



Social-Economic Factors Affecting Conservation of Aberdare Mountain

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The report presents the result of a study carried out in communities living adjacent to western Aberdare Mountains between August and October 2023. This was part of a Rufford Small Grant project that aimed at understanding the community social-economic factors affecting forest dependency, attitudes and perceptions towards forest conservation and management partners in Aberdare Mountains. Forty questionnaires were administered to community members, targeting household heads across 80% of the mountain's length and living equal to or less than 3km from its boundary. 87.5% of respondents had not received any kind of formal or informal environmental education. A general observation in the last 10 years on the status of tree cover, animal population and densities resulted to 28.8% of respondents saying that the aspects increased, 24% said they remained the same while 47.2% said there was an eminent decrease. However, the diversity of animal species hugely (26 respondents) remained the same. The respondents identified wild fires, poaching, logging, charcoal burning and fire wood collection as the main threats facing the Mountain and its wildlife. Men above 35 years were mostly directly engaged in illegal activities. Despite, this, all respondents appreciated the need to protect and conserve Aberdare Mountain citing that its importance as a water tower and foreign exchange earner. 92.5% were pro wildlife conservation while the rest expressed fears of human wildlife conflicts. The study identified Most, 82%, residents were willing to participate in patrols, rehabilitation, awareness and education interventions. Prioritizing training, engagement in protection and establishment of eco-friendly income generating activities for men >35year directly engaged in illegal activities; promoting on-farm tree growing and energy saving technologies; building youth capacity to be forest guides; strengthening partnerships for forest protection; continuous environmental education was recommended by the study.

November 2023

Background

listed in the tentative list of World Heritage Centre by the UNESCO Secretariat, recognized as Important Bird and Key Biodiversity Area and managed by Kenya Wildlife Services and Kenya Forest Services, Aberdare Mountains is a biodiversity hot spot in serious threat from the surrounding community.

The Mountains are home to many species of global importance including but not limited to; Critically Endangered Mountain Bongo (accounting for over 60% of estimated to be less than 100 individuals globally), Critically Endangered African Black Rhino, Endangered Bush Elephant, Endangered Sharpe's Longclaw, *Cinnyricinclus femoralis* and other over 200 bird species, Montane viper and *Neptis kikuyuensis*, *Charaxes nandina* butterflies endemic to central highlands all of whom depend on the sustainability of this forest.

Unfortunately, this protected area is bordered by communities who are largely peasant farmers who own small pieces of land from where basic needs – energy, food and income are met. To complement these basic needs community members put pressure to the forest resources by burning charcoal, collecting firewood, hunting for bush meat and extracting construction materials like cedar and bamboo poles. Wild fires; either accidental or intentional, and poaching for valuable trees poses major threats too. All these anthropogenic activities threaten the mountain critical habitat and its unique biodiversity. Little to no knowledge on the adverse impacts of destruction and interventions to reduce and stop them among community members threatens the Heritage site stature

Methodology

The survey targeted residents living in areas close to the Aberdare Mountains, equal to or less than 3km from the Mountain boundary. Distribution of respondents spanned 80% of the western Aberdare Mountain's length. Household heads were targeted as primary respondents as they majorly the bread-winners for other family members. A minimum distance of 1km was used to separate respondents and random household selection was done when more than one household was fit to host a respondent.

Results

42.5% of respondents were youth between 19-35 years while the rest were adults above 35years. Male respondents represented 57.5%. Small scale farmers represented 82.5% respondents while the remaining 17% were small business persons. Most respondents had basic/primary (42.5%) or secondary (42%) education while the rest had either informal or tertiary level education.

98% respondents had lived in this location for over 15 years. A general observation in the last 10 years on the status of tree cover, animal population and densities resulted to 28.8% of respondents saying that the aspects increased, 24% said they remained the same while 47.2% said there was an eminent decrease. However, the diversity of animal species hugely (26 respondents) remained the same.

The respondents listed cape buffalos, elephants, columbus monkey, spotted hyenas, leopard, antelopes (others but not the Mountain Bongo), birds, lion small mammals as the most common

animals. When induced on the CR Mountain Bongo, 71% acknowledged to know it with their numbers ranging 1-20 for all respondents who had seen them in the last 2 years.

