

Review of: "Stakeholders' Perception of Socioecological Factors Influencing Forest Elephant Crop Depredation in Gabon, Central Africa"

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Stakeholders' Perception of Socioecological Factors Influencing Forest Elephant Crop Depredation in Gabon, Central Africa

It is an interesting topic, but it is difficult to understand.

1. There is no introduction to forest conservation in the context of Gabon, where a forest belongs to a category of forest with certain management rules. Gabon and the issue of conservation areas (and I still do not understand) what the laws preserve - does Gabon have conservation targets for elephants? Logging is allowed, so trees are not protected, or is it only certain trees they can cut? - protection of wildlife? - mining, hunting, poaching, and village life simultaneous in a protected area, even when it is known that logging and mining camps eat bush meat and access roads allow poachers access also? - how is it managed and by whom?
2. There are no present or historical facts presented on the issue, e.g., forest elephants have declined by 80% since the 1980s?; elephant feed, e.g., tropical fruits growing wild in the forest, has declined by 79-87%, - you suggest it is the logging camps that take the trees (but present no names of the species involved or any data on this logging). I found one study that evaluated the abundance and use of two major multiple-use species that produce both timber for industry and edible fruits valued by local people: Ozigo and Abam (*Gambeya lacourtiana*) (Raponda-Walker and Sillans, 1961). You will need some more recent data on the extraction of fruit-bearing timber species.

Raponda-Walker, R. Sillans Les plantes utiles du Gabon Q. J. Of Crude Drug Res., 1 (1) (1961) 27-27

Other papers, e.g., Emma Bush et al., (2020). *Long Term collapse in fruit availability threatens Central African forest megafauna*, suggest climate change as most of these trees require a minimum temperature to start fruiting, and as temperature increases, the trees fruit less often. And hence, an 81% decline in fruiting over the last 32 years.

3. You talk about logging – logging in the National Park of Lopé was banned in 2011? Is this ban not implemented? or not policed? or...
4. Data for mining concessions, minerals, access roads, pollution of waterways? extraction method, open cut or?
5. You build it on interviews with farmers and conservationists working in the forest (I presume). It is unclear to me if it is of

interest and shows any important disagreement – as it looks like both elephants and villages are victims of government policies / and or the lack of policing ??

6. Gabon preserves its forest – does it have any specific target of preserving wildlife? Where are the incidences happening? What is the carrying capacity of the forest areas in Gabon? And how many elephants live there? What do the elephants forage on in the forest? Who is poaching elephants? Are the elephants tagged? - or could they be? Are there cameras on the roads so tusks can be detected?

7. A few notes from my reading; I have left in cursive letters examples of facts missing

Forest elephant crop depredation incidents (CDIs) around Gabon's national parks threaten both villagers' livelihoods and conservation efforts for critically endangered forest elephants. Most CDI-mitigation efforts have focused on improving crop protection. We argue that conflicts will continue to escalate unless broader villager and elephant needs are addressed simultaneously.

Elephants' problems: limit habitats; habitat disturbances from extractive industries such as logging and mining pushing elephants to leave their forest habitats

Villages' problem: their crops become easy pickings for elephants

Both issues can only be understood if you put them in context

Root of the problem:

The forest: *(88% of Gabon is covered in tropical rainforest)* the government receives money for conservation efforts; *(Gabon recently received the first \$17 million of a pledged \$150 million from Norway for results-based emission reduction payments as part of the Central African Forest Initiative (CAFI))*. The government employs conservationists; the government sells licences for logging and mining exploitation; private businesses set up eco-tourism.

Agricultural land, developed for export *(Gabon signed a \$236 million contract in 2010 with Olam to develop 50,000 hectares of palm groves. The aim is to eventually develop 300,000 hectares of palm groves and to become the top producer of palm oil in Africa. That means that Gabon depends on importing food – which forest villagers cannot buy unless they have a sufficient guaranteed income)*

Forest villagers are not benefitting, the elephants' food is not protected, and hence the elephants threaten villager's livelihood. A trade-off situation where Norway gets CO₂ credits, governments get concession money, but the elephants and the villagers are left to fight for survival. I would have included an interview with the forest minister on how he thinks this is working

A theoretical framework of – best forest practices and conservation is needed

You say: Our goal was to identify the needs of both villagers and forest elephants as a foundation for developing land management strategies enabling human-elephant coexistence

Your conclusions: An integrated suite of strategies focusing on human-elephant coexistence is highly needed – But in your goal, you promised to develop a land management strategy to enable human-elephant coexistence. You can't just say it is needed – you need to use what you describe as the issues; foraging and predation from logging and mining camps, and what actions should be taken for elephants' foraging trails “to be grown = established” away from the villages. Implement the no hunting and no poaching laws; e.g., concessions will lose their licence if no compliance (Compliance with legal indicators ranged from 95% to 42%, while the application of best practices ranged from 86% to 14%. In the sample, the majority of companies applied the indicators relating to timber harvesting to a greater extent than those relating to the control, hunting, and monitoring of wildlife.) Evaluation of the management of wildlife in the forestry concessions around the national parks of Lopé, Waka, and Ivindo, Gabon (Tim RAYDEN & Rawlings ESSAME ESSONO–2010) villagers could be policing this?? And more

You have to create a win-win situation, whereby both elephants and villagers gain: Villagers could be the conservationists paid by governments to grow more forest feed for elephants – work as guides, policing poaching - and commercialize food products from agroforestry trees

I recommend that you read:

Leakey, R.R., 1999. Potential for novel food products from agroforestry trees: a review. Food chemistry, 66(1), pp.1-14

In my view, a reader needs facts, both economic and political, to understand why this problem exists and how you reach the conclusion. The conclusion is what you suggest should happen to solve the problem. It is your opinion based on the facts and the analysis of the situation. As a conservation area, it sounds poorly managed. It sounds that compliance is poor from certain companies. Why are these companies still working in Gabon?

You had me very confused by this sentence, and the reader actually does not know what you think about any of this the potential to provide important foraging areas **for elephants so long as increased access for hunting and poaching is ensured** (the words hunting and poaching mean different things – hunting might be legal, but which animals? And poaching means it is illegal to hunt, which? (Do you mean hunting or poaching should be ensured?)

Hunting and poaching in protected areas were not noted in this landscape (do you mean in Lopé Park) as strictly prohibited by the National Park Law of 2007. However, in other national parks, it is reported as a major factor. ???????

We analyzed the narratives through content analysis, categorizing CDI perceptions into four **connected themes to build a synthetic framework based on three landscape contexts across which six socioecological drivers fostered five landscape dynamics that led to five proximal problem types leading directly to CDI's**. – This is very convoluted. And you do not seem to use it for anything - different policy actions to solve the 5 problem types in different landscape dynamics?

You still have to present the problem: why elephants are seeking village crops for sustenance?

The Forest - natural habitat – is too small and too disturbed to meet elephant needs. You say: Forest structural changes ? forest degradation and habitat transformation? **poaching, and noise and machinery from logging operations Hunting and poaching are strongly associated with logging and other industrial extraction processes.** Reduced native fruits availability? Reduced numbers of native fruit trees and decreasing fruit production. **The fruiting tree species of which animals consumed fruits were also the trees logged in the past”.** **Because of the reduced availability of fruit trees in logged areas**This sentence needs facts of species and (ref). This sentence is important. This is where you, as a reader, start understanding that even as Gabon is recognized as a country with low deforestation, it does not mean that the forest can accommodate its forest dwellers. Part of the problem, but also part of the solution. Leakey (1999) calls it trade-offs

The conservation group said that villagers lacked a labor force – what does that mean, to do what?

Best regards