Darwin Initiative Main and Post Project Annual Report

To be completed with reference to the "Writing a Darwin Report" guidance: (http://www.darwininitiative.org.uk/resources-for-projects/reporting-forms). It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)
Submission Deadline: 30th April 2019

Darwin Project Information

Project reference	25-017
Project title	Enhancing rural Caucasian community livelihoods through fruit and nut conservation
Host country/ies	Georgia and Armenia
Lead organisation	Royal Botanic Gardens Kew (RBG Kew)
Partner institution(s)	Nature Heritage NGO of Armenia (NH), National Botanical Garden Georgia (NBGG) and Institute of Botany, Georgia (IoB)
Darwin grant value	£310,171
Start/end dates of project	1st July 2018 – 31st March 2021
Reporting period (e.g., Apr 2018 – Mar 2019) and number	July 2018 – March 2019
Project Leader name	Elinor Breman (PI); Aisyah Faruk (Co-PI)
Project website/blog/Twitter	https://www.kew.org/science/our-science/projects/enhancing-rural-caucasian-livelihoods-fruit-and-nut-conservation
Report author(s) and date	Elinor Breman (RBG Kew), Aisyah Faruk (RBG Kew), Anush Nersesyan (NH), Astghik Papikyan (NH), Tsira Mikatadze-Pantsulaia (NBGG), Tina Barblishvili (NBGG), David Kikodze (IoB), Nana Shakarishvili (IoB) 30/04/2019

1. Project rationale

The Caucasus region is known as one of the 34 Biodiversity Hotspot and one of WWF's 35 "priority places" [1]. It is home to over 6,500 plant species, of which, 25% are found nowhere else in the world, making the Caucasus a region with the highest level of endemism within the Temperate Zone of the Northern Hemisphere[2]. Around 2,000 species of plants found within the region have a direct economic value and are used by local communities for various purposes from food and medicines to fuel and dyes[3]. Of these, over 15% are wild-growing fruit and nut species[4].

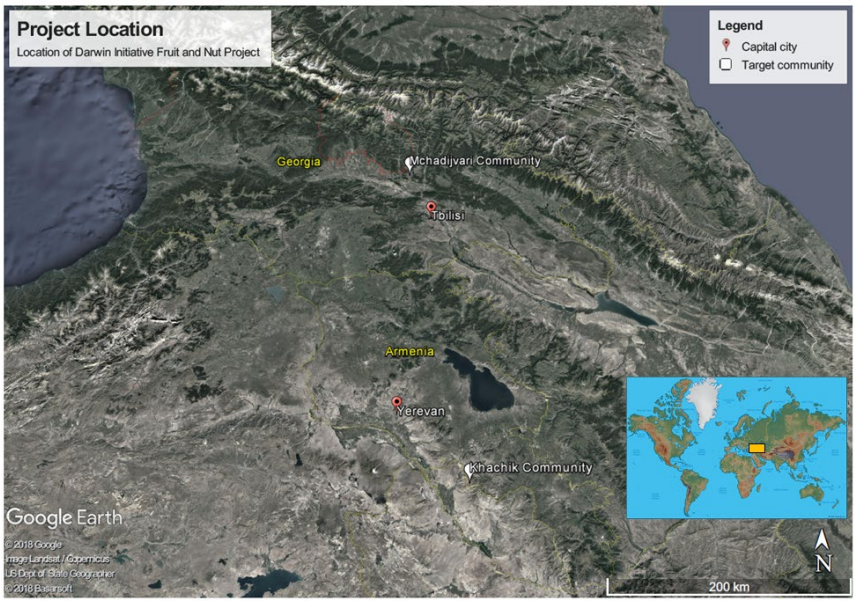
[1] Caucasus Nature Fund (CNF, 2014) *Supporting people conserving nature in the Caucasus,* Brochure, http://caucasus-naturefund.org/wp-content/uploads/2012/10/brochureCNF2014_reduced.pdf, viewed July 2017
[2] Batsatsashvili, K., Schatz, G. E. and Schulkina, T. (2013) *Caucasus Plant Initiative: A regional plant conservation strategy*, Missouri Botanical Garden, Missouri USA
[3] Rukhadze, A. (2015) *Georgia's fifth national report to the convention on biological diversity, "*United Nations Convention on Biological Diversity", viewed July 2017
[4] Food and Agriculture Organisation (FAO), 2006, *Better forestry, less poverty - A practitioner's guide; Food and Agriculture Organization of the United Nations*. Rome

Communities in Georgia and Armenia are dependent on harvesting wild fruit and nut species to supplement their diet and livelihoods. In 1991, heavy economic recession and high unemployment rates in the South Caucasus (or Transcaucasus) has forced rural families into poverty and a heavy dependence on ecosystem services[5]. In Georgia, approximately 1,200 plant species are used medicinally[6]. In Armenia, fruits and nuts make up 52% of frequently collected forest products[7].

Within the last century, more than 40 vascular plant species have disappeared from Armenia and Georgia, and over 250 are in danger of extinction[8]. Moreover, due to widespread illegal logging and mining activities, it is estimated that less than 12% of Caucasus vegetation remains unspoiled[9]. Other major threats to wild fruit and nut populations include overharvesting, overgrazing and pollution. Overharvesting using destructive techniques can speed up collecting, but can heavily damages re-growth, which can be detrimental to sensitive or rare populations of fruit and nut species[10]. Further threats come from locals facing economic pressure, a lack of education on the importance of wild genetic resources, and the expansion of monocultures[11]. These threats are exacerbated by the interaction of climate-change with habitat loss, plant population decline and the disruption of ecological processes.

The current project aims to safeguard the ecologically and economically important fruit and nut species in Georgia and Armenia, which would safeguard rural livelihoods and conserve these valuable genetic resources. In Georgia, we have engaged with the Mchadijvari community and in Armenia the Khachik community (Figure 1.1).

