

## Darwin Initiative Main: Annual 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: 30<sup>th</sup> April 2023**

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### Darwin Initiative Project Information

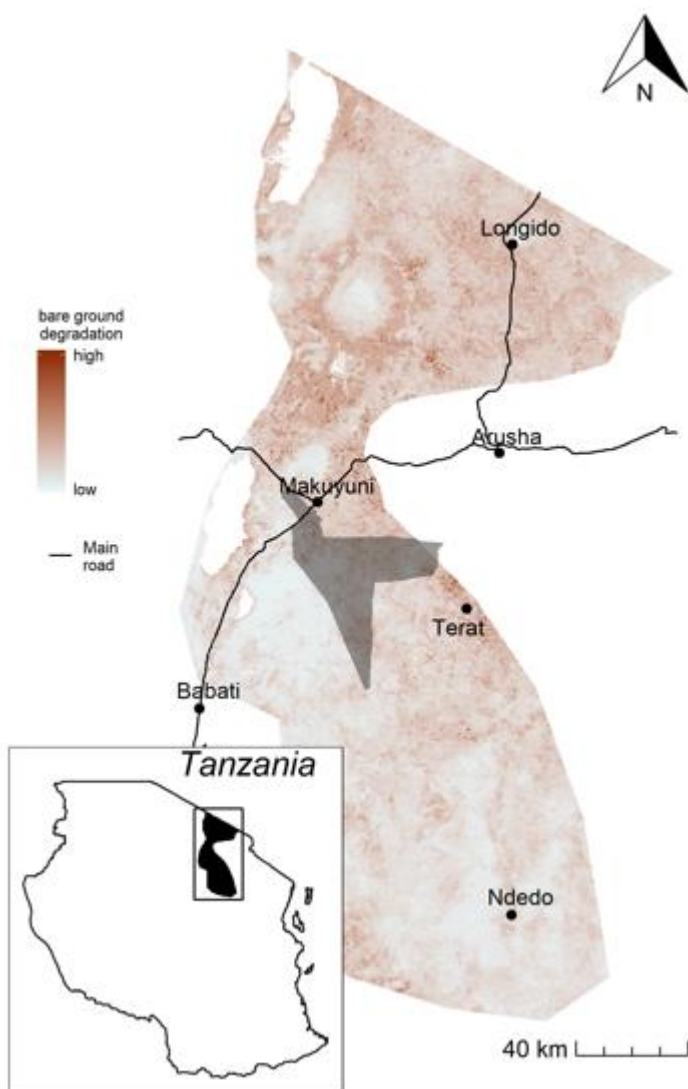
Project reference	27-008
Project title	Rangeland Guardians: women entrepreneurs for rangeland restoration
Country/ies	Tanzania
Lead Partner	University of York
Project partner(s)	Oikos East Africa, Instituto Oikos, Ujamaa Community Resource Team
Darwin Initiative grant value	£ 379,432.00
Start/end dates of project	01/10/20 – 31/09/23
Reporting period (e.g. Apr 2022 – Mar 2023) and number (e.g. Annual Report 1, 2, 3)	Apr 2021 – Mar 2022 - Annual Report 3
Project Leader name	Professor Colin Beale
Project website/blog/social media	<a href="https://sites.google.com/york.ac.uk/rangelandguardians">https://sites.google.com/york.ac.uk/rangelandguardians</a>
Report author(s) and date	Professor Colin Beale, Dr Rob Critchlow, Dr Silvia Ceppi, Neema Micheal, Plakizia Msalilwa, Fred Loure

### 1. Project summary

The savannas 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 severs corridors, and climate change alters rainfall. 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). When grazing is no longer possible, degraded land may be converted to agriculture, further exacerbating the problem. As a consequence, 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. 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 new conditions.

Working together through the Northern Tanzania Rangeland Initiative, all 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 in community-based 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 demand for assistance in restoration from the villages where we work, and decreases in biodiversity and movement of migratory ungulate populations. Although technical solutions to degradation are developed, tackling rangeland degradation at scale is difficult and landscape-scale restoration often fails.

This project pilots a novel, culturally acceptable and research-informed eco-entrepreneurial solution to rangeland restoration that we anticipate will scale well. Rangeland restoration process will be driven by Rangeland Guardians; women who will implement restoration and sustainable management this wildlife rich, but degrading, corridor within the Tarangire-Manyara ecosystem (Figures 1 and 2), restoring grazing opportunities for both livestock and wildlife.



This project is focused on 3 villages (highlighted in grey) in the Monduli District of Northern Tanzania where the project partners have a history of successfully implementing conservation and socio-economic projects. The extent of bare ground degradation in this map (Figure 1) is a result from the University of York’s research into quantifying landscape scale rangeland degradation. The study villages all have areas of rangeland degradation.

Figure 1. Location of the study area in northern Tanzania and extent of bare ground degradation (2019)

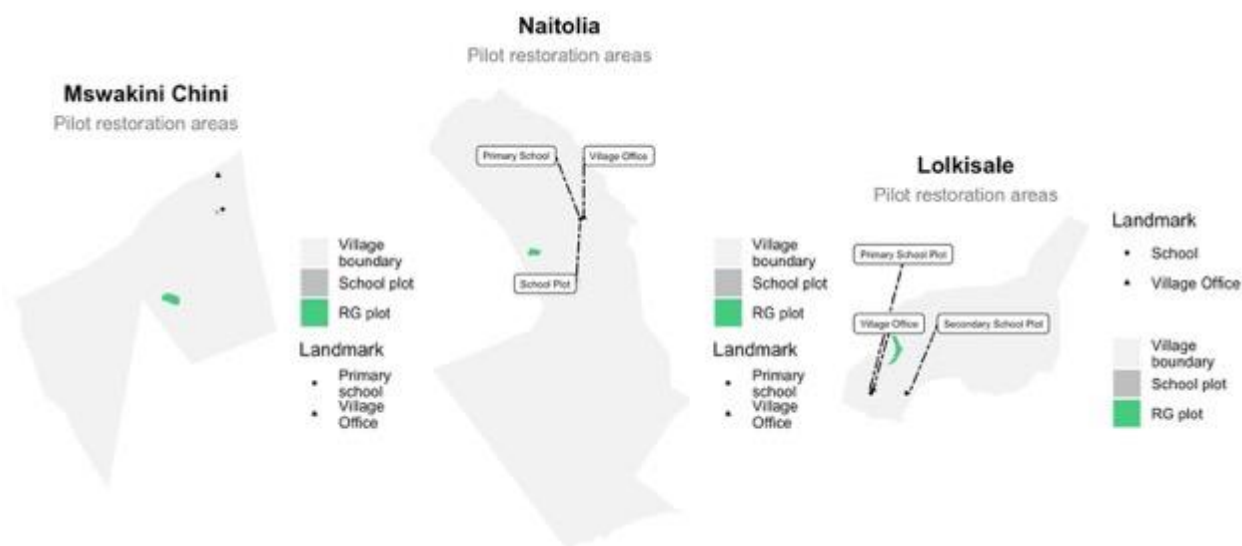


Figure 2. Locations of Rangeland Guardian and school restoration plots in each village

## 2. Project stakeholders/ partners

Monthly project meetings with all partners have continued through 2022-23 to ensure all partners are equally involved in planning, monitoring and activity progress updates. The in-country project partners (OEA and UCRT) have continued to collaborate with the University of York to design and implement all activities. Where possible, coordination of field activities between the two local partners (OEA and UCRT) is planned.

