

Darwin Initiative Main: Annual Report

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

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

Submission Deadline: 30th April 2023

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Darwin Initiative Project Information

Project reference	28-002
Project title	Pioneering sustainable grazing for plants and livelihoods in Cape Verde
Country/ies	Cabo Verde
Lead Partner	Fauna & Flora International
Project partner(s)	Associação Biflores
Darwin Initiative grant value	£ 341,546
Start/end dates of project	1 st October 2021 – 30 th June 2024
Reporting period (e.g. Apr 2022 – Mar 2023) and number (e.g. Annual Report 1, 2, 3)	Apr 2022 – Mar 2023, Annual Report 2
Project Leader name	Sara Calçada
Project website/blog/social media	N/A
Report author(s) and date	Sara Calçada, Dheeraj Jayant, Annkathrin Sharp, April 2023

1. Project summary

Covering 62.5km², Brava, “the island of flowers”, has unique microclimates, making it the greenest of Cabo Verde’s islands. Cabo Verde hosts 92 endemic plants, 78% of which are threatened with extinction, making Cabo Verde’s flora the most threatened in Macaronesia. Brava supports among the highest numbers of endemic species (24 confirmed to date) of Cabo Verdean islands. The primary livelihood of Brava’s ~5,000 residents is subsistence agriculture, animal husbandry, and fishing. Brava’s remoteness and lack of accessibility (and other public services) limit livelihood opportunities for its residents. Surveys (2018) by FFI and Biflores identified frequent overgrazing and overcrowding by non-native invasive plants and consequently little regeneration of threatened endemic plants. Goats (est. 1,285 animals), cows (est. 506 animals) and other domestic mammals, like donkeys, pigs and chickens (est. 2,465 animals) roam freely (2020 survey by the Ministry of Agriculture and Environment), grazing every leaf that they can find and preventing plant regeneration. Abandonment of land cultivation and abandonment of animals due to migration (induced by lack of availability of water and other socio-economic factors) are an important reason for free and uncontrolled grazing.

Grazing animals were introduced on Cabo Verde in the 1400s; hence, ecosystems are not adapted and are particularly sensitive to grazing pressures. Soil erosion and recurrent severe droughts exacerbate issues, contributing to the loss of pasture, declining crop productivity, and

the loss of livestock to slaughter as herds cannot be supported through prolonged dry seasons. Brava may also face future threats from the increasing aridity that currently affects other islands, especially at lower elevations, which could lead to species population reductions and restrictions on their distribution ranges. Brava's "Ribeira de Fajã d'Água", a Key Biodiversity Area (KBA) recognises the island's extraordinary but fragile plant diversity. This part of the island (1.1km²) was designated an Important Plant Area (IPA) in 2017, containing Critically Endangered plants such as *Launae thalassica* (which occurs exclusively in Brava), as well as Endangered species with extremely restricted ranges, such as *Echium hypertropium*, *Campanula bravensis* and *Diplotaxis varia* (over 10% of these species' world population is found in this KBA). Additionally, these plants are highly valued by the local communities that use them for their food, animal nutrition and disease treatment. This KBA, the only one in the island, has the highest significant potential to demonstrate sustainable agriculture approaches in Bravo to implement sustainable and data-driven grazing and land management strategies that protect endemic species, improve livelihoods, and increase local resilience to climate change. Initially supporting sustainable grazing management at the local scale in Ribeira de Fajã d'Água (Output 1), the project will also generate evidence needed to inform island-wide grazing management and conservation strategies (Output 2), and influence grazing management across Cabo Verde (Output 3).



Map of Brava and Cabo Verde in inset.

2. Project stakeholders/ partners

Overgrazing is considered a key priority issue in Cabo Verde by both government and NGOs. Whilst there are and have been other initiatives addressing part of this issue (or related issues) – such as goat husbandry, fodder production, drought, soil erosion, livestock production – our project is the first aiming to develop a holistic, sustainable grazing management plan (hereafter ‘management plan’) in Cabo Verde, with the initial scope focused on Brava as a model to be replicated across the archipelago. This is of great interest to other islands and organisations, as it could help address and fulfil goals/commitments for government and NGOs alike. Overall, partnerships, engagements and collaborations listed below are demand-led.

Stakeholder / Partner	Named in proposal?	Role (Interest / Influence)	Update
Biflores	Yes	Main project partner, leading on in-country implementation, and acting as a connector between FFI and other in-country stakeholders.	<p>FFI held regular meetings with Biflores to share project updates, exchange expertise (or facilitate access to it) and plan next steps.</p> <p>In April/May 2022, having demonstrated impressive performance in the project and knowledge of agronomy, the former Project Assistant was promoted to Project Coordinator and has led implementation of in-country activities, providing an invaluable connection between the Ministry of Agriculture and Environment (MAA), the livestock keepers, and FFI’s project team. While this enabled great strides in implementation, Biflores’ Director left in May 2022, with the position vacant until September 2022. During that period, the project managers at Biflores had to support core organisational management, so FFI’s Project Lead had to fulfil additional roles, and FFI has brought in some further, though limited, in-house capacity to ensure delivery of the project. In addition to the organisational and governance guidance provided in Yr2, FFI’s technical staff supported with both remote and in-person capacity-building, such as drone survey and GIS training (see Annex 9Q).</p> <p>Since the current Director has been in position, Biflores has recruited a Project Assistant, and has led all in-country implementation, engaging other stakeholders and consulting FFI’s technical expert team regularly. Biflores’ Director and FFI’s Project Lead are in constant contact and project implementation has been going smoothly.</p>
Municipality of Brava / Câmara Municipal da Brava (CMB)	Yes	The Municipality of Brava is a governmental partner in the project participating in workshops, providing advice and access to information. They will approve the final output, and provide a crucial link with the authorities, ensuring the feasibility and legality of the actions decided on in the management plan.	<p>FFI and Biflores have continued to coordinate project activities closely with the MAA and CMB.</p> <p>The head of the MAA for Brava left in September, and their replacement has been very actively engaged with Biflores in supporting design and budget for 3 corrals,</p>

<p>Ministry of Agriculture and Environment (MAA) / National Directorate for Environment (DNA)</p>	<p>No</p>	<p>The Brava-specific office for MAA/DNA is a governmental partner in the project, participating in workshops, providing advice and access to information, and providing a crucial link with herders and other similar initiatives or expertise in other islands. They will also approve the final output, and will ensure the feasibility and legality of the actions decided on in the management plan. They are the ultimate decision-makers and owners of the management plan.</p>	<p>We continue to support them to establish measures to protect biodiversity of Brava; similarly, the establishment of botanical gardens was also a priority for them, not only for our project.</p> <p>Past interactions with the MAA have been limited, due to availability of DNA representatives. However, the current MAA/DNA office have been actively engaged and supportive: supporting with fodder production and building capacity on drip irrigation. They also supported Biflores in contacting livestock keepers (they are the holders of the herder's database for Brava) and provided input into designing and budgeting the corrals.</p> <p>A new delegate was appointed to the Ministry of Agriculture and Environment in October 2022.</p> <p>Biflores has developed a strong relationship with the technicians and the delegate of the MAA and has been entrusted with a project to remove invasive species, maintain the forest perimeter in the high-altitude zones and initiate a cloud-moisture harvesting effort.</p> <p>The councillor of the CMB responsible for the environment was transferred in August 2022 and the function has not been replaced since. This represents a challenge for Biflores' partnership with the Camara Municipal. To address this, Biflores organises periodic meetings with the President of the CMB Francisco Tavares and the Vice President Ivone Cardoso, and intends to strengthen those relationships in anticipation of the inclusion of the management plan into the municipal code in Yr3.</p> <p>Biflores has constructed a Sustainable Grazing working group comprised of three technicians of the MAA, the delegate of the MAA, the Vice President and President of the CMB and three members of the Biflores staff. This working group supported the organization of a participatory event to elaborate an island-wide sustainable grazing management plan and will continue to work to implement this plan.</p>
<p>Community Association of Fajã d'Água</p>	<p>Yes</p>	<p>The association is mostly involved in developing and implementing projects related to community development such as financial and organisational support to herders and fishermen (with fishing gear and drip systems). The association has also participated in an environmental conservation project with local NGO "POSER-clima." The association will support engagement with and among local farmers, a key element of this project. As a well-</p>	<p>The Community Association of Fajã d'Água remains dormant. However, Biflores maintains relationships with partner livestock keepers (Beto and Djimoca) and the President of the Association (Sonia Andrade), who is also the President of Biflores' Board.</p>

		established and known entity on the island, they will act as a point of contact for farmers, directly supporting Biflores' and FFI's project staff with activities under Output 1 and indirectly under Output 2.	
National Agricultural Research and Development Institute (INIDA)	Yes	<p>Researchers from INIDA will provide technical and botanical expertise, and may facilitate the participation of students in the project's research activities by liaising with the University of Cape Verde (UniCV).</p> <p>FFI has already engaged with INIDA in the past, through a CEPF Small Grant-funded project in Brava on conserving endangered plants.</p>	Biflores has established a relationship with Isildo Gomes, the leading endemic plants specialist at INIDA. In October 2022, Biflores and Dr. Gomes organized a training on field techniques for endemic plant conservation for technicians of the MAA, Projeto Vitó (NGO in neighbouring island of Fogo) and the Brava forest guards. Biflores also organized a training with INIDA on botanical surveys and techniques of ex-situ conservation for its own team in Santiago in February 2023.
Livestock keepers of Brava	Yes		At the start of Yr2, Biflores completed a socio-economic survey (designed by FFI's project team) of 132 livestock keepers from 12 communities, to help establish the baseline for the project and to engage the participation of as many livestock keepers as possible. Through close collaboration and technical support, we have further strengthened relationships with this group, and received positive engagement in the project. Biflores has also established a partnership with a third livestock keeper for the construction of a corral and pilot monitoring.
Land owners	Yes		<p>A significant proportion (quantified through questionnaires with livestock keepers/farmers) of landowners are not the livestock keepers that use the land, nor are they based in Brava.</p> <p>Communication is primarily conducted remotely through the livestock keepers who use the land. These landowners also own the land where we intend to establish/implement fodder production.</p>
Projecto Agrofloresta – Santo Antão	No	Agrofloresta is a project based in Santo Antão, focusing on increasing agricultural productivity and resilience to climate change through the implementation of agroforestry systems on the island of Santo Antão, applying the principles of agroecology.	As we weren't able to recruit an in-country agronomist (Change Requests 1 and 2), we reached out to entities and initiatives related to agronomy and/or grazing and/or agroecology. Whilst these entities acknowledged not having the expertise we initially required for our consultancy, we have agreed to collaborate and exchange lessons, as both projects seek to improve agricultural productivity and fodder production.
Association for the Protection of Mertola Heritage (ADPM)	No	This project is supported by ADPM, an NGO based in Portugal.	We have sought to further develop relationships with both organisations in Yr2 and have planned consultancy and training provision with them for Yr3, with participation from Biflores and Brava's MAA, and the inclusion of any of Brava's livestock keepers interested in participating in practical training.

