Chapter 3:
APTNESS

Getting an "easy win" by replicating a community-based intervention that has proven to be effective elsewhere can help in building relationships with a new community. However, replication will often not achieve biodiversity conservation, which requires a suite of contextually appropriate conservation interventions that are designed or adapted at the community level. Multi-faceted programs with multiple interventions are generally more effective as they are able to address a diversity of threats and reach out to a wider section of the community.

The aptness of community-based interventions for any site or situation should be assessed in multiple ways:

- Are they designed to address the main threats to biodiversity in the area?
- Are they founded on a robust scientific understanding of the problem?
- Is there a role identified for the entire community or its representatives in the intervention portfolio?
- Are the interventions culturally appropriate?
- Are they in agreement with universal values?
- Are they designed keeping in mind the local socio-economy, social capital and skill sets?

Understanding the issue: every problem is not a nail

As conservationists, we are constantly aiming to expand the impact of our programs, or, to use typical NGO language, to upscale. Replicating a successful intervention in other sites is a standard and obvious way of upscaling. Sometimes this can work well (but see later discussion on the value of multi-faceted programs).

For example, instances of depredation by snow leopards inside corrals usually result in multiple livestock kills, causing the farmer high financial losses. In an

area where such damage is frequent, collaborative predator proofing of corrals can really help the farmer and is a potentially useful way to garner community support for conservation. It is also likely that the same approach, with minor adaptations, would work well in other communities where livestock depredation inside corrals is a major issue.

Indeed, such interventions that have relatively wider relevance and are easy to replicate, can play a useful role in initiating or strengthening communication and relationships with communities. However, the problem begins if we start assuming that they are adequate to address the key threats to biodiversity or focal species in every site.

It is useful to keep in mind that while the replication of a successful community-based intervention in other sites can be useful, sometimes it may be only partly useful, at times a waste of conservation resources, and at worst, damaging for the society or biodiversity. Yet, replication remains an invariably enticing way of planning an expansion for a variety of understandable reasons.

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Community-based conservation is time-consuming and challenging, and when an intervention works well after years of effort, the desire to replicate it in other sites is natural. It is also convenient to plan and propose the upscaling of ongoing programs in terms of interventions rather than measurable impacts on biodiversity, considering the complexities, time lags, and logistics involved in biological responses and their measurement.

From the perspective of funding agencies looking for tangible project impact, especially those sensitive to human issues, a focus on the intervention helps us draft more quantifiable indicators. And the fact that the intervention has already been tried and tested elsewhere instills confidence in its potential positive impacts for people and biodiversity.

It is also human nature and scientific motivation to look for general if not universal answers and solutions. Or, in the case of the conservationist, an innate desire for a conservation panacea.

The process of community-based work, like any other, also tends to concentrate the attention of the practitioner on the interventions. In implementing a conservation intervention, over time, like in any other initiative, the initial excitement of starting or expanding the program can get taken over by the routine tasks essential to keep the programs going. As this happens, the process indicators of the interventions – such as the number of people participating, the extent of benefit they are deriving, or the number of meetings conducted etc.– can take over as the guiding force at the cost of the larger vision and ultimate purpose of the effort: securing the status of biodiversity.

As the approach becomes narrowly focused on the interventions and their replication, we are often setting ourselves up to be surprised. When we actually begin to measure the impact on biodiversity, conservation-related behavior of people that the program aims to influence, or even the attitudes of the target community, we get unexpected results.

We may find that the state of biodiversity continues to degrade and the threats to conservation continue to intensify and diversify. Yet, in parallel, the process indicators – such as the number of people benefiting from the intervention economically, the number of community meetings etc. – might continue to convey that the program is running well.

Such a paradoxical situation arises not necessarily because the program is not implemented properly or because the conservation vision has taken a back seat. It may arise because the problem itself may have been misdiagnosed in the first place, or the intervention might be contextually inappropriate.

To give an example, after successfully piloting it in Mongolia, we began running the Snow Leopard Enterprises (Chapter 10: Snow Leopard Enterprises) program in Kyrgyzstan many years ago. Snow Leopard Enterprises (SLE) is designed such that in exchange for opportunities for livelihood enhancement, local communities agree not to engage in illegal hunting, and to actively prevent poaching by outsiders in their areas of grazing and resource use. It took us several years to understand that while SLE did have a positive impact with the communities living around Sarychat Reserve in the Kyrgyz Tien Shan Mountains, it was unable to reduce the extent of poaching by outsiders.

