

## Appendix 8

### Recommendations

The maintenance of a fence is contingent on a host of perceived costs and perceived benefits which differ in different social-ecological systems. This diversity in incentives across communities makes it difficult to give cookie-cutter guidance on how to make a fence successful. However, our findings suggest many steps that can be taken to ensure a process that makes maintenance of fences more likely to occur.

#### A

**Stage of fence establishment:** Defining the “area of interest” to be protected by the fence.

**Current practice:** Practitioners tend to use official administrative boundaries such as villages, irrespective of the governance system and social norms in the area they are trying to protect from elephants. The governance system actually in use often spans across multiple physical boundaries.

**Shortcomings in current practice:** Since, in practice, governance occurs based on locally recognized boundaries and not official boundaries, setting up a fence based on administrative boundaries leads to a mismatch. Existing governance bodies may not have jurisdiction over the full fence.

**Recommended action:** When defining a ‘community,’ attempt to use already existing spatial demarcations recognized by the communities you are working to protect. This aids coordination and conforms to an established set of norms. The normative boundaries could be administrative boundaries like villages and staff quarters, or boundaries observed by existing social institutions like the *raiye*, a body that governs commons like temples, shared agricultural land, etc.

#### B

**Stage of fence establishment:** Assigning a pathway of maintenance (e.g., an assigned community maintainer, collective community maintenance, or Forest Department maintenance)

**Current practice:** Done in an *ad-hoc* manner often based on the intuition of implementers. It typically starts by setting the stage for the community to self-organize by aiding the creation of a committee that is to look after maintenance-related activities.

**Shortcomings in current practice:** This fails to take into consideration the social-ecological conditions of the scenario, which may lead to some pathways being more conducive in certain settings and leading to failures in others.

**Recommended action:** First, examine the perceived costs and benefits of the key actors in the situation (the community overall, would-be community maintainers, the political elite,

and the Forest Department) and try to see who would find maintenance in their interest. If the situation seems like it would allow for Forest Department maintenance of a fence, that should be the first choice-- these fences, as public goods aiming to help protect elephants (another public good), should ideally be institutionalized with a stable bureaucracy. The next best choice is for a community maintainer to be hired, as that frequently resulted in success. If the community seems actively enthusiastic about performing community maintenance, it may then be promoted as it is cheaper and can foster a public sense of responsibility for preventing HEC.

C

**Stage of fence establishment:** Explaining the fence to the users

**Current practice:** All households that were likely to benefit from the fence were involved in the decision-making process.

**Shortcomings in current practice:** Given that sabotage, shirking, and non-compliance were often noted to be the reason for the failure of a fence, the current practice means that those that might ultimately cause the failure of the fence are not included in the process, meaning their interests cannot be addressed.

**Recommended action:** While establishing a fence, attempt to involve members of all households in the area protected by the fence in designing the fence and orienting them with regard to how it functions. This is irrespective of whether they see themselves benefitting from it or not. Ensuring that all individuals affected by the fence participate in the establishment of the fence has two main effects. First, it provides an opportunity for those that do not benefit to voice grievances and identify remedies. Second, including them creates a shared context that reduces the chances of the sucker phenomenon playing itself out. Those who do not benefit substantially (such as people who do not engage in agriculture) but still pay some of the costs (such as hindrance to movement) are less likely to engage in sabotage and non-compliance related to fence maintenance rules as it is public knowledge that they know how the fence works and that the implications of sabotaging the fence/ non-compliance are potentially large.

D

**Stage of fence establishment:** When the community organizes the process for supporting maintenance

**Current practice:** The decision on how and how much to collect from each household is not explicitly recommended by the implementers

**Shortcomings in current practice:** The community members, when self-organizing, are susceptible to the notion that each household contributing a small amount at regular periods is a sustainable pathway to maintenance. However, this approach ignores the resultant increase in transaction costs that comes with multiple small payments. As some individuals become

delinquent on payments, others might feel like “suckers” for shouldering the full cost of a public good and then also stop contributing-- i.e., the “sucker effect.”

**Recommended action:** When the community is deliberating on process, encourage the collection of a single large contribution (eg. annual) as opposed to repeated small ones (eg. weekly/fortnightly), reducing the transaction costs. Despite both the alternatives resulting in the same amount of contributions, respondents indicated that repeated contributions pinch the members more and lead to non-compliance. Additionally, given that it is a small amount, the recovery of arrears becomes logistically challenging. A larger contribution also creates a buffer reserve fund for urgent repairs.

E

**Stage of fence establishment:** Post-fence establishment, during fence maintenance.

**Current practice:** Poor maintenance of fences can then lead to more breaches by elephants, resulting in a drop in perceived benefits of the fence, which then means less enthusiasm for maintenance--ie., a vicious cycle or socio-ecological trap. Practitioners typically react by trying to nudge the community members into undertaking maintenance by verbally engaging with them

**Shortcomings in current practice:** Community members are often unconvinced of the effectiveness of the fences after they fall into the social-ecological trap.

**Recommended action:** A potential solution would be to hire a community maintainer to maintain the fence for a specified, predetermined period of time in order to make the benefits of the fence more salient. This maintainer should be from an external entity (ie, not from the village as this could lead to maintenance being considered his/her job even after the specified time), and s/he should undertake maintenance along with the community members, thus imparting the technical know-how as well.

F

**Stage of fence establishment:** Scaling-up maintenance of fences in a landscape

**Current practice:** Done in an *ad-hoc* manner often based on the intuition of implementers.

**Shortcomings in current practice:** Because of the idiosyncrasy of incentives across communities, attempting to scale up fences based primarily on active community maintenance can lead to failure. Similarly, Forest Department officials cannot easily be induced to maintain fences across contexts unless there is top-down pressure to do so.

**Recommended action:** The pathway with the most potential to be scaled up with ease is that of the community maintainer: since this pathway is maintained through well-established market norms, it scales better than pathways that rely heavily on community context or variable political incentives. In this scenario, the maintainer is appointed and has a clear set

of deliverables in exchange for a pre-decided remuneration, and any transgressions on either side can be navigated more easily than with unwritten social norms or complex political incentives.