responsible for the oversight of international conventions (notably the UN) or large international organizations (e.g., IUCN). Communicating governance structures to participants has always been a challenge, whether it is to field biologists, to representatives of indigenous and local communities, the private sector, or to government members. For example, at the IUCN WCC we witnessed misunderstandings over IUCN governance structures and processes as new voices have entered the arena – especially with regards to public-private partnerships, a major theme of the congress.

**Linkages:** Many participants at the IUCN WCC framed their participation not simply with reference to
IUCN but with a broader range of institutions and processes. Resolutions presented at the WCC referenced previous WCCs, the CBD, and other international processes. Individuals and organizations that were focused on specific issues charted their activities and inputs with reference to previous and future meetings and with reference to the known positions of other actors and organizations that were present. Informal coalitions of actors with experience from previous meetings and congresses were able to move debates forward within a discursive context that shut out some alternate views. Thus, whatever transpired at the IUCN WCC must be framed with reference to a broader temporal continuum and a broader social network of actors.

ACSC’s experience with collaborative event ethnography illustrates several points are useful in understanding the role critical temporal events in shaping policy and discourse – particularly the role of performance and orchestration, and the ways that informal assemblages of actors work together to drive discourse forward. By performance and orchestration, we mean the ways that individuals and groups use such events as a stage to lay out their own agendas—and the ways that these performances attempt to orchestrate the flow and outcomes of the event itself. Additionally, because such events link networks of individuals and institutions through a long-term series of other processes and events, understanding what go on at such meetings requires that we pay attention to longer-term processes and the events that link them.

A significant result of these critical temporal events is how donor funding is allocated to conservation and development. Decisions made at events concerning issues and funding allocations become the policy of donor agencies in how they allocate funds and accord support to conservation and development. In Peru, for example, virtually all the government agencies, NGOs as well as other actors, receive donor funding and/or technical assistance: the Management Authority for CITES, the Ministry of Environment (MINAM), the Protected Area system, the Office of Environmental Education, the Wetlands Program, the overseer of resource extraction, the BIOCAN project, and so on. Donors play a variety of crucial roles: providing information (identifying problems, norms and possible approaches); shaping policies (bringing in experts to advise on national and sub-national conservation strategies and laws); providing financing (often the largest share of project funding, particularly in Asia); and even facilitating compliance and enforcement (e.g., monitoring threatened species for CITES listings). Donors have a particularly strong role to play in a smaller, poorer developing country like Vietnam, which often uses donor-supported pilot projects as first examples of new concepts, which help to clarify national policy.

By “critical temporal events” we do not simply mean meetings but also the passing of laws, international treaties or making of decrees as well as the serendipity of unexpected events such as the impact of the Exxon Valdez oil spill on decisions to drill for oil in ANWR (see Figure 1). The formal transmission of norms from global institutions to local authorities primarily happens through the enactment and enforcement of national laws, often accompanied by regulations, strategies and policies that are prompted by and implement international obligations. In a few cases this process is rapid and direct: following approval of the U.S. FTA, for example, the president of Peru issued nearly 100 implementing decrees, on environmental as well as trade matters, within a matter of months. Such speed often creates its own rule of law problems; in the Peruvian case, the new rules were not approved by the legislature, but issued by the executive under authority of a general law authorizing
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Presidential decrees to increase the nation’s competitiveness (see Key Factor 5.2.3 above). More often, however, the legislative process is complex and lengthy; the links to international obligations may not even be clear.

The primary reason why choices over trade-offs are not externally imposed by the institutions is because of what we have identified as two systematic “breaks in the chain” of communication on global norms: (1) downward, as conservation institutions and government elites operate actively at the global and national levels adopting resolutions, laws and strategies, but implement those norms on the ground in weak, uneven and under-resourced ways, rarely responsive to local needs and interests; and (2) upward, as bottom-up projects provide communities, NGOs and other actors with local knowledge and a practical orientation, and as those local actors experience real trade-offs, but can find few opportunities to penetrate global processes with their ideas and views. ACSC’s research suggests that many of these fora are attended primarily by “global elites,” including national bureaucrats and NGO leaders, rather than by people knowledgeable about and engaged in local issues. Global elites dominate and orchestrate the framing of agendas for these meetings, and guide the outcomes. As a result, norms are adopted that are more likely to reflect global issues and perspectives, and do not work as well as they could in transmitting local feedback (or for that matter in transmitting conservation norms downward). To develop conservation in a social context, we must identify ways to overcome both of these systematic breaks.

Critical temporal events (environmental conventions, conferences, meetings, the passing of laws, the establishment of norms and the unexpected event) focus attention and bring together governments, donors, NGOs and other civil society groups. These events influence donor policy and funding and have some of the strongest influences on national and local biodiversity policy and activities, even more than conservation–oriented international NGOs.

5.2.5 Key Factor: The hegemonic use of language can distort how trade-offs are framed

ACSC became aware of the importance of translation to understanding trade-offs early in its development. Early in the ACSC process, our Peruvian colleagues commented on the difficulty of translating the concept of trade-offs into Spanish. They indicated that there were as many as six possible ways to translate it but that none quite fit the English language meaning. Our Vietnamese colleagues responded by saying they were having the same difficulty noting that the only translation they could come up with was “compromise from a position of weakness” and said it would be impossible to get any kind of government engagement at a meeting with that kind of theme. At a time when English has emerged as a globally dominant language, it is worth considering what role language hegemonies play in transnational conservation and development projects, particularly as these pertain to the calculation of trade-offs. Global conservation practices are increasingly reproduced through categories and managerial rhetoric that emanate from the Global North. At what point do we encounter the limits of commensurability in the process of translating an idea such as trade-offs across a broad spectrum of languages? Conservation practitioners have not adequately acknowledged the language hegemonies that permeate both global circuits of conservation knowledge production and practice, and the politics of translation that emerge as conservation
actors in the Global North and Global South engage across the differences of language in the conceptualization and enactment of trade-offs.

Translation is an issue not only in the domain of language, but also with respect to exchanges across or between different forms of expertise. This has political implications for transnational conservation and development initiatives. Translation has both the potential to impede an initiative’s effort, as well as to build bridges among the different groups involved which are critical for the project to succeed. For example, research on problem bounding and trade-offs, co-conceived by Bryan Norton and Paul Hirsch and executed by Paul Hirsch, was designed to apply Norton’s insights regarding problem bounding both to substantive conservation issues and to the collective research process as it unfolded. Fourteen in-depth interviews were conducted with a mix of academics and practitioners - working across five continents - who participated in ACSC's work. The interviews aimed to uncover differences and similarities in the way people "bound" conservation problems and the social context they are embedded in. Interviews were complemented with participant observation as well as data gathered at workshops in Tanzania, Vietnam, and Peru.

An important early finding was that differences in problem bounding are not merely a question of which threats are identified, or which features of ecological or social systems are deemed worthy of protection, but involves peoples' use of different logical frameworks for interpreting complexity. To the extent that this goes on unacknowledged, diverse ways of interpreting complexity tend to function at cross-purposes and thus pose a barrier to collaborative understanding across disciplinary and cultural boundaries. Several of the different logical frameworks at play in the conservation arena were apparent in the internal discussions of the ACSC team, and were particularly evident in the disparate reactions engendered by the trade-offs concept. While the definition of trade-offs given at the initiative’s outset was "management choices," several other meanings of trade-offs were identified (including trade-offs as an accounting problem, trade-offs as losses, trade-offs as compromise and negotiation, trade-offs as sacrifice, trade-offs as diverse perspectives, trade-offs as a step towards win-win). Each meaning, when applied to understanding trade-offs in particular conservation settings, can be seen as providing a different logical structure that results in very different identifications and calculations of trade-offs.

In the Madre de Dios region of Peru castañeros (Brazil nut collectors) and conservationists have different conceptions of nature and different socio-political goals. However, despite their differences, they both want to protect the forest against threats caused by certain local social dynamics, such as illegal timber harvesting and gold mining. These threats create a sense of crisis for both groups which they respond to with action. This sense of crisis is where the process of translation occurs. By sharing a threat, both groups appear on the side of conservation, thus generating a shared identity. Conservationists want to conserve the forest and in order to do so, they provide assistance to castañeros. Castañeros, on the other hand, want to improve their livelihoods and, therefore, conserve the forest in order to do so. In other words, each group’s vision of the social conditions in this context led them to look for political measures to contest the dynamics that would harm the environment. They build alliances that enable them to take coordinated action. It is through this process that translation occurs. It is a need for common ground to overcome a mutual antagonism that compels these groups to build bridges in order to create an alliance.
Although conservation NGOs and local communities have often found themselves on the same side in conflicts with extractive industries, this does not necessarily mean that the agendas of conservation practitioners and the development claims of local populations are always complimentary. In the Peru example, the global discourse of conservation articulates with local representations of nature in a way that permits short-term programmatic success. Nevertheless, their alliance could be jeopardized if conservationists assume that their conception of development is the same as that of the castañeros. Though they share some points in common, there is little attention paid to the ideological implications of development. In Peru, to be developed is often seen as becoming an urban citizen with a high level of education. Such a view of development could undermine the long-term success and sustainability of the program as the children of the castañeros leave the forest to pursue education and employment in the cities. Through its work in Peru, ACSC’s exploration of translation as a process with political and social implications has grown beyond the limits of linguistic analysis into ways in which social actors understand and build alliances with others.

ACSC’s experience arising from the background of its participants (see Annex 1) and the way it was structured meant that learning to effectively speak across difference is not just about learning to communicate one’s message clearly and coherently in a form that is accessible to a broad audience. It is also premised on recognition that translation is not binary – as between two languages or disciplines – but multidimensional. We must learn to communicate with a range of different kinds of audience. Through its own experience, and through research (see Key Factor 5.2. 4 above), ACSC sees significant barriers in communication existing in those zones of exchange between academics and the public, between academic disciplines, between academic disciplines and the fields of conservation practice, and between languages. In these zones, communication takes place along various continuums of dialogue and debate, conflict and negotiation, and power and interests. Knowing when and where to move along the various continuums of communication allows for new understanding and views to be included in the conversation. At the same time, individuals have their own mental models for viewing the world that are informed by aspects of their culture, whether that culture be one of socio-economic status, nationality or ethnicity, disciplinary training, or organizational membership.

Learning to understand and appreciate the values of another’s culture, discipline and/or position within the variety of conservation activities ranging between academia, policy and practice opens the possibilities for shared communication. ACSC’s conception of shared communication is also based on the recognition that communication entails more than delivering information. Learning to listen is a fundamental component of learning to communicate. This involves developing an awareness of the dynamics of cross-cultural communication and the ways in which use of specific terms reveals conceptual and methodological disciplinary legacies, as well as an awareness of the different forms of accountability and credibility to which actors in different disciplines and fields of practice must adhere. ACSC defined listening in this context as active listening, which involves an intentional awareness of the needs and interests of another. As an active listener, an individual should be able to accurately communicate what others have said to their satisfaction. Active listening leads to asking questions in a way that opens the lines of communication (rather than defines or confines them).
Asking questions in the right way should assist participants to identify and reframe problems in language accessible to all stakeholders.

5.2.6 Key Factor: The spatial and temporal scales over which conservation and development benefits are realized – as an outcome of trade-offs – are rarely commensurate with the scales over which costs are borne

All natural resource management systems have multiple scales of interaction and outcome. Interventions at global, national and household scales invariably have impacts at other scales. ACSC recognizes the need to reconcile spatial and temporal scale issues. Trade-offs imply that all decisions, and subsequent actions or investments, have real, short, medium and long-term costs and benefits, as opposed to win-win scenarios, which have only transitional costs (implementing change). These costs and benefits are borne by different people over different spatial and temporal scales. The contexts and dynamics associated with particular scales, and interactions or flows that become important with increasing scale pose serious challenges.

The catchment and basin of the Great Ruaha River in Tanzania presents an example of how different spatial and temporal scales relate. Water from the Usungu Wetlands on the upper Great Ruaha River has many uses, users and cross-sectoral importance (Figure 3). Water is used for irrigation of large- and small scale rice farms, and it is used for household purposes. Water powers the hydro-electric turbines that provide more that 75% of Tanzania’s electricity. Additionally, it supports wildlife and thus tourism in Ruaha National Park. Furthermore, the water is used for brick-making (commercial and domestic), provides important seasonal pasture for pastoralists and good fishing (an important source of protein) for fisher folks. Since 1993 the wetlands have been drying up with significant ecological, economic, social, political and legal implications. The drying up of the wetlands has attracted the attention of individuals, government and civil society organizations at local, national and international levels. These stakeholders hold varied and complex perspectives on the use of water from the Great Ruaha River. The Tanzanian government views the river at the scale of the entire watershed and over a long time period as a sustainable source of power for electricity generation. It was the recent drying up of the rivers leading to cuts in electricity as far away as Dar es Salaam, the capital, which led government to look more closely at resource management in the catchment area and propose more restricted management regimes. Rural communities see the river as a source of food, notably small-scale agricultural products and fish. Most households are poor and subsistence-based looking at benefits over short time frames. Pastoralists see the Usangu wetlands as an important seasonal source of grazing for their livestock. The international community sees the wetland and river as a source of large-scale agricultural development (commercial rice by the World Bank), and/or wildlife and tourism (international conservation organizations) necessitating the maintenance of water flows over long time periods.
Taking into account the complexity of interests in the Ruaha/Usangu region, ACSC attempted to explicitly analyze the cross-scale trade-offs in the management of socio-ecological systems. Figure 4 shows the impact evaluation matrices for each of five management options in five participant panels. There are some interesting discernable patterns that emerge from the comparison of the five panels of Figure 4. For the management option of National Park (Figure 4a), participants perceive much better impacts (closer to 100) for biodiversity protection and ecosystem services, especially at international and national scales, but the impacts on socio-cultural values and social equity are considered to be more adverse (closer to 0). National park status is perceived to have a better impact for economic welfare at the national scale but the local scale is perceived to suffer very adverse economic welfare impact from keeping Ruaha as a national park. In contrast, Figure 4e shows the perceived impacts when RNP is declared open area: biodiversity protection, ecosystem services and economic welfare at the international scale are perceived to suffer the worst impacts from opening up Ruaha National Park to broader development. However, participants perceived that this management scenario would have very positive impact on economic welfare, social equity and the protection of socio-cultural values at the local scale. The management option of multiple use area (Figure 4d) shows an interesting pattern of perceived outcomes/impacts: while this management option will have significantly adverse impact on the protection of biodiversity and ecosystem services at the international scale, participants perceive that this option will have a very positive impact on the protection of ecosystem services and socio-cultural values at the local scale. National level impacts fall between local and international scales, as shown in figure 4d. Similar patterns can be assessed in figures 4b and 4c for the management options of game reserve and game controlled areas. Overall, participants appeared to have a consistent and sharper perception of the impacts on the valuation criteria when different management options are pursued.
ACSC’s work in Tanzania and in other sites shows that conservation landscapes, including managed or human-dominated patches of land, will deliver different ecosystem services at different spatial and temporal scales. Examples of more localized services might include air quality regulation, erosion control, or cultural landscapes. Examples of more regional or global services include carbon sequestration, disease regulation, or ecotourism. This indicates that generally the greater the amount of land that is conserved or managed for particular ecosystem services, the greater the flow of services. This flow can also include disservices, such as disease transmission or a compromise in air quality due to emissions of volatile organic compounds, which must also be accounted for. There
is, however, a decreasing marginal return to benefits as more land is conserved or managed and the benefit of ecosystem services saturates. (The first acre of land conserved will deliver more in the way of recreational services, for instance, than the millionth acre of similar land conserved.) We assert that often, though not always, the benefits of conservation that flow to the global community exceed those that flow to the local community. This is because many ecosystem services are delivered well beyond the boundaries of conservation activities, and are delivered to more people. Politically, powerful actors at larger scales of social organization can have significant influence over the policies and management of socio-ecological systems at relatively smaller scales for several underlying reasons, including: the greater mobilization capacity of interest groups at higher levels; the heterogeneity of interests and attitudes across local areas; and the dominance of national mass media by higher levels. All of these factors influence how trade-off decisions are made.