Figure 1.1 Project location



[5] Bakkegaard, R. K. (2014) '*Executive Summary – Regional analysis of forest and environmental product use and dependence amongst rural households in South Caucasus, Eastern Europe and Russia*', in *Enpi East FLEG II*, http://www.enpi-fleg.org/site/assets/files/1532/forest_dependency_regional_executive_summary_publication_final.pdf, viewed July 2017

[6] Ministry of Environment and Natural Resources Protection of Georgia (MoE), *Georgia's Fifth National Report to the Convention on Biological Diversity*, 2014, https://www.cbd.int/doc/world/ge/ge-nr-05-en.pdf, viewed August 2017

[7] Mkrtchyan, A., Grigoryan, E. 2014. The World Bank (WB), European Neighborhood and Partnership Instrument East Countries Forest Law Enforcement and Governance II Program, *Forest Dependency in Rural Armenia*

[8] Food and Agriculture Organisation (FAO), 2010, *Gardens of Biodiversity, Conservation of genetic resources and their use in traditional food production systems by small farmers of the Southern Caucasus,* Rome

[9] Caucasus Nature Fund (CNF, 2012) '*Flora Fauna and Threats: Biodiversity under Threat, the Caucasus',* http://caucasus-naturefund.org/the-caucasus/flora-fauna-threats/, viewed August 2017

[10] Bakkegaard, R. K. (2014) *Enpi East FLEG II*, 4

[11] Food and Agriculture Organisation, *Gardens of Biodiversity*, 3

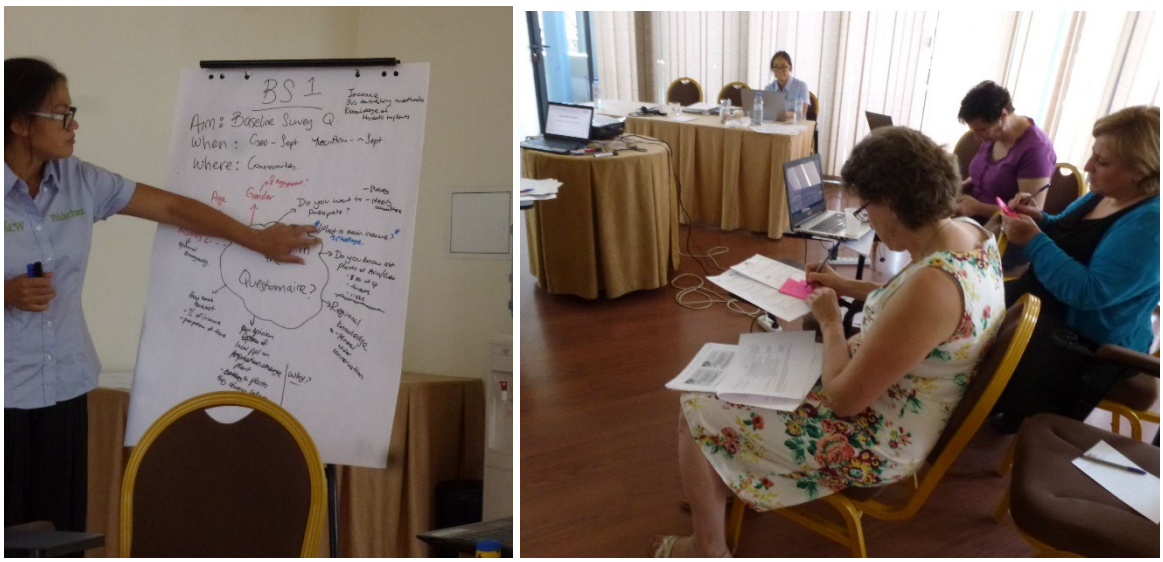
2. Project partnerships

The lead institution is RBG Kew's Millennium Seed Bank (MSB), which manages a partnership network of 96 countries and overseas territories and has over 20 years' experience of project design and delivery. Well-established partnerships exist with NH, NBGG and IoB through previous work in plant conservation. All partners have been closely involved in the development of the project and its delivery.

Planning of activities relating to the communities are largely led by the partners, social scientist and contacts in the local communities following the timetable in the original project application. For visits and events requiring the attendance of Kew or overseas staff the project team work well together to coordinate mutually acceptable timings and actions.

In September, all project managers/coordinators met in Yerevan to conduct a workshop regarding the community survey/questionnaire. This was facilitated by the Co-PI, who is a trained facilitator and utilised tools to ensure equal participation from all those involved (Figure 2.1). Partners discussed the questions further with the social scientist and a final version of the questionnaire was shared prior to conducting the interviews. Partners also made the decision on what to include in the project leaflets, suggesting adding a picture and/or name of the target village as they said it would increase the probability that the community members will keep them and pass them along to others.

Figure 2.1 Kew Coordinator facilitating a meeting with all key project partners on community questionnaire



During the meeting in Yerevan, the original log frame was shared with all the project partners and there was a discussion regarding any changes that needed to be made now that they have engaged with their respected communities. The changes identified were immediately highlighted to LTS by the PI and Co-PI and the results of the change request were communicated back to the partners, generally on the same day it was received.

Monitoring and evaluation of the overall project is managed by the PI and Co-PI. However, for workshops and events led by partners (e.g. community workshops, internal red listing meetings, research meetings etc), monitoring is generally done by the relevant partner. All the workshop registers provided in this report were developed, populated and managed by the partners.

There have been many achievements throughout the project year and across the partnership. The red listing training in Yerevan was a notable success. Not only was our target of 14 partner staff trained achieved, we also exceeded the number of women who attended (75%). Additionally, we engaged young members of staff with new Kew staff members, furthering the partnership between Kew, NH, NBGG and IoB.

"One of the best things about this workshop was the advice from Catia [Plant Assessment Unit, Kew], that we should not be afraid of making [mistakes], that this is the way of leaning. I would like for Catia to say that in every training sessions, so that people won't be afraid to learn." Extract from participant course feedback form.

