

## Darwin Initiative Main Annual Report

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

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

**Submission Deadline: 30<sup>th</sup> April 2022**

### Darwin Initiative Project Information

Project reference	26-010
Project title	Know your onions: sustainable plant use in Tajikistan
Country/ies	Tajikistan
Lead partner	Centre for Middle Eastern Plants (CMEP), Royal Botanic Garden Edinburgh (RBGE), UK
Project partner(s)	Kulob Botanic Garden (KBG), Tajikistan Ganji Tabiat (GT), Tajikistan Zam-Zam (ZZ), Tajikistan Fauna & Flora International (FFI), Tajikistan & UK
Darwin grant value	£361,436
Start/end dates of project	1 July 2019 – 31 December 2022
Reporting period (e.g. Apr 2021 – Mar 2022) and number (e.g. Annual Report 1, 2, 3)	October 2021 – March 2022 Annual Report 3
Project Leader name	Dr Alan Forrest (RBGE)
Project website/blog/social media	<a href="http://www.tajikistandarwin.cmep.org.uk">www.tajikistandarwin.cmep.org.uk</a>
Report author(s) and date	Dr Alan Forrest Jovidon Boboev Manizha Boboev 11 May 2022

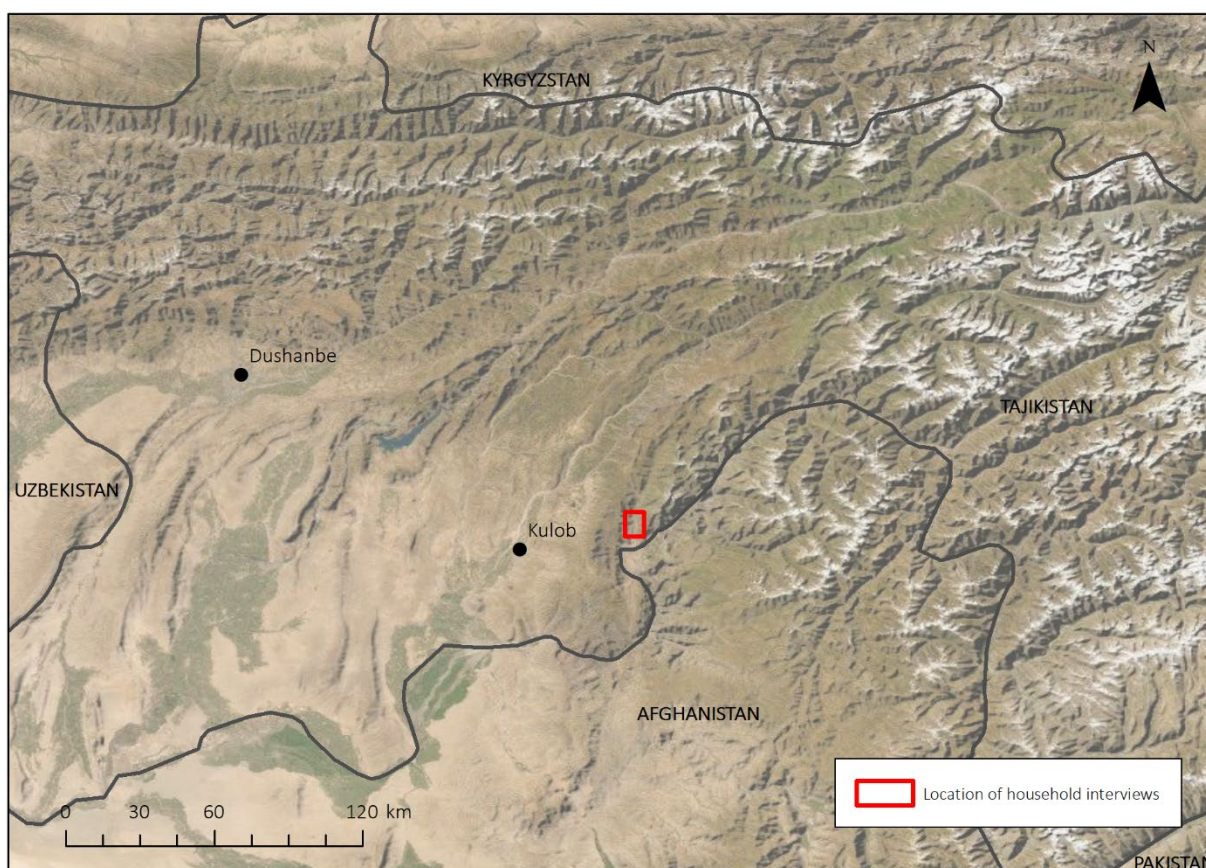
## 1. Project summary

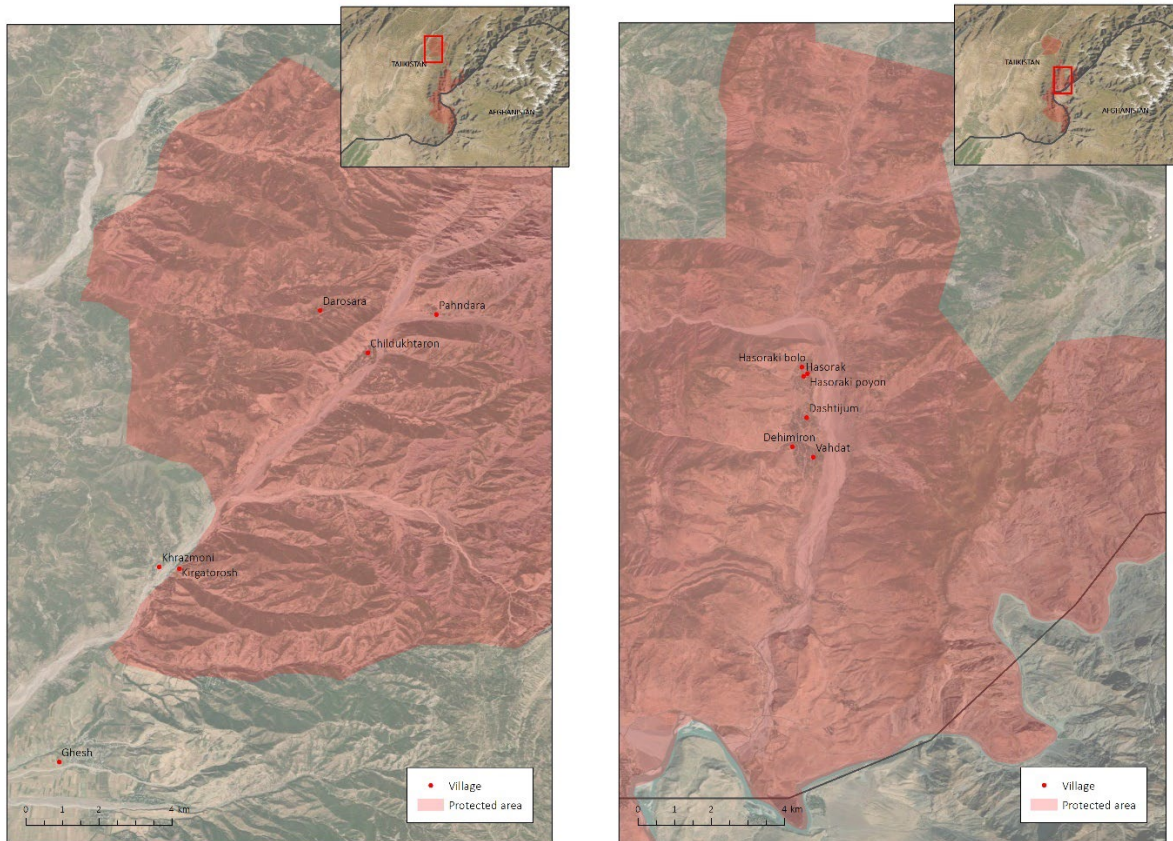
The sustainable use of natural resources is embedded within international conventions and has a significant role to play in conserving biodiversity and improving rural livelihoods. However, biodiversity conservation debates often overlook the importance of local agro-biodiversity and the wide range of non-domesticated species used by people in their day-to-day lives.