Similarly, there are costs to conservation activities, including the opportunity costs associated with devoting land to conservation activities and not to other uses. These marginal costs will rise as more land is conserved. Again, we assert that in many cases, the marginal costs associated with conservation will be higher at the local (small) scale than at the global (large) scale, largely due to the increased opportunity costs to local people. With less land at smaller scales, there is less flexibility to achieve a desired mix of conservation activities, extractive activities, and other land uses.

Thus there is often a “gap” between the set of conservation activities that would meet the global public interest and the set of conservation activities that would meet local or national interests (Figure 5). We argue that the cases that should be of interest for global conservation and development are those where: (a) the true global (or international) interests in conservation exceed the local (national or sub-national) interests; and (b) the “gap” between local and global interests is largest. With limited resources, the conservation community should focus on those locations where the global interests are unlikely to be met with local actions and decision-making. These areas may or may not overlap with the traditional focus on biodiversity “hot spots”; in many cases, new and fundamentally different conservation priorities might emerge from such an assessment.

This is an extremely stylized perspective of local and global decision-making. Our graph, for instance, presupposes that people can adequately assess the true social value and true social costs of conservation activities (in almost all instances, these differ from the market costs for land) and, further, that the scale-relevant institutions and policies are in place to allow conservation outcomes that balance these social costs and benefits (e.g., Figure 4 above).

**Figure 5: Local and Global interests in conservation.** Land will be conserved as long as the per hectare benefits exceed the per hectare costs. Thus $A_L$ represents the amount of land local decision-makers would choose to conserve if there is no influence or payment from the global community; $A_G$ represents the amount of land the global community would choose to conserve in weighing costs and benefits. When $A_L$ is close to $A_G$, most of the global interest in conservation is being met. Whether or not $A_L$ and $A_G$ can be realized will depend on the structure of property rights. While other functional forms are possible, the value of a conserved hectare when little land is conserved would tend to be high; as more land falls under some sort of protected status, benefits would decline. Thus the benefit curves slope downward. Because a particular patch of land can deliver both local and
global benefits, and global benefits should include the sum of local benefits, it is assumed in most cases that global benefits will exceed local benefits. Similarly, local opportunity costs may well be perceived to be much higher than global opportunity costs (e.g., a particular patch may represent the only lumber-producing region from the local perspective; the global community will perceive a lower opportunity cost because there are other lumber producing regions around the world). Estimating costs and benefits at either scale is challenging—not all residents will hold the same values, and the method of aggregation used to reflect local (or global) preferences can, in practice, mask the needs and preferences of the disenfranchised.

Consider some of the primary reasons gaps might emerge. The first set of problems surrounds the capacity to assess the true social costs and true social benefits of conservation. Many ecosystem services, by virtue of being public goods, are not traded or valued in markets. Hence their value is often taken to be zero by decision-makers. Conversely, the true social opportunity cost of foregoing some activities, such as mining, is often inflated, in part due to imperfect markets and subsidies (either active, through money transfers, or passive, through failure to charge to an activity the environmental degradation it causes). Thus, governments and decision-makers often fail to accurately assess the true social costs and benefits of conservation. Conservation organizations have tried to address this problem through engaging in local participatory processes, but this may not be where the problem lies. In particular, it is more often higher-level decision-makers who react to
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market values over social values. At the very least, then, conservationists need to focus participatory processes on those who represent a broader constituency. In addition, though, conservationists would be well served to promote indices that incorporate the value of the biosphere. At the very least, this would mean adopting a system of national accounts that incorporates measures of natural capital in addition to built and financial capital (note this is what TEEB is attempting to do). When this is done, a very different set of incentives for promoting national wealth emerges, with conservation or sustainable use of natural resources receiving higher priority.

There are two main challenges to incorporating an ecosystem services perspective into conservation planning. The first is simply to identify the flows of ecosystem services, with particular attention to the scales or locations in which those services are delivered. The second is to identify and implement the appropriate strategies and mechanisms for fully accounting for ecosystem services in land-use decisions.

Identifying and accounting for ecosystem services in a relatively complete fashion would lead to landscape mosaics ranging from fully protected areas to mixed-use areas, and offered reasonable progress on traditional conservation goals. The danger is that incomplete assessments (e.g., focusing on only a few ecosystem services) are likely to create landscapes that drift significantly from the optimal (from a public perspective) and degrade the capacity to reach traditional conservation targets.

This happens for two reasons. The first is that local actors (private land owners, public officials) will account, in land-management decisions, only for those services for which they can receive a benefit. These are either marketed services (e.g., agricultural products, ecotourism) or services whose benefits can be realized locally (e.g., managing for pollinators or soil fertility). Services whose benefits are delivered regionally or globally, and for which there are no markets or other mechanisms to create incentives for local management, are simply ignored. These can include such things as disease regulation, maintenance of the genetic diversity of the global crop base, preservation of potentially important but unexplored pharmaceuticals, and regional climate regulation. We assert (though this needs to be demonstrated more rigorously) that many of these global or regional, and unaccounted for, services fall in the category of regulating services and are more dependent on maintenance of genetic, species, and landscape diversity than are the other services of notice to local managers. Therefore, ignoring them leads to greater than optimal degradation of these forms of biodiversity.

The second problem arises because the mechanisms for accounting for these services—increasing the incentives for local managers to maintain flows of services whose benefits are realized globally—are lacking. Payments for ecosystem service (PES) schemes are one such mechanism, but they are not appropriate for all ecosystem services. PES schemes at times need to be complemented by, or replaced with, other policy interventions or mechanisms, such as securing land-tenure rights, promoting appropriate zoning regulations, or simply limiting or banning certain activities.

A central challenge for conservation, then, is to identify those areas where global and local interests in ecosystem services most diverge (that is, identify those areas where local land-use decisions are
most likely to compromise transboundary flows of regional and global services), and identify the mechanisms or interventions that increase incentives for local decision makers and land owners to account for those transboundary flows. Doing so would significantly widen the scope of “conservation activities” beyond project design to design and implementation of critical global or local institutions and policies.

5.2.7 Key Factor: Appropriate tools, methods and approaches that measure and navigate trade-offs are necessary

The selection of a tool, method, or approach for understanding or negotiating trade-offs in a given context is an important decision in and of itself that is often not adequately reflected on. Every tool, method, or approach (TMA) focuses on a certain set of issues and dynamics at the expense of others, and imbues those issues and dynamics with certain meanings, constraints, and possibilities (while neglecting alternative meanings, constraints, and possibilities). The most salient example of this are the TMAs that rely on assigning monetary value to dimensions of ecological or human well-being, which can be both powerful and problematic depending on the particular context and its social and ecological complexity. Notable examples of this are the TEEB initiative recently highlighted at the CBD meeting in Nagoya, Japan, and the Natural Capital Project at Stanford University. But this is not unique to tools that rely on economic forms of valuation – any TMA, from multi-criteria decision analysis to political ecology, simplifies complex phenomena in particular ways, and highlights certain problems while obscuring others. This reveals that the TMA selection process itself involves trade-off decision-making, and thereby underscores the importance of reflection for TMA selection in contexts involving trade-offs.

Given these insights, ACSC in collaboration with CIFOR, analyzed how TMAs are employed to deal with conservation and development trade-offs. For the purposes of clarity we defined tools, methods and approaches as follows:

A tool refers to specific instrument used to achieve an objective. The objective can be related to learning and/or intervening. Often, a tool refers to a specific entity (e.g. a device, a piece of software) by which a method or approach is implemented. In the field of conservation, examples of tools include transferable development rights and payments for ecosystem services, as well as specific software applications such as Miradi and InVest.

A method refers to a systematic means of accomplishing something, or a procedure that follows a specific plan. Methods can also consist of means or procedures for gathering and analyzing information, planning, negotiating, reconciling conflicts, and so forth. In the field of conservation, examples of methods include community-based conservation, scenario planning, stakeholder mapping, and multi-criteria decision analysis.

An approach refers to the broader frameworks, strategies, theories, and programs that provide the big picture within which tools and methods are applied. In the field of conservation, examples of approaches include the ecosystem approach, adaptive management, the rights-based approach, and political ecology.
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We undertook a series of interviews with a selection of leaders from organizations that frequently deal with conservation and development trade-offs. We defined leaders as those who have legitimate authority and capacity to guide, direct, or make project-level and/or program-level decisions within their respective organizations.

Interviewees represented a diversity of perspectives: leaders of local, national, regional, and international programs. Interviewees drew from a myriad of experiences, had varied periods of tenure in their respective organizations, and time doing conservation-development work. Interviewees’ areas of expertise included organizational operations and training, executive strategic direction, thematic or issue specific projects and initiatives, funding allocation, conservation case study selection, and more. Key findings included:

5.2.7.1 Half of the interviewees reported that they do not explicitly consider the multiple values at play or were unable to articulate how they do. Research in ACSC and elsewhere has shown that without due consideration for the values that people hold or associate with natural resources or their environment, inappropriate conservation and development interventions can result. We also believe that the same can be said of selecting tools or methods. It is critical to establish a baseline of information about the many perspectives and values that demarcate a “problem” or that are engaged in the issue so that thoughtful analysis about what TMA might be the most appropriate. For example, selecting a tool that favors things that can be counted only in monetary terms in an environment which needs to understand the value of things for their spiritual aspects may not be considered adequate for fully understanding the implications of trade-offs, or for calculating the actual “trade”.

5.2.7.2 Less than half of interviewees responded that they use TMAs to consider the power dynamics at play. Findings about power and values appear to be interrelated. As related to Finding 5.2.7.1 above, failure to assess or the inability to articulate the values at play in situations involving trade-offs is problematic because the so-called importance of specific stakeholders – and power dynamics and imbalances – often only becomes known and identified as values are assessed. This suggests that certain stakeholders or perspectives could be overlooked due to power dynamics that might otherwise be made salient in a values assessment (also see Key Finding 5.2.3 above). Even when full “stakeholder assessments” are conducted, a failure to explicitly assess the power dynamics related to the values at play can lead processes and organizations to exclude, or fail to consider, critical issues central to the interventions that are developed and implemented. Decision-making processes for TMA selection that address values and their relation to power are lacking, yet important, and could improve process and/or organizational operations and outcomes. Similarly, failure to assess power dynamics can also lead to narrow or underdeveloped analysis of important factors at play in decision-making processes related to trade-offs.

5.2.7.3 A majority of interviewees identified partnership as a key value for their own organization – stressing it even more than conservation and development – and cited the broadest range of partner-related TMAs. This suggests that the most creative and expansive thinking being
done is in the context of partnership. The logic is twofold. First, the finding that partnership is widely valued could be used to develop and frame tools or heuristics for trade-off thinking and decision-making to produce rich results. Such framing is likely to be positively received because it coincides with existing organizational values. Second, the context of partnerships produced the broadest range of creative thinking and discussion about TMAs in the interview. This finding can be leveraged to develop group processes that frame the problem of understanding trade-offs as a partnership issue, which is likely to generate a very broad and creative array of thoughts and strategies. Most organizations involved in conservation will cite partnerships as absolutely critical for achieving goals and objectives—the problems are too large to work on alone. However, there are vastly different views on what constitutes a partnership, and this too needs to be understood in the context of selecting and understanding TMAs.

5.2.7.4 Each organization—and members within the same organizations—working to identify/understand trade-offs listed unique tools and methods. While this might be understandable given the plethora of TMAs available and also given the uniqueness of the many contexts in which conservation organizations work, the fact that TMAs are typically selected without a full situation analysis being undertaken—for example, conducting limited or no assessment of the array of values and power dynamics at play (Findings 5.2.7.1 and 5.2.7.2)—leads us to conclude that individuals are not selecting based on prior knowledge and understanding of a given social context. The same can be said of selection of the tool or method itself, as there is rarely any type of analysis of the TMA to understand whether it would suit the context. Typically as we see in the key findings of this research, TMAs are selected based on what’s in current use in the organization or from personal experience, not from the appropriateness for the issue or problem at hand.

5.2.7.5 Each organization also reported both unique forms that their TMAs come in, and methods for training or introducing them to people (guidebooks, software, coaches, case studies, online courses, etc.). It is interesting that the conservation community speaks a lot about partnerships and working collaboratively to be able to achieve the important and bold goals that they have, yet in the area of TMAs there is not as much sharing of what works and does not as you might expect. Having said this there are more and more collaborative endeavors such as the Natural Capital project, ACSC, the Conservation Measures Partnership, the Cambridge Conservation Forum and Initiative, and the Poverty and Conservation Learning Group that do work to share lessons and create common tools and approaches (e.g. InVest, Miradi, Integrative Framework). It is perhaps worth a word of caution that while the partnerships for creating these and sharing are excellent, the tools and methods that are created still need to be examined for how and when they are used as the collaborations between the organizations does not in and of itself help you understand the context in which one is working.

5.2.7.6 Interviewees emphasized interest in “harnessing collective lessons learned”—including better leveraging partnership and improving joint learning—to decrease time and increase effectiveness. Findings 5.2.7.4, 5.2.7.5 and 5.2.7.6 indicate that there are missed
opportunities for shared strategizing, learning, and exchange of best practices. And, many organizations suggested ideas for improved collaboration within and across organizations, including a shared information repository, a collective case database, cross-agency training, conferences, and more. It may be that the collaborations that do exist do not yet do enough to “advertise” what they are working on, or that the collaborations are considered too “private” and/or that the people in the organizations that were interviewed view what is being worked on is not targeted correctly in terms of understanding and negotiating trade-offs.

