Effectiveness of Electric Fences in Improving Social Wellbeing and the Livelihood of the Farming Communities in the Areas Affected by Human-Elephant Conflict in Sri Lanka

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This study assesses the effectiveness of electric fences in reducing conflict between wild elephants and the farming communities that reside in the adjoining areas of natural habitats of wildlife in Sri Lanka. A household survey was undertaken by covering the entire beneficiary farming families of an electric fence established with the support of UNDP/GEF/SGP in Buddangala in Ampara District. Our analysis revealed how electric fencing was significantly effective in reducing crop damage by 88% and livestock depredation by 90% and property damage by 80%. Further 86% of householders state that after the installation of the fence, their food security levels are somewhat secure to very well secure and the home garden extent has increased from 2%-26%. About 85% state that the cropping pattern has significantly increased where farmers now grow different types of crops including perennials and certain cash crops. The time spent on chasing away wildlife has reduced significantly, as much as from 55% to 14% after the installation of the electric fence. More than 80% say the fence is effective and 92% say their tolerance level for tribal elephants have improved as a result and 93% say that they are appreciative of the value of the elephants in the area and aware of the importance they have for bio diversity, ecological, historical, cultural and religious values. About 70% say that their quality of life has improved. Respondents state that they are willing to pay for establishing a suitable mechanism to pay for the damage and conservation of elephants. Our analysis suggests that the total net present value of the cost of electric fence in this area was much less than the net benefit of it by the community. The overall findings reveal that there is significant improvement in social wellbeing and the livelihood of the farming communities in the study area. However, we observed that mere presence of electricity did not minimize fence breakage by elephants and entering into fenced areas. Thus, it is suggested that, location of fences in relation to landscape factors, maintenance of effective non-electrified fences and proximity of fences to areas of high elephant concentration are significant determinants of fence performance in mitigating human-elephant conflicts.

Keywords: Sri Lanka, Electric fencing, Human-elephant conflict, Social Wellbeing, Livelihood approach