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 2022

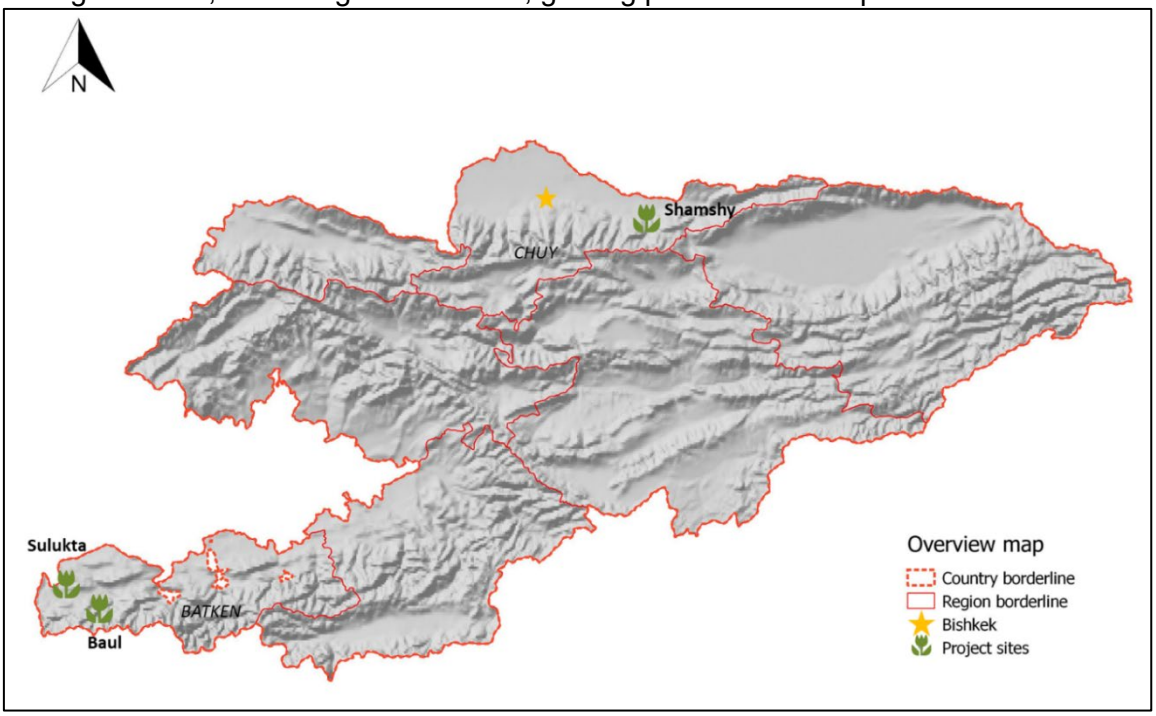
Darwin Initiative Project Information

Project reference	26-020
Project title	Securing wild tulips and pastoral communities in the Kyrgyz mountains
Country/ies	Kyrgyzstan
Lead partner	Fauna & Flora International
Project partner(s)	Association of Forest Users and Land Users of Kyrgyzstan (AFLUK); Bioresurs & Cambridge University Botanic Gardens (CUBG)
Darwin grant value	**£309,374**
Start/end dates of project	1st April 2019 - 31st March 2022
Reporting period (e.g. Apr 2021 – Mar 2022) and number (e.g. Annual Report 1, 2, 3)	1st April 2021 – 31st March 2022 Annual Report 3
Project Leader name	Jarkyn Samanchina
Project website/blog/social media	https://www.fauna-flora.org/projects/securing-wild-tulips-montane-grasslands-kyrgyzstan
Report author(s) and date	Mariia Cherniavskaiia, Jarkyn Samanchina, Ormon Sultangaziev, David Gill, Kayirkul Shalpykov, Sairagul Tajibaeva. April, 2022

1. Project summary

The montane grasslands of Kyrgyzstan are globally important with 27 species of wild tulips (35% of global diversity), including six endemics and 11 nationally Red Listed species. Kyrgyzstan's 4 million hectares of montane grasslands are crucial for tulips and semi-nomadic pastoralism. For centuries, Kyrgyz people have grazed livestock, and pastoralism remains integral to mountain communities' livelihoods. However, approximately a quarter of all Kyrgyzstan's montane grasslands are overgrazed, resulting in decreased ground cover, widespread erosion, less palatable species for livestock and less resilience to climate change. Pasture degradation is negatively impacting already-deprived, grassland-dependent communities, threatening their livelihoods, wellbeing and cultural identify. The pastoral regions of Chui and Batken are Kyrgyzstan's first and second most impoverished, respectively, with average incomes of less than 60 GBP per month. The project is working in Shamshy village in Chui Region and Baul village and Sulukta town (in Batken Region). Pastures are managed centrally by the Kyrgyzstan government in conjunction with local Pasture Committees. Tulips are indicator species for sustainably-managed pastures, as overgrazing and excessive trampling by livestock are key

threats that prevent regeneration, resulting in extinction risk. Other threats include recreational flower picking, climate change and habitat loss. These threats are exacerbated by limited data, the absence of formal protection and low public awareness. The project will increase understanding of Kyrgyzstan's grasslands and tulips and work with local communities to protect tulips through sustainable grazing management, protection and culturally-relevant awareness-raising activities, benefiting communities, grazing pastures and tulips.



2. Project stakeholders/ partners

FFI's Kyrgyzstan Programme team led the management of the project activities on the ground, including coordinating of work plans of the main partners, promoting smooth communication between partners, participating directly in selected activities, sourcing additional expertise where required, providing technical advice, leading on monitoring and evaluation and acting as a conduit for collaboration between the project's national and international partners

Bioresurs - national experts in botany and plant conservation - led all biodiversity surveys, monitoring and species conservation activities in the project sites. Over Y3 Bioresurs collaborated with local research institutions: the Institute of Chemistry and Phytotechnology of (ICP); Institute of Biology of (BI), Kyrgyz National University named after J. Balasagyn (KNU); the Kyrgyz-Turkish Manas University; the Botanical Garden named after Gareev; and the Seed Laboratory of the Frunze Forestry of the State Agency on Environment Protection and Forestry of the Government of the Kyrgyz Republic (SAEPF).

Association of Forest, Land Users of Kyrgyzstan (AFLUK) is an NGO that works towards sustainable forest and pasture management. It led all work related to pasture management in the project. This involved close engagement with local self-governments (LSGs) in Shamshy and Kulundy in the Project sites; National Pasture Users Association of Kyrgyzstan "Kyrgyz Jayity"; Kyrgyz Scientific Research Institute for Livestock and Pastures (KSRILP); and Leilek Forestry (situated by one of the project sites, Baul) and SAEPF. Regional administrations also participated in public discussions during pasture management policy development.

Cambridge University Botanic Garden (CUBG) – holders of the UK's national tulip collection – are providing technical input across the project and are supporting the establishment of ex situ collections. They also lead supervision of a PhD student – Brett Wilson - who is jointly supervised by Royal Botanic Gardens, Kew and FFI. Brett's PhD addresses questions related to the evolutionary history, genetics and conservation priorities for tulips across Central Asia.

FFI staff maintain constant contact (by phone, online meetings) with all partners to monitor progress and support implementation. Because of the COVID19 situation, FFI hosted just one

formal steering group meeting in Y3 with the lead national partners (AFLUK and Bioresurs). AFLUK and Bioresurs regularly coordinated upcoming events with each other and kept FFI informed ahead of all major activities. All partners participated in a project WhatsApp group, “Darwin Tulips”, which has enabled regular sharing of information, photographs and updates from the field, which is documented in project materials and reports

3. Project progress

3.1 Progress in carrying out project Activities

1.1 Develop survey methodology for tulips and pastures, with input from project partners and stakeholders.

Completed and reported on in Y1.

