Darwin Initiative Main: Final Report

To be completed with reference to the "Project Reporting Information Note": (https://www.darwininitiative.org.uk/resources-for-projects/information-notes-learning-notes-briefing-papers-and-reviews/).

It is expected that this report will be a **maximum of 20 pages** in length, excluding annexes.

Submission Deadline: no later than 3 months after agreed end date.

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Darwin Initiative Project Information

Project reference	27-008
Project title	Rangeland Guardians: women entrepreneurs for rangeland restoration
Country(ies)	Tanzania
Lead Partner	University of York
Project partner(s)	Oikos East Africa, Instituto Oikos, Ujamaa Community Resource Team
Darwin Initiative grant value	£ 379,432.00
Start/end dates of project	01/10/20 – 31/09/23
Project Leader name	Professor Colin Beale
Project website/blog/social media	https://sites.google.com/york.ac.uk/rangelandguardians
Report author(s) and date	[redacted]

1 Project Summary

The project is located in the rangelands of Northern Tanzania (Figure 1), focusing on three villages in Monduli District: Mswakini Chini, Naitolia and Lolkisale (Figure 2). These villages were chosen as the pilot areas for restoration due to the project teams' previous successful experience of implementing successful conservation and socio-economic projects in these areas. These long-formed relationships have been crucial to the success of previous projects.

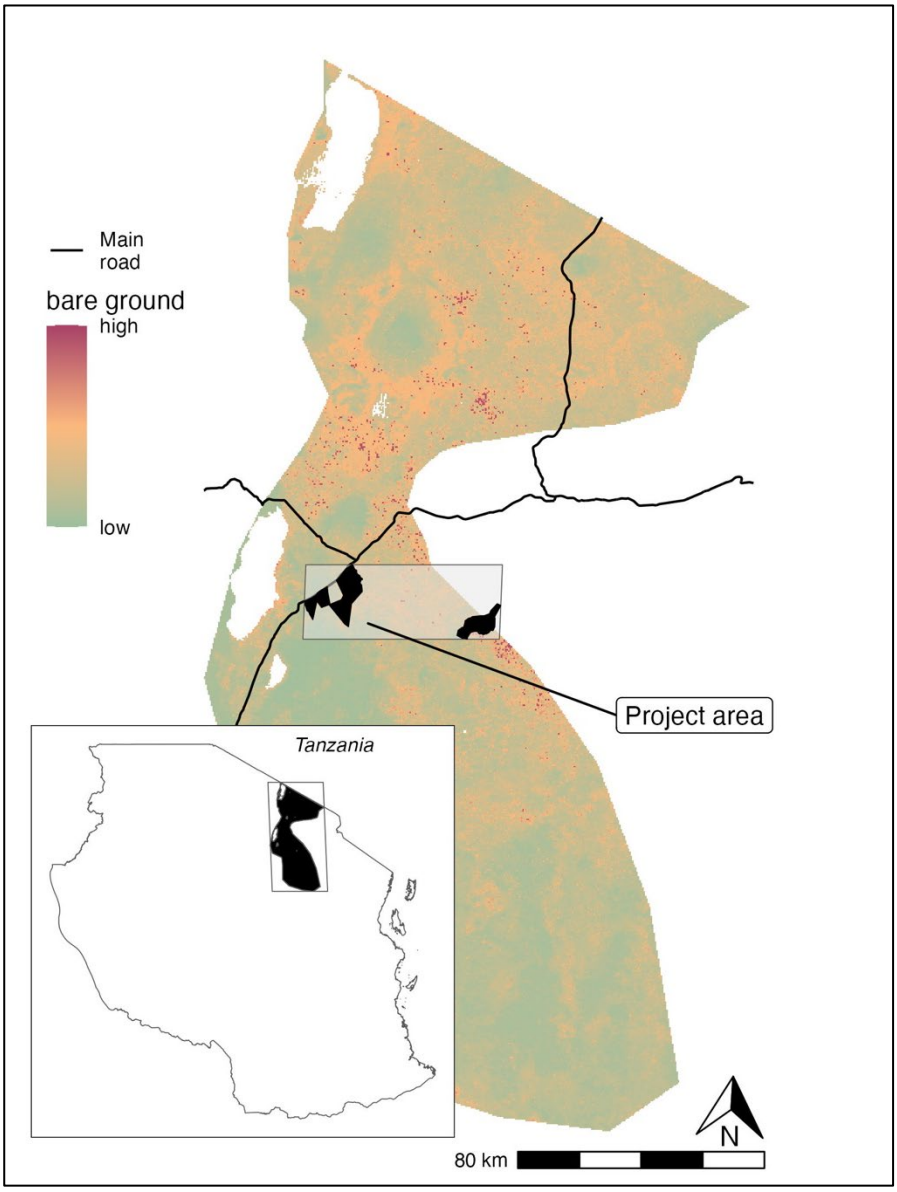

Figure 1. Project area location in northern Tanzania (with the three study villages highlighted in black) and extent of bare ground degradation in 2019 prior the project. Degradation calculated by the project team as part of previous research on quantifying drivers and extent of rangeland degradation for the Northern Tanzania Rangeland Initiative (NTRI) and Endangered Ecosystems of Northern Tanzania (EENT)

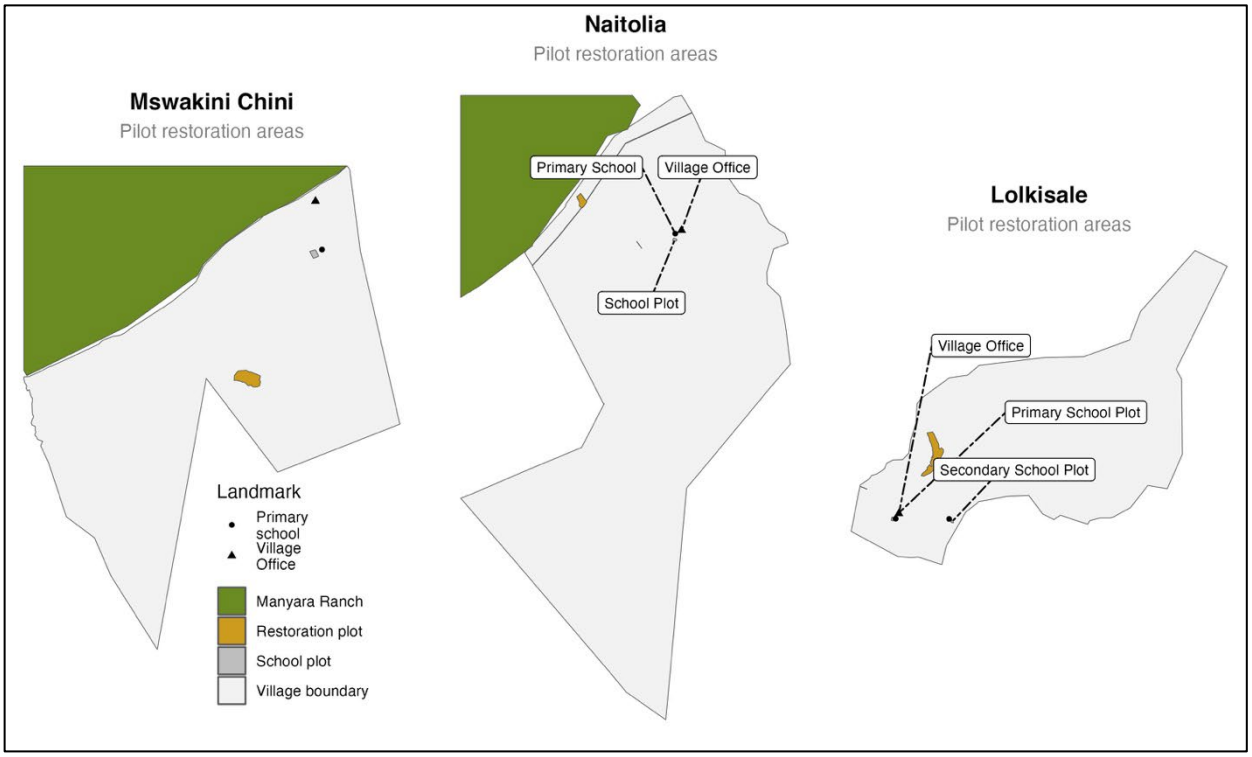

Figure 2. Location of restoration areas in the three project villages. Randilen Wildlife Management Area (which provides wet and dry season grazing, borders Mswakini and Naitolia to the South. Grazing is also available in Manyara Ranch Conservancy to the north of Mswakini and Naitolia.

The rangelands of Northern Tanzania are not only home to iconic biodiversity, but to >3 million pastoralists. Unfortunately, both wildlife and pastoralist livelihoods are at risk from societal and environmental change: increasing human population requires more livestock; modern society demands sedentary lifestyles, land-use change such as increase in agricultural land, severs wildlife corridors, and climate change alters rainfall patterns. Together these reduce rangeland biodiversity and compound rural poverty, with around 15% of remaining pastoralist rangelands in northern Tanzania showing signs of degradation (soil loss and invasions by noxious plants). All the project villages have communal grazing areas that have a large proportion of degradation, which has been mapped at a landscape level (Figure 1) through the University of York's previous research into quantifying landscape scale rangeland degradation and identify the drivers of rangeland degradation in the Northern Tanzanian rangelands. Although we cannot halt major external drivers like climate change, our theory of change suggests we can reverse degradation and loss of remaining rangelands by working with communities to adapt governance and management structures to changing land and climate conditions.

When grazing is no longer possible, degraded land may be converted to agriculture, further exacerbating the problem. As a consequence of the reduced availability of grazing areas (both amount and quality), pastoralists are among the poorest members of Tanzanian society (monthly income among Maasai of 13,500 Tsh/adult/month compared to World Bank's national food poverty at 26,085 TSh/adult /month), women are particularly marginalised and wildlife numbers in northern Tanzanian rangelands have fallen >80% over 20 years.

Working together through the Northern Tanzania Rangeland Initiative, the project partners have helped identify the problems: The University of York have been assessing ecological degradation and restoration, Instituto Oikos and Oikos East Africa have been working on community-led conservation and rangeland management and Ujamaa Community Resource Team have expertise in sustainable land use planning and community empowerment. All partners have all seen an increasing amount of rangeland degradation and a demand for assistance in restoration and decreases in biodiversity and movement of migratory ungulate populations that have historically moved seasonally across the rangelands. Although technical solutions to degradation are developed, tackling rangeland degradation at scale is notoriously difficult and landscape-scale restoration often fails.

This project piloted a novel, culturally acceptable and research-informed eco-entrepreneurial solution to rangeland restoration that we expected will scale well. Rangeland restoration process was driven by groups of Rangeland Guardians. The Rangeland Guardian groups are compiled of women who were trained and supported in rangeland restoration entrepreneurship to implement sustainable management of this wildlife rich, but degrading, corridor within the Tarangire-Manyara ecosystem (Figures 1 and 2), restoring grazing opportunities for both livestock and wildlife.