5.2.7.7 Organizations struggle most with the discussion-deliberation and negotiation-navigation pieces. Many conservation organizations in the past few years have found themselves more and more often in the negotiation arena as their tactics and strategies include getting directly involved with policy development and reform. It is possible that their staffing and approaches have not caught up with this change as rapidly as they could. In addition, many organizations admit that the amount of research that they do or that they have access to is too limited for their needs in facilitating discussion and being involved in the negotiation process, so that they may see these parts of a process as particularly challenging. This suggests that knowledge-based discussion and access to cutting-edge research would help organizations surmount the challenge of discussion and negotiation.

5.2.7.8 Most interviewees reported using proscribed tools, rather than assessing and selecting TMAs. Our research revealed that organizations tend to use TMAs they are familiar with in a formulaic or proscribed way. When probed to provide further detail, interviewees had four common responses:

- Their organizations typically used the same TMAs (i.e. it was part of the organizational policy and/or culture);
- They simply did not think about it but used what they had used previously, what worked, or what they knew about; however, many expressed interest in learning about what TMAs had been used in other projects or organizations;
- Time constraints prevented them from dedicating time to TMA selection;
- They didn’t know where to go, or were not aware of shared informational or TMA repositories – a finding reinforcing Findings 5.2.7.4, 5.2.7.5, and 5.2.7.6 above and underscoring existing opportunity for greater shared learning and collaboration.

It is unlikely that some TMAs might be dynamic and flexible enough to tailor to every scenario, and simply using a proscribed tool – rather than engaging in some reflective thought or TMA selection process -- may lead organizations to fail to select the most appropriate TMAs for the context. Further, given the level of nuance involved in cases related to environmental and development traded-offs, it is likely to be more strategic to customize tools, methods, and approaches for interventions. Strategic TMA selection should lead to better outcomes. An important area of further study is assessing the impact of the TMA selection process to the resultant outcomes when they are applied.
Interviewees commented on the lack of, and need for, a common language to discuss trade-offs. About a decade ago, the organizations that formed the Conservation Measures Partnership (CMP) also noted that the need for a common language in general approaches was urgent; this was seconded by many in the donor community (see also www.conservationmeasures.org). However, the organizations themselves had strong ties with “their own language” and so a solution proposed was to create a Rosetta Stone that spoke across the “linguistic” divide. It may be that some type of “translator” would be more acceptable at least at the earliest stages. However the importance of language and word choices in defining problems, in understanding contexts, in creating partnerships and in collaborations cannot be underestimated as some of ACSC’s research has shown in Peru and elsewhere (see also Key Factor 5.2.4).

Half of interviewees expressed confusion in distinguishing between a tool, a method, and an approach. Findings 5.2.7.9 and 5.2.7.10 reveal that organizations want and need a common trade-off language and clear definitions of terms. This also elucidates findings from an earlier review of TMAs that relate to conservation and development trade-offs. It is clear that better and clearer methods for communication and classification for TMA selection is necessary, if they are to be useful to organizations. This might also include the creation of a clear typology and methodology for discussing TMAs and their fit, feasibility, strengths, and weaknesses if and when applied to specific trade-off issues.

Many people mentioned time as a key consideration both in terms of selecting a TMA and also for applying them. The need for a quick fix because of the urgency of the issues that conservation organizations are dealing with, or feel that they are dealing with is important. Potentially, if TMAs were more clearly differentiated and better organized, and if there was a simple way of testing a tool or method (approaches being a different category). Some examples include, but are not limited to, ACSC’s Integrative Framework, or a decision tree with certain criteria. This could save people time but still allow for the ‘due consideration” that we believe is needed before selection.

Key criteria used to select cases include organizational policy, situational analysis and fundability. Findings 5.2.7.11 and 5.2.7.12 speak to practical considerations, important processes or heuristics designed to facilitate trade-off decision-making. These observations underscore the importance of considering time constraints, as well as organizational and contextual factors related to cases involving trade-offs that impact organizational process, despite the fact that they are unrelated to case specifics. Finding 5.2.7.11 shows that organizations want – and are more likely to use – reflective processes for TMA selection that are user-friendly and not time intensive. Finding 5.2.7.12 reveals that decision-making processes should not only reflect upon issue or case specifics, but also on organization policies and priorities and situational context.
Table 2: Characteristics of TMAs that interviewees want (and currently lack)

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<thead>
<tr>
<th>In terms of ANALYSIS</th>
<th>In terms of ACTION</th>
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<tr>
<td>• Make trade-offs explicit</td>
<td>• Facilitate dialog, interaction, information sharing within and beyond the organization</td>
</tr>
<tr>
<td>• Make values, process, power explicit</td>
<td>• Link interventions to the organizational strategy and/or long-term outlook</td>
</tr>
<tr>
<td>• Make decision-making logic explicit</td>
<td>• Translate thoughts &amp; plans into action</td>
</tr>
<tr>
<td>• Illustrate stakeholders &amp; suggest best approaches</td>
<td>• Determine appropriate follow-up actions</td>
</tr>
<tr>
<td>• Reveal assumptions &amp; underlying logic</td>
<td>• Are easy and non-time consuming to use</td>
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<tr>
<td>• Show cause-effect linkages</td>
<td>• Develop and use a common trade-off language</td>
</tr>
<tr>
<td>• Assess the big picture</td>
<td></td>
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<tr>
<td>• Share best practices from other cases, organizations, or even other industries</td>
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ACSC’s work on TMAs has shown that while there are some shortcomings in how conservation leaders and their organizations go about selecting TMAs, there is also interest in improving how this is done (Table 2). We believe that more research on TMAs – their selection and their application – is needed to enable and equip conservation and development organizations, as well as the wider community in which they operate, to more thoughtfully decide on which tool, method or approach is appropriate in different contexts. Some specific actionable insights include:

- **There is a great opportunity for collaborative learning.** The high value placed on partnership contrasts with lack of shared learning within and across organizations. Improvements may include sharing:
  - Unique TMAs and best practices within and across organizations and fields/industries,
  - The array of types/forms of TMA training used and available, a need interviewees stressed,
  - Case selection criteria and corresponding TMAs; and
  - A shared resource repository for conservation-development trade-off information and a compendium of past cases.

- **There is a need for a common trade-off language, clear related term definitions, and better classification of TMAs** for better reflective decision-making and tool selection.

- **More work needs to be done to develop multiple or flexible TMA selection criteria for case studies.** Either multiple criteria for both policy-based (fixed) and situational or funding-contingent (emerging / evolving) cases – or a single TMA selection process adaptable to both case types – would be useful to organizations in the field.

In summary, TMAs that make values, power, and decision-making processes explicit would be most useful. Additionally, organizations seek improved processes for the analysis of trade-offs
Advancing Conservation in a Social Context: Working in a World of Trade-offs

within conservation and between conservation and other social goals, as well as corresponding easy-to-use, time-efficient tools and methods for action. Finally, shared learning about TMAs within and across organizations, and even industries, presents one of the greatest opportunities to improve trade-off analysis.

5.2.8 Key Factor: Bridging the information divide between science, policy and practice would improve trade-off decisions

Scientists construct theories, test hypotheses, and refine conceptual models over time. As individuals, they are temperamentally tentative and natural sceptics. They are engaged in a quest for knowledge, understanding full well that their journey is never fully completed. They are trained to acknowledge the limitations of their data and to emphasize how much always remains unknown. Policymakers and analysts are not moved primarily by theory or empirical data. They are driven by political, economic, and social forces that reflect the society in which they live. For the practitioner, policy determines how much they have to work with and science can provide guidance on how to use limited resources wisely. To a large extent, much of the knowledge that informs practice is empirical. As such, it is influenced by what practitioners learn by doing, which may not necessarily be grounded in systematic data collection and analysis. Its utility is most apparent when scientific investigation is constrained by significant methodological limitations. When all of the answers are not in, the scientist’s job is to design the next study. The practitioner, in contrast, does not have the option of waiting for more data. Like researchers, practitioners are grounded in state-of-the-art knowledge and the basic principles of scientific inquiry. Unlike scholars, however, they must respond both to concrete human needs and conservation priorities, and make decisions in the face of inadequate information.

Translating good science into good policy, and then into good practice, is not an easy task (though good policy often results from the lessons of good practice as well). Scientists often say that managers ignore their research and advice, with managers countering that scientists don’t provide helpful solutions for real-world management challenges. A key lesson is that translating science into policy and practice is a messy and inexact business. Adherence to a purist notion of scientific practice is not useful, and “best available” science is often better characterised as “good enough” science. The problem relates partly to the different worlds that scientists, policymakers and practitioners inhabit, with attendant social and cultural divisions between them. ACSC believes building real working relationships across these cultural and social divides is critical for success. Scientists cannot afford to see themselves as detached experts who deliver knowledge to policymakers and practitioners, but must assume the role of collaborative learners and facilitators of knowledge generation in a science-policy-practice partnership. This requires skills and competences that are not traditionally associated with scientific training and career advancement. It can be useful to involve people with specialist expertise in working at the interface between these three worlds.

So where do we go from here? First, we must acknowledge that science, policy, and practice reflect different ways of thinking about conservation and development. Second, we must recognize the imperative of combining the best of these three perspectives. It is not a question of the relative value of reflective thinking versus action orientation. It is not a matter of assigning greater weight to
empirical data versus professional judgment. The challenge is to develop creative ways of blending all three cultures to be open to different ways of thinking about the complexities of conservation and development as well as the resulting trade-off choices that will have to be made.

Simply bringing all the relevant understanding from a wide array of disciplines (i.e., a multi-disciplinary approach) does not in itself guarantee success. Approaches are needed that bridge disciplines, take into account history and context and, in many instances, make people and institutions the focus. Successful approaches require people to think about and operate at the interface between disciplines rather than within them. Knowledge-brokers can provide the key link between disciplines, science, policy and practice.

To address this ACSC is promoting a more realistic and reflexive way of acknowledging trade-offs through integrative thinking (see Key Factor 5.2.9 below). By integrative, we mean something different than interdisciplinary or integrated. An integrative approach is first of all pluralistic. It recognizes and respects the integrity of different disciplines and values the variety of perspectives that specific disciplines bring to the conservation realm. But it also recognizes that every perspective is partial; that every lens simultaneously focuses one’s field of vision while obscuring that which lies outside that field of vision. It also recognizes learning how to speak to one another across disciplines and fields of practice benefits from an explicit appreciation for the inevitable struggles of translation that characterize the effort, and embraces those struggles creatively, collaboratively and affirmatively. Such an approach should have the following characteristics:

- Provide a means for the systematic engagement of multiple partial perspectives that goes beyond the inclusion of a variety of disciplines, country representatives, organizations, etc, and achieves a form of “deep pluralism,” in which multiple epistemologies, valuation methods, and ways of knowing are encouraged and given space to interact.

- Be proactive about the tensions and communication difficulties that can occur when issues are explored simultaneously from multiple perspectives.

- Serve to reveal the ways in which people re-interpret what others say through their own analytical lenses, and the associated danger of oversimplifying the ways in which others understand the world’s complexity.

- Forego the objective of providing a unified output that justifies one policy choice over another to all potential audiences. If the idea of deep pluralism is taken seriously, it must be accepted that a single and final understanding of a sufficiently complex issue is inherently over-simplistic.

- Encourage an iterative process of reflection, action, and learning about conservation trade-offs and their complexities.

- Not yield to paralysis, but instead provide insight and the opportunity for genuine reflection, honest communication, and responsible action.

To respond effectively, the conservation community requires that the next generation of scientists, policymakers and practitioners not only develop expertise in specific fields but also have the conceptual tools to work across disciplines. In an effort to address this, ACSC has supported the
development of two academic programs that emphasize issues of complexity, translation and integrativeness.

The first is the development of a PhD program in Integrative Conservation at the University of Georgia whereby students gain disciplinary depth while also learning to collaborate across fields of practice. In order to promote both depth and breadth, students simultaneously complete the requirements for a traditional field of study, such as Ecology, Anthropology, Forestry, or Geography, and the requirements for the Integrative Conservation program. Within the Integrative Conservation program, students choose to major in Integrative Conservation and Anthropology (or ICON and Ecology, Forestry, or Geography), and as such their degrees reflect both their disciplinary training and their integrative understanding. This program also strives to move beyond the paradigm of interdisciplinarity by reaching outside of academia to bring students and faculty together with scientists, policymakers and practitioners. Through mechanisms such as internships, a speaker series with discussion panel, and a practitioner-in-residence program, students interact with conservationists as partners and colleagues. This program has now been approved by the Georgia Board of Regents.

The second is the Advancing Integrative Conservation IGERT. A fundamental premise of this program is that learning effective communication skills is essential for academics, policy-makers and practitioners to anticipate and negotiate the inevitable issues of communication that occur across disciplines, fields of practice, and languages. Through a series of specially-tailored one-credit professional development seminars and other mechanisms, participants receive guidance in communication across disciplines, navigating institutional cultures in academia and non-governmental organizations (NGOs), the role of institutional dynamics in communication, building organizational capacity, strategic management in complex organizations, and linking science and policy.

5.2.9 Key Factor: Shared integrative thinking is required for informed decisions and actions

5.2.9.1 Integrative Thinking

We contend that while the move to trade-off thinking and analysis in conservation is an important one, if conceived too narrowly or in an overly technical frame, it has the potential to conceal the very elements of a problem that must be confronted in the design and implementation of more resilient conservation initiatives. The challenge facing the conservation community is to develop concepts and techniques for identifying, analyzing and negotiating trade-offs that go beyond the merely technical and embrace the multiple kinds of complexity inherent in the social context of conservation.

The conservation of biodiversity in contexts characterized by poverty, inequity, and weak or nonexistent institutions is a wicked problem. To call a problem wicked signifies that there is no definitive way to formulate the problem, and thus there can be no singular solution that takes into account the variety of interests, perspectives and uncertainties involved. Any formulation of the problem - and subsequent design of strategies and solutions - requires making assumptions that are both difficult and controversial. In dealing with wicked problems, scientists, policymakers and
practitioners, and those who fund them, must traverse a fine line between the paralysis that can sometimes result from the full recognition of a problems’ wickedness, and the overly narrowly – and sometimes counterproductive – solutions that can come from oversimplified analyses.