Tajikistan is a floristically diverse mountainous country suffering from extreme environmental degradation. Scientists at Kulob Botanic Garden have recognized that while threats to fruit and nut forests are well known, there is a fundamental disconnect between routine harvesting and sale of wild herbaceous plant species and the potentially detrimental amount and methods of that harvesting. For example, in pilot studies, more than 80% of interviewed households were found to collect wild onion bulbs in order to augment their income.

Such poverty and financial insecurity will be compounded if wild plants are collected to extinction locally – as already documented in some areas. While many such species are not globally threatened, they are declining nationally and have been listed in the Red Book of Tajikistan. An alternative method to unsustainable wild harvesting is required. Small scale trials cultivating two species of wild onions in two communities have been successful in reducing wild harvesting by up to 50% and have reported increases in average income by up to 40% by growing wild plants locally. To make a significant difference with concomitant benefits for more communities a wider range of plant species could be cultivated, and markets identified and developed to enable increased financial benefits. Awareness and technical capacity to maintain long term programmes must be gained both in the communities and the organisations that wish to support them.

The project is located in southern Tajikistan, in identified communities in Childukhtaron and Dashtijum Reserves. Project partners Kulob Botanic Garden and Ganji Tabiat are located in the provincial capital Kulob City with partners Zam-Zam located in Dashtijum. The FFI country office is located in the capital Dushanbe with regular travel and communication with the project partners and region. Some communities have been chosen to overlap with Darwin Initiative project 24-006 in order to allow comparison among products, effects and benefits to ascertain any complementarity to be gained to further benefit local communities.





Maps showing study area: Tajikistan highlighting Childuktaron and Dashtijum Protected Areas to the east of Kulob, followed by specific location details of villages inside each area that are the focus of the project.

## 2. Project stakeholders/partners

The partnership between Kulob Botanic Garden and Ganji Tabiat with RBGE has been developing over the six years leading up to the start of this project, with multiple visits to Tajikistan for joint expeditions, training and capacity development. This was strengthened through the visit of Dr Mariyo Boboev and Jovidon Boboev to RBGE in November 2019. FFI have been working in Tajikistan for a number of years with local staff managing a range of projects including Darwin Initiative 24-006 on which Dr Boboev has a role. Links between UK partners have been strengthened through visits to both Edinburgh and Cambridge, and the involvement of FFI Tajikistan staff in RBGE expeditions.

Ongoing challenges due to the impact of the global COVID-19 pandemic have lessened but have still been evident during Year Three of the project. While the partnerships have not suffered during this period – all partners have been supportive to each other under challenging and diverse circumstances – there is no doubt that communication among partners for a variety of purposes has had to be adjusted due to the inability to travel to Tajikistan to undertake specific tasks. Communication on routine tasks has still been conducted via email with continuing use of platforms such as Zoom for communication, updates and training purposes. This has been equally challenging for all partners – some responsible for the delivery of training components, and some receiving training.

However, as per the first two years of the project, the majority of planning, decision-making and actions are made by Tajik partners with support from UK partners. This has lent an element of sustainability to the project, and as restrictions on movements have been less strict in Tajikistan the majority of in country activities have progressed well with some delays. Tajik partners have scheduled and undertaken work routinely and under their own initiative giving detailed information and maintaining excellent relationships with target communities.

As additional questions have arisen over the course of the last year, adaptive management has been used to address any issues not addressed directly in the project application or log frame. An example of this has been extensive discussion between partners through development of

PMSD approaches, where the difference between assessing existing markets as opposed to the creation of new markets led to involvement with local authorities and the Forest Department about the harvesting of wild plants and the potential threat of creating markets leading to increased harvesting. Further discussions with communities have led to insights about how people collect and use plants locally as opposed to selling them directly. The strength of the project partnerships has meant that all information has been shared and discussed with all partners and with communities and local stakeholders to give additional insight prior to decision making.

### 3. Project progress

#### 3.1 Progress in carrying out project Activities

##### Output 1

BIODIVERSITY: improved conservation status of at least five nationally threatened native plants which are currently over-harvested in the wild.

Activity 1.1.1 Gather and model distribution data for target threatened species (desk and field study).

See Table 1.1.1 below which summarises data acquired for Target Species and also additional species highlighted as potentially threatened through over-harvesting following questionnaires completed at National Symposium in October 2021. Data has mostly been acquired from online herbaria, GBIF and collaborators who have extensive experience and collections from Tajikistan that are not in the public domain yet. Numbers presented exclude geo-referenced records from herbaria in Dushanbe, Kulob and St. Petersburg (data acquired and being added now) and field records prior to and during the current project by the project team and other collaborators. The table does not yet include data from collaborators in Poland; this should increase data density significantly and enable final distributions and models to be constructed. For non-endemic species, records are from Tajikistan only. Endemism is subject to local taxonomic interpretation. Where the number of records is too small for robust and reliable SDM additional records outside Tajikistan have been collated for non-endemic species. Environmental data for SDM has been acquired.