International Centre of Rural and Agriculture Studies (CERAI)	No	CERAI is a Spanish international development NGO specialised in rural development and sustainable agriculture with a focus on Food Sovereignty. CERAI aims to contribute to the development of rural communities improving the well-being of families and environment, defending farmers' interests to have equal access to means of productions, improving decision-making participation, raising awareness and respect values to the peasant culture and contributing to women empowerment in the rural society. They have an office in São Vicente.	In Yr1, we hoped CERAI would play the role of in-country agronomist consultants, which was not possible, so FFI and Biflores shared their own in-house expertise. However, more recently Biflores engaged with CERAI and AAN during the Agricultural fair in Praia, February 2023. We will continue to develop this relationship to organise exchanges of technical expertise.
Friends of Nature Association (AAN)	No	AAN is a Cabo Verdean NGO focusing on reforestation, sanitation and livestock husbandry.	
Veterinary Services – Be Safe	No	Dr. Rodrigues graduated at the top of her class in Zootechnics at the Federal University of Santa Catarina (Brazil) and has returned to her native Cabo Verde as a highly qualified local specialist with experience in animal reproduction and genetics, nutrition, wellbeing, and treatment of disease,	Be Safe, through zootechnician Dr. Cris Rodrigues, has been contacted and expressed interest and availability to provide support on animal nutrition, identification and treatment of parasites, and animal wellbeing. Biflores plans to organise a training with Dr. Rodrigues for its project staff and the technicians of the MAA on basic veterinary needs, animal wellbeing and nutrition, and a training directly provided to the livestock keepers. The proposed training package can be found in Annex 10.
Projeto Vitó	No	Conservation NGO based in the Island of Fogo, the island closest to Brava. Projeto Vitó's work extends to Brava too, including focus on endemic plants. As a larger, more established organisation, they have a wealth of experience and lessons that can be passed on to Biflores. See https://doi.org/10.3390/plants11101313 for one of their recent publications.	Biflores' staff have developed close relationships with Projecto Vitó director Herculano Dinis and the Endemic Plants conservation team, whose knowledge and experience of plant conservation in Cabo Verde is extensive. This strengthening of ties has led to extremely fruitful exchanges of learning and experience, and has enabled joint site visits and planning of activities regarding endemic plant regeneration in Brava, environmental education for communities, and ex-situ plant conservation (Photos of the site visits in Annex 9I).

3. Project progress

3.1 Progress in carrying out project Activities

Output 1: Site-based sustainable grazing management plan developed and piloted in the commune and KBA of Fajã d'Água, delivering immediate conservation and wellbeing benefits and informing an island-wide grazing management plan.

Activity 1.1 Early in Yr1, set up a steering group and regular partnership meeting to coordinate the project, including the participative workshops with all stakeholders.

FFI and Biflores organised a meeting in September 2022 to reinvigorate the steering group, propose a template structure for the grazing management plan, and create a working committee to enable a continued and dynamic collaboration between the MAA, the CMB and Biflores, engaging relevant stakeholders as required.

Activity 1.2 In Yr1, carry out workshops and develop an adaptive sustainable grazing management plan for Fajã d'Água with key stakeholders: community, experts and government.

Given the delays in the start of the project (reported in previous Annual report), as well as limitations regarding human resources and capacity at FFI, Biflores, and the MAA at different stages, this activity fell behind. To avoid delaying the project, and whilst Fajã D'Água is the pilot site for grazing management, the results and lessons from this site are instead informing the development of a participatory island-wide grazing management plan.

- FFI's Agronomy Specialist and Analytics Specialists provided the relevant templates and toolkits/approaches for the elaboration of the participatory grazing management plan.
- Biflores used these tools when coordinating the working committee with the municipality (CMB) and the MAA for management plan development, conducting two meetings within Yr2 (Annex 9J) in which Biflores shared baseline data and insights from its analysis, proposed a template for the management plan, garnered institutional support for the development and implementation of this plan, and scheduled six further meetings for April 2023, with more due to be scheduled following the wider participatory workshop later that month. Meetings within Yr2 focused primarily on securing strategic support from delegates and discussing technical approaches with ministry technicians.

Activity 1.3 From Yr2, implement the plan from 1.2 as a pilot, and manage it adaptively, feeding lessons learned back into the plan.

Please refer to Activity 1.2. Whilst there is not currently a written management plan, lessons learned from the field trials, such as livestock GPS tracks (Annex 5) and data on fodder and silage production (Annexes 9G & 12) are being captured and informing the development of the island-wide grazing management plan.

Activity 1.4 From Yr2, monitor the implementation of the plan closely to allow for adaptive management: livestock and wellbeing indicators; vegetation cover and focal plant health.

Vegetation characteristics (cover, richness, etc.), soil erosion and water runoff were monitored at the pilot site, and will continue to be monitored to assess the impact of livestock management on these environmental indicators, and support adaptation of the plan accordingly (Annex 7).

Activity 1.5 Throughout the project, provide veterinary services in Fajã d'Água, to: incentivise project participation, build capacity in animal husbandry including sustainable grazing, and project monitoring.

Basic veterinary care information has been sourced to date from the zootechnician in the MAA, who is an active part of the steering committee for this project. Conversations with livestock keepers in Yr2 revealed that a group of them have already been provided with training by the MAA on basic veterinary and husbandry care. Biflores engaged zootechnician Dr Cris Rodrigues

to provide training and mentoring on animal husbandry and veterinary care for project staff and MAA technicians, practical elements of which will be delivered to livestock keepers (Annex 10).

Two corrals were constructed in the Riberia de Fajã d'Água, for two livestock keepers who volunteered to be part of the pilot activities.

Supported by FFI's Agronomy Specialist, Biflores has provided extensive information and technical support regarding the use of forage crops to produce fodder. The underlying principle is to incentivize every livestock herder to produce forage crops that can then be treated and stored to provide animals with improved nutrition during drought periods. This includes almost monthly demonstrations for communities on fodder production, mineral block production, and storage best practice including (but not limited to) the Brava Agronomy Fair (Nova Sintra, June 2022, Annex 9A), the National Agronomy Fair (Praia, February 2023, Annex 9B), and a workshop in Assomada (Santiago island, February 2023,).

Activity 1.6 Throughout the project, build capacity of community members to address basic veterinary needs in the long-term.

To incentivise community members' participation, the project team supported the construction of corrals, provided information and technical support with fodder production, and hosted workshops, one in November 2022 (Annex 9K), organised in collaboration with the MAA, training 15 livestock keepers on the production of fodder and the treatment of livestock affected by parasites. A second workshop was held in December 2022 on use of local forage crops for improved animal nutrition and health. A practical workshop on the use of the fodder production machine and best practices for storing fodder and mineral blocks was organized by Biflores and the MAA. 15 livestock keepers from various zones participated in the workshop.

Activity 1.7 Conduct a Participatory Impact Assessment with the community of Fajã d'Água at the end of Yr1.

We have conducted and analysed the data from a socio-economic survey consulting 132 livestock keepers across 12 communities, including Fajã d'Água. The survey was conducted island-wide in recognition of the fact we will no longer be producing a pilot management plan for one area only, but have moved directly to begin developing a management plan for all of Brava. This baseline data will also form the basis of our impact assessment at the end of the project. Further details can be found in the survey report (Annex 4).

Activity 1.8 Conduct island-wide baseline outreach on endemic plants and overgrazing in Yr1, including so as to sensitize communities to the project and help result dissemination.

We held a workshop (May 2022) with the steering group to discuss the state of endemic plants and grazing, and perform a participative analysis of the current grazing regime in Brava. 28 livestock keepers and technicians of the MAA and Biflores participated.

Biflores organized an outreach activity (July 2022) to disseminate information on the impact of free grazing and the benefits of alternative approaches (use of corrals, fodder production, etc.) with two groups (Mato Grande – 12 participants, and Lomba Lomba – 6 participants). We coordinated training provided by INIDA on endemic plant identification and flora identification and monitoring for forest guards, MAA technicians, and partner NGO staff in November 2022, and for broader communities, Biflores organised awareness-raising events with schools in Furna, Nossa Senhora de Monte, and Nova Sintra. As part of a parallel project, beginning in January 2023, monthly nature treks were organised for community members to learn to identify endemic plants in their natural context (Annex 9D). In February and March 2023 two educational sessions were held with women's church group members to exchange knowledge on traditional uses of endemic plants, as well as introduce them to the project and its aims (Annex 9E). Finally, in March 2023 Biflores conducted conservation outreach work at a local school professions fair (Annex 9O).

Output 2: New, locally-relevant scientific evidence confirms appropriate grazing management strategies and is available to inform decision-making for island-wide grazing management planning and conservation strategies.

Activity 2.1 Throughout the project, design and conduct field trials: place plots under different grazing regimes, testing endemics' regeneration and interactions between grazers, native and invasive plants.

At two pilot sites in Ribeira de Fajã d'Água and Pedra Molar, we have:

- Provided fodder specimens (Elephant grass *Cenchrus purpureus*, Moringa *Moringa oleifera*, Congo beans *Cajanus cajan*, Cactus *Opuntia cochenillifera*, sugarcane *Saccharum officinarum*, and maize *Zea mays*) for livestock keepers to grow and harvest.
- Instructed livestock keepers in fodder and silage production (Annex 9G)
- Constructed corrals for livestock, using schematics provided by FFI's Agronomy Technical Specialist to ensure suitability for the herds and owner's needs (Annex 9G).
- Tracked livestock movements with GPS collars when free grazing prior to corral construction, and will be conducting GPS tracking when livestock are released for limited grazing periods as well as at diverse locations with more intense free-grazing for comparison (Annexes 5 & 9F).
- Surveyed vegetation and endemic plants on the ground (Annex 9L), and conducted drone surveys for aerial vegetation mapping and monitoring during dry and rainy seasons.
- Planted endangered endemic plant species at Pedra Molar (and at a new, third field trial site in Mato).

All of the above activities and resulting data collected are being used to inform the draft management plan, and will be used to allow comparative assessment of different regimes throughout the project and beyond.

Activity 2.2 In Yrs1-2, test endemic plant germination in a nursery. Plants will include our five focal species, as well as others, following INIDA recommendations.

Biflores has increased its capacity for ex-situ cultivation of endemic plants, including strengthening its partnership with the MAA to increase plant germination capacity in the nursery in Campo Baixo. Biflores has also completed construction of a nursery in the Ribeira de Fajã d'Água (parallel activity in a separate Biflores-led project). After consultation with the INIDA endemic plant specialist Dr. Isildo Gomes, Biflores is concentrating its ex-situ plant production efforts on the following eleven endangered endemic plants: *Echium hipertropicum*; *Launaea thalassica*; *Satureja forbesii*; *Sideroxylon marginata*; *Dracaena draco* subs *caboverdeana*; *Centaurium tenuiflorum* ssp *viridense*; *Campanula bravensis*; *Globularia amigdalifolia*; *Periploca laevigata*; *Campyanthus glaber*, *Diplotaxis glacilis*.

Ex-situ production and experiments for germination of the plants are ongoing in the Nova Sintra and Fajã d'Água nurseries; tree production continues in the Campo Baixo nursery (Annex 9M).

Activity 2.3 In Yrs1-2, measure water run-off and soil loss during the rainy seasons (Aug-Dec) in correlation with vegetation cover and type.

With the technical support of FFI, Biflores has implemented methods to measure water run-off and soil erosion (Annex 6) (Indicator 2.2), as well as describe species abundance and distribution on selected sites in Fajã d'Água. Soil erosion was monitored at four points across two sampling sites: Lomba Lomba Travessa and Fajã d'Água Lagido. Water monitoring was planned according to the methodology, however due to poor rainfall, there was no run-off to monitor in the 2022 rainy season. The initial results of this monitoring can be found in Annex 7.

Activity 2.4 In Yrs1-2, place GPS collars on livestock to facilitate shepherding and improve grazing control; analyse the data to map animal movement and land use.