Over the past two decades, great strides have been made in designing, implementing, and evaluating conservation initiatives that account for the multiple perspectives and uncertainties involved. Moves towards greater stakeholder participation, public/private partnerships, “integrated conservation and development,” and “community based conservation” grew from increasingly nuanced analyses of the multiple scales and values involved in conservation issues, as have more recent trends toward the valuation of ecosystem services and associated incentive programs.

In suggesting that integrative thinking is needed, we aim to build on these advances while protecting against an unhealthy faith in inevitably partial approaches that, if applied uncritically, runs the risk of eroding the capacities for trust, learning, and compromise that are necessary if conservation initiatives are to be effective and resilient over the long term. Stated more positively, integrative thinking in the design, implementation, and evaluation of conservation initiatives allows for a broader consideration of the social context in which conservation occurs, and the development of strategies and solutions in keeping with such consideration.

Developing and applying guiding principles, conceptual lenses, integrative approaches, and key factors with scientists, policymakers, practitioners and donors serves as a common foundation for dialogue and inquiry across the multiple kinds of differences successful conservation must include and account for. In advocating for “Integrative Thinking,” we mean three specific things:

- **Moving from the inclusion of multiple stakeholders towards the engagement of multiple perspectives and diverse modes of rationality**

  The basic idea of perspective is that our experiences and interpretations of those experiences come from somewhere. In a cognitive sense, the idea of perspective can refer to ones’ point of view, or to the context from which experiences are interpreted. To “gain perspective” generally refers to the expansion of one’s context for understanding or decision-making, as in when a parent encourages a child to see something from another’s point of view. Gaining perspective in conservation involves more than just examining and aggregating the interests of a diversity of stakeholders. It means making space for the different ways in which problems, and indeed the very notion of problem solving, are conceptualized.

- **Moving from the search for and promotion of win-win solutions towards the explicit recognition of trade-offs**

  Conservation initiatives designed to simultaneously achieve multiple benefits, for example biodiversity conservation and human well-being, are difficult to realize. Even the most well thought out initiatives can be associated with loss of access to resources, loss of development opportunities, and changes in ecological dynamics and in human populations.
and behavior that negatively affect species and ecosystems. Realistic acknowledgment of losses as well as gains need not imply inaction or policy paralysis. On the contrary, identification and analysis of trade-offs can:

- Invite and promote dialog, creativity, and learning
- Allow for more comprehensive planning
- Reduce the probability of disappointment and disillusionment associated with a policy or initiative that yields mixed outcomes
- Allow for the acknowledgment of conflicting views and interests and thus facilitate deliberation and concerted negotiation
- Legitimize the possibility of choosing not to adopt a given policy or participate in a certain program, which in turn increases the legitimacy of policies that are ultimately adopted
- Help decision makers and those to whom they are accountable confront and take responsibility for difficult choices
- Allow for progress toward conservation and human well-being objectives to be made even though no alternative meets all interests and values

- **Moving from the search for comprehensive, synoptic strategies and solutions towards those that acknowledge gaps, and incorporate ways of narrowing, bridging, and minding them**

In the very wording of the concept of “Integrated Conservation and Development,” there is a problematic assumption that a single set of policies and solutions can simultaneously address multiple values from multiple perspectives. The subtle but important shift from integrated solutions to integrative approaches recognizes that, in a wicked problem context, any problem formulation – and therefore any solution – is inevitably partial. In giving up the quest for comprehensiveness, productive and fertile multi-perspective conversations are possible while recognizing that not every stakeholder may be at the table.

To recognize the existence of gaps is to recognize that not all views and perspectives will necessarily balance, harmonize, or otherwise converge, and that attempts to make them do so can at times be harmful. Gaps can take the form of differences in knowledge, power, values, and ways of thinking and understanding. Some gaps, such as those between groups with different levels of wealth but shared values and understanding, can be “narrowed” by incentives or other financial mechanisms. Other gaps, such as those between people with different priorities but relatively equal ability to express their concerns and influence decisions, may be more appropriately “bridged” by the development of institutions for deliberation and collaborative management. Finally, some gaps, such as inequities between groups with different levels of power and ways of knowing, can’t be fully addressed either by financial mechanisms or collaborative institutions and may best be "minded." Minding a gap is quite different from ignoring it. Gaps that are ignored may cause conservation initiatives to fail or result in counter-productive outcomes. Minding gaps entails moving beyond superficially acceptable solution to the design and implementation of strategies that serve to foreground those problem aspects that require more long-term or larger scale efforts.
For example, most recently, payments for ecosystem services programs (at the national scale) and REDD initiatives (at the international scale) are being developed and implemented in Cat Tien National Park in Vietnam. Cat Tien illustrates an integrative approach to designing, implementing, and evaluating these kinds of initiatives (Table 3).

**Table 3: Illustration of an integrative approach to designing, implementing, and evaluating these kinds of initiatives in the Cat Tien National Park, Vietnam**

<table>
<thead>
<tr>
<th>Current Approach</th>
<th>Integrative Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>If Priority is the Inclusion of Multiple Stakeholders,</strong> then design and implementation of future conservation initiatives in Cat Tien will entail:</td>
<td><strong>If Priority is Engagement with Diverse Perspectives and Rationalities,</strong> then design and implementation of initiatives will be focused on:</td>
</tr>
<tr>
<td>Listing and identifying the range of stakeholders (different villages and villagers, Park Staff, International NGOs, national and regional government...)</td>
<td>Identifying the multiple systems of value and frames of reference relevant across different groups and at different scales</td>
</tr>
<tr>
<td>Identifying (and perhaps prioritizing) interests and objectives of different stakeholders and stakeholder groups</td>
<td>Identifying those who may not have a voice in current decision processes, but nevertheless will be affected by decisions (e.g. poachers, other places in Vietnam or other countries that may be affected by the displacement of some activities from one area to another)</td>
</tr>
<tr>
<td>Working to create procedures for different stakeholders to express their interests and provide input to decisions</td>
<td>Thinking critically about the ways in which current or prospective procedures may highlight some values and perspectives and obscure others</td>
</tr>
<tr>
<td></td>
<td>Working to highlight the role of direct and hidden power, including the power to frame issues</td>
</tr>
<tr>
<td><strong>If Evaluative Standard = Win/Win,</strong> then evaluation of future conservation initiatives will entail:</td>
<td><strong>If Evaluative Standard = Tradeoffs,</strong> then evaluation of future conservation initiatives will entail:</td>
</tr>
<tr>
<td>Identifying, measuring, and communicating the gains associated with REDD initiatives, such as: poverty reduction, income, measures of biodiversity and ecosystem health, etc., reduced carbon emissions, etc.</td>
<td>Accounting for losses in addition to gains, as well as those actors who fail to gain or are worse off after policy implementation</td>
</tr>
<tr>
<td></td>
<td>Going beyond single-metric forms of measurement such as benefit-cost analysis</td>
</tr>
<tr>
<td><strong>If Goal is to Develop Comprehensive Solutions:</strong></td>
<td><strong>If Goal is to Implement Partial Solutions, Characterize Gaps, and Work to Narrow, Bridge, and Mind them:</strong></td>
</tr>
<tr>
<td>Emphasis will be on the development of incentive mechanisms</td>
<td>Development of incentive mechanisms will go along with careful analysis of the context in which they are applied, and on the identification of gaps and strategies for dealing with them</td>
</tr>
</tbody>
</table>
5.2.9.2 The ACSC Integrative Framework

Engaging multiple perspectives, focusing on trade-offs, and foregoing comprehensive solutions does not in and of itself guarantee a productive process or resilient outcomes. As anyone who has attempted to grapple with difficult social problems across disciplinary, organizational, or cultural domains can undoubtedly attest, attempts to work together along with people coming from different perspectives often involve a great deal of time spent with people talking past one another. One important reason for this is that people tend to re-interpret the views and statements of others through their own particular lenses. This does not tend to foster learning, creativity, or collegiality.

The ACSC Integrative Framework was designed to counteract this tendency. It consists of three integrative lenses that guide a series of associated questions that can be adapted across a variety of issues and contexts. An iterative process of reflection and action, it is specifically designed to assist in the often under-appreciated process of problem formulation, and therefore it is intended to precede and provide guidance for the identification and pursuit of further research and specific problem-solving and decision-supporting actions, as well as provide touch-points throughout the adaptive management process.

The integrative framework entails the orientation of multiple perspectives (disciplinary, cultural, organizational...) through three distinct “integrative lenses,” each of which provides conceptual space for the engagement of different modes of rationality.

The development of the integrative lenses emerged from our own struggles and tensions in working across the boundaries of culture, discipline, and organization within ACSC. The three lenses are termed: “value and valuation”, “process and governance”, and “power and inequality.”

- **The value and valuation** lens focuses on the problems inherent in identifying, measuring, and comparing values within and between diverse perspectives;

- **The process and governance** lens focuses on the problems of including in decision processes the voices and perspectives of people and groups affected by conservation initiatives, and of situating decision processes within larger institutional and governance settings;

- **The power and inequality** lens focuses on problems regarding the exercise of power – including the implicit power of problem framing and definition – within domains characterized by pre-existing inequalities.
**The ACSC Integrative Framework**

- **Value and Valuation**
  - **Value and Valuation**
  - How are these values measured and aggregated, and how are different kinds of values (and values at different scales) prioritized and compared?

- **Process and Governance**
  - How do existing procedures, institutions and structures of governance shape the way problems are identified and negotiated?
  - Do existing governments and institutions have the capacity and willingness to enforce decisions that are made?

- **Power and Inequality**
  - What are the explicit and implicit forms of power (including the power to frame the issue) that influence decisions and outcomes?
  - What forms of inequality (wealth, knowledge, capacity, etc.) are relevant?
  - Are there hidden agendas at work?
  - Are there ways in which complex problems are being simplified that benefit some actors at the expense of others?
6. Conclusion: Towards an Integrative Approach to Acknowledging Trade-offs and Embracing Complexity

Given the desire to conserve species and ecosystems, it is increasingly important to think through and make explicit trade-offs among different conservation goals and between conservation and other social goals, such as poverty alleviation and economic development. Trade-off thinking and analyses are important for understanding and communicating the multiple dimensions of conservation initiatives. Offering overly optimistic scenarios that simultaneously promote multiple conservation and development objectives might seem strategic by conservation professionals seeking funding. Nevertheless, ignoring or obscuring trade-offs can contribute to the profound disappointment and even alienation of important partners in conservation. Acknowledging trade-offs requires resisting the temptation to obscure political realities, flatten multiple dimensions of value into a single term, or ignore marginalized interests or ways of knowing.

So how should analysis and communication regarding trade-offs within conservation, and between conservation and other social goals proceed? In particular, how can such analysis and communication operate in a way that provides an opening for grappling with the full range of values and dynamics that shape what may be lost and what gained when conservation decisions are made and implemented? As researchers and practitioners develop methods to identify and calculate trade-offs or adapt tools and methods from other disciplines for use in conservation, we believe that an open and integrative approach to acknowledging trade-offs and embracing complexity will be more effective.

First, an open and integrative approach to acknowledging trade-offs and embracing complexity starts with the assumption that no single perspective recognizes all dimensions of an issue. Furthermore, such an approach recognizes and highlights ways in which people with particular perspectives (e.g., disciplines, organizations, cultures) not only have partial views of the complexity of conservation issues, but also tend to oversimplify or take for granted the ways in which others understand complexity.

Second, recognizing that all views of a complex problem are partial, an open and integrative approach to acknowledging trade-offs and embracing complexity systematically engages multiple partial perspectives. This entails but goes beyond the inclusion of a variety of disciplines, country representatives, and organizations. It should be a deep form of pluralism in which multiple epistemologies, valuation methods, and ways of knowing are encouraged and allowed to interact.

Third, an open and integrative approach to acknowledging trade-offs and embracing complexity aims to provide a unified output that justifies one policy choice over another to all potential audiences. If the idea of deep pluralism is taken seriously, it must be accepted that a single and final understanding of a sufficiently complex issue is inherently over simplistic. The identification of trade-offs should thus be viewed as an iterative process of understanding the multiple implications of conservation decisions as seen from multiple perspectives.
Fourth, and perhaps most importantly, an open and integrative approach to acknowledging trade-offs and embracing complexity should not yield paralysis, but instead provide insight and the opportunity for genuine reflection, honest communication, and responsible action.

7. Future Directions

The purpose of ACSC going forward is three-fold:

- **Evolve** - through an iterative process engaged in by scientists, policymakers and practitioners - a shared set of **guiding principles, conceptual lenses, integrative approaches, and key factors** to promote a more realistic and reflexive way of acknowledging trade-offs through integrative thinking;

- **Build the knowledge base through collaborative and other research** to contribute to a solid evidence base that can inform policy and practice and provide important pedagogical material for learning and leadership; and

- **Establish a compendium, a “what’s what” and a mechanism for sharing tools, methods and approaches (TMAs), and ways of knowing, that are associated with trade-offs in conservation to allow wiser selection and use of them.**

In addition, the initiative will collaborate with organizations and institutions – NGO, university, parastatal and state – who specialize in the development of **training programs and curricula**, and who could work with us to bring together a **compendium of knowledge, tools, and approaches** with the aim of supporting the capacity of policy developers and decision makers to understand, make explicit, and negotiate trade-offs. As necessary, we aim to **bring together one or more network(s)** of individuals, academic institutions, NGOs and donor organizations as a means of improving our understanding of, and our ability to navigate, trade-offs. This improved understanding will expose the root causes of many conservation problems and empower decision-making and practice in the complex world of conservation and development trade-offs.

Specifically the initiative will:

**7.1 Test and refine our Integrative Framework for organizing collaborative problem-solving and strategic planning**

Developing and applying guiding principles, conceptual lenses, integrative approaches, and key factors with donors and practitioners serves as a common foundation for dialogue and inquiry across the multiple kinds of differences successful conservation must include and account for. Central to our collaborative undertaking is an **Integrative Framework (IF)** that continues to evolve through our research and discussions. The IF offers a multi-faceted strategy for confronting trade-offs within conservation and between conservation and other social goals. Its aim is to create opportunities for multiple ways of analyzing complex issues, help people recognize the limitations of oversimplified narratives, and encourage people to think through tradeoffs.
Our future work will involve real time testing the five proposed applications of the IF with collaborating partners. These applications are in:

- Conservation process and practice
- Knowledge-building within the wide conservation community (case studies)
- Facilitation of problem identification and bounding
- Cross-disciplinary approaches to teaching and research
- Checks-and-balances in conservation and development projects, programmes & policies

7.2 Conduct research on key factors affecting conservation and development trade-offs

Our research to date has focused on improving our understanding of the world in which conservation decisions are made at the international, national and local levels. We have done this through a focus on three countries’ national context (Peru, Tanzania and Vietnam), and triangulated those findings with case studies of policy interventions, field initiatives, and other types of research including round table discussions and thematic workshops. Our research recently entered its own action phase as we have begun to share, test, and discuss our findings with a larger community. Our research findings have been presented in the nine key factors above that influence trade-offs in conservation and between conservation and other social goals and thus have importance to donors, strategists, and evaluators as well as practitioners, policy-developers, teachers and students.