Engagement with all relevant stakeholders has continued. In December 2022 all project members were able to meet in person, as well as hold a stakeholder discussion meeting involving local government, and village representatives as well as District Rangeland and Livestock officers, researchers from the Tanzania Wildlife Research Institute (TAWIRI) (2022 local collaborator) and a newly formed collaboration and capacity building partnership with the Tanzania Livestock Research Institute (TALIRI) as part of the project's livestock monitoring activities (Annexes 4.4 and 4.5 – stakeholder meeting reports).

In-country partners are regularly engaging with the relevant stakeholders on at least a monthly basis through visits to the project villages.

## 3. Project progress

### 3.1 Progress in carrying out project Activities

**Output 1 - Biodiversity improvements: Degraded rangeland within key wildlife corridors in Northern Tanzania have restored function and increased biodiversity.**

#### Activity 1.3 Practical rangeland restoration activities by Rangeland Guardians

Rangeland restoration activities have continued to be implemented by the Rangeland Guardians Women groups. Although the lack of rainfall has resulted in little vegetation growth, an interview assessment in January 2023 highlighted the importance and benefit of the Rangeland Guardian concept to the women and communities (Section 11 and Annex 4.7). Both OEA and UCRT have continued to support rangeland restoration activities (e.g. Annex 4.9). When there has been rainfall the methods of preventing water runoff and trapping seeds do work, highlighting the strong potential for recovery when rains eventually come Figure 3.



Figure 3. Examples of Rangeland Guardian restoration activities (l-r): seed trap in Lolkisale, water bund in Naitolia and seed trap in Mswakini. Note green patches and vegetation growth due to water and seed trapping.

#### Activity 1.4 **Scaling up - identification of additional degraded areas for restoration**

UCRT have lead the identification of an additional 173 Ha for restoration activities within village CCROs (161.7 Ha in Naitolia and 11.3 in Mswakini Chini) (Annex 4.2). These areas are dominated by invasive bush (*Dichrostachys cinerea*) restricting grazing opportunities. UCRT worked with the communities to remove the invasive bush (Figure 4), while follow up monitoring of removal success will be implemented OEA and UoY. It will be important to ensure grazing is restricted in these new areas to ensure grass can out compete *Dichrostachys cinerea*.



Figure 4. Pre and during rangeland management activities to remove invasive bush from additional restoration areas within communal grazing land (CCRO)

#### Activity 1.5 **Tagging of livestock**

GPS collaring of livestock starting in June 2022 with 60 GPS collars being deployed in the villages of Lolkisale and Mswakini. A further 19 GPS collars have been deployed in Mswakini in January 2023 to bring a total of 79 collars deployed across 60 households. The implementation of this activity has included engagement with TALIRI and the district and ward livestock officers to ensure all stakeholders are aware of project and plan for monitoring livestock and rangeland use within the villages. The first data was downloaded from a sample of 12 collars in December 2022 (Figure 5). The data collected will be used with land use data (CCRO, farm, WMA etc) to help inform management such as how the rangeland is being used over during the year and identify where is most impacted, and whether the

existing rangeland governance is working. OEA staff have been trained in setting up and deployment of the devices and will continue to monitor the progress of the data collection approximately every 3 months until the end of the project, when the GPS collars will be donated to TALIRI.

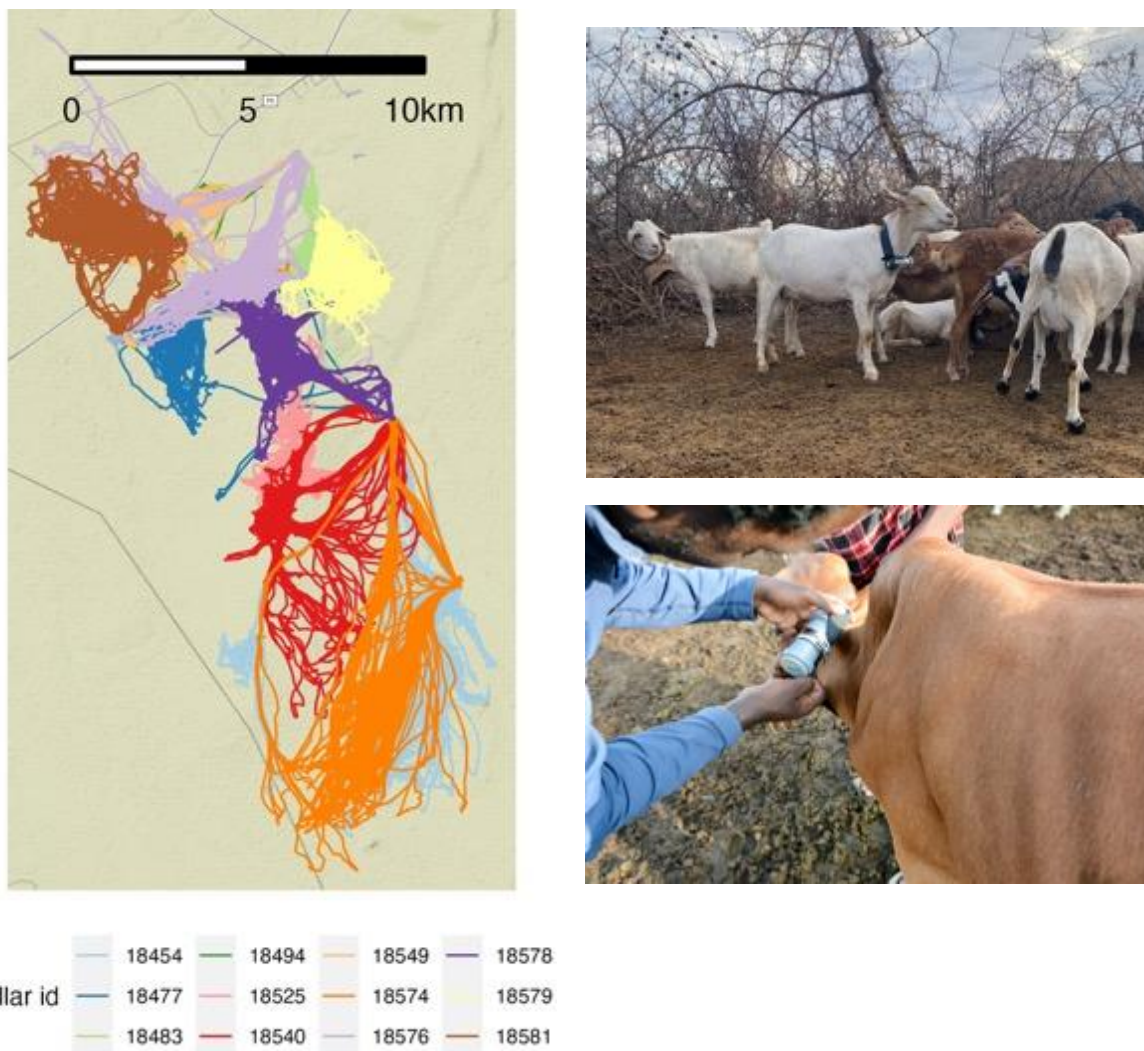


Figure 5. Sample of 12 collared animals from Naitolia showing movement tracks of individuals over a 5 month period. GPS collar deployed on goats and cattle.

**Activity 1.6 Biodiversity surveys for invertebrates and birds, ongoing surveys of vegetation composition and structure.**

Thirty one site surveys were conducted in 2022, 8 of these were surveys in new locations due to the some of the 2021 locations being unsuitable (private land) for repetition in 2022. Across the three villages the percentage of grass cover has declined significantly between 2021 and 2022 within all land types (degraded, good and restoration areas). The exception was for Mswakini where there has been a 70% increase grass cover within the restoration areas (Figure 6). This is summary is illustrated in the figures below. This is not surprising giving the lack of rainfall in the preceding 18 months.