The partnership did have some challenges this year, mainly due to the fact that some aspects of the project are novel to the partners and the partnership. There was an issue relating to how to show evidence for matched-funding for reporting, which have not been as this had not been a requirement for past projects with the partners. This somewhat delayed some activities starting, as all involved needed further clarification from LTS before moving forward. Kew Co-PI managed to speak to Eilidh from LTS on the phone to clarify this issue in good time and ensured that the delay wasn't detrimental to the agreed Outputs. The project relied heavily on partners working with local communities, which also represented a new challenge to the partners and the partnership. With the support of the social scientist and enthusiasm from the community members, the partners are growing confident in this aspect of the project:

"I've enjoyed this [the community workshop] part of the project, though it seemed so unusual [different from previous projects]" a comment made by Tina from NBGG.

3. Project progress

Please note that we have moved all photos relating to Section 3 into Annex 4 to save space. Figures are numbered and linked accordingly. A separate folder with additional evidence is attached with this report, all documents included are mentioned in the text as Annex 4.X.X.X.

3.1 Progress in carrying out project Activities

Output 1. Two rural communities trained in sustainable harvesting practices and empowered to deliver *in-situ* conservation of fruit and nut ecosystem services to enhance rural livelihoods

Project activities for year 1 under this output:

1.1 Two social scientists are engaged, one in Georgia, one in Armenia

Progress: complete. Partners engaged two social scientists local to the country. In Georgia, the social scientist is part of the company "STREAM" and a copy of their community engagement report can be found in Annex 4.1.1.1. In Armenia, there was a change in their social scientist since the start of the project (CRF approved by LTS), the new social scientist is from World Vision International Charity Organisation (Figure 3.1.1 and Annex 4.1.1.2 is an extract from the Social Scientist Contract translated from Armenia into English).

1.2 Partners and social scientists conduct community assessments and engage members

Progress: Complete. Community assessments were conducted by the partners and social scientist in September 2018. Annex 4.1.2.1 and 4.1.2.3 are final versions of the questionnaires for each partner, while Annex 4.1.2.2 and 4.1.2.4 are scans of completed questionnaires. Details of how these relate to the outputs are discussed in Section 3.2 below.

1.3 300 project leaflets are prepared and distributed to 200 households, the target school and the church in each community

Progress: complete. The leaflets were designed and printed by the partners. A total of 615 were distributed to households, target school and the local church. See Annex 4.1.3.1-4.1.3.4 for final leaflet designs and distribution declaration forms by partner staff. Figure 3.1.2 is evidence of

Georgian partners handing out leaflets to the Mchadijvari community and Figure 3.1.3 is evidence of a community member from Khachik with a leaflet distributed by the Armenian partners.

1.4 Partners and social scientists recruit volunteers for the steering-committees (consisting of 1 partner staff and four community members) and plan future meetings during the first workshop

Progress: Complete. In Armenia, NH staff members and the social scientist engaged with 9 members of the community to be part of the steering committee. This activity took place during the first workshop rather than prior, due to the long distance of the community from Yerevan, which makes multiple trips within that quarter unfeasible. In Georgia, the partners have also engaged with community members to be part of the steering committee (14 people recruited). This was done prior to the first workshop, during interviews conducted by the social scientist (see Annex 4.1.2.4). A larger number of people have been chosen to ensure that any drop-outs will not affect the overall output by the end of the project (see Section 3.2 for names of Steering Committee)

1.5 Steering-committees, partners and social scientists meet for training and activity planning, including planning of demonstration plots

Progress: Complete. Three days before the first workshop, Georgian partners, NBGG met with key members of the steering-committee, including the head of the local municipality, Zurab Jariashvili and Leila Mighdiseli (Figure 3.1.4). Their cooperation is key for the success of project activities. They discussed the location, time and date of the upcoming workshop and shared with the schedule of the day. Following the workshop, the partners met with the Director of the secondary school, Shorena Driashvili, who had expressed further interest in project activities. More recently, NBGG partners invited the steering committee to the seedbank in March 2019 to share with them information regarding ex-situ conservation techniques and discuss project activities (Figure 3.1.5).

In Armenia, the NH staff met with community leaders to discuss plans for the workshop (Figure 3.1.6). They are also in close communication with the Biodiversity Champion, Bela (see section 1.12 for details). During the second visit she was very helpful in organising the training events.

1.6 Presentations and quizzes are delivered to school-children during the school term in Y1

Progress: Complete. At the end of September 2018, NH staff members conducted a presentation and quiz to the school of the target communities (Figure 3.1.7). A series of questions were asked, designed to gauge their learning around the project and plant conservation in general.

In Georgia, the partners conducted a presentation and quiz at their community school in December 2018. This was conducted after the school day had finished. NBGG staff introduced the project, outlined importance of plant conservation and young people's involvement in the project (Figure 3.1.8 and 3.1.9).

1.7 Workshops for information sharing are conducted with community members

Progress: Complete. NBGG staff members conducted a two-day information sharing workshop for the Mchadijvari community in September 2018 (Figure 3.1.10, 3.1.11, 3.1.12 and attendance register in Annex 4.1.7.1). The workshop started with the NBGG project manager (Tamaz Darchidze) introducing the team, the project and agenda for the day. The attendees were actively involved in the discussion, asking various question about the partnership and saying they feel proud to be part of an international collaboration. Project coordinator (Tsira Pantsulaia) gave a talk on the Georgian seed bank and plant conservation methods. Finally, newly trained red list participant, Sandro Kolbaia (see Output 3 in this section for details), gave a presentation about the red list and threatened species, highlighting the importance of conservation. Participants provided their experience of fruit and nut harvesting, including where and when they collect each species.

"Nana Kulusashvili also expressed her opinion. She mentioned that she collects fruits of berries and nut trees mostly for the needs of her family, but sometimes she sells dogwood and bramble, also "black hearted" wild pear, which is very sweet." Excerpt from the meeting minutes

In Armenia, the partners conducted workshops and field-work activities with the Khachik community in September 2018, arriving the evening before so as not to delay the start. Sona Galstyan, a member of NH, started the workshop with a presentation introducing the project. Further presentations were given on the topic of fruit and nut conservation and the potential activities of the project. During the partner's visit, the community members showed them collecting locations of wild fruit and nut, as well as how they use them (Figure 3.1.13 and 3.1.14, attendance register in Annex 4.1.7.2).

