



Darwin Initiative: Final Report

Darwin Project Information

Project reference	22-015
Project title	Sustainable management of an Ethiopian rangeland for biodiversity and pastoralists
Host country (ies)	Ethiopia
Contract holder institution	The Royal Society for the Protection of Birds (RSPB)
Partner institution(s)	Ethiopian Wildlife Natural History Society (EWNHS); SOS Sahel; BirdLife International; Coventry University (CU); Manchester Metropolitan University (MMU)
Darwin grant value	£285,490
Start/end dates of project	01 April 2015 / 30 November 2018
Project leader's name	Clare Stringer
Project website/blog/ Twitter	http://www.birdlife.org/datazone/speciesfactsheet.php?id=1017228
Report author(s) and date	Sarah Havery; Clare Stringer; Yilma Abebe; James Bennett; Teshome Dega; Mercy Kariuki; Huw Lloyd; Kariuki Ndang'ang'a; Abduba Yacob and Simon Wotton (January 2019)

1 Project Rationale

Pastoralism is potentially the most effective system for managing dry grasslands, delivering sustainable resource management with poverty alleviation. The Liben Plain supports c.10,000 pastoralists with usufruct property rights. Designated an Important Bird and Biodiversity Area and part of the South Ethiopian Highlands Endemic Bird Area, the Plain holds one of only two populations of Liben Lark *Heteromirafr archeri*, and important agro-biodiversity (a strategic priority in Ethiopia's NBSAP), including c.50 grass species and the unique Boran cattle. Poverty and drought have led to overgrazing, soil erosion, scrub encroachment, conversion of grassland to crops and severe degradation, with just 7,500 ha of degraded grassland remaining (30% of its extent 20 years ago).

Consequently, the Liben Lark is listed as Critically Endangered. Our research suggests that habitat degradation is the biggest threat to its survival. This degradation is also causing pastoralists to suffer from declining livestock productivity, reduced income and increasing food insecurity (particularly during a three-month dry season hunger gap). This results in poor child nutrition and increased vulnerability to the impacts of drought. Driven by the declining fortunes of pastoralism, some pastoralists are turning to cultivation, which, due to unpredictable rainfall and poor soils, is unsustainable and accelerates grassland and biodiversity loss.

2 Project Partnerships

BirdLife International is a global Partnership of autonomous NGOs who share a mission to conserve birds, their habitats and biodiversity, working with people towards the sustainable use of natural resources. The **BirdLife Africa Partnership Secretariat (BLAPS)**, based in Kenya, supports and coordinates partners' work in Africa. The **Ethiopian Wildlife and Natural History Society (EWNHS)** is the BirdLife International Partner in Ethiopia and has long experience of conservation work in the country, being established in 1966. The **Royal Society for the Protection of Birds (RSPB)** and EWNHS have worked closely together since 2007, researching the Critically Endangered Liben Lark and other threatened species in southern Ethiopia. RSPB are recognised as a 'Supporting Partner', within the BirdLife Partnership, which means they provide targeted support to other BirdLife Partners. Between 2015 and 2018 however, RSPB has redefined its strategy for international work, meaning that they will not be supporting partners in East Africa from 2020 onwards. Therefore, the **BirdLife International Secretariat** based in the UK has become more involved in the last few months of the project to ensure the legacy of this project continues, which is outlined in more detail in the Sustainability Plan, **Annex 7.12**.

SOS Sahel had been leading several successful development-focussed livelihood projects in the region and were invited to join the project partnership in 2014, to meet the need for development expertise in implementing this project. Their expertise has been extremely valuable and their involvement in the partnership has been welcomed, they have been able to share their skills and knowledge with project partners.

Coventry University (CU) became involved in the EWNHS-RSPB research project in 2010 and provide crucial technical advice on collective rangeland management and grassland assessments. **Manchester Metropolitan University (MMU)** has been working on the EWNHS-RSPB project since 2012, through supporting a PhD student to research the status of the Liben Lark and degradation of the plain. The student was co-supervised at CU and completed her PhD during the second year of the project. MMU provide technical advice on species research and monitoring.

All partners bring specialist technical skills and experience, in a variety of different disciplines that complement each other and together have provided a strong partnership for project delivery. All partners have been involved in project planning, monitoring and evaluation and decision-making, which has occurred formally through 13 Project Steering Committee meetings held since the start of the project. The project partners have provided input to this Final Report through technical reporting and providing the required supplementary material as listed in **Annex 7**.

The greatest challenge to the partnership was that the UK-based partners could not visit Ethiopia and work alongside the local partners in Liben Plain from mid-2016 until June 2018 because of the impacts of the 2016/17 drought (the worst drought Ethiopia has experienced in over 50 years) and the subsequent political instability in Ethiopia, including two State of Emergency declarations. Communication with the Ethiopian partners was challenging during this time as internet was intermittent and the phone connections were unreliable. This period also coincided with a complete change in project management staff at the RSPB due to staff leaving.

Under these conditions it was challenging to maintain and build relationships between the partners. To address this, the Project Leader visited Addis in June 2017 to reshape the project with the Ethiopian partners and fortunately a field team were able to visit Liben Plain in June 2018 to complete the surveys. These two actions enabled the partnership to reform and deliver as much as possible of the project considering two major project assumptions had not held true.

The way the partnership will continue beyond the scope of this project is outlined in the Sustainability Plan in **Annex 7.12**.

3 Project Achievements

3.1 Outputs

Output 1: Participatory Rangeland Management process facilitates development of an institutional framework for managing community grassland reserves ('kallos')

Output 1 was delivered on time during YR1 of the project. The finalised kallo management by-law signed by the Kallo Management Committee is provided in **Annex 7.1**, along with photographs of some of the meetings, and of kallos being harvested. Three major stakeholder meetings and 7 targeted meetings were held, along with additional discussions, to raise awareness and build support across all areas of the community for rangeland conservation and sustainable management approaches (see **Annex 7.1**). These additional awareness-raising efforts in YR1 were developed to tackle a threat to the project: the Zonal Government announced plans to resettle pastoralists on the Plain in order to designate the site as a grassland reserve. As well as being a serious concern from both a humanitarian and environmental perspective (the rangeland is dependent on pastoralist management), the Darwin project was put at risk because people thought it supported the resettlement. Consequently the project team had to work very hard to ensure that the rationale and basis for the Darwin project has remained understood throughout the project.

In YR2 – YR4 of the project, the Kallo Management Committee slowly evolved its roles and management structures to increase its capacity to conserve the Liben grasslands alongside other communal structures established within and from the community i.e. pasture management committee.

Output 2: Trials of grassland restoration indicates that kallos can increase dry season food security for pastoralists equitably and can restore grassland quality and Liben Lark habitat

At the end of YR1, 276 ha of kallos had been created. These four kallos had to be harvested for emergency fodder during the 2016/17 drought and although they likely saved lives, they were unfortunately largely destroyed during this period of political instability.

In the remainder of the project, the project team worked hard to ensure these kallos were re-established and maintained. By the end of the project, a total of five kallos have been established, four of which were mapped accurately by GPS in June 2018. The areas of each kallo have subsequently been calculated in ArcGIS as shown in **Fig. 1 & Fig. 2**. These kallos are known as Gamme, Haro-chiracha, Harsido, Wachu-bilta and a currently unnamed kallo north of Wachu bilta; see **Table 1**. Therefore, a **total of 303.02 ha of kallos** were produced following the drought in the time scale of the project.

Table 1: The kallos present on Liben Plain and their respective sizes in hectares.

Kallo name	Size (ha)
Gamme	33.59 (plus 13 ha extension by October 2018)
Haro-chiracha	45.44
Harsido	92.68
Wachu-bilta	87.31
north of Wachu bilta	31.00
TOTAL	303.02

The creation of the kallos using cleared scrub had the added benefit of increasing the area of open grassland on the Plain, therefore providing both more lark habitat and more pasture land. In YR1 a total of 690 ha of scrub had been cleared and following the drought in YR2 and YR3, an additional 707.93 ha was cleared as shown in **Fig.1**. The **total area of scrub cleared was approximately 1,398 ha** over the course of the project, therefore increasing the area of grassland on Liben Plain by 18.6%.

Monitoring the positive effects of scrub clearance on rangeland production, to show the impact of this activity, has been difficult in the project timeframe due to the impact of the drought on the Plain. It is also currently unclear how quickly scrub will re-establish in the cleared areas.

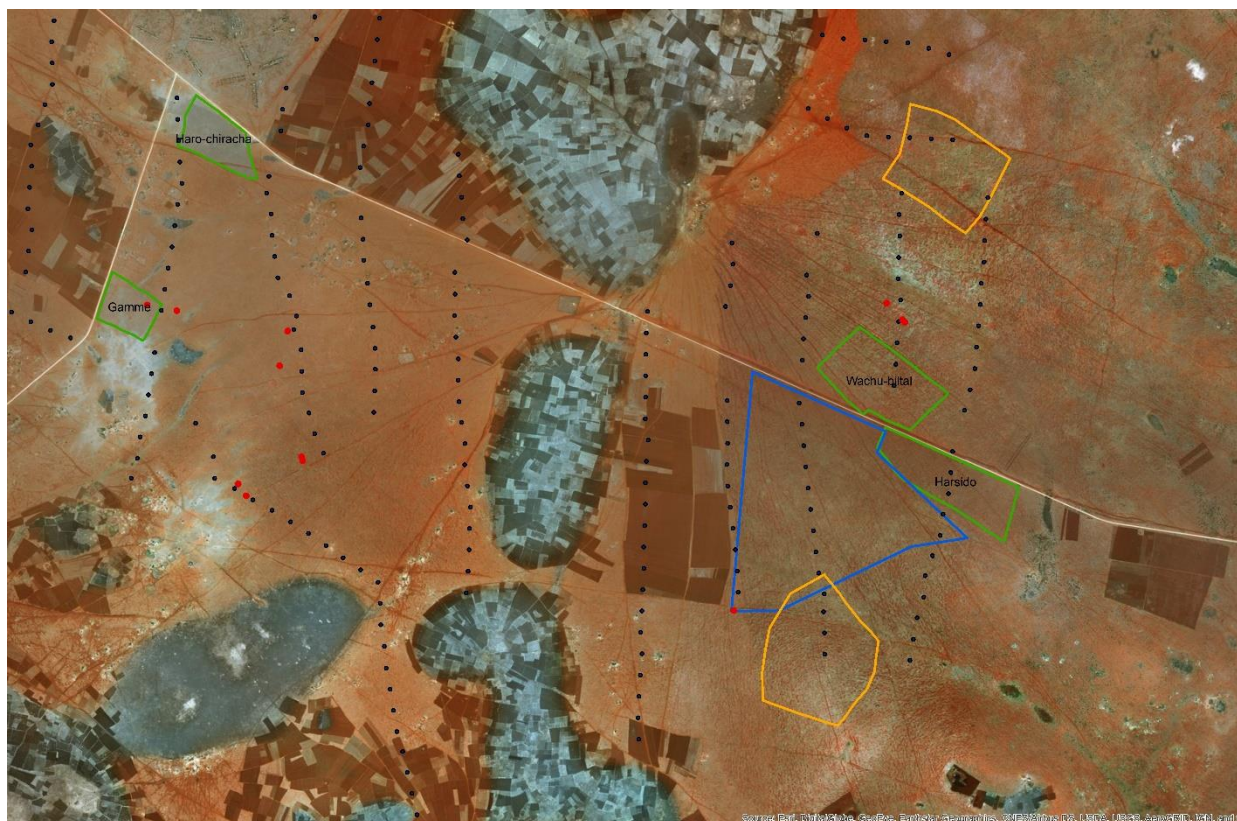


Figure 1: Aerial image indicating the four kallos on Liben Plain as of July 2018 demarcated with a green boundary. The total area of scrub cleared during the lifetime of the project is shown, with the areas cleared by SOS Sahel demarcated with an amber boundary and the area cleared by EWNHS demarcated with a blue boundary. The red dots indicate where Liben larks were present in June 2018. The black dots indicate the long-term lark monitoring transects.