With the support of the FFI team and the partner livestock keepers, Biflores technicians have tracked the herds of two livestock keepers using GPS collars made with SnapperGPS receivers we secured from the Arribada Initiative through WILDLABS (Indicator 2.3). A home range analysis was produced from these movement maps and provided to the steering committee in Portuguese to inform management plan development. Biflores technicians will continue this activity in other zones that have been identified as intense free-grazing zones, notably Cachaço,

to provide comparative data and inform the development of the management plan. Maps from initial tracking, and a basic home range analysis, can be found in Annex 5.

Activity 2.5 In Yrs1-2, conduct botany surveys in understudied areas (Mato-Campo das Fontes and Sarrado) to complement the existing data from the literature and previous FFI projects.

Biflores recruits were trained on botanical survey methods by Dr. Isildo Gomes of INIDA. Dry season Inventories of flora and vegetation cover in the Ribeira de Fajã d'Água have been completed, and further surveys will be completed during the rainy season (August–November 2023). Botanical surveys for the regions of Mato, Sarrado, Campo das Fontes, Lomba Lomba, Ferreiros and Sorno are ongoing, with expected completion of the first round of surveys by May 2023. These will be repeated during and after the rainy season. Biflores will produce a report (including mapping of distributions of endemic species) for the above-mentioned regions by December 2023.

Activity 2.6 In Yrs1-2, map, using GIS, the vegetation (cover, type) in understudied areas using a drone and cross-referencing with fieldwork described above and participatory mapping.

In June 2022, FFI's Analytics Specialist delivered desk-based and practical training on basic GIS and drone-flying to Biflores staff, to facilitate collection of spatial and visual data needed to produce vegetation cover maps (Indicator 2.4) (Annex 9Q).

In the last year, drone footage of Fajã D'Água both during the dry season and after the rainy season has been collected for vegetation cover maps. Given the size of the files and the poor internet connection on the island, exchange of drone files between Biflores and FFI has only happened 3 times, when both partners meet face to face and can hand over hard drives.

A vegetation map of the whole island during the dry season has been produced (Annex 5) with a second version for the dry season to follow in Yr3, to inform zoning under the island-wide management plan.

Output 3. A Brava-wide temporal, spatial and financial grazing management plan, the first of its kind in Cape Verde, is developed to benefit ~6,000 people, 67 km², and 21 endemic plant species, and will be available and used to inform sustainable grazing management practices on other islands.

Activity 3.1 In Yrs2-3, convene stakeholders (communities, government, experts) in workshops, on an island-wide scale, for a participatory planning process for sustainable grazing on Brava.

Please refer to 1.2 and 1.3 for context. Biflores, the CMB and the MAA have planned a 3-day formal participatory planning workshop with 50 livestock keepers from various important pastoral zones, based on the IUCN Sustainable Grazing Management Plan Toolkit. Scheduled for April 2023, the workshop invitation and programme made in Yr2 can be found in Annex 13.

Activity 3.2 In Yrs2-3, draft an island-wide adaptive sustainable grazing management plan, based on Outputs 1 and 2 results and the participatory planning process in 3.1

Please refer to 1.2, 1.3 and 3.1 for context. Whilst there is an initial template for the grazing management plan, and there have been multiple steering group discussions on the template throughout Yr2, detailed participatory drafting of the management plan will begin in early Yr3.

Activity 3.3 In Yr3, Municipality of Brava and Ministry of Agriculture and Environment approve and disseminate the grazing management plan, to be implemented in a follow-up project. *Nothing to report under this year.*

Activity 3.4 Repeat Participatory Impact Assessment (logframe, 1.2) in Yr3 for Fajã d'Água and two additional communes (Mato-Campo das Fontes and Sarrado) of Brava. *Nothing to report under this year.*

Activity 3.5 Conduct end of project island-wide outreach on endemic plants and overgrazing, at the end of Yr3. *Nothing to report under this year.*

Activity 3.6 Organise exchanges with organisations on other islands, including FMB, FFI's local partner on Maio Island, to broadly disseminate results, in Yr3.

Whilst not yet in Yr3, or with FMB, in Yr2 Biflores has participated in and facilitated exchanges or wider external events:

- Biflores' Project Coordinator participated in an exchange to promote sustainable grazing (technical solutions to improve the livestock keeping sector) in Boa Vista in March 2023 (Annex 9H).
- Biflores participated in the National Agriculture Fair in February 2023, and presented the progress of this project to national government officials and community associations. Biflores organised a presentation of the project and demonstration of fodder production in the community of Furna, Assomada (Santiago island).
- Exchange with Projeto Vitó in Fogo in March 2023 (Annex 9I).
- A 3-day exchange with 35 livestock keepers of Brava and from 7 other islands was organised by Biflores and the MAA in November 2022, designed to build their capacity on a broad range of topics within sustainable grazing (Annex 9K).

These events facilitated the sharing of lessons from different islands on addressing overgrazing and endemic plant conservation, but also enabled Biflores to promote its work to others, in particular the success of this nationally pioneering project, and explore potential future collaboration for similar initiatives (Indicator 3.4).

3.2 Progress towards project Outputs

Output 1: Site-based sustainable grazing management plan developed and piloted in the commune and KBA of Faja d'Água, delivering immediate conservation and wellbeing benefits and informing an island-wide grazing management plan.

Although a detailed and participative grazing management plan was not formally developed or piloted, several activities helped achieve progress towards this output. There are eight livestock keepers in the basin of the Ribeira de Fajã d'Água. Baseline socio-economic data, information regarding the size of their herds and their livestock-keeping methods was gathered as part of the island-wide survey (Annex 4), whose results and associated learning are informing the development of the island-wide grazing management plan.

Based on the survey conducted in the Ribeira de Fajã d'Água, two livestock keepers were selected to pilot sustainable grazing operations. Our project provided technical and financial assistance to these individuals (detailed in 2.1 above). Corral construction for each livestock keeper was completed in November and December 2022 respectively (Annex 9G). Through informal conversations, the following benefits were reported by participants comparing against conditions prior to our project's intervention:

- Better control and confinement of animals.
- Reduced time for shepherding.
- Reduced conflict with farmers and other livestock keepers.
- Reduced attacks by errant dogs.
- Better nutrition and fodder production for the animals.
- Increased understanding of fodder production and storage.

The project team will work to formally record reported livelihood and wellbeing benefits among project beneficiaries in both the original pilot sites, and the new ones established beyond Fajã d'Água, for dissemination and consideration in the draft sustainable grazing management plan.

In terms of conservation benefits resulting from our work at pilot sites:

- A suitable site was identified for the planting of endemic species (*Tintoria Indigofera tinctorial L. ssp. microcarpa* (A. Chev.) and Tortolho *Euphorbia tuckeyana*) following fieldwork in Pedra Molar.
- Botanical surveys were organized along four trails in the Ribeira de Fajã d'Água to collect information on endemic species in the region. 18 endemic species were identified and

their distribution mapped, contributing to more accurate monitoring of some extremely threatened and delicate species (e.g. *Lobularia canariensis ssp. fruticosa*.) (Annex 11).

Output 2: New, locally-relevant scientific evidence confirms appropriate grazing management strategies and is available to inform decision-making for island-wide grazing management planning and conservation strategies.

In Yr2, the project made significant progress collecting relevant scientific data on a range of elements needed to enable long-term monitoring and to inform decision-making and the proposed management plan:

- We conducted detailed research on potential grazing management strategies, such as climate-resilient fodder production, and combined this with experiences and suggestions of keepers gathered in the socio-economic baseline survey (Annex 4).
- We have begun monitoring animal movement using GPS collars on goats of the pilot field trials' livestock keepers in the Ribeira de Fajã d'Água (Annexes 5 & 9F) (Indicator 2.3).
- We have been monitoring soil erosion and vegetation cover and quality, to determine the impact of piloted grazing management actions on soil and vegetation. Due to lack of rain during the rainy season of 2022, we were unable to study water run-off. (Annexes 7 & 9L) (Indicators 2.2, 2.1)
- We have produced a vegetation cover map for the island representing the dry season – (Annex 5) (Indicator 2.4).
- Baseline botanic surveys were conducted in Mato-Campo das Fontes (Annex 11) (Indicator 2.5). The botanical survey of Sarrado is taking place in April 2023.
- Biflores repurposed an abandoned structure as a nursery and is testing the germination of 8 species (1,000 individuals) including 4 of the 5 endemic plant indicator species (Indicator 1.4) for replanting in selected sites, the successes or challenges of which will contribute to further understanding of ex situ plant conservation and inform future strategies.

Data from all the above surveys and trials is contributing to the body of evidence around interactions between grazing animals, grazing approaches, and their impacts on endemic and invasive species (Indicator 2.1).

Output 3: A Brava-wide temporal, spatial and financial grazing management plan, the first of its kind in Cape Verde, is developed to benefit ~6,000 people, 67 km², and 21 endemic plant species, and will be available and used to inform sustainable grazing management practices on other islands.

In Yr2, the project organised consultations with 40 people (of whom 11 are women) as part of the process of developing the sustainable grazing management plan, scheduled to take place in early Yr3 (now completed April 2023). The community associations of Brava are not currently functional, but we are supporting the reactivation of several of them to enable the implementation of the management plan, with an eye to their participation in developing and implementing other potential projects such as agroecology and removal of invasive species.

- Biflores holds regular consultations with the MAA and the CMB to discuss aspects of the management plan and protection of endemic plant species (Indicator 3.2). Biflores shares a nursery with the MAA in the zone of Campo Baixo for production of endemic trees (Dragoeiro *Dracaena draco* and Marmulano *Sideroxylon marginata*) (Annex 9M).
- The MAA entrusted Biflores with an invasive species removal and revegetation project of 20 hectares. The draft management plan will inform the revegetation project, including cloud-moisture harvesting to ensure water availability for the planned agro-forests that will include forage crops, agricultural crops and endemic trees.
- Biflores participated in the National Agriculture Fair and presented the progress of the Darwin project to government officials and community associations (Annex 9B). Biflores presented the project and demonstrated fodder production in the community of Furna, Assomada (Santiago island, Cabo Verde).
- During an exchange between Biflores and Projeto Vitó, Biflores presented the sustainable grazing project and discussed the challenge of overgrazing with the technicians of Projeto

Vitó. We also visited 2 livestock keepers on Fogo island, and discussed opportunities for the implementation of a similar plan to address overgrazing in Fogo (Annex 9I).

- Biflores' Project Coordinator participated in an exchange to promote sustainable grazing (technical solutions to improve the livestock keeping sector) in Boa Vista.

3.3 Progress towards the project Outcome

Outcome: Brava's 6,000 inhabitants, supported by government, implement sustainable and data-driven grazing and land management strategies that protect endemic species, improve livelihoods, and increase local resilience to climate change.