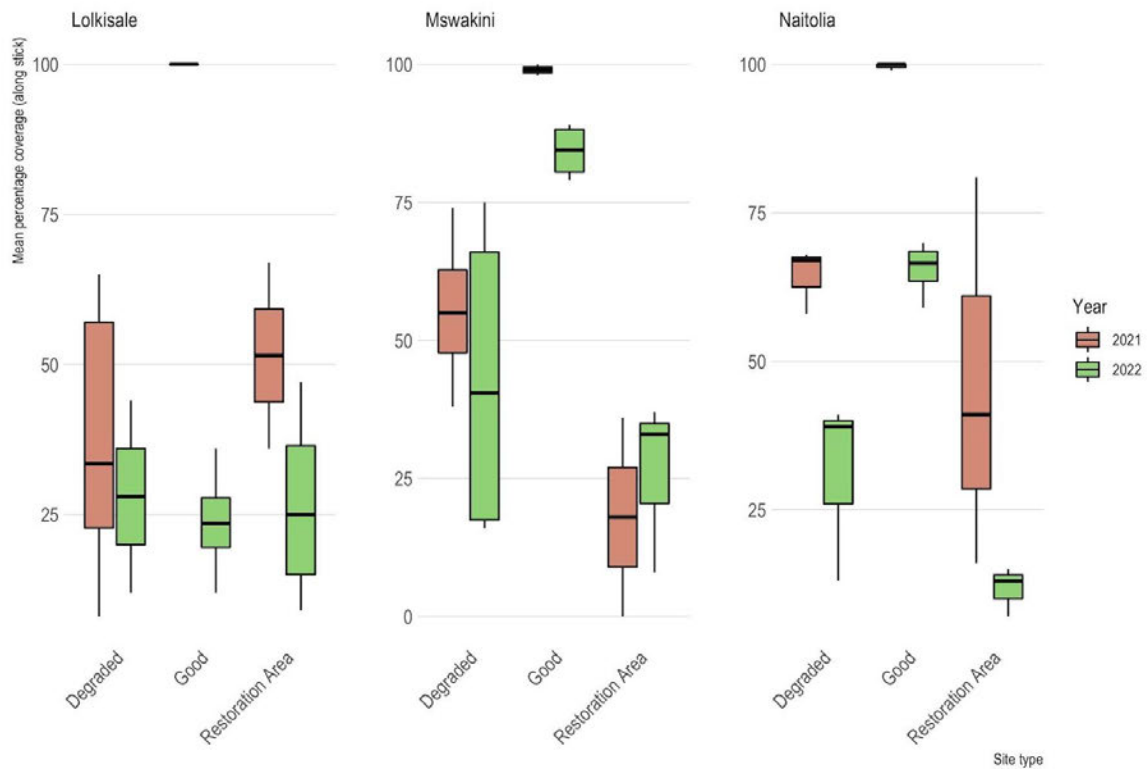


Figure 6. Summary of grass cover change across the 3 villages and types of grazing land.

**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.**

The activities associated with output 2 were completed in 2021/22. Severe drought has restricted biomass growth and therefore opportunities for generating income. Significant rainfall in March 2023 may allow grass sales by August 2023. If this can happen additional training and support will be provided to the RGs to ensure successful marketing and income generation.

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

Despite some rainfall in early 2022, drought has continued until March where there has been some significant rainfall in Mswakini and Naitolia. This has resulted in little biomass growth and grass harvests have not been possible. Restoration activities have continued providing potential for faster rangeland recovery. The school education program has been expanded to reach more students.

**Activity 3.2 Awareness campaign in primary and secondary schools on the importance of rangeland conservation and the opportunities deriving from rangeland restoration.**

An additional 251 students were enrolled on the school awareness campaign between May and July 2022. This included presenting episodes of the “Our rangeland, our pride” podcast followed by focus groups discussions in both primary and secondary schools (Figure 7).

Figure 7. Students in Mswakini primary school and Irikisale secondary school facilitated by Rebecca Elias of OEA

**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.**

**Activity 4.1 Training of resource assessors**

The bi-monthly Resource Assessor (RA) surveys have continued and some summary data are shown in Figure 8 and Figure 9. Other data include changes in problem plants and invasive species changes in bare ground. These data will be shared with the grazing committee and discussed in relation to the best method of presentation and how they can be used for adaptive management – particularly for the site level data, which will be presented spatially to inform the grazing committees. OEA have continued to provide support to the RAs throughout 2022/23.

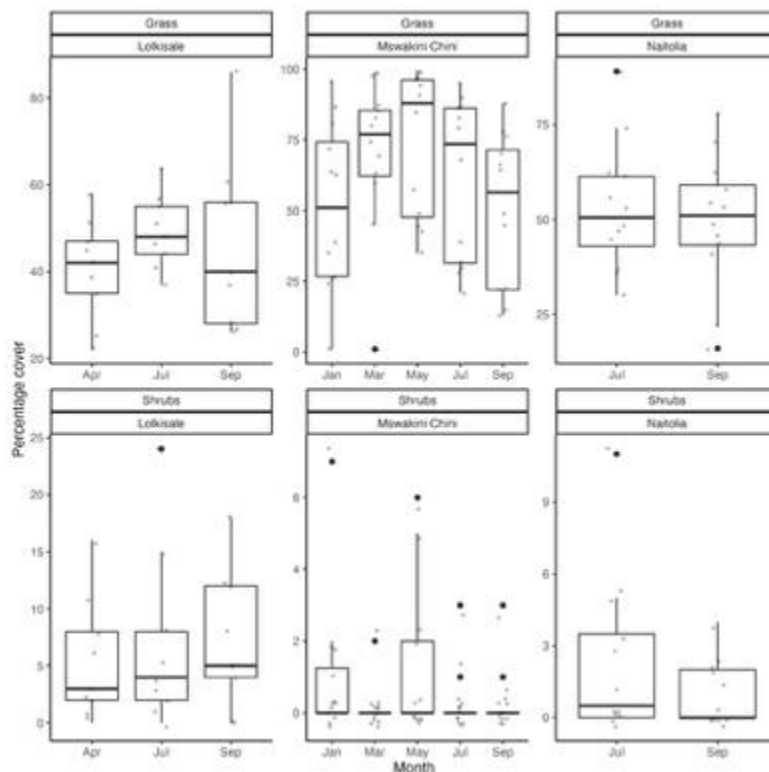


Figure 8. Percentage of grass and shrub cover over time per village in communal grazing land