1.2 Conduct baseline surveys for tulips and pastures in the project sites, and repeat monitoring in years 2 and 3

A - Tulip surveys

In April and May 2021, field surveys led by Bioresurs identified 31 new habitats of 17 wild tulips species in Chui, Batken, Talas and Jalal-Abad regions of Kyrgyzstan. Data were collected on floral composition, range, abundance and threats, adding to data collected Y1-2 and contributing to a comprehensive picture on the status of wild tulips in Kyrgyzstan. Highlights from the latest series of surveys include:

- Collection of *Tulipa dasystemon, Tulipa ferganica* (found and collected in 4 locations), *Tulipa rosea* (found and collected in 8 locations), *Tulipa turkestanica* (found and collected in 7 locations), *Tulipa affinis* (found and collected in 2 locations), *Tulipa tetraphylla* and *Tulipa korolkowii* (found and collected in 1 location).
- A survey expedition in Chui region, conducted in March and April 2021, identified the following tulips: *Tulipa sp. 1*, a tulip close to *T. zenaidae* and *T. ostrowskiana*; *Tulipa sp. 2* - tulip, closely related to *T. talassica*, presumably *T. brachystemon*. If the preliminary identification is confirmed, this will be the first finding of *T. brachystemon* for Kyrgyzstan. The specimen is currently awaiting identification at the Botany Laboratory of the Academy of Sciences, alongside undergoing genetic analysis by PhD student Brett Wilson; we hope to confirm this in the final report.
- An additional expedition to collect herbarium material for molecular research was carried out from 3-10 May 2021 in new locations within the Chui region. The following species were collected: *Tulipa greigii* (Susamyr ridge); *Tulipa talassica* (Talas ridge); *Tulipa dubia* (Chatkal ridge, Tereksai); *Tulipa platystemon* (Fergana ridge) and *Tulipa bifloriformis* (Chatkal ridge, Chapchama pass).

B - Monitoring of fenced and reference areas in the Shamshy project site

The demonstration sites created in 2019 with an area of 10m by 10m were monitored twice during the grazing season in Y3. Monitoring was carried out inside sites, adjacent to the site and outside the territory to serve as a control. Now that two seasons have passed since the fences were erected, we can see notable changes in vegetation and species composition, with a decrease in bare land. A full report will be provided in the Final report to Darwin.

C- Pasture surveys.

During the reporting period of 2021-2022, we continued to assess the condition of selected pilot pasture sites and GPS coordinates marked in 2020. Monitoring and assessment of pasture conditions of the pilot project sites was carried out according to the methodological guidelines developed through this project. The experts' report are given as a summary below.

Within Y3, monitoring had been carried out 2 times:

- The year of 2021 - 2nd, 3rd week of May, the beginning of grazing;
- The year of 2021 – 3rd week of July, 1st week of August, during grazing and after.

I. Summary of pasture assessment results: Shamshy.

Site name	Latitude (N)	Longitude (E)	Altitude, m	Findings and recommendations
Kok-Torpok	42˚35.592'	075˚19.784'	2079	Generative shoots of key plants were eaten by sheep before they had time to be seeded, trampling of young shoots of nutritious forage grasses is also observed, which are subject to rapid degradation due to non-rooting of the root system, due to low plant coverage and a high percentage of bare land sites
	42˚35.592'	075˚19.790'	2077	
	42˚35.604'	075˚19.775'	2073	
	42˚35.605'	075˚19.783'	2072	
Kok-Torpok-2	42˚35.533'	075˚19.811'	2063	During the monitoring, it was determined that the pasture is slightly degraded, and that there are first signals of the necessary positive changes in the use of pasture resources.
	42˚35.530'	075˚19.804'	2064	
	42˚35.523'	075˚19.819'	2062	
	42˚35.521'	075˚19.812'	2063	
Shamshy 2 ha fenced in 2020 demonstration plot	42˚35.494'	075˚24.173'	1698	At the demonstration site there is a rest system with a good cover of forage grasses, as a result of which there is an increase in perfectly eaten grasses, a reduction in the percentage of bare land. The monitoring results prove that the provision of rest for two seasons has a positive effect on the restoration of vegetation cover, the preservation of red-book tulips, an increase in grasses and tree waste, which allows to retain moisture, reducing unwanted vegetation, increasing yields by 2-2.5 times.
	42˚35.490'	075˚24.176'	1700	
	42˚35.484'	075˚24.164'	1699	
	42˚35.489'	075˚24.162'	1701	
Kok-Bulak	42˚36.034'	075˚21.718'	1805	This site is heavily overgrazed, as in the previous year, the height of stubble does not exceed 5cm, despite the spring season, the percentage of pasturing exceeds all standards, there is a systemless grazing and an increase in weed vegetation from year to year.
	42˚36.036'	075˚21.727'	1806	
	42˚36.036'	075˚21.717'	1803	
	42˚36.044'	075˚21.723'	1802	

II. Summary of pasture assessment results: Baul.

Site name	Latitude (N)	Longitude (E)	Altitude, m	Findings and recommendations
Chayish (Quarter 5 of Ozgorush unit of Leilek Forestry)	39˚45.339'	069˚56.648'	2096	In general, the pastures are in good condition. On steppe-type pastures 45% of perfectly eaten plants grow, 24% of eaten grasses, the percentage of bare land decreased by 12%, taking into account the fact that the last year there was a pasturing of forage grasses by more than 80% and the percentage of bare land by 21%.
	39˚45.333'	069˚56.649'	2094	
	39˚45.338'	069˚56.635'	2089	
	39˚45.333'	069˚56.635'	2088	
Chayish (Quarter 6 of Ozgorush unit of Leilek Forestry)	39˚45.485'	069˚56.956'	2273	Based on the main indicators, the site is excellent for grazing of small cattle, there are no signs of a degraded process, there is enough fodder stock on this site for grazing of small cattle (1-LU (Livestock Unit) per 1ha or 5 sheep per 1ha) with proper use of pasture lands.
	39˚45.477'	069˚56.961'	2277	
	39˚45.485'	069˚56.951'	2280	
	39˚45.475'	069˚56.955'	2283	
Ak-Sar (Quarter 5 of Ozgorush unit of Leilek Forestry)	39˚44.189'	069˚55.166'	2376	According to the preliminary assessment of the indicators, there are first signals of change in the botanical composition and an increase in undesirable vegetation.
	39˚44.190'	069˚55.159'	2380	
	39˚44.181'	069˚55.166'	2374	
	39˚44.181'	069˚55.157'	2381	
Sary-Tash (Quarter 25 of Ozgorush unit of Leilek Forestry)	39˚46.109'	069˚55.092'	2000	This site is a dry steppe site located on the southern slope, the projective cover of the soil with plants is 68%, with a predominance of eaten grasses - 59%, is suitable for grazing livestock.
	39˚46.113'	069˚55.084'	2009	
	39˚46.104'	069˚55.090'	2001	
	39˚46.110'	069˚55.079'	2011	

III. Summary of pasture assessment results: Suluktu

Site name	Latitude (N)	Longitude (E)	Altitude, m	Findings and recommendations
Field №8	39˚55.818'	069˚38.747'	1516	This site is a cereal-grass pasture with a dominant - *Festuca sulcata*, steppe type, mid-mountain location. On such pastures, the pasturing rate should not exceed 60-65% of the vegetation cover. According to the monitoring results, the rate of grazing is very high, resulting in the destruction of the feed cover and the appearance of weeds, which negatively affects the condition of pastures.
	39˚55.820'	069˚38.740'	1516	
	39˚55.808'	069˚38.746'	1522	
	39˚55.810'	069˚38.739'	1522	
Tytty	39˚57.145'	069˚38.316'	1670	In a comparative analysis of changes in the dynamics of plant growth and development with the last year's data, this site is quite suitable for grazing sheep and goats.
	39˚57.146'	069˚38.309'	1666	
	39˚57.135'	069˚38.314'	1682	
	39˚57.136'	069˚38.307'	1679	
Tytty 2	39˚56.976'	069˚38.216'	1643	Analyzing the grazing period of this site, at the time of monitoring, which was 55 days out of 60 days of the grazing period, when pasturing - 45%, a festuca sulcate- artemisia steppe-type site is potential.
	39˚56.979'	069˚38.209'	1647	
	39˚56.965'	069˚38.212'	1646	
	39˚56.968'	069˚38.205'	1645	