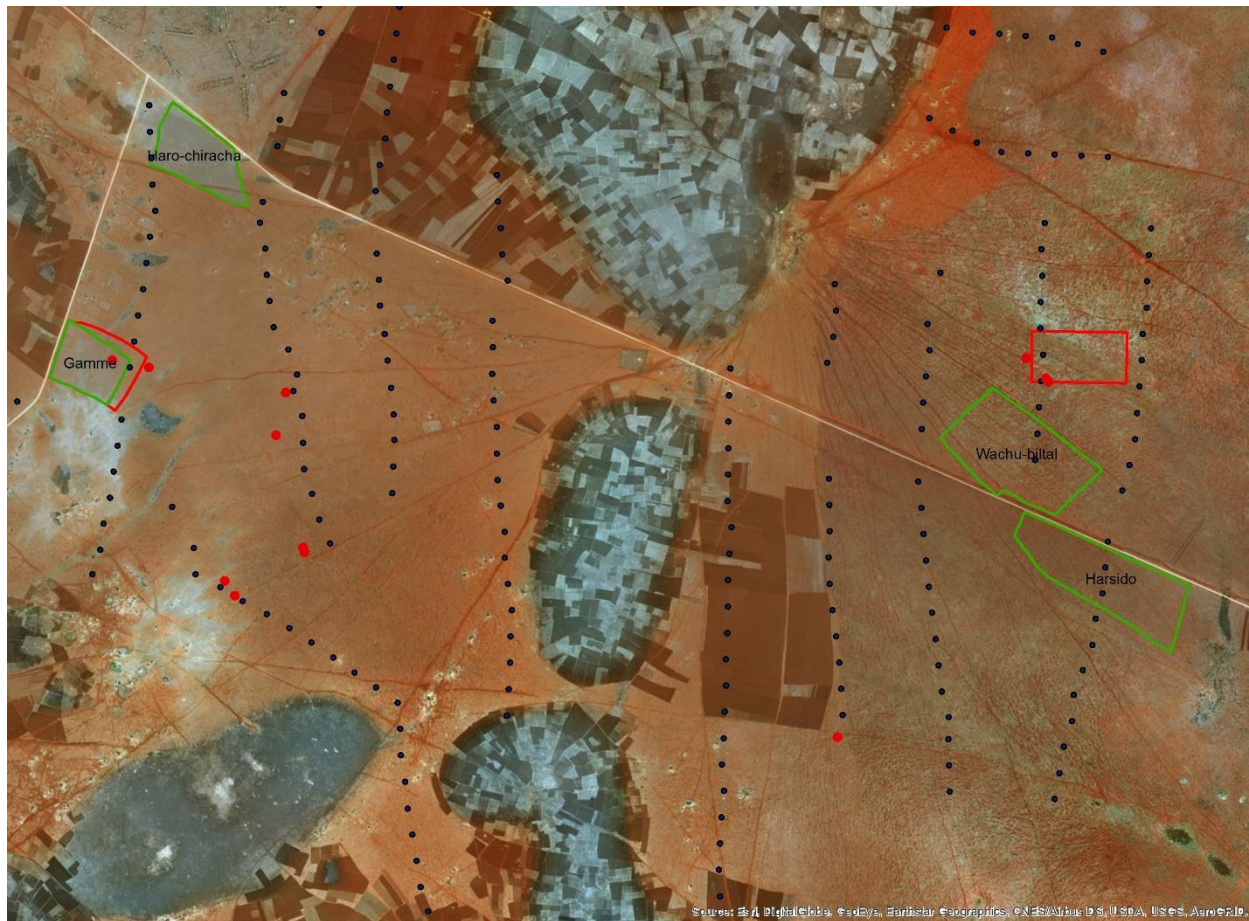


Figure 2 - Aerial image indicating the approximate location of the additional 31 ha kallo created north of the Wachu-bital kallo and the 13 ha Gamme kallo extension by October 2018 demarcated with a red boundary. The four kallos on Liben Plain as of July 2018 are demarcated with a green boundary. The red dots indicate where Liben larks were present in June 2018. The black dots indicate the long-term monitoring transects.

Liben Lark abundance and nest surveys were completed on schedule in YR1 through co-funding from an Ethiopian PhD student, who analysed data, and submitted her thesis in 2016, see **Annex 7.14**. The annual lark surveys were then delayed, as explained in **Section 2**, until June 2018, when a thorough survey of Liben larks was completed across the Plain, where only 10 individual birds were recorded. In 2007, 67 birds recorded on the same transects, see **Fig.3** (Spottiswoode et al., 2009). This suggests the population has declined over the project period, which is likely due to limited or no breeding and potentially adult mortality during the drought period, although no data was collected during the drought period to support this (see **Annex 7.2**). The *ganna* rains had been good and started early in 2018, which suggests that the breeding season had started early. It may be, therefore, that there were less males singing in June as a result and so the population could have been underestimated. A pair of larks were observed foraging and using one of the kallos in 2018 (see **Annex 7.2** for details), so it appears that kallos enhance the prey resource base and it is possible that the damaged kallos provided the only suitable lark foraging habitat during the drought period. Only two nests were found in 2018, and very few have been found in previous surveys (c.8 nests in total) which was too few to obtain an estimate of productivity.

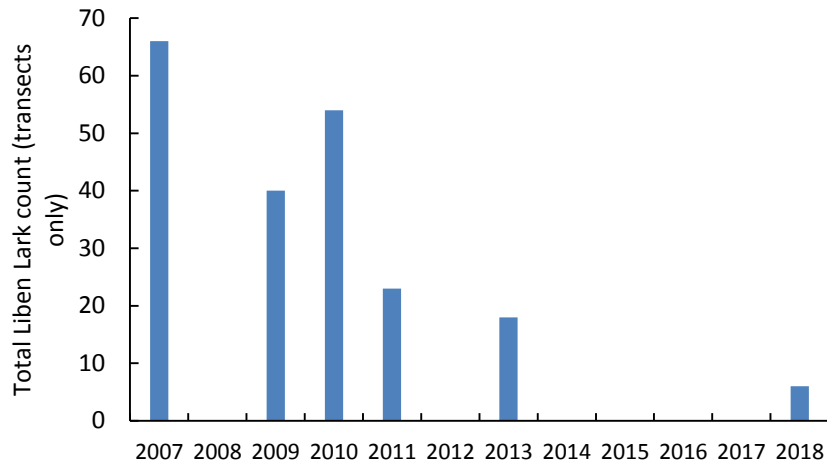


Figure 3: The changes in relative population size (i.e. overall number recorded) of Liben larks on the long-term transects on Liben Plain from 2007-2018. There were no surveys in 2008 and between 2014-2017.

The kallo vegetation height and diversity surveys were also delayed, for reasons explained in **Section 2**. In June 2018 average grass sward heights were collected from inside and outside the kallos (see **Fig.4; Annex 7.2**). When compared to the limited Liben lark distribution data in 2018 only, interestingly kallo 2 (Gamme) appeared most suitable for larks which has the shortest grass length of the four kallos surveyed, and was more heterogenous. This may have implications for how kallos are best managed (e.g. have a limited grazing regime), but currently more research is needed to understand if this is the case, or if 2018 was an irregular year as the rains had been better than average. We were not able to obtain data on the grass species richness and diversity of the kallos, however anecdotal evidence from partners and local pastoralists indicated that high nutritional fodder grass species, that have not been seen in years, were growing in the kallos following the rains in 2018.

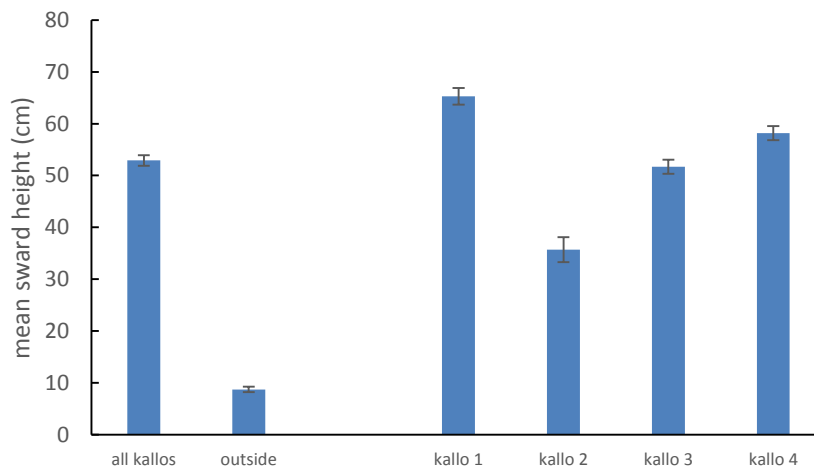


Figure 4: The difference in grass sward height (cm) from inside the kallos to outside the kallos in 2018. Kallo 2 (Gamme) appeared to be most suitable for Liben larks.

The data from the repeated socio-economic surveys (2015 and 2018) have shown that the drought had a major impact on livestock numbers on the Liben Plain (see **Section 4.5**). Overall, the drought reduced grazing or forage availability for almost all the households who were questioned in 2018 (see **Annex 7.3**). That said, 70% of households had used kallos to collect fodder, which had become the main source of fodder on the Liben Plain during the drought.

Most households in 2018 had a negative view of the kallos; but this was due to ‘too many people’ using them rather than kallos not being considered useful. This indicates that the kallos do work in terms of providing more fodder during the dry season.

Output 3: Pastoralist communities have the capacity to develop livelihoods

The certification of the Simphire Liben Cooperative, a local Community-based Organisation (CBO) under which four village level CBOs have been established in Miesa, Fulo, Haro Chiracha and Game & Dibe Ademo, a major achievement of the project. This Cooperative will continue to be active beyond the project. The Cooperative has a saving and credit registration under the Zonal Cooperatives Office and now has 102 members of which 55 are male and 47 are female. The Cooperative, through this project, now also has an office from which it will operate in the future (see **Annex 7.5**).

Market assessments were completed and a viable business plan for the Cooperative was developed in YR1 (see **Annex 7.6**). Implementation of the business plan was planned for YR2 and YR3 but was not completed due to the drought.