1.8 Land secured for two demonstration plots and signs created

Progress: Complete. In Armenia, the partners discussed with the community and decided to secure three plots. There were two reasons for this, one is to manage the risk of the local owner of the land leaving or selling the land and secondly, at the time the community and partner hadn't agreed on the priority species to plant, therefore, having three different plots of land ensured that whichever species was chosen there will be a suitable place for planting. Signs have been erected for the plots (Figure 3.1.15).

During the workshop in September, the community in Georgia expressed their interest in cultivating red list species on their farmlands, private plots and houses.

"Participant of the workshop said that they wish to cultivate Red List species on their farmlands – private plots, surrounding their houses. They said that they will take care about these plants. They said that an advantage should be given to walnut and laurel, as they are widely used by the population. A common idea of Mchadijvari residents was that if there would be the "sales market", then they would wish to share more space for planting the fruit and nut species and this will boost their income." From meeting minutes.

In addition, the Director of the Mchadijvari Public School expressed interest in creating the special demonstration plot to grow on priority species based on the project. Pictures of signs of the plots to come in the next phase.

1.9 Baseline/evaluation surveys conducted

Progress: Complete. Baseline surveys was conducted by partners and social scientist in September (Armenia) and December (Georgia) 2018 (see Figure 3.1.16). Questionnaires have been scanned and sent to Aisyah (Co-PI), who incorporated them into a Community Engagement Database (Figure 3.1.17). Questions were designed to measure project learning and will be repeated in second and third year of the project to track progress.

1.11 Practical and theoretical training is delivered by partners and social scientists on planting, cultivation and harvesting of fruit and nut species

Progress: First phase complete. As part of the information exchange workshop in September 2018, NH staff members also conducted a one-day practical training course on plant conservation and sustainable harvesting with the Khachik community (attendance register Annex 4.1.11.1). As part of this training, the partners taught local community members topics relating to health and safety in the field, how to collect herbarium vouchers and highlighted sustainable collection of fruit and nut species in the wild based on MSBP International Seed Conservation Standards (Figure 3.1.18 and 3.1.19).

In Georgia, the partners also conducted a practical training event, mainly around propagation/cultivation techniques. Prior to the event, the partners and community agreed on three species to cultivate based on the results of the community surveys (*Crataegus kyrtostyla*, *Crataegus pantagyna* and *Prunus spinosa*). In March 2019, NBGG staff members set up a practical training event at the Mchadijvari public school, at which there was a great exchangof information and experiences between the community and NBGG staff. For example, Elene Japaridze demonstrated the techniques used by the NBGG's conservation team for the propagation of conservation collections (Figure 3.1.20). The participants expressed great interest during the practical workshop and discussed with NBGG staff the types of substrate to use on fresh seeds vs cuttings. Tinatin Barblishvili (project staff) also shared with the community the uses of growth regulators (Biorag 1 and 2) developed by Georgian scientist Ramaz Gahokidze and its positive effect on the growth wild species with low seed set. The local biology teacher also shared his experience with this technique on his own crops.

1.12 Two BCs are engaged and coached in knowledge dissemination by the social scientists

Progress: Partially complete. Currently, only one Biodiversity Champion has successfully been engaged by the project partners, namely, Bela Arakelyan, a teacher from the community in Armenia (Figure 3.1.21). Community members love and respect her and she happy to help us and make suggestions. Due to the logistics issues getting from Yerevan to Khachik, we really need a reliable person in the community to be an effective mediator for the project. In Georgia, a Biodiversity Champion has not yet been finalised between the partners and committee members, but will be done in the next phase.

Output 2. Seeds of 122 wild fruit and nut species from the Caucasus are protected through *ex-situ* seed banking in-country and at the MSB

The activities for the first year relating to Output 2 were to prepare a target species list and conduct pre-collection assessments for target species. All partners have submitted their target lists for collecting (see Annex 4.2.1.1), covering around 140 species. There is an overlap of 21 species between the Armenian and Georgian lists, therefore, continued coordination is needed between all the partners (Kew included) to ensure there is minimal duplication and that the original target of 122 species is met by the end of the project.

Partners have started gathering information from their herbaria and in the field to ensure that the locality of the species is correct, and that they start their seed collecting at the optimal time (ripe fruits/nuts) (Figure 3.1.22, 3.1.23, 3.1.24 and Annex 4.2.2.1). This is as planned and ahead of the collecting season for the target species.

Finally, training for partner staff was planned with a deadline prior to December 2019. Experienced partner staff in Georgia have trained 10 young staff members in seed collecting, field data input forms and seed banking procedures (see Annex 4.2.2.2 for attendance list). In Armenia partners are waiting on the start of the collecting season (summer-autumn) in order to train new members of staff on seed conservation techniques.

Output 3. Global extinction risk assessments are completed and submitted to IUCN SIS for 20 of the target seed conservation species

For the first year of the project, the activities under Output 3 included IUCN-accredited Kew staff travelling to Armenia and training 14 partner-affiliated individuals by the end of September 2018 (Figure 3.1.25). The training event was held in the Erebuni Plaza Business Center in Yerevan from the 3-7 September 2018. Planning for the training event was a collaborative effort between the partners, with Anush Nersesyan and Astghik Papikyan from NH leading the

organisation of the venue, refreshments and day-to-day management during the time of the training. Two members of staff from Kew's Plant Assessment Unit, Catia Canteiro and Helen Chadburn, both IUCN accredited Assessors, took the lead in organising the training schedule, content and delivery of the event in accordance to IUCN's guide-lines. Please refer to Annex 4.3.1.1 for a final copy of the training schedule distributed to the participants. Aisyah was the lead in liaising with partners and other Kew staff, and in organising accommodation and travel arrangements. She also opened the event with a general introduction to the trainers and project to the participants on the first day.