In retrospect, we realized that it was far-fetched – and even unfair – on our part to have expected the local community to prevent poaching by outsiders, considering that the latter are usually influential and politically well connected,

while the local people in this case do not have ownership or rights over the land they use for grazing livestock. In fact, they have to rent the grazing land from landowners living elsewhere around Lake Issykul. Not surprisingly, while they were able to honor part of their commitment by not poaching themselves, the local communities were unable to prevent poachers from elsewhere.

The inadequacy of SLE to comprehensively address the issue of poaching in the Tien Shan is an example of how an intervention that enjoyed reasonable success elsewhere was contextually inadequate to address a rather similar problem in a different societal context. In response, we have since initiated a Citizen-Ranger Wildlife Protection Program, which runs in parallel with SLE. A collaborative effort with INTERPOL and the Kyrgyz government, this program trains and motivates rangers and local community members to work together to apprehend poachers.

Mark Twain is famously, though perhaps apocryphally, said to have written, "To a man who has a hammer, every problem looks like a nail." As practicing conservationists, we too carry the heavy burden of the metaphorical hammer. We tend to focus excessively on and celebrate our interventions, while neglecting the complexity and uniqueness of conservation problems. We tend to disregard the variation in the underlying societal dynamics in different sites or at different points in time. It would help considerably if community-based conservation thinking could shift its emphasis from 'what' to 'why'.

Addressing the problem: every solution is not a hammer

Unfortunately, there is no conservation panacea, and certainly not for community-based conservation. In fact, the complexity and dynamism of conservation threats and societal dynamics have prompted environmental issues to be labeled wicked problems, which, in a manner of speaking, have no solution (Ludwig et al. 2001). A term borrowed from social planning, a wicked problem is one that is unique; without definitive formulations, stopping rules or solutions; is constantly changing, and can be considered a symptom of another problem (Rittel and Weber 1973).

The experience with our first village wildlife reserve in Spiti Valley, India, where we worked with the local community to free up some of the land from livestock grazing to enable wild ungulate recovery, is a somber and, at the same time, somewhat amusing experience to consider.

One of our underlying assumptions had been that wild ungulate population

recovery would deflect some of the carnivore predation away from livestock to wild prey (Mishra et al. 2003a). A decade later, our own research invalidated the assumption. It showed that wild ungulate abundance was the main determinant of snow leopard abundance, and that an increase in wild prey could actually cause an increase in the extent of predation on livestock, rather than a decrease (Suryawanshi et al. 2013).

The village reserve effort did result in a four-fold increase in wild ungulate abundance. So from the perspective of conservation, our collaborative effort had succeeded in enabling wild ungulate recovery, and perhaps even facilitating the use of the area by snow leopards (Mishra et al. 2016a), both rather desirable outcomes.

However, from the community perspective, it is unlikely that the village reserve helped in reducing livestock depredation. On the contrary, it led to a new issue, that of more crop depredation by the wild ungulates. To make matters worse, this occurred during a period of rapid socio-economic transition that saw crops largely replace livestock in their relative importance in the local economy (Mishra 2000).

Fortunately, we had also started an insurance program with the community in question to address the problem of livestock depredation, which has been running well. More recently, we have had to initiate discussions and pilot new interventions to address the issue of crop depredation.

It is therefore instructive to consider the inherently wicked nature of conservation problems. Doing so helps us realize that seemingly identical conservation problems can actually be very different, and, even when they are similar, the conservation interventions required may vary from one site to the other. And perhaps most importantly, that there are no final solutions.

Assessing aptness

The recognition that there is no single correct solution in community-based conservation is humbling. But it need not be a cause for despondency. On the contrary, acknowledging that no solution is perfect makes it much easier to try out new interventions. It also makes it easier to critically evaluate ongoing interventions, accept the shortcomings and adaptively evolve the programs.

The knowledge that there is no single or correct way to address a problem in

community-based conservation also helps reduce the fear of making mistakes. Way too often, conservationists hesitate to try out new possibilities because of the fear of going wrong, even while fully recognizing the need for thinking and acting outside the box.

The situation, the conservation threats, the constraints, capacities, and opportunities vary between areas and between communities in the same area, and they change over time. It is therefore important for any community-based effort to be sensitive to this dynamism, and for the interventions to be designed or at least adapted to the specific contexts and communities. While no effort will be perfect or correct given the nature of the problem, the appropriateness of an intervention or a set of interventions for a situation or a community can and should be assessed in multiple ways.

