Final Evaluation Report

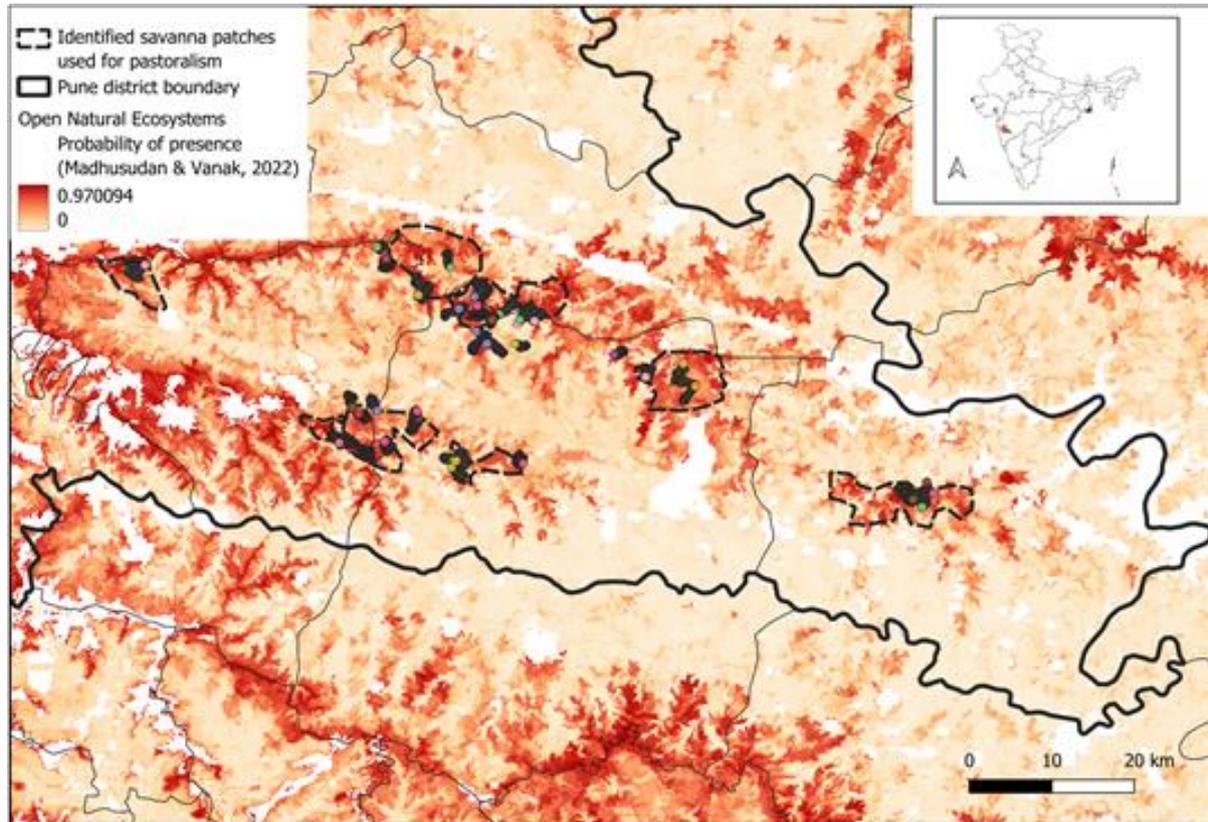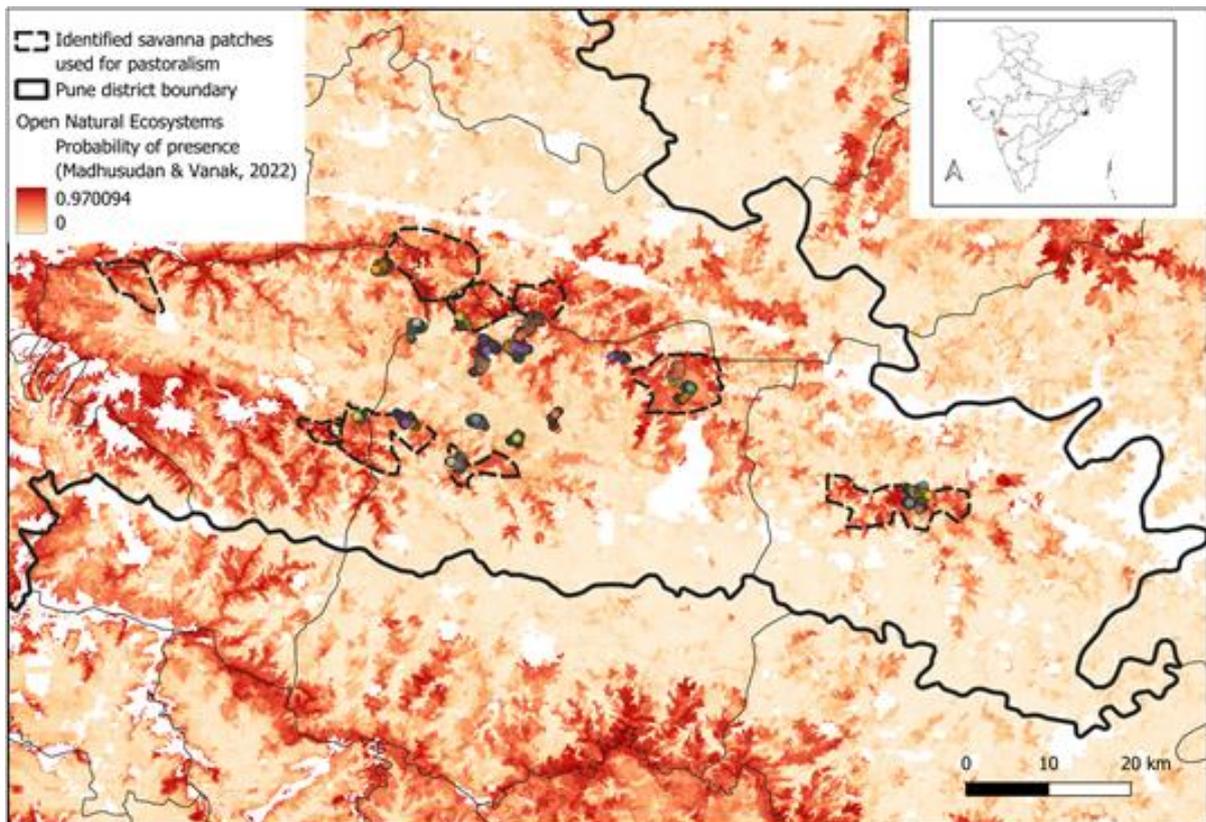| Your Details	
Full Name	Iravatee Majgaonkar
Project Title	Understanding pastoralist dependence on biodiverse savanna ecosystems: Exploring a land sharing framework for conservation
Application ID	37373-B
Date of this Report	07.02.2024