Over the course of the project basic literacy and numeracy training has been provided to a total of 153 people (76 female and 77 male). Business and financial management training has been provided to 101 heads of households (68 male and 33 female). Cattle fattening training has been provided to 30 people (26 male, 4 female) (see **Annex 7.7**). The number of female participants were lower than hoped due to reasons explained in **Section 4.4**.

Baseline capacity needs of the four CBOs were recorded through self-assessment questionnaires in 2015 which were repeated in 2018. A comparative report (see **Annex 7.5**) has shown the membership had increased by 18% over the course of the project and organisational capacity has increased. However, a major capacity gap is the lack of access to communication facilities. Interestingly, empowerment scores in 2018 were ranked as “*fully meets this aspect*”. This shows that the training and interactions between partners and CBOs including livelihood support to them has had impact on CBO empowerment.

Output 4: Project partners maintain and build on the outcome of the project and promote Participatory Rangeland Management to conserve biodiversity across Ethiopia’s rangelands in the long-term

In 2016, criteria for identifying priority biodiversity areas for consideration in the Oromia Pastoralist Development Strategy were developed and led to the identification of nine priority sites that would benefit from Participatory Rangeland Management (see **Annex 7.9**). These sites are: Bogol-Manyo-Dolo, Dawa – Wachile, Omo National Park, Senkele Sanctuary, Nechisar National Park and its surrounding, Yabello Sanctuary, Sarite Plains, Jijiga Plains and Arero Forest, see **Fig.5**. Since this strategy is under review, efforts were made during the project to ensure that these map is included in the revised version of the strategy.

Meetings were held in Ethiopia in June 2017 with project partners to identify priority biodiversity areas which would benefit from participatory rangeland management in Ethiopia (see **Annex 7.9**).

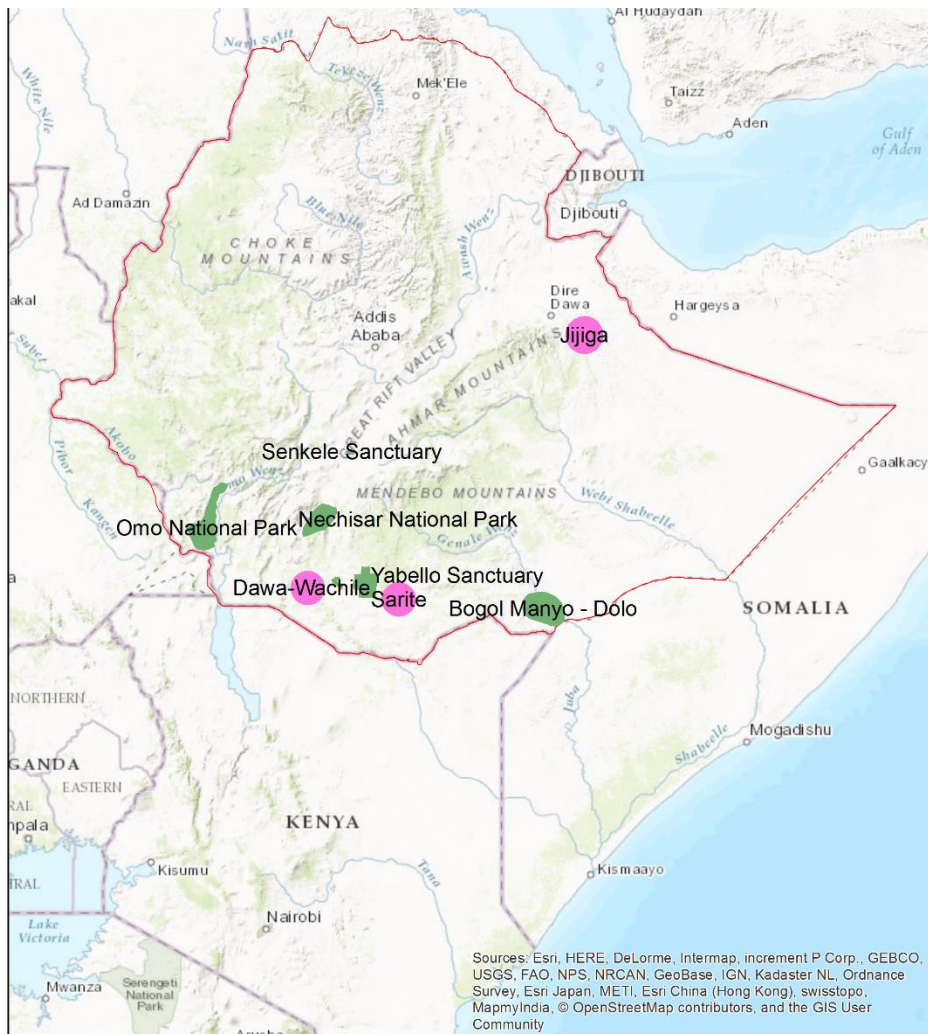


Figure 5: The nine sites in Ethiopia identified for consideration in the Oromia Pastoralist Development Strategy.

A lessons-learned and guidance document for integrating biodiversity into Participatory Rangeland Management in priority areas in Ethiopia has been produced and distributed amongst key stakeholders (see **Annex 7.15**).

A stakeholder workshop was held in Addis in September 2018 attended by 14 stakeholders including local and national Government (see **Annex 7.10**). Presentations on the project were completed by project partners promoting Participatory Rangeland Management (PRM) and highlighting the lessons learnt from this project. Two of the 14 stakeholders were from BirdLife International, who facilitated the workshop. All remaining 12 participants provided feedback (see **Annex 7.10**), with 11 out of the 12 (92%) saying that they would recommend PRM at all times. One individual still would recommend PRM, but questioned the overall sustainability longer-term.

In terms of sustaining the outcome of this project, two funding proposals were written jointly with the partners and were successfully submitted, one was unsuccessful (Christensen) and the other is awaiting confirmation (Whitley Fund for Nature) (see **Annex 7.11**). Details of microfinancing were collated (see **Annex 7.8**) and the CBO received a revolving fund of 79,000.00 ETB (c.£2,600), meant for livelihood diversification, in 2016. Additional microfinancing was received by the CBO in YR3 of 150,000 ETB (c.£4,000) from the local Government (see **Annex 7.8**). A Sustainability Plan was produced (see **Annex 7.12**) outlining the next steps to sustain the projects' outcome over the next year and suggestions of what is required longer-term to achieve an improvement in both food security and Liben lark population status.

Output 5: Project management, monitoring and evaluation structures and processes ensure that the project objectives are achieved on schedule and within budget

In YR1 project partners decided to amalgamate the Steering and Implementation Committees due to the overlap in membership and restrict the meetings to project partners only. Key evidence for this is the Partnership Management Agreement, and the Project Steering Group meeting notes (see **Annex 7.16**).

The socio-economic survey questionnaires were redesigned in 2017/18 aiming to capture the impact the kallos may have had during the drought. See **Section 4.5** for details on the socio-economic survey. See **Output 3** above for details on the CBO capacity needs assessments. See **Output 2** above for details on Liben lark distribution.

A manuscript has been submitted for peer-review to the journal Land Use Policy titled '*Institutional conflict over collective rangeland management by Borana Pastoralists on the Liben Plain, Southern Ethiopia*', and is awaiting confirmation of acceptance (see **Annex 7.4**) A manuscript has been drafted on the Liben lark declines and on land-use change on the Liben Plain (see **Annex 7.13**).

Any delays in reporting to Darwin have been agreed in advance and change requests have been submitted as required, see **Section 6.1**.

3.2 Outcome

Outcome: Sustainable management of the Liben Plain initiated to enhance livelihoods and food security for c.10,000 pastoralists, prevent mainland Africa's first bird extinction and integrate biodiversity conservation into Ethiopian rangeland recovery

Through the establishment of five kallos on Liben Plain, as mapped in **Fig. 1 & Fig. 2**, sustainable management of Liben Plain has been initiated. Overall the project has indicated that kallos can increase dry season fodder availability for pastoralists, however the scale of what was achieved during the first year of the project was not enough to meet the demand for fodder during the 2016/17 drought (see **Annex 7.3**). The results from the June 2018 trip has indicated that kallos can restore grassland and can provide suitable habitat for Liben larks, though no positive impact was seen on the lark population due to the impact of the drought (see **Fig. 3; Annex 7.3**).

The Simphire Liben Cooperative has been established with four village-level CBOs, and membership has increased by 18% over the course of the project. The CBO's organisational capacity has increased, a business plan has been produced (**Annex 7.5**), microfinance funds have been received (**Annex 7.8**), and CBO empowerment has increased through the training provided by the partners in livelihood support initiatives (**Annex 7.7**).

Priority areas for consideration in the Oromia Pastoralist Development Strategy have been identified (see **Fig. 5**) for integrating biodiversity into Ethiopian rangeland recovery and a stakeholder workshop was held in September 2018 (see **Annex 7.9**) where lessons learnt and guidance on implementing Participatory Rangeland Management was disseminated (see **Annex 7.15**).

Two of the project assumptions did not hold true in YR2, (1) '*There are no serious outbreaks of political instability in the project area*'; and (2) '*There are no serious drought episodes during the project period*'. The actions taken to recover the project from this are detailed in **Section 2** and through change requests submitted to Darwin, as detailed in **Section 6.1**.

3.3 Impact: achievement of positive impact on biodiversity and poverty alleviation

Impact: *Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.*

See **Sections 4.1** and **4.2**.

The establishment of the kallos should impact on both poverty alleviation and biodiversity conservation in the long-term. **The kallos provided the main source (70%) of fodder available during the 2016/17 drought** and anecdotal evidence suggested that the kallos held grass on the Liben plain longer than anywhere else and “saved livestock and saved lives” during this time. The challenge in terms of the overall impact of this project was that the kallos established in YR1 were not on the scale needed to address the demand for fodder during this time (see **Annex 7.3**).

Our calculations are that the 303 ha of kallos currently in place should be able to support 2,727 cows, giving **additional food to approximately 909 households (4,545 - 7,272 people)** during the hunger gap period (see **Section 4.3**).

The Liben lark population has continued to decline, with only 10 birds recorded in 2018 in comparison to 67 in 2007 on the same transects (see **Fig. 3**). The larks were observed foraging and using the kallos in 2018, so it is likely that the kallos enhance the quality of foraging habitat and the situation may have been worse if it were not for the presence of the kallos during the drought.

The established Cooperative and subsequent training delivered from partners has empowered the local community through livelihood support training e.g. cattle fattening (see **Annex 7.7**).

4 Contribution to Darwin Initiative Programme Objectives

4.1 Contribution to Global Goals for Sustainable Development (SDGs)

This project was designed to contribute towards achievement of the SDGs. The kallos have already assisted at Liben by providing around 909 local pastoralist households with the ability to support more cows through the three-month hunger gap, giving year-round access to food (SDG2, target 2.1). However, the impacts of the severe drought and political instability at Liben have meant that many people have still suffered from food shortages, and many livestock have died (see **Annex 7.3**). The recovery of the grassland on the Plain had initially been slow following the drought, and land conversion to crops is increasing.