The threats

Strangely, the best way of judging the aptness of specific conservation interventions - the raison d'être of conservation - tends to be amongst the most neglected. Are the interventions designed to address the key threats to the biodiversity that one is trying to preserve?

A new intervention is often designed in response to particular threats to biodiversity, and can potentially work well if informed by adequate science, supported by the community, and implemented well. However, it is useful to keep in mind that any intervention usually addresses a limited number of threats, or a limited number of aspects of any threat. In reality, biodiversity in any site tends to face a multitude of threats, and as a rule of thumb, a suite of interventions with any community tends to be more effective and resilient than a single intervention (See later discussion on multi-faceted approaches).

Furthermore, when we try to replicate the interventions in other areas, it is often based on the assumption that the threats are similar. We neglect to conduct comprehensive threats assessments, even though several simple and useful frameworks for threats assessment are available (e.g. Salafsky and Margolius 1999).

Indeed, many of the threats tend to be common or similar between sites, so, with good fortune, the same interventions can have a positive impact on biodiversity in the new sites. But they need not, especially if there are other, more overwhelming threats to biodiversity that the interventions were not designed to address.

As mentioned earlier, the potential expansion of mining operations into snow leopard habitats in our community-based sites took us by surprise on more than one occasion. This happened because our field presence was not adequate, and because we were focusing excessively on our conservation interventions instead of letting ourselves be guided by the actual threats.

Maintaining sight on the threats to biodiversity in any area is critical. These are constantly changing, and, more often than not, intensifying. Routinely evaluating whether or not our interventions are effectively addressing the main threats to biodiversity is one of the most essential and fundamental ways of judging their aptness. If they aren't, we need to adaptively improve them. If that is not enough, we need to design new interventions. In conservation, one size does not fit all.

The science

Community based conservation is more craft than science, where social sensitivity and skills of the conservationist matter as much as or more than scientific frameworks or sociological methods. Yet, it is difficult to overemphasize the importance of robust scientific understanding of sociological and ecological issues in designing, implementing, monitoring and adapting community-based efforts.

Community based conservation is more craft than science, where social sensitivity and skills of the conservationist matter more than scientific frameworks or sociological methods. Yet, it is difficult to overemphasize the importance of robust scientific understanding of sociological and ecological issues in designing, implementing, monitoring and adapting community-based efforts.

One often experiences situations where the community is facing an issue, they have a clear idea of what is to be done, and they request for the conservationists' support. While community knowledge is to be valued highly and their solutions given high consideration, I have always found it useful to insist on first studying the problem, collaboratively if possible. Indeed, it is important to explain respectfully why developing a better understanding of the problem is required. This can be done by providing examples and competing explanations, explaining nuances, and discussing other possible options.

For instance, when people requested our support for large-scale fencing to protect crops from wild ungulates, we helped them understand how such fencing

could be damaging for wildlife movement. We also helped them see that there were other options such as temporary solar fencing that could be explored, but only after mapping the hotspots for crop damage. While initiating the study to look into a long-term solution, we could simultaneously assist the community immediately by creating support for temporary guards from the community. These guards are tasked with maintaining vigil for a few months each year, when crops are most vulnerable.

More fundamentally, science has a role in defining the conservation problem that one is trying to tackle in the first place. This might sound somewhat exaggerated, but it isn't, and is better explained with an example.

In the late 1990s, when I started working in the Buddhist Trans-Himalayan region, the prevailing wisdom at the time conveyed a somewhat rosy picture of the state of wildlife. Anthropologists had written about the Changtang region of the Tibetan Plateau "…The balance of livestock, people, and pasture is not degrading or overgrazing the pastureland…There are an abundance and diversity of wild ungulates such as antelope, wild asses, gazelles, and blue sheep." (Goldstein and Beall 1989, p. 179).

Ecologists too betrayed visions of harmonious coexistence between Trans-Himalayan people and wildlife, though in a more guarded, indirect manner. "…A generally benign association (of wildlife) with a sparsely distributed population whose traditional land use and religious practices have permitted long-term coexistence" (Fox et al. 1994). Or, "Wild animals occur in low densities and need larger areas to maintain their viable populations…" (Chundawat and Rawat 1994, p.3).