A community data-collection survey was another activity scheduled for year one, designed to inform partners on which taxa they should prioritise and gather additional information on threats and uses to feed into red list assessments. This activity is complete for Georgia, where the social scientist engaged with 194 residents and of those who participated (~190), they successfully collected fruit and nut information from 94 women and 96 men (target was 20% of the population: 94 women and 92 men). Interview sheets were scanned and sent to Aisyah (Co-PI) to input in a Community database (Figure 3.1.17), which is made available to the partners via Dropbox. A summary of the information was given as a Powerpoint report during a meeting in Tbilisi, Georgia in February 2019 to discuss and finalise a red listing target species (Annex 4.3.1.4 for a PDF of the final list). The same meeting was also held in Yerevan, Armenia in February 2019 to discuss the Armenian community survey and target list (Figure 3.1.26). NH staff members and the social scientist engaged with 29 residents (18 women and 11 men) in 2018-2019 for the community survey. Partners plan to continue interviewing the community to gather information on the target species in 2019-2020 to ensure that the target of 20% (73 men and 70 women) of the community is met and any data incorporated in upcoming assessments. Aisyah will be accompanying the partners and social scientist for the next community engagement activity in May-June to offer additional support.

The final list included species where data exists in Georgian, Armenian and Kew herbaria. In such case all parties have agreed to share their data to ensure all assessments are of the highest quality. Aisyah has finished transcribing labels and georeferencing *Rosa canina* and is now working on *Cerasus microcarpa* from the Kew herbaria to be shared to partners for assessments. The aim is to have this completed and shared with the partners by the end of June 2019.

After the IUCN Red List training in September, partners have a better understanding of the data required for assessments and have conducted internal meetings with experts and colleagues to discuss gaps in their current information (Figure 3.1.27). Based on the gap-analysis meetings, partners have started to collect data, including transcribing herbarium labels of species from their own herbaria, literature searches and field trips to verify desk-based findings, as well as collecting population size data. In Armenia, for example, the gap-analysis meetings have revealed that more up-to-date information is needed on populations of *Crataegus caucasica* and *Sorbus hajastana*. As a result, field work was conducted in four regions of Armenia to find these species and update current data (Figure 3.1.28). In Georgia, partners have started collecting data on five species from the list, including data for sharing (e.g. *C. caucasica*).

Output 4. Increased understanding of the genetic diversity and uses of 12 fruit and nut taxa, highlighting valuable traits for climate change resilience

In the first year of the project, the project activities under Output 4 are to engage with two MSc students and have them trained by partner staff in genetic analysis techniques. Both the Armenian and Georgian partners have identified suitable candidates for the project. In Armenia, Razmik Papikyan (Figure 3.1.29) is now fully part of the project as an MSc student (Annex 4.4.1.3

is a PDF of his contract). In Georgia, the selected candidate is Ana Qvlividze (Figure 3.1.29). Unfortunately, due to the Georgian schooling system, Ana will only be given a formal contract as an MSc student in September 2019, which is when the new term starts. Despite this, Ana has sent a letter of interest to work on the project (Annex 4.4.1.2) and the Director of Institute of Botany, Ilia University of Georgia have sent an email confirming that she will be supervised and trained under the IoB (Annex 4.4.1.1).

3.2 Progress towards project Outputs

Output 1. Two rural communities trained in sustainable harvesting practices and empowered to deliver in-situ conservation of fruit and nut ecosystem services to enhance rural livelihoods

The partners in Georgia had initially planned to engage with a small village community within the Dusheti Municipality called Ebnisi. During their visit to the Ebnisi community in the first quarter of the project, several issues were highlighted, such as a lower number than thought of collectors and a lack of water access making establishing demonstration plots unfeasible. A new community, Mchadijvari, was identified and interested in joining the project. This community has a much higher population than Ebnisi (943 adults, 463 male, 480 female and 131 children), increasing the number of people engaged with the project. A change request was approved by LTS, and percentage indicators relating to population size in the log frame (indicators 0.1, 0.2, 1.1, 1.2 etc) were updated.

In Armenia, during the partner and social scientist's first visit to eh Khachik community, they identified a change in the size of its population compared to when an assessment was done prior to the project application. A change request was approved by LTS and the log frame was updated accordingly.

> *"Before workshop the SS studied the gender and age composition of the community. She found out that according to the 2011 year Census, there were 1028 people living in the village, 498 of them were male and 530 female, but this number decreases and now for the 2018 population is decreased to 713, 348 of them are women and 365 are men. For this new data she has been actively cooperating with the community leadership, studied community registration books for the community resident (In Armenia all communities have this kind of books)."* Excerpt from a report made by Armenian partners.

Since approval of the changes, the partners are making steady progress towards achieving Output 1 by its close. The first indicator of success was to make 60% of the community members (497 women, 497 men and 108 children) aware of the project by December 2018. We delivered this in several ways, through project leaflets, prior to interview questions during community surveys and a presentation at the local schools. Section 3.1 gives details of these activities, which includes 615 leaflets distributed to both communities between September and November 2018 (declarations in Annex 4.1.3.1 and 4.1.3.3). According to community assessments made by partners and social scientists through interviews, there is an average of three adults and one child per household (conservative estimate). Therefore, we believe that the project was reached 1,845 adult residents and 660 children (including 30 children in Armenia and 15 in Georgia through presentations). Of the people leaflets were distributed to, 42% of those were women in Armenia, while 52% were women in Georgia. Reaching this output indicator will ensure that majority of the community is made aware of the importance of plant conservation and activities relating to fruit and nut conservation.

In order to empower the community to conserve fruit and nut ecosystems, we aimed to establish a community led steering-committee made up of four members of each community (three of whom are women) and one Biodiversity Champion. The aim was to provide an indication that the

community will continue to be engaged throughout and beyond the project. Progress towards this is going well, with nine people engaged in Armenia (78% women) and 14 engaged in Georgia (57% women):

Armenian Committee Members	**Georgian Committee Members**
Vergush Araqelyan	Nanuli Tandilashvili
Marieta Mehrabyan	Laura Mighdiseli
Anahit Harutyunyan	Niko Temrikishvili
Nazeli Abrahamyan	Mtvarisa Chialashvili
Aghavni Aghababyan	Mamuka Archuadze
Vard Hakobyan	Nino Kenteladze
Hripsime Karapetyan	Nana Qulisashvili
Vanush Grigoryan	Leila Mamulashvili
Pertsch Poghosyan	Nikoloz Kolkhitashvili
	Archil Kolkhitashvili
	Gorderdzi Baghashvili
	Evgeni Dinuashvili
	Leila Mighdiseli
	Zurab Jariashvili

In Armenia, one of the engaged community members has agreed to be a Biodiversity Champion (Figure 3.1.21). This is also an indication of progress being made towards Output Indicators 1.6 and 1.7.