The work of the CBO, whose membership is increasing and includes unemployed people and female heads of household, are contributing towards SDGs 5 (target 5.1) and 8 (target 8.6) (**Annex 7.5**).

In addition, the kallos will enable sustainable use of the grassland ecosystem and halting biodiversity loss (SDG 15). However, we have not been able to measure the impact of kallos on halting biodiversity loss due to the extreme impact of the drought in 2016/17.

4.2 Project support to the Conventions or Treaties (CBD, CITES, Nagoya Protocol, ITPGRFA)

The project was designed to support Ethiopia in meeting its NBSAP targets. It aims to develop sustainable management systems for a degraded rangeland, building upon indigenous knowledge and traditional systems (contributing to **CBD articles 8, 10 and 11** and the programme of work on agricultural biodiversity; informing the UNESCO-SCBD programme on linking biological and cultural diversity, and contributing towards **Aichi Targets 1, 7, 14 and 18**). Unfortunately, the project has not had any interaction with the Ethiopian CBD focal point.

The project has contributed to three strategic objectives of Ethiopia’s NBSAP, these being:

- Objective 2: By 2020, all remaining natural ecosystems outside protected areas are under sustainable management.
- Objective 3: The costs and benefits of biodiversity conservation are equitably shared through a range of public, private, community/CBO and NGO partnerships.
- Objective 4: The rich agro-biodiversity of Ethiopia is effectively conserved.

4.3 Project support to poverty alleviation

The project has supported the creation, repair and maintenance of 329 ha of kallos on the Liben Plain. Each 100 ha (1 km²) of kallo grassland supports 900 milking cows through the dry season. An average household (5-8 persons) currently has three milking cows. Thus 100 ha of kallo will benefit approximately 300 households x 5-8 = 1,500 - 2,400 people. The 303 ha of kallos we have created can therefore support approximately 909 households, or 4,545 - 7,272 people through the hunger gap.

Kallos are communally managed under customary pastoralist by-laws (geda) and are self-regulated by the community, with formalised documented agreements. Infractions of community benefits are self-policed and punishable by fines, and so are very rare. A customary benefit-sharing mechanism recognises that female-headed households and the poorest households are the most vulnerable and are therefore given priority in benefit sharing. This ensures that the most vulnerable and poorest households will have milk throughout the dry season.

The established Cooperative (47 women, 55 men) and subsequent training delivered from partners has empowered the local community through livelihood support training e.g. cattle fattening (see **Section 3; Annex 7.5**).

The Liben district in the Oromia Region of Ethiopia suffered a **severe drought in 2016/17**, the worst Ethiopia has seen in over 50 years, and there was an extended period of political instability and the declaration of a **State of Emergency** in the country in October 2016, followed by violent clashes including in towns near the project area. The drought affected areas of Somalia and Ethiopia, resulting in pastoralists from other areas moving to Liben seeking food for their animals. Some of these new arrivals were armed and this led to some violent clashes. There was also increased immigration onto the Plain as people have fled from more densely populated areas with more violence elsewhere in Ethiopia and Somalia. This increased pressure on scarce resources at the Plain.

The repeated socio-economic survey has indicated that 95% of households did not have access to enough grazing during the drought, and 97% said there was not enough forage availability. In 2018, 86% of respondents said they had too little milk available to support the household during the drought. However, anecdotal evidence from partners working on Liben Plain has said the kallos saved lives and the kallos provided the main source of fodder on Liben Plain – there just wasn't enough to go around and for long enough to sustain the local communities over the drought period.

4.4 Gender equality

In 2015, 7% of household heads were women (mothers or grandmothers), compared to 13% in 2018 following the drought. In 2015, 43% of households headed by women were very vulnerable, compared to 71% in 2018 (**Annex 7.3**). Women in the Liben area still have a lower level of education than men - many women over 20 have not completed school, and there are high rates of illiteracy and innumeracy in women over 30. In Borana culture, women's roles are focused on domestic duties, raising children, collecting water, firewood and cooking. Young girls often assist with these activities to support their mothers and prepare them for adulthood. Consequently, women do not often engage in livelihood or decision-making processes outside their households.

The project has contributed to gender equality through provision of training for both men and women. For example, the project has provided training on business and entrepreneur skills and loan management for all members of the cooperatives. 101 heads of households have now participated in these training opportunities: 68 of these were male, and 33 female. Training in basic literacy has also been provided: 43 women participated, with a total of 52 adult students across 3 sites (see **Annex 7.7**).

Women are members of the general Kallo Management Committee and are in the leadership teams of the CBO. Although the proportion of female members of these groups is still low, it is a significant achievement in this community. These groups were identified by the communities

and self-elected, which is essential for ensuring local ownership of the project and sustainability of activities.

4.5 Programme indicators

- **Did the project lead to greater representation of local poor people in management structures of biodiversity?**

Yes, through the Kallo Management Committee and Simphire Liben Cooperative.

- **Were any management plans for biodiversity developed?**

Local by-laws for kallo management were developed.

A lessons-learned and guidance for Participatory Rangeland Management (PRM) report was produced to summarise PRM and the project for other stakeholders (see **Annex 7.15**).

- **Were these formally accepted?**

PRM has been formally accepted as a management method by the Kallo Management Committee and Simphire Liben Cooperative.

The by-laws were formally approved by the local Government and are now being actively implemented.

- **Were they participatory in nature or were they ‘top-down’? How well represented are the local poor including women, in any proposed management structures?**

The PRM process involved project partners, local/village administrations, community elders and rangeland managers.

Kallos are communally managed under customary pastoralist by-laws (geda) and are self-regulated by the community, with formalised documented agreements. 84 people (54 male, 30 female) attended stakeholder meeting and workshops for the agreement of the kallo by-laws.

- **Were there any positive gains in household (HH) income as a result of this project?**

The 2016/17 drought in Ethiopia had a significant impact on the communities living around Liben Plain and had a major impact on livestock numbers, as shown in **Table 2**. Unfortunately, this has impacted the socio-economic status of many of the households, meaning many are now more vulnerable at the end of the project. The relative socio-economic status of households was categorised using figures provided by EWNHS & SOS Sahel to get an understanding of the vulnerability of households on Liben Plain (see **Annex 7.3**), but it should be noted that this is not standardised.

Table 2: Effect of drought on livestock numbers on Liben Plain (of the 187 households interviewed in January 2018).

Livestock	Total no. before drought (2015)	Total no. following drought (2018)	Died during drought
Cattle	4671	1716	2955 (63.3%)
Sheep	3244	1302	1942 (59.9%)
Goats	2655	1057	1598 (60.2%)

- **How many HHs saw an increase in their HH income?**

None. The relative economic status of the households estimated from the repeated socio-economic surveys has shown that 20% more households are very or moderately vulnerable in 2018 compared to 2015 (see **Annex 7.3**).

- **How much did their HH income increase (e.g. x% above baseline, x% above national average)? How was this measured?**

Overall, the results of the repeated socio-economic survey have indicated that 93% of households surveyed were very or moderately vulnerable in 2018, compared to 73% in 2015.

4.6 Transfer of knowledge

The project facilitated the transfer of skills and expertise between EWNHS and SOS Sahel project staff e.g. the value of biodiversity conservation in development and participatory processes for rangeland management.

A female Ethiopian obtained a PhD qualification in YR1 of the project for her work on Liben larks. The results of the 2018 survey are being used in a manuscript drafted for peer-review (see **Annex 7.14**). The socio-economic data collected in YR1 have also been used in a manuscript submitted for peer-review.

Government stakeholders attended the workshop in September 2018 as detailed in **Section 3**.

4.7 Capacity building

The limited contact between international partners and the local partners in 2016/17 limited the amount of partner development support available whilst delivering the project activities.

A female Kenyan working for BirdLife International presented the project at a UK-based conference.

A male Ethiopian working for SOS Sahel on the Liben Plain has developed skills as a team leader through the project, by having oversight and leadership on all project activities and deliverables.

5 Sustainability and Legacy

Kallos have a high commercial value and low management costs. The Borana communities have a strong culture of sustainable community grassland management. For these reasons, kallos are likely to be retained and deliver sustainable benefits to local people long after project ends. SOS Sahel report 100% retention rates on kallos elsewhere after seven years.

The project has also supported the establishment and development of a Cooperative supporting four village level CBOs, providing its members with training to implement business plans. This will help vulnerable households who are being driven to abandon pastoralism to develop/diversify their livelihoods and reduce their need to plough grassland for crops. Microfinance schemes have been identified and some funding received by the Cooperative towards livelihood initiatives (see **Annex 7.8**).

As the needs of the local people and Liben's grassland biodiversity are aligned, it is likely that once kallos are established and people are provided with long-term support for livelihood development, no further external support will be needed to maintain the kallos or secure this population of the Liben Lark from extinction. The project is therefore a rare example of a sustainable 'win-win' situation for livelihood development and biodiversity conservation. The post-project plan (see **Annex 7.12**) to create further kallos on and around the Liben Plain should lead, in the longer-term, to an increased population of Liben larks.

Priority areas for rangeland biodiversity in Ethiopia have been identified (see **Fig. 5**) and a report on lessons learnt and guidance for integrating biodiversity conservation in rangeland management has been developed and disseminated to stakeholders (see **Annex 7.15**). However, further work is required to ensure this is built into the Oromia Pastoralist Development Strategy.

6 Lessons learned

The 2016/17 drought and subsequent political instability were the greatest challenges for the project. The impact this had on the project partnership is outlined in **Section 2** and the impact on the deliverables of the project are outlined in **Sections 3 and 4**. The key technical lessons learnt of implementing Participatory Rangeland Management considering these challenges are highlighted in the guidance and lessons learnt report (see **Annex 7.15**).

A review of the project was completed by RSPB and BirdLife International in December 2018 (post-project), which identified five top lessons learnt:

1. The Darwin Initiative have been very supportive and understanding of the challenges facing the project. Frequent communication with the Darwin team and **managing expectations** has been critical for the projects' overall delivery.
2. Integrating **partner development support** for project delivery is essential for long-term sustainability of project outcomes. This requires staff from supporting partners (not necessarily the Project Manager) to visit local partners regularly throughout the project to discuss organisational capacity and issues, not directly related to but that impact upon the project, such as financial management.
3. **Regular communications** between different project partners is essential. It may have been useful to acknowledge the communications issues earlier on in this project and to have adapted to the situation better. There are lots of platforms that can help partners keep in contact e.g. WhatsApp, Zoom, Skype etc., not all of which were explored in this project.
4. **Consistency in Project Management staff** ensures the direction and focus of the project and relationships with partners are maintained. Relationships take time to build between project partners and it takes time to get up to speed, which can impact a project's delivery.
5. Setting criteria for **stopping points** would assist with clear decision-making on when it is appropriate to pause a project during crisis events. **Contingency funding**, either from the funder or lead organisation, would allow for project staff to be supported during crisis events. It was not possible to pause this project because the people on the ground needed the funds and sufficient co-funding was not available.