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
Measuring characteristics and mapping land use governance regimes present in large savanna patches		✓		Based on available remotely sensed data and ~four field surveys in each site, we were able to identify at least nine patches of relatively large savanna in our study area, each of which have slightly higher elevation than their surrounding agricultural lands (~50-150m) and on an average have an area of 39.73 km^2 (STDEV=21.71) In terms of land use governance, these patches are largely privately owned, followed by some revenue/forest department lands as well. Forest dept lands form 5-42% area of the identified patches. In summary, elevated private lands which have not been diverted for cultivation are some of the last remaining large savanna habitats in the study area. The identification of revenue lands (and hence "commons") was entirely dependent on state government data for which we filed an appeal under the Right to Information Act, 2005. However, the state government claimed to have lost the data in a fire incident in 2012 and this limited our scope of the governance analysis.
Tracking of livestock movement in the study area and recording the patterns in which savanna habitats are used by livestock in each season			✓	We completed 109 individual tracking days of livestock movements within two summer seasons and one monsoon season in 2022 and 2023 using custom-made GPS trackers and handheld GPS devices. We found that pastoralists used open savanna habitats (private or government lands) for > 85% of their grazing time in the monsoon. This percentage changed in the dry season

			when pastoralists used open habitats as well as harvested agricultural fields almost equally. This indicates that the dependence on savannas in the monsoon is highest. (Maps for both seasons are appended below this table)
Interviewing pastoralists about their perspectives on reduction in savanna habitats and how they have coped with the loss of bio-diverse grazing lands			We conducted 122 discussions with men and women pastoralists (along with observations of their herding activities) where we noted their perspectives of landscape changes in savanna habitats. The most important finding from these was that although pastoralism suffers because of the loss of savanna habitats, land diversions to agriculture also have started being important means for accessing fodder and water for livestock. Hence, not all types of agriculture inhibit pastoralism. Through lived experiences, pastoralists are able to identify which savanna patches retain water for long and which vegetation their livestock can consume seasonally. The direct benefits that they see from savanna habitats makes them well placed to be managing these biodiverse areas.
Holding shared learning sessions to share project outputs with pastoralists and involve them in planning for developing a land-sharing framework for our study site.			Three group workshops where shared learning sessions were to be held towards the end of the project period. However, this objective had to be modified to holding individual meetings with just 12 families because I missed the monsoon season in 2023 owing to medical reasons and a lot of families had left the landscape by October 2023 by the time I could return to the field. These 12 sessions were productive in documenting important areas for pastoralism in the study area. As an addition to the objective however, I co-designed an animated video in the regional language (*marathi*) which highlighted the potential of management of savanna ecosystems for pastoralism. This video helped introduce the idea of

| | | | community led natural resource management to pastoralists in the study area. These videos were circulated amongst all known families even though they were out on migration. |

Images 1 & 2 above show the distribution of sites, livestock tracks and presence of savannas in monsoon and summer respectively.