It would have appeared that little, if anything at all, was needed in terms of active conservation effort. The remote, high altitude mountain landscapes, a sparse density of humans, and the prevalence of Buddhism, all conjured up and rendered plausible the notion of a Trans-Himalayan Eden.

Research, however, soon belied this pastoral idyll. The region was in the middle of a rapid socio-economic transition, and while being geographically remote, the local economy was already getting integrated with regional markets (Mishra 2000). Studies documented the serious extent of economic loss suffered by local communities due to livestock predation by snow leopards and wolves, and the retaliatory carnivore killing (Mishra 1997). Research showed that the rangelands were overstocked with livestock (Mishra et al. 2001) and populations of wild ungulates were depleted because they were outcompeted for resources by

livestock (Bagchi et al. 2004, Mishra et al. 2004).

These research findings came as a surprise to many, including us. They also catalyzed us to start our community-based conservation work in the region, and led to initiatives like the village reserve and the community-based livestock insurance program. Research thus helped identify and define the conservation issues that had remained ignored.

The case of village reserves is useful to consider here once again. When we began our work, the density of blue sheep *Pseudois nayaur*, the main wild ungulate in our study area, was relatively low. Although the hunting of wild ungulates wasn't chronic, sporadic poaching instances were prevalent, a few by local people and others by defense personnel, assisted by locals (Mishra et al. 2003a).

Wild ungulate density is a key determinant of snow leopard abundance. Without the benefit of research findings, we could have easily been tempted to consider an intervention like SLE to facilitate an increase in the wild ungulate population. There is no doubt that SLE could have been useful for the local community by bringing the women an additional livelihood source, and would have also helped curtail the instances of wild ungulate hunting.

However, it was highly unlikely that SLE would have helped in facilitating any significant increase in the wild ungulate population. Research was already showing that the wild ungulate population was largely limited by excessive livestock grazing (Mishra et al. 2001, 2004); a threat that an intervention like the village reserve was able to specifically address. And one that SLE in its standard form would not have been able to do anything about.

Thus, science has a fundamental role in helping us recognize and analyze the key conservation issues and their societal underpinnings. It helps develop robust situation analyses, better identify the threats to biodiversity, and frame conservation problems appropriately.

Science can help frame measurable conservation targets, and also informs us about the kind of interventions that are more likely to help achieve them. It gives a sense of the kind of resultant responses we can expect, and time frames over which we can hope to see measurable change.

By helping identify the appropriate indicators to be measured, and by designing statistically and empirically robust frameworks for measurement and data

analyses, science also plays a critical role in monitoring of program performance, a subject discussed later (see Chapter 8: RESPONSIVESS).

For now, it is useful to keep in mind that an intervention that is designed without a robust scientific understanding of the socio-ecological context is less likely to be apt. And that an expansion which doesn't begin by first developing a scientifically robust situation analysis is less likely to succeed.

The scale

The household or the community?

Operationally, individuals or individual households tend to form the actual unit of participation in many community-based conservation interventions. For instance, livestock are owned by individual households, and therefore, the participation in a livestock insurance program is at the household level. Similarly, individuals choose whether or not to participate in SLE. The number or proportion of participants or families is, therefore, considered an important metric of the reach and impact of most community-based conservation interventions.

Where individuals or households are the main units of participation, it is important that elements be specifically designed in the interventions to facilitate the potential involvement and ownership of the entire community, not just the participants. The need for this is obvious. Unless the entire community's support for conservation is generated, the interventions will not have the desired impacts on the status of biodiversity. In SLE, for instance, ensuring that a part of the funds generated are directed for community welfare or to a micro-credit program that is open to non-participants has been very helpful.

Another way to reach the entire community is for the interventions to be multi-faceted, which, in any case, tends is more desirable than single interventions for reasons discussed later (see discussion on multi-faceted approach).

It is helpful to ensure a role for the entire community or its representatives in any conservation program, even if only a proportion of the individuals are actually involved in the intervention. It is also important, as discussed earlier, that the designing or tailoring of interventions be undertaken at the scale of each community for the programs to be contextually appropriate.

When a conservation intervention is designed, or at least adapted at the scale of

each community through discussions and negotiations, it is likely to experience relatively high local ownership. This ownership, as we shall see later (see Chapter 6: NEGOTIATION), is one of the important determinants of the resilience of any community-based program, and of the ease with which the interventions can be adaptively improved over time.

