

Action: Assessing benefits and consequences of corridors to local communities

Background Information:

The impact of conservation practices on local communities is a critical area of study. It illuminates both challenges and opportunities that must be taken into consideration in order to ensure long-term efficacy of proposed solutions.

The articles analyzed below highlight some of the most likely drawbacks and challenges of wildlife corridors as they affect local communities. These include increased potential for human-wildlife conflict, the inherent tension of outside conservation organizations working in local areas, and community livelihoods being negatively impacted by conservation-based restrictions.

It has been demonstrated by community-based environmental management scholars that involving communities in decision-making and implementation at the grassroots and administrative levels has wide-spread positive effects on the success of conservation projects (Agrawal & Gibson, 1999; Ostrom, 1990). In particular, it is demonstrably beneficial to take an asset-based approach to community conservation projects (Kretzmann and McKnight, 1996). An asset-based approach is one in which the community's full capacity is recognized. In other words, by taking inventory of the skills and strengths that community members can provide to the corridor project, as opposed to looking through a deficit lens, conservation practitioners have increased opportunity to expand and support their efforts.

While it is often difficult to quantify community impacts of corridor implementation and restoration, especially as compared with the ability to assess ecological impacts, there are methods available. Some of these include conducting survey-style interviews, recording incidents of human-wildlife conflict, and measuring changes in unemployment rate and median household income. Researchers have begun to take these local community impacts into consideration when analyzing the efficacy of wildlife corridors, thereby providing a unique lens through which to view restoration projects.

Key Messages:

- Five studies assessed the impacts of ecological corridors on local communities.
- Two of five studies found that when communities are involved from the initial stages, corridor projects are more likely to be successful.
- All five studies determined that corridor and conservation projects must have some tangible economic benefit to the surrounding communities in order to garner local support.
- Four of the five studies actively involve local communities in corridor establishment or restoration in a way that supports community members having autonomy in resource management and use.

Supporting Evidence from Individual Studies:

1. *Are corridors good for tigers Panthera tigris but bad for people? An assessment of the Khata corridor in lowland Nepal* - Wegge et al. 2018

The Khata corridor (11-12 km long, 8 km wide) was established in early 2000 between Bardia National Park in Nepal and Katarniaghat Wildlife Sanctuary in India and comprises 3,000 km² of protected tiger habitat. This study examined whether or not this corridor and the resultant increase in tiger populations caused an increase in conflict with local people. Tiger-human conflict was assessed by means of

questionnaires and semi-structured interviews. Presence of tigers was compared between the corridor, the national park, and the wildlife sanctuary. Local residents reported generally favorable attitudes towards both lions and the corridor. Results from this study indicated successful use of the corridor by tigers (9 transient-use, 2 exclusive-use individuals recorded between 2012-2013, with a successful breeding event recorded in 2012 within the corridor. This marks an observed increase in abundance. The study also reveals overall positive attitudes of locals towards tiger conservation and corridor existence, and decreased incidents of tiger-human conflict.

2. *COOPLANTAR: A Brazilian Initiative to Integrate Forest Restoration with Job and Income Generation in Rural Areas* - Mesquita et al. 2010

The focus of this study was on the Monte Pascoal-Pau Brasil Ecological Corridor (MPPBEC) and on the effects of a local cooperative (COOPLANTAR) that restores forests and improves livelihoods. The MPPBEC is an extension of the Central Corridor, and consists of 94,000 ha of adjacent land. The area is primarily for growing eucalyptus, coffee, and papaya therefore much of the Central Corridor forest (120 km wide; 18% of original forest cover) is extremely fragmented. The large cellulose manufacturer, Veracel, has used Eucalyptus production in the MPPBEC as a steady supply of raw materials and has funded a large portion of conservation efforts in the area through COOPLANTAR. Through this cooperative, local communities play an active role in choosing which areas will be reforested. Riparian zones in river basins have been a top priority. Much of the restoration efforts have involved planting native trees on rural properties. By the end of 2009, COOPLANTAR had restored 200 ha of forest on Veracel's land. These restored areas serve to connect several critical forest fragments within the Central Corridor and MPPBEC to form ~4,000 ha of continuous land. Plans for the future include planting a new nursery and getting more local community members involved.

3. *Developing Forested Conservation Corridors in the Kangchenjunga Landscape, Eastern Himalaya* - Chettri et al. 2007

The Kangchenjunga corridor is located in the transboundary region of Nepal, Bhutan, and India. People living in communities near the corridor continue to use the dwindling resources in unsustainable ways, largely due to persistent poverty. 70% of people in and around the protected areas are living on less than \$2 USD. The International Center for Integrated Mountain Development (ICIMOD) is a collaboration between all three countries with the goal of reestablishing natural conservation corridors through participatory forest management and enhancing the livelihoods of those inhabiting the corridors. ICIMOD works closely with the World Wildlife Fund (WWF) and the United Nations Development Program (UNDP) and in 2002, these groups identified 6 potential corridors, linking 9 protected areas, using GIS and remote sensing technology. All of those involved cited the difficulty of involving all stakeholders. However, they chose to make the process participatory, consultative, and transparent from the beginning, which the authors largely credit with the success of the efforts.