6.1 Monitoring and evaluation

An M&E plan was developed and adopted in YR1, based on project Outputs, Outcome and indicators. This has not changed during this reporting period. Monitoring top level project progress was focussed on three key project measures:

1. *The proportion of pastoralist households that experience a dry season hunger gap at the start compared to the end of the project:* Repeated socio-economic data have been collected and a report produced (see **Annex 7.3**).
2. *The capacity of the Cooperative to develop and diversify sustainable livelihoods:* Repeated data on CBO capacity have been recorded using self-assessments and report produced (**Annex 7.5**).
3. *The change in the conservation status of the Liben Lark population on the Liben Plain:* Repeated data have been collected on the distribution and population of Liben larks (see **Fig. 3**).

Progress against activities and indicators has been tracked and measured through 6 monthly technical written reports, quarterly Steering Committee meetings and frequent email communications.

The M&E plan in place was an effective way of assessing progress against the project objectives resulting in the change requests to Darwin. It did not cover project management processes (see **Section 6**) which could have benefitted the project.

Three change requests were submitted over the course of the project:

1. In August 2017 significant changes were accepted to the log frame, following a project partnership meeting in Addis (**Section 2**) which assessed the impact of the 2016/17 drought and the required adaptations to enable the project to continue. The most significant change was the reduction in the overall size of kallos to be created from 1,000 ha down to 400 ha.
2. In August 2018 the project was extended by 6-months to allow for a delayed visit to Liben Plain in June 2018. The November 2017 trip was delayed due to security concerns raised by the partners.
3. In September 2018 changes were accepted in the log-frame, adapting the project to the results of the June 2018 visit to enable the project to be delivered. The project was extended to November 2018 to allow for more time for reporting and sustainability planning.

6.2 Actions taken in response to annual report reviews

Any issues raised within the Annual Report Reviews were discussed with the project partnership in the steering group meetings. Comments with issues to address were received in the review of AR1 and AR2, which were addressed where possible.

The only outstanding issue was a comment from the reviewer in YR1: *'It is unclear exactly how the project is discouraging land conversion by external investors. It is assumed that dialogue with stakeholders has resulted in government support for kallos', rather than cultivation, but it would be useful to know how the project plans to stave off conversion pressure in the future'*.

Land conversion remains a significant problem for Liben Plain and the amount of land conversion has increased (see **Annex 7.4**). The project has strived to achieve as much as possible in the challenging circumstances. The lack of pasture grass and fodder during the 2016/17 drought may have also influenced the amount of land conversion. This remains an issue to be addressed on the Liben Plain.

7 Darwin identity

The project has a high profile within the local communities and the local Government administration. Sign boards with partner and Darwin Initiative logos demarcate kallos and explain their purpose. The regional Government has a good understanding of the project and staff have copies of the annual work plan and updates and are familiar with the Darwin identity.

The following communication pieces were made publicly available online in 2015/16, recognising the Darwin Initiative:

<http://www.rspb.org.uk/community/ourwork/b/biodiversity/archive/2015/06/15/closing-the-hunger-gap-establishing-grassland-reserves-in-ethiopia.aspx>

<http://www.cebmmu.co.uk/research/darwin-initiative-sustaining-pastoralist-livelihoods-in-ethiopia-and-saving-the-liben-lark-from-extinction>

<http://www.birdlife.org/datazone/speciesfactsheet.php?id=1017228>

Over 2016/17 and 2017/18 the priority had been refocussing the project and getting it working in a way that it is still able to deliver the project Outcome. The delay in the field visit had meant there was limited new results to report on over this period. This meant there had been limited opportunity to communicate more widely outside of Ethiopia about the project during this time.

The following communication pieces were made publicly available online in 2018/19, recognising the Darwin Initiative:

<http://ww2.rspb.org.uk/community/ourwork/b/biodiversity/archive/2018/07/19/searching-for-the-critically-endangered-liben-lark.aspx>

https://www.birdlife.org/worldwide/news/can-critically-endangered-liben-lark-be-saved-our-latest-update?utm_source=BirdLife+International+News+Notifications&utm_campaign=874e6e4cc4-Summary_news_notification&utm_medium=email&utm_term=0_4122f13b8a-874e6

<http://www.ewnhs.org.et/index.php/programs-projects/21-sustainable-management-of-an-ethiopian-rangeland-for-biodiversity-and-pastoralists>

The project was also featured in the State Of Africa's Birds report that was launched in September 2018: <https://www.birdlife.org/africa/news/state-africas-birds>

Several presentations have been delivered by project partners. In Ethiopia, both EWNHS and SOS Sahel have presented the project at events such as the Zonal GO and NGOs Partnership forum. BirdLife International completed a poster presentation at SCCS in 2017.

The Darwin Initiative has been acknowledged in two drafted manuscripts for peer-review (see **Annex 7.4 & 7.13**).

The Darwin logo was used in all project reporting and publications, notably the lessons learnt and guidance publication (see **Annex 7.15**).

8 Finance and administration

8.1 Project expenditure

Project spend (indicative) since last annual report	2017/18 Grant (£)	2017/18 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)			99%	
Consultancy costs			104%	
Overhead Costs			97%	
Travel and subsistence			98%	
Operating Costs			105%	
Capital items (see below)			91%	
Others (see below)			107%	
TOTAL			100%	

NOTE: Does not include final audit costs, estimated to be £1,500 under RSPB.

Staff employed (Name and position)	Cost (£)
Mark Hulme/ Graeme Buchanan (Project Lead/ Conservation Scientist)	
Clare Stringer, Assisting Project Lead	
Sarah Havery, Assisting Project Lead	
Yilma Dellelegn, Project coordinator (Ethiopia – EWNHS)	
Wariyo Sara, Project officer (Ethiopia – EWNHS)	

Tesfaye Gebresenbet/Mekuria Mamo, Finance administrator (Ethiopia – EWNHS)	
Tewabe Ashenafi, Driver (Ethiopia – EWNHS)	
Abduba Yacob, Project advisor (Ethiopia – SOS)	
Iya Boneya, Project officer (Ethiopia – SOS)	
James Bennett, Project advisor (Coventry University)	
Kariuki Ndonganga, Project advisor (BirdLife)	
Mercy Kariuki, Project assistant (BirdLife)	
Huw Lloyd, Project Advisor (Manchester Uni)	
TOTAL	

*In 2016/17 commented that “Reporting money sent to partner, as opposed to spent by partner.” However, this year now shows actual spend over the 2x years.

Capital items – description	Capital items – cost (£)
CBO Furniture (ENWHS)	
TOTAL	

Other items – description	Other items – cost (£)
Production of reports	
Workshop materials	
Production of communications materials	
TOTAL	

8.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total (£)
RSPB (Staff time, Salary overheads, Travel, Funds to Partners)	
SOS (Salary overheads)	
Coventry University (Salary overheads)	
BirdLife International (Salary overheads)	
Manchester Metropolitan University (Salary overheads)	
TOTAL	

Source of funding for additional work after project lifetime	Total (£)
RSPB (Salary costs for SOS)	
TOTAL	

Originally the RSPB co-funding was planned to continue beyond the end of the project for another financial year (i.e. from April 2018 – Mar 2019) to continue the work beyond the project lifetime, however most of the funds were used during the no-cost project extension period (April – November 2018).

8.3 Value for Money

The overall value of the project is the indication that, through using Participatory Rangeland Management, both biodiversity and pastoralists can benefit on the Liben Plain and it has set the foundation for a unique win-win scenario where grassland management provides lark breeding habitat in the wet season and fodder for pastoralists in the dry season. However, to have the desired impact in terms of improving the socio-economic status of the pastoralist communities and an improvement in the conservation status of the Liben lark; the outputs of this project will need to be scaled-up significantly which will require significantly more investment.

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

Note: Insert your full logframe. If your logframe was changed since your Stage 2 application and was approved by a Change Request the newest approved version should be inserted here, otherwise insert the Stage 2 logframe.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Impact: Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.</p>			
<p>Outcome: Sustainable management of the Liben Plain initiated to enhance livelihoods and food security for c.10,000 pastoralists, prevent mainland Africa's first bird extinction and integrate biodiversity conservation into Ethiopian rangeland recovery</p>	<p>Indicator 1: By end of project, around 2,000 pastoralist households (c.10,000 people, including c.2,000 women and c.6,000 children) on and around the Liben Plain have improved access to fodder for their cattle (and other livestock) in the dry seasons.</p> <p>By end of project, socioeconomic surveys quantify dry season milk production and food shortage</p> <p>By end of project, communities have developed by-laws and benefit sharing agreements to govern the use of kallos, and at least 350 hectares of kallos have been created, encouraging growth in the kallos of high-value grasses for fodder</p> <p>Indicator 2: By end of project, one CBOs (70 people, >35 women) have the capacity to support communities to implement livelihood development/diversification initiatives, with one livelihood initiative training</p>	<p>Indicator 1: Reports of baseline and end-of-project participatory community fodder access/hunger gap assessment surveys</p> <p>Maps and aerial photographs of the kallos</p> <p>Indicator 2: We will monitor CBO capacity through comparative analysis of baseline and end of project self-assessment reports of capacity needs and by the generation and quality of business plans for livelihood initiatives and approaches made to donors.</p> <p>We will also monitor how CBOS are using their training to set up an ongoing M&E process to measure the impact of their activities on the wellbeing of the communities in the long term. This will be done through CBO self-assessment reports.</p> <p>The CBO business plan.</p> <p>Report on livelihood initiative training.</p> <p>Indicator 3: Biological transect surveys will quantify the use made by kallos by</p>	<p>Ethiopian Government continues its current drive to restoring sustainable pastoralism</p> <p>There are no more serious outbreaks of political instability in the project area</p> <p>There are no more serious drought episodes during the project period</p>

	<p>delivered to CBO by the end of the project.</p> <p>By end Yr 1: CBOs established and are developing business plans for most feasible livelihood development and diversification schemes.</p> <p>By end Yr 2: Business plans developed; training of CBO committee in progress.</p> <p>Indicator 3: By end of project, the precipitous population decline of the Critically Endangered Liben Lark has been slowed</p> <p>By end of project, surveys undertaken after kallo creation indicate use of kallo grassland by birds for breeding and foraging</p> <p>Indicator 4: By end of project, the potential for integrating biodiversity conservation with pastoralist development is understood by at least 5 key government and civil society stakeholders.</p> <p>By end Yr 1, kallos established on the Liben Plain provide a demonstration of how biodiversity and development can be delivered through Participatory Rangeland Management</p>	<p>Liben Larks, and their distribution and population will be compared with baseline transect data going back to 2005. Population size will be estimated using distance sampling. Results will be published in the peer-reviewed literature.</p> <p>Indicator 4: The aim of the stakeholder visits and multi-stakeholder workshop held in the final year of the project will be to discuss the successes and challenges of the project and the guidance and lessons learnt for implementing PRM with stakeholders. At the end of the workshop/stakeholder visits we will ask participants to provide feedback of the event and of the PRM approach. We will provide a summary report of these statements as part of the final project progress report.</p>	
<p>Outputs:</p> <p>1. Participatory Rangeland Management process facilitates development of an institutional framework for managing community grassland reserves ('kallos')</p>	<p>1.1 By end of Month 4, Kallo Management Committees are established with equitable representation from all stakeholder groups (including women)</p> <p>1.2 By end of Month 4, stakeholders, including communities, Government</p>	<p>1.1 Records of stakeholder meetings and Kallo Management Committees meetings, ToR for Committees and lists of representatives</p> <p>1.2 Kallo management and equitable benefit-sharing agreements and by-laws</p>	<p>Existing Borana mechanisms for enforcing by-laws and distributing fodder to the most needy members of society are applied to new kallos</p>