Yet, for all the talk of the need to involve local communities from planning to implementation of conservation programs, when it comes to actual practice, we often try and replicate the same standard prescription and set of rules we have worked out for any intervention. While we tend to do this for multiple, understandable reasons, as discussed earlier, shifting the focus from the standard intervention to the specifics of each community would help in making the programs stronger.

Small groups, or large communities?

With conservation interventions, we want to reach out to as large a proportion of the local community as is possible. The greater the number of people involved, the bigger the potential positive impact on the status of biodiversity. Most of the community-based interventions, in any case, need a minimum threshold number of participants to be effective and sustainable.

While larger groups are desirable, sometimes this can become problematic. Many interventions such as the livestock-insurance program or village reserves rely on the willingness of the participants to cooperate with each other. As the group size increases, the willingness to cooperate can decline. This is not just because of the reduced communication among participants as their number increases.

Game theory suggests that the rate of cooperation in an interaction is inversely related to the number of people involved, and the potential rewards from cheating tend to increase with group size (Colman 1999). Note that the term cheating is used here purely in a decision-theoretic sense, denoting logical action explained by rational self-interest, and has no moral connotation.

In practice, this can manifest itself as, say, an increasing tendency for filing false claims in a livestock insurance program. A few years ago, there was an instance of a false insurance claim detected in one of our programs in Spiti Valley, Western Trans-Himalaya. Because the community was relatively small with around 50 participant families who all knew each other, the transgression was easily detected, and the claimant let off with a warning.

The ideal size of the group for a particular community-based intervention may vary with the community and the intervention, and it is difficult to specify numbers with which to work. Instead, this is best judged by the conservationist together with the community members.

When communities and potential number of participants are large, it may be useful to manage the interventions at the scale of traditional administrative groupings rather than of the entire community.

Communities are well aware of these issues. Beyond a certain size, most local communities traditionally divide themselves into smaller groups for ease of internal administration and management. In snow leopard landscapes, community groups are usually based on how close the houses or gers are to each other, or the proximity of their resource use areas. There are interesting systems of decision-making within each group, often democratic, with group leaders being responsible for negotiation and coordination between groups and eventual community-level decisions (e.g. Mishra et al. 2003b).

When communities and potential number of participants are large, it may be useful to manage the interventions at the scale of traditional administrative groupings rather than of the entire community. It is preferable to rely on traditional administrative groups – provided they are voluntary and equitable – rather than create new ones, since any imposed grouping may be less efficient and could also have unanticipated consequences for community-cohesion.

There is another hidden lesson here. Working with smaller, tightly functioning community units has advantages as discussed. Further, beyond the management unit, sometimes one just needs to take one small step at a time, especially when trying out new initiatives (see Chapter 5: TRANSPARENCY). Conservationists sometimes hesitate to try out new ideas because they feel their effort is too small, impacting a limited area, or involving only a few participants. In community-based conservation, no step is too small.

Small areas, or large landscapes?

While small has advantages, it can also be a rather important and prevalent problem when it comes to the spatial coverage of community-based conservation efforts.

Our ability to work with any given community tends to be influenced by multiple

factors such as our familiarity, presence, relationship, ease of access, wildlife value of community-land, specific threats to wildlife, resources and manpower. The inclusion of communities in conservation efforts within a landscape, therefore, is rarely uniform. This is especially the case when community-based efforts are undertaken without a geographical reference such as a Protected Area or some unit of conservation in mind.

Community-based efforts implicitly focus on and tend to be constrained by the size of the area or habitat owned or influenced by the community in question. On the other hand, common sense – as well as the island biogeography theory – underscores the importance of protecting larger habitat patches rather than smaller ones for effective conservation and to reduce the chances of local extinction of species. There is often a mismatch between the area of influence of the community and the habitat needs of the species or biological assemblage that one is trying to conserve.

For instance, the home range size of an individual snow leopard, our conservation flagship, can be spread over a few hundred square kilometers. The area of influence of communities in snow leopard habitats, on the other hand, typically varies from a few tens to a few hundred square kilometers, and, rarely, a few thousand.

On average, therefore, in a given community, the habitat area that could potentially be protected through community-based efforts will often be smaller than the home range size of even a single snow leopard. This means that even if community-based efforts managed to result in strict protection in one community's area, a snow leopard that uses this habitat, in its normal course of movement, could still get killed in another community's area.