1.3 Draft and disseminate report summarising field knowledge of tulips, species and population distributions, and assessing sites for reinforcement and protection opportunities

From 10 to 14 May 2022, a large meeting is planned with international participation of all stakeholders on a tulip conservation strategy. In collaboration with Brett Wilson, we will disseminate a number of scientific briefing papers ahead of the planned Tulip Conservation Strategy meeting. Data collected in Y1 of the project was incorporated in the article by Brett Wilson et al “Central Asian wild tulip conservation requires a regional approach, especially in the face of climate change” in Biodiversity and Conservation (2021) (Abstract in Annex 4, 1.2).

1.4 Undertake field mission to collect threatened tulip species, identifying key species with the potential for long term recovery and reinforcement

In Y3 63.4g of tulip seeds and 890 bulbs (including 85 offsets) were collected from 10 wild species: *T. turkestanica, T. affinis, T. rosea, T. platestemon, T. korolkovi, T. greigii, T. talassica, T. zenaidae, T. dasystemon, T. kaufmanniana*. In 2021, we noted that almost all of the samples have disease-damaged bulbs. The Phytopathology Laboratory of the Institute of Biology of the National Academy of Sciences (NAS) carried out pathogen identification. The following tulip bulb pathogens have been identified: 1. *Sclerotinia bulborum* (Wakk) Rehm; 2. *Sclerotium tuliparum* Kleb; 3. *Aspergillus flavus* Link; 4. *Aspergillus oryzae*; 5. *Rhizopus stolonifer* (Ehrenb) Vuill.

1.5 Establish threatened tulip ex-situ collections at Gareev Botanical Gardens, supported by Cambridge University Botanic Gardens

Seeds and bulbs of wild tulips collected in Y3 also were distributed to three experimental sites in Kyrgyzstan: two in Bishkek and one in Chunkurchak gorge. These sites have different microclimates, providing different optimal conditions for different species. Through collections made in Y1-3, the project has in total supported ex-situ conservation of 22 species. Monitoring of germination rates of tulip species planted *ex situ* continued in 2022. These data are being compiled as part of an effort to understand best growing conditions for different tulips species.

1.6 Cultivate, grow and plant threatened tulip bulbs in-situ to reinforce priority populations; monitor plantings to assess success

In the reporting period, observations of tulips planted in 2019 and 2020 were conducted in the Botanical Garden named after Gareev of the National Academy of Sciences, in the Chunkurchak

tract and at the experimental plot of the Institute of Chemistry and Phytotechnology of the National Academy of Sciences of the Kyrgyz Republic. In the Chunkurchak tract, out of the two-year-old specimens, only *T. kaufmanniana*, T*. bifloriformis* and *T. dasystemonoides* flowered. Of the species planted in 2020, *T. ostrowskiana*, *T. heterophilla*, *T. talassica* and *T. jacques* flowered. Seeds were not formed, probably due to unstable climatic conditions of the current year. At the experimental plot of the Institute of Chemistry and Phytotechnology, located in Chui valley, plants bloomed and bore fruit but seeds did not mature. In the Gareev Botanical Garden, tulips flowered from 28 March to 3 May for 37 days. Depending on the species, the flowering time ranged from 8 days in *T. zonneveldii* to 20 days in *T. kaufmanniana*. The duration of flowering of one species of tulip ranged from 12 to 20 days. Emergence of seedlings (sown in 2019, 2020 and 2021) on nursery beds and in seed boxes was recorded from 1 to 12 March in 2021 and 2022. Emergence of seedlings in boxes was recorded 7-10 days later than in seedlings in nursery beds. As in previous years, seed germination was 60 to 80%. The highest germination of seeds was recorded for *T. kaufmaniana, T. tarda* and *T. bifloriformis*. For other species, seed germination was <60%. Reintroduction activities have been piloted at two plots in the Shamshy Gorge with planting of over 1000 bulbs of native tulip species and planting of 150 grams of seeds.

1.7 Organise and execute exchange trips between Gareev and Cambridge University Botanic Gardens, focusing on staff skills improvements in ex-situ collection management and in-situ reinforcement

Postponed to July 2022 due to restrictions on travel.

1.8 Collate background information on threatened tulips and design and implement at a strategy workshop that results in the development of a multi-stakeholder tulip Kyrgyz conservation strategy

On 26 February 2022, the Conference Hall of the Institute of Chemistry and Phytotechnology of the National Academy of Sciences of the Kyrgyz Republic hosted a scientific workshop on "Study and sustainable conservation of wild tulip biodiversity in Kyrgyzstan" (see Annex 4, 1.3XX). The workshop was organised by the "BIORESOURCE" Public Foundation, Institute of Chemistry and Phytotechnology of National Academy of Sciences of the Kyrgyz Republic, and Fauna & Flora International. There were 25 participants (including 7 women), including representatives of the Ministry of Agriculture, Pasture Department, Ministry of Natural Resources, Ecology and Technical Inspection, tour operators. At the end, the workshop was summarised and a draft Strategy for the Conservation of Wild Tulips in Kyrgyzstan was discussed, which will be finalised and presented at the meeting in May.

In May 2022 we will implement a multi-stakeholder strategy workshop and a Red List workshop. These will both be informed by the project's survey results (see 1.2) as well as ongoing analysis and distribution mapping completed under Brett Wilson's PhD.

2.1 Hold consultation meetings and discussion groups with three pasture committees and at least 50 pasture users to understand current pasture management and health; results analysed
Completed in Y1 and Y2.

2.2 Write report that reviews current pasture management practices and assesses these against reforms, making recommendations and assess feasibility for improvements
Completed in Y1 and Y2.

2.3 Results (2.2) used for livestock and pasture planning exercise, with community members and stakeholders engaged in designing content of workshops
Completed in Y1 and Y2.

2.4 Plan and hold three pasture planning workshops, reaching at least 100 pasture users; at workshops, gather data to inform development of a plan

In Y3, due to the fact that the existing Community Pasture Management Plans were difficult for pasture users to understand based on results and learning from Y1, they were modified and

simplified. That is why the following activities have been included in order to facilitate the Community Pasture Management Plans of the pilot sites:
- Establishment of 7 working commissions in the pilot sites;
- Establishment of the Jailoo Council in the pilot plots;
- Inclusion of protection measures for tulips in the pilot plots through adapted grazing regime and awareness-raising activities;
- Implementation of a grazing management plan;
- Verification of fulfilment of functions of the Commission on monitoring and evaluation of pasture conditions;
- Verification of the implementation of the functions of the commission for resettlement and allocation of shepherds to pastures;
- Conducting a survey of pasture users on the implementation of the above activities.

2.5 Using data acquired in 2.4, used to develop 'pasture and livestock plans' with pastures users and content supported by the local community

In September 2021, AFLUK assessed Community Plans for Pasture Management (PMP) implementation in the project sites through field visits and meetings with pasture users. In all project sites, the updated Pasture Management Plans were approved by the local councils. Accordingly, seven permanent local commissions have been created to guide implementation. They also approved actions for wild tulip conservation, including establishing a gentle grazing regime and shifting grazing to account for tulip flowering times. Subsequent awareness-raising activities were conducted among pasture users.