	<p>and civil society have agreed locations for kallos, and developed management, and equitable benefit-sharing agreements for them, upheld through by-laws</p> <p>1.3 By end of project, Kallo Management Committees are distributing dry season forage under agreed management and equitable benefit sharing approaches</p>	<p>1.3 Kallo Management Committees forage distribution records</p>	<p>Drought does not disrupt normal grassland management processes further</p>
<p>2. Trials of grassland restoration indicates that kallos can increase dry season food security for pastoralists equitably and can restore grassland quality and Liben Lark habitat</p>	<p>2.1 By end of project, scrub cleared from up to 1,000 ha within the current kallos and adjacent areas occupied by Liben Larks, increasing the size of the open Liben Plain by c.14%</p> <p>2.2 By end of project, fences made using cut scrub (underplanted with non-invasive euphorbia to create permanent living fences) demarcate community kallos covering around 350 ha, located to capture >20% of the core area occupied by Liben Larks</p> <p>2.3 By end of project, grass sward heights , are 50% higher within kallos than outside</p> <p>2.4 By end of project, 50% of the population of Liben Larks are using the kallos and areas cleared of scrub for breeding and/or foraging.</p> <p>2.5 By end of project, at least 75% of all c.2,000 pastoralist households (including at least c.5,000 women and girls and over c.300 households headed by women) have access to fodder from kallos during the dry season</p>	<p>2.1. Map and photographs showing extent of scrub clearance</p> <p>2.2. Satellite images showing extent of new community kallos</p> <p>2.3. Report on kallo grass sward heights</p> <p>2.4. Report of surveys of Liben Larks usage inside and outside kallos</p> <p>2.5 Comparative analysis socioeconomic survey report of the baseline/end of project of fodder access surveys</p>	<p>Illegal conversion of grassland to crops by external investors does not increase</p> <p>Local CBOs remain viable and engaged</p> <p>Other grassland stakeholders external to the Liben Plain are interested in learning from the project</p>

<p>3. Pastoralist communities have the capacity to develop livelihoods</p>	<p>3.1 By end Month 6, one CBO's baseline capacity needs self-assessments complete and opportunities for equitable livelihood development are identified and prioritised by communities</p> <p>3.2. By end of Yr1, one community based organisations (CBOs) are established to manage livelihood development and diversification initiatives</p> <p>3.3. By end of Month18, one CBOs have developed business plans for sustainable development initiatives, potentially including resource centre for visitors and local people, communal vehicles, milk collection and storage point (all are ideas suggested by local people during visit in November 2014)</p> <p>3.4. By end of Yr 2, 70 pastoralist (35 male heads of household and 35 female heads of household) household heads are receiving training in basic numeracy and literacy skills and business and financial management to facilitate community engagement in livelihood initiatives</p> <p>3.5. By end of project, the CBO is in discussion with donors or applying to microfinance schemes to secure funding for livelihood initiatives</p>	<p>3.1 Baseline capacity needs self-assessments /livelihood prioritisation report</p> <p>3.2 Community-Based Organisation (CBO) constitution documents and records of CBO meetings</p> <p>3.3 One business plan</p> <p>3.4. Training materials, training workshop list of attendees, training workshop photographs</p> <p>3.5. Funding proposals, records of meetings</p>	
<p>4. Project partners maintain and build on the outcome of the project and promote Participatory Rangeland Management to conserve biodiversity</p>	<p>4.1. By end of Yr 1, priority areas for biodiversity in Ethiopian Borana rangelands are identified for establishing Participatory Rangeland Management, linked to the Oromia</p>	<p>4.1. Map of identified sites for inclusion within Oromia Regional Pastoralist Development Strategy</p>	

<p>across Ethiopia's rangelands in the long-term</p>	<p>Regional Pastoralist Development Strategy</p> <p>4.2. By end of project, regional stakeholders managing priority biodiversity areas (Indicator 1) that could benefit from Participatory Rangeland Management processes and from integration of biodiversity conservation into management practices are identified</p> <p>4.3. By end of project, a plan for sustaining the kallo system on the Liben Plain is agreed by project partners and stakeholders</p> <p>4.4. By end of project, SOS Sahel and EWNHS staff submit one proposal for funding to donors and supporting CBOs in implementing business plans and monitoring project interventions</p> <p>4.5. By end of project, partners have promoted Participatory Rangeland Management and biodiversity mainstreaming to 30 stakeholders in Ethiopia, through a workshop completed by end of project</p>	<p>4.2. List of land management stakeholders in Ethiopian Borana rangelands to be invited to workshop (activity 4.5)</p> <p>4.3. Plan for kallo sustainability report</p> <p>4.4. Project proposals and CBO records</p> <p>4.5. Workshop presentations, attendance lists and minutes, scientific papers and technical guidance publications</p>	
<p>5. Project management, monitoring and evaluation structures and processes ensure that the project objectives are achieved on schedule and within budget</p>	<p>5.1. By end of month 2 project partners have signed partnership agreements and confirm their respective roles and responsibilities</p> <p>5.2. By end Yr 1, Baseline surveys complete: 1. milk production level/ hunger gap assessment survey (stratified sample of the 10,000 households – part of PRRA); 2. One CBO capacity needs self-assessments;</p>	<p>5.1. Copies of signed partnership agreements</p> <p>5.2. Milk production level/ hunger gap assessment survey (stratified sample of the 10,000 households) reports (baseline and end of project); CBO capacity needs self-assessments (baseline and end of project); Report of Liben Lark distribution</p> <p>5.3. Records of Steering Group meetings</p>	

	<p>3. Liben Lark distribution and productivity surveys</p> <p>5.3. Project partner Steering Committee meets twice annually</p> <p>5.4. By end of project, repetition of all baseline surveys complete</p> <p>5.5. All financial and progress reports submitted to the project manager and project donor on time</p>	<p>5.4. Published analysis of baseline and end of project data</p> <p>5.5. Report submission records; Darwin feedback on annual and 6-month reports</p>	
Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)			
Activity 1.1	Undertake a Participatory Rangeland Resource Assessment		
Activity 1.2	Support customary institutions and Government bodies to establish joint Kallo Management Committees to oversee community kallos through the Participatory Rangeland Management process		
Activity 1.3	Facilitate a series of stakeholder-led workshops, engaging communities, Government and civil society to identify locations for kallos and develop management, by-laws and benefit-sharing agreements for them through the Participatory Rangeland Management process		
Activity 2.1	Committees identify and establish local teams to build the kallos		
Activity 2.2	Remove acacia scrub from up to 1,000 ha of grassland, inside and outside kallos, adjacent to existing Liben Lark populations, to encourage range expansion and grassland restoration (increasing the size of the open plain by 14%)		
Activity 2.3	Use cut acacia scrub, underplanted with euphorbia, to create four kallos of a maximum of 100 ha each in key sites for Liben Larks		
Activity 3.1	Support CBOs to undertake a self-assessment of their capacity needs and prioritise needs for enabling equitable livelihood development and diversification		
Activity 3.2	Support local communities to develop/establish one Community-Based Organisation (CBO) to manage and oversee livelihood and infrastructure development initiatives		
Activity 3.3	Support CBOs to develop business plans that potentially could include: a resource centre for visitors and local people, communal vehicles, milk collection/storage point and local commodities shop (ideas suggested by local people during visit in November 2014)		
Activity 3.4	Provide training in numeracy and literacy skills and business and financial management to CBO committees (70 people, 35 women) to enable them to facilitate community engagement in livelihood development and diversification initiatives		
Activity 4.1	Identify priority areas for rangeland biodiversity and regional stakeholders that could benefit from Participatory Rangeland Management in Ethiopian Borana Rangelands, to direct implementation of Oromia regional Pastoralist Develop Strategy to inform Activity 4.5		
Activity 4.2	Provide training in fundraising, communications and monitoring impacts of interventions to in-country partners and CBOs to enable them to build on project outcome in the long-term		

Activity 4.3	Facilitate transfer of skills and expertise between EWNHS and SOS Sahel project staff eg the value of biodiversity conservation in development and participatory processes for rangeland management
Activity 4.4	In Yr3, hold stakeholder visits to demonstration kallos and national level multi-stakeholder workshop at Liben Plain, including to raise awareness and promote integration of biodiversity conservation into sustainable grassland management systems for application at other priority grassland sites in Ethiopia
Activity 5.1	Formalise roles and responsibilities, including project management and implementation structure in project partnership agreements
Activity 5.2	Collect baseline data on current milk production levels and hunger gap assessment (stratified sample of the 10,000 households);
Activity 5.3	Analyse CBOs capacity needs self-assessments (done under activity 3.1)
Activity 5.4	Carry out baseline survey of Liben Lark distribution and productivity
Activity 5.5	Facilitate 6-monthly Steering Committee meetings to evaluate project process towards impact
Activity 5.6	Monitor project progress on a monthly basis through liaison with all partner staff
Activity 5.7	Undertake repeats of baseline surveys and produce comparative analysis reports on: <ul style="list-style-type: none"> 1. Milk production level/ hunger gap assessment survey (stratified sample of the 10,000 households); 2. CBOs capacity needs self-assessments 3. Liben Lark distribution

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

Project summary	Measurable Indicators	Progress and Achievements
<p>Impact:</p> <p>Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.</p>		<p>The kallos provided the main source (70%) of fodder available during the 2016/17 drought.</p> <p>Our calculations suggest that the 303 ha of kallos currently in place should be able to support 2,727 cows, giving additional food to approximately 909 households (4,545 - 7,272 people) during the hunger gap period (see Section 4.3).</p> <p>The Liben lark population has continued to decline, with only 10 birds recorded in 2018 in comparison to 67 in 2007 on the same transects (see Fig. 3). The larks were observed foraging and using the kallos in 2018, so it is likely that the kallos enhance the quality of foraging habitat and the situation may have been worse if it were not for the presence of the kallos during the drought.</p> <p>The established Cooperative and subsequent training delivered from partners has empowered the local community through livelihood support training e.g. cattle fattening (see Annex 7.7).</p> <p>The challenge in terms of the overall impact of this project was that the kallos established in YR1 were not on the scale needed to address the demand for fodder during this time (see Annex 7.3).</p>
<p>Outcome Sustainable management of the Liben Plain initiated to enhance livelihoods and food security for c.10,000 pastoralists, prevent mainland Africa's first bird extinction and integrate biodiversity conservation into Ethiopian rangeland recovery</p>	<p>Indicator 1: By end of project, around 2,000 pastoralist households (c.10,000 people, including c.2,000 women and c.6,000 children) on and around the Liben Plain have improved access to fodder for their cattle (and other livestock) in the dry seasons.</p> <p>By end of project, socioeconomic surveys quantify dry season milk production and food shortage</p>	<p>Through the establishment of five kallos on Liben Plain, as mapped in Fig. 1 & Fig. 2, sustainable management of Liben Plain has been initiated.</p> <p>Indicator 1: By the end of the project, a total of 303 ha of kallos are established on Liben Plain. This will provide access to fodder for 909 pastoralist households during the dry season, as evidenced in Section 3.</p> <p>The socio-economic survey completed in 2015 and repeated in 2018 has quantified the dry season milk production and food shortage as evidenced in Annex 7.3.</p> <p>A Kallo Management Committee and a Kallo Management Steering Committee has been established since YR1 of the project. Evidence of the by-law and meetings are provided in Annex 7.1.</p>