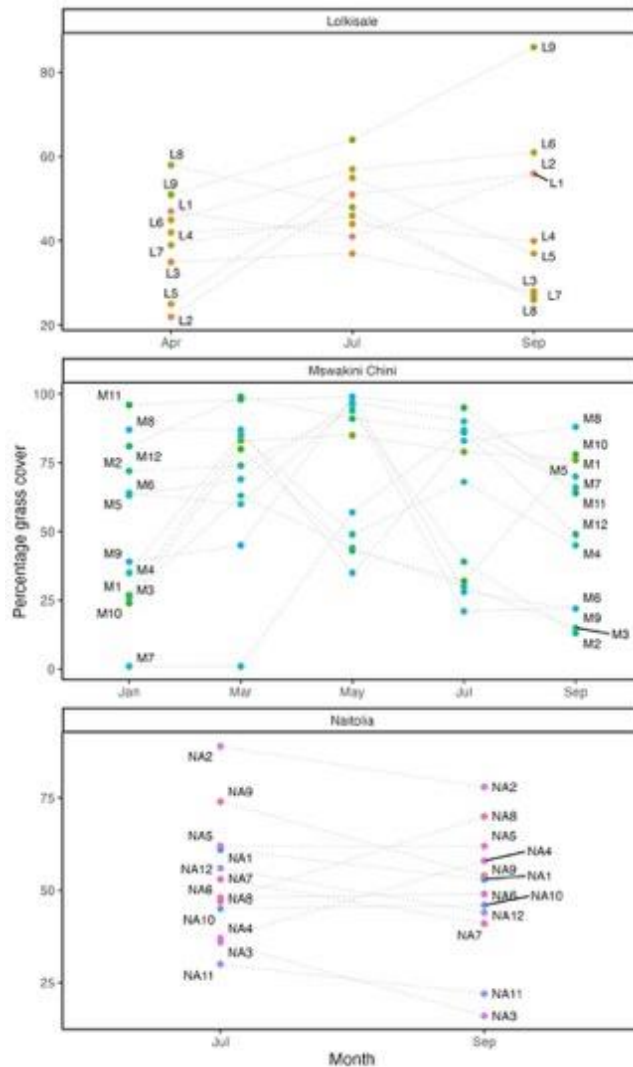


Figure 9. Site level change in percentage of grass cover over time per village

#### Activity 4.2 Training grazing committees on sustainable grazing management

Grazing committee training involving the RGs was implemented in March 2023 (see Annex 4.7). The training program on rangeland restoration was held in Naitolia and Lolkisale villages from the 14th to the 17th of March 2023. The program was attended by various stakeholders, including village grazing leaders, members of grazing committees, selected rangeland guardians, and resource assessors from Mswakini Chini, Naitolia village, and Lolkisale village, the Mswakini ward livestock officer and Monduli district officer (Figure 10). The program aimed to equip participants with the necessary skills and knowledge to manage rangeland effectively. The topics covered during the training included: the causes and drivers of rangeland degradation; rangeland restoration practises for the degraded areas (such as bare ground, bush encroachment, invasive plant species, and soil erosion); and the invasive species identifications, threats, and control measures. The participants showed a high interest on the invasive plant species discussion. They were happy to share their knowledge and experiences on the medicinal value of the invasive plant species such as *Calotropis procera*, *Datura stramonium*, *Solanum incanum*.





Figure 10. Participants involved in the grazing committee training in Lolkisale and Naitolia villages

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

On the 6<sup>th</sup> September 2022 the Lolkisale Environmental Committee Secretary was invited to attend the 1st Steering Committee Environmental Meeting between 5 villages in the nearby Arumeru District to share and promote the experience of the Lolkisale Rangeland Guardians (identification of restoration areas, training, management and governance). From this visit, the 5 villages have unanimously agreed to trial the Rangeland Guardian initiative in their respective villages. This learning event is also part of Activity 3.2 to increase the awareness of the Rangeland Guardian groups, and the impact that they can have.

All project stakeholders (University of York, UCRT, OEA, TALIRI and TAWIRI and Moduli District) as well as 33 members of the Naitolia community were involved in a workshop on December 2022 to provide feedback and exchange knowledge on the project to date (Figure 11). The outcome of the biodiversity assessments and a sample of the livestock collaring data were presented to the community, while it was also an opportunity to engage with the community to help identify solutions to the lack of grazing opportunities.



Figure 11. Stakeholder meeting December 2022 in Naitolia

**Activity 4.4 Presentation of results at national and international meetings**

The 5th Scientific conference of the Rangeland Society of Tanzania was attended by 2 members of UCRT and 1 member from each village grazing committee in Morogoro 11-12th April 2022 see UCRT report in Annex 4.1. UCRT present on the Rangeland Guardians project as well as holistic grazing and rangeland management activities.

## 3.2 Progress towards project Outputs

**Output 1 - Biodiversity improvements: Degraded rangeland within key wildlife corridors in Northern Tanzania have restored function and increased biodiversity.** *Measurable indicators: 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. 1.3 Nutrient cycling rates increased by 30% start to end in restoration plots, 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 by project end.*

91.3 Ha of degraded rangelands identified as the pilot restoration areas and 173 Ha of CCROs are under active community-led rangeland management. Grazing potential in the Mswakini Chini restoration plot increased by 70% compared to the baseline, but in the other restoration plots, grazing potential decreased due to lack of rainfall Section 3.1, Activity 1.7.

The final set of biodiversity surveys for all indicators: a) vegetation transects to assess density, structure, and species composition, sweep netting and identification of morphospecies for arthropods and c) observations of species and numbers for butterflies, d) point counts for birds, are due in June/July 2023 from which changes in biodiversity indicators from the baseline recorded in June 2021 will be assessed.

**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.** *Measurable indicators: 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 three rangeland groups with a total of 60 pastoral women have been selected as Rangeland Guardians participants (see Annual report 2021/22). Drought has restricted biomass growth and put pressure on communities identifying additional restoration areas (i.e. it is difficult to restrict and reducing grazing when demand within communities is high), making the target of 500Ha of land under restoration by RGs difficult (indicator 2.1). The 60 RG participants have completed either basic Marketplace Literacy or more detailed Livestock Marketplace Literacy Training (indicator 2.2) (see Annual report 2021/22). Official District registration documents of the 3 cooperatives (indicator 2.3) are not yet available but will be obtained by project end.

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

Grass sales (indicator 3.2) have not yet been possible due to drought and lack of biomass, grass sales are expected in 2023. The school awareness program (indicator 3.3) has reached 1458 students to date.

**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.** *Measurable indicators: 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).*

By-law documentation (indicator 4.3) is still in progress (originally planned for Year 1 but expected by July 2023). Resource Assessor monitoring (indicator 4.4) is now being implemented in all villages (see Section 3.1 – Activity 4.1). The analysis process is complete and can be used to provide outputs to grazing committees. Annually, there are 5-6 survey periods, across wet and dry seasons. Work will continue to automate the data collection to speed up community feedback as well as identify the best format to present results to grazing committees to inform management.

### **3.3 Progress towards the project Outcome**

**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.**

The project team continue to progress towards the project outcome as demonstrated by the Rangeland Guardian rangeland restoration activities (Section 3.1 – Activities 1.3 and 1.4), biodiversity surveys (Section 3.1 – Activities 1.7), progress of the school awareness program (Section 3.1 – Activity 3.3) and the support of the bi-monthly data recording by the Resource Assessors (Section 3.1 – Activity 4.1). The Rangeland Guardian and Resource Assessor concepts are now being implemented in other villages in Northern Tanzania.

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).

By end of year 2 270.3 Ha of rangelands were under restoration: 91.3 Ha of Rangeland Guardians managed rangelands and 173 Ha of CCRO under active restoration management. The community and conservation benefits of rangeland restoration continues to be implemented. Work will continue with communities to identify additional areas for restoration, but it is unlikely that the 500Ha target will be reached given the pressures of drought on the communities. The project team will require to agree changes to the logframe for year 3 to account for this change. However, additional villages within the Monduli District have been recruited as part of the DARX004 project and new restoration areas have been identified in those communities.

0.2. By-laws passed in three villages ensuring commitment toward rangeland restoration and rights of Rangeland Guardians (year 1)

The project has been presented to all relevant village government representatives. The project team have not been provided with the official village approval documents, but will continue to engage with the village governments and we expect the indicator to be achieved by the project end.

0.3. 60 households record income generated by the rangeland restoration programme of £10 per month during the dry season (year 3).

N/A at the end of the 2022/23 financial year

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

Biomass only increased from the baseline 2021 measurements in the restoration plot of Mswakini Chini by approximately 70%. The region has been severely affected by drought, restricting biomass growth. This indicator is still adequate for measuring annual biodiversity changes and will be used to compare the final year data with Year 1 and Year 2. The final biodiversity survey is due in June 2023.

