Final Evaluation Report

Your Details	
Full Name	Henry (Harry) Wells
Project Title	Towards mutually beneficial wildlife-livestock interactions in Kenyan savanna ecosystems
Application ID	27451-1
Date of this Report	12 June 2022

1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
Investigate competitive/facilitative interactions between livestock (stocking rate) and wildlife and their individual and interactive effects on savanna vegetation				To understand these processes in more depth, we studied the effects of the herbivore enclosure treatments on cattle foraging behaviour and the effects of wild megaherbivores on wild mesoherbivores.
Assess cost-effective methods to control the exotic invasive cactus, *Opuntia stricta*, in rangelands of pastoral communities				We went further to investigate the equity implication of this rangeland rehabilitation work and how costs and benefits were distributed.

2. Describe the three most important outcomes of your project.

a). The site-level habitat use diversity of small-bodied wild vertebrate species increases in response to grazing, whether by cattle or wild herbivores.

b). Understorey plant community composition was driven by total herbivory at moderate cattle stocking rates but driven more by herbivore identity at higher cattle stocking rates.

c). Perceived equity of rangeland rehabilitation activities was greater for those employed and those living further from the restoration site, but employment status and distance to the restoration site interacted non-linearly.

3. Explain any unforeseen difficulties that arose during the project and how these were tackled.

We had no major unforeseen difficulties.

4. Describe the involvement of local communities and how they have benefitted from the project.

The community members in the rangeland in which we conducted the ecosystem restoration work (i.e., clearing the invasive cactus, *Opuntia stricta*) benefited through employment and from the rangeland rehabilitation itself. One of our research assistants was also from this community and benefitted from employment.

5. Are there any plans to continue this work?

We have raised small amounts of funding to continue the rangeland rehabilitation work involving the invasive cactus and hope to apply for more grants to increase the scale. We have also extended this work by studying the ecology of *Opuntia stricta* in more depth and how native herbivores interact with the cacti.

We are also continuing our investigation of livestock-wildlife-vegetation interactions using both herbivore enclosure experiments and landscape-scale data.

6. How do you plan to share the results of your work with others?

We have published several peer reviewed articles in high impact factor journals and presented our results in academic meetings and conferences. We also communicated a summary of our findings to the local community of land managers and conservationists.

7. Looking ahead, what do you feel are the important next steps?

During this project we have identified several key knowledge gaps. Firstly, a comparison of the effects of different domestic herbivores (at different stocking rates and environmental conditions) on wildlife and plant communities is needed. Secondly, we need to bridge the gap between local controlled experiments (e.g., herbivore enclosures) and landscape-scale observational studies. Finally, higher temporal resolution is necessary to understand the net effect of livestock-wildlife interactions over an entire year or over several years. Regarding the invasive *Opuntia stricta*, scaling up efforts to remove the cactus need to be contemporaneous with other land rehabilitation activities (e.g., changing grazing regimes) to avoid sites at which the cactus is cleared receiving even heavier herbivory and disturbance by domestic animals.

8. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?

We used The Rufford Foundation in all presentations, and we acknowledged The Rufford Foundation in full in all journal articles.

9. Provide a full list of all the members of your team and their role in the project.

Dr Duncan M. Kimuyu: Duncan helped with fieldwork logistics and contributed to manuscript editing.

Prof Andrew Dougill: Andy provided intellectual support through his academic supervisory role and also helped to edit manuscripts.

Prof Lindsay Stringer: Lindsay also provided intellectual support through her academic supervisory role and also helped to edit manuscripts.

Mr. David Hewitt: David coordinated the cattle grazing runs.

Mathew Nermoni: Mathew assisted in vegetation and dung surveys.

Jackson Ekadeli: Jackson assisted in vegetation and dung surveys.

Stephen Ekale: Stephen assisted in vegetation and dung surveys.

Julius Mathiu: Julius was replaced by Elijah Kirobi, who assisted with Maa-English interpretation and administration of questionnaires.

10. Any other comments?

The publications that are associated with this project are attached separately.