Significant progress has been made towards the project outcome during Yr2:

- Botanical, livestock, and ecosystem monitoring data is now being collected regularly for areas of conservation interest, including the KBA Ribeira de Fajã d'Água and areas such as Mato-Campo das Fontes, Sarrado, Cova Galinha, Sorno, Lomba and Ferreiros, to serve both as baselines for future monitoring and evaluation, and to inform the management plan in development. This represents a significant increase in up-to-date information available for conservation planning when compared to project start.
- These data, combined with the livestock keepers' perspectives and socio-economic data that was collected and analysed in 2022, form an important part of ensuring the grazing and land-management strategies in development are data-driven and sustainable, and have already served to provide recommendations for key considerations in the management plan regarding drought resilience, gender equality, and community context (see underlined text in the survey report, Annex 4).
- In terms of increasing confidence in decision-making and planning processes, Biflores is working to reactivate the currently defunct community associations to increase democratic participation, ensuring representation and inclusion of Brava's inhabitants.
- The project has facilitated participatory decision-making through Biflores organizing meetings between communities and the MAA and CMB.
- We believe the indicators currently serve as adequate means to measure the intended Outcome, though we note Indicator 3.1 presents a possible challenge. Our livestock-keeper survey revealed that a low proportion of this stakeholder group is represented by women, and cultural barriers result in reluctance among women to involve themselves in participatory elements of the project. We are conscious of the need to ensure our approaches facilitate, in a sensitive and proactive manner, their engagement to the greatest possible extent. (See section 6 *Gender equality and social inclusion*).
- Given the initial delays to the project activities, we recognise that the Outcome may not be entirely achieved within the timeframe, and to address this we have adapted the project (by working directly on an island-wide management plan, rather than a smaller pilot in Fajã d'Água beforehand), and by considering a request for a potential no-cost extension to allow time to elaborate a fully participatory management plan.

3.4 Monitoring of assumptions

Outcome level assumptions:

Assumption 1: Climate and weather events do not impact fieldwork (e.g., if there is no rainy season, plants can be dormant):

Comments: To date, climate and weather events have not prevented fieldwork, but they have caused delays. The 2022 rainy season was erratic and dry, so we were unable to measure any water run-off. Fajã D'Água occasionally has very high winds, which at times prevented the project team from collecting drone footage, so tasks were postponed. A landslide in January 2023 blocked all road access to Fajã d'Água for 3 months, which impacted collection of results, communication and service provision for the livestock keepers at pilot sites there.

Assumption 2: Communities continue to be willing to engage to improve livestock and grazing management:

Comments: To date, communities have been extremely willing to engage; attendance at community-targeted events, workshops or public events has been high, and when collecting the baseline household surveys, we engaged with 132 livestock keepers across 12 communities.

Assumption 3: The impact and circumstances of the COVID-19 pandemic allow us to implement all project activities on the island, but also wider national and internal travel:

Comments: Whilst Covid-19 didn't have a direct impact on delivery of activities in the last year, the reported delays of Yr1 cascaded into Yr2, as the MAA and planned consultants (like CERAI and the vet) were still extremely busy catching up on prior commitments, following earlier Covid-19-related delays to their own activities.

Output level assumptions:

Assumption 4: Climate impacts do not adversely affect pasture indicators: Cape Verde is subject to droughts, so it might be hard to observe plant recovery if the drought persists, since native plants will be dormant.

Comments: There was again reduced waterfall and increased drought across Brava in 2022, but less than in the previous year. It was not possible to measure of water run-off even at the peak of the rainy season. Apart from that, we don't foresee issues in observing plant recovery.

Assumption 5: Local government continues to be supportive and actively engages in the project, as grazing was identified as a priority through past government-led activities.

Comments: Positive relationships with local government on Brava continues and Biflores has a good relationship with local MAA and CMB. We have observed that the national level MAA have had lower than anticipated ability to engage in the project (in part due an extremely busy catch-up period post Covid-19 lockdowns). The departure of the former head of the MAA in Brava delayed engagement for a period during 2022, but since their replacement has been in post, collaboration has been stronger and closer than ever. At this point, we consider the MAA to be an ally of the project, and their partnership with Biflores has been very positive.

Assumption 6: Adequate size and health of endemic plant source population to allow natural regeneration. The removal of grazing could remove a pressure on invasive plants that had previously been holding them in check.

Comments: We still assume that endemic source populations are large enough to support natural regeneration, and are already growing the 5 project-focus endemic plant species in the project nursery and in the MAA's nursery in a different part of the island, to test response to different weather conditions. We are monitoring and removing invasive plant populations through co-funding, and are closely evaluating how they respond to reduced grazing intensity.

Assumption 7: Data on water indicators is robust and indicative enough of seasonal and annual trends to be useful in future policy making and planning regarding the links between water and land uses.

Comments: Data on water indicators was not possible obtain due to the aforementioned poor rainfall. It has become clear that water availability is an issue for some parts of the island, and as such, FFI and Biflores are exploring potential initiatives focusing on water capture and storage.

Assumption 8: Learning and lessons from Brava will have applicability on other islands in the archipelago, irrespective of their respective agroecological and climate diversity.

Comments: While are yet to finalise a written grazing management plan, engagement with organisations on other islands and participation at the National Agronomy Fair have generated great interest in this project and its results. Biflores has engaged productively with 2 NGOs from 2 islands in the archipelago to date, has disseminated initial project results with the Municipalities of Boa Vista and Assomada, and FFI and Biflores are already engaging with other organisations looking to address the issue of overgrazing on different islands, as a follow-up to this project.

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

The anticipated impact for our project is “Brava has thriving and self-sustaining endemic flora and livelihoods, which mitigate local climate change impacts, soil erosion and desertification, and create a model for sustainable management across Cape Verde”. We are working towards a positive impact for biodiversity through developing evidence, capacity, management plans and actions to reduce the threat from grazing for at least five endemic plant species. Progress has been made towards development of an island-wide Sustainable Grazing Management plan, informed by our baseline and the results of two (recently three, with a fourth planned in Yr3) field trials to pilot measures to reduce grazing intensity (Annexes 9G & 12). Measures to monitor and control invasive species (a second major threat to endemic plants) are also underway through co-funding. We anticipate that reduced grazing intensity will not only enable population recovery, but also support wider recovery of soil health and vegetation (needed to improve climate change resilience), which we will now be able to measure having collected all necessary baselines – socio-economy surveys, vegetation cover map, sample goat distribution, endemic plant regeneration (Annexes 4 & 5). Long-term poverty-reduction impacts will result from healthier livestock populations, supported through a recovery of native vegetation, and improved access to veterinary care, but also better crop productivity for human consumption.

4. Project support to the Conventions, Treaties or Agreements

Convention on Biological Diversity (CBD);

The project will support Cape Verde to fulfil its obligations under the following articles of the CBD:

CBD Article 6. General Measures for Conservation and Sustainable Use

Comments: Development of a sustainable grazing management plan is underway.

CBD Article 7. Identification and Monitoring

Comments: Baseline and monitoring research on poorly-known endemic plant species, vegetation cover, grazing approaches, socio-economic status of stakeholders, animal movements, and ecosystem processes is underway in sites across Brava (Indicators 2.1, 2.2, 2.3, 2.4, 2.5)

CBD Article 8. In-situ Conservation

Work is underway towards a sustainable grazing management plan; two trial plots are fully established, with two further plots in development, in combination with fencing construction and invasive species removal (Annex 9N) to reduce pressure from grazing and invasives on five endemic plant species; monitoring and botanical surveys has begun and is ongoing.

CBD Article 10. Sustainable Use of Components of Biological Diversity

Comments: Work to develop sustainable grazing management is including and supporting active involvement of communities, with 132 livestock keepers surveyed for the baseline socio-economic analysis (Annex 4), and the first formal participatory grazing management plan workshop scheduled for April 2023 had confirmed attendance from 40 community representatives (11 of whom are women).

CBD Article 13. Public Education and Awareness

Comments: In Yr2, Biflores engaged with directors of two schools to organise an environmental club, nature walks, and maintenance and construction of new botanical gardens in communities. Demonstrations and public outreach were conducted at Agronomy fairs in Brava and Praia. Education sessions on the project and the importance of endemic plants and their traditional and medicinal uses were held for women from local church groups (Annex 9E).

The project will also support:

Aichi Target 1

Comments: In Yr2, Biflores engaged with directors of two schools to organise an environmental club, nature walks, and maintenance and construction of new botanical gardens in communities. Demonstrations and public outreach were conducted at Agronomy fairs in Brava and in the capital

Praia. Education sessions on the project and the importance of endemic plants and their traditional and medicinal uses were provided for local women's church groups (Annex 9E).

Aichi Target 5 and 7

Comments: Development of a sustainable grazing management plan for Brava is underway

Aichi Target 10

Comments: Work towards improved ecosystem resilience is underway, as the sustainable grazing management plan's implementation will result in healthier vegetation and reduced soil erosion and water run-off.

Aichi Targets 12 and 14

Comments: Development of a sustainable grazing management plan for Brava is underway. This includes implementation of two 'trial zones' where fencing is allowing vegetation regeneration in key zones, with two more 'trial zones' identified in different parts of the island to test different variables.

Aichi Target 18

Comments: Interviews on livelihoods, livestock and grazing were completed for 132 livestock keepers across 41 villages of Brava; data from these helped collate traditional knowledge. This knowledge has been integrated into management plan workshops, where community participation was prioritised. Traditional knowledge was also exchanged as part of the women's educational session hosted in February 2023 (Annex 9E).

Aichi Target 19

Comments: Baseline and monitoring research on poorly known endemic plant species was conducted in Fajã D'Água KBA, Mato-Campo das Fontes, Sarrado, Sorno and Ferreiros.

The project supports the CBD's Global Strategy for Plant Conservation by: (1) undertaking fieldwork to document and recognise plant diversity (surveys complete in a KBA and additional site; ongoing at a third site); (2) effectively conserving plant diversity (fencing constructed, grazing management plan under development); and (3) conducting community consultations and outreach to raise local awareness about plant diversity, its role in sustainable livelihoods, and importance to life on Earth (research and consultations across 12 communities complete; workshops, education sessions and school outreach mentioned above underway or complete).

United Nations Framework Convention on Climate Change (UNFCCC).

The project is supporting Cabo Verde in pursuing adaptation contributions as specified in its Intended Nationally Determined Contribution to the UNFCCC. Work towards development of a sustainable grazing management plan will ultimately increase the adaptive capacities of agro-silvopastoral productions systems; prevent degradation and erosion; and improve data collection and modelling capacity associated with water and soil management.

Global Goals for Sustainable Development (SDGs)

The project contributes to multiple SDGs, including:

SDG 1. No Poverty

Comments: Research to understand local barriers to sustainable grazing management was completed in Yr2 (Annex 4). This is informing a locally-developed management plan that will ultimately improve vegetation recovery and health of livestock.

SDG 2. Zero Hunger

Comments: Work to develop a sustainable grazing management plan will support practices that increase agricultural and herd productivity and help maintain ecosystems that support farming.

SDG 5. Gender Equality

Comments: Work to understand gender roles and responsibilities related to livestock keeping and associated income formed part of socioeconomic research carried out in 12 communities.

SDG 12. Responsible Consumption and Production

Comments: Awareness-raising work with livestock keepers (112 men, 20 women), women from local church groups (8) and school children (>400) is underway, helping to ensure Brava's people have the relevant information and awareness needed to pursue sustainable development.

SDG 13. Climate Action,

Comments: Development of a sustainable grazing management plan, combined with mapping of vegetation, will inform action to strengthen Brava's ecosystems and thus the island's resilience and adaptive capacity to climate-related hazards, including soil erosion and desertification.

SDG 15. Life on Land

Comments: Development and implementation of a sustainable grazing management plan will ultimately lead to sustainable use of a terrestrial ecosystem and its services, and help to prevent biodiversity loss and protect threatened plant species (especially in the Fajã d'Água KBA).

5. Project support to poverty reduction

According to the World Bank, Brava has the highest rate of global and extreme poverty in Cabo Verde. Access to services including education, water, sanitation and healthcare, and access to infrastructure including transport are significant challenges. The majority of the population depends on the primary sector. Agriculture and livestock keeping has been severely impacted by an ongoing drought that has lasted nearly 2 decades, affecting livestock-keepers' ability to cope with sustaining their herds during the dry season (Annex 4).