Data gathering from Tajik and Russian institutes (and in Russian language) has been delayed at times due to COVID travel restrictions and access to collections leading to the decision to complete mapping as part of Red List Assessment training, and involvement of Darwin Fellow Qobil Bobokalanov who is also mapping target species in the genus *Ziziphora*. These will be completed by the end of June 2022 (original project completion data) and assessments submitted by the end of 2022.

Species	# localities	Status	Red List (global)	Red List (Tajikistan)
<i>Allium giganteum</i>	16		Not yet assessed	
<b><i>Allium rosenbachianum</i></b>	12	Sun-endemic?	Not yet assessed	Endangered
<b><i>Allium stipitatum</i></b>	49		Not yet assessed	Endangered
<b><i>Allium trautvetterianum</i></b>	3	Endemic	Not yet assessed	Critically Endangered
<b><i>Bunium persicum</i></b>	11		Not yet assessed	Endangered
<b><i>Ferula violacea</i></b>	17	Endemic	Not yet assessed	Vulnerable
<i>Fritillaria eduardii</i>	7		Not yet assessed	
<i>Galagania fragrantissima</i>	25		Not yet assessed	
<b><i>Paulita ovczinikovii</i></b>	15	Endemic	Not yet assessed	Not yet assessed
<i>Rheum maximoviczii</i>	7		Not yet assessed	
<i>Ziziphora clinopodioides</i>	20		Not yet assessed	
<i>Ziziphora pamirolaica</i>	8		Not yet assessed	

<i>Ziziphpra suffruticosa</i>	1		Not yet assessed	
<i>Ziziphora tenuior</i>	1		Not yet assessed	

**Table 1.1.1** Number of data points gathered for SDM (excluding points mentioned in the text).

Activity 1.1.2 Gather information about levels of wild harvesting from communities.

Community and household interviews collected from 102 respondents (draft reports submitted previously). The majority of households in target communities gather wild harvested plants, with the majority used for local consumption. Final visits to assess whether levels of wild harvesting have or will reduce as a result of project activities are planned for 2022. These results are being summarized as case studies for the National Report.

Activity 1.1.3 Undertake formal conservation assessment of six target species.

Formal Red List training due to be given *in situ* was changed due to the inability to travel due to COVID-19. Switch to online training provided through IUCN/Conservation Training with back up support given remotely by UK partners who are certified IUCN Red List Assessors and Trainers. Additional individuals and additional modules have been completed (see ANNEX 1 as an example). As UK partners were unable to travel to Tajikistan for meetings in late 2021 training and assessment has continued online. A Change Request has extended the project timeframe and modelling and Red List Assessments will be completed by the end of June 2022. In order to assess additional threats and the results of conservation actions – including as part of this project – Green Status Assessments will also be undertaken and published by the end of 2022 and included as case studies in the National Report.

When studying assessments already undertaken by different authors, it is apparent that some anomalies exist. These can be taxonomic, methodological and based upon different data sets and/or local assessments of threat. These points will be compared and considered when reporting assessments for target species and recommendations submitted to Tajik authorities and partners.

Activity 1.2.1 Establish long-term monitoring plots for six target species.

Details of monitoring plots established are given Table 1.2.1 below. Four of the six target species are included in multiple sites, with two additional species known to be wild harvested included as they are also considered to be under threat from overharvesting and are located in close proximity – as such there was an opportunity to gather information about the status of additional taxa to feed into the National Report. Harvesting and use of two target species – *Paulita ovczinikovii* and *Bunium persicum* – was considered less prudent as (a) *Allium* species are considered to be under considerable threat locally, and (b) for *B. persicum* it is such a widespread (although declining) species that selecting a small number of sites was not seen as accurate or informative.

Reserve	Monitoring Plot	Target Species	Additional Species
Dashtijum	Shuji Bolo	<i>Allium stipitatum</i>	<i>Allium giganteum</i>
		<i>Allium trautvetterianum</i>	<i>Rheum maximowiczii</i>
		<i>Ferula violacea</i>	
	Rui Kash A (Regi Roshako)	<i>Allium trautvetterianum</i>	<i>Allium giganteum</i>
		<i>Ferula violacea</i>	<i>Rheum maximowiczii</i>
	Rui Kash B (Shavu Arus)	<i>Allium stipitatum</i>	
Childukhtaron	Dashti Saghra	<i>Allium stipitatum</i>	<i>Rheum maximowiczii</i>
	Darai Siyahloya	<i>Allium rosenbachianum</i>	<i>Rheum maximowiczii</i>
	Qutani Seb	<i>Allium stipitatum</i>	<i>Rheum maximowiczii</i>
	Darai Mazoro	<i>Allium stipitatum</i>	<i>Rheum maximowiczii</i>

### **Table 1.2.1.** Monitoring plots established and species monitored within them.

#### Activity 1.2.2 Field and community monitoring of six target species.

The optimal time for monitoring the target species is April-June. Initial monitoring was delayed, firstly due to travel restrictions in spring 2020 and in spring of both 2020 and 2021 by adverse weather conditions that has delayed the start of spring and subsequent flowering and fruiting times. Replicate semi-structured 1m<sup>2</sup> sampling plots were used to measure the numbers and condition of plants in a quick survey methodology that is repeatable and easy to employ to track changes on an annual basis, as used in previous work by KBG staff. Added to this will be informal knowledge of project staff and community members on the general trends at specific localities, all of which are well known to local staff and stakeholders and that will feed into Red List Assessments by the end of June 2022.

Additional visits to monitoring plots were undertaken in Year Three. Images from surveys are included in [REDACTED]. It is clear that while wild harvesting impacts plants, there are additional threats to reproduction and condition due to the effects of overgrazing and the removal of nurse shrubs that protect target species: in the continued presence of nurse shrubs the numbers of target species plants is greater at some sites.

It has further been noted that adverse weather conditions are affecting flowering and seed production, and also impacting sites directly through widely reported and damaging mud flows due to excessive rain. Discussion with a range of project partners and experts will be undertaken to give an estimate of climate effects on the long-term persistence of target species in the wild and whether this additional threat should be considered in conservation assessments.

A final Report is in preparation, to include long-term plans post project completion.