A key vehicle for dissemination of integrative thinking is collaborative research with key actors such as conservation organizations and research centers like GIOS, CICR and CIFOR. This is not research for the sake of research, but research developed collaboratively with those key actors to respond to issues/contexts that are of concern to them and designed explicitly to help them understand and analyze the complex trade-offs being made in those contexts. In some cases, this entails working with organizations/institutions to develop case studies of initiatives/issues they are involved in. It also involves collaboration to analyze existing data, such as ACSC is currently doing with CIFOR, or research on existing relevant processes which require fresh ways of thinking about decision-making and collective action. It may involve catalyzing the creation of research networks focused on specific issues. In the future it may involve more extended collaborative research initiatives with organizations/institutions to design integrative research projects that address specific and key issues. This may involve the use of the Integrative Framework specifically, or it might involve the application of other integrative mechanisms. Research could be relatively brief (a workshop bringing together key actors involved in a particular context) or more extended institutional engagements involving collaborative research, exchanges of students/personnel, etc. It could build on dissertation research projects or on existing research programs, thus building on prior sources of funding and seeking external funding from other sources.

Despite a large literature and far-reaching practical experience, there remains a paucity of rigorous comparative case study work on efforts to meet both conservation and development goals. Systematic analysis of trade-offs and synergies between these two goals are rarer still. Our experience of developing case studies further emphasizes the need to expand this case study pool.
and provide ease of access to that pool. We aim to build a portfolio of case and policy context studies/stories that will aid key audiences—donors, academia, practitioners and policy-developers—in developing their own policies, or their own evaluative criteria, or their own courses. Already ACSC has been asked to examine GMOs in Peru, oil and gas in Papua New Guinea, the nature of networks in achieving conservation goals, and global water issues. Our own ACSC research has also led us to better understand the gaps in our knowledge that require further exploration if the complexity around trade-offs are to be more completely understood. These include such subject areas as Problem Formulation and Fair Representation, Priority Land Areas for Conservation of Ecosystem Services (PLACES), and Institutional and Event Ethnographies.

For instance, more research that allows decision-makers and scientists to share understanding on the challenges of managing ecosystem services—which often trade-off against each other—and co-evolve decision-support tools for understanding and managing such trade-offs is needed. PLACES seeks to identify those areas of highest global priority for the conservation and management of ecosystem services. In particular, PLACES is focused on the different spatial and temporal scales over which ecosystem services are delivered, the trade-offs among those services, and the different values placed on those services by recipient communities. PLACES asks when and under what social and ecological circumstances the “gap” between the local decisions and the broader public good are largest, and explores what incentives can be used to more closely align local and broader interests.

7.3 Build knowledge of and access to tools, methods and approaches

One of the key factors identified by the ACSC project is that any tool, method or approach (TMA) used to understand and negotiate tradeoffs will have a profound effect on outcomes. Every TMA emphasizes a certain set of issues and dynamics at the expense of others. Thus, specific meanings, constraints and possibilities are addressed, while others are ignored. By analyzing and developing a compendium of the range of possible TMAs through the Integrative Framework, we intend to facilitate greater wisdom – and humility – in the selection of strategies and interventions as the necessary work of conservation progresses in a world of tradeoffs.

7.4 Continued Collaboration

ACSC has sparked interest in possible future collaboration from many new places including WWF National Organizations, IUCN, TNC, Transnational NGO, University of Cambridge, University of Queensland, CIFOR, James Cook University, Wageningen University, while also seeing interest from those who have already been involved such as Arizona State University, University of Georgia, Syracuse University Maxwell School, University of Michigan, Georgia Institute of Technology, Sokoine University of Agriculture (Tanzania), Vietnam National University, Catholic University of Peru, the Peruvian Society for Environmental Law (SPDA), World Wide Fund for Nature (WWF International) and Wildlife Conservation Society (WCS). Within the donor community we have been fortunate to have active involvement (rather than just funding) by the John D. and Catherine T. MacArthur Foundation, and our aim is to encourage these types of action-oriented relationships with other funders, which may also diversify the financial support.
Annex 1

Biographical Sketches of ACSC Team

Thomas O. McShane has over 30 years of experience in conservation and development. He has worked in the private sector, for government in both developed and developing countries and for international, non-governmental organizations. He is currently the affiliated with the Global Institute of Sustainability at Arizona State University as a Research Associate and is a visiting lecturer at the Institute for Landscape Management at the University of Freiburg, Germany. He consults for NGOs, aid agencies and the private sector on social and environmental sustainability, program development and evaluation, and conservation and development issues. Most recently, he was senior conservation advisor to WWF International with responsibility for conservation and development projects in Africa, Asia and Latin America. McShane co-authored The Myth of Wild Africa: Conservation without Illusion and is co-editor of Getting Biodiversity Projects to Work: Towards More Effective Conservation and Development. He has written extensively on conservation and people issues.

Sheila O’Connor is a Senior Conservation Advisor at WWF having recently completed a term as WWF International’s Director of the Conservation Measures and Audit Programme at WWF International. She has worked for WWF for 20 years undertaking a variety of duties; starting her work as a technical advisor on two integrated conservation and development projects (ICDPs) in southern Madagascar. This was followed by a period as principal technical advisor for all biodiversity-related projects throughout Madagascar and finally serving as WWF’s Madagascar country programme director for several years. Dr. O’Connor left Madagascar in 1996 after nine years with WWF’s programme there. She was also the interim director, Africa and Madagascar Programme based in Switzerland for two years as well as heading up the Conservation Strategies unit based in Washington D.C. Recently, Dr. O’Connor moved into a half-time position at Arizona State University’s Global Institute for Sustainability serving as a research advisor on the Advancing Conservation in a Social Context initiative. Dr. O’Connor has a Bachelor of Arts degree in environmental science from the University of Vermont, a Master of Philosophy degree in applied biology from the University of Cambridge (UK) and a PhD (also applied biology) from the University of Cambridge. Research for her PhD thesis was conducted during a three-year period in Madagascar looking at the effect of human impact in riverine forest ecosystems. Dr. O’Connor was awarded the honor of ‘Chevalier de l’Ordre National’ by the President of Madagascar in 1995 for services in conservation to that country.

Ann Kinzig, is the Arizona State University Liaison and Advisor in the Advancing Conservation in a Social Context project, and was also a member of the Planning Team. She is an Associate Professor at Arizona State University in the School of Life Sciences. Her academic work has focused on theoretical ecology, resilience, and the interaction of social and ecological systems, including most recently a focus on ecosystem services. In 1998-99 she served in the Office of Science and Technology Policy in the U.S. Government, as the first AAAS Roger Revelle Fellow in Global Stewardship. Her portfolio while there included climate change, carbon sequestration, and energy policy. Ann has a PhD in Energy and Resources, and an M.A. in Physics, from the University of California at Berkeley, and a B.S in Physics from the University of Illinois Urbana-Champaign. She has numerous publications in her fields of interest, including Functional Consequences of Biodiversity (co-edited with S. Pacala and D. Tilman, Princeton University Press) and Exploring Resilience in Social Ecological Systems (Special Issue in Ecology and Society, co-edited with B. Walker, J. Anderies, and P. Ryan).

Manuel Pulgar-Vidal has been the executive director of the Peruvian Society for Environmental Law (SPDA) since 1994, which is arguably one of the most important and influential environmental law organizations in Latin America. His areas of work and expertise include environmental policy, with an emphasis on promoting dialogue between the public and private for-profit and non-for-profit sectors, and pollution prevention in productive sectors (especially mining and fisheries). He works frequently as a consultant for national and international organizations on environmental policy in Peru and throughout Latin America. He has acted as a speaker at numerous national and international fora. Mr. Pulgar-Vidal was a visiting professor at the University of Miami at the North South Center from August 1999, to May 2000, and is currently professor of...
environmental law at the Universidad Católica del Perú and Universidad Peruana de Ciencias Aplicadas. Mr. Pulgar-Vidal is currently a board member of FONDEBOSQUE – the national fund for sustainable management of forests and, until year 2000 he served on the board of PROFONANPE, the trust fund for protected areas in Peru. He also acted as chairman of the board of the Permanent Seminar for Agrarian Research (SEPIA) from 2003 to 2005. Mr. Pulgar-Vidal is an Avina Leader. Avina is a group who recognizes leadership in people able to promote through dialogue and consensus building processes the improvement of social policies

**Bruno Monteferrer Siles** is a lawyer from the Peruvian Society for Environmental Law (SPDA) and coordinator of the decentralized office based in Iquitos, region of Loreto. He graduated from the Faculty of Law of the Pontificia Universidad Católica del Peru (PUCP) with a temporary stay at the Barcelona University, Spain. He received his Diploma on Integral Management of Coastal Marine Areas from the Guadalajara University in Mexico and specializes in legal environmental issues and especially on governance, and public and private conservation mechanisms. Monteferrer is a member of the Initiative for Private Conservation Team, of the Private Conservation Network and the Management Committee of Pacaya Samiria National Reserve. Published several articles on analysis of legal conservation opportunities and participated in two books “Management Committees: Constructing Governance for the Natural Protected Areas from Peru” and “Essay of the National Context: The Coast and its People”.

**Juan Luis Dammert B.** is a sociologist from the Pontificia Universidad Católica del Peru (PUCP), and works as a researcher at the Peruvian Society for Environmental Law (SPDA). He has experience and knowledge on issues related to conservation, sustainable development, social conflicts, and energy policy and decentralization process; and is trained for both academic and field work. During the last three years, he has been the Peruvian coordinator of the Advancing Conservation in a Social Context, a research initiative created to investigate the complex trade-offs that exist between human well-being and biodiversity conservation goals in specific places, and between conservation and other economic, political and social agendas at local, national and international scales. In the frame of this initiative, research has been carried out on issues such as biofuels promotion in Peru, the possible social and environmental impacts of the construction of large dams in the Peruvian Amazon, and the categorization process of the Sierra del Divisor reserved zones, among other studies. Dammert is assistant professor at PUCP and also the coordinator of the Sustainability Working Group of the Multisectoral Commission on Bioenergy.

**Paul D. Hirsch** is a research assistant professor at Syracuse University’s Maxwell School of Citizenship, an affiliate of the Center for Environmental Policy and Administration, and a research director at the Program for the Advancement of Research on Conflicts and Collaboration. His research centers on the interplay of science, politics, and values in decision-making under conditions of complexity. He is also an experienced facilitator, having worked over the course of 15 years with a variety of non-profit and academic institutions both in the United States and abroad. Dr. Hirsch’s research with the ACSC project pertains to the question of how the boundaries of complex trade-off problems get defined by multiple actors. Additionally, he is facilitating the development of ACSC’s integrative framework for engaging in multi-disciplinary and cross-cultural collaboration. Dr. Hirsch has a Bachelor of Science degree in Biology and Society from Cornell University, a Master of Science degree in Conservation Ecology and Sustainable Development from the Odum School of Ecology at the University of Georgia, and a Ph.D. in Public Policy from the Georgia Institute of Technology.

**Hoang Van Thang** is the director of Centre for Natural Resources and Environmental Studies (CRES) at the Vietnam National University in Hanoi. From 1980 to present, Dr. Thang has worked in the area of wetland conservation, biodiversity conservation, ecological approaches conservation and community-based conservation management. Dr. Thang has worked as faculty in the biology department at the University of Hanoi, CRES, VNU and WWF Indochina Program and has strengths in environmental planning and ecology.

**J. Peter Brosius** is a professor in the Department of Anthropology at the University of Georgia and director of the Center for Integrative Conservation Research (CICR). As well, he teaches in a graduate program that is focused on Ecological and Environmental Anthropology. He serves as an associate editor of the journal Human Ecology, was past president of the Anthropology and Environment Section, American Anthropological Association, is a member of the IUCN Commission on Economic, Environmental and Social Policy (CEESP) Co-Management Working Group and the World Commission on Protected Areas/CEESP Theme on Indigenous and
Local Communities, Equity and Protected Areas (TILCEPA). In 2005, Dr. Brosius was awarded the Lourdes Arizpe Award in Anthropology and Environment. Dr. Brosius’ research in Environmental Anthropology focuses on political ecology and on the cultural politics of conservation at both local and global scales. Previously, his research focused on international environmental politics in Sarawak, especially as this pertained to the international campaign focused on Penan. Recently he has been working with the Kelabit community in Sarawak to develop a project called “Protected Area Planning and Implementation in Pulong Tau National Park.” In conjunction with the ACSC initiative, he continues a research trajectory focused on global conservation and the politics of scale, with a particular focus on ecoregional planning and conservation finance. Brosius has published in journals such as American Anthropologist, Current Anthropology, Conservation Biology, Ambio, Global Environmental Change, Society and Natural Resources, Comparative Studies in Society and History, Identities and Human Ecology.

Meredith Welch-Devine is a Temporary Assistant Professor at the University of Georgia. She previously served as a post-doctoral research associate for ACSC. During the course of this post-doc, she is studied the role of the social sciences in conservation planning, and helped launch the Integrative Conservation doctoral program at UGA. Her research interests include political ecology, state theory, common-pool resources, and policy implementation. Meredith’s dissertation research focused on the implementation of the European Union conservation initiative Natura 2000 in the Basque province of Soule. Meredith received her Ph.D. in anthropology at the University of Georgia and holds a M.S. in Conservation Ecology and Sustainable Development from UGA as well as a Ph.D. in ethnologie from L’Université de Pau et des Pays de l’Adour. She received her B.A. in sociology and anthropology from Washington and Lee University.

Alexander Songorwa has a Bachelor of Science in Zoology and Wildlife Ecology from the University of Dar Es Salaam, Tanzania (1987), a Master of Science in Rural Planning and Development from the University of Guelph, Canada (1994) and a PhD in Natural Resource Management from Lincoln University, New Zealand (1999). Currently, Dr. Songorwa is a senior lecturer at Sokoine University of Agriculture (SUA) in Tanzania where he lectures undergraduate and postgraduate classes in Wildlife Policies and Legislation; Participatory Natural Resource Conservation and Wildlife Utilization (undergraduate); and Protected Area Management, Community Development and Eco-tourism Planning and Management (postgraduate). Dr. Songorwa has worked extensively in research on issues related to community-based conservation, wildlife policy development and development, and has been involved in several consulting works in relation to natural resources assessments. He has also supervised many undergraduate and postgraduate students in their research work. Dr. Songorwa joined SUA in 2001. Before that he worked as Wildlife Officer for several years and served in various capacities (including assistant project manager for the Selous Game Reserve) in the Tanzanian Ministry of Natural Resources and Tourism.