	<p>By end of project, communities have developed by-laws and benefit sharing agreements to govern the use of kallos, and at least 350 hectares of kallos have been created, encouraging growth in the kallos of high-value grasses for fodder</p> <p>Indicator 2: By end of project, one CBOs (70 people, >35 women) have the capacity to support communities to implement livelihood development/diversification initiatives.</p> <p>By end Yr 1: One CBO established and are developing business plans for most feasible livelihood development and diversification schemes.</p> <p>By end Yr 2: Business plans developed; training of CBO committee in progress.</p> <p>Indicator 3: By end of project, the precipitous population decline of the Critically Endangered Liben Lark has been slowed</p> <p>By end of project, surveys undertaken after kallo creation indicate use of kallo grassland by birds for breeding and foraging</p> <p>Indicator 4: By end of project, the potential for integrating biodiversity conservation with pastoralist</p>	<p>Indicator 2: The Simphire Liben Cooperative has been established with four village-level CBOs, and membership has increased by 18% over the course of the project. The Cooperative had 102 members of which 55 are male and 47 are female by the end of the project.</p> <p>A business plan for livelihood development has been produced, as evidenced in Annex 7.6.</p> <p>Literacy and numeracy training has been delivered to 76 women and 77 men in the project in YR1 and YR2. Cattle fattening training has been delivered to 30 people. Training evidenced in Annex 7.7.</p> <p>Indicator 3: A team were able to visit Liben Plain in June 2018 and complete a Liben lark survey. Unfortunately, numbers were very low with only 10 birds being recorded, in comparison to 67 in 2007 (see Fig. 3).</p> <p>However, it is possible that the kallos provided the only suitable foraging habitat during the 2016/17 drought (although we have no data to support this), suggesting that the situation may have been worse if it were not for kallos being present during this time.</p> <p>Indicator 4: A stakeholder workshop was held in Addis in September 2018 which was attended by 14 stakeholders including local and national government, and feedback was received from all participants including feedback on PRM, as evidenced in Annex 7.10.</p> <p>A Lessons Learnt and guidance report was produced as evidenced in Annex 7.15.</p>
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	<p>development is understood by at least 5 key government and civil society stakeholders.</p> <p>By end Yr 1, kallos established on the Liben Plain provide a demonstration of how biodiversity and development can be delivered through Participatory Rangeland Management</p>	
<p>Output 1. Participatory Rangeland Management process facilitates development of an institutional framework for managing community grassland reserves ('kallos')</p>	<p>1.1 By end of Month 4, Kallo Management Committees are established with equitable representation from all stakeholder groups (including women)</p> <p>1.2 By end of Month 4, stakeholders, including communities, Government and civil society have agreed locations for kallos, and developed management, and equitable benefit-sharing agreements for them, upheld through by-laws</p> <p>1.3 By end of project, Kallo Management Committees are distributing dry season forage under agreed management and equitable benefit sharing approaches</p>	<p>1.1 A Kallo Management Committee (17 people) and a Kallo Management Steering Committee (7 people) have been established since YR1. Members include Government staff, village elders, village leaders, pasture elders and 3 women. Evidence provided in Annex 7.1</p> <p>1.2 Stakeholders decided on locations, benefit-sharing approach and management of kallos by July 2015. Kallo management by-law finalised and signed by September 2015 Evidence provided in Annex 7.1</p> <p>1.3 Due to the start of the drought in YR1, 90 ha of Kallos were harvested to provide emergency dry season forage under the management agreement by-law. Following the drought, usual distribution methods were resumed.</p>
<p>Activity 1.1 Undertake a Participatory Rangeland Resource Assessment</p>		<p>Completed.</p>
<p>Activity 1.2. Support customary institutions and Government bodies to establish joint Kallo Management Committees to oversee community kallos through the Participatory Rangeland Management process</p>		<p>Completed.</p>

<p>Output 2. Trials of grassland restoration indicates that kallos can increase dry season food security for pastoralists equitably and can restore grassland quality and Liben Lark habitat</p>	<p>2.1 By end of project, scrub cleared from up to 1,000 ha within the current kallos and adjacent areas occupied by Liben Larks, increasing the size of the open Liben Plain by c.14%</p> <p>2.2 By end of project, fences made using cut scrub (underplanted with non-invasive euphorbia to create permanent living fences) demarcate community kallos covering around 350 ha, located to capture >20% of the core area occupied by Liben Larks</p> <p>2.3 By end of project, grass sward heights, are 50% higher within kallos than outside</p> <p>2.4 By end of project, 50% of the population of Liben Larks are using the kallos and areas cleared of scrub for breeding and/or foraging.</p> <p>2.5 By end of project, at least 75% of all c.2,000 pastoralist households (including at least c.5,000 women and girls and over c.300 households headed by women) have access to fodder from kallos during the dry season</p>	<p>2.1 The total area of scrub cleared was approximately 1,398 ha over the course of the project, therefore increasing the area of grassland on Liben Plain by 18.6%, as evidenced in Fig. 1.</p> <p>2.2 By the end of the project, a total of five kallos have been established, covering a total area of 303.02 ha which were repaired/produced following the drought in the time scale of the project. The areas of each kallo have subsequently been calculated in ArcGIS as shown in Fig. 1 & Fig. 2. These kallos are known as Gamme, Haro-chiracha, Harsido, Wachu-bilta and a currently unnamed kallo north of Wachu bilta; see Table 1.</p> <p>2.3 The grass sward heights were >50% higher inside the kallos than outside the kallos, as evidenced in Fig. 4.</p> <p>2.4 Only 10 birds were recorded in the 2018 survey. Of these, four were located in or near the kallos and determined the location of the kallos created in Sept/Oct 2018, as evidenced in Fig 2. Two larks were observed foraging in one kallo (Gamme) in 2018.</p> <p>2.5 Our calculations suggest (Section 4.3 for details) that the 303 ha of kallos we have created can support approximately 909 households (c.45% of pastoralist households), or 4,545 - 7,272 people through the hunger gap.</p>
<p>Activity 2.1. Committees identify and establish local teams to build the kallos</p>	<p>Completed.</p>	
<p>Activity 2.2. Remove acacia scrub from up to 1,000 ha of grassland, inside and outside kallos, adjacent to existing Liben Lark populations, to</p>	<p>Completed.</p>	

encourage range expansion and grassland restoration (increasing the size of the open plain by 14%)	
Activity 2.3. Use cut acacia scrub, underplanted with euphorbia, to create four kallos of a maximum of 100 ha each in key sites for Liben Larks	Completed, but not to 400 ha in size. Five kallos covering a total area of 303 ha were created by the end of the project, as shown in Fig 1 & Fig. 2
<p>Output 3. Pastoralist communities have the capacity to develop livelihoods</p>	<p>3.1 By end Month 6, one CBO's baseline capacity needs self-assessments complete and opportunities for equitable livelihood development are identified and prioritised by communities</p> <p>3.2. By end of Yr1, one community based organisation (CBO) are established to manage livelihood development and diversification initiatives</p> <p>3.3. By end of Month18, one CBO has developed business plans for sustainable development initiatives, potentially including resource centre for visitors and local people, communal vehicles, milk collection and storage point (all are ideas suggested by local people during visit in November 2014)</p> <p>3.4. By end of Yr 2, 70 pastoralist (35 male heads of household and 35 female heads of household) household heads are receiving training in basic numeracy and literacy skills and business and financial management to facilitate community engagement in livelihood initiatives</p> <p>3.1 Baseline capacity needs of the four CBOs were recorded through self-assessment questionnaires in 2015 which were repeated in 2018; as evidenced in Annex 7.5.</p> <p>3.2 The certification of the Simphire Liben Cooperative, a local Community-based Organisation (CBO) under which four village level CBOs have been established in Miesa, Fulo, Haro Chiracha and Game & Dibe Ademo, a major achievement of the project.</p> <p>3.3 Market assessments were completed and a viable business plan for the Cooperative was developed in YR1 (see Annex 7.6). Implementation of the business plan was planned for YR2 and YR3 but was not completed due to the drought.</p> <p>3.4 Over the course of the project basic literacy and numeracy training has been provided to a total of 153 people (76 female and 77 male). Business and financial management training has been provided to 101 heads of households (68 male and 33 female). (see Annex 7.7).</p> <p>3.5 Details of microfinancing were collated (see Annex 7.8) and the CBO received a revolving fund of 79,000.00 ETB (c.£2,600), meant for livelihood diversification, in 2016. Additional microfinancing was received by the CBO in YR3 of 150,000 ETB (c.£4,000) from the local Government (see Annex 7.8).</p>

	3.5. By end of project, the CBO is in discussions with donors or applying to microfinance schemes to secure funding for livelihood initiatives	
Activity 3.1 Support CBOs to undertake a self-assessment of their capacity needs and prioritise needs for enabling equitable livelihood development and diversification		Completed.
Activity 3.2 Support local communities to develop/establish one Community-Based Organisations (CBOs) to manage and oversee livelihood and infrastructure development initiatives		Completed.
Activity 3.3 Support CBOs to develop business plans that potentially could include: a resource centre for visitors and local people, communal vehicles, milk collection/storage point and local commodities shop (ideas suggested by local people during visit in November 2014)		Completed.
Activity 3.4 Provide training in numeracy and literacy skills and business and financial management to CBO committees (70 people, 35 women) to enable them to facilitate community engagement in livelihood development and diversification initiatives		Completed.
Output 4. Project partners maintain and build on the outcome of the project and promote Participatory Rangeland Management to conserve biodiversity across Ethiopia's rangelands in the long-term	<p>4.1. By end of Yr 1, priority areas for biodiversity in Ethiopian Borana rangelands are identified for establishing Participatory Rangeland Management, linked to the Oromia Regional Pastoralist Development Strategy</p> <p>4.2. By end of project, regional stakeholders managing priority biodiversity areas (Indicator 1) that could benefit from Participatory Rangeland Management processes and from integration of biodiversity conservation into management practices are identified</p>	<p>4.1 In 2016, criteria for identifying priority biodiversity areas for consideration in the Oromia Pastoralist Development Strategy were developed and led to the identification of nine priority sites that would benefit from Participatory Rangeland Management (see Annex 7.9).</p> <p>4.2 Meetings were held in Ethiopia in June 2017 with project partners to identify priority biodiversity areas and stakeholders which would benefit from participatory rangeland management in Ethiopia (see Annex 7.9).</p> <p>4.3 A Sustainability Plan was produced (see Annex 7.12) outlining the next steps to sustain the projects' outcome over the next year and suggestions of what is required longer-term to achieve an improvement in both food security and Liben lark population status.</p> <p>4.4 In terms of sustaining the outcome of this project, two funding proposals were written jointly with the partners and were successfully submitted, one</p>