#### Activity 1.3.1 Collection and storage of seeds and plants for *ex-situ* collections.

During the entire project timeframe, weather conditions have not been favorable for the flowering and setting seed of target species. Seeds from all target species have been collected, and although the number of localities and the amount of seed has not been as high as expected it has increased during Year Three as opposed to Year Two with an additional total of more than 10kg of seed collected combined from all target species. Seeds have both been stored at KBG and distributed to project beneficiaries. Several community members and beneficiaries have been involved in the collection of seeds and have therefore experienced site conditions and received *in situ* awareness raising about the sustainable collection of seeds.

Seeds collected previously are growing well at KBG and some have been transferred to demonstration plots ([REDACTED]). Due to the inability of the RBGE team to travel to Tajikistan it has not been possible as yet to establish *ex situ* seed or plant collections in the UK.

## **Output 2**

**AWARENESS & CAPACITY DEVELOPMENT:** capacity of project partners and local community stakeholders in horticulture and sustainable use of locally used plant species is improved. Awareness of sustainable plant use increased locally and nationally.

#### Activity 2.1.1 Horticulture training (Certificate in Practical Horticulture, delivered to project staff).

Previous training at Kulob Botanic Garden in the two years prior to the start of this project resulted in KBG horticulture staff building upon their experience and skills. As such, it was decided that capacity was strong enough to initiate the first stages of horticultural work and community training, with a view to assessing additional requirements and building these into a formal training and qualification programme. This was subsequently delayed due to postponement of the trip to Tajikistan due to COVID-19 pandemic. However training in communities has been largely successful as a testament to the existing skills of the KBG team as previously reported. Plans are now being developed to ensure travel to Tajikistan occurs in late 2022 and was a main reason for the project timeframe being extended. An assessment of training to be conducted will be made and training delivered at that time.

#### Activity 2.1.2 Project staff training in field survey, monitoring, documentation and reporting.

As per Activity 2.1.1 above. Several KBG staff and especially Dr Mariyo Boboev have extensive experience in survey and monitoring in Tajikistan. Community members have participated in field monitoring and seed collection.

Activity 2.2.1 Horticulture and sustainable harvesting training (delivered by project staff in communities).

See Activities 2.1.1 and 3.1.1. Horticulture training has been delivered to communities during plot establishment with follow on and Q&A sessions in Year Three (██████████). Harvesting from plots will form part of future horticulture training. Community members who have participated in monitoring and seed collection programmes have received training on the importance of the timing and amount of the collection of both bulbs and seeds.

Activity 2.3.1 PMSD and social research skills training (delivered to project staff).

Following preparation of online training materials by FFI staff Tajik partners took part in three online training sessions accompanied by extensive discussions. Subsequently, all responsibility to gather additional market and local details and decision making on product selection and forward planning has been devolved to Tajik partners leading to further and ongoing discussion and highlighting areas requiring further information. This is an iterative process that has suffered delays due to the COVID-19 pandemic.

Activity 2.4.1 Sustainable use awareness workshops held in communities.

During community interviews and horticulture training, a range of awareness workshops have been conducted. In March 2022, when beneficiaries have been growing target species for two years, additional awareness workshops were conducted to deliver information on the importance of growing target species as opposed to harvesting them in the wild. Further, Q&A sessions as part of these workshops allowed participants to address any issues they had about how they were growing the target species and how better to manage their land for that purpose (see ANNEX 5). Forty people participated in these workshops, of which 80% were women.

Activity 2.4.2 Sustainable use events held at KBG (stakeholders, schools, colleges).

As reported previously, during Year Three an awareness event was conducted on 16 April 2021 on the Significance of Wild Plants in Tajikistan with media representatives from Kulob Television and the Media Department of Kulob Government attending to cover the event (██████████). The TV crew made records from the event and it was transmitted on the TV News program of Kulob TV channel on April 17, 2021 at 20:00 Tajikistan time. See also: <https://ganjtabiat.tj/news/9>

During 7-8 of October 2021 a National Workshop on Sustainable Plant Use in Tajikistan was conducted in Kulob (██████████). The event was held in Kulob State University Conference Hall and more than 70 participants attended the event including media representatives from national and local TV channels. In this event media from TV Channel 1, TV Safina, Kulob TV Channel as well as Media Department of the Kulob Government participated. The event was broadcasted on October 11, 2021 at 20:00 Tajikistan time and was rebroadcasted in the following days.

Activity 2.5.1 Media campaigns on sustainable use of natural resources.

See Activity 2.4.2 regarding media coverage of project activities. Additionally the team are filming and editing a short film about project activities and success stories which will be completed in 2022 and shared with stakeholders, at the National Report launch event, and on the project website.

Activity 2.5.2 Project website online (monitoring of website hits).

Website template designed and content uploaded. However, website currently inactive as ongoing issues with online resources being moved to compliant hosting and managed services, have proved difficult to solve. It is planned to have the project website online by the end of June 2022 when website release will be promoted and subsequent hits monitored.

[www.tajikistandarwin.cmep.org.uk](http://www.tajikistandarwin.cmep.org.uk)

Activity 2.6.1 Produce and disseminate project success reports.

A series of Success Stories highlighting project participants and beneficiaries are in production. For the first example see ANNEX 8.

### Activity 2.7.1 Conservation Assessment training.

See [REDACTED] for example certificates of online module completion. Online support and training ongoing (see 1.1.3 above).

### Output 3.

LIVELIHOODS & HEALTH: livelihoods improved for 100 households through increased and diversified income from sustainable plant product sales, with associated food security and social benefits.

#### Activity 3.1.1 Agro-biodiversity plots established and in production.

To date 100 household plots have been established in villages in Dashtijum and Childukhtaron Reserves, with associated horticulture training and awareness of sustainable use workshops undertaken. Following establishment of 20 plots initially via selected households with farming and agricultural experience, the additional plots featured engagement with additional communities, specifically targeting households that are marginalized and in remote locations, and those without significant access to agricultural lands. The local experience of Ganji Tabiat and Zam Zam was essential in this exercise.

During Year Three and the ongoing COVID-19 pandemic and adverse weather conditions in some localities it was not possible to visit all beneficiary households. In total 39 households were visited and the rest will be visited in 2022. The target species being grown and the areas of land under cultivation were assessed, and also further advice given as to which areas of land were most suitable for agrobiodiversity plots and how best to manage them (see [REDACTED]). While several households grew only *Allium stipitatum*, the majority of households are growing several target species.