The third measurable indicator that we are using to identify progress and eventually success of Output 1 is the establishment of two demonstration plots in 2018 in local areas and cultivated with six priority species by December 2019. Initially, the logframe indicated August 2019, however, as the autumn season (August-October) is the main time for collecting material for planting, it was unfeasible to have species cultivated by this date. Currently, lands have been pledged in both communities, with Armenia having designed and erected signs for their demonstration plot in the community (see Section 3.1 for details and evidence). The establishment of the plots cultivated by community members will not only help alleviate wild populations from overharvesting, but also ensure the legacy of fruit and nut conservation remains within the community after the project ends.

The fourth measurable indicator is that 10% of community members (83 women and 83 men) are trained in harvesting techniques by 2020, and a total of 20% of community members, 166 women and 166 men, are trained in sustainable harvesting techniques and the long-term consequences for important F&N by March 2021. Some progress has been made towards this, with a total of 76 community members trained so far (attendance registers in Annex 4.1.7.1, 4.1.7.2 and 4.1.11.1), which is just under half of the intended target numbers until 2020. 69% of those who attended from the Armenian Khachik community were women, whilst 81% from the Mchadijvari community in Georgia were women. We plan to discuss with the steering committee and social scientist better ways of engaging with the men, as they also conduct harvesting activities within the household, but are underrepresented in the training events.

Output indicator 1.5 involves the collection of utilisation and threat data for 20 F&N for IUCN red-list publications and 12 research taxa from 20% of adult community members, 166 women and 166 men, during in 2018 and 2019 and the use of this information in red-list assessments and genetic research. Data have been collected from 190 residents in Georgia and 29 from Armenia (see Section 3.1 for details). Results from the 2018 surveys were used to prioritise the target list for red-list assessments and research. Further surveys and questions will gather information regarding harvesting locations and use. The communities are involved in these steps, helping them feel further empowered to conserve fruit and nut ecosystems.

Output 2. Seeds of 122 wild fruit and nut species from the Caucasus are protected through *ex-situ* seed banking in-country and at the MSB

There is high likelihood that the project will achieve this target by the end of the project, as the planned activities are on track to meet the deadlines within the Output indicators (i.e. 39 from Armenia and 58 from Georgia by December 2020, with the remaining by March 2021). The target list of 140 species have been sent to the Co-PI by partners, including key information such as possible fruiting times for 60 species and locations of 17 species (see Annex 4.2.1.1 and 4.2.2.1).

Armenian partners are currently planning training events for three partner staff (50% of whom are women) on seed collecting, processing and banking by December 2019. In Georgia, they have started training young staff members in seed collecting, processing and banking (Figure 3.1.8 and Annex 4.2.2.2). Training of new staff members will increase the capacity of partners to collect and process seeds of fruit and nut species, increasing the probability of achieving Output 2.

Output 3. Global extinction risk assessments are completed and submitted to IUCN SIS for 20 of the target seed conservation species

Progress in achieving this output has been made and the output is on track. To ensure this, the project aimed to increase the capacity of partner institutes to conduct global red-list assessments. One of the measurable indicators for the output was to show that 14 partner-affiliated individuals (of which 50% women) can conduct global red-list assessments to the standard of the IUCN by September 2018. Kew staff conducted a training event in Yerevan, Armenia with 14 participants from all partner institutes (all invitees attended), 71% of which were women (attendance list inAnnex 4.3.1.2).

Prior to the training, the trainers asked the participants to fill out a Training Needs Assessment (TNA) form in order to understand the level of understanding by the participants of the key elements of IUCN assessments. Twelve of the 14 participants completed the TNA prior to training. The TNAs indicated that only 23% of trainees felt they were confident in conducting assessing activities independently. Around 35-36% of participants felt that they have no or some knowledge of assessing species prior to the training.

We measured the effectiveness of the course via a feedback form given to the participants. Thirteen of the 14 participants completed the form. The responses showed that 85% of trainees very much agreed that the objectives of the course were met, with 56% saying that the materials, content and organisation of the course was Excellent. At the end of the course, 62% of the participants felt confident that they could assess species independently and the same percentage say that they could train others in IUCN assessments. Original TNAs and Feedback Forms are available upon request. All participants now have an account with SIS (IUCN's toolkit for species assessments), which will allow them to start writing assessments and submit them to IUCN directly. Certificates were provided on completion of the course (Annex 4.3.1.3).

Since the training the partners and Kew staff have made progress towards finalising the list of species for assessment (see Section 3.1 for more detail) according to community surveys. A measure of progress towards successfully achieving this output would be to have full assessment data available for seven species by December 2019. So far, partners and Kew staff have compiled locality data from herbarium labels of nine species (Annex 4.3.1.5), including two from Kew's herbarium (Annex 4.3.1.6). A draft of the assessments will be sent to Kew's Co-PI for review by July 2019 ready for a December 2019 submission to IUCN.

Output 4 Increased understanding of the genetic diversity and uses of 12 fruit and nut taxa, highlighting valuable traits for climate change resilience

As mentioned in Section 3.1 under this output, two MSc students have been engaged to conduct research on the diversity and use of 12 fruit and nut taxa. In terms of verification, the Armenian partners have sent over a copy of Razmik's contract (Annex 4.4.1.3). In Georgia, Ana will receive an official contract when the new term starts in September 2019, however partners have started to involve her in the project and has sent evidence of her engagement through photos (Figure 3.1.29) and copies of email showing her willingness to be part of the project, as well as confirmation of her supervision by the Institute of Botany (Annex 4.4.1.1 and 4.4.1.2). We hope that this is enough evidence to show that the measurable indicator to have two MSc student in place by March 2019 is met. At present, based on the progress report by Razmik, we believe that his gel electrophoresis results indicate that he can conduct genetic analysis for 8 *Rosa* taxa (Annex 4.4.3.1). However, as part of his training at Kew in September 2019 we will be gathering more evidence to support this claim and show quantifiable data of new learning.