The Darwin Initiative-financed program '*Pioneering sustainable grazing for plants and livelihoods*' provides the opportunity to organise the livestock keeping sector and foster a community-based transition towards resilient agriculture and livestock production.

In the longer-term, the objective of reducing unsustainable free grazing and improving access to sustainable nutrition sources aims to simultaneously improve the productivity of the livestock-keeping sector and protect areas with high levels of endemism that could be the target of future eco-tourism projects (though we acknowledge the need for more developed infrastructure and public services enabling tourism for this potential income stream to be realised).

The project supports some direct poverty reduction efforts via the provision of financial and technical assistance towards the construction of corrals, with initial, informal reports already implying benefits for the livestock keepers (see section 3.2). Two corrals were constructed in the Ribeira de Fajã d'Água and we are providing continuous technical assistance to livestock keepers to maximize fodder production to ensure that livestock's access to nutrition is sustained during the dry season. Biflores is also working to facilitate the organization of a livestock keepers' association and cooperative that would pool resources to increase fodder production and augment capacity for its proper storage to ensure access to improved animal nutrition. These actions aim at improving the productivity of the sector without increasing workloads or the extent of land required, thus increasing the potential for augmented incomes.

In terms of indirect benefits, curbing unsustainable grazing will likely lead to reduced soil erosion, water runoff, and improved vegetation coverage, thereby improving nutrient, water and carbon cycling on Brava, hopefully boosting resilience against climate-related hazards, which are known to disproportionately impact poorer communities.

Throughout this project, the team aims to combine local community knowledge with that of the national and international scientific community to better understand the ecosystem services provided by endemic plants. As we begin to implement the adaptive sustainable grazing management plan, we will work with communities to plant agroforests and forage crops based on agroecological principles. Supporting the development of these systems could provide a resilient source of crop products for household use, and potentially for additional income sources.

6. Gender equality and social inclusion

Please quantify the proportion of women on the Project Board ¹ .	Out of a total of 14 people, 5 are women: - FFI Project Lead: Sara Calçada - Annkathrin Sharp (FFI UK) - Emma Scott (FFI UK) - Harriet Branson (FFI UK) - Ivone Cardoso (CMB, Cabo Verde)
Please quantify the proportion of project partners that are led by women, or which have a senior leadership team consisting of at least 50% women ² .	2/5 project partners meet this threshold: FFI has a senior leadership team consisting of at least 50% women; The Community Association of Fajã d'Água is led by a woman. Though Biflores is led by a man, its board is entirely made up of women. The MAA & CMB are led by men.

Gender equality and social inclusion considerations:

Our Yr2 socio-economic baseline survey of livestock keepers revealed a significant gendered division of labour, and most livestock keepers are men (85% – Annex 4). Ensuring equal numbers of women participate in the development of the sustainable grazing management plan (Indicators 0.3 & 3.1) will be challenging, as they represent only 15% of the livestock keeper stakeholder group. We also note that 100% of the technicians of the MAA are men, however approximately 50% of their plant nursery staff are women; the CMB team includes one woman (named in the table above), and Biflores' team has one female biologist out of a total of 6 staff.

To ensure gender equality and social inclusion in project activities, we will:

- Continue to collect, analyse, report and adapt activities based on gender dis-aggregated data, and incorporate findings from our surveys into our recommendations.
- Organize training and meetings exclusively for women who practice livestock keeping to facilitate participation without meetings being dominated by male participants.
- Advocate for the inclusion of women in the leadership of community associations.

7. Monitoring and evaluation

FFI and Biflores are jointly responsible for monitoring and adaptive management, in line with the project's Theory of Change, with both organisations assuming lead roles in coordinating M&E activities. The project's M&E plan is designed to capture evidence of change at key stages along the project's pathway of impact based on the logframe and indicators, and defines responsibilities of project team members in data collection and analysis. The M&E plan and associated data collection methods and tools are kept in a shared online folder, accessible to both organisations. For other stakeholders, such as MAA, CMB, livestock keepers and general public, information is shared in different formats, depending on the target audience, such as presentations, posters, news articles, social media posts, and reports (see Annex 9R for a selection of news articles).

In Yr2, we finalised monitoring protocols to assess changes in vegetation cover, water run-off, livestock distribution, grazing habits and husbandry over the duration of the project and began implementing these monitoring efforts (relating to indicators 2.1, 2.2, & 2.3) (Annexes 5, 6 & 7). Baseline data has been collected on husbandry and grazing practices, and knowledge, attitudes and perceptions, to evaluate changes from baseline to end-of-project. All protocols and information generated are shared with and, where relevant, co-designed by project partners. The outputs of these various forms of monitoring will contribute to the project Outcome by improving the quality of management planning strategies, ensuring considerations regarding climate

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

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

change vulnerabilities, gender dynamics, and impacts on income will be incorporated into the management plan as it is developed. The data collected in Yr2 as part of these Outputs included:

- Socio-economic baselines on livestock keeping and income
- Vegetation quality – cover, height, and richness
- Soil erosion
- Grazing animal movement and home range analysis

8. Lessons learnt

Despite the continued impacts of the pandemic and a management transition, the project was able to advance successfully due to the dedication of Project Coordinator Vani Furtado and the recruitment of a local livestock keeper, Carlos Bango. Their local knowledge, relationships with communities and institutions and their communication with FFI's team for implementation of monitoring activities permitted significant progress toward the project outcomes. Investment in building relationships with the MAA's new delegate and local municipalities in other regions has been crucial for gaining support for project implementation and dissemination of results.

The provision of services such as corral construction, planting of forage fields, production of silage and fodder has been instrumental in building relationships and trust with key members of the livestock-keeping communities. The participative nature of the elaboration of the sustainable grazing management plan permitted clearer understanding of the livestock keepers' perceptions and the potential use of local resources for future initiatives, which we will build into this and future project plans. Participation in events such as the National Agricultural Fair was extremely helpful for gaining exposure and exchanging ideas with experts from other NGOs (such as Agrofloresta and Friends of Nature, Cabo Verde), and we learned that attendance at these events is well worth the logistical effort and cost.

In terms of building learning into our current plans, capacity and timing restrictions led us to adapt the idea of devoting a significant part of the project to developing a pilot grazing management plan for Fajã D'Água. Based on improved understanding of the capacity and time needed for participatory drafting of a management plan, we chose instead to focus on developing an island-wide plan, which would still incorporate methodologies and practices piloted as part of the project, but across the whole of Brava, to ensure the same main project output – a participatory, evidence-based grazing management plan for the whole island.

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

The previous project review highlighted 4 main points, which we will address separately:

1. *The project should consider requesting an extension and replanning the project. In part given there were 6 months of delays at start up but also given three emerging process 'red flags': 1) An inability to recruit local positions for the project, (2) Concerns already about workshop fatigue in the community (3) The absence of key project stakeholder from the island community, i.e. land owners. Given these issues it may be timely to reassess the project approach now, learning from the reality on the ground and to reformulate the approach to achieve the same project ends. Other suggestions to consider in terms of project approach are outlined below. Any changes should be proposed via the Change Request process.*

We appreciate the recommendations made. We are indeed considering requesting a no-cost project extension, particularly given the delay in the development of the grazing management plan. However, the project has made great strides in some respects, and we feel we are only now getting to a point where we will be able to make a good judgement of what exactly needs to be requested. Any Change Requests will be submitted before the next report in October 2023.

A few thoughts and updates on sub-points 1-3:

- (1) This has changed significantly since the last report. Whilst it is still hard to recruit locally in Brava, we now have a very qualified in-country project team local to Brava who, along with FFI's Agronomy Specialist and the recently-appointed Director of Biflores, have been invaluable to the positive strides made in the last year. We are very confident that we have the right people in place for this project at FFI, Biflores, and the MAA (whose recently-

appointed Delegate is engaged and positive about the project). The Project Coordinator previously worked for the MAA as a Rural Extension and Agriculture/Livestock technician; the Project Assistant is a livestock keeper with extensive, first-hand understanding of stakeholder concerns, and both have excellent working relationships with both the MAA and project-affected communities.

- (2) Our concern was primarily about ensuring that the comprehensive community engagement delivered by Biflores and others working on the island should be as coordinated as possible to avoid duplication of efforts or engagement fatigue. We have indeed been able to address this, and have found the community, specifically the livestock keepers, to be highly engaged and invested in the project activities.
- (3) This is indeed a key concern, but is also the reality of the island's context, and not something we are in a position to change. Land-owners will continue to be kept informed of activities on their property and in Yr3 will be consulted for their input on the management plan, but ultimately have not so far expressed any concern about the project activities since these improve, rather than threaten/damage, their propriety or assets.

2. *Consider removing the intension to collaborate with NARDI and utilising any budget related to a new project approach. Expand the active networking in Cape Verde with all other local projects. Work through this, guided by the Paris Declaration on Aid effectiveness and the Accra Agenda for Action around harmonising aid effectiveness. Identify all ongoing and imminently planned activities on Brava (and potentially the archipelago) and unite this body, to work jointly.*

As highlighted in Sections 2 & 3 in this report, collaboration with INIDA/NARDI is finally bearing fruit: Dr. Isildo Gomes has delivered training to the Biflores team, the forest guards and the technicians of the MAA and is defining collaboration under this project and wider flora-related projects led by Biflores, and some co-led with FFI. Furthermore, and as also referenced in this report, collaborations and exchanges with other Cabo Verdean NGOs have begun to develop organically, or through other FFI-led projects in the archipelago. Notably, there has already been an exchange with Projeto Vitó in Fogo, and initial engagement with Agrofloresta from Santo Antão. FFI is also facilitating the design of a collaborative project focused on endangered endemic trees (and other flora taxa) with Biflores (Brava), Terrimar (Santo Antão), Projeto Biodiversidade (Sal) and Projeto Vitó (Fogo).

3. *There is some concern that the development of the proposed community-based grazing management plan, currently comes rather late in the project implementation. The reviewer would encourage the project to consider a more comprehensive approach (in terms of broader contextual understanding of issues, including through greater stakeholder engagement), yet a more rapid formulation of 'a draft plan', that could form a basis for more nuanced community and government consultation, earlier than currently planned. It is very likely that local stakeholders are very aware of the issues, and the constraints to change, and these issues need to surface now - not in year 3 when government and communities say "thank for your great work and the plan you leave us with, you see the problem is...". The process of Facilitated Advocacy, and the use of Delphi technique approaches may have relevance to the project approach in this regard.*

Thank you for this point. We agree that Facilitated Advocacy principles and approaches are relevant to this project. The delay in the project start, with further delays in the last year due to turnover of key staff at Biflores, FFI and the MAA, along with the concern raised by the reviewer, has led to a shift in project approach. The following influenced our decision:

- Whilst we carried on with the two trial plots in Fajã D'Água, as well as collecting the necessary baseline metrics for this area, we have quickly expanded to other parts of Brava, creating new trial plots and collecting data from sites subject to different conditions.
- We collected socio-economic data from 132 livestock keepers across the island.
- The MAA has proposed giving funding to Biflores to lead on the restoration of 20ha of land on the island.

Because of these, and with consideration to the project's timeframe, rather than developing a pilot grazing management plan for Fajã D'Água as a preliminary step, we are instead facilitating the participatory development of a grazing management plan for the whole island, through broader stakeholder engagement, and with Biflores actively collaborating with the MAA and livestock keepers. The first formal process was scheduled to take place outside of this reporting period (April 2023), but the programme developed for it can be seen in Annex 13. However, and as we mentioned on the first point, whilst progress is being made, we are very aware we are behind in the delivery against this deliverable, and are likely to request a no-cost extension to ensure sufficient time can be given to comprehensive government and stakeholder consultation.