#### Activity 3.2.1 Market appraisal workshops in five communities.

It has become clear that establishment of wild harvested species in household plots will have benefits to selected households with the potential for upscaling and concomitant benefits through a reduction in wild harvesting. It is clear that market actors are keen to link with communities that grow particular species and purchase from them, and market demand is likely to drive development and scaling supported by further horticultural training as necessary. The issues highlighted at workshops around the legality of growing and selling nationally threatened plants and ensuring produce sold to market actors is NOT wild harvested – an issue of provenance – is still under discussion and resolution.

#### Activity 3.2.2 Market chain analysis workshops (with all actors and stakeholders).

Interviews were conducted with a total of 22 market actors. For a summary of results see ANNEX 10. It is clear that both large and small traders are involved in both harvesting and sale of all target species and additional species as well. However, this has established that a market for all target species exists and therefore the “creation” of a new market as a potential threat is not an issue. However expansion of that market could be an issue, but large traders especially have noted a willingness to both deal directly with communities who are growing species in agrobiodiversity plots and also to consider growing the species themselves. This therefore raises the question of how to manage the provenance – to ensure that companies can check and only pay for produce that is not wild harvested. This may have a negative effect on small traders who rely upon wild collected plants as a significant livelihood component and discussions with these traders is ongoing.

#### Activity 3.2.3 "Producer groups" established and operating.

All beneficiary households visited in Year Three were supplied with jars and sealing machines and trained in their use. While the products of target species – especially onions – are not yet being harvested, training on the use of jars to preserve products was given and households used these materials and demonstrated preserved fruits and vegetables as a result ([REDACTED]). These will be used in the future for preservation of onions particularly. As a result, each community and the households within it has established a “producer group” that shares training and knowledge gained to improve their ability to grow and preserve products. Formal relationships with commercial entities are still under development, and the supply of fresh or



preserved produce for either commercial or personal use or consumption will form part of these developments in 2022.

#### Activity 3.3.1 Participatory Impact Assessments.

These are planned for 2022.

### Output 4

**GENDER EQUALITY:** increase in number of women in five communities benefiting from involvement in household and community management and budgeting, with increased horticulture and business skills.

#### Activity 4.1.1 Horticulture training in communities delivered to women.

All local workshops and training have included a significant number of women ( [REDACTED] ).

#### Activity 4.1.2 Sustainable harvesting training delivered to women.

Planning as per Activity 4.1.1.

#### Activity 4.1.3 Production and packaging training delivered to women.

See Activity 3.2.3 which was delivered primarily to women.

#### Activity 4.1.4 Training in agro-biodiversity business management and market access delivered to women.

Planned for 2022 as relationships with commercial companies develops.

#### Activity 4.1.5 Participatory Impact Assessments targeting livelihood benefits for women.

Planned for 2022.

### Output 5

**SUSTAINABLE PLANNING:** "National Report on Sustainable Use of Plants in Tajikistan" developed to benefit biodiversity and community livelihoods in Tajikistan, including case studies and appropriate governance structures.

#### Activity 5.1.1 Research and gather data on plant use in Tajikistan.

Published and online information about the uses of plants in Tajikistan and in the wider Central Asia region has been collated. Acquisition of information from local experts and those held at Tajik institutes and in the Russian language more or less complete. Community interviews have indicated levels of plant use for target species and questionnaires distributed at the National Symposium in October 2021 have been summarized and are being incorporated. The intention is to summarize this information for publication in the National Report on Plants for Livelihoods in Tajikistan for which the contents is agreed and which is currently being drafted and shared collaboratively.

#### Activity 5.1.2 National Workshop on sustainable plant use in Tajikistan.

During 7-8 of October 2021 a National Workshop on Sustainable plant use in Tajikistan was conducted in Kulob. This event was attended by more than 70 people including scientists, students, specialists, the Academy of Sciences' staff and other guests. Also, project partners FFI, Zam Zam, GT and some active beneficiaries participated in the event. Unfortunately, due to COVID-19 partners from the UK, Russia and Uzbekistan were not able to come. Therefore, they joined the event via Zoom.

The National Workshop was chaired by the Vice-President of the National Academy of Sciences of Tajikistan (NAST), Corresponding Member of the NAST Saidov A.S. Opening speeches made by Valizoda Abduqodir Isuf, Mayor of Kulob City and Miralizoda Abdusalom Mustafu, Rector of Kulob State University.

In the second day, collaboration between the Royal Botanic Garden Edinburgh and Kulob Botanic Garden was presented by John Mitchell, Alpine Supervisor of the RBGE. Prepared questionnaires by RBGE on sustainable plant use in Tajikistan were spread among Botanists' Section members to find out their ideas and opinion on current situation of rare and endangered plant species. The filled questionnaires were translated from Tajik into English by GT and sent to RBGE for further analysis.

Activity 5.1.3 Draft National Report on Plants for Livelihoods circulated to stakeholders and reviewers.

Contents agreed. Content in development. The draft National Report will be circulated to partners by mid-2022.

Activity 5.2.1 Launch events for National Report.

Activity planned for late 2022.

Activity 5.3.1 Steering Committee (all partners).

Following the COVID-19 pandemic, online meetings, discussions and trainings have taken place frequently.

Activity 5.3.2 Steering committee (Tajikistan partners).

See Activity 5.3.1 Additional meetings between Tajik partners have been ongoing in Year Three especially in relation to PMSD data gathering and decision making.

Activity 5.3.3 Submit reports to Darwin Initiative.

Responsibility of RBGE to submit timely reports to Darwin Initiative. Timing of annual reports slightly delayed due to Ramadan and Eid usually falling within period of report preparation.

Activity 5.3.4 Monitoring and Evaluation plan and reviews.

Online meetings regularly discuss how activities are leading towards project targets. Quarterly reports are measured against activities and any delays or required actions noted and acted upon as necessary. All partners have adopted an adaptive and flexible approach during the COVID-19 pandemic.

## **3.2 Progress towards project Outputs**

**0.1 BIODIVERSITY:** *by end of project, five plant species threatened by unsustainable harvesting have better actual and projected conservation status through reduction in wild harvesting.*

Six species identified; information on wild harvesting collected; seeds of plants collected, stored, germinated and transferred to demonstration plots, with agrobiodiversity plots established in 100 households. Reductions in wild harvesting will be assessed in Y4 following extension of project timeframe with Red List and Green Status Assessments completed, projected and published.