As NH staff were able to recruit and train their MSc student earlier, Razmik was able to complete his training with his supervisor and extract DNA of *Rosa* ahead of the second measurable indicator of success (i.e. DNA extraction completed by January 2020) (see Annex 4.4.3.1 for evidence). Further analysis and interpretation of the data will be done during his training with Kew researchers in September. Ana is due to be trained by her supervisor Zezva from the Institute of Botany on DNA extraction of *Prunus* taxa in the next phase. She will be trained on PCR techniques at Kew and how to interpret the results by Kew researchers. Planning for this training is underway and laboratory access forms have been submitted to Kew lab managers for approval (Annex 4.4.2.1 and 4.4.2.2).

3.3 Progress towards the project Outcome

The number of people engaged directly through leaflet distribution and short surveys can be found in section 3.2 above. When asked if they found the project interesting and would like to participate in the activities, over 90% agreed (Annex 4.3.3 for data). Initial engagement has been overwhelmingly positive and shows steady progress towards meeting Outcome Indicator 0.1.

Similarly, progress towards Outcome Indicator 0.2 is evident at the end of the first year. Sections 3.1 and 3.2 outline the number of people that have received practical training just under half of the target for 2020. Demonstration plots are also being established in the communities (see Section 3.1 and Figure 3.1.15).

By engaging two local MSc students to conduct research activities relevant to the project in the first year, the project has shown progress for Outcome Indicator 0.3 and 0.6. Further progress is being made on Outcome Indicator 0.3 through the establishment of steering-committees in both communities.

For Outcome Indicator 0.4, *ex situ* conservation will ensure that rare fruit and nut species are safeguarded from extinction. Progress is being made with partners finalising the target species list for seed collecting, together with collection of data on potential localities and optimum collecting times for 60 species. The pre-collecting data will increase the probability of successfully collecting the 122 fruit and nut species at the optimum time of seed ripeness, thereby increasing the longevity of the seeds in storage.

Progress is being made for Outcome Indicator 0.5 through increasing the capacity of partner institutions to carry out global risk assessments by the end of the project. Herbarium vouchers from Georgia, Armenia and at Kew of 17 species has been transcribed to give an understanding of their distribution, thereby feeding into the assessment criteria.

3.4 Monitoring of assumptions

The majority of assumptions in the original application still hold true, however we would like to add an additional assumption relating to Output 4:
Assumption 1: Kew staff are available to train MSc student on genetic analysis techniques
Comments: To manage this risk, Co-PI will engage with relevant members of staff at an early stage (Figure 3.4.1).

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

The Caucasus region is considered a global biodiversity hotspot, conserving its diversity will have a high impact on global biodiversity conservation. Output 1 will contribute to biodiversity conservation and poverty alleviation by enhancing the knowledge of local fruit and nut collectors in plant conservation and sustainable harvesting techniques. In addition, by establishing plots for the community to grow rare fruit and nut species, the project will alleviate the pressure of wild harvesting as well as establish a potential new income source for the community.

Output 2 will directly contribute to the conservation of Caucasus biodiversity by conserving over 100 species of fruit and nut plants in long term storage under internationally recognised standards (http://brahmsonline.kew.org/Content/Projects/msbp/resources/Training/MSBP-Seed-Conservation-Standards.pdf).

Output 3 contributes to biodiversity conservation at the species and ecosystem level by documenting the current knowledge of extinction risk and population locations for fruit and nut species. This information can be used in conservation and land planning. In addition, Output 3 has contributed to poverty alleviation through training of local students/researchers in the latest techniques for extinction risk assessments, enhancing their capacity to conserve their national biodiversity.

Similarly, Output 4 also contributes to poverty alleviation through the MSc course for Georgian and Armenian students and training at Kew to further their knowledge. This will equip the two local students with the ability to enhance their wellbeing and career progression, as well as contribute to the wider understanding of fruit and nut species conservation.

4. Contribution to the Global Goals for Sustainable Development (SDGs)

This project addresses SDGs 1, 2, 12, 13 and 15.

Targets 1.4 and 1.5 focus on equal rights and control of economic resources and building the resilience of the poor. Targets 12.2 and 12.8 focus on sustainable natural resource use and raising awareness of such aims. In the 2018-2019 Financial Year, the project has

- Raised awareness of the project aims to rural communities through leaflet distributions (see Section 3.1 Output 1 for details)
- Delivered workshopd on the theory and practical training of plant conservation, sustainable harvesting (see Section 3.1 and 3.2 for details)
- In Georgia, partners have started to train rural communities on propagation techniques for home-cultivation (see Section 3.1 for details)

Target 15.4 specifies the conservation of mountain ecosystems, within which the project is located, for sustainable development.

Target 2.1 aims for improved quality and quantity of food from ecosystems and 2.4, 13.1 and 13.4 highlight the need for strengthened resilience to climate-change. Targets 2.5 and 15.6

specifically intend to maintain plant biodiversity and ensure the benefits of genetic resources are shared equitably. Seed conservation will make genetically-diverse material freely available for restoration, re-introduction and/or research.

- Partners are already contributing by planning seed collections of wild populations of fruit and nut species (see Section 3.1 and 3.2 for details)
- MSc student projects have been engaged and are currently studying the genetic diversity of selected taxa that are economically important (see Section 3.1 and 3.2 for details)
- Finalised list of species for red listing and seed collection (see Section 3.1 and 3.2 for details)

5. Project support to the Conventions, Treaties or Agreements

The project furthers ITPGRFA's objectives for "conservation, documentation, sustainable use, and *ex-situ* collections of food and agriculture resources" through community collaboration for conservation of fruit and nut crop wild relatives (CWR). Articles 5, 6, 9, 12 and 13 are addressed. CBD strategic goals A-E are supported. Aichi Targets (AT) 1 and 4 raise awareness of biodiversity value and conservation with stakeholders. Georgia's National Goals (NG) A1, A2 and E2, and Armenia's national CBD targets 25.1.b and 26.1.a to inform the public about biodiversity and threat mitigation, increasing local involvement in decision-making for sustainable biodiversity use by 2020.