2 Project Partnerships

All project partners were equally involved in the project design and planning. The project partners had more than 5 years experience of working together, which has helped to identify each other's strengths and synergies. All three partners have collaborated throughout, this included regular monthly meetings (remote) to ensure the planning and decision making was collaborative and to ensure good progress with all activities. The in-country project partners had a crucial role in maintaining community relationships and increased the planned community visits to ensure the project activities were well supported.

The demand of support required of the project partners did change during the project, this was due to challenging climatic conditions and understanding the requirements of some activities. This was reflected in more involvement from the in-country partners as required. For example, the UCRT team were encouraged to help support the identification and expansion of the restoration areas which required significant community discissions as all community grazing areas were under pressure from greater demand due to drought conditions, which lasted until the last 6 months of the project. OEA took on a more involved role in some activities (e.g. the livestock monitoring) which required more follow up visits, support and community discussion than initially expected.

On occasions there was some communication problems between the in-country partners, for example the partners were sometimes unaware of each other's field activities, particularly in the initial stages of implementing restoration activities in the Rangeland Guardian plots. This was address through ensuring regular sharing of project activities between partners (e.g. weekly plans) to ensure activities were implemented efficiently.

All project partners were involved in field activities, and the University of York ensured that both partners were involved in the biodiversity data collection activities and community meetings when the York team were in the country, and the in-country partners provided significant logistical support to the York team in the final field season (e.g., through vehicle use and administrative support).

The project has engaged with all pertinent local institutions starting from Monduli District, which is the highest governance body of the local government and descending through the ward, the village and the sub-village, which the smallest cell of local government. The District appointed a project focal person from the Community Development Department who has attended all the activity openings, and in particular, all the discussion where land allocation to the women groups was on the agenda of the community meeting, bringing effectively the representation of the government in all discussions, this helped to clarify the processes to identify parcels of degraded land suitable to pilot ecological restoration protocols. Furthermore, the District Educational Officer reviewed the education conservation programme and familiarised with the teaching tools. The same District Educational Officer was very familiar with both Oikos and the outreach educational officer.

During the project, we also directly involved the Tanzania Livestock Research Institute (TALIRI) to collaborate as part of the livestock monitoring activity (Annex 6.3). This included bring TALIRI staff to community meetings, getting advice on the work and capacity development for TALIRI through transferring ownership of the livestock GPS devices to TALIRI.

Following this project, Oikos East Africa, Instituto Oikos and Ujamaa Community Resource team continue to collaborate on the Darwin Extra project 'Partnering for a biodiverse, prosperous and resilient Tarangire Ecosystem landscape' ([redacted]). This Darwin Extra project has scaled

up the Rangeland Guardian concept to a total 17 villages in the northern Tanzanian Rangelands and will continue supporting the Rangeland Guardians in the three pilot villages included as part this project. The University of York has continued to collaborate with Oikos East Africa/Instituto Oikos and UCRT on separate grant applications.

All partners have provided input and supporting documents for this this report.

3 Project Achievements

3.1 Outputs

Output 1 - Biodiversity improvements: Degraded rangeland within key wildlife corridors in Northern Tanzania have restored function and increased biodiversity. Grazing potential (grass and forage availability) has increased across all restoration sites, there was also an increase in biodiversity in all sites, although this did vary between the survey species groups.

1.1 Grazing potential increased from baseline by 100% per year in restoration plots. Forage availability increased in restoration areas from between 10-12% ground cover in 2021 to between 30-41% ground cover by project end, this is an increase of more than 100% in all restoration sites, further details are provided in Annex 1.1.

1.2 Plant species richness increases from baseline by 50% per year in target degraded rangeland (many sites have only 1-2 species in largely barren ground ensuring rapid progress is possible). While grass species richness increased across the majority of sampled areas in all villages, the greatest increases were recorded in the restoration sites compared to the baseline species richness recorded in 2021. The baseline number of grass species were low, and the increase in average number of grass species for the Lolkisale restoration sites was 266%, for Naitolia 359% and Mswakini 470% (Annex 1.2).

The number of invasive species decreased within all restoration sites during the project (Annex 1.3), with the greatest changes in Lolkisale (66.3% decrease) and Naitolia (46.1% decrease), while in Mswakini the change in invasive species was minimal (2.56% decrease). The differences in invasive species change are this is likely better management of the restoration areas (e.g. active removal of invasive and problem species), preventing grazing as the increase in Naitolia and Lolkisale.

1.3 Use of restored sites by threatened wildlife (notably Zebra) has increased by 10% relative to baseline by end. Contrary to our expectation, the use of restored sites by threatened wildlife (zebra, giraffe and elephant) did not change in the restoration sites of Mswakini and Naitolia (Annex 1.4). Domestic animal use of the Naitolia restoration decreased during the project, while in Mswakini domestic animal use increased. This is change in domestic animal use is likely due to the stronger governance and management implanted in Naitolia compared to Mswakini, and may have impacted the presence of wild ungulates, this is particularly true for Naitolia where the restoration site had well maintained bush fences to prevent grazing.

1.4 Invertebrate and bird diversity has increased by 50% relative to baseline by project end. Arthropod diversity (measured in morphospecies), and abundance (count of individuals) increased in the restoration sites of Naitolia (mean morphospecies +42.6%, mean abundance +32%) and Mswakini (mean morphospecies +195%, mean abundance +68%), but decreased in Lolkisale (mean morphospecies -17.3%, mean abundance -2.73%). Butterfly species richness increased between 2021 and 2023 in the restoration sites of Lolkisale (mean +25%) and Mswakini (mean +6.67%) but decreased in Naitolia (mean -25%). Species diversity, using the Shannon-Weiner Index which takes into account abundance, increased in Lolkisale (mean +20.6%), but decreased in Mswakini (-55.6%) and Naitolia (-28.1%). Bird species richness increased at all sites, the greatest increase in number of species between 2021 and 2023 was in the Naitolia Restoration site, where the mean number of species observed within a 50-metre radius increased by 130% followed by Mswakini (+105%) and Lolkisale (+2.5%). Bird diversity (mean change in the Shannon-Weiner Index) also increased at all restoration sites (Naitolia +68.5%, Mswakini +52.3% and Lolkisale +17.8%). Further results are provided in Annex 1.5.

Output 2 - Direct benefit to Rangeland Guardians: Three Rangeland Guardians groups composed of women and youth from vulnerable pastoralist communities are established and trained and at least 60 members receive sustainable income from sale of grass from restored rangelands.

2.1 Sixty informally educated pastoral women lease an average of 8 Ha of recovering rangelands by end. By the project end, 60 women were registered as Rangeland Guardians and leasing on average 4.4 Ha of recovering rangelands per person (see Outcome 0.1). While this is less than expected, significant challenges to the project included COVID-19 restricting training of Rangeland Guardians and the identification of suitable pilot sites and prolonged drought condition restricting opportunities for scaling-up the pilot areas to new locations. For example, the location of the pilot site in Naitolia had to be re-negotiated due to overlap with the CCRO which was against the CCRO by-laws; this was a good exercise for the village government to be made aware of the exact CCRO boundaries and requirements of areas that could be used by the Rangeland Guardians for restoration.

2.2. Sixty informally educated pastoral women are empowered through new skills: rangeland restoration techniques and marketplace literacy knowledge by end.

Although 'training course attendance certificates' (Indicator 2.2) are not available, all Rangeland Guardians attended marketplace literacy training (Annex 2.1) and participated in regular restoration activities specific to their village guided by the project partners (Annex 2.6). At the end of the project 37 of the Rangeland Guardians across the villages completed surveys to assess their participation and change in understanding of rangeland management and restoration (Annex 2.5). Of the 35 (95%) who stated that participation was worthwhile, more than 50% stated that education activities (e.g. restoration training, marketplace literacy) were the most beneficial, while the greatest challenged included governance (i.e., livestock inclusion) and lack of vegetation growth due to drought conditions. Prior to the project, 89% were not aware of problems such as invasive species and all respondents have received management training of invasive species and have greater understanding of impact on grazing areas – 31% of the participants stated that removal of invasive species (to allow grass growth) was a restoration priority, followed by allowing rest through preventing grazing pressure and better governance as demonstrated in the Naitolia restoration plot (Annex 2.3). Qualitative interviews during the project highlighted the empowerment benefits, despite lack of restoration progress (Annex 2.4).

2.3 3 cooperatives, microenterprises are registered with District government. The three Rangeland Guardian groups have been registered with the Monduli District Government (Annex 2.2). This registration helps to ensure the groups are recognised by the communities to establish their microenterprise such as selling grasses grown on community land. The District government have also recognised the important role these Rangeland Guardian groups have in the communities and are also supporting the expansion of the Rangeland Guardian model during the Darwin Extra project DAREX004.

Output 3 - Community benefits from restoration: Availability of dry-season fodder increases, improving livestock value.

3.1 >300 Kg / Ha.yr of grass biomass available to livestock across the restored rangelands (currently <100 Kg / Ha.yr) by end. Prolonged drought resticted vegetation growth durign the project and dry-seson fodder only harvestable in 1 restoration site by the project end (Annexes 2.3 and 3.1).

3.2 Purchases of grass at village level contribute to increased value of livestock. Implementation delays due to COVID-19 and prolonged drought until the last year of the project restricted grass growth and sales. Grass sales were only possible from the Naitolia restoration plot, where 15 bundles of grass worth 6,000 Shillings each were harvested, a total of 90,000 Tanzania shillings is approximately £30 for the year. As noted in the focus group discussions (Annex 3.1), the women rangeland guardians from Naitolia village noted that this income was

“too small especially because 20 members of the rangeland restoration team have to share the revenue”.

3.3 2000 school students receive awareness raising and training in sustainable rangeland management (500 in year 1, 1000 in year 2, 500 in year 3). Implementation of the education activities were initially delayed due to COVID-19 health restrictions, but the school education program reached 1445 students (72.25% of the project target), with 1194 students reached in year 1 and a further 251 in year 2 (Annex 3.2).

Output 4 - Governance improvements underpinning lasting impact: Village grazing committees have established adaptive principles of sustainable grazing management across non-degraded rangelands, with best practice shared with neighbour villages.

4.1 Three village grazing committees have increased knowledge of adaptive grazing management strategies compared with baseline and understand the concepts of joint resource management (continuous increase in average understanding scores from baseline, 18 months and year 3 surveys).

Baseline measures were not obtained due to Covid-19 restrictions and the focus on grazign committee was to ensure traingin and knowledge exchange throughout the project in the form of learning and training events. Grazing committee training and knowledge exchange events invloved 56 participants from across the 3 villages (Annex 4.1), at the end of the project, it was noted in the focus group discussions tha “Members of the community have adopted and applied the knowledge from the rangeland restoration plots to manage community and private rangeland areas.” (Annex 3.1), highlighting some of the impact of the project on the grazing commitees and wider community.