2.6 Work directly with pasture committees and pasture users on implementation of community-led pasture and livestock plans within the timescale and resources identified

The implementation of three Community Plans for Pasture Management - updated through the project in 2020 - is being regularly guided and monitored through visits and phone calls by AFLUK and FFI. A consultation work on the implementation of the Community Plan for Pasture Management and Sustainable Pasture Resource Management is carried out when requested by the pasture users of the pilot sites.

2.7 Monitor and assess implementation of management plans by communities through interviews and sites visits

Monitoring and evaluation of the implementation of the Pasture Management Community Plans was carried out in September 2021 in 2 phases: desk study and field study, in each of the three project sites (Baul, Suluktu, Shamshy). During the desk study, the implementation of the 7 working commissions, the establishment of the Jailoo Council and the wild tulip conservation activities were verified. The tulip conservation activities included the following: Issuance of an order "On preservation of wild tulips (from flowering to seed shedding) and the pastures on which they grow"; Clarification of the list of pasture users and their introduction to the order; Conducting awareness-raising activities among pasture users. The results of the desk study show that all the activities have been implemented successfully. Thus 7 commissions were established in three project sites: In Shamshy the commission consists of 18 representatives of Pastoral Committees, in Baul - of 17 (of which 5 are women), in Syuluktu - of 21 (of which 4 are women). Also, Jailoo councils have been established from active pasture users, with 7 members each.
During the field study visits to the pasture plots, representatives of the Pasture Committees of the pilot plots verified the pasture conditions. According to the results of monitoring and assessment of pasture conditions, 8 plots in Baul and 5 plots in Suluktu were assessed as slightly degraded, in Shamshy 2 plots were also assessed as slightly degraded and 2 others are in the initial stage of degradation.

2.8 'Sustainable Pasture Management Agreement' written with Pasture User Association and in consultation with Pasture Committees

Consultative meetings on sustainable pasture management were held in April 2021 in Baul and Suluktu and in May 2021 in Shamshy with the Pasture Users Association, Pasture Committees

and other stakeholders (see Annex 4, 2.1 for agenda and information). A total of 37 Pastoral Committees were represented in the series of consultation meetings, attended by a total of 86 participants: 39 in Suluktu, 21 in Baul (including 2 women), 26 in Shamshy (including 6 women). The participants of the consultation meetings on sustainable management were mainly interested in the sustainability of the Pasture Users Association and the Pasture Committees. Also, the participants agreed and supported the goals and objectives of the project and promised to pay attention to the conservation of wild tulips growing in the pastures. At the end of the consultation meetings it was decided to organise training sessions and to sign an agreement on sustainable pasture management after the return of pasture users from the pastures. This usually happens in September but it depends on the area and altitude at which the pastures are located.

2.9 Pasture Committee workshop organised and run, and participants sign onto the 'Sustainable Pasture Management Agreement'

In October 2021, a round table in Bishkek brought together 48 central and local policy makers on integrated forest and pasture management (8 women; 40 men). This meeting was organised following the success of the Darwin Initiative project in developing a joint forestry and pasture management plan between Leilek Forestry Unit and the Pasture Committee in the "Baul" pilot site. FFI and project partners presented this as a successful example of two sectors developing a joint plan to resolve over-grazing. The round table submitted a resolution to replicate this approach across Kyrgyzstan to the Agency on Forest Ecosystem of the Ministry of Agriculture, Water Resources and Regional Development of the Kyrgyz Republic on October 4th.

At the end of the workshop, agreements on sustainable pasture management were signed with the Pasture Committees (PC). In total, 45 PCs signed agreements for a total area of 10,387ha (Annex 4, 3.1). The approximate areas of tulip production in the pastures of the Aiyl districts were considered when developing the agreements. Informational posters on project activities prepared by the FFI office in Kyrgyzstan were distributed to all participants.

In addition to this meeting, in February and March 2022, a series of workshops on Capacity Building of Pasture Users in Sustainable Pasture Management and Use was conducted. The locations below are different to the three main project sites, and represent work to extend capacity building benefits to other priority locations in Kyrgyzstan.

Data	Location	Number of participants				
		Total	Men	%	Women	%
16.02.2022	Batken	***17***	*17*	***100***	*0*	***0***
17.02.2022	Isfana	***19***	*18*	***95***	*1*	***5***
10.03.2022	Kara-Balta	***16***	*15*	***94***	*1*	***6***
15.03.2022	Bishkek	***15***	*14*	***93***	*1*	***7***
	In Total	***67***	*64*	***95***	3	***5***

3.1 Design a suite of trainings for pasture users, incorporating knowledge gained via original reports on grazing management, grazing plan and recommendations on pasture improvements techniques

Completed in Y1.

3.2 Lead training events, reaching 300 pasture users across 3 communities, to build their capacity and applied skills in improved pasture management

In June 2021 in Baul and Suluktu, and in September 2021 in Shamshy, a series of trainings on "Capacity building of pasture users in sustainable pasture management and use" were conducted. Information about the participants, dates and locations are given below.

Data	Location	Number of participants				
		Total	Men	%	Women	%
04.06.2021	Suluktu	***27***	*13*	***48***	*14*	***52***
05.06.2021	Baul	***24***	*14*	***58***	*10*	***42***

06.06.2021	Baul	***27***	*8*	***30***	*19*	***70***
07.06.2021	Suluktu	***28***	*16*	***57***	*12*	***43***
08.06.2021	Suluktu	***19***	*11*	***58***	*8*	***42***
08.09.2021	Shamshy	***27***	*20*	***74***	*7*	***26***
	In Total	***152***	*82*	***54***	70	***46***

The training provided general information about pasture resources of the Kyrgyz Republic, general information about tulips growing on pastures. The training programme also included: Sustainable management and use of pastures; Restoration and improvement of degraded pastures; Legal basis of pasture management and use (Constitution, codes, laws, regulation etc.); Problems of pasture use and ways to solve them.

During the trainings, the following questionnaires were distributed to the participants:
- Monitoring and evaluation of the implementation of the Pasture Management Community Plan;
- Determination of the opinions formed and evaluation of the training conducted;
- To determine the level of knowledge of the participants before and after the training on: Sustainable management and use of pastures;
- To determine the level of knowledge of the participants before and after the training on:
.

A total of 152 participants took part in the above surveys and the surveys were conducted anonymously. From the surveys, it is clear that 79% of the participants are aware of the Pasture Management Community Plan, and 62% are informed about the activities. More than half of the participants do not participate in the general meetings of the Pasture Users Association, they think that the grazing norms and pasture rotation are not respected. All participants mentioned that the interests of vulnerable groups are considered in pasture use and that a fee/payment for pasture use is collected.

Regarding the measurement of the participants' knowledge before and after the trainings, the below results were collected:

- On the topic "Sustainable management and use of pastures", the knowledge scores of pasture users of the pilot plots before trainings ranged from 23% to 44%, and after trainings it ranged from 55% to 77%, indicating a significant increase in knowledge of participants.
- On the topic "Pasture degradation and improvement methods", the knowledge scores for pasture users before trainings ranged from 21% to 40%, and after the trainings ranged from 40 to 68%, again indicating a significant increase in knowledge of participants.

In general, all participants showed a good level of participation and interest in the trainings. They were satisfied with the organizational aspects of the training, effective methods of training of trainers, and the quality of handouts.

Building on earlier capacity building trainings for pasture users in 2020 (benefiting 152 pasture users), in July 2021 the project organised an experience exchange for 7 (3 women) stakeholders who visited three pasture committees in two districts of Issyk-Kul region. Hosts shared their experiences of attracting investments to improve pasture infrastructures, improving mudflow-prone pasture roads and on record keeping and accounting. Of particular note was a visit to Sary-Bulak Pasture Committee. This PC is unusual as its chair and >50% of its members are female (pasture management is traditionally male dominated). The chair shared her experience in chairing the committee and in securing additional income for women pasture users through making Kyrgyz yurts.