	<p>4.3. By end of project, a plan for sustaining the kallo system on the Liben Plain is agreed by project partners and stakeholders</p> <p>4.4. By end of project, SOS Sahel and EWNHS staff submit one proposal for funding to donors and supporting CBOs in implementing business plans and monitoring project interventions</p> <p>4.5. By end of project, partners have promoted Participatory Rangeland Management and biodiversity mainstreaming to 30 stakeholders in Ethiopia, through a workshop completed by end of project and other relevant channels.</p>	<p>was unsuccessful (Christensen) and the other is awaiting confirmation (Whitley Fund for Nature) (see Annex 7.11).</p> <p>4.5 A stakeholder workshop was held in Addis in September 2018 attended by 14 stakeholders including local and national Government; and feedback on PRM was received by all participants with 91% saying they would promote this technique (see Annex 7.10).</p>
<p>Activity 4.1. Identify priority areas for rangeland biodiversity and regional stakeholders that could benefit from Participatory Rangeland Management in Ethiopian Borana Rangelands, to direct implementation of Oromia regional Pastoralist Develop Strategy to inform Activity 4.5</p>		<p>Completed.</p>
<p>Activity 4.2. Provide training in fundraising, communications and monitoring impacts of interventions to in-country partners and CBOs to enable them to build on project outcome in the long-term</p>		<p>Completed.</p>
<p>Activity 4.3. Facilitate transfer of skills and expertise between EWNHS and SOS Sahel project staff eg the value of biodiversity conservation in development and participatory processes for rangeland management</p>		<p>Completed.</p>
<p>Activity 4.4. In Yr3, hold stakeholder visits to demonstration kallos and national level multi-stakeholder workshop at Liben Plain, including to raise awareness and promote integration of biodiversity conservation into sustainable grassland management systems for application at other priority grassland sites in Ethiopia</p>		<p>Completed, though due to security concerns in Negele the stakeholder workshop was held in Addis. Despite this, there was good representation of local government officials at the workshop. The Lessons Learnt and Guidance document was distributed to a wider group of stakeholders beyond the workshop.</p>

<p>Output 5. Project management, monitoring and evaluation structures and processes ensure that the project objectives are achieved on schedule and within budget</p>	<p>5.1. By end of month 2 project partners have signed partnership agreements and confirm their respective roles and responsibilities</p> <p>5.2. By end Yr 1, Baseline surveys complete: 1. milk production level/hunger gap assessment survey (stratified sample of the 10,000 households – part of PRRA); 2. CBO capacity needs self-assessments; 3. Liben Lark distribution and productivity surveys</p> <p>5.3. Project partner Steering Committee meets twice annually</p> <p>5.4. By end of project, repetition of all baseline surveys complete</p> <p>5.5. All financial and progress reports submitted to the project manager and project donor on time</p>	<p>5.1 In YR1 project partners decided to amalgamate the Steering and Implementation Committees due to the overlap in membership and restrict the meetings to project partners only. Key evidence for this is the Partnership Management Agreement, and the Project Steering Group meeting notes (see Annex 7.16).</p> <p>5.2 The socio-economic survey questionnaires were redesigned in 2017/18 aiming to capture the impact the kallos may have had during the drought. See Section 4.5 for details on the socio-economic survey. See Output 3 above for details on the CBO capacity needs assessments. See Output 2 above for details on Liben lark distribution.</p> <p>5.3 The Steering Group had regular meetings, as evidenced in the Project Steering Group meeting notes (see Annex 7.16).</p> <p>5.4 Repetition of baseline socio-economic and lark surveys were completed</p> <p>5.5 Any delays in reporting to Darwin have been agreed in advance and change requests have been submitted as required, see Section 6.1.</p>
<p>Activity 5.1. Formalise roles and responsibilities, including project management and implementation structure in project partnership agreements</p>	<p>Completed.</p>	
<p>Activity 5.2. Collect baseline data on current milk production levels and hunger gap assessment (stratified sample of the 10,000 households);</p>	<p>Completed.</p>	
<p>Activity 5.3. Analyse CBOs capacity needs self-assessments (done under activity 3.1)</p>	<p>Completed.</p>	
<p>Activity 5.4. Carry out baseline survey of Liben Lark distribution and productivity</p>	<p>Completed.</p>	
<p>Activity 5.5 Facilitate 6-monthly Steering Committee meetings to evaluate project process towards impact</p>	<p>Completed.</p>	

<p>Activity 5.6. Monitor project progress on a monthly basis through liaison with all partner staff</p>	<p>Completed.</p>
<p>Activity 5.7. Undertake repeats of baseline surveys and produce comparative analysis reports on:</p> <ol style="list-style-type: none"> 1. Milk production level/ hunger gap assessment survey (stratified sample of the 10,000 households); 2. CBOs capacity needs self-assessments 3. Liben Lark distribution 	<p>Completed.</p>

Annex 3 Standard Measures

Code	Description	Total	Nationality	Gender	Title or Focus	Language	Comments
Training Measures							
1a	Number of people to submit PhD thesis	1	Ethiopian	Female	Designing a rangeland to preserve Africa's most endangered mainland bird and a people's way of life	English	
1b	Number of PhD qualifications obtained	1	Ethiopian	Female	Designing a rangeland to preserve Africa's most endangered mainland bird and a people's way of life	English	
2	Number of Masters qualifications obtained	0	-	-	-	-	
3	Number of other qualifications obtained	0	-	-	-	-	
4a	Number of undergraduate students receiving training	1	British	Male	Liben lark surveys	English	
4b	Number of training weeks provided to undergraduate students	2	British	Male	Liben lark surveys	English	
4c	Number of postgraduate students receiving training (not 1-3 above)	0	-	-	-	-	

4d	Number of training weeks for postgraduate students	0	-	-	-	-	
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification (e.g., not categories 1-4 above)	0	-	-	-	-	
6a	Number of people receiving other forms of short-term education/training (e.g., not categories 1-5 above)	284	Ethiopian	113 women, 171 men	Basic literacy & numeracy; Business and financial management training; livelihood initiative training	Local language	
6b	Number of training weeks not leading to formal qualification	Unknown	-	-	-	-	
7	Number of types of training materials produced for use by host country(s) (describe training materials)	1	NA	NA	Participatory Rangeland Management for the benefit of pastoralists and biodiversity: Guidance and Lessons Learnt from the Project	English	
Research Measures		Total	Nationality	Gender	Title	Language	Comments/ Weblink if available

9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (ies)	2	NA	NA	(1) Local by-law for kallo management. (2) A lessons-learnt and guidance for Participatory Rangeland Management (PRM) report was produced to summarise PRM and the project for other stakeholders	(1) Local language (2) English	Participatory process
10	Number of formal documents produced to assist work related to species identification, classification and recording.	0	-	-	-	-	
11a	Number of papers published or accepted for publication in peer reviewed journals	0	-	-	-	-	
11b	Number of papers published or accepted for publication elsewhere	0	-	-	-	-	
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	2	NA	NA	(1) Socio-economic database (2) Grass sward data	English	

12b	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country	1	NA	NA	Liben lark population estimates	English	
13a	Number of species reference collections established and handed over to host country(s)	0	-	-	-	-	
13b	Number of species reference collections enhanced and handed over to host country(s)	0	-	-	-	-	

Dissemination Measures		Total	Nationality	Gender	Theme	Language	Comments
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	1	NA	NA	Stakeholder workshop	English	14 stakeholders participated
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	1	Kenyan	Female	Student Conference on Conservation Science	English	Poster presented

Physical Measures		Total	Comments
20	Estimated value (£s) of physical assets handed over to host country(s)	388	Cooperative building and furniture
21	Number of permanent educational, training, research facilities or organisation established	1	Cooperative building and furniture
22	Number of permanent field plots established	5	Over the course of the project, five kallos were created. Four were largely destroyed during the 2016/17 drought, but were re-established

Physical Measures		Total	Comments
			during the remainder of the project. These kallos are still in existence and will be maintained beyond the scope of the project.

Financial Measures		Total	Nationality	Gender	Theme	Language	Comments
23	Value of additional resources raised from other sources (e.g., in addition to Darwin funding) for project work	£100,244	NA	NA	NA	NA	Co-funding from project partners

Annex 4 Aichi Targets

	Aichi Target	Tick if applicable to your project
1	People are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	X
2	Biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	
3	Incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.	
4	Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	
5	The rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	
6	All fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	
7	Areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	X
8	Pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	
9	Invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	
10	The multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	
11	At least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	

12	The extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	
13	The genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	
14	Ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	X
15	Ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	
16	The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.	
17	Each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	
18	The traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.	X
19	Knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	
20	The mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.	

Annex 5 Publications

Type *	Detail (title, author, year)	Nationality of lead author	Nationality of institution of lead author	Gender of lead author	Publishers (name, city)	Available from (e.g. web link, contact address etc)
PhD thesis	Bruktawit Abdu Mahamued. Designing a rangeland to preserve Africa's most endangered mainland bird and a people's way of life (2016)	Ethiopian	British	Female	NA	NA
Drafted manuscript for peer-review	Bennett et al., Institutional conflict over collective rangeland management by Borana Pastoralists on the Liben Plain, Southern Ethiopia.	British	British	Male	TBC	NA
Drafted manuscript for peer-review	Mahamued et al., Rangeland habitat loss and lark population decline	British	British	Male	TBC	NA

Annex 6 Darwin Contacts

Ref No	22-015
Project Title	Sustainable management of an Ethiopian rangeland for biodiversity and pastoralists
Project Leader Details	
Name	Sarah Havery
Role within Darwin Project	Project Coordinator
Address	RSPB Headquarters
Phone	
Fax/Skype	
Email	
Partner 1	
Name	Paul Kariuki Nding'ang'a
Organisation	BirdLife Africa Partnership Secretariat
Role within Darwin Project	Project sustainability and legacy
Address	
Fax/Skype	
Email	
Partner 2	
Name	Mengistu Wondafrash
Organisation	Ethiopian Wildlife and Natural History Society
Role within Darwin Project	Director - EWNHS
Address	
Fax/Skype	
Email	
Partner 3	
Name	Teshome Dega
Organisation	SOS Sahel Ethiopia
Role within Darwin Project	Project Manager – SOS Sahel
Address	

Fax/Skype	
Email	
Partner 4	
Name	James Bennett
Organisation	Coventry University
Role within Darwin Project	Scientific support – grassland recovery
Address	
Fax/Skype	
Email	
Partner 5	
Name	Huw Lloyd
Organisation	Manchester Metropolitan University
Role within Darwin Project	Scientific support – biodiversity & Liben lark recovery
Address	
Fax/Skype	
Email	

Have you included means of verification? You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Y
Do you have hard copies of material you want 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.	N
Have you involved your partners in preparation of the report and named the main contributors	Y
Have you completed the Project Expenditure table fully?	Y
Do not include claim forms or other communications with this report.	