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).

N/A at the end of the 2021/22 financial year.

### 3.4 Monitoring of assumptions

- 0.1 District Governance remains supportive of the implementing partners work and of NGOs work more in general.

The district government continues to support the project. District rangeland and livestock officers have attended knowledge exchange events and stakeholder meetings (Section 3.1 – Activity 4.3).

- 0.2 The target villages remain committed to support the Rangeland Guardians programme throughout and beyond the life of the project.

The target villages and communities are still committed but drought has continued to cause stress and insecurity restricting the timely implementation of some activities. The Rangeland Guardians remain positive about the restoration activities and benefits (see section 11 and Annex 4.7). Communities asked for some activities such as identification of restoration area and livestock monitoring to be postponed as many community members had to leave the villages with their herds in search for pastures.

- 0.3 National policies will not further marginalise pastoralism in favour of land conversion for farming purposes.

There have been no policy changes since the start of 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.

Despite some rains in early 2022, has been a significant drought throughout the rest of 2022. This has created some concern in the communities about available pasture for the remaining livestock, preventing the scaling up of restoration activities, but community relationships with NGOs and the project have remained positive. The recovery potential is there, when there has been even little rainfall, the restoration activities are improving grass growth (See section 3.1 - Activity 1.4).

- 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).

The village government remain committed to keeping the restoration areas for the RGs, but are unlikely to identify areas for direct RG benefit (i.e., grass sales and income generation) due to the need for grazing areas given the drought. In all 3 villages, it has been difficult to actively police the no-grazing required for the restoration areas, and discussions continue on how to manage this - i.e., signage, fines etc. Tree cutting and agriculture have not taken place in the restoration areas in 2022/23. There are some issues of neighbouring villages grazing the Lolkisale restoration site, but the village remains committed to the RG management of the restoration area.

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

There has been prolonged drought throughout the project, the short rains in 2022 were not enough for biomass growth. Site visits in December 2022 show that the recovery potential remains – even after little rain, the restoration activities have provided some vegetation growth (See section 3.1 - Activity 1.4).

- 1.3 That our measures of biodiversity (vegetation, zebra, invertebrate and birds) reflect wider impacts on ungulate populations that change at slower rates than the project timeline.

This assumption continues to hold.

- 2.1 Compliance with by-laws established by local governments in the target villages.

Overall compliance with by-laws is good, but the drought has caused extra demand for any grazing availability putting pressure on the restoration areas. Villages governments remain committed, but are likely to require additional support - e.g., signage of restoration areas and fines to ensure full by-law compliance.

- 2.2 There will be no dramatic change in land tenure or land grabbing episodes targeting or involving the restored areas.

There has been no land tenure change to date, this assumption continues to hold.

### 3.1 Northern Tanzania will not be affected by severe drought which will reduce recovery potential.

The lack of rain in 2021/22 and 2022/23 has caused significant problems for pastoralists, but vegetation growth, even when a little rain comes, suggests recovery potential is not affected (See section 3.1 - Activity 1.4).

### 3.2 OEA will continue to be welcomed in local schools.

OEA continues to work close collaboration with the government entities that regulate education in primary and secondary schools. Implementation of the school education program has continued (see section 3.1)

### 4.1 Tanzania will not implement zero livestock mobility policies that will increase dramatically rangeland degradation.

This assumption continues to hold, livestock mobility regulations have not been addressed by the national policies during the project lifetime.

### 4.2 Villages maintain strong working relationships with UCRT and OEA.

To date all villages have been collaborative and appreciated the project. Village representatives have supported the restoration activities, attended stakeholder meetings and participated in exchange visits to neighbouring areas.

## 3.5 Impact: achievement of positive impact on biodiversity and poverty reduction

By improving rangeland health in northern Tanzania, the intended impact of this project is 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 is being contributed to through rangeland restoration by increasing habitat availability at a local scale, but also improving habitat and connectivity within the currently fragmented landscape that is used as corridor for migratory ungulates such as zebra, elephant and wildebeest. The project activities are occurring 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% compared to 2020/21 (Section 3.1 – Activity 1.7), 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 DARX004 – proof that the concept is culturally acceptable and scalable.

This project is contributing to poverty alleviation through improved grazing management, rangeland degradation awareness and education. These strategies will continue to be used throughout the project to reduce the impact of rangeland fragmentation and reduce the degradation rate (currently ~1% pa) that threatens the pastoralist lifestyle. To date school awareness programs and marketplace literacy training to pastoralist women have been implemented (Section 3.1 - Activities 2.2 and 3.3), as well as knowledge sharing between the Rangeland Guardian Women and the traditionally male dominated Grazing committees (Section 3.1 – Activity 3.2).

## 4. Project support to the Conventions, Treaties or Agreements

This project directly addresses 3 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, the key objective of this project.

To improve sustainable grazing and consumption (target 4), traditional management practices need to adapt due to (i) an increasing ‘squeeze’ on open rangelands available to pastoralists as a consequence of land conversion for agriculture, development or other purposes concentrates pastoralists on smaller areas of grassland and limits their nomadic movements, preventing natural recovery of grasslands; (ii) socio-economic changes within pastoral communities resulting in increasing sedentarisation, again limiting seasonal and nomadic movements and (iii) changes in climate altering the productivity of grasslands. This project will transfer scientific knowledge of grassland management under changed conditions to pastoralist communities to co-produce updated management practice and restore sustainable use – this is being done through the Resource Assessors (Section 3.1 – Activity 4.1)

Both pastoralist communities and rangeland wildlife require large, connected areas of savanna grasslands incorporating sufficient environmental variation to provide grazing opportunities throughout the range of climatic variation. As rangelands degrade, they are both more susceptible to conversion for other uses and functionally lost from the landscape, limiting the movements of animals, and adding to the rangeland ‘squeeze’. Habitat loss has been identified as the primary cause of the loss of connectivity between protected areas and closure of movement corridors, itself a key threat to the biodiversity of savanna ecosystems. Through a program of training and restoration of degraded rangeland areas (Section 3.1 – Activities 1.3, 1.4, 2.3 and 4.2), the project will reduce the amount of degradation, fragmentation and habitat loss within this important ecosystem (Target 5) as well as restoring landscape-scale connectivity for pastoralists and wildlife alike.

Rangelands degrade primarily through loss of resilience to environmental and climatic change. Restoring lost resilience (Target 15) is a primary focus of this project. We will improve the status of degraded rangelands to the benefit biodiversity and human livelihoods with direct benefits to ecosystem resilience. To date we have identified 270 Ha of rangelands for restoration activities (Section 3.1 - Activity 1.5)

This project is working towards the Tanzania NDC (2021) adaptation measures of:

- ‘Promoting local and modern climate resilience knowledge for sustainable pasture and rangeland management systems and practices’ (Output 4)
- ‘Strengthening livestock research and development’ (Activity 1.7)
- ‘Promoting resilient land use planning and management’ (Activities 4.2 and 4.3)
- ‘Promoting measures to address negative impacts of climate change on young people, women, old and other groups facing inequality, including people with disabilities’ (Output 2)

The project has not interacted with the Tanzania convention focal points to date, but will aim to before the project end, especially as the concepts are now being scaled up to other areas of Northern Tanzania.