3.3 Conduct consultation interviews with pasture users on use of pasture improvement methods; repeat after 1 year to understand application

A survey and consultation on the use of pasture improvement methods in the pilot plots is scheduled from 13 to 23 May 2022. The questions consist of the following parts:
- General questions on pasture and tulip knowledge;
- Monitoring and evaluation of the implementation of the pasture management plan;
- Assessment of changes in livestock health and product quality;

- Mastering pasture improvement methods.
The results of the survey will be provided after the event in the final report.

3.4 Conduct discussion groups to learn and document the real and perceived benefits and pitfalls to pasture improvement methods; utilise to adaptively manage as necessary
Scheduled for 13-23 April 2022. The results will be presented in the final report.

3.5 Consult and establish community pasture monitoring method through sward and forage assessment and invertebrate assessments for biodiversity to understand the health and recovery of pastures, and to monitor project impact.

The research was conducted in the spring-autumn pastures of the Chu valley of the Kyrgyz Republic located at an altitude of more than 1600m in the established experimental plots in the Shamshi area. Demonstration plots No. 1 and No. 2 were located closer to the koshars (temporary livestock shelter) and were more prone to degradation, sample No. 3 was taken between them as a control. Demonstration plot No. 4 is located higher and compared to the above demonstration plots was less susceptible to degradation, sample No. 5 was taken next to the fenced plot as a control of this plot. Summarizing the obtained results, it is possible to conclude that the best indicators of the state of pastures fulfilling the main role of maintaining species biodiversity can be:

- The content of agronomically valuable fractions in the soil (1.0 - 0.25 mm);
- Humus content;
- Total nitrogen content;
- Species biodiversity of actinomycetes.

Based on the results of this work, 2 papers were prepared for international journals and are under review by experts.

3.6 Conduct interviews and discussion groups with pasture users regarding changes in herd health and quality of products from livestock.

Scheduled for 13-23 April 2022. The results will be presented in the final report.

4.1 Establish, train and equip two community protection groups to monitor and protect tulips and maintain fencing at four sites (once erected).

A workshop was held in a secondary school in Shamshy village on 21 May 2021 with the participation of the staff of the Public Foundation "Bioresource". During the workshop, we showed a video on the importance of preservation of wild tulips of Kyrgyzstan. Posters about wild tulips were distributed. Mobile groups of 10 high school students were established and given waistcoats, caps and bags. High school teachers agreed to lead and supervise informal tulip conservation groups, and they, and the pupils, will carry out informal monitoring of important tulip sites.

4.2 Identify threatened tulip species sites prioritised for fencing and then work with community protection groups to erect fencing

In general, fencing of pilot plots in the Shamshy gorge on two plots with a total area of 2ha was carried out. From 10 to 16 September 2021, we organised a trip to Baul village to fence 3ha of pilot plot in the Shayyk gorge. Monitoring is being conducted at the fenced plots. In addition, we also set up a nursery at the Baul secondary school on an area of 3ha. Here, 77 bulbs of wild tulips from 12 habitats were planted. We also planted about 100 bulbs of cultivated tulips and seeds of wild *Fritillaria eduardii*.

4.3 Consult, identify and mark tulip conservation zones, and work with local pasture users to apply grazing management

Annual workplans in the approved community pasture management plan for each project site (see 2.4-2.5) include actions to identify tulip conservation zones and apply seasonal limits to

grazing in these areas. These measures are successfully applied within project areas; more information will be supplied with final report.

4.4 Survey tourist agencies, identify key messaging, and develop outreach materials targeting tourists to influence tourist behaviour, highlighting cultural value of tulips and laws governing tulip cutting

Following earlier consultations with tourist agencies, on March 1, 2022, a memorandum of cooperation between PF "Bioresurs" and "Travel Experts" Ltd. was drawn up, in which the travel company agreed to include in its programmes the organisation of flower tours to wild tulip growing areas during the flowering period. The memorandum also includes a commitment to comply with the requirements of the legislation of the Kyrgyz Republic during visits to tulip growing areas.

4.5 Distribute tourist outreach materials through tourist agencies and local businesses; survey tourists to assess impact

Posters were produced in March 2021 (Annex 4, 4.1) and 500 were distributed at workshops, roundtables, festivals and other events held as part of our project. Two videos were also produced in Russian and Kyrgyz. Both the posters and film were handed over to tourism companies for use in their operations.

4.6 Design and implement a series of cultural events working with local community leaders, teachers and other local influencers (e.g. tulip festivals, bulb plantings, school activities)

In April 2022, the First Tulip Blossom Festival was organised. We will report on this in the final report.

4.7 Design and transport mobile interpretation boards on tulips and tulip conservation to project communities, to will be eventually housed in Gareev Botanical Gardens

FFI and Gareev Botanic Gardens developed outreach posters (5 in total) featuring information on wild tulips and ongoing in-situ and ex-situ conservation work carried out through the Darwin Initiative (Examples given in Annex 4, 4.2). Mobile information boards (Annex 4, 4.3) produced by FFI and posters produced by PF "Bioresurs" as part of the tulip project were given to the E. Gareeva Botanical Garden of the National Academy of Sciences of the Kyrgyz Republic.

4.8 Conduct surveys to understand changes in attitudes, perceptions, and behaviours, regarding wild tulips their cultural value and protection

Participatory Impact Assessments are scheduled for June 2022.

3.2 Progress towards project Outputs

Output 1. Increased knowledge of wild tulip species is informing both in-situ and ex-situ conservation and management development at national level

Data on tulip populations across Kyrgyzstan were collected during Y1, Y2 and Y3. Monitoring of the established baseline indicators of species diversity, vegetation, rangeland condition and productivity continued at the three project sites in Y3. Vegetation monitoring in the Shamshy sample plots was carried out in Y1, Y2 and Y3 and data were collected on tulip abundance, vegetation and soil conditions. (Indicator 1.1.). Four ex situ collections were established in Y1, and in Ys2 and 3 the collections were supplemented, so that 22 species are now conserved ex situ (Indicator 1.2) making these viable populations. In Y3, the threatened species *T. zenaidae* was reintroduced into the 100ha fenced project areas at Shamshy (Indicator 1.3); it will be possible to determine the status of the population after monitoring in 2022. An exchange trip to the UK for five local experts to improve technical understanding and skills in tulip conservation has been postponed until July 2022 (Indicator 1.4). A national tulip conservation strategy is planned for 10-14 May 2022 and preparations are underway (Indicator 1.5).

Output 2. Members of grazing communities are more knowledgeable and actively engaged in sustainable pasture planning and management

In Y1, 226 pasture users (34% (79) women) from Baul, Suluktu and Shamshy had greater awareness on pasture degradation, the importance of pasture management plans and pasture improvement methods (Indicator 2.1). In Y2, AFLUK, following close collaboration and consultation with stakeholders at the project sites, successfully supported the revision of three Community Plans for Pasture Management (Indicator 2.2). The management plans were simplified and adapted, and in Y3 their implementation by the local population was measured, with the result that all pasture users complied with the prescribed activities in the management plans (Indicator 2.3). In Y3, a sustainable pasture management agreement was adopted by 45 Pasture Committees for a total area of 10,387ha (Indicator 2.4), exceeding our set targets.