4. *Ecological Restoration and Reforestation of Fragmented Forests in Kianjavato, Madagascar* - Manjaribe et al. 2013

This corridor project makes use of a three-tiered design that capitalizes on the region's mountainous terrain. The three tiers are "permanent" (must be left entirely intact; emphasis on pioneer species), "timber" (set aside for harvesting of timber), and "non-timber" (largely secondary forest, used for cultivation of non-timber products). The uppermost 50% of each mountain is divided into pioneer and secondary species. On the lower half of each mountain, commercially valuable trees are planted and owned and maintained by community members. This program has been formalized through the Education Promoting Reforestation Project (EPRP), which works with local leaders and residents to plan corridors. Part of their mission is to provide supplemental income through the growth of timber and non-timber products. A major strength of this program was the fact that the community was approached prior to any conducting of fieldwork in order to gauge interest in and support for restoration efforts. 58 people from the Kianjavato Commune (which contains the Kianjavato Coffee Reserve on Sangasanga mountain, an enterprise that has led to significant land degradation) attended the first reforestation village meeting. During this meeting, 22 private landowners pledged to enroll in a reforestation pilot program. Participation in this program was contingent on leaving the permanent tier fully intact. Plans for the future include a parallel corridor which will improve the resilience of the planted corridor by creating a zone between these corridors that is protected from anthropogenic disturbance. Part of their efforts include near-constant monitoring of community groups in order to reduce the chances for illegal hunting.

5. *Governing REDD+: global framings versus practical evidence from the Kasigau Corridor REDD+ Project, Kenya* - Atela, 2013

The Kasigau Corridor built by Wildlife Works is 500,000 acres and links Tsavo East and Tsavo West National Parks, the two largest wildlife protection areas in Kenya. These parks contribute significant revenue to Kenya's GDP through eco-tourism. Kasigau is the first project to issue carbon credits under the international system of Voluntary Carbon Standards (VCS) and the Climate Community and Biodiversity Standard (CCBS). This has allowed for a shift away from traditional practices such as hunting for game meat, cropping, and harvesting wood products. The tourism industry has led to an increase in human-wildlife conflict, as communities resist being totally cut off from subsistence resources. However, with the introduction of the REDD+ framework, local people are beginning to have more favorable attitudes towards conservation efforts. The Kasigau corridor project has been so successful largely because the project developers (Wildlife Works) have worked in the area since 1998 and so have long-standing relationships with the community. The area chief and other community leaders were told about the project long before any work got under way, and communication traveled largely through traditional cultural means such as chiefs' barazas (meetings), to avoid top-down dictation. The community was included and engaged in all phases of development. While attitudes are favorable at present, the continued success of the Kasigau project will hinge on navigating through the complicated political waters of land rights and use.

Conclusions and Recommendations:

Based on analysis of the above studies, I offer several recommendations:

- 1.) *Local communities should be involved at the ground level when planning a wildlife corridor.* The human impacts of a corridor will be far-reaching and community buy-in is best achieved when the decision-making process is participatory and transparent.
- 2.) *Corridors must have some positive economic benefit to the local community.* Informed effort should be put into understanding the needs and strengths of all potentially impacted communities, in order to assess how community members can be involved, and how the corridor project can serve to sustain or even elevate their quality of life.
- 3.) *Similarly, communities can be integral to maintaining corridor projects, if the benefit to them is clear and outweighs any potential costs.* Involving community members in everything from corridor planning, to construction, to maintenance, to monitoring can not only be cost-effective, but can serve to strengthen the impact of the project, as local communities will be more likely to support current and future conservation efforts in the area if they are active participants in the process.

To summarize, wildlife corridor projects are best implemented when the community is involved early on and throughout the duration of the corridor project in ways that directly benefit them. The benefits that have been shown to generate the most motivation are poverty alleviation and increased economic opportunity. An important component of effective involvement of communities in corridor projects is management through outside governance and strong inter-institutional partnerships. These practices are generally best conducted by conservation organizations or governmental institutions which create partnerships with local communities to establish autonomy within the community. The goal of outside governance should always be to create community self-sufficiency and move towards local ownership of the corridor project. Best practices for establishing autonomy include providing trainings and workshops, conducting stakeholder meetings, and establishing governing boards on which community interests are well-represented.

Supporting Studies:

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