4.2 Adaptive grazing management plans will have been developed and are in use for all communal grazing lands (none currently).

The grazing committees from the three villages participated in knowledge exchange events (with Rangeland Guardians and Resource Assessors) and rangeland management training activities throughout the project (Annex 4.1). Due to the continued drought conditions throughout the project, many pastoralists chose to keep livestock within seasonal grazing areas (‘ronjos’) outside of village land. Grazing plans, including seasonal grazing areas are implemented, but the status of grazing plan documents being archived with the village governments is not known.

4.3 By-laws will have been passed defining and allocating restoration areas and implementing communal grazing management plans in all villages (none currently).

Although by-laws are enforced, such as implementation of fines in Naitolia village for people using the restoration areas for resource use (“*The law breakers were fined Tanzania Shillings 50,000 each that served as a lesson for others with similar ill intentions*” - Mr. Loiboni Loimarai, Naitolia village participant; Annex 3.1), we do not yet have the documentation from the village offices. We will continue to request for this information, especially as it also relates the DAREX004 project.

4.4 Resource Assessors will be able to monitor rangeland conditions in the target communities and feedback to grazing committees enabling adaptive management (none currently).

Using their experience of training Resource Assessors in other Districts, Oikos East Africa trained 17 resource assessors across the 3 villages (5 in Lolkisale, 7 in Mswakini and 5 in Naitolia). Training was delayed due to the impact of COVID-19 on the timetable of implementing project activities, and the training took place in September/October 2021 (Annex 4.2). The resource assessors implemented bi-monthly vegetation surveys from January 2022 until the project end and have continued to do so as part of the Darwin Extra project DAREX004. The data were shared with the grazing committees, but due to delays data processing, limited adaptive management has taken place. Protocols are now in place to automate data entry, this will mean that results can be shared immediately with village grazing committees. In addition, rather than presenting data graphs, a simple traffic light system has

been generated to provide an assessment of grazing condition and risk to communal grazing land and livestock (Annex 4.3).

3.2 Outcome

The anticipated outcome from this project was a scalable and sustainable, community led and culturally acceptable model of rangeland restoration and management. This model was to be implemented in three villages, with tangible benefits for biodiversity and local communities.

0.1 500 Ha of degraded rangeland under restoration in Monduli district (Tanzania) by project end (0 Ha in 2019, 100 Ha in year 1, 300 Ha in year 2). At the end of Year 3, there were 264 Ha of land under active restoration among the three villages. This was compiled of the Rangeland Guardian restoration plots (91.3 Ha) that focused on restoring land with high bare ground coverage and a 173 Ha of rangeland in Naitolia village where dense thickets of *Dichrostachys cinerea* were preventing grazing (Annex 6.2). These areas continue to be monitored and restoration activities implemented as part of the Darwin Extra project DAREX004. We did not reach the anticipated amount of land under active restoration due to several factors. Firstly, identification of restoration plots was delayed due to fieldwork activities not being implemented as planned during COVID-19 to ensure safety of staff and local communities. Secondly, identifying land suitable and allowed by grazing committees was more difficult than expected – rarely were degraded rangeland areas relatively close to bomas (for security and access) allowed by the village grazing committees to be assigned to the Rangeland Guardians and for Naitolia the initial restoration plot was designated within the CCRO which against the CCRO by-laws. This identification process served a good lesson for both the project team and communities in understanding the current land-management set up in the villages. Finally, prolonged drought until 2023 meant that any available communal grazing land available was in more demand, and the village governments were un-willing to designate additional sites for the Rangeland Guardians until grazing conditions improved and when the impact of the restoration activities in the pilot sites could be shown to be working, which was not obvious until July 2023 when the first grasses were harvested in Naitolia village (Annex 2.3).

0.2 By-laws passed in three villages ensuring commitment toward rangeland restoration and rights of Rangeland Guardians (year one). To date we do not have the evidence that by-laws have actively been passed by the village governments, the project partner UCRT will continue to monitor this by-law update as part of their commitment to assisting with village land-management planning. However, the Rangeland Guardian groups continue to be supported by the village governments (Annex 3.1), continue to implement restoration activities as part of the Darwin Extra project DAREX004 and have been recognised by the Monduli District government as an official enterprise (Annex 2.2).

0.3 60 households record income generated by the rangeland restoration programme of £10 per month during the dry season (year three). Income generation was only possible in one village (Naitolia), where the 20 Rangeland Guardians received a combined income of approximately £30 (Annex 3.1) within the first 3 months of the dry season (June-August 2023). Grass harvest was only possible in the final year due to prolonged drought restricting grass growth, and further grass harvest were not possible before the project end. At the Lolkisale site, grass harvest as not possible as there had not been enough rainfall during throughout the project (but the grass harvest (and associated income) was possible after the following wet season (2024)). Mswakini site also received very little rainfall, but low grass growth was also compounded by poor governance and continued livestock pressure within the restoration site.

0.4 Grassland productivity, plant invertebrate and bird diversity is increased in restoration plots by at least 50% annually from baseline (to be established in within three months of start)

Overall biodiversity and productivity increased in the restoration plots, but some plots did not reach the planned annual 50% increase. This is likely due to the impact of Covid-19 with delays in training, and prolonged drought restricting increases in grass productivity. Forage availability (grazing potential) increased in restoration areas from between 10-12% ground cover in 2021

to between 30-41% ground cover by project end (Annex 1.1). Grass species increased both inside and outside restoration areas, but the greatest increases occurred in the restoration sites (Annex 1.2). Bird species richness and diversity increased in all restoration sites, with more than 50% increase in Naitolia and Mswakini, increases in Lolkisale were less than 50%. Changes in invertebrate richness and diversity varied among sites. Further details of changes in productivity and biodiversity can be found in Section 3.1

0.5 Rangeland quality (measured by grass cover) over entire village grazing areas is increased by 10% relative to neighbouring villages not participating in pilot (year 3).

We assessed rangeland quality in comparison to neighbouribg villages by calculating change in bare ground over time using earth observation data. This analysis showed the change in bare ground change between the project start and end was on average 6.9% lower in the project villages compared to the neighbouring villages (Annex 1.6). We were unable to restict the analysis to soley grazign specific areas as wer were uable to obtain the spatial information fo this analysis (i.e. extent of grazign areas per village), so we compared the full village extents. All areas of within and surrounding the project sites suffered from drought conditions during the project which likely resticted achieving the 10% increase in vegetation coverage.

3.3 Monitoring of assumptions

0.1 District Governance remains supportive of the implementing partners work and of NGOs work more in general. **Comment**: This support was monitored through regular engagement with the District Government. The Monduli District government appointed a focal contact for the project and she maintained involvement throughout the project through regular meeting and attendance in community visits. The District confirmed the registration of the Rangeland Guardian groups (Annex 2.2). As part of the livestock monitoring, the project engaged with the District Livestock Officer and District Rangeland Officer to ensure they were updated on the progress and concern regarding the GPS tracking of livestock, where suitable they were also invited to community meetings (Annex 5.4).

0.2 The target villages remain committed to support the Rangeland Guardians programme throughout and beyond the life of the project. **Comment**: The villages continued to support the project and the beneficiaries throughout the project. Despite lack of financial benefits, the Rangeland Guardians remained committed to the pilot restoration sites (Annexes 2.4 and 3.1), suggesting the project's expected pathway to change is still valid. Support for all three Rangeland Guardian groups has continued as part of the Darwin Extra project DAREX004.

0.3 National policies will not further marginalise pastoralism in favour of land conversion for farming purposes. **Comment**: There were no changes to national policies that would reduce rangeland areas for livestock grazing during the project to livestock movement policies during the project.

0.4 Prolonged droughts will not exacerbate conflict between communities and land invasions targeting available grass in the restored rangelands and simultaneously compromise recovery rates. **Comment**: Prolonged drought during the project had a significant impact on rangeland restoration recovery rates – in only one restoration site (Naitolia) was grass harvestable by the project end. Unsuccessful restoration was due to a combination of drought and poor management (i.e., restricting livestock grazing was not implemented well enough), but the demand for any available grazing during the project was high and this made restricting grazing even tougher to implement.

1.1 Identified communities remain stable and committed to respect the agreements in terms of allocation of land to Rangeland Guardians (compliance will be monitored). **Comment**: The pilot restoration sites were supported by the communitas through the project, although evidence of by-laws stating land-allocation to Rangeland Guardians has not been provided. The three pilot restoration sites continue to be managed by the Rangeland Guardians beyond the project end with support from the partner Oikos East Africa as part of DAREX004.

1.2 No prolonged drought: rangeland restoration is achieved by restoring recovery potential under normal conditions, continuous drought may render activity ineffective. **Comment**: noted

in assumption 0.4, prolonged drought during the project had a significant impact on rangeland restoration activities – in only one restoration site (Naitolia) was grass harvestable by the project end.

1.3 That our measures of biodiversity (vegetation, zebra, invertebrate and bird) reflect wider impacts on ungulate populations that change at slower rates than the project timeline. **Comment**: Vegetation and biodiversity changes were apparent and measurable during the project.

2.1 Compliance with by-laws established by local governments in the target villages. **Comment**: Certificate of Customary Right of Occupancy (CCROs), a tool to secure communal land, were established in the villages, with the assistance of the project partner UCRT, prior to the project start. CCROs form part of the communal land management system such as identifying seasonal grazing areas and other areas of grazing restrictions. The Rangeland Guardian restoration areas were required to be located outside CCROs (due to CCRO by-laws) but still on communal land. Additional evidence of by-laws specific to the Rangeland Gurdiands restoration areas (such as no-grazing) have not yet been obtain through UCRT.

2.2 There will be no dramatic change in land tenure or land grabbing episodes targeting or involving the restored areas. **Comment**: There were no changes land tenure during the project. The identification of initial pilot site in Naitolia was a useful process for the village government to remind them of the extent of the CCRO and that the pilot could not be sited within the CCRO. Restoration areas continued to be used by livestock throughout the project due to demand for grazing as a result of prolonged drought. Only strong governance was useful in restricting livestock use (e.g. Naitolia village where grass was harvestable by the project end). The Lolkisale restoration site was often used by neighbouring villages for grazing despite, and required additional dialogue with the neighbouring villages to reduce grazing on the site.

3.1 Northern Tanzania will not be affected by severe drought which will reduce recovery potential. **Comment**: Prolonged drought was an issue throughout the project, but the Rangeland Guardians remained committed despite limited benefits by the project end (Annex 2.4 and 3.2). Some rangeland recovery was possible highlighting that the rangelands maintain the potential to recover given restoration management, and fundamentally, strong governance.

3.2 OEA will continue to be welcomed in local schools. **Comment**: Despite the impact of COVID-19 restricting school visits and pupil involvement to lower levels that expected (72.25% of 2000 students; Section 3.1 and Annex 3.2), the OEA team were able to increase the number of students involved during year 2 of the project. The OEA team continue to implement conservation-education programs in schools within Moduli District.