Output 3. Pasture users are applying skills and techniques that support recovery of grasslands benefiting livelihoods and biodiversity

In Y3, 152 (including 70 women) pasture users were trained in sustainable pasture and livestock management, in addition to 105 pasture users (including 28 women) trained in Y2 and 134 (including 74 women) trained in Y1. Thus by Y3, a total of 391 pasture users and stakeholders were trained, of which 44% women were trained (Indicator 3.1). By the end of the project we expect that the vast majority of training participants will have applied sustainable management practices on their pastures; in Y3 discussion groups and surveys on the use of knowledge gained during the trainings are planned (Indicator 3.2). KRILP experts have developed a pasture monitoring system for use by pasture users, and in Y3, training manuals on pasture monitoring were distributed to all training participants and during meetings (Indicator 3.3). A participatory impact assessment, to be conducted at the end of April 2022, will be used to assess whether pasture improvement work has resulted in tangible improvements in livestock health (Indicator 3.4).

Output 4. The importance, protection and the cultural value of tulips is articulated, celebrated and shared; to support community led in-situ conservation of tulips

A total of 5ha of plots were fenced in natural conditions, including two plots of 1ha in the Shamshy Gorge where *T. zenaidae* is protected and two plots of 2ha and 1ha in the Shaiyk Gorge near Baul village where *T. affinis* is protected (Indicator 4.1). The Shamhy sites no longer show signs of trampling while it is too early to compare results on the sites near Baul. Conservation zones for tulips have been marked in two sites (100ha) and results were integrated into updated Pasture Management Plans that include controlled light grazing regimes (Indicator 4.2). Two schools (Shamshy and Baul) have established groups of 20 secondary school students, most of them girls, to monitor fenced areas and pastures for pressures on wild tulips. These are led by biology teachers (Indicator 4.3). Three tourist agencies signed Agreements with AFLUK to incorporate tulip tourism into their packages, while one tourist agency signed an agreement with Bioresource (Indicator 4.4). New information materials were produced (Indicator 4.5) for an event on 24 March 2021, “Together we will protect and preserve the wild tulips of Kyrgyzstan” with the participation of students and employees of the Agro-technical College named after I.S. Ibraimov. During the event, there was a presentation about wild types of tulips and the problems of their protection, after which the students cleaned the area where the tulip bulbs from Bioresurs PF were planted. Calendars were distributed as handouts with brief information about wild tulips in the Kyrgyz Republic (11 Red Book tulips with Russian, Kyrgyz and Latin names). A Tulip Festival was held in April 2022 and additional surveys are planned and will be reported on in the final report.

3.3 Progress towards the project Outcome

Indicator 0.1. By the end of the project (from a baseline monitoring in year 1), there is a reduction (100%) of poached grassland area, with increased presence of natural palatable forage and indicator invertebrates in 500ha of montane pasture.

The project took important steps towards this indicator in Y2 after AFLUK signed Agreements with the local self-government bodies (LSG) and Leilek Forestry of the SAEPF to introduce sustainable pasture management approaches to 550ha area of grassland habitat (150ha in

Shamshy; 100ha in Kulundu and 300ha in Baul). In Y2, vegetation cover, species composition of vegetation and general condition of pastures in these areas were monitored and will be repeated in Y3 in April and May to identify any initial changes, the results will be presented in the final report.

Indicator 0.2. 300 people (30% female) engaged in pasture management report improved confidence in their ability to manage their pastures by end of project.

In Y3, community pasture management plans were revised and simplified to make them more relevant and accessible to local pasture users. By the end of Y3, 391 people (44% women) had been trained in improved pasture management practices. Local community representatives spoke at the joint meetings. In general, pasture users actively participated in the meetings and showed interest. Pasture users, during trainings and meetings, reported experiencing more confidence in managing their pastures because of the plans.

Indicator 0.3. By end of project, at least 50% of both male and female respondents from 150 households report an improvement in pasture quality and a decrease in their vulnerability to environmental and/or economic shocks and stressors; with proportional representation of the poorest households.

Decreased vulnerability to environmental and/or economic shocks will be assessed in Y3 at the end of April. We expect that application of better pasture management will lead to improved pasture quality and will help people feel more resilient to any stressors. It is unlikely that this will translate into any changes in livestock health within the timeframe of this project.

Indicator 0.4. By project end, there is a 20% increase in flowering rate at 5ha of degraded tulip sites for 4 tulip species, using baseline surveys from year 1.

After fencing 5ha with wild tulip populations in Shamshy and Baula, observations show that the number of young vigorous tulips increases compared to non-fenced control plots in almost all sites.

Indicator 0.5. By project end 80% (50:50 women and men) of surveyed community members (200 person subset) demonstrate an increased understanding of the value, cultural importance and need to protect endemic tulips.

In Y3, awareness was raised by producing information boards, posters and a film about the value of tulips with additional events planned in April. At the end of April, a survey will evaluate any changes in how community members value tulips and their conservation.

3.4 Monitoring of assumptions

Assumption 1. Extreme climate events do not adversely affect pasture indicators or tulips (this will be managed through flexible planning and scheduling)

During Y3, no extreme climate events affected pasture indicators or tulips.

Assumption 2. Indicators can demonstrate pasture improvements within the timescales of the project (research by other projects has shown this should be achievable)

We still believe it will be possible to assess some initial improvements in pastures quality in Y3, for example we already observed positive changes in soil microorganisms within a year of fencing, suggesting that the recovery of soils and vegetation begins immediately when land is rested.

Assumption 3. No exceptional environmental or economic shocks occur that adversely affect the price of livestock (this has not been the case in recent years and so is not expected to effect the project)

COVID-19 has caused an economic crisis in Kyrgyzstan, food prices have risen and consequently meat and livestock prices have increased. The situation with Ukraine has also had an impact. Currently, livestock and meat prices continue to rise, but slowly, although this does not affect the number of livestock on pastures.

Assumption 4. Unusual climate, political and social disruptions do not affect planned fieldwork (this will be accommodated for through adaptive management and scheduling)

In Y3, the fieldwork schedule was affected by conflicts on the border with Tajikistan, as our project sites in Batken region are very close to the area where there were conflicts. Some pasture expert visits have been postponed and some AFLUK work has been postponed. But this work will be completed in April-May 2022.

Assumption 5. Adequate size and health of tulip source population allows for collection (a collection method will be applied to stop damage to existing populations and the scoping trip results suggested that populations are large enough)

The size and state of the tulip populations were large enough to permit small collections of tulip bulbs. Bioresurs only collected a small proportion of bulbs from each species in each site.

Assumption 6. Successful replication of environmental condition to allow ex-situ cultivation (CUBG has a large amount of experience in ex-situ cultivation and knowledge exchange events will support this element of the project)

We established four different *ex situ* conservation sites (including one in mountainous area) to provide a range of environmental conditions and altitudes suitable for different tulip species.

Assumption 7. Pasture committees and users, including women users, continue to be willing to engage in consultations (the scoping trip helped to build relationships as well as the wider project partners having good pre-existing relationships)

Members of pasture committees and pasture users, including women, are still willing to participate in consultations. In Y3, 152 people (including 70 women) participated in the training and workshop.

Assumption 8. Pasture users are willing to stop or alter some current grazing behaviours (as the plan are being developed in collaboration with the communities we plan to mitigate any issues arising during the project)

This remains to be fully tested although feedback from the first workshops indicates that local people are aware of high levels of pasture degradation. Approval of updated management plans in Y2 indicates there is local willing to address unsustainable levels of grazing.

Assumption 9. Community members are able to implement plans with available resources, including available pasture.

The management plans were successfully revised in the second half of Y3 to make them more accessible to local people. In Y3, monitoring and evaluation of the implementation of the management plans showed a reasonably good result. Seven commissions were established, Jailoo councils were set up and activities for the protection of wild tulips were carried out.

Assumption 10. Pasture user engagement in the training and implementation (the use of similar case studies and examples to demonstrate proven successes)

Pasture users have engaged positively with consultations and trainings carried out in Y3.