## **5. Project support to poverty reduction**

Pastoralists are among the financial poorest communities globally with monthly income among Maasai of 13,500 Tsh/adult/month compared to World Bank’s national food poverty at 26,085 TSh/adult/month). Changes in society and climate have resulted in more sedentary lifestyles, which has impacted the amount of healthy rangelands available to support communities and sustain biodiversity. This project aims to contribute to poverty reduction by improving access to grazing land by improving the quality of resources to support pastoralist livelihoods, provide training and education to communities and schools on the awareness of rangeland degradation and methods to manage it, while the restoration process itself aims to improve the ecosystem services provided by the rangelands, and provide resilience of the ecosystem to climate change impacts. We also aim to add to the governance structures already in-place by establishing adaptive management principles of sustainable grazing management in communal grazing areas that are not degraded.

The school education program was expanded to a further 251 students to bring the total to date to 1,445 (Indicator 3.3). The trained rangeland guardians have been involved in sharing their knowledge

with the male dominated grazing committees (Activity 4.2 and Annex 4.3). The rangeland restoration activities will improve grazing conditions and resource for livestock and continue to benefit pastoralist livelihoods. The data now being collected by the trained Resource Assessors will benefit the community governance and management of rangelands by providing an evidence base for management decisions (Indicator 4.4).

## 6. Gender equality and social inclusion

Women are broadly recognised as the most vulnerable and marginalised sector of pastoralist societies, yet they are also the most effective catalysts of behavioural change. Interventions specifically targeted at women in these communities can have larger impacts on household poverty rates than other targets, and empowers women to take a greater role in community leadership. Our project focuses explicitly on identifying, training and developing women’s groups to increase their financial independence and leadership skills. The core programmes of both local partners Oikos East Africa and UCRT include women empowerment in pastoral communities (<http://www.ujamaa-crt.org/womens-rights-and-leadership-forums.html>). Both organisations have worked with thousands of women in Northern Tanzania and understand very well the mechanisms for both inclusion and empowerment.

The project specifically targets women, but men and traditional leaders from both the communities and district government have been included in the implementation of the project development, this has so far been well received by all (Activity 3.1 and annex 4.7 for qualitative interview assessment). All pastoralist women selected as Rangeland Guardians have completed either the Marketplace Literacy or Livestock Marketplace Literacy training (Indicator 2.2) and continue to be trained in rangeland restoration techniques.

Please quantify the proportion of women on the Project Board <sup>1</sup> .	50% (2/4)
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 <sup>2</sup> .	66% of UCRT partnership involves women led management (2/3) 66% of OEA partnership team is lead by women (4/6) Directors of both project partners are women

## 7. Monitoring and evaluation

Monitoring and evaluation is a core element of this project: success of restoration projects relies heavily on adaptive management processes. There will be routine monitoring, including regular monitoring of vegetation structure and composition in restoration sites (using established Rangeland Health methodology) and compliance with grazing restrictions on recovering sites. Vegetation monitoring is therefore embedded within the normal work plan and cannot be separated from core operating costs.

Additional monitoring for project evaluation includes separate, dedicated activities that investigate the wider impact of the work on biodiversity and communities. These focus on three areas: (1) biodiversity monitoring, (2) Socio-economic monitoring (including compliance monitoring) and (3) monitoring of training effectiveness. Some of the monitoring approaches are based on annual changes, such as in vegetation change and satellite analysis of degradation.

<sup>1</sup> 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.

<sup>2</sup> 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.

To assess the Rangeland Guardian's understanding of best practice within grazing committee membership, a report from the data collected during the training activities (marketplace literacy and rangeland restoration techniques) will be completed. Repeated surveys at the project end will enable direct evaluation of the impact on individuals involved in the intervention.

There have been no major changes to the M&E plan in the past year. Monitoring and evaluation is shared among the project partners.

## **8. Lessons learnt**

Communication between all partners has been fundamental to this project and has continued through regular monthly meetings and a Stakeholder meeting with all partners in December 2022. OEA continues to provide weekly plans on project related activities – this works well to keep the lead partner up to date on monitoring progress. Both OEA and UCRT share their reports from all field visits.

Involving the additional stakeholder has also been beneficial and TALIRI staff have provided feedback on the project activities related to the livestock and rangeland monitoring. For any future rangeland projects in Tanzania the involvement of TALIRI will be of benefit in providing expertise and support.

Regular community visits by both in-country partners have also been fundamental to the success of the project so far and maintain community relationships given the sensitivity of some of the aspects of the project (livestock monitoring and assigning land to RGs). In retrospect, the budgets should have been increased to ensure more field visits to support the communities as required.

## **9. Actions taken in response to previous reviews (if applicable)**

## **10. Risk Management**

## **11. Other comments on progress not covered elsewhere**

OEA staff have also been able to conduct a qualitative assessment of the Rangeland Guardian concept through interviews with 3 of the Rangeland Guardians in each study village in order to better understand current perceptions & motivations of women participating in project, as well as challenges & future plans. A full summary is provided in Annex 4.7

Overall, women's perspectives of restoration plots are positive, despite challenges such as use of the plots for grazing. The women remain hopeful that the plots will offer a source of income (by growing & selling grasses) for their women's groups in the future. Despite women seeing little to no ecological changes in their restoration plots, they continue to visit the plots weekly. This was presented as socially valuable time when they are allowed to leave their homes and meet with their fellow women's group members to share ideas. Several women have piloted restoration activities they learned during the project (such as building seed traps & removing invasive plants) at their own homes and in their own gardens.

## **12. Sustainability and legacy**

Throughout the project, we aim to increase promotion of the work to more villages in the Moduli District through the project partners and hopefully further afield where the in-country partners are working with other communities on different projects. Materials generated for the School Awareness program are already freely accessible (Standard Measures – Table 2). Other training materials will be made available through the project website and promoted among NTRI partners, the school education program and problem plant posters developed in 2021/22 have been distributed to schools and communities – see Annex 4.8 for evidence of posters in village offices.



The project was promoted at the Rangeland Society of Tanzania’s 5<sup>th</sup> Annual conference in April 2022, including through presentation and some financial support (Annex 4.1).

The exit strategy is still valid. The Rangeland Guardian (RG) groups formed in the target communities will be self-sustaining as they are fully trained, and different forms of degradation will likely continue to be a problem.

To achieve our ultimate impact requires that the programme expands to new locations after the project end. This will be ensured by training up to 9 RGs as trainers to ensure skills can be passed on in the communities and who will facilitate visits by district rangeland technical teams. This will prime programme expansion: we anticipate that if successful, RGs will have established a new income source and grazing quality on village lands will improve. Such tangible benefits ensure neighbouring villages will want to get involved: with official district support (levered through NTRI’s leadership role within the regional government’s new ‘Healthy and connected rangelands working group’), such roll-out can be self-fulfilling. While this may seem optimistic, successful interventions in pastoralist communities managed by the project partners have seen spectacular organic growth. For example, UCRT have seen growth following establishment of Women’s Rights and Leadership Fora in 2011, with 35 village fora now established and over 900 women establishing legal land ownership rights. If a solution is simple, beneficial and culturally acceptable, uptake is strong.

The Rangeland Guardians and Resource Assessor concepts developed in this project to manage and monitor village communal grazing areas is now being implemented across more than 30 additional villages in Northern Tanzania as part of the Darwin Initiative funded project ‘Partnering for a biodiverse, prosperous and resilient Tarangire Ecosystem landscape’ (DARX004). This uptake of a simple, beneficial and culturally acceptable solution shows that the concepts have significant potential for impact. The RGs and Ras trained in this project are being used to pass on their new knowledge and expertise as part of the DARX004 project.

### 13. Darwin Initiative identity

This project is recognised as a distinct project (funded through the Darwin Initiative), however 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. Work will continue by project partners to ensure the project is 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](https://pure.york.ac.uk/portal/en/projects/darwin-rangeland-guardians(a513d465-082a-4e0c-8230-3f8f868f4c9e).html) and available via personal twitter profile (e.g. [https://twitter.com/Rob\\_Critchlow](https://twitter.com/Rob_Critchlow)). All participant information documents, presentation and training materials, such as the Marketplace Literacy Manuals, carry the Darwin 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/>).