David R. Mutekanga holds a PhD in Environment Management having researched on the involvemen of environmental NGOs in the implementation of the global convention of biological diversity. He also holds a Master of Science in Applied Entomology and Parasitology and a Bachelor of Science in Biology from Makerere University, Kampaala, Uganda. David has several postgraduate qualifications in various aspects of environment management including policy research and advocacy. He has also done research fellowships at the United Nations University Institute of Advanced Studies in Japan. David has long working experience with national, regional and international level environmental NGOs in Uganda, Kenya, Tanzania, Ethiopia and South Africa. He has also lectured and administered at a national University in Uganda. David is currently coordinating the interdisciplinary research for the Wildlife Conservation Society (WCS) at the Ruaha Landscape Program in Iringa, Tanzania.

Rose Peter Kicheleri: A graduate in Bachelor of Science in Wildlife Management from Sokoine University of Agriculture (2007). After graduating she has been working for ACSC Project in Tanzania as a project assistant. Her duties include helping the project coordinator in a day-to-day project activities and financial management.
**Annex 2**

**ACSC Outcomes**

The outcomes table below shows the status of outcomes for ACSC. It is important to bear in mind that the outcomes defined in the original proposal were for a full five-year period. ACSC is currently seeking support to enable the dissemination, and further development, where necessary, of the research findings.

<table>
<thead>
<tr>
<th>Proposed outcomes for the full 5 year ACSC Initiative</th>
<th>Outcomes as of October, 2010 (the first 3 year research phase completed)</th>
<th>Specific details related to outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge on tradeoffs</td>
<td>1.New knowledge created through analysis of case studies and through national level reviews in 3 countries</td>
<td>1.1 National contextual information in Peru, Vietnam and Tanzania on ecological, political, social and economic situation was collected and analyzed to provide a backdrop against which “trade-offs” in conservation and development could be considered (see Annex 6)</td>
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<td>-Improved knowledge and awareness</td>
<td>2.Brought forward new knowledge through specific thematic studies that helped us focus on key factors that are important in conservation and development</td>
<td>1.2 A number of case studies have been completed (or almost completed) based in the Peru, Tanzania, Vietnam the USA to examine trade-offs and the factors that contribute to how trade-offs are understood and negotiated (see Annex 6). Additional case studies (6-15) are also underway based on a new partnership with CIFOR, and on demand from in-country or from new associations (WWF in PNG has asked us to look at Oil and Gas)</td>
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<td>-Generate knowledge over the relationship between conservation-development and making it available for the general public</td>
<td>3. Generated different ideas of the relationship between conservation and development by examining the “win-win” paradigm</td>
<td>2.1 A number of thematic studies (see Annex 5) have been undertaken, and 3 Global thematic workshops – (Values &amp; Ethics, Ecosystem Services &amp; Resilience, Power &amp; Knowledge) were convened with leading thinkers on the subjects. These helped to generate ACSC’s 9 key factors that continue to be analyzed, as well as further studies being supported by other donors</td>
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<td>-Development of formal and informal educational programs, workshops as well as development agency based and executive training purposes</td>
<td>4.Have brought new thinking in about the concept of “Trade-offs” and Introducing new ideas for the analysis of the social context or the situation that conservation projects develop in their design phases</td>
<td>2.2 In addition to the thematic studies, all of our country-based research, and all workshops and discussion groups have also contributed to our developing and refining the key factors important to conservation &amp; development (see Annexes 5 &amp; 6).</td>
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<td>5. Have developed new courses and begun to organize others.</td>
<td>3.1 The Global workshops, thematic research, national level research, case studies and</td>
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</table>
discussion during ACSC team meetings and at different for a around the world (e.g. SCB, Diversitas, IUCN, WWF etc.) led us to develop our ideas about the pitfalls of the “win-win” paradigm in conservation & development. These have been published recently (see Annex 4) and presented to some major conservation groups (e.g. WWF, WCS, IUCN. A joint ACSC letter to World Conservation- the magazine of IUCN- has opened up a more public forum for our thinking and we are working on a public journalistic piece for publication in the Spring of 2011.

4.1 Our new thinking on the concept of trade-offs and “how to analyze the social context” has been brought about by the same series of research and events and discussion groups as above. It has led us to develop an Integrative Framework (IF) for conducting trade-off and situation analyses and a set of Principles that have helped ACSC work with pluralism and integrativeness. The IF has been peer reviewed and has undergone initial testing using CIFOR cases, a large-scale dam case in Peru, and with certain organizations, and in academia (e.g. WWF, Queensland University, Paidea Middle School). The workbook version is under development and will be worked on as it is tested during 2011. Both the IF and the Principles have been subject to many presentations and to publications (see Annexes 3 & 4). A new Integrative Conservation Ph.D has been designed at the University of Georgia and approved by the Board of Regents with a first intake of students scheduled for 2011. Coursework at Sokoine University’s Wildlife Department has been redesigned using concepts and ideas from ACSC, as have courses developed by CRES for Vietnam National University.

5.1 A new course offered to undergraduates at the University of Vermont in Sustainable Development has borrowed heavily from ACSC’s newly developed ideas about trade-offs.

5.2 Relationships with Columbia University’s Master’s in Development Practice have been established and they particularly would like to use ACSC’s case studies in their courses.

5.3 Young scholarship programs developed in Peru around the theme of trade-offs have
Advancing Conservation in a Social Context: Working in a World of Trade-offs

### Proposed outcomes for the full 5 year ACSC Initiative

<table>
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<tr>
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#### Shift in thinking – (this outcome was not in the original proposal but was added in 2009 and links closely with the outcome above.)
- Conceptual shifts in thinking (win-win out, trade-offs in)
- Knowledge, narratives and analytical approaches to frame a new way of thinking - a connection between knowledge and thinking
- Nationalize new way of thinking to approach tension between conservation-development (integrative framework/principles, no good and bad, trade-offs)
- A broader and more holistic picture of how conservation functions and its implications (scales issues more explicit, drivers behind the decision/position)

1. The view of who the key actors are within a conservation-development trade-off and those that can be influenced by ACSC in terms of a shift in thinking clarified.
2. The design and testing of a set of principles an integrative framework, and a commentary of different tools, methods and approaches has been developed, is being further tested and will be made available.
3. New ideas on the way conservation functions or what might be important in conservation that is not typically accounted for have been put forward.

<table>
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<tr>
<th>1.1 Determining key actors within the context of a trade-off has been partially tested through the application of the IF to specific case studies in Peru, Vietnam, Tanzania and from the lower Mekong region (see Annexes 5 &amp; 6). In addition, WWF has asked ACSC to work with them on designing an improved key actors analysis for their own large-scale projects because they are interested in the added value of the Integrative Framework and to their current process.</th>
</tr>
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<tbody>
<tr>
<td>1.2 ACSC identified four key actor groups that we believe are key to conservation and development trade-off thinking and analysis; these should be targeted by sharing our “shifts in thinking” about win-wins, trade-offs, tools and analysis. These include donors/funders, policy-developers, practitioners and academia (focused on the nexus of conservation and development). We have begun to reach out to these groups in particular practitioners and academia, at this stage via workshops, meetings, inclusion in review processes, and development of new curricula.</td>
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<td>1.3 Our research into the selection of tools, methods and approaches (TMAs) and how they affect understanding of trade-offs and solutions proposed has resulted in two initial reports which focus our ideas on how to improve understanding of TMAs and how to be wiser in their selection. These will be made available to our key actor groups and the community at large during dissemination. Additional research will also be undertaken as this is considered a key area of concern.</td>
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<td>2.1 The set of Principles that ACSC developed through a participatory approach within the ACSC team and externally through interaction at different fora has been published (see list of publications in Annex 4).</td>
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</table>
| 2.2 The Integrative Framework has undergone many iterations and a series of peer reviews; publication is imminent having tested it with at
least one case. Other tests are being scheduled for late 2010-2011, where after a workbook version will be prepared.

2.3 Tools such as ethnographies have been used within ACSC and their utility at major events—World Conservation Congress and a Protected Area Fora in Peru—has been attested to. Write-ups and publications about these events are in press. In addition, National Science Foundation has provided the support another Event Ethnography at the CBP COP in Japan which has just been completed.

2.4 The selection of tools, method and approach in and of itself is a trade-off and the research to examine how they are selected and what impact this might have on understanding and negotiating trade-offs has been finalized, though it is felt that additional research should go forward during any second phase of the project. Tools including low tech ones such as visualization and high tech ones such as Decision Theatres, and tools like Multi criteria decision analysis, Stella Models were amongst the mix of those considered in this research. Some publications have already resulted—see the list available in Annex 4.

3.1 Several of the key factors proposed by ACSC directly address the question of “how conservation functions”– these are included in the final report and will be part of the dissemination work.

3.2 At GIOS/ASU, proposals around ecosystem services hotspots have been submitted for funding (e.g. Problem Formulation and Fair Representation, Priority Land Areas for Conservation of Ecosystem Services (PLACES) has been submitted as a required pre-proposal to NSF); the ideas for these originated from an ACSC supported workshop around ecosystem services, resilience and related issues.

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<tr>
<td>Methodologies identified -Decision making processes (frameworks, heuristics) helping practitioners to</td>
<td>1. An integrative framework has been developed that would aid in decision-making processes.</td>
<td>1.1 An integrative framework has been developed and shared with conservation groups, scientists and others. This framework serves as a possible new way of analyzing, new ways of</td>
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</table>
Advancing Conservation in a Social Context: Working in a World of Trade-offs

address trade-offs and work on strategy development
- Creation of new approaches and insights in the field of conservation (ex.-integrative framework that helps conservation organizations to better think about the social context in which they work)
- A strategy to analyze and assess the potential consequences of decisions and actions.
- New ways of analyzing

looking at strategy.

2. A joint position at WWF/ASU specifically on strategies and learning using ideas and concepts from ACSC has been designed (funding has been partially secured)

3. The use of traditionally academic tools such as ethnographies for this project creates the opportunity for them being used more widely by other key actors such as donors/funders, policy-developers and practitioner organizations.

Norms and principles identified
- Identify a fuller suite of factors contributing to the problem
- Propose a set of principles that may help those in conservation & development get something started

1. ACSC principles developed and shared.

2. The concept of integrativeness developed and shared, though there is still more to be done.

3. ACSC key factors of importance in understanding the social context in which conservation takes place under development and partially shared.

4. Improved understanding of the importance of careful selection of tools, methods and approaches under development.

1.1 The ACSC Principles have been developed over the course of three years through a participative process. They are now available in publications (see Annex 4), and have been shared at several workshops and events. They are an “open source” set of principles in that they can be adapted by whoever might find them useful for situations in which multiple perspectives, cultures and disciplines need to be understood.

2.1 Through an interactive process internal to ACSC and with some external audiences, the concept of “integrativeness” rather than integrated has been developed. This approach has been tested, and is still being tested, in middle schools, universities, and conservation organizations.

3.1 The key factors (at least an initial set of 9) that ACSC believes are important to consider in every “trade-off” problem in conservation & development have been teased out of our research to date. Each key factor is being further researched and more fully developed with evidence.

4.1 That the selection of a tool, method or approach is in and of itself a trade-off and also that it can influence the process and solution of both understanding and negotiating a problem has been clear to ACSC for some time. In this last 6 months we have conducted some analysis about how tools are selected amongst certain
Advancing Conservation in a Social Context: Working in a World of Trade-offs

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<td>Partnerships among organizations</td>
<td>1. An emergent network has formed which creates links amongst academia and practitioners.</td>
<td>1.1 The network, currently named tradeoffs.org, has emerged from ACSC’s core collaborators (ASU, WCS, Sokoine U, CRES, SPDA, UGA/CICR) and more recent associations (e.g. Michigan, UVM, James Cook University, WWF, IUCN, Columbia, CIFOR). This has been built out of long hours and deepened understanding amongst the different cultures, perspectives, disciplines, etc... and lives the “integrative” philosophy.</td>
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<td>2. Capacity building &amp; training opportunities developed.</td>
<td>2.1 The development of new courses, curricula, training and sharing mentioned previously, and input into others – for example at ASU’s undergraduate level, UGA’s Integrative Conservation Ph.D program, WWF learning week, Catholic University of Peru have been amongst ACSC’s activities.</td>
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<td>3. A joint position WWF/ASU on strategy and learning has been created.</td>
<td>3.1 Creating a joint position that carries on making connections between academia and conservation organizations, and using forums like the Conservation Measures Partnership or Cambridge Conservation Forum for sharing, learning and continually improving our knowledge base has been an interesting exercise.</td>
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<td>4. New young leaders are emerging from ACSC in Peru, Vietnam, Tanzania, &amp; USA.</td>
<td>4.1 The young people (both on the core ACSC team and in universities) from at least four corners of the world- Peru, Vietnam, Tanzania and USA- have been incredibly participative, have helped the ACSC team work out its differences and make progress on all fronts. They have conducted important research, found innovative ways of sharing the emerging ideas, and there is a very strong support for these ideas moving into the future.</td>
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</table>

- Donors and aid agencies and foundations using principles on trade-offs to guide application of funding in c/d
- Capacity building and links between academics and practitioners and decision makers and scientists in understanding complexity and being able to negotiate with that improved understanding improved
- Learning and networking opportunities developed
- Development of new leaders in the field who contribute to the literature and practice of conservation at the global, regional and local levels
- Linking people across the globe from different contexts (developed/developing; capitalist/socialist) and building understanding of trade-offs & how to address them
- A new group of people thinking differently in an integrative way over the next twenty years
Annex 3

Abbreviated List of Events and Fora in which ACSC has been engaged

2010

Convention on Biological Diversity (CBD) CoP 10 Nagoya, Japan

Wageningen University, Netherlands, Technology and Agrarian Development Group
Trade-offs in Conservation and Development: Towards an Integrative Approach.

National workshop for the development of an elephant action plan (Arusha, Tanzania)

Presentation on ACSC and the Integrative approach at the Secretariat of the CBD in Montreal, Canada

2009

International Union for the Conservation of Nature (IUCN), Gland, Switzerland
Trade-offs in Conservation and Development: Towards an Integrative Approach

World Wildlife Fund International Headquarters (WWF), Gland, Switzerland
Trade-offs in Conservation and Development: Towards an Integrative Approach

III Natural Protected Areas National Forum, Chiclayo, Peru. Peruvian Committee of IUCN

Society for Conservation Biology, Beijing, China
Balance, Harmony, Power: Evaluating Trade-offs in Resource Conservation, Conversion, and Extraction (presented research and organized symposium)

Diversitas: International Programme of Biodiversity Science, Cape Town South Africa.
Advancing Conservation in a Social Context: Working in a World of Trade-offs (Invited session with ACSC Research Team).