Environmental Awareness

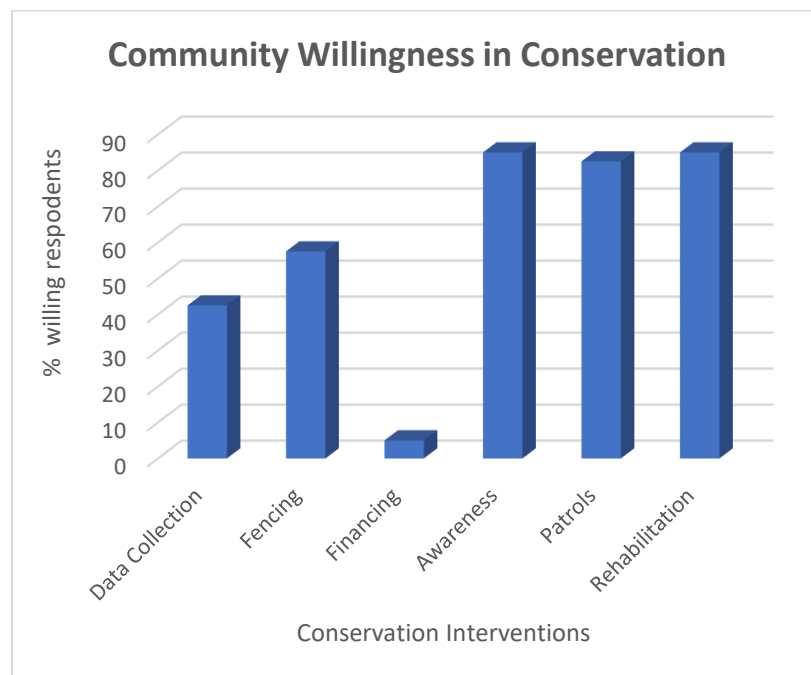
Asked if they received any formal or informal training or awareness on environmental conservation, 87.5% said no. Amongst the 12% respondents who had received some form of environmental education, there only one female, and the respondent had tertiary education. Further quantification of the conservation knowledge level in a scale of 1-5 where one is very poor and 5 is excellent, revealed most (95%) of the respondents were below average at equal or less than 3.

Perception towards Aberdare and Wildlife Conservation

Asked if Aberdare Mountain conservation is important, all respondents appreciated the critical role played by the Mountains mostly identifying the mountain as a water tower, source of fire wood, a grazing space and its aesthetic value attracting tourists.

Asked if wildlife conservation (including Mountain Bongo) is important, 92.5% of respondents said yes because the wildlife created opportunities and revenues from tourism related activities while the rest said they didnt know. However, 62.5% expressed fears that wildlife causing human wildlife conflict was a reason they would rather have no wildlife increase in the Aberdare Mountains. This was different for the Mountain bongo which respondents had no fear on their numbers increasing as they were not feeding on their crops nor risk any risk of attacks.

Interestingly, all respondents were positive asked if conservation of wildlife was important with over 82% willing to participate in interventions (patrols, awareness creation and rehabilitation) designed to protect and conserve Aberdare mountains and its wildlife as shown bellow.

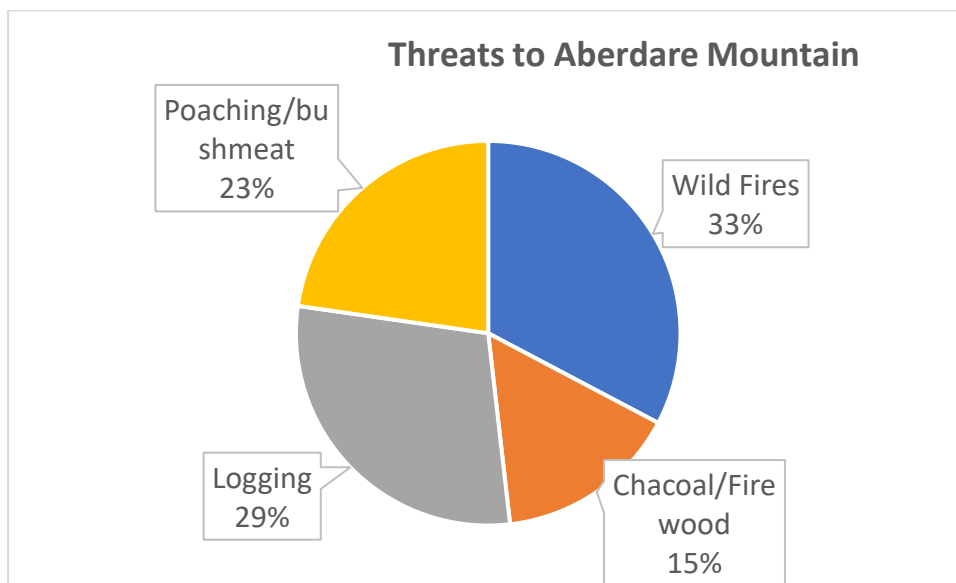


Community willingness to participate in different conservation actions

Conservation Threats

The study reported that 62.5% residents felt that the protection and management by tasked government bodies of the protected area was somewhat effective given a range of 1-5 to quantify the management effectiveness sighting continuation of illegal activities and corruption as reasons for their responses.

When asked what were the main threats to the Mountains and its biodiversity, wild fires, poaching and forest destruction were recorded as the most probable threats as in figure bellow.