4.1 Tanzania will not implement zero livestock mobility policies that will increase dramatically rangeland degradation. **Comment**: There were no national changes to livestock movement policies during the project.

4.2 Villages maintain strong working relationships with UCRT and OEA. **Comment**: OEA and UCRT were welcomed throughout the project across all types of activities. After discussion among project partners, UCRT were unwilling to be part of the livestock monitoring activities to ensure their working relationships with the villages remained as strong as possible. Livestock monitoring is a particularly difficult activity within Maasai communities due to their importance for cultural, societal and wealth status. The project partners continue to work with the villages as part of DAREX004.

3.4 Impact: achievement of positive impact on biodiversity and poverty reduction

By improving rangeland health in northern Tanzania, the intended impact of this project was to reduce the vulnerability of pastoralist communities by increasing resource availability, reduce land-use conflict and preserve endangered wildlife corridors and landscape connectivity.

Positive biodiversity impact was contributed to though rangeland restoration by increasing habitat availability at a local scale, but also improving habitat and connectivity with in the

currently fragmented landscape that is used as corridor for migratory ungulates such as zebra, elephant and wildebeest. The project activities were implemented on non-protected village land, working outside of conservation areas such as national parks can be successful if the communities drive the process and are able to benefit directly through improved finances and resource availability. Furthermore, the long-term sustainability of conservation interventions increases dramatically when they are culturally acceptable, low-cost and scalable. In the village of Mswakini Chini, grass biomass growth increased by more than 70% over three years between 2021 and 2023 (Section 3.1 – Activity 1.7), while plant species richness increased in the restoration areas (Annex 1.2) and bird species richness increase at all restoration sites (Annex 1.5), highlighting that the Rangeland Guardian concept can work to improve biodiversity. The Rangeland Guardian concept is now being implemented by the project partner OEA as part of the Darwin Initiative project DAREX004 – proof that the concept is culturally acceptable and scalable, and this is being implemented in 13 other villages in Northern Tanzania.

This project contributed to poverty alleviation through improved grazing management, rangeland degradation awareness, education and helping to improve the status of typically marginalised women in these communities. The school education program, which has increased awareness of climate and rangeland management issues, and the marketplace literacy training to pastoralist women were implemented (Section 3.1 - Activities 2.2 and 3.3). Knowledge sharing between the Rangeland Guardian women and the traditionally male dominated Grazing committees (Section 3.1 – Activity 3.2) is now in place and the women have more confidence within the communities such as contributing to village meetings, and implementing their own management of any private land (Annexes 2.4 and 3.2).

Undertaking restoration of almost 265 Ha of rangeland has led to direct increases in biodiversity at each location, though in the short term this impact has been severely limited by the impact of East Africa's long-term drought. Towards the end of the project rains returned to some of the landscapes and recovery was immediately obvious, with increased vegetation cover and associated biodiversity. Following the end of the project the El Nino driven rains have led to widespread biodiversity recovery, centred around project sites from which recovery can spread. While the role of rainfall is absolutely crucial, the physical restoration work associated with the project has primed these areas of the landscape to respond best to improved conditions, enabling them to catalyse wider positive impacts on biodiversity.

Due to the drought during most of the project period, our anticipated financial gains were realised in only one of the trial sites where a small amount of rain occurred. Despite this lack of financial contribution and the communities being well aware that without rains their work would not provide immediate benefits, the rangeland guardians continued with their meetings and work. They reported that having a regular reason to gather and meet was itself appealing and increased their opportunities. Together with the training and status benefits their roles had, the rangeland guardians reported valuable changes to their quality of life associated with the project. As the project matures and rains return we hope the financial benefits may be increased.

4 Contribution to Darwin Initiative Programme Objectives

4.1 Project support to the Conventions or Treaties (e.g. CBD, Nagoya Protocol, ITPGRFA, CITES, Ramsar, CMS, UNFCCC)

This project contributed to the following Aichi targets of the Convention on Biological Diversity (CBD): Target 4, sustainable consumption being key to sustainable use of grasslands; Target 5, reduction of habitat loss by preventing further loss of functional savannas; and Target 15, restoration and resilience of ecosystems. Through piloting the innovative Rangeland Guardian concept in three villages, training of Resource Assessors to monitor rangeland condition, and sharing knowledge with village livestock grazing committees, this project has helped improve the sustainable use of grasslands (CBD Target 4), improving the amount of functional savannas (CBD target 5) and restoring approximately almost 265Ha of degraded rangelands (bare ground and invasive bushland) (CDB Target 15). In addition, the conservation education

program reached almost 1500 students (both primary and secondary school levels) in the three communities, helping to generate awareness of the value of biodiversity (Aichi Target 1).

This project has also contributed to the UNCC Tanzania Nationally Determined Contributions (2021) adaptation measures. This includes: the project partnership and capacity building activities with the Tanzanian Livestock Research Institute has contributed to the NDC "Strengthening livestock research and development", Knowledge exchange and training of Resource Assessors has contributed to the NDC "Promoting local and modern climate resilience knowledge for sustainable pasture and rangeland management systems and practices" The Rangeland Guardian Concept has directly address the NDC "Promoting measures to address negative impacts of climate change on young people, women, old and other groups facing inequality, including people with disabilities"

While there has been no direct interaction with the Tanzania convention focal point, the project team work closely with government partners, including the Tanzania Wildlife Research Institute and Tanzania Livestock Research Institute as well as directly involving staff from the District government involved in rangeland and conservation management.

4.2 Project support to poverty reduction

Poverty is multi-dimensional problem. For women, poverty is aggravated by discrimination and lack of voice in decision making processes, this is particularly true among patriarchal societies such as the Maasai. We had envisaged poverty reduction occurring for the Rangeland Guardians as a consequence of their being able to sell grass, and through the training we delivered in market literacy, etc. We anticipated that extra income, directly into the hands of women would result in reduced poverty for the entire household. We further expected that the increased grass availability would improve wealth for the wider community as they rely on grass availability to raise livestock. In reality, the direct financial benefits (from grass sales) of the project were negligible, as a consequence of the long-term drought (Annex 3.1). While we had identified complete failure of the rains as a possible risk to project success (Assumptions 0.4, 1.2 and 3.1), we had considered this extremely unlikely. The reality of the recent years, and a 40 year extreme drought, was unexpected.

Despite this lack of financial contribution from the rangeland restoration and grass harvesting work, the training in marketplace literacy has helped the Rangeland Guardians more generally. They are better able to negotiate at the market and have received higher status (Annex 2.4). Indeed, despite the fact that they were well aware that the success of all their restoration work was contingent on the drought breaking, the rangeland guardians continued with their meetings and work. They reported that having a regular reason to gather and meet was itself appealing and increased their opportunities. Low or no literacy and lack of formal skills are two very important dimensions of poverty which the project has addresses. The 60 Rangeland Guardians and all other women belonging to the target groups (Resources Assessors, teachers, etc.) have acquired new knowledge and skills (Indicator 2.2, Annex 2.4 and 3.1). We expect that the recognition of their role will help trigger empowerment processes which will continue beyond the life of the project. Together with the training and status benefits their roles had, the rangeland guardians reported valuable changes to their quality of life associated with the project (Annex 2.4 and 3.1).

4.3 Gender equality and social inclusion

A key driver of this project was the focus on Maasai women, who are often the most marginalised members of their communities. Maasai women typically lack access to training and empowerment opportunities, but across the project villages the 60 women who have formed the Rangeland Guardian groups have now been trained in eco-entrepreneurship (indicator 2.2 – Annex 2.1), some have gained income (indicator 0.3 – Annex 3.1) from their restoration activities and their role has been recognised within the community and at a District government level (indicator 2.3, Annex 2.2). The feedback from the women was very positive,

and despite the climatic and governance challenges the women continued to hopeful that the plots will offer a source of income (by growing & selling grasses) for their women's groups in the future - "We have goals that if we can get grass to grow, we can sell the grass at a good price." (Annex 2.4). While major social changes were not evident, there were notable small-scale changes related to men's perceptions and the womens' confidence within their households "For example, tomorrow is Wednesday. My husband knows I will not be around because I will go to the [restoration] plot that day. So the chores that he can help with, he will do so that I can go" and within the communities "After being selected to be the leader of the women's group…I now have confidence to speak up in Village Council Meetings. They see now that we are people who can help our community." (Annex 2.4).

The project was entirely focussed on the critical positive role of women in behavioural change and protection of natural resources. The in-country partners, women occupy managerial positions in all departments, while Oikos East is built around women's power to catalyse positive environmental change, a key program, of the Ujamaa Community Resource Team is to address gender inequality through women's economic empowerment.

Please quantify the proportion of women on the Project Board[1].	50%
Please quantify the proportion of project partners that are led by women, or which have a senior leadership team consisting of at least 50% women[2].	66%

4.4 Transfer of knowledge

The Rangeland Guardian model is a novel concept of for land restoration, and this pilot project has shown that with the correct governance and support the new community-led method of rangeland restoration can be successful. The project initially trained 60 women as Rangeland Guardians, these women are now examples of the successful restoration initiative and they have directly shared their knowledge with more than 300 people from other villages that Oikos East Africa are currently working with as park of the Darwin Extra Project DAREX004, furthermore. To date, more than 400 women have been trained as Rangeland Guardians in 20 villages. Through this additional funding (approximately 1 million USD) secured by Oikos East Africa, the land under restoration by Rangeland Guardians in Northern Tanzania has had a tenfold increase.

Learning events were also a key activity of this project and included exchange visits between local governments and district representatives targeting restored rangelands, including representatives from neighbouring districts who were not part of this project (Annex 5.5) and and a learning event with all partners and stakeholders to share expereinces of the project progress (45 participants – Annex 5.4).

One member of UCRT was invited to the Rangeland Society of Tanzania (RST) In 2022 to share his knowledge on UCRT's involvement in rangeland management and restoration activities, including the Rangeland Guardians project (Annex 5.2). At the International Congress for Conservation Biology (ICCB 2023), one member of the UoY presented a poster on the Rangeland Guardians model of sustainable rangeland restoration, and also presented results from the restoration activities as part of a presentation on why understanding the drivers of rangeland degradation is key to ensure the correct restoration activities are implemented to maximise success (Annex 5.1). One member of UCRT was invited to the Conference of the

[1] A Project Board has overall authority for the project, is accountable for its success or failure, and supports the senior project manager to successfully deliver the project.

[2] Partners that have formal governance role in the project, and a formal relationship with the project that may involve staff costs and/or budget management responsibilities.

Parties of the UNFCCC (COP 27) to discuss how to build capacity and train indigenous women leaders especially in relation to their important role they have in climate change action.