4. Consider including other forms of evidence with future reporting – for example meeting minutes – to demonstrate the quality of activities undertaken

This is feedback we have actively sought to act on in Yr2 as evidenced in this report's annexes, where we are including information such as the weekly reports prepared by the Project Coordinator, meeting and workshop attendance sheets, photos, training or presentations materials, reports, and so on, in addition to monitoring outputs. We have also encouraged partner staff to record meeting minutes and action points as part of good record-keeping.

10. Risk Management

As the Risk Register was introduced before submission of the Half-Year report, the whole document was completed then, six months before this current report. Seven risks were originally identified, and a new one was added in the last two months (see below). Whilst project activities have been adapted to address or mitigate the risks, these have either not materialised or required adaptation of project deliverables or design. The updated risk register can be found in Annex 8.

- (1) Loss of relevant knowledge or implementation capacity
- (2) Access to equipment and/or project consumables
- (3) Approval of sustainable grazing management plan being approved by central government
- (4) Loss of funds due to exchange rate fluctuations
- (5) Rising inflation, food and fuel costs
- (6) Low level of engagement by communities due to donor-funded project fatigue and/or different priorities
- (7) Benefits of project don't reach more vulnerable groups (particularly women)
- (8) MAA giving Biflores funding for reforestation of 20ha within project timeframe.

11. Other comments on progress not covered elsewhere

The livestock-rearing sector is extremely dynamic and is impacted by a number of factors, including demographics (most notably migration); access to technical assistance; climatic conditions, and presence of diseases. This means baseline surveys of livestock keepers might become outdated more rapidly than expected; to adapt we are regularly conducting informal check-ins with stakeholders and will bear in mind that outside factors may be responsible for some of the changes we anticipate in follow-up surveys. The 20ha reforestation project from the MAA already mentioned above will be informed by the activities and observations from Yr2 of this project. A significant difficulty encountered this year was poor rainfall, and having observed the challenges presented by limited access to and storage of water, FFI and Biflores are exploring potential future initiatives focused on water capture and storage, much-needed across Cabo Verde, which will improve this project's chances of long-term sustainability and success.

12. Sustainability and legacy

On Brava, the improved relationships and continued engagement of two key government agencies (the MAA and the CMB) in the development of the sustainable grazing management plan is an encouraging sign for longer-term institutional support for this project in particular and hopefully for other conservation initiatives in future. The high levels of interest among the livestock keepers surveyed in Yr2 and their willingness to participate in and benefit from activities to address over-grazing, improve resilience to drought, and support recovery of vegetation on

Brava is another positive indication of sustainability for the project and beyond, and based on Yr2's findings, the intended sustainable benefits post-project remain the same. This past year, the growth and progress achieved by the in-country team reflects the results of FFI's close support and Biflores' significantly expanded technical and institutional capacity, which bodes well for longer-term conservation on the island. There has been a corresponding increase in recognition and interest both within Brava and across the archipelago; Biflores' agronomy expertise, innovative approaches and proactive engagement in multi-stakeholder events has helped to build a reputation as a driver of participatory efforts in tackling overgrazing and conserving endemic species. A great deal of this progress is directly attributable to the Darwin Initiative and the knowledge and connections it has enabled the project team to build. We hope to foster a sustained ecological, technical, and socio-economic legacy of the project's Outcome by collaborating with similar and complementary projects elsewhere in Cabo Verde, sharing the sustainable grazing management plan as an example, encouraging its formal adoption in Brava by policy-makers, and continuing to build people's awareness of and engagement in grazing management and endemic plant conservation beyond the end of this project.

13. Darwin Initiative identity

The Darwin Initiative Logo has been used in all communication documents (posters, meeting invitations – see Annex 13) and presentations. In interviews with local news media, project staff have mentioned Darwin's funding of the project. Biflores has used the Darwin Initiative logo on informational signage, including outreach posters on sustainable grazing and fodder production. Within the target country (Cabo Verde), the Darwin Initiative is known via various projects implemented by this team, as well as NGOs such as Projeto Vitó, Fundação Maio Biodiversidade, and BiosCV. Biflores will have a social media presence and a new site in Yr3, and will link to the Darwin Initiative in all project-related posts.

14. Safeguarding

Has your Safeguarding Policy been updated in the past 12 months?	Yes
Have any concerns been investigated in the past 12 months	No
Does your project have a Safeguarding focal point?	Yes: Senior HR Adviser (International), HR – Ema Infante – FFI's institutional focal point; Project Lead – Sara Calçada – Project Safeguarding focal point
Has the focal point attended any formal training in the last 12 months?	Yes. FFI has an internal Learning Management System, which enables online training in policies and procedures and in Q1 2023 all FFI staff were required to complete compulsory safeguarding training: <i>Safeguarding essentials</i> ; <i>FFI's Safeguarding Children and Vulnerable Adults Policy</i>
What proportion (and number) of project staff have received formal training on Safeguarding?	Past: 29% [4, all FFI] Planned: 71% [10]
Has there been any lessons learnt or challenges on Safeguarding in the past 12 months? Please ensure no sensitive data is included within responses.	No.
Does the project have any developments or activities planned around Safeguarding in the coming 12 months? If so please specify.	FFI plans to deliver safeguarding training to all 6 of Biflores' team members in Yr3 as part of an organisational resilience fund programme.

15. Project expenditure

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

Project spend (indicative) since last Annual Report	2022/23 Grant (£)	2022/23 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
Monitoring & Evaluation (M&E)				
Others (see below)				
TOTAL	112,425	112,425		

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

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

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

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

Whilst we have yet to produce a full draft sustainable grazing management plan, the project has made a number of achievements of which we are proud. Among these: we are extremely pleased with the progress of our ex-situ reproduction of the endangered, endemic Marmulano *Sideroxylon*

marginata, which is significant because they are challenging to reproduce in ex-situ conditions due to their slow-growing nature and preference for rocky, mountainous habitat (Annex 9M).

In addition, the extent of community buy-in and engagement has been extremely encouraging, and the degree of interest from other NGOs and organisations in Cabo Verde has resulted directly from the reputation our project is building as a leading effort in participatory grazing management, innovative agronomy approaches, and conservation of endemic plants. Our presence at a national Agricultural fair in Cabo Verde's capital really helped to put our Darwin Initiative project on the map, and the connections made with government officials, the agricultural and conservation sectors at the event will increase the project's reach and future impact.

File Type (Image / Video / Graphic)	File Name or File Location	Caption, country and credit	Online accounts to be tagged (leave blank if none)	Consent of subjects received (delete as necessary)
Image	Marmulano in nursery.jpeg	<i>Sideroxylon marginata</i> saplings growing ex-situ at Biflores' nursery. Brava, Cabo Verde. Biflores/FFI	Instagram - @faunafloraint Twitter - @faunaflora Facebook – Fauna & Flora International	N/A subject is a plant

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

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
<p>Impact Brava has thriving and self-sustaining endemic flora and livelihoods, which mitigate local climate change impacts, soil erosion and desertification, and create a model for sustainable management across Cape Verde.</p>		<p>(Report on any contribution towards positive impact on biodiversity or positive changes in the conditions of human communities associated with biodiversity e.g. steps towards sustainable use or equitable sharing of costs or benefits)</p>	<ul style="list-style-type: none"> - Continued botanical surveys to increase knowledge on distribution of endemic species. - Continued monitoring of soil quality, soil erosion, water run-off. - Implementation of the adaptative sustainable grazing management plan. - Reforesting with endemic plants and trees.
<p>Outcome Brava's 6,000 inhabitants, supported by government, implement sustainable and data-driven grazing and land management strategies that protect endemic species, improve livelihoods, and increase local resilience to climate change.</p>	<p>0.1 By end of project, scientific data is available on the interactions and impacts of grazing animals and grazing approaches on native and non-native plants on Brava, and is being used to inform sustainable grazing management planning and implementation across the island.</p> <p>0.2 By end of year 2, new botanical data is available for two as yet un-surveyed trial areas (Mato-Campo das Fontes and Sarrado) on the island and, alongside existing data, this is informing conservation and grazing management planning and management.</p> <p>0.3 By end of project, 150 people (50% women) from 12 communities describe themselves as more confident in engaging in decision-making and planning</p>	<p>0.1: Ongoing – FFI and Biflores have been continuously monitoring: a) Soil erosion; b) Movement of goat herds; c) Impact of grazing on distribution of endemic plants; surveying and mapping vegetation cover</p> <p>0.2: Ongoing – Biflores has produced preliminary inventories for the trails of Mato-Campo das Fontes and is surveying Sarrado.</p> <p>0.3 and 0.4: Ongoing – Biflores has been facilitating workshops, exchanges and meetings between livestock keepers from communities across Brava (and other islands of Cabo Verde) and the technicians and delegates of the Câmara Municipal and the Ministry of Agriculture and the Environment.</p> <p>0.5: Too soon to tell</p> <p>0.6: Collection and analysis of baseline data on soil and vegetation cover was completed</p>	<ul style="list-style-type: none"> - Planting of crop fields across the island with selected forage species that are adapted to arid regions. - Continued community outreach in on livelihood and environmental impacts of free grazing to encourage a transition towards sustainable grazing. - Continued botanical surveys to in Faja de Agua, Mato, Lomba Lomba, Figueral, Cachaco, Fontainhas – Campo das Fontes - Increased engagement with landowners to formalize land-use for forage fields. - Continue engagement and training with forest guards and technicians of the Ministry of Agriculture and Environment - Measure soil quality improvements in selected sites.