When wildlife includes landscape species like the snow leopard, the spatial area of reference cannot be the community land, or even a protected area alone. The focus has to be on entire landscapes that can support breeding populations, or form important biological corridors connecting other populations.

Therefore, when wildlife includes landscape species like the snow leopard, the spatial area of reference cannot be the community land, or even a protected area alone. The focus has to be on entire landscapes that can support breeding populations, or form important biological corridors connecting other populations.

In such a landscape-level approach, while the focus is on promoting conservation across entire landscapes, the community or a cluster of neighboring communities still remains the operational unit of conservation. The spatial units over which conservation actions are implemented (and some of the biological responses are measured) are usually delineated based on a conflation of ecological, geographic, threats-related, and administrative factors.

These and other issues such as the important role of the Government and multi-sectorial cooperation for landscape scale community-based conservation are discussed later (Chapter 9: STRATEGIC SUPPORT). For now, it is useful to keep in mind that our objectives and the biology of the species involved play a key role in deciding the scale-aptness of community-based conservation programs.

Socio-cultural aptness and value orientation

Value orientation

Assessing the cultural appropriateness of any community-based intervention is essential. Culture represents a complex of beliefs, practices, norms, values, and symbols (Schwartz 2006). An important aspect of cultures is defined by the value orientations of people – their shared ideas of what is good or desirable – which must be considered in community-based conservation.

For instance, to many researchers and conservationists trained in western style wildlife management, trophy hunting of wildlife is a perfectly legitimate conservation tool, provided it is implemented well. Indeed, while mismanaged trophy hunting has contributed to depletion of wildlife (the Kyrgyz Republic, consequently, had put a temporary moratorium on trophy hunting across the country), in other areas, such as northern Pakistan, well-managed community-based trophy hunting has arguably helped both people and wildlife in snow leopard habitats.

A Buddhist monk, or even the average practicing Buddhist herder living in snow leopard habitats, however, is likely to find the idea of taking life and inflicting insufferable pain on another living being – for sport – preposterous and deeply sinful. Ironically, their antithetical views notwithstanding, the monk and the trophy hunter may fully share a common concern for protecting other forms of life.

It is these value orientations that make an intervention like trophy hunting

potentially apt in say Islamic or animistic communities that have retained a strong tradition of hunting, while rendering it totally inappropriate in others. Value orientations of the local community are essential to consider, but the conservationist must also be mindful of those of the larger society supporting conservation. Consequentialist reasoning – whereby the ends are seen to justify the means – can be problematic, particularly when it comes to conservation tools such as trophy hunting (Nelson et al. 2016). Being aware of these issues is essential. Such awareness comes with deeper thought and sensitivity.

Values

The need to consider value orientations is an important issue, but not the only one. The sensitivity toward contextual value orientations may need to be balanced with the need to uphold certain universal values. For instance, too often, social realities dictate that in community-based conservation, inadvertently, we end up largely working with the male members of the community, who are seen to be making the decisions at both the household and the community levels.

This can be problematic not just from the perspective of gender equity. For instance, recent research indicates that women tend to have greater negative attitudes towards predators such as the snow leopard, partly because they might bear disproportionately greater costs of wildlife-caused damage such as livestock depredation (Suryawanshi et al. 2014). Unless community-based programs have an adequate focus on women and ensure their representation, building societal support for wildlife conservation will remain difficult.

In response to this felt need, in Pakistan, our Ecosystem Health Program expanded its representation to include and train women as community livestock extension workers. In India, SLE was added to the repertoire of community-based interventions to specifically seek the support and involvement of women in snow leopard conservation.

The need for gender representation, however, applies not just to the communities. Working effectively with local communities also requires that the team of conservationists have adequate gender representation.

The developments in our vaccination program in Pakistan, or expansion of SLE in India, would have been difficult without the presence of highly capable women in our staff. We have been very encouraged and excited by the enthusiastic response of the communities in India, where our women staff have led the piloting of the

SLE initiative. This enthusiasm of local women is in stark contrast to their rather indifferent response more than a decade back when I first discussed SLE with them. There were no women conservationists in our team then.

Thus, community-based efforts need to strike a balance between the contextual value orientations of specific cultures and certain universal values, such as gender and social equity. These judgments are perhaps best made based on intuition and common sense.

Socio-economics and social capital

Local economies and skill-sets

The aptness and performance of any conservation intervention in a given community will often depend on the local socio-economy. It is therefore useful to assess the socio-economic status of households at the community level while designing or adapting a community-based intervention.