4.5 Capacity building

One of the Oikos East Africa project team (female) was awarded a two-year scholarship to study on the Conservation Management of African Ecosystems at the University of Glasgow from September 2023 and continues to engage with OEA, this will hopefully provide OEA with greater scientific research capacity for future projects. One junior ecologist from Oikos East Africa (male) who was a trainee during the project has been promoted to Rangeland Restoration specialist, has received a salary increase and is now managing restoration activities in approximatley 20 villages. He has also been on fully funded training workshop 'Stories for Science Communication - African Stories, African Voices' at the Research and Innovation for the Serengeti Ecosystem (RISE) – see Annex 6.2.

5 Monitoring and evaluation

The Monitoring and Evaluation system was crucial to providing direction to project partners regarding the indicators required to support the project outcomes and outputs. Some assumptions were broad, and in retrospect these would have benefited from the addition of finer-level assumptions to monitor the progress more readily. For example, a time-scale could have been included within the drought assumptions (e.g. more than 1 season of drought) which could have meant changes to improve the log-frame given the severe challenges of drought were implemented and better assessed, such as with measuring the success of restoration activities and this could have been based on indicators other than harvestable grass fodder.

All activities were however regularly monitored through regular field support and contact from the in-country project partners, such as ensure Resource Assessor data was collected on time and supported as required – any issues with such activities could therefore be identified quickly. For the resource assessor data collection, mobile data collection would have allowed faster feedback of grazing status to the communities. This is now being implemented as part of DAREX004.

The qualitative assessment of the project from 9 Rangeland Guardians, carried out by Oikos East Africa (Annex 2.4), was an additional activity that was of particular benefit to the project partners for identifying progress and success measures directly from the beneficiaries.

6 Actions taken in response to Annual Report reviews

Y2 - Comment 1: Please provide comment on whether efforts to improve communication and coordination between OEA and UCRT were effective. **Response**: Regular communication between partners improved and was noted in further reports.

Y2 - Comment 2: Please update on the delays to activities 1.5 and 1.6, and how these have been accounted for. **Response:** Updates were provided in the next HY report and YR3 report. GPS tagging (activity 1.6) was completed, while identification of additional pilot areas (1.5) changed to management within the CCRO. We requested discussion with Darwin staff about this in February 2023, but this did not progress

Y2 - Comment 3: Output indicator 4.3 – if documentation for by-laws is not yet received by the next HY report, please describe the consequences this would have and suggest an alternative plan. **Response:** We continued to request for by-law documentation but to date have not received documents. This has not had an impact on the project or Rangeland Guardians - they continue to be supported by the district and villages, and were officially recognise as micro-enterprises by the District (Annex 2.2)

Y2 - Comment 4: It would be helpful to know what percentage of the 91.3ha is under CCRO, to understand how this might affect predicted RG income benefit from grass sales. Are there other activities allowed within CCRO by-laws that could see RG income improve in these areas?

Response: None of the pilot restoration areas were within the CCRO. Scaling up was not possible, so the focus became invasive bush management within the CCRO as pilot areas were not allowed within the CCRO due to by-laws (Annex 6.2).

Y3 - Comment 1: At this point, the project may wish to consider focusing its activities on field visits to the communities to further discuss the challenges of climate change, and to continue to reinforce the long-tern adaptation benefits of rangeland restoration. **Response:** Field visits did increase, especially with regular contact regarding rangeland management and livestock tracking which enabled more regular updates on progress and any problems. A full stakeholder meeting also took place (Annex 5.4) to share further understanding of management and climate change issues among participants and partners

Y3 - Comment 2: It is understood that severe drought has restricted biomass growth and therefore any opportunities for generating income. The report states that, if rain comes, additional marketing and income generation support will be provided to the Rangeland Guardians. Will this support be provided if the rain arrives after EoP or only if rain arrives before EoP. If the latter, why can training not be provided now in anticipation of the rain? **Response:** MPL training was provided earlier in the project (Annex 2.1), the communities continue to be supported by OEA as part of DAREX004

Y3 - Comment 3: The school awareness programme recruited 251 students (Y3 target=500 students) during the reporting period to bring the total number of students enrolled to 1,458 (target=2,000). Is recruitment ongoing? Why was the project unable to reach its target during the reporting period? **Response:** We were unable to further add to the number of school students during the project. School enrolment did not increase enough during the project to support additional deployment of the education team from OEA**.**

7 Lessons learnt

- **Climate vs governance.** The restoration activities were a success (i.e., harvestable grass) in one of the 3 sites. While this was strongly affected by climatic conditions (drought conditions), governance had a key role in success and if implementing the project again, managing the governance (i.e. grazing restrictions) would require significantly more direct support – especially to the women's groups who would often say that they are unable to prevent access to restoration sites on their own – the whole communities need to support such an initiative.
- **Change in awareness of livestock pressure.** Overall, the communities were well engaged and it was noticeable that during the project more questions were being asked regarding grazing use and how to manage grazing. Some conversations also included questions on how livestock owners should potentially reduce their livestock numbers to reduce pressure on grazing areas and increase livestock health.
- **Solutions that work locally are not always scalable**. Rangeland health declines due to conditions that can differ dramatically between locations. Factors such as soil type, the rain-shadow effect of mountains, the presence of dams, waterholes, roads, and anthropic pressure all contribute to a mosaic of local circumstances that respond differently to stressors and shocks. It is evident that solutions cannot be scaled in a generalized way, as locally successful solutions may not work elsewhere.

  Understanding what works where is critical, and although it may extend and delay the rollout of activities, our lesson learned is that a rigorous, science-driven testing phase must be included in all restoration initiatives.
- **Law enforcement and by-laws have a strong effect on the success of restoration interventions.** A lack of strong governance and law enforcement in some areas has led to problems with fully implementing interventions. Poor law enforcement and awareness have also eased land grabbing events, which negatively affect the possibility of engaging with the communities fearing any more land-grabbing episodes.

This pilot model is based on empowering women, who, with new knowledge and tools, become Rangeland Guardians, specialized in how to effectively counteract rangeland degradation driven by the spreading of invasive plants. The areas allocated for restoration activities are identified by community members through a participatory and transparent process. The success of the restoration depends on three main factors: (1) the commitment of the women, (2) rainfall, and (3) zero grazing. Zero grazing is the most important condition to achieve restoration, allowing for the necessary "resting time." However, zero grazing is also the most difficult behaviour to enforce in communities stressed by a lack of resources. Strong governance and law enforcement have been difficult to achieve, and often the efforts of the Rangeland Guardians have been nullified by reckless and influential community members who disrespect agreements and graze on the limited grass resources within the allocated restoration plots.

The engagement of women Rangeland Guardians with the program is driven by the income generated from rangeland restoration through the sale of grass. Restoring degraded rangelands is a labour-intensive process that involves removing invasive plants and trees. Financial incentives were not provided to Rangeland Guardians due to the need for constant funding; instead, the success of the initiative relies on the commitment of the women.

Women are disproportionately affected by rangeland degradation as they bear the largest share of responsibility for livestock keeping, farming, firewood collection, building, childcare, and food production. Oikos believes that women's commitment to positive change is strong and long-lasting and therefore focuses on empowering women. Despite the limited productivity of the restoration plots during the pilot phase of the women-led rangeland restoration in three villages, qualitative findings show that women are motivated by the possibility of earning an income by trading grass (Annex 2.4). A subgroup of nine Rangeland Guardians from three villages in the Monduli District were interviewed to better understand their current perceptions and motivations for participating in rangeland restoration activities despite recurrent droughts affecting the villages. All women were married with 2-7 children and aged between 24-54 years. Overall, women have a positive perspective of restoration plots, even though they face challenges such as constant use of the plots for grazing. Women remain hopeful that the plots will provide a source of income for their women's groups in the future. Despite not seeing any significant ecological changes in their restoration plots, women continue to visit the plots weekly. This time is valuable for them as they can leave their homes and meet with fellows to share ideas. Finally, several women have piloted restoration activities they learned during the project at their own homes and on their own land.

- **Marketplace Literacy as women empowerment tool.** Subsistence communities often lack the knowledge and skills necessary to participate in markets and the wider economy, which can hinder their ability to generate income. Those who attempt to capitalize on the income-generating potential of rangeland restoration, primarily through the sale of grass and in particular women, may fail due to their limited knowledge.

  The Marketplace Literacy Training program was developed in 2015 in collaboration with Professor Madhu Viswanathan, founder of "The Marketplace Literacy Project" at the University of Illinois (US), with the aim of overcoming low literacy rates in subsistence communities through a simple, pictorial, and participatory approach. This program is customized to the culture and needs of pastoralist people and is designed to increase their capacity to engage with livestock markets and value chains in a more strategic and profitable manner.

  Using a bottom-up approach to subsistence market research, Oikos has developed tailored content, role plays, examples, and exercises to enhance the efficacy of the training program. By improving the capacity of subsistence pastoralists to engage with livestock markets, this program helps to increase household resilience to stress and shocks. The training approach is highly participatory and uses participants' existing knowledge as its starting point. The principle of self-discovery guides the training. Although new scientific and legal information is introduced throughout the training course whenever pertinent, it is always provided after the participants have analysed and presented their own perspectives.

New information is therefore added onto a structure which is fully understood, rather than being the basis of the training itself. The training specifically challenges the enduring preconceptions held by decision-makers and civil society officials and practitioners regarding pastoralists and agro-pastoralists and their way of life, and which have a direct impact on policy. This is done by using evidence-based arguments and practical ideas relevant to the participants. Supporting arguments with evidence is central to changing participants' attitudes and the training uses a range of data and case studies from indigenous knowledge, scientific research, and participatory action-learning processes. The program has reached more than 10,000 pastoral women.

- **Collaboration with scientists is the way to go**. The in-country partners value the collaboration with several national and international research groups. Working in tight collaboration with scientists provides access for rigorous protocols and review processes, provides the necessary external perspective which promotes reflection and innovation, and broadens learning opportunities. Often large databases are hard to manage for organizations fully focused on active restoration in the field. Oikos has been collaborating with a team of ecologists from the University of York since 2016 and has produced and tested simple rangeland health assessment tools which were described in the first version of the manual.

  Oikos attends scientific symposia where learned lessons are shared, promotes the reading of peer reviewed papers and reports among its team members to boost critical review of interventions and to offer communities evidence-based knowledge. Furthermore, counteracting the rapid changes affecting rangeland landscapes, such as the growing diffusion of invasive plants, needs to be informed by science and scientists benefit from the capillary information collected by field teams.

8 Risk Management

No new risks have occurred during the last 12 months

9 Sustainability and Legacy

Throughout the project, the Moduli district have been strongly involved and provide a focal contact who participated most community meetings and additional fieldwork visits. This ensured that the project was promoted within the District government. Awareness and engagement with the District Government on the Rangeland Guardian model/concept continues through the ongoing work was part of the Darwin Extra project DAREX004. The expansion of Rangeland Guardian concept shows that demand this sustainable model. Given the lessons learnt from implementing the concept in these three pilot villages, the villages and marginalised women now involved in DAREX004 are expected to benefit from the restoration activities and continue to be supported by the OEA team, as well as the Monduli District representatives.