	<p>processes, compared to year 1 baseline.</p> <p>0.4 By end of project, five or more government officials describe themselves as more skilled in engaging community members directly in decision-making.</p> <p>0.5 By end of project, 80% of women and 80% of men surveyed in Brava report an improved sense of overall wellbeing as a result of project activities including through increased participation in grazing planning and management (subjective wellbeing), improved relations with government authorities and other communities (relational wellbeing), and improved livestock health and value (material wellbeing).</p> <p>0.6. By end of project, there is a measurable improvement in surface soil and grassland vegetation condition and cover in selected project trial plots.</p> <p>0.7 By end of project, there is a 5-10% increase in numbers of 5 endemic plant indicator species (Launaea thalassica CR, Globularia amygdalifolia EN, Echium hypertropicum EN, Campanula bravensis EN, Diplotaxis varia EN) compared to year 1.</p>	<p>0.7: Too soon to tell</p>	<ul style="list-style-type: none"> - Training for livestock keeps on animal well-being and nutrition. - Continue plantations of endemic species.
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<p>Output 1. Site-based sustainable grazing management plan developed and piloted in the commune and KBA of Fajã d'Água, delivering immediate conservation and wellbeing benefits and informing an island-wide grazing management plan.</p>	<p>1.1 By end of year 1, an initial, adaptive management plan is developed with experts and the focal community of Fajã d'Água (~120 people).</p> <p>1.2 By year 3, 75% of livestock owners engaged in the project report a sense of increased livelihood and wellbeing benefits derived from their livestock compared to year 1 baseline and based on factors that, pending the owner, will include stable or increased income from the sale of livestock and/or products (meat, milk), animal health, (decreased) rate of culling, etc.</p> <p>1.3 By year 3, there is improved pasture cover (denser grass sward) and vegetation quality (increased flora diversity), and reduced erosion (reduced bare patches), in Fajã d'Água village (640 m²) and surrounding buffer zones (1,000ha), compared to year 1.</p> <p>1.4 By end of project, there is a 5-10% increase in numbers of 5 endemic plant indicator species (<i>Launaea thalassica</i> CR, <i>Globularia amygdalifolia</i> EN, <i>Echium hypertropicum</i> EN, <i>Campanula bravensis</i> EN, <i>Diplotaxis varia</i> EN) compared to year 1.</p>	<p>1.1 Ongoing – the adaptive management plan is in development with input from technical experts and community stakeholders.</p> <p>1.2 – 1.4 Not applicable to this reporting period</p>	<p>Implementation of island-wide sustainable grazing management plan: This includes fencing off degraded areas and working on ecological restoration, construction of corrals, planting of agroecological forage fields.</p>
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<p>Activity 1.1 Early in Yr1, set up a steering group and regular partnership meeting to coordinate the project, including the participative workshops with all stakeholders.</p>	<p>Ongoing – regular stakeholder meetings were held in 2022-23 to engage them in the process of management plan development and seek their feedback.</p>	<p>Continue regular meetings with the steering group for the implementation of the sustainable grazing management plan.</p>
<p>Activity 1.2 In Yr1, carry out workshops and develop an adaptive sustainable grazing management plan for Fajã d'Água with key stakeholders: community, experts and government.</p>	<p>Ongoing - the steering committee, which includes government representatives, has developed a structure for the adaptive management plan with input from technical experts and community members.</p>	
<p>Activity 1.3 From Yr2, implement the plan from 1.2 as a pilot, and manage it adaptively, feeding lessons learned back into the plan.</p>	<p>Ongoing – though there is not currently a fully developed management plan to pilot, lessons learned from field trials in Fajã d'Água are being captured and informing the development of an island-wide grazing management plan.</p>	
<p>Activity 1.4 From Yr2, monitor the implementation of the plan closely to allow for adaptive management: livestock and wellbeing indicators; vegetation cover and focal plant health.</p>	<p>Ongoing – vegetation characteristics, soil erosion and water runoff are being monitored at the pilot site to assess the impact of livestock management on these environmental indicators, and support adaptation of the plan accordingly</p>	
<p>Activity 1.5 Throughout the project, provide veterinary services in Fajã d'Água, to: incentivise project participation, build capacity in animal husbandry including sustainable grazing, and project monitoring.</p>	<p>Ongoing – an active member of the steering committee is a zootechnician in the MAA, and we have engaged with zootechnician Cris Rodrigues to provide training to MAA and project staff on basic veterinary care, animal wellbeing and nutrition, to enable them to pass this on to livestock keepers.</p>	
<p>Activity 1.6 Throughout the project, build capacity of community members to address basic veterinary needs in the long-term.</p>	<p>Two corrals were constructed for livestock breeders as part of pilot activities; extensive information and technical support has been provided to livestock keepers on the use of forage crops to produce fodder and silage; workshops were held in November and December 2022 by Biflores and the MAA for livestock keepers to learn</p>	

		about best practice for fodder production and storage, improved animal nutrition, and parasite management. Each workshop was attended by 15 participants from around the island.	
Activity 1.7 Conduct a Participatory Impact Assessment with the community of Fajã d'Água at the end of Yr1.		Completed – a baseline socioeconomic survey was conducted with 132 stakeholders across 12 communities.	
Activity 1.8 Conduct island-wide baseline outreach on endemic plants and overgrazing in Yr1, including so as to sensitize communities to the project and help result dissemination		In Y2, a stakeholder workshop performed a participative analysis of grazing regimes in Brava (May 2022). An outreach activity disseminated information on free grazing impacts and the benefits of alternative methods (e.g. corral use and fodder production) among stakeholders from Mato Grande and Lomba Lomba (July 2022).	- Continue outreach activities in communities, schools and other organizations (sports teams, women's associations,) and institutions (local municipality and Ministry of Agriculture and the Environment)
Output 2. New, locally-relevant scientific evidence confirms appropriate grazing management strategies and is available to inform decision-making for island-wide grazing management planning and conservation strategies.	<p>2.1 By end of project, there is new scientific evidence available on interactions between i) grazing animals, grazing approaches, endemics and invasive species; and ii) regeneration and germination rates of endemic flora, in relation to field-tested grazing regimes.</p> <p>2.2 By project end, measures to monitor key water indicators (e.g., rate of run-off, specific indicators tbc) are in place in priority sites.</p> <p>2.3 By end of year 2, animal movement and land use patterns are newly mapped and available to inform management planning at island level.</p>	<p>2.1 Ongoing – data is being collected as part of activities 2.1, 1.7, 2.4, 2.5 and 2.6 to inform scientific evidence on those interactions.</p> <p>2.2 Ongoing – specific indicators have been determined, monitoring methods have been developed, and monitoring is underway.</p> <p>2.3 Ongoing – animal movement patterns have been mapped at 2 sites prior to livestock being kept in corrals, and is being used to inform management plan development. Satellite tracking of free-grazing herds is being conducted at separate sites for comparison.</p> <p>2.4 Ongoing – spatial vegetation map of pilot sites in Fajã d'Água is being developed, and broader island-wide mapping work continues.</p> <p>2.5 Ongoing – baseline surveys in Mato-Campo das Fontes and Sarrado are underway with expected completion in May 2023.</p>	

	<p>2.4 By end of year 2, spatial vegetation map of the whole island (67 km²) is developed, to inform zoning under the island-wide grazing management plan.</p> <p>2.5 Baseline botanic surveys around two communities (Mato-Campo das Fontes and Sarrado) are completed in years 1 and 2, followed by endpoint botanic surveys in the same locations in year 3, and monitored through monthly fixed point photos.</p>	
<p>Activity 2.1 Throughout the project, design and conduct field trials: place plots under different grazing regimes, testing endemics' regeneration and interactions between grazers, native and invasive plants.</p>		<p>Ongoing – field trials are underway at key sites, where baseline & follow-up data is being collected on grazing regimes, animal movement, and endemic and invasive plant distribution.</p>
<p>Activity 2.2 In Yrs1-2, test endemic plant germination in a nursery. Plants will include our five focal species, as well as others, following INIDA recommendations.</p>		<p>Ongoing –plant germination capacity has been increased with new nurseries established, and 11 endangered endemic plants are being cultivated according to INIDA recommendations.</p>
<p>Activity 2.3 In Yrs1-2, measure water run-off and soil loss during the rainy seasons (Aug-Dec) in correlation with vegetation cover and type.</p>		<p>Ongoing – Monitoring methods have been established and data collection is underway. Insufficient rains throughout Y2 meant that run-off measurement has not yet been possible.</p> <p>We will continue monitoring soil erosion, we hope rainfall permits water monitoring in Yr3, and we will commence additional soil moisture level measurement in Yr3.</p>
<p>In Yrs1-2, place GPS collars on livestock to facilitate shepherding and improve grazing control; analyse the data to map animal movement and land use.</p>		<p>Ongoing – livestock movements have been tracked and mapped at 2 key sites, contributing to a basic home range analysis for these herds and permitting comparison with vegetation cover mapping. Further GPS collar data is being collected at free-grazing sites elsewhere on Brava.</p>

<p>Activity 2.5 In Yrs1-2, conduct botany surveys in understudied areas (Mato-Campo das Fontes and Sarrado) to complement the existing data from the literature and previous FFI projects</p>	<p>Ongoing – baseline botanical surveys in Mato-Campo das Fontes and Sarrado are underway, with expected completion in May 2023 and rainy season follow-up surveys scheduled for Aug-Oct 2023.</p>	
<p>Activity 2.6 In Yrs1-2, map, using GIS, the vegetation (cover, type) in understudied areas using a drone and cross-referencing with fieldwork described above and participatory mapping.</p>	<p>Ongoing – drone surveys have been conducted in Fajã d'Água in both dry and rainy seasons, and FFI's Analytics Specialist has begun creating vegetation maps with the footage, though further areas are yet to be surveyed.</p>	
<p>Output 3. A Brava-wide temporal, spatial and financial grazing management plan, the first of its kind in Cape Verde, is developed to benefit ~6,000 people, 67 km², and 21 endemic plant species, and will be available and used to inform sustainable grazing management practices on other islands.</p>	<p>3.1 Consultations held in years 1, 2 and 3 with 12 communities, involving 150 people in total, (of which 50% women), as well as community associations.</p> <p>3.2 Six consultations held with two government entities (Municipality, Ministry of Environment and Agriculture) in years 1, 2 and 3.</p> <p>3.3 By end of project, local communities and government are facilitated to develop an integrated management plan, drawing on evidence generated through Outputs 1-3, formally endorsed by the island authorities.</p> <p>3.4 By the end of the project, at least 1 other organisation is planning replicability of Brava's model to implement on a different island.</p>	<p>3.1 Scheduled – progress has been made through informal discussions with the steering committee, but the first comprehensive, formal, participatory consultation on the management plan will be held in April 2023.</p> <p>3.2 Partial progress – meetings have been held with the Municipality (CMB) and the MAA as part of ongoing steering committee discussions.</p> <p>3.3 Not applicable to this reporting period</p> <p>3.4 Progress has been made through learning exchanges with NGOs on different islands, expressions of interest in the project's progress on Brava and in working collaboratively on future similar or related projects at a regional level.</p>
<p>Activity 3.1 In Yrs2-3, convene stakeholders (communities, government, experts) in workshops, on an island-wide scale, for a participatory</p>	<p>Initiated - informal discussions have been held with the stakeholders on the steering committee, but the first island-</p>	

planning process for sustainable grazing on Brava.	wide, formal, participatory consultation on the management plan will be held in April 2023	
Activity 3.2 In Yrs2-3, draft an island-wide adaptive sustainable grazing management plan, based on Outputs 1 and 2 results and the participatory planning process in 3.1	Initiated – a template for the plan has been developed, with input from the first participatory meeting in April 2023 and from baseline surveys due to complete in May 2023 to be incorporated into a full first draft.	
Activity 3.3 In Yr3, Municipality of Brava and Ministry of Agriculture and Environment approve and disseminate the grazing management plan, to be implemented in a follow-up project.	Not applicable to this reporting period	
Activity 3.4 Repeat Participatory Impact Assessment (logframe, 1.2) in Yr3 for Fajã d'Água and two additional communes (Mato-Campo das Fontes and Sarrado) of Brava.	Not applicable to this reporting period	
Activity 3.5 Conduct end of project island-wide outreach on endemic plants and overgrazing, at the end of Yr3.	Not applicable to this reporting period	
Activity 3.6 Organise exchanges with organisations on other islands, including FMB, FFI's local partner on Maio Island, to broadly disseminate results, in Yr3.	Initiated in Yr2 – though not yet with FMB, discussions with organisations on Santiago and Fogo were conducted in Yr2 to share project learning and progress to date.	Continue engagement with Projeto Vitó in Fogo, the local municipalities in Santiago and Boa Vista. Engage more proactively with NGOs in Maio and Santo Antão.
Activity 3.7 Engage government representatives from other islands, and at national level, to disseminate results and scope suitability and replicability of the plan, in Yr3.	Not applicable to this reporting period	