For instance, the ability of livestock owners to contribute premium into the insurance fund depends on their economic status. In relatively poor communities, this ability will remain limited. Therefore, a greater proportion of the insurance fund may need to be subsidized through conservation funding compared to relatively wealthy communities, where participants may have the willingness and ability to pay relatively higher premium amounts.

Similarly, in otherwise comparable circumstances, the willingness to participate in an income generation program like SLE, and its potential impact could be expected to be higher among relatively less affluent communities, as any additional income for them would form a much larger proportion of the average household income. In more affluent communities, the addition to the income may need to be much higher for the program to have the desired level of participation and impact.

It is also useful to keep in mind the variation in skill sets and social capital amongst communities, which can have implications for the performance of community-based interventions. While interventions are best designed keeping local resources and available skills in the community in mind, almost invariably, the skill sets need periodic enhancement. Given the variation in existing skills, the need for training again can vary between communities. For instance, people in relatively remote communities may have high natural history knowledge, while

a community-based tourism intervention might require greater training emphasis on housekeeping and hospitality. In contrast, training for people living in more integrated communities or setups like townships may require a greater emphasis on natural history and nature interpretation skills compared to hospitality.

While interventions are best designed keeping local resources and available skills in the community in mind, almost invariably, the skill sets need periodic enhancement.

Social capital

The concept of social capital recognizes the value of social networks, trust and norms as a resource for action and for addressing individual or collective problems (Coleman 1986). Social capital can be a diffuse but critical element in the effective delivery of any community based program. It is especially useful in the implementation of collective agreements and norms, so that community-based interventions can actually lead to an improvement in the status of biodiversity.

Communities may differ in their available social capital, a useful measure of community coherence. This can have implications not just for the ultimate performance of community-based programs, but also on the aptness of any community-based intervention.

Some interventions depend more on social capital compared to others. For instance, our SLE and livestock vaccination programs (Chapters 10 and 12, respectively) rely predominantly on individual involvement, and less so on social capital, although the latter continues to have an important role in ensuring conservation compliance. In comparison, the livestock insurance program (Chapter 11) has a much greater reliance on social capital. It requires systems and norms that can ensure that the participants pay their premiums on time, and that the committee members manage the funds with integrity. It requires social networks and trust to deal with moral hazards and to deter the temptation to file false claims. And it depends on voluntary contribution of time and effort of insurance committee members to run the program.

Thus, the available and required social capital can help assess the suitability of any community-based intervention. It is also useful to keep in mind that social capital needs resource investment, both economic and cultural (Portes 1998). Sometimes, in the interest of long-term and sustainable conservation outcomes,

it becomes useful to invest in enhancing it, a subject discussed elsewhere (Chapter 8: RESPONSIVENESS).

Interestingly, while community-based conservation interventions depend on it, they can also contribute to enhancing the available social capital. The Youth Council of Kibber village is a good example. This was a loose collection of young villagers brought together by their shared love for having a good time, mostly a good game of cricket! Yet, this group became more organized, and indeed more responsible, when they started playing a role in community-based conservation interventions.

They acquired a fair amount of respect within the community especially after effectively managing the livestock insurance program in the village – to the extent that, when internal conflicts led to a temporary breakdown of the traditional village administration system, this group, by now respected and seen as non-factional, was requested to administer the affairs of the village. They ended up doing so for the nearly two years it took for the disputes to be resolved and status quo to be restored.

Social capital, and the aptness of specific conservation interventions for a given community, therefore, can change over time. Often, timing is critical in community-based conservation, as we shall see later (see Chapter 6: NEGOTIATION and Chapter 8: RESPONSIVENESS).

Multi-faceted approach

Diversity is ingrained in our thinking. The stability of ecosystems is thought to increase with the diversity of its component species (McCann, 2000). Peace and stability among nations is suggested to increase with the diversity and extent of their economic relations and interdependence (Gartzke et al. 2001). Similarly, the effectiveness of community-based conservation efforts, and the resilience of the relationship between communities and conservationists, is influenced by the diversity of interventions – for several reasons.

As discussed earlier, a single community-based intervention is rarely able to address all the key threats to biodiversity in an area (see section above on Threats). This simple recognition gives rise to the rule of thumb that multi-pronged approaches are better than single interventions.