The project engaged with the Tanzania Livestock Research Institute (TALIRI) and the Tanzania Wildlife Research Institute (TAWIRI) and the knowledge shared will improve research capacity – especially with TALIRI who have taken ownership of the GPS collars for their own projects.

The partner organisations continue to apply for grants on related projects to promote the Rangeland Guardians concept and have submitted two funding applications since the project end (REDAA and UKRI). All in-country team members continue to be employed on related projects through their organisations. One member of the York team ceased employment after the project end but continues to apply for funding on related project with the in-country partners on this project and also continues to draft manuscripts for publishing on the science related aspects of the project (e.g. livestock movements, biodiversity changes as a result of restoration activities).

One of the Oikos East Africa team was awarded a two-year scholarship to study on the Conservation Management of African Ecosystems at the University of Glasgow from September 2023 and continues to engage with project partners.

10 Darwin Initiative identity

This project is recognised as a distinct project and wholly funded through the Darwin Initiative. The project expands on work by the partners, who have been involved in a 6 year collaboration with the Monduli District as part of the Endangered Ecosystems of Northern Tanzania collaboration. All outputs from this project (e.g. information posters, presentations, training and reports) have been clearly identified as funded by the Darwin Initiative.

The project website (with Darwin Initiative identity) can be accessed at https://sites.google.com/york.ac.uk/rangelandguardians/. The project is also listed on the York Research Database - https://pure.york.ac.uk/portal/en/projects/darwin-rangeland-guardians(a513d465-082a-4e0c-8230-3f8f868f4c9e).html, it also has a dedicated webpage on the York Environmental Sustainability Institute website (https://www.york.ac.uk/yesi/research/resilient-ecosystems/rangeland-guardians/), and available via personal twitter profile (e.g. https://twitter.com/Rob_Critchlow). All participant information documents, presentation and training materials, such as the Marketplace Literacy Manuals, carry the Darwin Initiative and UKAid logos. The project is also described on the Oikos East Africa website (http://oikosea.co.tz/projects/rangeland-guardians-women-led-initiatives-for-rangelands-restoration/). The project posters which can be found in village offices of the three villages also carry the Darwin Initiative and UKAid logos (Annex 5.3).

Social media posts examples:

- https://twitter.com/TZBirder/status/1600002574010134529?s=20
- https://twitter.com/Rob_Critchlow/status/1597720052660596736?s=20
- https://twitter.com/Rob_Critchlow/status/1544325539984465922?s=20

11 Safeguarding

Has your Safeguarding Policy been updated in the past 12 months?		No
Have any concerns been investigated in the past 12 months		No
Does your project have a Safeguarding focal point?	No	
Has the focal point attended any formal training in the last 12 months?	No	
What proportion (and number) of project staff have received formal training on Safeguarding?		Past: 0% Planned: 0%
Has there been any lessons learnt or challenges on Safeguarding in the past 12 months? Please ensure no sensitive data is included within responses.		

12 Finance and administration.

12.1 Project expenditure

Project spend (indicative) since last Annual Report	2023/24 Grant (£)	2023/24 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)	[redacted]			
Consultancy costs				
Overhead Costs				
Travel and subsistence				Part of unspent financial change request to cover in-country partner expenditure
Operating Costs				Part of unspent financial change request to cover in-country partner expenditure
Capital items (see below)				
Others (see below)				Unexpected salary increases
Audit Costs				Greater than initial audit costs
TOTAL	**71,365.23**	**62,296.80**		

Staff employed (Name and position)	Cost (£)
Rob Critchlow (Researcher)	[redacted]
Colin Beale (Project Lead)	
Silvia Ceppi (Conservation Biologist)	
Neema Michael Lekule (Rangeland Management Officer)	
Paine Eulalia Mako (Women's Leadership Specialist)	
Fred Loure Parmelo (Land Use and Rights Lawyer)	
Plazikia Msalilwa (Community Development Officer	
TOTAL	**35,578.93**

Capital items – description	Capital items – cost (£)
TOTAL	

Other items – description	Other items – cost (£)

University of York Other Costs Ujamaa Community Resources Team Other Costs Oikos East Africa Other Costs	[redacted]
TOTAL	**7718.89**

12.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total (£)
TOTAL	

Source of funding for additional work after project lifetime	Total (£)
TOTAL	

12.3 Value for Money

It is hard to decide whether this project has been good value for money. On the surface, the results have little to show within the timeline of the project, thanks to the near total failure of the rains throughout the project period. Moreover, given the drought it is hard to imagine how any biodiversity work in this region could have done better. However, the preparatory work undertaken during the project, the training delivered and the communities that have been built, alongside the vision for restoration that has been engendered across the communities set the scene for rapid improvements as soon as the rains return. Indeed, the recent El Nino rains have seen rapid recovery focussed around the restoration sites. Within the timeline of the project itself we suggest the Return on Investment would be considered low, but the true benefits are only just being realised.

During the project value for money was assured by leveraging additional funding to the University of York through matched funding. Evidence for this is provided in the details of the workshop and comparison with accounts: it will be clear, for example, that Prof Beale took an active role in workshops but did not receive payments for flights, etc. from the project. Similarly, both UCRT and Oikos East Africa were able to 'piggy-back' additional work into the project on the back of the regular engagement with the communities the project allowed, providing additional benefits for the communities.

13 OPTIONAL: Outstanding achievements of your project (300-400 words maximum). This section may be used for publicity purposes.

I agree for the Biodiversity Challenge Funds Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here).

We consider the main outstanding achievement of the project the fact that we have proven women can lead rangeland restoration successfully, and that this process is culturally accepted in a very conservative society. The process is heavily dependent on rains, but in favourable weather conditions it produces tangible benefits to the lives of the women and a reduction of the distribution of invasive plants which are the main threat to rangeland's health in Northern Tanzania. Restoration plots, monitored beyond the life of the project, are showing an increase in palatable grasses. An idea which was never tested before is today successfully scaled up applied in 17 villages, more than 420 women have been trained as Rangeland Guardians and are actively restoring degraded areas. With more than 60% of Tanzania's land showing signs of degradation, transforming informally educated and generally vulnerable women in agents of ecological rehabilitation is a winning process.

Annex 1 Project's original (or most recently approved) logframe, including indicators, means of verification and assumptions.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Impact: Healthier rangelands in Northern Tanzania will reduce the vulnerability of pastoralist communities by increasing resource availability, reduce conflict and will preserve endangered wildlife corridors and connectivity.			
Outcome: A scalable and sustainable, community led and culturally acceptable model of rangeland restoration and management is implemented over three villages, with tangible benefits for biodiversity and local communities	0.1. 500 Ha of degraded rangeland under restoration in Monduli district (Tanzania) by project end (0 Ha in 2019, 100 Ha in year 1, 300 Ha in year 2). 0.2. By-laws passed in three villages ensuring commitment toward rangeland restoration and rights of Rangeland Guardians (year one) 0.3. 60 households record income generated by the rangeland restoration programme of £10 per month during the dry season (year three). 0.4 Grassland productivity, plant invertebrate and bird diversity is increased in restoration plots by at least 50% annually from baseline (to be established in within three months of start) 0.5 Rangeland quality (measured by grass cover) over entire village grazing areas is increased by 10% relative to neighbouring villages not participating in pilot (year 3).	0.1. Village government declarations and project maps. 0.2. Village by-laws approval documents. 0.3. Grass sales ledgers 0.4 Wet-season monitoring using fixed quadrats transects and point counts within restoration sites. 0.5 Annual remote sensing analysis monitoring bare ground and invasive encroachment.	0.1District Governance remains supportive of the implementing partners work and of NGOs work more in general. 0.2 The target villages remain committed to support the Rangeland Guardians programme throughout and beyond the life of the project. 0.3 National policies will not further marginalise pastoralism in favour of land conversion for farming purposes. 0.4 Prolonged droughts will not exacerbate conflict between communities and land invasions targeting available grass in the restored rangelands and simultaneously compromise recovery rates.
Output 1. Biodiversity improvements: Degraded rangeland within key wildlife corridors in Northern Tanzania have restored function and increased biodiversity.	1.1 Grazing potential increased from baseline by 100% per year in restoration plots. 1.2 Plant species richness increases from baseline by 50% per year in target degraded rangeland (many sites have only 1-2 species in largely barren	1.1 Wet-season assessment of % of bare ground and invasive species coverage through Rangeland Health methodology. 1.2. Baseline and endline ecological monitoring reports	1.1Identified communities remain stable and committed to respect the agreements in terms of allocation of land to Rangeland Guardians (compliance will be monitored). 1.2 No prolonged drought: rangeland restoration is achieved by restoring

	ground ensuring rapid progress is possible). 1.4 Use of restored sites by threatened wildlife (notably Zebra) has increased by 10% relative to baseline by end. 1.5 Invertebrate and bird diversity has increased by 50% relative to baseline (many sites have only 1-2 species in largely barren ground ensuring rapid progress is possible) by project end.	1.4 Baseline and endline ecological monitoring reports (signs of mammalian use, particularly dung counts, will be key for this indicator. We base our indicator on Zebra as the most abundant of the threatened species present, but will also monitor all signs of ungulate use) 1.5 Baseline and endline ecological monitoring reports	recovery potential under normal conditions, continuous drought may render activity ineffective. 1.3 That our measures of biodiversity (vegetation, zebra, invertebrate and bird) reflect wider impacts on ungulate populations that change at slower rates than the project timeline.
Output 2. Direct benefit to Rangeland Guardians: Three Rangeland Guardians groups composed of women and youth from vulnerable pastoralist communities are established and trained and at least 60 members receive sustainable income from sale of grass from restored rangelands.	2.1 Sixty informally educated pastoral women lease an average of 8 Ha of recovering rangelands (securing grazing for circa 30 small stock worth at least £1000) by end. 2.2. Sixty informally educated pastoral women are empowered through new skills: rangeland restoration techniques and marketplace literacy knowledge by end. 2.3 3 cooperatives, microenterprises are registered with District government (year 2).	2.1. Project socio economic baseline and endline report 2.2. Training course attendance certificates; surveys before and after training demonstrating a change in understanding of rangeland restoration and entrepreneurship. 2.3 Official incorporation documents.	2.1 Compliance with by-laws established by local governments in the target villages. 2.2 There will be no dramatic change in land tenure or land grabbing episodes targeting or involving the restored areas.
Output 3. Community benefits from restoration: Availability of dry-season fodder increases, improving livestock value.	3.1 >300 Kg / Ha.yr of grass biomass available to livestock across the restored rangelands (currently <100 Kg / Ha.yr) by end. 3.2 Purchases of grass at village level contribute to increased value of livestock. 3.3 2000 school students receive awareness raising and training in sustainable rangeland management (500 in year 1, 1000 in year 2, 500 in year 3).	3.1 Rangeland Guardian's commercial records and grass sale log books. 3.2 Numbers of bales of grass purchased by village members. 3.3 School logs and entry and exit tests on a sample of students (at least 200).	3.1 Northern Tanzania will not be affected by severe drought which will reduce recovery potential 3.2 OEA will continue to be welcomed in local schools

Output 4. Governance improvements underpinning lasting impact: Village grazing committees have established adaptive principles of sustainable grazing management across non-degraded rangelands, with best practice shared with neighbour villages.	4.1 Three village grazing committees have increased knowledge of adaptive grazing management strategies compared with baseline and understand the concepts of joint resource management (continuous increase in average understanding scores from baseline, 18 months and year 3 surveys). 4.2 Adaptive grazing management plans will have been developed and are in use for all communal grazing lands (none currently). 4.3 By-laws will have been passed defining and allocating restoration areas and implementing communal grazing management plans in all villages (none currently). 4.4 Resource Assessors will be able to monitor rangeland conditions in the target communities and feedback to grazing committees enabling adaptive management (none currently).	4.1 Before and after surveys of knowledge and understanding of best practice within grazing committee membership. 4.2 Village grazing plan documents archived with village executive. 4.3 Copy of the by-laws signed by local government. 4.4 Village government meetings minutes showing official recognition of resource assessors role.	4.1 Tanzania will not implement zero livestock mobility policies that will increase dramatically rangeland degradation. 4.2 Villages maintain strong working relationships with UCRT and OEA.