Assumption 11. Pastures have recovered sufficiently for this to be reflected in cattle health (by staggering efforts the year 1 pastures users should be evidencing improvements)

We will evaluate this fully at the end of Y3 although initial data indicate that we are unlikely to observe a change in cattle health within the lifetime of the project.

Assumption 12. People, including those who do not participate in project activities, do not overgraze pastures that are newly recovered (pasture use will be mapped and overlapping damage prevented)

In Y3 the project focused on awareness raising to promote understanding of pasture laws and management among community members, including those who have not signed up to a pasture management plan. The project also promotes communication and cooperation between different pasture committees and government institutions to help avoid conflicts over the use of different pasture resources.

Assumption 13. Individuals in the communities are willing to engage in protection activities (the scoping trip helping to build relationships and partners have good pre-existing relationships)

Our lead partners Bioresurs and AFLUK established good relationships with local community members in the sites and are aware of many individuals keen to take part in protection work.

Assumption 14. Sites are suitable for fencing, tenure allow fencing and maintenance can be agreed upon (relationships will be built in advance to ensure that suitable sites can be found)

This was achieved for trial fencing carried out at the start of Y1, after consultations were completed with local pasture users, the Pasture Committee and the local governmental body. By Y3 the fencing was completed.

Assumption 15. Greater awareness of tulips and knowledge of their locations, does not increase the threat of illegal cutting (clear messaging together with assessment of impact will reduce this risk)

During the field trips (22 tulip sites) in Y2 only in one site the collecting tulips bulbs was noticed, although this low level of threat might have been due to reduced movement during the COVID-19 lockdown. In Y3, the project continued to raise awareness of laws prohibiting illegal harvesting and its negative impact on wild tulips. Tulip protection groups will also monitor tulip populations and help prevent any increased threat from harvesting.

Assumption 16. Local communities feel a connection with and pride in traditional cultures that relate to tulips that motivates conservation (there is a strong sense of culture and pride in Kyrgyzstan and tulips are a common symbol)

In April, the first Tulip Festival in Central Asia took place. We will report on this in the final report.

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

This project aims to secure healthy and diverse montane grassland ecosystems, with self-sustaining tulip populations. To achieve this biodiversity impact, we are working to (1) improve pasture management and therefore recover tulip habitat and (2) reduce the extinction risk faced by highly threatened tulip species through population reinforcement and ex situ conservation collections. In Y3, we took a significant step towards restoring tulip habitat; previously, in Y2, agreements were signed by the three Grassland Committees to allocate 550ha of land for sustainable grassland management (where limited, light or rotational grazing will be applied) along with a review of community grassland management plans, which set out a number of priority actions to support restoration of these areas. In Y3, sustainable pasture management agreements were adopted by 45 Pasture Committees for a total area of 10,387ha. At the species level, actions to intensively protect critical habitats for tulip populations in two of the three sites were also included in the above-mentioned plans. Ex situ collections increased from 13 species to 22 species.

By working to improve the management of pasture lands across three sites, the project aims to support resilient and economically thriving pastoral communities. Activities leading up to this desired impact have a focus on (1) promoting local application of and inclusion within pasture management plans and (2) building the necessary skills and confidence in pasture users to apply these plans on the ground. In response to results from local consultations carried out in Y1, in Y2, the project was successful in supporting revisions to three existing 'Community Plans for Pasture Management' that our interview data suggested were previously poorly understand and not applied on the ground. Plans were made more accessible to local pasture users and included an agreement to delegate responsibilities to seven local people for different functions of pasture management. An agreement was also made to appoint a local council (formed by local activists) to ensure that local concerns can be raised to the Pasture Committees. In Y3, seven commissions, Jailoo councils were restricted in three project areas and activities to protect wild tulips were included. This work was complemented by a series of training workshops held during the first, second and third years, aimed at developing knowledge, skills and confidence in pasture management, monitoring and improvement methods. In the second half of the year, and additional 152 people were trained.

4. Project support to the Conventions, Treaties or Agreements

- The project conducted baseline research on 23 poorly-known tulip species (85% of the national total) and is thus contributing to the CBD and Aichi Target 19 (science for conservation).
- A section on traditional knowledge on pasture management was incorporated into the Community Plan of Pasture management and the document was approved by local decision makers. This is in line with Aichi Target 18 (respect for traditional knowledge).
- In Y2 establishment of tulips conservation zones were negotiated and agreed with local communities in two sites. These activities will contribute to CBD Article 8 (in-situ conservation) and Aichi Targets 12 (prevention of extinction), 19 (knowledge, the science base and technologies relating to biodiversity are improved) and 14 (preserving ecosystem services and livelihoods).
- Four ex situ conservation collections containing 22 tulip species (*T. kaufmaniana* represented in the plots with two variations red and white) are up and running. This is supporting Aichi Targets 12 and 13 in regard to preventing extinctions and maintaining genetic diversity through ex-situ protection.
- We updated Pasture Management Plans and also conducted sustainable pasture management trainings to pasture users. These will support CBD Article 10 (sustainable and equitable use) and Aichi Targets 1 (awareness of sustainable principles), 4 (sustainable production), 5 (preventing the reduction of natural habitat) and 7 (sustainable agriculture management).
- Ultimately, we expect that the activities carried out by this Project will contribute to healthier grasslands and pastures that will be more resilient to climate change, and that will contribute to Aichi Target 10 (climate change mitigation).

5. Project support to poverty reduction

The three project sites are located in Kyrgyzstan's two poorest regions, Chuy and Batken.

By working to improve the management and condition of pasture lands across these sites, the project aims to support resilient and economically thriving pastoral communities. Activities leading up to this desired impact have a focus on (1) promoting local application of and inclusion within pasture management plans and (2) building the necessary skills and confidence in pasture users to apply these plans on the ground. In response to results from local consultations carried out in Y1, in Y2, the project was successful in supporting revisions to three existing 'Community Plans for Pasture Management' that our interview data suggested were poorly understand and not applied on the ground. Plans were made more accessible to local pasture users. The plans included an agreement to delegate responsibilities to seven local people for different functions of pasture management. An agreement was also made to appoint a local council (formed by local activists) to ensure that local concerns and suggestions can be raised to the Pasture Committees.

The revision of these plans is a critical step to engagement local users in sustainable pasture management. This was complemented by a series of training workshops held during the first, second and third year aimed at developing knowledge, skills and confidence in pasture management, monitoring and improvement techniques. Over the 3 years, 391 people were trained. Ultimately, we expect to see an improvement in pasture conditions by the end of the project, leading to healthier pastures and better livestock health long-term, a critical asset for these communities. In addition, the project has engaged with the private sector, including tourism companies, four of which have signed agreements to include tulip tours in their programmes. Of course, tourism revenues in Kyrgyzstan are significantly reduced in 2020 and 2021 because of Covid-19, but there is some potential for tulip-based tourism to create an additional source of income for local communities in these areas.

6. Consideration of gender equality issues

Women and men in Kyrgyzstan access and benefit from natural resources differently, along culturally and traditionally assigned roles, and men still dominate in policy and decision making process. Especially in rural areas that is observable; local self-government heads and pasture committee leaders are male. At first glance, the traditional view of pasture management seems like a man's job, however women also gain indirect benefit from pasture: 1) Almost every family in our project site has one or more cow and women milk these cows and make different kinds of dairy product for sale or for use by her family. 2) Traditionally women are closer to nature and the establishment of tulips conservation sites can contribute to their spiritual inspiration. The project has prioritised inviting women to workshops, trainings and interviews to ensure their perspectives are accounted for, that they benefit from the training and have influence over future management. During the 3 years of the project, 172 women participated in capacity building trainings for pasture users on sustainable pasture management and use (44% of the total number of participants). In addition, women began to be involved in the commissions; among the representatives of the seven commissions created at the project sites to monitor and control the pasture management plan, 16 are women (total 56 members of the commissions). We will continue to address gender equality issues: ensure that women are widely involved in all future activities and ensure that women play an active role in both pasture management and species conservation.