International Workshop on the Philosophy of Interdisciplinarity, Atlanta, Georgia, USA
From Interdisciplinary to Integrative: Reflections from the Field (http://pin-net.gatech.edu/intlworkshop.php.)

Peruvian Society for Environmental Law, Lima, Peru
Trade-offs in Conservation and Development: Towards an Integrative Approach

Center for Resources and Environmental Studies, Vietnam National University, Hanoi, Vietnam
Trade-offs in Conservation and Development: Towards an Integrative Approach

Sokoine University of Agriculture, Tanzania
Trade-offs in Conservation and Development: Towards an Integrative Approach

Paidea Middle School- Thinking Like a Planet, Atlanta, Georgia, USA

ACSC Tanzania External Review Country workshop

OUTRAIN/ACSC Training (Kibondo District), Tanzania
Advancing Conservation in a Social Context: Working in a World of Trade-offs

ACSC Consultative workshop in Phong Dien District, Thua Thien Hue Province, Vietnam

ACSC Consultative workshop in Ha Long Bay, Vietnam

2008

IUCN World Conservation Congress, Barcelona, Spain
Advancing Conservation in a Social Context: Working in a World of Trade-offs (Invited session with ACSC Research Team).

Society for Conservation Biology, Chattanooga, Tennessee, USA
Fair Trade-offs: A Scalar Approach

A round table on Opportunities and challenges of biofuels promotion in Peru, held in July 2008, with the presence of authorities, private sector representatives and civil society actors.

A round table regarding the situation of San Fernando Bay, Peru, a coastal marine area where several interests converge, was held in January 2008, and our participation on two consultancy Regional Workshops focused around the possibilities to declare the Area as a Conservation Area.

Regional workshop for conservation educators and practitioners of the Albertine Rift Region, Tanzania

Sector specific EIA and forest specific EIA guidelines (Tanzania)

2007

ACSC Values and Ethics Workshop, Helen, Georgia, USA

ACSC Politics of Knowledge Workshop, Helen, Georgia, USA

ACSC Ecosystems Services and Resilience Workshop, Woods Hole, Massachusetts, USA

A workshop “Sustainable criteria for energetic crops in Peru”, organized by the Ministry of Agriculture with the support of SPDA, SNV-Peru and Swiss Contact, was successfully realized. The workshop showed interesting results and conclusions, compiled with the presentations in a DVD. The production and delivery of the DVDs was sponsored by ACSC, Lima, Peru.

Tanzania country-based diagnostic workshop on trade-offs issues

Conference on Mineral Resources and Sustainable Development in Vietnam

International Conference on Linkages of Forest Protection, Economic Growth and Poverty Reduction - Issues and Approaches in Vietnam

International Conference in Vietnamese Studies: Current situation, Achievements and Development Orientation

Society for Conservation Biology Meetings, South Africa
Annex 4

Summary of Publications

There are many more publications in preparation that have not been listed here; also there are a substantial number of documents and publications as part of the grey literature.


The book now has a web-page on Amazon, ISBN numbers, prices, advanced offers and a publication date, as follows:

http://www.amazon.co.uk/Trade-Offs-Conservation-Deciding-Science-Practice/dp/1405193832


Masters and PhD Theses supported by ACSC


The Role of Financial Institutions on Trade-offs between Biodiversity Conservation and Development. Romina Capelli Deacon. Masters of Environmental Science Thesis, University of Zurich


Words Apart: Exploring the Politics of Translation in Conservation from the Local to the Global. Patricia Dunne. PhD Dissertation, University of Georgia

Remaking the Landscape: Kelabit Engagements with Conservation and Development. Sarah Kitchner. PhD. Dissertation, University of Georgia

Collaborative Institutional Ethnography of the WWF Arctic Network Initiative. Ted Maclin. PhD Dissertation, University of Georgia
Papers associated with the Collaborative Event Ethnography at WCC, Barcelona 2008.

*Conservation and Society:*

Brosius and Campbell, Collaborative Event Ethnography at the World Conservation Congress, Barcelona, 2008


Maclin, Ted and Juan-Luis Dammert. Setting the Stage for Biofuels: Policy Texts, Community of Practice, and Institutional Ambiguity


Hagiaman, Shannon, Terre Satterfield, and Hadi Dowlatabadi. Climate Impacts, Conservation and Protected Values: Understanding Promotion, Ambivalence and Resistance to Policy Redesign at the WCC.

Gray, Noella. Sea change: Exploring the International Effort to Promote Marine Protected Areas.

Doolittle, Amity. The Politics of Indigeneity: Indigenous Perspectives on Climate Change Policy.

Welch-Devine, Meredith. Sorting out roles and defining divides: social sciences at the World Conservation Congress.

Hitchner, Sarah. Heart of Borneo as a ‘jalan tikus’: Exploring the links between indigenous rights, extractive and exploitative industries, and conservation at WCC 2008

Pena, Pablo. Diversifying ICDP market-based mechanisms for better results: NTFP and REDD at the 4th World Conservation Congress
### Annex 5

#### Thematic Research & Development

<table>
<thead>
<tr>
<th>Project</th>
<th>Main Focus Areas</th>
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<tr>
<td><strong>The Role of Financial Institutions and their Policies on Biodiversity Conservation and Development Trade-Offs</strong> <em>(University of Zurich)</em></td>
<td>To understand how the financial sector handles and affects trade-offs choices between biodiversity conservation and development</td>
</tr>
<tr>
<td><strong>Knowledge Systems - The Effects of Ecology, History &amp; Experience upon Environmental perceptions in the Osa Peninsula, Costa Rica</strong> <em>(Arizona State University)</em></td>
<td>This research combined ecological and social science methods to analyze the interplay between neo-tropical ecology, conservation biology, local land use history, and global economic forces in influencing attitudes towards protected areas in Costa Rica’s Osa Peninsula.</td>
</tr>
<tr>
<td><strong>Knowledge Systems Analysis: Synthesis and Application to Biodiversity</strong> <em>(Arizona State University)</em></td>
<td>To develop a theoretical and empirical synthesis of existing research on knowledge systems. Knowledge systems are set up in ways that minimizes rather than exposes the degree to which policy decisions confront explicit trade-offs between goals, outcomes, and ways of understanding and valuing the world.</td>
</tr>
<tr>
<td><strong>Mapping Donor Perspectives on linked Conservation and Development, 1980-2005</strong> <em>(University of Michigan)</em></td>
<td>To improve understanding of how donor organizations have perceived and influenced conservation and development trade-offs since 1980 by systematically analyzing the international conservation funding landscape, particularly in relation to the broader terrain of development.</td>
</tr>
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<td><strong>Institutional/Event Ethnography- Collaborative Event Ethnography at the World Conservation Congress, Barcelona, Spain</strong> <em>(University of Georgia)</em></td>
<td>A critical element in understanding trade-offs is the nature of the transaction, not just the post-transaction outcome; it’s not just a matter of who gains and who loses, but how that happens. Among a range of research methods, ethnography is among the most effective for understanding this dynamic.</td>
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<tr>
<td><strong>Rebounding Conservation</strong> <em>(Syracuse University)</em></td>
<td>In the most basic sense, to “bound” a problem is to make a decision about what is and what is not a part of the relevant context for a particular problem. The forefronting of trade-offs, which was a focus of the ACSC Initiative, can be understood as a program for rethinking the boundaries within which conservation problems are evaluated and engaged with. This research on problem bounding, developed theoretical concepts to explore problem bounding in conservation – and the role of trade-off thinking in re-formulating problem boundaries - and empirically applied those concepts to the issues and scenarios ACSC was involved in.</td>
</tr>
<tr>
<td><strong>People and Parks: Revisiting 20 Years of Conservation Action Linking Protected Area Management with Local Communities</strong> <em>(Conservation International)</em></td>
<td>This study presents a reanalysis of projects first studies in 1989, building on the original baseline. It is based on a desk review to find out the current situation at these projects and their subsequent experience based on</td>
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<tr>
<td>Priority Land Areas for Conservation of Ecosystem Services (PLACES) (Arizona State University)</td>
<td>This study proposes a four-step process for addressing these issues: (1) convening experts in various ecosystem services to identify sites where ecosystem services are likely to be of global importance, and undersupplied (ecosystem service “hotspots”); (2) identifying the range of mechanisms, including PES, for managing the different types of services, and the advantages and disadvantages of each; (3) creating a model (decision-support tool) for examining trans-boundary flows of services in particular places, given specific policy interventions and ecological and social contexts; and (4) applying the decision-support tool in a variety of sites differing in their social and ecological context. (NSF proposal)</td>
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<tr>
<td>The Social Context of Conservation (University of Georgia)</td>
<td>This research originates from the idea that understanding social context is crucial to the success of conservation, and the main objective of this research is to arrive at a better understanding of how certain conservation organizations and programs perceive the social context of their work and use different disciplinary approaches and tools to elucidate that context and navigate tradeoffs.</td>
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<tr>
<td>Conservation, Development and the Politics of Translation (Universidad Católica del Perú, Peruvian Society for Environmental Law, &amp; University of Georgia)</td>
<td>This research postulates that translation is not limited to linguistic processes, but also has political implications for transnational conservation and development initiatives. In this respect, translation has both the potential to impede an initiative’s efforts, as well as to build bridges among the different groups involved which are critical for success.</td>
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<tr>
<td>Global Institutions as Constraints on Local Conservation Decisions (Arizona State University)</td>
<td>This study looks at global institutions having major biodiversity components to assess the means by which they influence conservation decisions at national, local and community levels -- how conservation obligations actually play out on the ground -- and the means by which local concerns, opinions and decisions feed back to influence global norms. It’s goal is to determine: (1) whether and how global institutions project conservation norms into local decision-making, creating pressure to make trade-offs, and (2) whether and how those institutions provide for local feedback where trade-offs do ensue.</td>
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<tr>
<td>The State of Trade-offs in Conservation Projects (Arizona State University, WWF International, University of</td>
<td>The purpose of this research is to determine to what extent conservation projects explicitly or implicitly</td>
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### Advancing Conservation in a Social Context: Working in a World of Trade-offs

<table>
<thead>
<tr>
<th>Study Title</th>
<th>Summary</th>
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<tbody>
<tr>
<td>Georgia</td>
<td>recognize and work on trade-offs. The underlying hypothesis is that few conservation projects, if any, explicitly and adequately identify trade-offs in undertaking their conservation projects, and so in success, in terms of nature conservation and in terms of people’s appreciation, protection or sustainable management of nature is undermined.</td>
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<tr>
<td>Communicating Tradeoffs through Social Marketing (University of Rhode Island, WWF International)</td>
<td>This review discusses: 1) orientations for the use of social marketing to influence decision makers and; 2) a framework for the use of social marketing to promote “trade-off” thinking and improved understanding of trade-offs among different actors. Reflections and recommendations on ethical norms for conservation and development practitioners whom use social marketing techniques are presented.</td>
</tr>
<tr>
<td>Advancing Integrative Conservation through Experiential Learning and Strategic Communications (University of Georgia)</td>
<td>Analyzing and negotiating contemporary conservation challenges requires not just integrative processes, but integrative people. It is imperative that training the next generation of conservation scientists and practitioners brings the insights of multiple disciplines and fields of practice to bear. This program has the goal of ensuring that students gain a broad integrative perspective in addition to disciplinary expertise to help them work comfortably at the intersection of academic disciplines and the world of practice. To achieve these objectives this program intertwines an integrative approach, experiential learning, and strategic communication. It builds upon the ACSC Integrative Framework (IGERT proposal to NSF).</td>
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<tr>
<td>Politics and the Possibilities of Global Conservation Knowledge: Understanding Knowledge Management in the Global Environmental Facility (Arizona State University)</td>
<td>This research advances the proposition that understanding the systems that produce information and knowledge in global conservation should serve as a starting point for any progress in generating new analytical tools and lasting lessons to fill this void. To this end, this study considered systems of biodiversity knowledge generation, not only in their composition, but also in their social and political dynamics within one central conservation organization – the Global Environmental Facility (GEF).</td>
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<tr>
<td>Cross-Scale Dynamics in Conservation and Development Trade-Offs: Evaluating Sustainable Development Policies in Complex Governance Systems (Georgia Institute of Technology, University of Vermont)</td>
<td>In this research, a multi-disciplinary team of policy analysts, environmental ethicists, anthropologists, biologists and ecologists examine the question of how conservation-development trade-off decisions are now made, how they are viewed by different parties, what heuristics are used and by whom, and especially the way in which boundaries are formed and scales negotiated in real policy networks described by participants in real negotiations. The research is based on the following premise: the process of formulating a...</td>
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### Advancing Conservation in a Social Context: Working in a World of Trade-offs

<table>
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<tr>
<th>Problem</th>
<th>Solution</th>
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| The problem cannot be understood separately from the process of building appropriate institutions to respond to it. (NSF proposal) | **Sustainable Hunting and International NGOs (Arizona State University)**
Trophy hunting can provide funds and incentive to improve conservation, but in practice this often falls short. Specifically, funds often do not get filtered to those people who require the incentive to monitor poaching and support conservation initiatives. Conservation NGOs can offer a more participatory and deliberative space for improving the use of trophy hunting as a mechanism for improving conservation. |

| Tools: Design and implement research on structured decision heuristics, such as Multi-Criteria Decision Analysis (MCDA), to elicit better understanding of tradeoffs in conservation and development (University of Vermont) | This work designed MCDA protocols and facilitated their implementation in three workshops in Tanzania, Peru and Vietnam. It subsequently analyzed workshop valuation data and is publishing peer reviewed journal articles on the results. It participated in certain tele-seminars and other meetings/dialogues related to the development of the integrative framework in order to improve its content and potential application. |

| Tools: Visualizing Landscape: Understanding and Negotiating Conservation & Development Trade-offs using Visual Techniques (IUCN, James Cook University, Australia, Columbia University) | Participatory techniques are widely used by conservation and development practitioners to attempt to build their understanding of complex conservation and development trade-offs and to attempt to gain support from local stakeholders for external “project” interventions. All participatory techniques have their strengths and weaknesses. This work further develops and builds a community of practitioners in the use of an innovative range of visualization techniques which show promise in dealing with conservation and development situations. |

| Tools: Tools, Methods and Approaches for Working in a World of Trade-offs: Interviews with Conservation Program Leaders and Review of CIFOR Case Narratives (Syracuse University, WWF International, CIFOR, Arizona State University) | The three objectives of this research were: 1) To survey Tools, Methods, and Approaches (TMAs) used by a broad range of leaders doing work in – or related to – the field of conservation to understand, analyze, and/or negotiate trade-offs; 2) Analyze and synthesize key findings from interviews with conservation leaders to offer critical and actionable insights useful to conservation-development trade-off work within and across organizations; and 3) Analyze the decision-making processes or TMAs that were, and were not used or made explicit, in eight CIFOR case reports in the Mekong Delta. |

| Tools: A Reflective Heuristic for Context Sensitive Selection of Tools and Methods for Trade-off Analysis (Syracuse University, CIFOR, University of Georgia, WWF International, Arizona State University) | Rather than developing a new tool, method, or approach, this work developed a process of reflection by which practitioners can consider the merits - relative to the context in which they will be applied - of the tools, methods, and approaches at hand. The basic... |
### Rethinking Trade-offs: Values & Ethics (Georgia Institute of Technology)

The assumption underlying the process we describe here is that the selection of a tool or method is an important decision *in and of itself* that is, in many cases, not adequately reflected upon.