Activities

1.1 Identification, mapping and baseline monitoring of initial 100 Ha of degraded rangelands across 3 villages in Monduli District (lead by UoY).

1.2 Creation of a simple manual (the 'restoration toolkit') for the rangeland restoration (lead by UoY). This will be largely a visual manual that the RGs will use to assess land degradation.

1.3 Training of the RG members in rangeland restoration (lead by UoY and OEA). OEA has trained a team of 15 resource assessors in Arumeru District and has trained District Game Officers in the past, so established workshop methods are available.

1.4 Practical restoration activities by RGs (following training and manual, including field mentoring by OEA and UoY)

1.5 Identification of next 400 Ha of degraded rangelands.

1.6 Tagging of >100 heads of livestock (lead by UoY)

1.7 Biodiversity surveys for invertebrates and birds, ongoing surveys of vegetation composition and structure (lead by UoY)

2.1 Socio-economic baseline and end-point surveys. UCRT has a standard pastoralist questionnaire-based survey that will be used in this project to provide a baseline and will be repeated at the end.

2.2 Selection and formation of 3 RG groups composed by women and youth (and at least 60 members). Selection will be informed by the baseline socio-economic survey to target those most likely to benefit from the intervention.

2.3 Training of the RG members (3 groups, 60 people) in MPL and basic saving group management (Lead by OEA). This will be a workshop style activity, supported by mentoring, using methods and training materials already established and tested by OEA. pre and post surveys

3.1 Presentation of the activities and work plan to the Local Government (District and Village) with project launch.

3.2 RG awareness raising / marketing to grazing committee. RGs will run a workshop with the village grazing committee to raise project awareness, focussing on marketing the fodder they will cut during restoration. The price will be established based on market prices for grass for the specific season and discussed with the traditional grazing committees.

3.3 Awareness campaign in primary and secondary schools targeting at least 2000 students on the importance of rangeland conservation and the opportunities deriving from rangeland restoration. - 3 primary schools

4.1 Training of at least 4 resource assessors in each target village on ecological monitoring, simultaneously undertaking baseline monitoring of biodiversity, and providing bi-monthly reports on conditions and grazing activities to the Grazing Committee, Oikos has trained a team of 15 RA + has outlined a simple manual in English and Kiswahili.

4.2 Training of 3 grazing committees on sustainable grazing management (led by UoY with OEA and UCRT). Grazing committees are traditionally male dominated and the new knowledge of the RG women groups will be incorporated into the grazing committees through the facilitation of UCRT and the WLF which we intend to link to the RG programme.

4.3 Learning events and exchange visits between local governments and district representatives targeting restored rangelands.

4.4 Presentation of the project results to at least 2 international scientific conferences and one national (TAWIRI). - disseminate the results in several scientific and development platforms + NTRI provides an ideal primary dissemination route.

Annex 2 Report of progress and achievements against final project logframe for the life of the project

Project summary	Measurable Indicators	Progress and Achievements
Impact: Healthier rangelands in Northern Tanzania will reduce the vulnerability of pastoralist communities by increasing resource availability, reduce conflict and will preserve endangered wildlife corridors and connectivity.		The 60 Rangeland Guardians have improved rangeland condition in the pilot areas as well as increased their status within the communities. Improving the degraded rangelands has increased grazing resources for livestock and wildlife, while grass harvest has provided financial income to the project beneficiaries. Biodiversity generally increased in the restoration areas compared to outside, wild ungulate (e.g. zebra) use of restation areas was not greater compared to non-restored areas.
Outcome A scalable and sustainable, community led and culturally acceptable model of rangeland restoration and management is implemented over three villages, with tangible benefits for biodiversity and local communities	0.1. 500 Ha of degraded rangeland under restoration in Monduli district (Tanzania) by project end (0 Ha in 2019, 100 Ha in year 1, 300 Ha in year 2). 0.2. By-laws passed in three villages ensuring commitment toward rangeland restoration and rights of Rangeland Guardians (year one) 0.3. 60 households record income generated by the rangeland restoration programme of £10 per month during the dry season (year three). 0.4 Grassland productivity, plant invertebrate and bird diversity is increased in restoration plots by at least 50% annually from baseline (to be established in within three months of start) 0.5 Rangeland quality (measured by grass cover) over entire village grazing areas is increased by 10% relative to	By the end of the project, 244 Ha of degraded rangelands are under active community-led management. The Rangeland Guardians have been recognised and supported by the village and District governments. Despite prolonged drought conditions throughout the project, the Rangeland Guardians have acknowledged societal benefits such as improved status in the communities and confidence among the typically marginalised women. The drought conditions prevented the income goals from being reached, but biodiversity and grazing condition has generally improved within the restoration areas compared to areas without active management.

Project summary	Measurable Indicators	Progress and Achievements
	neighbouring villages not participating in pilot (year 3).	
Output 1. Biodiversity improvements: Degraded rangeland within key wildlife corridors in Northern Tanzania have restored function and increased biodiversity.	1.1 Grazing potential increased from baseline by 100% per year in restoration plots. 1.2 Plant species richness increases from baseline by 50% per year in target degraded rangeland (many sites have only 1-2 species in largely barren ground ensuring rapid progress is possible). 1.3 Use of restored sites by threatened wildlife (notably Zebra) has increased by 10% relative to baseline by end. 1.4 Invertebrate and bird diversity has increased by 50% relative to baseline (many sites have only 1-2 species in largely barren ground ensuring rapid progress is possible) by project end.	Forage availability (grazing potential) increased in restoration areas from between 10-12% ground cover in 2021 to between 30-41% ground cover by project end – see Section 3.1 and Annex 1.1. Grass species increased both inside and outside restoration areas, but the greatest increases occurred in the restoration sites – see Annex 1.2. Use of restored sites by threatened wildlife (zebra, giraffe and elephant) did not change in the restoration sites, this is likely to be because of the drought conditions with animals preferencing to use nearby protected areas less impacted by grazing. Bird species richness and diversity increased in all restoration sites, with more than 50% increase in Naitolia and Mswakini, increases in Lolkisale were less than 50%. Changes in invertebrate richness and diversity varied among sites - see section 3.1.
Activity 1.1 Identification, mapping and baseline monitoring of initial 100 Ha of degraded rangelands across 3 villages in Monduli District (lead by UoY).		91.3 Ha of degraded areas identified in 18 months (within 10% of 100 Ha aim).
Activity 1.2 Creation of a simple manual (the 'restoration toolkit') for the rangeland restoration (lead by UoY). This will be largely a visual manual that the RGs will use to assess land degradation.		Visual restoration toolkit completed.
Activity 1.3 Training of the RG members in rangeland restoration (lead by UoY and OEA). OEA has trained a team of 15 resource assessors in Arumeru District and has trained District Game Officers in the past, so established workshop methods are available.		Training and support has been implemented by OEA throughout the project – see Annex 2.6
Activity 1.4 Practical restoration activities by RGs (following training and manual, including field mentoring by OEA and UoY)		All villages have implemented grazing restrictions and some management of invasive species – Section 3.1 and Annex 2.6

Project summary	Measurable Indicators	Progress and Achievements
Activity 1.5 Identification of next 400 Ha of degraded rangelands.		Due to prolonged drought, scaling up was restricted due to the demand for any available grazing – i.e., villages were not willing to set aside additional areas for grazing restrictions. Scaling up therefore focused on invasive bush management within the CCROs as requested by the communities – 173 Ha of land identified, and management was implemented – see Annex 6.2.
Activity 1.6 Tagging of >100 heads of livestock		60 households involved across the 3 villages with 81 GPS tags deployed. Delayed tagging in Mswakini as most livestock were not in the village due to drought.
Activity 1.7 Biodiversity surveys for invertebrates and birds, ongoing surveys of vegetation composition and structure		Annual surveys were completed as required to monitor biodiversity change - Section 3.1 and Annexes 1.1-1.5.
Output 2. Direct benefit to Rangeland Guardians: Three Rangeland Guardians groups composed of women and youth from vulnerable pastoralist communities are established and trained and at least 60 members receive sustainable income from sale of grass from restored rangelands.	2.1 Sixty informally educated pastoral women lease an average of 8 Ha of recovering rangelands (securing grazing for circa 30 small stock worth at least £1000) by end. 2.2. Sixty informally educated pastoral women are empowered through new skills: rangeland restoration techniques and marketplace literacy knowledge by end. 2.3 3 cooperatives, microenterprises are registered with District government (year 2).	The pilot restoration areas 91.3 Ha across the 3 villages (1.5Ha on average). This is less that the planned indicator, but due to drought and land availability the villages were unwilling to expand the restation areas until evidence of restoration was observed. 60 Rangeland Guardians have received training in rangeland restoration and marketplace literacy. The focus group discussions and end of project questionnaires demonstrate the knowledge gained and benefits to the Rangeland Guardians - see Annex 2.5 and 3.1. The 3 Rangeland Guardian cooperatives have been registered with the Moduli District Government – see Section 3 and Annex 2.2
Activity 2.1 Socio-economic baseline and end-point surveys. UCRT has a standard pastoralist questionnaire-based survey that will be used in this project to provide a baseline and will be repeated at the end.		Baseline survey was completed - see Annex 2.6
Activity 2.2 Selection and formation of 3 RG groups composed by women and youth (and at least 60 members). Selection will be informed by the baseline socio-economic survey to target those most likely to benefit from the intervention.		60 Rangeland Guardians were selected across the 3 target villages from group of 115 women – see Annex 2.7
Activity 2.3 Training of the RG members (3 groups, 60 people) in MPL and basic saving group management (Lead by OEA). This will be a workshop style activity,		All Rangeland Guardians completed formal training in marketplace literacy - Annex 2.1