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

Project summary	SMART Indicators	Means of verification	Important Assumptions
<p>Impact: Brava has thriving and self-sustaining endemic flora and livelihoods, which mitigate local climate change impacts, soil erosion and desertification, and create a model for sustainable management across Cape Verde.</p>			
<p>Outcome: Brava's 6,000 inhabitants, supported by government, implement sustainable and data-driven grazing and land management strategies that protect endemic species, improve livelihoods, and increase local resilience to climate change.</p>	<p>0.1 By end of project, scientific data is available on the interactions and impacts of grazing animals and grazing approaches on native and non-native plants on Brava, and is being used to inform sustainable grazing management planning and implementation across the island.</p> <p>0.2 By end of year 2, new botanical data is available for two as yet un-surveyed trial areas (Mato-Campo das Fontes and Sarrado) on the island and, alongside existing data, this is informing conservation and grazing management planning and management.</p> <p>0.3 By end of project, 150 people (50% women) from 12 communities describe themselves as more confident in engaging in decision-making and planning processes, compared to year 1 baseline.</p> <p>0.4 By end of project, five or more government officials describe themselves as more skilled in engaging community members directly in decision-making.</p> <p>0.5 By end of project, 80% of women and 80% of men surveyed in Brava report an improved sense of overall wellbeing as a result of project activities including through increased participation in grazing planning and management (subjective wellbeing),</p>	<p>0.1 Scientific publication, datasets, report and photos of experimental setup at different points in time.</p> <p>0.2 Scientific publication, reports and photos of fieldwork. Grazing management plans informed directly by datasets.</p> <p>0.3 Participatory Impact Assessment, feedback from stakeholders. NB: this is verified by other measures in indicators 0.5, 1.2 and 1.3.</p> <p>0.4 Participatory Impact Assessment, feedback from stakeholders. Post-workshop assessments. NB: this is verified by other measures in indicators 0.3, 1.2 and 1.3.</p> <p>0.5 Participatory Impact Assessment and household surveys at baseline and end of the project.</p>	<p>Climate and weather events do not impact fieldwork (e.g., if there is no rainy season, plants can be dormant).</p> <p>Communities continue to be willing to engage to improve livestock and grazing management.</p> <p>The impact and circumstances of the COVID-19 pandemic allow us to implement all project activities on the island, but also wider national and internal travel.</p>

	<p>improved relations with government authorities and other communities (relational wellbeing), and improved livestock health and value (material wellbeing).</p> <p>0.6. By end of project, there is a measurable improvement in surface soil and grassland vegetation condition and cover in selected project trial plots.</p> <p>0.7 By end of project, there is a 5-10% increase in numbers of 5 endemic plant indicator species (Launaea thalassica CR, Globularia amygdalifolia EN, Echium hypertropicum EN, Campanula bravensis EN, Diplotaxis varia EN) compared to year 1.</p>	<p>0.6 Survey data, monitoring reports and photos</p> <p>0.7 Survey data, monitoring reports and photos</p>	
<p>Output 1 Site-based sustainable grazing management plan developed and piloted in the commune and KBA of Fajã d'Água, delivering immediate conservation and wellbeing benefits and informing an island-wide grazing management plan.</p>	<p>1.1 By end of year 1, an initial, adaptive management plan is developed with experts and the focal community of Fajã d'Água (~120 people).</p> <p>1.2 By year 3, 75% of livestock owners engaged in the project report a sense of increased livelihood and wellbeing benefits derived from their livestock compared to year 1 baseline and based on factors that, pending the owner, will include stable or increased income from the sale of livestock and/or products (meat, milk), animal health, (decreased) rate of culling, etc.</p> <p>1.3 By year 3, there is improved pasture cover (denser grass sward) and vegetation quality (increased flora diversity), and reduced erosion (reduced bare patches), in Fajã d'Água village (640 m2) and surrounding buffer zones (1,000ha), compared to year 1.</p>	<p>1.1 Document describing the initial adaptive management plan for Fajã d'Água, signed by the authorities and by the community association of Fajã d'Água.</p> <p>1.2 Veterinary examinations; Socioeconomic household surveys in years 1 and 3; Participatory Impact Assessment in year 3. NB: this is verified by other measure in indicators 0.3, 0.5 and 1.3.</p> <p>1.3 Monitoring data, reports and photos, Participatory Impact Assessment.</p>	<p>Climate impacts do not adversely affect pasture indicators: Cape Verde is subject to droughts (currently the 3rd year of the latest drought), so it might be hard to observe plant recovery if the drought persists, since native plants will be dormant.</p> <p>Local government continues to be supportive and actively engages in the project, as grazing was identified as a priority through past government-led activities.</p> <p>Adequate size and health of endemic plant source population to allow natural regeneration.</p> <p>The removal of grazing could remove a pressure on invasive plants that had previously been</p>

	<p>1.4 By end of project, there is a 5-10% increase in numbers of 5 endemic plant indicator species (Launaea thalassica CR, Globularia amygdalifolia EN, Echium hypertropicum EN, Campanula bravensis EN, Diplotaxis varia EN) compared to year 1.</p>	<p>1.4 Survey data, monitoring reports and photos</p>	<p>holding them in check.</p>
<p>Output 2 New, locally-relevant scientific evidence confirms appropriate grazing management strategies and is available to inform decision-making for island-wide grazing management planning and conservation strategies.</p>	<p>2.1 By end of project, there is new scientific evidence available on interactions between i) grazing animals, grazing approaches, endemics and invasive species; and ii) regeneration and germination rates of endemic flora, in relation to field-tested grazing regimes.</p> <p>2.2 By project end, measures to monitor key water indicators (e.g., rate of run-off, specific indicators tbc) are in place in priority sites.</p> <p>2.3 By end of year 2, animal movement and land use patterns are newly mapped and available to inform management planning at island level.</p> <p>2.4 By end of year 2, spatial vegetation map of the whole island (67 km²) is developed, to inform zoning under the island-wide grazing management plan.</p> <p>2.5 Baseline botanic surveys around two communities (Mato-Campo das Fontes and Sarrado) are completed in years 1 and 2, followed by endpoint botanic surveys in the same locations in year 3, and monitored through monthly fixedpoint photos.</p>	<p>2.1 Scientific publication and report, photos of experimental setup at different points in time.</p> <p>2.2 Photos of water monitoring in place; preliminary water monitoring results</p> <p>2.3 GPS data and movement maps of animals.</p> <p>2.4 GIS map.</p> <p>2.5 Survey data and photos, data sets; scientific publications and reports.</p>	<p>Climate does not impact fieldwork.</p> <p>Data on water indicators is robust and indicative enough of seasonal and annual trends to be useful in future policy making and planning regarding the links between water and land uses.</p>

<p>Output 3 A Brava-wide temporal, spatial and financial grazing management plan, the first of its kind in Cape Verde, is developed to benefit ~6,000 people, 67km², and 21 endemic plant species, and will be available and used to inform sustainable grazing management practices on other islands.</p>	<p>3.1 Consultations held in years 1, 2 and 3 with 12 communities, involving 150 people in total, (of which 50% women), as well as community associations.</p> <p>3.2 Six consultations held with two government entities (Municipality, Ministry of Environment and Agriculture) in years 1, 2 and 3.</p> <p>3.3 By end of project, local communities and government are facilitated to develop an integrated management plan, drawing on evidence generated through Outputs 1-3, formally endorsed by the island authorities.</p> <p>3.4 By the end of the project, at least 1 other organisation is planning replicability of Brava's model to implement on a different island.</p>	<p>3.1 Workshop proceedings and attendance sheets. Participatory Impact Assessment.</p> <p>3.2 Meetings agenda and proceedings</p> <p>3.3 Integrative grazing management plan for entire Brava, signed by the relevant authorities (Ministry of Agriculture and Environment, Municipality of Brava); meetings and workshop reports; feedback from stakeholders.</p> <p>3.4 Meetings and workshop proceedings and attendance sheets; draft feasibility report.</p>	<p>Learning and lessons from Brava will have applicability on other islands in the archipelago, irrespective of their respective agroecological and climate diversity.</p>
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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)

Output 1

1.1 Early in Yr1, set up a steering group and regular partnership meeting to coordinate the project, including the participative workshops with all stakeholders

1.2 In Yr1, carry out workshops and develop an adaptive sustainable grazing management plan for Fajã d'Água with key stakeholders: community, experts and government.

1.3 From Yr2, implement the plan from 1.2 as a pilot, and manage it adaptively, feeding lessons learned back into the plan.

1.4 From Yr2, monitor the implementation of the plan closely to allow for adaptive management: livestock and wellbeing indicators; vegetation cover and focal plant health.

1.5 Throughout the project, provide veterinary services in Fajã d'Água, to: incentivise project participation, build capacity in animal husbandry including sustainable grazing, and project monitoring.

1.6 Throughout the project, build capacity of community members to address basic veterinary needs in the long-term.

1.7 Conduct a Participatory Impact Assessment with the community of Fajã d'Água at the end of Yr1.

1.8 Conduct island-wide baseline outreach on endemic plants and overgrazing in Yr1, including so as to sensitize communities to the project and help result dissemination.

Output 2

2.1 Throughout the project, design and conduct field trials: place plots under different grazing regimes, testing endemics' regeneration and interactions between grazers, native and invasive plants.

2.2 In Yrs1-2, test endemic plant germination in a nursery. Plants will include our five focal species, as well as others, following INIDA recommendations.

2.3 In Yrs1-2, measure water run-off and soil loss during the rainy seasons (Aug-Dec) in correlation with vegetation cover and type.

2.4 In Yrs1-2, place GPS collars on livestock to facilitate shepherding and improve grazing control; analyse the data to map animal movement and land use.

2.5 In Yrs1-2, conduct botany surveys in understudied areas (Mato-Campo das Fontes and Sarrado) to complement the existing data from the literature and previous FFI projects.

2.6 In Yrs1-2, map, using GIS, the vegetation (cover, type) in understudied areas using a drone and cross-referencing with fieldwork described above and participatory mapping.

Output 3

3.1 In Yrs2-3, convene stakeholders (communities, government, experts) in workshops, on an island-wide scale, for a participatory planning process for sustainable grazing on Brava.

3.2 In Yrs2-3, draft an island-wide adaptive sustainable grazing management plan, based on Outputs 1 and 2 results and the participatory planning process in 3.1.

3.3 In Yr3, Municipality of Brava and Ministry of Agriculture and Environment approve and disseminate the grazing management plan, to be implemented in a follow-up project.

3.4 Repeat Participatory Impact Assessment (logframe, 1.2) in Yr3 for Fajã d'Água and two additional communes (Mato-Campo das Fontes and Sarrado) of Brava.

3.5 Conduct end of project island-wide outreach on endemic plants and overgrazing, at the end of Yr3.

3.6 Organise exchanges with organisations on other islands, including FMB, FFI's local partner on Maio Island, to broadly disseminate results, in Yr3.

3.2 3.7 Engage government representatives from other islands, and at national level, to disseminate results and scope suitability and replicability of the plan, in Yr3.

Annex 3: Standard Indicators

Due to staff annual leave and illness affecting capacity, we have not had the opportunity to complete the Standard Indicators table since its introduction. These will be thoughtfully considered and included in the next reporting deadline.

Table 1 Project Standard Indicators

DI Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DI Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project

No formal publications have been produced in Yr2 of this project.

Table 2 Publications

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)

Checklist for submission

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the correct template (checking fund, type of report (i.e. Annual or Final), and year) and deleted the blue guidance text before submission?	Yes
Is the report less than 10MB? If so, please email to BCF-Reports@niras.com putting the project number in the Subject line.	Yes
Is your report more than 10MB? If so, please discuss with BCF-Reports@niras.com about the best way to deliver the report, putting the project number in the Subject line.	No
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Yes
Do you have hard copies of material you need to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	No
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 16)?	Yes
Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	