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

a) As opposed to what was thought before the project begun, pastoralists take decisions on movement largely based on socio-economic rationale and only partially based on ecological reasoning. Additionally, their dependence on savanna habitats is prominent in particular seasons and not in other parts of the year. Lastly, depending on the herd sizes and family dynamics, use of savannas varied by frequency and intensity. This meant that management of savanna habitats has to be: (i) explicitly linked to those particular seasons, (ii) have tangible socio-economic returns, and (iii) has to be weighted based on each family's characteristics. Any intervention designed in the near future will be acceptable and practical for pastoralists only based on these three factors. This learning was the biggest takeaway from the research findings.

b) In the study area, we were able to identify nine important savanna habitat fragments, their governance patterns and their use for livelihoods. All of these are classified as 'wastelands' under the Wasteland Atlas published by the Department of Land Resources under the Ministry of Rural Development, Government of India and are slowly being demarcated for diversions. The data collected in the project duration will help make a strong case for use of these lands for livelihoods, especially when clubbed with data on wildlife presence from conservation NGOs working in the landscape.

c) This work was one of the first attempts to collect data on fine-scale use of land covers, both native and modified habitats for pastoralism. Additionally, this work laid emphasis on epistemological viewpoints on landscape change, i.e., how do pastoralists see the loss of savanna habitats and what they deem important in the landscape. The outcomes of this work have shown that loss of all savanna habitats is not uniformly detrimental to pastoralism. Pastoralists alternately need savannas and agriculture in the same year.

d) The outreach material that we produced from this project is an explainer video titled 'maalvaataa' in the local language 'Maraathi'. This was meant to be circulated within the pastoralists in the study area and the purpose of the video was to summarise the issue of savanna fragmentation and how pastoralist-led savanna conservation can be taken ahead. I proposed three frameworks that can be explored along with the help of Civil Society Organizations, viz. Joint Forest Management committees, Community Conserved Areas and Forest Rights Act, all of which are potentially possible under different Indian legislations. This video has been circulated amongst pastoralists and it is meant to 'plant a seed' of community led conservation in minds of the community members.

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

Three unforeseen difficulties slowed down the project work. Firstly, since the families were spread out in different villages, we could not cover more than one family on the same day because of the sheer distance needed to be covered between villages. This slowed down our work and we could sample only 50% of what we thought we could. Secondly, because of brucellosis, a zoonotic infection from livestock, the principal investigator could not work between April 2023 to August 2023, and this delayed our engagement sessions with the families. Thirdly, we could not access revenue land governance information of savanna habitats from the state government because the headquarters claimed to have lost this information in a fire incident in 2012.

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

We were able to connect with 79 families all of whom were dependent on savanna habitats seasonally for their livelihood incomes. They helped us understand fine-scale use of resources needed for pastoralism on a seasonal basis. This is the first time that such fine-scale documentation of pastoralist movement in savannas of Maharashtra state has been done. This knowledge will now enable us to plan for community-led grassland restoration and management.

5. Are there any plans to continue this work?

Yes, I plan to be an active member of research and conservation organisations working in the Maharashtra state landscape on community-led grassland restoration. Through this, I will continue my engagement with pastoralists and

savanna conservation and use the knowledge and networks from the Rufford work as inputs for designing any interventions.

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

As mentioned above, we made engagement material in the form of a short video which took the message of savanna fragmentation and much needed community led conservation till the pastoralists, the primary stakeholders in savanna conservation and restoration. Moreover, I will be publishing my work from this research work in the form of a peer-reviewed scientific paper in 2024. I will also be presenting my work from this Rufford grant at an international conference in 2024.

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

The most important next step is to make sure that engagement with different stakeholders in savanna conservation continues for the coming decade. By this I mean engagement at all scales- global, regional and hyper-local. For example, taking the issues of savanna conservation to an international audience, to the Indian central and state government and to the actual users of the landscape. We need to uphold savanna conservation as a part of the sustainable development debate since currently, they are entirely viewed as 'waste' or 'degraded' within state plans and in public conscience. The next important step will be to use the produced knowledge and apply it for savanna conservation and restoration projects in this landscape. For e.g. I can use my findings to make a case for community conservation reserves instead of inviolate protected areas in the region.

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?