Project summary	Measurable Indicators	Progress and Achievements
supported by mentoring, using methods and training materials already established and tested by OEA. pre and post surveys		
Output 3. Community benefits from restoration: Availability of dry-season fodder increases, improving livestock value.	3.1 >300 Kg / Ha.yr of grass biomass available to livestock across the restored rangelands (currently <100 Kg / Ha.yr) by end. 3.2 Purchases of grass at village level contribute to increased value of livestock. 3.3 2000 school students receive awareness raising and training in sustainable rangeland management (500 in year 1, 1000 in year 2, 500 in year 3).	Due to prolonged drought impacting biomass growth, grass harvest and sales were only possible for the Rangeland Guardian group in Naitolia village – See Annex 3.1 The school education programme reached 72% of the target number of students, this could not have been increased in the participating villages due to number of enrolled students during the project – section 3.1 and Annex 3.2.
Activity 3.1 Presentation of the activities and work plan to the Local Government (District and Village) with project launch.		The in-country project partners (OEA and UCRT) introduced the project to the local and district governments at the start of the project (Annex 6.4). The District Executive Director appointed a project focal person from the Community Development Department. The project was not presented at village assembly meetings (to reach a wider audience) to ensure COVID-19 safety for both partners and the local communities.
Activity 3.2 RG awareness raising / marketing to grazing committee. RGs will run a workshop with the village grazing committee to raise project awareness, focussing on marketing the fodder they will cut during restoration. The price will be established based on market prices for grass for the specific season and discussed with the traditional grazing committees.		Rangeland Guardians participated in learning events with the grazing committees Annex 4.1 and project awareness and support was acknowledge during the focus group discussions at the project end (Annex 3.1)
Activity 3.3 Awareness campaign in primary and secondary schools targeting at least 2000 students on the importance of rangeland conservation and the opportunities deriving from rangeland restoration.		In the first phase of the education programme (Year 1), 1194 students were enrolled from 3 primary and 1 secondary schools. An additional 251 students were enrolled during year 2 of the project – see Section 3.2 and Annex 3.2
Output 4. Governance improvements underpinning lasting impact: Village grazing committees have established	4.1 Three village grazing committees have increased knowledge of adaptive grazing management strategies	Adaptive grazing management has not been implemented during the project due drought conditions (section 4.2) and demand for any available forage by grazing animals. Throughout the project, a large proportion of livestock were kept outside

Project summary	Measurable Indicators	Progress and Achievements
adaptive principles of sustainable grazing management across non-degraded rangelands, with best practice shared with neighbour villages.	compared with baseline and understand the concepts of joint resource management (continuous increase in average understanding scores from baseline, 18 months and year 3 surveys). 4.2 Adaptive grazing management plans will have been developed and are in use for all communal grazing lands (none currently). 4.3 By-laws will have been passed defining and allocating restoration areas and implementing communal grazing management plans in all villages (none currently). 4.4 Resource Assessors will be able to monitor rangeland conditions in the target communities and feedback to grazing committees enabling adaptive management (none currently).	the villages as there was not enough available grazing for livestock. Data collected by the Resource Assessors is available for future adaptive management plans (Section 4.4). Evidence of by-laws for the Rangeland Guardian has not been obtainable despite requests to UCRT. We expected that additional by-law documentation would have been easily obtainable. Communal grazing management is implemented in the villages through Certificate of Customary Right of Occupancy (CCROs) – these areas have been physically demarcated on the ground in the villages of Naitolia and Mswakini and restrict land use to communal grazing only (no agriculture or housing is allowed). The Resource Assessors were trained in measuring rangeland condition and regular contact and additional training was provided by OEA as required during the project. The Resource Assessors were also involved in learning exchanges and stakeholder meetings to share their experiences.
Activity 4.1 Training of at least 4 resource assessors (RAs) in each target village on ecological monitoring, simultaneously undertaking baseline monitoring of biodiversity, and providing bi-monthly reports on conditions and grazing activities to the Grazing Committee.		OEA trained 17 Resource Assessors and bi-monthly surveys took place from September 2021 to the project end. Results from the surveys can be provide back to the grazing committees – see Section 4.4 and Annexes 4.2 and 4.3
Activity 4.2 Training of 3 grazing committees on sustainable grazing management (led by UoY with OEA and UCRT). Grazing committees are traditionally male dominated and the new knowledge of the RG women groups will be incorporated into the grazing committees through the facilitation of UCRT and the WLF which we intend to link to the RG programme.		Grazing committee training involving the RGs was implemented in March 2023 (Section 3.1 and Annex 4.3)
Activity 4.3 Learning events and exchange visits between local governments and district representatives targeting restored rangelands.		Learning events and stakeholder meetings to exchange knowledge and experience of rangeland manangement among the project and neighbouring communities took place through the project – see Section 4.4 and Annexes 5.4 and 5.5.

Project summary	Measurable Indicators	Progress and Achievements
Activity 4.4 Presentation of the project results to at least 2 international scientific conferences and one national (TAWIRI). - disseminate the results in several scientific and development platforms, + NTRI provides an ideal primary dissemination route.		The Rangeland Guradian Concept and project results were presented at the TAWIRI 2021 and 2023 conferences, the ICCB 2023 conference and the 5th Scientific conference of the Rangeland Society of Tanzania (2022) – see Section 4.4 and Anexes 5.1. and 5.2.

Annex 3 Standard Indicators

Table 1 Project Standard Indicators

DI Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DI Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
DI-A01	3.3 2000 school students receive awareness raising and training in sustainable rangeland management (500 in year 1, 1000 in year 2, 500 in year 3).	Number of people from key national and local stakeholders completing structured and relevant training	People	Primary and secondary school students	1194	251		1445	2000
DI-A01	4.1 Three village grazing committees have increased knowledge of adaptive grazing management strategies compared with baseline and understand the concepts of joint resource management	Number of groups from key national and local stakeholders completing structured and relevant training	Grazing Committee		0	0	3	3	3
DI-D01	0.1. 500 Ha of degraded rangeland under restoration in Monduli district (Tanzania) by project end (0 Ha in 2019, 100 Ha in year 1, 300 Ha in year 2).	Hectares of habitat under sustainable management practices	Ha		91.3	173		264.3	500
DI-A01	2.2. Sixty informally educated pastoral women are empowered through new skills: rangeland restoration techniques and marketplace literacy knowledge by end.	Number of people from key national and local stakeholders completing structured and relevant training	People	Pastoralist women	60			60	60
DI-A03	NA	Local research institute (TALIRI) knowledge exchange and capacity building	1	Research Institute		1		1	0
DI-A04	2.2. Sixty informally educated pastoral women are empowered through new skills: rangeland restoration techniques and	Number of people applying new skills (restoration and entrepreneurship)	People	Pastoralist women	60			60	60

DI Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DI Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
	marketplace literacy knowledge by end.								
DI-A04	4.4 Resource Assessors will be able to monitor rangeland conditions in the target communities and feedback to grazing committees enabling adaptive management (none currently).	Number of people applying new skills (Resource assessment)	People	Resource Assessors		17		17	17
DI-A07	NA	Number of government institutions/departments with enhanced awareness and understanding of biodiversity and associated poverty issues	Institution	District government National research institutes x2 (TALIRI and TAWIRI)	2	2	2	3	2
DI-A10	Proportion sustainable livelihood enterprises established that are functioning at project end (at least a year after establishment).		Proportion	Rangeland Guardian groups (3 in total)	0	0	0.33	0.33	1
DI-B05	NA	Number of pastoralist women with increased participation in local communities / local management organisations	People	Pastoralist women	60	60	60	60	60
DI-D12	0.1 500 Ha of degraded rangeland under restoration in Monduli district (Tanzania) by project end	Area of degraded rangeland under active restoration	Area - (ha)	Rangeland / Savanna	91.3	173		264.3	500
DI-E01	NA	Area of ecosystem degradation avoided	Area - (ha)	Rangeland / Savanna Livestock grazing pressure removed	91.3	173		264.3	500

Table 2 Publications

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
Our rangeland, our pride	Educational podcast	Instituto Oikos, 2021				https://www.spreaker.com/show/our-rangeland-our-pride

Annex 5 Supplementary material (optional but encouraged as evidence of project achievement)

- **Annex 1 - Biodiversity summary**
  - 1.1 – Grazing potential change
  - 1.2 – Plant species richness change
  - 1.3 – Invasive species change
  - 1.4 – Ungulate use of restoration areas
  - 1.5 – Invertebrate and bird species change
  - 1.6 – Comparison of village rangeland quality
- **Annex 2 – Rangeland Guardians Summary**
  - 2.1 - Marketplace literacy training - OEA report
  - 2.2 - Moduli District Registration Certificates
  - 2.3 - Grass harvesting in Naitolia
  - 2.4 - Qualitative interviews report and presentation
  - 2.5 - Rangeland Guardians change in understanding
  - 2.6 - Restoration activities – example partner reports
  - 2.7 - Rangeland Guardian selection report
- **Annex 3 – Community benefits**
  - 3.1 - Focus Group Discussion – Beneficiary feedback report
  - 3.2 - School education program Year 2 - OEA reports
- **Annex 4 - Governance**
  - 4.1 - Grazing Committee training
  - 4.2 - Resource Assessor summary
  - 4.3 - Resource Assessor data – grazing committee feedback
- **Annex 5 – Dissemination**
  - 5.1 - Conference presentations (TAWIRI 2021, ICCB 2023, TAWIRI 2023)
  - 5.2 - Rangeland Society of Tanzania 2022 - UCRT report
  - 5.3 - Invasive species posters
  - 5.4 – Stakeholder learning event – UCRT and OEA reports
  - 5.5 – Learning Exchange Kitwai B – UCRT report
- **Annex 6 – Other**
  - 6.1 - Science communication training - Erick Swai
  - 6.2 - Scaling up of restoration areas - UCRT report
  - 6.3 - TALIRI restoration visit report (TALIRI partnership evidence)
  - 6.4 - Project Introduction

Checklist for submission

	Check
Is the report less than 10MB? If so, please email to BCF-Reports@niras.com putting the project number in the Subject line.	
Is your report more than 10MB? If so, please discuss with BCF-Reports@niras.com about the best way to deliver the report, putting the project number in the Subject line.	
If you are submitting photos for publicity purposes, **do these meet the outlined requirements (see section 10)?**	
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	
Do you have hard copies of material you need to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 10)?	
Have you involved your partners in preparation of the report and named the main contributors	
Have you completed the Project Expenditure table fully?	
Do not include claim forms or other communications with this report.	