For the ethicists, economists, and political scientists who met in this workshop, the trade-offs concept was, simultaneously: a useful reminder that choosing one course of action forgoes others; a politically and cognitively oppressive archetype that favors narrow conceptions of value and human possibility; an organizing principle for a set of useful heuristics and distinctions; and a stimulus for the development of a set of questions and a research agenda.

### Rethinking Trade-offs: Conservation and the Politics of Knowledge (University of Georgia)

This workshop is premised on the assumption that conservation and development trade-offs are inherently political. In the last few decades, scholars have come to recognize that the contours of power are more convoluted, and more implicit, than once thought. Across a range of disciplines the theoretical landscape is defined by a concern with questions of the links between knowledge and power, and the boundaries between epistemology and politics are much more problematic than once assumed.

### Rethinking Trade-offs: Resilience & Ecosystem Services (Arizona State University, The Woods Hole Research Center)

This workshop was charged with exploring the themes of resilience and ecosystem services. It was expanded to include issues such as analysis of institutions and economic instruments as well as conservation, scale, social goals, and research collaboration. A set of nine primary research questions were identified. Also see PLACES study above.

### Rethinking Trade-offs: A Report on ACSC Global Research Workshops (University of Michigan)

This report provides an overview of the results and current research stemming from three workshops organized by ACSC under the rubric of “Rethinking Trade-offs.” Held in the Fall of 2007, these workshops (see above) were designed to help define the agenda under the global research component of ACSC by drawing from recent scholarly and practical advances across a range of disciplines on how to approach conservation and development trade-offs. They sought to cast a wide net for ideas, concepts and issues that might be especially important or compelling for consideration at an early stage of ACSC research.
## Annex 6

**Country Research & Development**

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<tr>
<th>Country - Project</th>
<th>Main Focus Areas</th>
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<tr>
<td>USA – Arctic National Wildlife Refuge, Alaska (Arizona State University)</td>
<td>The history of the Arctic National Wildlife Refuge (ANWR) in Alaska provides a lens on how different conservation and development narratives influence public policy. Using a timeline dating from 1960 to the present, this study explores values (economic performance, changes in caribou numbers, the price of oil, cultural views of nature, etc.), process (access to information, knowledge, effective communication, participation by interest groups and key actors, etc.), and power (political influence, wealth, job creation, perceptions of national security, etc.) to analyze how public policy is driven in different directions.</td>
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<tr>
<td>USA – PhD Program in Integrative Conservation (University of Georgia)</td>
<td>The PhD program in integrative conservation at the University of Georgia helps students gain disciplinary depth while also learning to collaborate across fields of practice. This program strives to move beyond the paradigm of interdisciplinarity by reaching outside of academia to bring together scientists, policymakers and practitioners. Through mechanisms such as internships and a practitioner-in-resident program, students will interact with conservationists as partners and colleagues.</td>
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<td>USA – Paidea Middle School, Atlanta, Georgia (Syracuse University)</td>
<td>The ACSC Integrative Framework was applied to the development of a cross-disciplinary climate change curriculum. Through a teacher training workshop that included math, social studies, English, science, and art and language teachers, the IF was used to generate sets of questions about climate change, its impacts, and what can be done. Through an iterative process with teachers and students, the curricula was developed, refined and then used through the Fall, 2009 and the Spring, 2010. This initiative represents the utility of the framework in its most basic form to structure learning across traditional boundaries.</td>
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<tr>
<td>USA – Navigating the Trade-offs and Complexities of Hydro-fracking: a Model for Dialog, Collaborative Research, and Problem-Solving (Syracuse University)</td>
<td>The prospect of high volume hydraulic fracturing (hydro-fracking) in Central New York and the surrounding region brings the area into national, and even global debates regarding the connections and tensions between energy development and environmental protection. While natural gas is an important component of regional and national energy strategies, many are concerned that the techniques for</td>
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recovering the gas reserves will cause water pollution and other environmental harm. Thus far, the local dialogue about this issue has been characterized by one-sidedness and polarization, with little common ground in which people with different perspectives can work together towards understanding and navigating the multiple trade-offs and complexities involved.

| Vietnam – Final ACSC Synthesis Report | The ACSC Initiative was designed to promote productive and meaningful research and discussion about the relationship between biodiversity conservation, social well-being, and economic development in Vietnam. This analysis summarizes and categorizes Vietnam’s history with respect to the social and decision making context of conservation and development decisions through three different time periods, and creates a typology of the multiple kinds of relationships between conservation and development activities that occur in Vietnam. |
| Vietnam – Historical Research Report: Conservation & Development Trade-offs in Vietnam | This synthesis report was based on the historical reports of social, economic, ecological, and political themes and secondary data from many sources to: (1) understand the context of natural resources and ecosystem trends since 1962, (2) understand the relationship between conservation and development, (3) develop a typology of trade-offs in the time period, and (4) understand the decision making process related to trade-offs. |
| Vietnam – Bai Tu Long National Park, Quang Ninh Province, Vietnam: Case Study | This research project set out to identify challenges in conservation; understand trade-offs in decision making to establish national parks, conservation projects, and development of tourism; and clarify contexts (economic, social, political and ecological) that affect decision making process for conservation and development. Research methods included: analysis of secondary data; in-depth interviews of provincial, district and commune cadres; interviews of 56 households; and environmental valuation. |
| Tanzania – Final ACSC Synthesis Report | This report is based on ACSC research that was conducted in two areas in Tanzania from July 2008 to September 2009: Saadani National Park, which was upgraded to a national park category in 2005, and Usangu wetlands including the Usangu Game Reserve, |
which, in 2007, was annexed to Ruaha National Park, and a total of nine villages adjacent to the two protected areas. Four research teams of two researchers each were engaged to work on the different research portions: Ecology team; Social team; Politics team; and Economics team.

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<tr>
<th>Tanzania – Quarterly, Annual &amp; Workshop Reports</th>
<th>Quarterly, annual and workshop reports are available for Tanzania for the period 2007 to 2009.</th>
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<tbody>
<tr>
<td>Tanzania – Ecological factors influencing trade-offs between conservation and development in Tanzania</td>
<td>This paper is based on recent work in Saadani and Usangu Basin to evaluate ecological factors affecting development and conservation trade-offs with local stakeholders so as to improve the ability of key actors to identify, analyze and understand when trade-offs are important, how can they be calculated and negotiated. Attempts to reconcile economic development with environmental conservation in the study areas has revealed that conservation laws and regulations are rarely enforced as livelihood needs depends primarily on conserved resources. Also use of tools for incorporating community knowledge, preference and values in natural resources could help in identifying and negotiating trade-offs.</td>
</tr>
<tr>
<td>Tanzania – Political and Historical Perspectives of Conservation in Tanzania</td>
<td>The present article assesses the influence of governance and/or institutional structures on conservation and development trade-offs in four villages adjacent to Saadani and Ruaha National Parks. The fundamental argument of the article is that governance and institutional structures in place are insufficient in terms of providing a win-win situation between conservation and people’s livelihood. This is mainly because of the top-down decision making set-up whereby the lower organs of authority takes what is dictated by the higher ones which more often than not uphold conservation over the livelihood of those effected by conservation.</td>
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<tr>
<td>Tanzania – Sociological Aspects Pertaining to Trade-Offs Between Conservation and Local Livelihoods: Case Study of Saadani and Ruaha National Parks in Tanzania</td>
<td>This paper aims at discussing sociological and anthropological factors supporting or undermining conservation endeavors. The objectives of the study were to understand local people’s awareness of resources and conserving wildlife; to identify sociological and anthropological issues related to trade-offs between conservation and development; to understand the manner in which these issues influence local people’s perception and attitudes towards conservation in the protected areas; to identify opinions of local communities on ways of overcoming the trade-offs caused by conservation.</td>
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<tr>
<td>Tanzania – Review of the Decision to Evict Pastoral Communities from Usangu Wetlands of Southern Tanzania using the Trade-off Approach</td>
<td>In 2008, pastoral communities who had settled in Usangu Wetlands of Southern Tanzania were removed due to the need to conserve these wetlands as water</td>
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<td>Tanzania – Trade-offs Between Extractive Industry and Biodiversity Conservation in East Usambara Mountains Ecosystem, Tanzania: An Analysis of Power and Power Relations</td>
<td>The aim of this study was to identify all stakeholders and their roles in conservation and gold mining in the area, to assess the importance and influence of each stakeholder, to address local communities’ participation in decision making process on the issues of gold mining and conservation, to carry out analysis of national policies and institutions that govern mining and conservation, and to identify trade-offs that exist between gold mining and biodiversity conservation in East Usambara Mountains ecosystem.</td>
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<td>Tanzania – Impact Assessment on the Livelihoods of Pastoralists Evicted from Usangu Basin, Tanzania</td>
<td>This study pursued the following specific objectives: To examine pastoralists’ livelihood changes that occurred due to their eviction; to identify and assess current constraints and opportunities for livestock keeping and compare with the situation prior to eviction; and to identify different sources of income among pastoralist households. The research was guided by the following questions: Is there any significant impact on the pastoralists’ livelihoods due to their eviction from Usangu basin? What are the current constraints and opportunities of livestock keeping as compared to the situation in Usangu basin? Is there any significant difference among different income sources within the pastoralist households?</td>
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<tr>
<td>Tanzania – Curriculum for MSc in Wildlife Management</td>
<td>Building on the conceptual work of ACSC on trade-offs, national studies into the economic, social, political and ecological context of decision-making, and on the case studies undertaken for ACSC in the country (Usangu wetlands, gold mining in the East Usambara Mountains, and Saadani National Park) coursework is being developed that specifically looks at trade-offs in conservation and development and opportunities offered whereby advanced degree research include work on trade-off thinking and decision-making.</td>
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<tr>
<td>Peru – Final ACSC Synthesis Report</td>
<td>This report presents the national research results for the Peruvian national context of trade-offs between conservation and development. It has been based on a multidisciplinary research aimed to identify the key factors that influence conservation and development.</td>
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Catchment areas for the Great Ruaha River, which had started drying up. This paper describes the scenario and identifies the legal, socio, economic and governance issues related to decision-making, which affect these people and analyses the trade-off decision, which had to be made by both the local communities and government, which made and enforced the decision of moving these communities.
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<table>
<thead>
<tr>
<th>Report Title</th>
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<tr>
<td>Peru – Quarterly, Annual &amp; Workshop Reports</td>
<td>Quarterly, annual and workshop reports are available for Peru for the period 2007 to 2009.</td>
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<tr>
<td>Peru -- From an Inviolable Zone to a “National Interest” Project: The Shrinking of the Bahuaja Sonene National Park</td>
<td>This study explores the trade-offs between existing protected areas and the discovery of hydrocarbons within the protected area boundaries. It discusses decision-making processes in Peru and the exercise of power between different interest groups.</td>
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<tr>
<td>Peru – Economic valuation of the ecosystem services and the hydrocarbons of the Bahuaja Sonene national park. Elements for debate.</td>
<td>This report discusses the opportunities and shortcomings of economic valuation of biodiversity and ecosystem services for conservation. The analysis uses the paradigmatic case of Bahuaja Sonene National Park, a biodiversity hotspot also rich in hydrocarbons.</td>
</tr>
<tr>
<td>Peru – Biofuels: the need to incorporate social and environmental considerations</td>
<td>This edition of the Cuestion de Perspectiva bulletin is dedicated to the analysis of biofuels in Peru. The report is based on a round table held in 2008 and also on empirical research carried out in San Martin region.</td>
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<tr>
<td>Peru – Biofuels in Peru: Issues at Stake (video)</td>
<td>This video explores biofuels policies in Peru and the trade-offs between economic, social, political and ecological interests. It argues that what seemed like a sound decision for the environment and the economy to promote biofuels is in fact problematic on many fronts.</td>
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<tr>
<td>Peru – Perceptions of conservation in the light of the III National Forum of Natural Protected Areas.</td>
<td>This work was the result of an event ethnography carried out in the III NPA Forum, which took place in Chiclayo, Peru, in November 2009. 53 interviews and a survey of 211 persons were carried out. The report focuses on the nature of conservation as a social movement in Peru.</td>
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<tr>
<td>Peru – Conservation, Extractive Industries and Indigenous Reserves: the categorization process of the Sierra del Divisor Reserved Zone</td>
<td>This research document analyses the categorization process of the Sierra del Divisor reserved zone, where hydrocarbon blocks, indigenous reserves and natural reserves are superimposed. The analysis showed that despite the process was allegedly participatory; the extraction of hydrocarbons was allowed in an imposed way.</td>
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<tr>
<td>Peru – Oil palm monoculture in the Peruvian Amazon: the case of Shanusi</td>
<td>This case study analyses the expansion of oil palm in the Shanusi and Caynarachi valleys, and discusses the social and environmental impacts of large scale monocultures in the Peruvian Amazon.</td>
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<tr>
<th>Peru – Power, valuation and process in the Inambari dam case.</th>
<th>This research tests ACSC’s Integrative Framework to analyze the decision making process of the construction of a large dam in the Inambari river. It uses the Integrative Framework to assess what is being valued, through what processes and how actors exercise their power in decision making.</th>
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<tr>
<td>Peru – Introducing Young Researchers to Trade-offs</td>
<td>Two research contests were launched for young researchers. In 2008, 29 proposals were received and three selected with research undertaken on people and parks, bio-piracy and mining issues. In 2009, 71 proposals were received and four selected. There were two general themes in the contest: Power, valuation and process in decision-making regarding conservation and development; and Politics of knowledge: discourse, representation about nature, biodiversity and development in Peru.</td>
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