Yes, I used the logo in the animation video for pastoralists. The video has been sent to The Rufford Foundation. Additionally, I will also be acknowledging The Rufford Foundation in my scientific paper and my conference presentation as mentioned above.

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

Iravatee Majgaonkar: Principal Investigator who was involved in designing the work, collecting the data, analysing it and who will be publishing it.

Dr. Abi Tamim Vanak: Senior Fellow at ATREE, Bengaluru who was involved in an advisory capacity on the above project. He provided scientific inputs for the study design and data analysis.

The Grasslands Trust: NGO in Maharashtra whose members were involved in an advisory capacity and helped me establish a network within the pastoralists.

Shivam Shinde, Hrishikesh Karandikar, Ashwini Labde & Anish Paul: Research collaborators for field work who were involved in data collection and data entry.
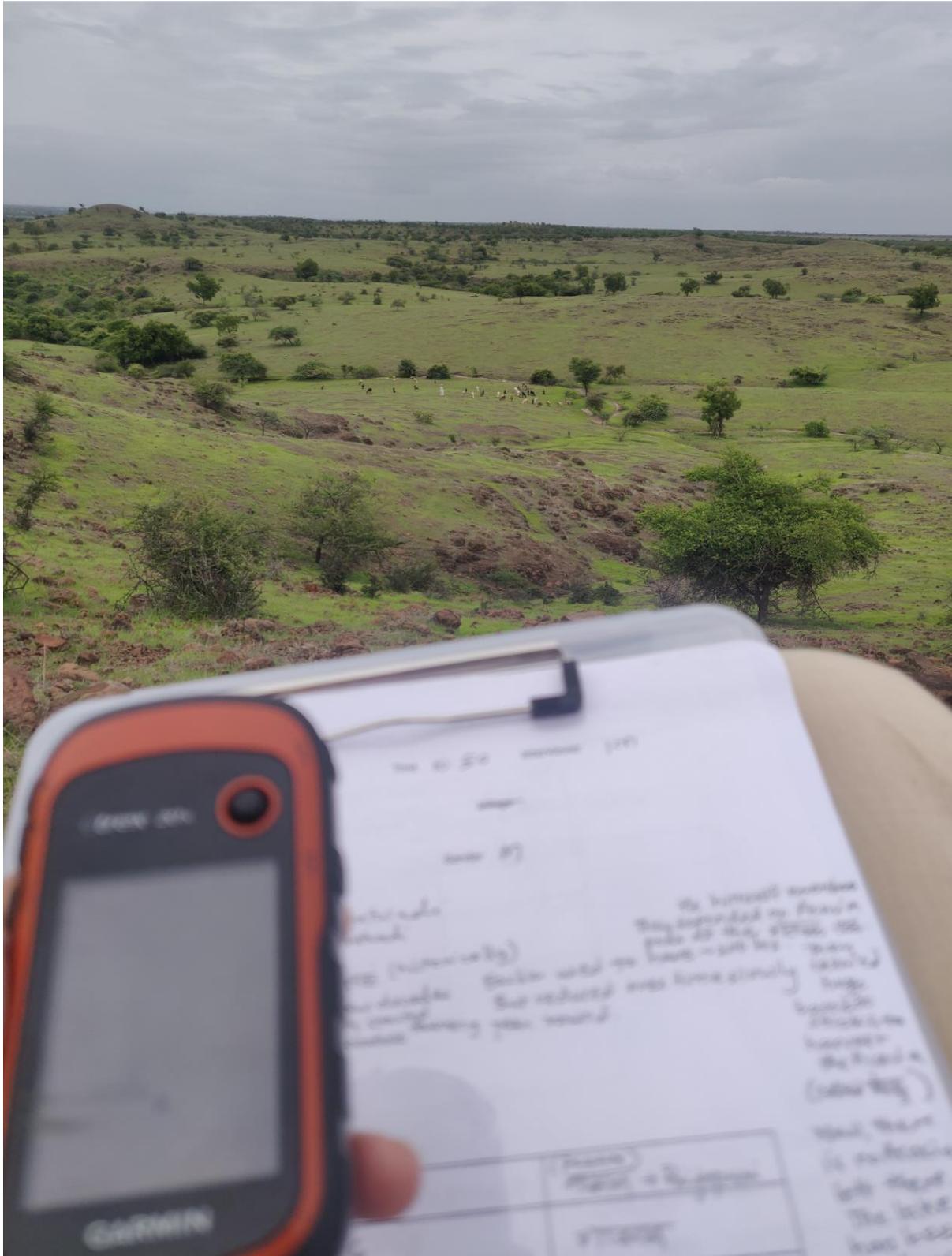
Biodiverse savannas used for pastoralism.

Socio economic surveys.

Livestock tracking surveys.

Livestock tracking data.