7. Monitoring and evaluation

A steering group is overseeing project implementation and reviewing progress against the project activities and indicators. FFI's Kyrgyzstan Programme and the two national partners (AFLUK and Bioresurs) discussed regularly the Project implementation issues throughout year. Throughout the project regular meetings were organised with partners at the FFI Kyrgyzstan office, during the COVID-19 related constraints meetings were held online via ZOOM, to discuss further plans as well as to check the progress of the project. All partners also participate in a project WhatsApp group, "Darwin Tulips", which has also enhanced informal activity monitoring and sharing of updates from the field. Each partner organisation has been responsible for monitoring and maintaining records of activity outputs, including numbers of community participants, disaggregated by gender. Data collected by the Project partners is allowing us to monitor progress against the output-level indicators, with survey data, literature reviews, training reports, workshop reports and planting records allowing us to verify progress against all outputs in the log-frame. The project manager has been responsible for collating this data, and then following adaptive management principles throughout. For example, when we realised data collected on pasture quality in Y1 was insufficient to monitor certain output level indicators, we recruited experts from KRILP to develop and apply best practice methods for pasture assessments, enabling high quality data collection at the sites. During Y3, we also followed the principles of adaptive management to take into account the COVID-19 situation as well as political situations (including the conflicts on the border with Tajikistan), adjusting the timing and format of various activities throughout the Y3.

8. Lessons learnt

In the first year, there were some gaps related to communication between the partners. In the second year, FFI Kyrgyzstan initiated regular meetings and data exchange on project progress. In this regard, in the third year, effective communication has already been established not only between key partners but also with other stakeholders.

In Y2, there were difficulties in fencing the sites in the south of the republic due to difficulties in delivering materials through the pass. In Year 3, it was finally possible to fence in the intended plot. It has also not been possible to reintroduce the bulbs grown in the Gareyev Botanical Garden, as there is not enough time for the first specimens to flower. Depending on the species, flowering takes between 4 and 7 years. Therefore, there is a need to extend activities by at least another 3 years in order to fully complete all the plans. Overall, the objectives of the project are being met. Due to COVID-19 constraints, some activities have been postponed and will be completed by the end of the project.

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

Provide details of recommendations of Kulundu Pasture Management Plan for budget and set of actions for Suluktu.

The Kulundu Management Plan was attached in the last report. It is a 20 page management plan which outlines (1) geography, climate and current condition of pastures ay Kulundu; (2) current capacity, in terms of infrastructure and human resources; and (3) recommendations for actions and budget allocations for the next five years. These include:

- Allocating funding to regular monitoring and evaluation of pasture condition (using protocols developed under the Darwin project)
- Establishment of 'pasture improvement' demonstration plots to raise awareness of wider benefits among the local communities
- Purchase of machinery
- Organisation of new watering areas for livestock
- Regular provision of trainings for pasture users in topics including legal issues, M&E, record management and accountancy
- Reparation of roads (to enable more effective livestock rotation between pasture areas)
- Experimental sowing of seeds to support pasture recovery

10. Other comments on progress not covered elsewhere

In March 2022, a new Pasture Committee was organised in Suluktu. For the organisation of the Pasture Committee the following took place: consultation meetings with stakeholders; trainings to increase the awareness of pasture users of Suluktu; a general meeting of pasture users of Suluktu where the Pasture Committee Statute was approved, representatives of the committee were elected and other documents for the registration of the Pasture Committee were prepared. Currently the newly organised Pasture Committee in Suluktu needs capacity building of the committee representatives and technical support.

11. Sustainability and legacy

We are building sustainability into all aspects of the project. We have already left in place three updated long term Pasture Management Plans which, through the work carried out under this project, are now more feasible, better account for local needs and will have greater buy-in and support from local pasture users. Pasture users have also received training on sustainable pasture management, helping to increase their understanding of the management plans and building their skills and confidence in application of agreed actions within these plans. In addition, following a series of trainings on sustainable pasture management, 45 pasture committees entered into an agreement on sustainable pasture management on more than 10,000 ha in Y3. This in turn will hopefully lead to an improvement in pasture quality. Extensive involvement with various stakeholders and decision and policy makers across different sectors is also supporting wider buy-in to our project, and this is also supporting long-term sustainability. As pasture users apply updated management plans and adopt techniques learnt through the project we expect to see gradual improvements in pasture condition and that this will strengthen local incentives to maintain and implementation of Pasture Management Plans post-project. Finally, all of the research outputs from the project will feed into a National Tulip Strategy that will be developed by the end of the project and which will determine future conservation actions, leads and resources for activities. This will help to create a long-term driver and focus for tulip conservation

in Kyrgyzstan and Central Asia. Ex-situ collections, established in Year 1, will be maintained as part of Gareev Botanical Gardens' collections, facilitating long-term maintenance.

12. Darwin identity

The Darwin Initiative logo is used on all project documents and presentations that are given during project work. The logo is used consistently by all project partners and a requirement for this is clearly outlined in their sub-grant agreements.

FFI created a page on its website for the project (https://www.fauna-flora.org/projects/securing-wild-tulips-montane-grasslands-kyrgyzstan) and also regularly posts updates on its social media channels (e.g. https://twitter.com/FaunaFloraInt/status/1386728079117197313

All materials (handouts, calendars) produced by the project include the Darwin logo (Annex 4).

13. Impact of COVID-19 on project delivery

Due to the introduction of a state of emergency in the Kyrgyz Republic to mitigate spread of Covid-19, many activities could not be carried out as planned. Activities that we had to postpone or adapt include:

- Postponement of fieldwork in the spring, meaning that we missed an opportunity to monitor flowering rates of target species.
- Postponement of school and cultural events planned in the project communities and in Bishkek
- Adjustment of timing for activities involving interaction with pasture users and local policy makers to avoid any contact during the peak of the pandemic and the national lockdown
- A planned learning exchange visit of Kyrgyz scientists to Cambridge University Botanic Garden was postponed to July 2022.

None of these changes have had a critical impact on progress towards the project outcomes. FFI staff and partners followed national directives and internal staff policies regarding COVID-19 prevention measures in Kyrgyzstan both during and after the national lockdown. When travel and gatherings were permitted again, all partners and staff followed local rules and norms on social distancing and used sanitizers and masks during field trips and meetings. It was also common to work at home during this period.

14. Safeguarding

Please tick this box if any safeguarding or human rights violations have occurred during this financial year. ☐

If you have ticked the box, please ensure these are reported to ODA.safeguarding@defra.gov.uk as indicated in the T&Cs.

15. Project expenditure

Table 1: Draft project expenditure during the reporting period (1 April 2021 – 31 March 2022)

Project spend (indicative) since last Annual Report	2021/22 Grant (£)	2021/22 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)	[redacted]	[redacted]	-0.3%	
Consultancy costs	[redacted]	[redacted]	36%	We opted to carry out one last round of pasture monitoring in Spring 2022 to make up for missing an earlier season due to Covid restrictions. As a result,

				consultancy costs ended up being £131.70 over the threshold. This is a high percentage variance, but a low absolute ammount.
Overhead Costs	[redacted]	[redacted]	0%	
Travel and subsistence	[redacted]	[redacted]	3.97%	
Operating Costs	[redacted]	[redacted]	10.47%	Costs for workshops and seminars in Year 3 were slightly lower than anticipated.
Capital items (see below)	-	-		
Monitoring & Evaluation (M&E)	-	-		
Others (see below)	[redacted]	[redacted]	58.45%	We were able to complete publication objectives at a lower cost than anticipated,
TOTAL	92,085.4	87,533.4		

16. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes

We plan to submit an outstanding achievement covering the whole success of the project, when we submit our final report in September 2022.