**0.2 AWARENESS & CAPACITY DEVELOPMENT:** at least 100 biodiversity stakeholders (from local to national) in Tajikistan more aware of the sustainable use of natural resources and how to implement benefits at local and national scales.

Communities (14) and over 100 households more aware of sustainable use through introduction to and participation in project; awareness and capacity activities complete; capacity development conducted prior to project start and top up training delayed due to coronavirus pandemic – online and remote training delivered and ongoing.

**0.3 LIVELIHOODS & HEALTH:** agro-biodiversity programmes established benefiting at least 100 households in terms of increased and more resilient household income, direct access to plant products.

Plots established in 100 households; target species providing or will provide plant products for local consumption with development of relationships between communities and traders to up=scale production and increase household income.

**0.4 GENDER EQUALITY:** at least 50 women skilled in horticultural methods and developing and managing niche agri-businesses.

Women have been represented in households/farmers selected in first stage, and in community interviews, workshops and initial training. Horticulture and preservation training predominantly attended by women (ca. 80% of participants).

**0.5 SUSTAINABLE PLANNING:** national report and roadmap for long term sustainable agro-biodiversity programmes developed, with pilot programmes for six species established and demonstrated to stakeholders.

Symposium hosted by Kulob Botanic Garden in late 2021 with discussion and consolidation locally towards the final report, including questionnaires distributed and completed. National Report contents discussed with partners and drafted. Routine meetings among partners.

### 3.3 Progress towards the project Outcome

**Outcome:** Increased awareness and capacity locally and nationally to use Tajikistan's plant resources sustainably, leading to improved conservation status and enhanced livelihoods for communities.

Given the challenges and delays brought about by COVID-19 progress is satisfactory towards the project outcome, with a clear path to delivery of outputs following decision making. Awareness is being increased with potential for expansion. The nature of livelihoods benefits will become clear following additional data gathering and implementation of PMSD and the subsequent National Report publication.

Output 1 – conservation assessment of six species ongoing, *ex-situ* seed collections established, monitoring plots established, verification of reduced threat through reduction in harvesting to be verified, further spatial analyses to verify long term and sustainable improvements;

Output 2 – the majority of training has been conducted online or has been managed in a practical sense in Tajikistan, some delays to implementation;

Output 3 – plots established; much discussion on how to proceed as some disparity among ideas and also among information collected in household interviews and existing/establishing markets and market actors; decisions following additional data gathering during PMSD to dictate whether up-scaling can be managed appropriately; benefits through a reduction in effort in wild harvesting and local food production will occur with data gathered in final year;

Output 4 – women largely involved in plot establishment and training; following decisions on up-scaling via PMSD further training for women will be undertaken;

Output 5 – events undertaken in Year Three, planning for further events and film in final year; outline contents of report disseminated and layout/text/images in preparation;

### 3.4 Monitoring of assumptions

#### Outcome Assumptions

**SECURITY:** *Tajikistan remains a secure location to work, with no risks for Tajik or international partners (Khatlon province is currently a safe location, working with known and trusted partners with UK Embassy advice and support).*

This assumption remains valid, but the situation will be closely monitored as and when travel to Tajikistan becomes possible following the COVID-19 pandemic. Travel within Tajikistan during the pandemic has not been restricted, but all project partners and participants in communities have been offered the decision to not travel or to not receive project workers locally. Routine communication with Tajik partners has been maintained to ensure all partners are aware of the current situation in Tajikistan. International flights have started to resume to Tajikistan, and the potential for secure and safe future travel is being regularly monitored by UK partners. However, borders with Tajikistan and some adjacent countries remain closed and liable to incidents, including Afghanistan and the GBAO. The project partner institutes are not located in these areas although some participating communities are within GBAO boundaries. Travel during October/November 2022 is the most likely solution to see project activities through to completion and to attend events.

**NATURAL DISASTERS:** *floods, landslides and poor travel infrastructure may cause access issues (ameliorated through flexible planning and scheduling).*

Some issues encountered in Year Three; all communities remain accessible but field missions delayed in some instances. Occasionally planned community visits have been postponed and rescheduled due to heavy rain or snow and these have led to land and mud slides during 2021 and 2022. Local partners assess conditions routinely prior to travel.

**FINANCE:** *international transfers and exchange rate variation could impact the timing and cost of in country implementation (exchange rates have been estimated conservatively to take account of Brexit, and routine planning with in-country partners will ensure banking instability is counteracted).*

So far, no issues with international transfers have been encountered, with exchange rates remaining within planned assumptions. Exchange rates are however changing in response to Brexit, the COVID-19 pandemic and costs are increasing due to the war in Ukraine which has affected supply routes and costs. These issues will be monitored closely and Change Requests submitted if necessary. Final payments have been successfully submitted and received despite intermediate banks being in Moscow: extensive checks were made regarding whether the correspondent banks were still available for transactions from the UK.

**STAFF RETENTION:** *continuity of staff at all partner organizations (Tajik partners have provided named individuals for all positions, and have assured these are trusted and respected staff who demonstrate long-term commitment, although if staff did move on there are a number of young graduates already known to the project team who could fulfil those roles).*

All staff remain engaged and working in collaboration on the project. We do not anticipate any changes at this stage.

### **Output 1 Assumptions.**

*On the ground, measurable improvements in species numbers will not be feasible with the project, but a direct reduction in a specific threat coupled with ex situ collections will allow a re-assessment of status alongside a future projection of persistence.*

Assumption still valid.

### **Output 2 Assumptions.**

*Participation of stakeholders at awareness raising and media events can be dependent on various factors - however KBG have held such events previously, and good relations with the UK Embassy in Tajikistan and the National Academy of Sciences make this a low risk.*

No issues encountered with communities and stakeholders during events and workshops in Year Three.

### **Output 3 Assumptions.**

*Community engagement (existing working relations between Tajik partners and several communities make this a low risk).*

No issues encountered; community engagement has been positive thus far. Communities were given the option to not receive visits from project staff during the global pandemic, but thus far this option has not been taken up - project staff follow local guidelines strictly and no threat to health has been encountered from project activities.

*Land tenure (some communities and households may be limited in the availability of land for establishment of agro-biodiversity plots, however existing pilot projects suggest that solutions can be found and are likely to increase as benefits accrue).*

Despite increased numbers of communities engaged, no households have yet been encountered that do not have access to land directly and different types of land have been used to establish plots. Given the success of establishing plots locally, this assumption remains positive. Discussions on upscaling production will mean land tenure factors are under increased scrutiny to ensure inclusivity is maintained.