In fact, even a single threat often has multiple dimensions. To take an example,

let us consider the seemingly straightforward threat of retaliatory killing of predators in response to predation on livestock. Human attitudes and behavior underlying different responses to predators, such as retaliatory killing, can be influenced by range of factors. These include individual human experiences and attributes, socio-economic indices of the family and the community, relationship with the state, the appearance and behavior of the carnivore itself, and so on (Suryawanshi et al. 2014).

This creates the need for management efforts to be made multi-pronged. For example, a conservation approach needs to be able to address at least three aspects to be effective in the case of livestock predation and retaliatory killing (Mishra and Suryawanshi 2015, Mishra et al. 2016b).

- Steps to reduce livestock losses through better livestock protection,
- Mechanisms to share and offset economic losses when livestock depredation does take place,
- Interventions to improve the social carrying capacity for the predators through livelihood enhancement and awareness programs.

All three aspects require different kinds of interventions. For instance, predator-proofing of corrals in certain sites, and building incentives for better herding in others (in situations where losses occur while livestock is grazing in the pastures), can help with better livestock protection. But neither of these interventions is designed to help offset depredation costs, for which an intervention like the insurance program needs to be considered (Chapter 11). Insurance programs themselves can create a moral hazard (see discussion above on Social Capital), and therefore, thinking of ways to reward better herding can be useful. Similarly, Snow Leopard Enterprises (Chapter 10) or collaborative veterinary care (Chapter 12), where appropriate, can help with livelihood enhancement, but not with better livestock protection.

There are other reasons that make a multi-faceted approach more meaningful. For community-based efforts to lead to effective biodiversity conservation, it is important to have the willingness and support of the entire community. This underscores the importance of involving as many households as possible in the program. Single interventions rarely manage to reach out to the entire community.

For example, there are households that do not have livestock, and would not benefit from interventions like corral improvement or livestock insurance programs. Yet, it is important to involve them, because their actions could be

equally or more conservation-unfriendly compared to the participants. On the other hand, these households could become potentially useful conservation allies if they are involved in a meaningful way.

Often, the needs of the community rather than those of biodiversity, or their conceptual familiarity with an intervention, influence their readiness to pilot it.

Diversification of interventions, therefore, helps in making the programs more inclusive. Families without livestock, for example, could perhaps be involved through other contextually meaningful programs such as SLE. The potential inequity in the community created by incomplete coverage of conservation programs could, in fact, lead to problems for both the society and the biodiversity.

It is important to keep in mind, however, that it is neither prudent nor logistically feasible to start multiple interventions in a community at the same time. Diversification must take place step by step.

Starting with interventions that address the main threats to biodiversity and diversifying over time is useful whenever possible, but not always feasible. Often, the needs of the community, rather than those of biodiversity (see Chapter 8: RESPONSIVENESS), or their conceptual familiarity with an intervention, influence their readiness to pilot it. This is okay as long as it is regarded as an initial step in the larger conservation vision for the area, and the program is diversified over time to address the main threats to biodiversity. When a community is able to run an intervention appropriately for some time, it tends to become relatively more open as well as more capable to experiment with others.

A multi-faceted program developed over time improves the resilience of conservation partnerships with local communities. A relationship based on a single intervention will collapse if the intervention were to fail for some reason – or in some cases even if it were to succeed. For instance, there is little to do in terms of follow-up in an intervention such as collaborative predator-proofing of corrals. Once the corrals are improved, there is no tangible avenue left for sustained engagement with the community, and for encouraging conservation-friendly behavior.

Indeed, when local communities are convinced of the long-term interest, presence, and potential for a diversity of engagements with conservationists, they also tend to be more responsive, and more open to adaptive improvement of interventions. A diversity of potential interventions also helps shift the

interaction from positional bargaining to a more collaborative partnership (see Chapter 6: NEGOTIATION). In community-based interventions, in diversity, there is strength.

Dos:

- Assessing threats to biodiversity rather than assuming them
- Designing interventions to address specific and relevant threats
- Designing interventions that are contextually appropriate for the target community
- Working with women and ensuring adequate representation in the conservation team
- Reaching out to majority of the community, but working with relatively smaller groups
- Investing in enhancement of social capital

Don’ts:

- Ignoring social and cultural contexts when implementing programs
- Focusing solely on program participants and forgetting to build in a role for the entire community in the intervention portfolio
- Creating new groups within the community for program operations, instead of using traditional ones
- Focusing solely on individual community land for landscape species conservation