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/1597720052660596736?s=20)
- [https://twitter.com/Rob\\_Critchlow/status/1544325539984465922?s=20](https://twitter.com/Rob_Critchlow/status/1544325539984465922?s=20)

### 14. 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% 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.	
Does the project have any developments or activities planned around Safeguarding in the coming 12 months? If so please specify.	

## 15. Project expenditure

**Table 1: Project expenditure during the reporting period (1 April 2022 – 31 March 2023)**

Project spend (indicative) since last Annual Report	2022/23 Grant (£)	2022/23 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
Monitoring & Evaluation (M&E)				
Others (see below)				
<b>TOTAL</b>		<b>131,716.85</b>		

**Table 2: Project mobilising of matched funding during the reporting period (1 April 2022 – 31 March 2023)**

	Matched funding secured to date	Total matched funding expected by end of project
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Matched funding leveraged by the partners to deliver the project.	
Total additional finance mobilised by new activities building on evidence, best practices and project (£)	

**16. OPTIONAL: Outstanding achievements or progress of your project so far (300-400 words maximum). This section may be used for publicity purposes**

## Annex 1: Report of progress and achievements against logframe for Financial Year 2022-2023

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
<p><b>Impact</b></p> <p>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.</p>		<p>Rangeland Guardians (RGs) have been selected in the three target villages and areas to pilot rangeland restoration by the RGs have been identified. Improving the degraded rangelands will increase grazing opportunities and sustainable land use for both livestock and wildlife, while the restoration will also improve habitat for other biodiversity. Training of the RGs and the school awareness program has also started.</p>	
<p><b>Outcome</b></p> <p>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</p>	<p>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).</p> <p>0.2. By-laws passed in three villages ensuring commitment toward rangeland restoration and rights of Rangeland Guardians (year one)</p> <p>0.3. 60 households record income generated by the rangeland restoration programme of £10 per month during the dry season (year three).</p> <p>0.4 Grassland productivity, plant invertebrate and bird diversity is increased in restoration plots by at least 50% annually from baseline (to</p>	<p>0.1 Additional 173 Ha of degraded land with the CCROs of Mswakini and Naitolia were identified, and management implemented.</p> <p>0.2 N/A for 2022/23 financial year</p> <p>0.3 No grass growth due to lack of rainfall. Significant rainfall in March 2023 may provide opportunity for grass harvesting by August 2023</p> <p>0.4 Grass coverage only increased in Mswakini restoration area by &gt; 50%. Evidence provided in section 3.2</p> <p>0.5 To be completed by end of Year 3</p>	<p>0.1 Continue to work with villages to identify further areas for rangeland restoration. This will likely focus on invasive species as highlighted by village meetings</p> <p>0.2 Confirm completion of official incorporation of RGs and restoration land into village by-laws.</p> <p>0.3 Monitor progress and provide support for grass harvest, storage and marketing</p> <p>0.4 Complete final biodiversity survey in June/July 2023. Complete remote sensing analysis in relation to field measurements. Complete analysis of invertebrate and bird communities to assess change and impact of restoration activities</p>

	<p>be established in within three months of start)</p> <p>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).</p>		0.5 Resource assessors to continue regularly monitor and collect data on vegetation change.
<p><b>Output 1.</b> Biodiversity improvements: Degraded rangeland within key wildlife corridors in Northern Tanzania have restored function and increased biodiversity.</p>	<p>1.1 Grazing potential increased from baseline by 100% per year in restoration plots.</p> <p>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).</p> <p>1.3 Nutrient cycling rates increased by 30% start to end in restoration plots.</p> <p>1.4 Use of restored sites by threatened wildlife (notably Zebra) has increased by 10% relative to baseline by end.</p> <p>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.</p>	<p>1.1 Grazing potential has not increased. Evidence provided in section 3.1</p> <p>1.2 N/A for 2022/23 financial year – to be completed by August 23</p> <p>1.3 N/A for 2022/23 financial year – to be completed by August 23</p> <p>1.4 N/A for 2022/23 financial year – to be completed by August 23</p> <p>1.5 N/A for 2022/23 financial year – This indicator will be more specific to areas of bare ground degradation. In areas where there are invasive bush or weeds, biodiversity will increase but the baseline will likely be greater than 1-2 species. To be completed by August 23</p>	
<p><b>Activity 1.1</b> Identification, mapping and baseline monitoring of initial 100 Ha of degraded rangelands across 3 villages in Monduli District (lead by UoY).</p>		N/A for 2022/23 financial year	N/A
<p><b>Activity 1.2</b> 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.</p>		N/A for 2022/23 financial year	Manual updates and improvements are planned

<p><b>Activity 1.3</b> 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.</p>	<p>Additional training and support has been implemented by OEA throughout 2022/23</p>	<p>Training will continue to be implemented as required throughout 2023</p>
<p><b>Activity 1.4</b> Practical restoration activities by RGs (following training and manual, including field mentoring by OEA and UoY)</p>	<p>All villages have implemented grazing restrictions and some management of invasive species</p>	<p>Restoration activities will continue to be implemented throughout 2023</p>
<p><b>Activity 1.5</b> Identification of next 400 Ha of degraded rangelands.</p>	<p>Work has focussed on scaling up management within the CCROs as requested by the communities – 173 Ha of land identified and management implemented.</p>	<p>Continue to identify suitable degraded areas in collaboration with communities throughout 2023</p>
<p><b>Activity 1.6</b> Tagging of &gt;100 heads of livestock (lead by UoY)</p>	<p>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.</p>	<p>Regular data collection and community interaction required during 2023. Attempt to identify additional participants if required. Explore capacity building with TALIRI – training in use of GPS collars</p>
<p><b>Activity 1.7</b> Biodiversity surveys for invertebrates and birds, ongoing surveys of vegetation composition and structure (lead by UoY)</p>	<p>Year 2 survey completed in June 2022.</p>	<p>Final biodiversity monitoring survey in June 2023</p>
<p><b>Output 2.</b> 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.</p>	<p>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.</p> <p>2.2. Sixty informally educated pastoral women are empowered through new skills: rangeland restoration techniques and marketplace literacy knowledge by end.</p> <p>2.3 3 cooperatives, microenterprises are registered with District government (year 2).</p>	<p>2.1 Pilot areas (approx. 100Ha) identified and management continuing but drought has restricted grass growth. Significant rainfall in March 2023 will hopefully provide grass for sale by August 2023.</p> <p>2.2 N/A for 2022/23 financial year</p> <p>2.3 Not finalised yet, this will be completed by August 2023</p>

<p><b>Activity 2.1</b> 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.</p>	<p>Completed in 2020/21</p>	<p>Repeated socio-economic survey for comparison with baseline and provide report and results</p>
<p><b>Activity 2.2</b> 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.</p>	<p>Completed in 2020/21</p>	<p>RGs will continue to be supported and trained by project partners until the end of the project</p>
<p><b>Activity 2.3</b> 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</p>	<p>Completed in 2021/22</p>	<p>N/A</p>
<p><b>Output 3.</b> Community benefits from restoration: Availability of dry-season fodder increases, improving livestock value.</p>	<p>3.1 &gt;300 Kg / Ha.yr of grass biomass available to livestock across the restored rangelands (currently &lt;100 Kg / Ha.yr) by end.</p> <p>3.2 Purchases of grass at village level contribute to increased value of livestock.</p> <p>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).</p>	<p>3.1 N/A for 2022/23 financial year – assessment will be made in July/August 2023. Important to note the impact of 2+ years of drought in biomass growth</p> <p>3.2 N/A for 2022/23 financial year– assessment will be made in July/August 2023. Important to note the impact of 2+ years of drought in biomass growth</p> <p>3.3 251 students enrolled on the education program during 2022/23 (see Section 3.1)</p>
<p><b>Activity 3.1</b> Presentation of the activities and work plan to the Local Government (District and Village) with project launch.</p>	<p>N/A for 2022/23 financial year</p>	<p>The project team will continue to work with local and district officials and ensure they communities are kept informed through learning and exchange visits (Activity 4.3)</p>
<p><b>Activity 3.2</b> 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</p>	<p>N/A for 2022/23 financial year</p>	<p>N/A</p>