### **Output 4 Assumptions.**

*Social and cultural issues (involvement of women in increased responsibility for agro-biodiversity plots and benefits has the potential to present cultural resistance).*

So far this issue has not been encountered but will be monitored as PMSD and PIA training and implementation increases. Training and plot establishment and management has strongly featured women, but management of business and associated benefits will be a consideration moving forwards.

### **Output 5 Assumptions.**

*Inability to engage with all relevant stakeholders (to be ameliorated by early and thorough planning).*

No issues encountered as yet.

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

#### **Impact Statement:**

“Plant diversity is conserved through sustainable use, providing long term enhancement of well-being and livelihoods in local communities.”

This impact statement remains valid, but due to delays and project extensions it is still too early in the project to assess direct or future effects. With all project components on track we envisage the impact statement to remain valid and the project to contribute to this through awareness, engagement and direct benefits that can be measured, monitored, projected and expanded beyond the project boundaries and timeline.

We consider the National Report to be critical to ensuring potential for long term benefits after completion of the project. Part of the success of this will depend upon decisions and recommendations as to whether upscaling horticultural plots can significantly increase community benefits or whether this will create a market that potential increases demand and illegal wild harvesting. Discussion and information gathering in Year Three has identified that such markets already exist and there are local and regional businesses active in these areas. Interaction regarding growing target species as opposed to wild harvesting has so far been positive and the risk in market creation is one to be managed rather than avoided.

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

This project will directly address all three main objectives of the Convention on Biological Diversity (conservation, sustainable use, equitable benefit sharing), and in particular the following articles:

Article 7 through identifying species at risk through unsustainable harvesting and monitoring the effects of interventions designed to improve conservation status; six species identified and awareness and intervention to mitigate unsustainable harvesting ongoing and being monitored.

Article 8 through proposing interventions to reduce unsustainable use of resources leading to better *in-situ* conservation outcomes, especially for threatened species; interventions proposed, with conservation status to be assessed and projected based upon project activities.

Article 9 through establishment of *ex-situ* collections (plants and seeds) of taxa threatened through unsustainable harvesting, in Tajikistan and globally; achieved locally at Kulob Botanic Garden, planned for RBGE when international travel resumes (RBGE holds living collections of *A. rosenbachianum* but will increase collections by the end of the project).

Article 10 through establishing sound practices that both ensure sustainable use and also contribute to community livelihoods, while also benefiting target threatened species in their natural habitats; livelihood benefits of the above interventions established and being monitored.

The project has also addressed Article 12 through capacity development of key partners, Article 13 through education and awareness events in communities, schools and other institutes, Article 17 through the exchange of information about threatened plant species, and Article 18 through international cooperation.

The reporting period for both the Aichi Targets and the Global Strategy for Plant Conservation were completed at the end of 2020 and as a result reporting on the targets are somewhat irrelevant. The development of the 2050 Biodiversity Targets and the 2030 milestones is ongoing, and progress against these will be reported for the current project at their current state of development and adoption at the close of the project at the end of 2022.

The Nagoya Protocol will be fully respected, and additional local and national recommendations developed, to ensure any *ex situ* collections adhere to the principles and procedures of Access and Benefit Sharing in Tajikistan and with international partners.

The Focal Point for Tajikistan was unable to attend the Symposium in Kulob in October 2021. Direct interaction via the National Report and subsequent launch event is planned for 2022.

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

The primary beneficiaries are community members in rural villages in Dashtijum and Childukhtaron Reserves. Agro-biodiversity plots have been established with 100 households engaged. Therefore, additional food sources will become available as plots mature giving easier access to produce locally and reducing the requirement for dangerous and time-consuming harvesting trips. Social, health benefits and financial benefits will be documented in the final year. Additional horticulture skills are transferable to different and additional crops and plants.

The project will demonstrate these benefits in target communities with target species but is designed to collate enough additional information and lessons learned to enable expansion to additional species and additional areas at minimal expense or effort during up-scaling. It can already be seen that species outside the six target species have been highlighted and some are being monitored as part of the project – there has been a focus on gathering additional information and horticulture potential for these species in Year Three. These plans will be co-constructed and shared nationally in the National Report on Plants for Livelihoods.

## **6. Consideration of gender equality issues**

During Year Three the project team made further specific efforts to engage directly with female community members and their roles in cultivating, harvesting and storing plants and their products. Women have featured strongly in workshops and horticultural training; it is evident that while women rarely if ever wild harvest plants alone, they often do so closer to home giving an automatic role in household plots and the potential to expand female involvement in such activities at a range of scales. Follow-on and Q&A sessions were attended predominantly by women, and training in product storage also. These are transferable skills that will in time apply to species and products out with the project target species and which are mostly attended to by women. Plans for specific management and business arrangements within informal producer groups will be implemented in 2022 as relationships with market actors are developed and finalised.

## **7. Monitoring and evaluation**

Monitoring and Evaluation has been based upon a sound communication strategy, with known and trusted partners. This was evident before and during the application process, and immediately after the project started when Kulob Botanic Garden Director Dr Mariyo Boboev and Ganji Tabiat Director Jovidon Boboev visited the UK with funds from the Global Britain Fund administered through the UK Embassy in Dushanbe.

Communication has been regular and productive. As a result of the inability of UK partners to travel to Tajikistan, communications have been expanded and the online and remote component has been expanded. This has made communications somewhat more formal, allowing more direct record-keeping of interactions and discussions. There is no doubt that this has increased the time allocated to capacity development materials, and to application of adaptive management.

Project reporting by all partners follows the log frame and associated indicators.

Activities in communities are regular and therefore progress and dealing with any issues arising has formed a specific part of those activities, managed by local partners.

## **8. Lessons learnt**

There is no doubt that achieving certain technical and planning components have been more challenging due to COVID-19 and the inability to travel. This has certainly resulted in some delays even in Year Three and concomitant following delays in Year Two as certain project trainings and activities would have been conducted in person with the opportunity for quick discussion and resolution of any issues. This has been more time consuming conducted remotely and has necessitated behavioural change for some partners who are used to giving or receiving training in different formats. There is no doubt that this will be a valuable lesson, as the ability to deliver remote training (with associated language issues in some circumstances) can be used successfully due to travel restrictions resulting from the global pandemic or alternatively in locations affected by security issues. The requirement for good internet connections as such should be a strong consideration and should be addressed at the project and activity design stage with appropriate funding requested if necessary – giving also a sustainable resource upon project completion.