Major threats to Aberdare and its wildlife

Factor Affecting Forest Dependency

Asked why people destroy the mountain and its wildlife, 37 out of 40, 92.5%, respondents identified poverty as the main reason why residents engage in illegal activities in the Aberdare Mountains. 77.5% respondents also identified lack or insufficient information on importance of conserving the Mountains as the other factor. None of the respondent felt that illegal activities were done due to malice. Men above 35 years were the mostly (38 out of 40 respondents) responsible for illegal activities.

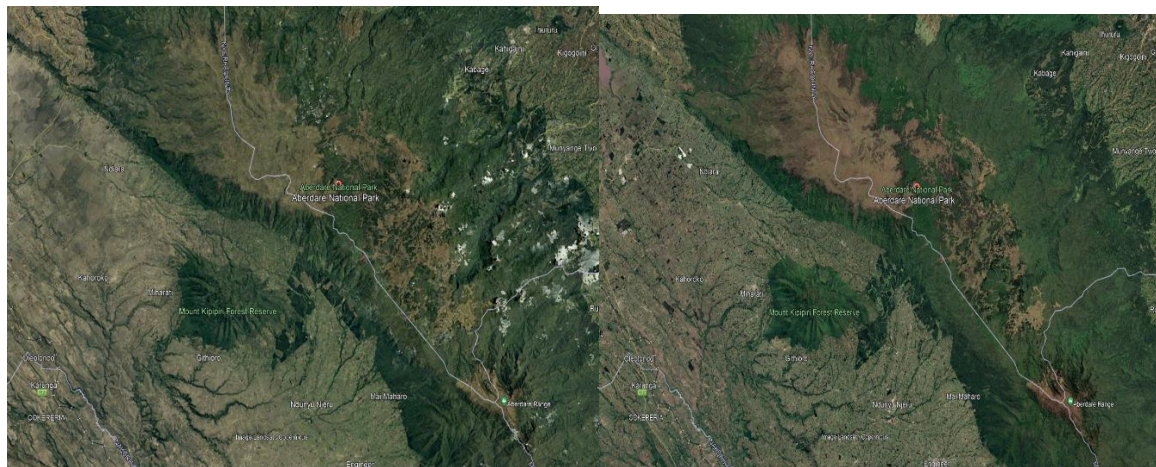
Proposed Interventions

Asked if they know anything that could be done to reduce and stop threats to the Mountains and its wildlife, most respondents recommended increased number of rangers and community scouts to enhance patrols, establishment of alternative livelihood sources specifically to people doing illegal activities, on-farm tree growing and awareness creation and/or trainings on conservation and Aberdare Mountain protection

Discussions

The findings identified that most of the household decision makers had up-to secondary education level despite their age. This is a critical positive aspect considering that they are able to understand simple to moderately complex conservation concepts that could be promoted during trainings and awareness campaigns.

The community members observation that the densities of vegetation and tree cover in the forest has reduced over time is well in line with the satellite images captured in the maps below.



Western Aberdare maps in years 1984 and 2020 respectively (Source: Google Earth Pro)

This decline was proportional to that of wildlife in hosted by the mountains and occasioned by illegal activities including logging, poaching, wildfires, charcoal burning and uncontrolled firewood collection.

Despite a large number of residents having received no formal or informal environmental education, they know its important to protect and conserve the forest. This presents a perfect opportunity for successful implementation of conservation interventions as its easy to get them supported and owned by the residents.

The residents were able to identify, fires, poaching, logging, charcoal burning, firewood collection as the main threats to the Mountain and its biodiversity. Similarly, they were able to identify that men above 35 years of age were the once mostly engaged in illegal activities. This was hypothetically inconsistent with our initial idea before the survey- that youthful residents are mostly engaged in illegal activities. In feedback that confirmed that the residents knew the threats had adverse effects to the Mountains, its biodiversity and people around it, they were willing to participate in conservation interventions: patrols, rehabilitation, awareness creation and monitoring aimed at slowing down and or revering these threats

Recommendations

Based on the results, the study recommended:

- ❖ Prioritization of identification of persons directly engaged in illegal activities
- ❖ Establishment and strengthening of sustainable income generating activities for men above 35 because they are the mostly directly engaged in illegal activities
- ❖ Engage willing local residents in forest protection through patrols and monitoring of forest destruction
- ❖ Training and equipping youth as local forest guides to avert new entrants into illegal activities when they attain 35 years of age
- ❖ Promotion of on-farm tree growing and energy saving technologies to reduce pressure to the forest resources
- ❖ Promotion of strategic activities and actions that strengthens partnership between communities and government agencies: Kenya Wildlife Service and Kenya Forest Services to make the Aberdare Mountain protection and conservation seamless
- ❖ Continuous training and awareness creation on conservation importance to residents: in one-on-one or group setup