<p>be established based on market prices for grass for the specific season and discussed with the traditional grazing committees.</p>		
<p><b>Activity 3.3</b> 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</p>	<p>An additional 251 students from 3 primary and 1 secondary schools have enrolled on the program – (see Section 3.1)</p>	<p>Report and assessment of impact of conservation program to be completed by project end</p>
<p><b>Output 4.</b> 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.</p>	<p>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).</p> <p>4.2 Adaptive grazing management plans will have been developed and are in use for all communal grazing lands (none currently).</p> <p>4.3 By-laws will have been passed defining and allocating restoration areas and implementing communal grazing management plans in all villages (none currently).</p> <p>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).</p>	<p>4.1 Grazing committee members have been involved in learning exchanges and Resource Assessor training to improve resource management concepts. Year 3 survey will be completed by August 2023.</p> <p>4.2 N/A for 2022/23 financial year</p> <p>4.3 Official documentation from village meeting minutes is still to be provided</p> <p>4.4 Regular vegetation assessments have continued see section 3.1 – activity 4.4 for example data to date</p>
<p><b>Activity 4.1</b> Training of at least 4 resource assessors (RAs) in each target village on ecological monitoring, simultaneously undertaking baseline monitoring of</p>	<p>Bi-monthly RA surveys have continued</p>	<p>Process to analyse data is complete. Project team will work together for</p>



biodiversity, and providing bi-monthly reports on conditions and grazing activities to the Grazing Committee.		best format to present data to grazing committees for adaptive management
<b>Activity 4.2</b> 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)	N/A
<b>Activity 4.3</b> Learning events and exchange visits between local governments and district representatives targeting restored rangelands.	Stakeholder meeting with all partners December 2022 (Annex 4.4 and 4.5)	Additional exchange visits will be implemented – likely to focus on invasive species management in neighbouring areas
<b>Activity 4.4</b> 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.	5 <sup>th</sup> Scientific conference of the Rangeland Society of Tanzania was attended by 2 members of UCRT and 1 member from each village grazing committee in Morogoro 11-12 <sup>th</sup> April 2022 see UCRT report in annex 4.1	This project and results will be presented at the International Congress for Conservation Biology in July 2023 – 1) a poster presentation on the Rangeland Guardians concept and 2) an oral presentation on rangeland management and recovery potential with results from this project and previous work in Northern Tanzania

## Annex 2: Project's full current logframe as presented in the application form (unless changes have been agreed)

Project summary	SMART Indicators	Means of verification	Important Assumptions
<b>Impact:</b> 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.			
<b>Outcome:</b> 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.	District Governance remains supportive of the implementing partners work and of NGOs work more in general. The target villages remain committed to support the Rangeland Guardians programme throughout and beyond the life of the project. National policies will not further marginalise pastoralism in favour of land conversion for farming purposes. Prolonged droughts will not exacerbate conflict between communities and land invasions targeting available grass in the restored rangelands and simultaneously compromise recovery rates.
<b>Output 1.</b> Biodiversity improvements: Degraded rangeland within key wildlife corridors in Northern Tanzania have	1.1 Grazing potential increased from baseline by 100% per year in restoration plots.	1.1 Wet-season assessment of % of bare ground and invasive species coverage through Rangeland Health methodology.	Identified communities remain stable and committed to respect the agreements in terms of allocation of

<p>restored function and increased biodiversity.</p>	<p>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).</p> <p>1.3 Nutrient cycling rates increased by 30% start to end in restoration plots.</p> <p>1.4 Use of restored sites by threatened wildlife (notably Zebra) has increased by 10% relative to baseline by end.</p> <p>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.</p>	<p>1.2. Baseline and endline ecological monitoring reports</p> <p>1.3 Decomposition rates of grass and wood from standardized litterbags in year one and year three.</p> <p>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)</p> <p>1.5 Baseline and endline ecological monitoring reports</p>	<p>land to Rangeland Guardians (compliance will be monitored).</p> <p>No prolonged drought: rangeland restoration is achieved by restoring recovery potential under normal conditions, continuous drought may render activity ineffective.</p> <p>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.</p>
<p><b>Output 2.</b> 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.</p>	<p>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.</p> <p>2.2. Sixty informally educated pastoral women are empowered through new skills: rangeland restoration techniques and marketplace literacy knowledge by end.</p> <p>2.3 3 cooperatives, microenterprises are registered with District government (year 2).</p>	<p>2.1. Project socio economic baseline and endline report</p> <p>2.2. Training course attendance certificates; surveys before and after training demonstrating a change in understanding of rangeland restoration and entrepreneurship.</p> <p>2.3 Official incorporation documents.</p>	<p>Compliance with by-laws established by local governments in the target villages.</p> <p>There will be no dramatic change in land tenure or land grabbing episodes targeting or involving the restored areas.</p>
<p><b>Output 3.</b> Community benefits from restoration: Availability of dry-season</p>	<p>3.1 &gt;300 Kg / Ha.yr of grass biomass available to livestock across the</p>	<p>3.1 Rangeland Guardian's commercial records and grass sale log books.</p>	<p>Northern Tanzania will not be affected by severe drought which will reduce recovery potential</p>

<p>fodder increases, improving livestock value.</p>	<p>restored rangelands (currently &lt;100 Kg / Ha.yr) by end.</p> <p>3.2 Purchases of grass at village level contribute to increased value of livestock.</p> <p>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).</p>	<p>3.2 Numbers of bales of grass purchased by village members.</p> <p>3.3 School logs and entry and exit tests on a sample of students (at least 200).</p>	<p>OEA will continue to be welcomed in local schools</p>
<p><b>Output 4.</b> 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.</p>	<p>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).</p> <p>4.2 Adaptive grazing management plans will have been developed and are in use for all communal grazing lands (none currently).</p> <p>4.3 By-laws will have been passed defining and allocating restoration areas and implementing communal grazing management plans in all villages (none currently).</p> <p>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).</p>	<p>4.1 Before and after surveys of knowledge and understanding of best practice within grazing committee membership.</p> <p>4.2 Village grazing plan documents archived with village executive.</p> <p>4.3 Copy of the by-laws signed by local government.</p> <p>4.4 Village government meetings minutes showing official recognition of resource assessors role.</p>	<p>Tanzania will not implement zero livestock mobility policies that will increase dramatically rangeland degradation.</p> <p>Villages maintain strong working relationships with UCRT and OEA.</p>

## 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 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-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

**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)



## Checklist for submission

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the <b>correct template</b> (checking fund, type of report (i.e. Annual or Final), and year) and <b>deleted the blue guidance text</b> before submission?	
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:BCF-Reports@niras.com">BCF-Reports@niras.com</a> putting the project number in the Subject line.	
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<b>Have you included means of verification?</b> You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	
<b>Do you have hard copies of material you need to submit with the report?</b> 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 16)?	
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.	