One planning issue has been taking into consideration that the working schedules of partners may differ significantly. This could be due to cultural, societal or religious factors or due to the difference between staff employed full-time on project activities yet needing to take into account additional roles and responsibilities outside the project – both in the UK and in other countries. It is our experience that such issues, when discussed, are not considered in enough depth or detail. The importance of co-constructed log frames and timetables cannot be over-stressed, also taking into account adaptive changes during the project. In Year Three some of these issues have been addressed directly, and often through direction by the host country partners allowing them to direct and dictate their own activities and timescales.

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

The following two comments were made in the AR2 Report to be addressed in the AR3:

“Please provide details of organised exchange trips between UK partners and Tajik partners if they are indeed planned in Y3”.

Travel to Tajikistan is being planned for late 2022 to encompass final programme meetings and outputs, launch event for the National Report, training modules and visits to target communities if local regulations to enter the GBAO allow.

“It is hoped that Kulob Botanic Garden and Ganji Tabiat will produce more wild plant seeds in Y3”

See Activity 1.3.1. Additional seeds have been collected, stored and distributed during Year Three.

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

In general no further comments are necessary. Although an extension to the project timescale has been agreed until the end of 2022, financial transactions will be complete by the end of June 2022. This is relevant as costs in Tajikistan are increasing rapidly due to indirect effects of the conflict in Ukraine. This may however impact upon the cost of any travel to Tajikistan by UK partners late in 2022. Further, due to insecurity in neighbouring Afghanistan and the occasional closure of the GBAO, it may not be possible for partners – especially UK partners – to visit target communities inside the GBAO boundary. Both situations are being monitored closely and carefully.

## **11. Sustainability and legacy**

Communication with the UK Ambassador to Tajikistan is being maintained, and advice about travel and logistics sought as and when necessary as well as providing project updates and the potential for direct involvement as and when desired. UK partners have not visited Tajikistan since the new UK Ambassador took up his posting, but no doubt this will occur when travel becomes available again.

Interviews in Year Three with market traders and companies that sell target species has revealed a lack of knowledge about sustainable harvesting and the possibility to cultivate species to reduce wild harvesting. All market traders and companies are processing and selling plants collected in the wild, and some of these entities were “not aware” that these species could be cultivated. As a result, companies are expressing an interest in growing species on land that they own, and also buying from communities that are growing species rather than collecting them in the wild. As such, knowledge about sustainable harvesting and alternative solutions has spread to the commercial sector. Currently this has focused in *Allium* spp. which can be processed and stored in jars – making them a more sustainable commodity – but additional discussions are planned to expand this knowledge to additional species.

A Darwin Fellowship awarded to Qobil Bobokalonov, who is an excellent young botanist and researcher based at the National Herbarium in Dushanbe and is associated with Kulob Botanic Garden, has been delayed due to travel restrictions under the global COVID19 pandemic and working conditions in Edinburgh where access to facilities has been compromised by building and other works. It is planned that he will visit Edinburgh in late 2022 to complete his training and fellowship activities which will be publicised and added to the National Report for dissemination in Tajikistan.

The exit strategy remains valid. The National Report on Plants for Livelihoods will be used to promote the benefits of project outcomes and how these can be up scaled beyond the life of the project. Further, the production of cultivation guides for specific plants – project target species– will further enable this up-scaling.

## **12. Darwin identity**

In presentations at the National Symposium hosted in Kulob in October 2021 and in media events hosted at Kulob Botanic Garden in spring 2021, the Darwin Initiative has been featured as the funding partner for the current collaborative programme. It will also feature during the preparation and launch of the National Report in late 2022.

The project has been mentioned in some social media channels: most often on the Twitter accounts of CMEP and several other staff and research groups at RBGE. The launch of the project website will feature in partner media. [www.tajikistandarwin.cmep.org.uk](http://www.tajikistandarwin.cmep.org.uk)

The Darwin Initiative is recognised in Tajikistan as a distinct thing, due to pre-existing projects funded through FFI and also through the work of the UK Ambassador. The project partners see DI as a way to further their own ideas with priming funds, and to support conservation and development in ways that would not otherwise be possible. This has resulted in the successful application for a young Tajik botanist as a Darwin Fellow

Some work of Ganji Tabiat is included in the below website, including Darwin Initiative logo: [http://ganjitableti.tj/?page\\_id=1500](http://ganjitableti.tj/?page_id=1500)

## **13. Impact of COVID-19 on project delivery**

The impact of the COVID-19 pandemic on project activities and planning is covered throughout the report. In short, the ability of UK partners to travel to give direct support to Tajik partners has been impacted: this has led to adaptive planning to achieve such support using alternate methods (mostly online) and has resulted in delays to some components. It is not believed that this will affect achievement of the project outcomes and delivery of outputs significantly.

## **14. Safeguarding**

RBGE and UK project partners have safeguarding policies in place.

No safeguarding issues have been encountered during the third year of the project.

Community engagement has been implemented through trusted and pre-existing relationships between Tajik partners and those communities.



During the COVID-19 pandemic, all partners and beneficiary communities have been given the option to dictate what they are comfortable with according to the project interventions. The wearing of facemasks has been compulsory in Tajikistan for some part of the project activities. All staff were offered the choice to work as normal, or to reduce work or travel or interaction to whatever degree was dictated by National Policy or through personal choice. As yet, no issues have been reported that suggest any safeguarding issues under the global pandemic have arisen.

FFI staff in Tajikistan were at times asked to cease national travel under conditions allow for safe travel. As such, modification of training plans from in-country to remote – both internationally and within Tajikistan – have been implemented. Some delays have resulted, but project outcomes and outputs remain unaffected.

International travel for UK partners was suspended during the reporting period to ensure control under pandemic conditions. Plans for travel to Tajikistan in late 2022 are in development.

## 15. Project expenditure

**Table 1: 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)	██████	██████	-1%	
Consultancy costs	██████	██████	0%	
Overhead Costs	██████	██████	-1%	
Travel and subsistence	██████	██████	-28%	No fieldwork costs as Lead Institute improved exchange rates
Operating Costs	██████	██████	-13%	Improved exchange rates
Capital items (see below)	██████	██████	0%	
Monitoring & Evaluation (M&E)				
Others (see below)	██████	██████	0%	
<b>TOTAL</b>	<b>£114,113</b>	<b>£111,075</b>		

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

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

No content in this section at this time.