Current progress:

- Leaflets and knowledge exchange workshops in Georgia and Armenia (see Section 3.1 Output 1 for details)
- Twitter and Samara (see Section 13 for details)
- Steering-committee and BC engagement (see Section 3.1 for details)
- Community questionnaire (see Section 3.1 for details)

Community engagement activities, including IUCN-accredited assessments of F&N, will help both governments to meet targets for reduced natural habitat loss (AT5) and help prevent extinction / improve the conservation status of known threatened species (AT12). IUCN assessments and genetic research will be informed by mutual sharing of learning from these activities, seed conservation (AT19) and traditional knowledge (TK) (AT18). Georgia's NG C2 (AT19) requires improved species status, notably >75% of red-listed species. IUCN global red-listing will enhance understanding of economically-important species and build on national red-lists.

Current progress:

- Red list training of IUCN-accredited assessors in September 2018 completed (see Section 3.1 for details)
- Final target list of red list and seed collection made by partners (see Section 3.1 for details)
- Knowledge exchange workshops with community to gather information for red listing and conservation action plans (see Section 3.1 for details)

Seed conservation activities address Georgian NG C1 and C5 for the assessment of biodiversity status, maintenance of indigenous plant species, and safeguarding of genetic diversity; and Armenian target 23.1.b for *ex-situ* conservation of biodiversity. Conserving seeds in-country and duplicating collections provides a resource for research, restoration and reintroduction as well as providing security backup.

Current progress:

- 140 species on target list created by partners for collecting activities (see Section 3.1 for details)

- Collection of locality data and fruiting times of target species on-going (see Section 3.1 for details)

Research will improve plant genetic knowledge, directly addressing Georgia's NG E1 for enhanced knowledge on the values and functioning of biodiversity. Training of local MSc students in advanced, transferable genetic research will address Armenia's target 26.1.b for enhanced training of specialists in biodiversity studies

Current progress:

- MSc students engaged for research activities and started training (see Section 3.1 for details)

All project outputs contribute to GSPC Targets 8, 9, 13, 14. Conservation status will be informed regarding threats, population sizes and uses; seed collections and red-listing will contribute to Targets 8-9. Traditional knowledge is core to the project and will be treated with due respect; communities will be educated in the importance of plant diversity and its conservation (Targets 13-14). Progress is being made through distribution of leaflets, presentations and workshop.

Mutually-agreed ABSAs are in place with all project partners to ensure fair and equitable use of project-related resources. Copies are available upon request. Community members engaged with for interview have been informed about the project and explicitly asked if they would like to participate.

The British Ambassador in Armenia has expressed interest in the project's activities and joining a visit to the community in June 2019 (Figure 5).

6. Project support to poverty alleviation

Evidence that the project is supporting poverty alleviation in this current year can be found in Section 3.1 and 3.2 under Output 3, more specifically the red list assessor training. The beneficiaries of this work include partner affiliated staff member who are all local Georgian and Armenian students/researchers/conservationists. This and past training given to partner staff have also led to knowledge exchange during theory and practical training workshops with the community (see Section 3.1 and 3.2 under Output 1 for details). Presentations given to local school children contributes to the enhancement of knowledge of sustainable use and plant conservation for the next generation.

Engaging with the communities to collect plant material and provide training in propagation/cultivation techniques will also have a direct impact to these communities in the form of potential additional income from local harvest.

7. Project support to gender equality issues

The project aims to increase the knowledge, and thereby confidence, of more disadvantaged community members to take decisions about the future of their natural resources. Rural Caucasus populations are dominated by women (52% in Armenia[12] and Georgia[13]). However, traditional gender norms prevail, preventing their equal participation[14]. These communities are almost homogenous in ethnicity and religion[15]. Project partners are committed to equal opportunities and employ staff without regard to gender; eight of 12 key project roles are held by women.

Evidence of female inclusion is evident in the red listing workshop, where over 50% of the participants were female (See Section 3.2 for details, Output indicator 3.1).

12 National Statistical Service of the Republic of Armenia. 2015. Population. The Demographic Handbook of Armenia
13 National Statistics Office of Georgia, 2015. Women and Men in Georgia. Statistical Publication, Tbilisi
14 http://www.fao.org/3/a-i5575e.pdf
15 https://en.wikipedia.org/wiki/Demographics_of_Armenia

The project aims for gender equity and a "do-no-harm" policy; social scientists engaged are trained in Yerevan University's Guidance for Social Workers in Armenia[16], and Porta and Keating's Approaches in the Social Sciences[17] in Georgia, to encourage equal participation. Workshops conducted with communities have allocate time to predominantly female activities, including fruit and nut collection and processing. As a result, a total of 18 out of 26 of participants of training activities were women in Armenia, and 29 out of 35 were women in Georgia. In Armenia, we are hoping to increase engagement of men to ensure an equal gender balance of the population benefits from the project (Output indicators 1.1,1.4). Finally, the chosen BC in Armenia is a female teacher, and both countries have submitted a list of members of their steering committee, with majority of whom are women.

Female members of staff were at hand to conduct interviews and give out leaflets, ensuring that these activities provide a safe space for any female community members to speak out. In minutes of meetings provided after each workshop, the partners transcribed questions and comments made by the participants, the majority of whom, were women.

8. Monitoring and evaluation

We have in place community questionnaires that we conduct every year of the project to measure the impact the project has on the community. In the first year the questionnaire serves as a baseline, gathering already acquired knowledge of the residents prior to the project activities. We will ensure that the same individual will be interviewed in the second and third year to measure learning throughout the project. The questionnaires will give the project both qualitative and quantitative data that contributes to the overall outcome.

Training/meeting/workshop registers have been taken as evidence of the number of people attending. Meeting minutes given by partners provide an overview of the progress towards the various outputs throughout the project. Currently the partners are required to submit progress reports to Co-PI on a quarterly basis for M&E purposes.

Similarly, for training of partner staff, such as red list assessment training and MSc student training, training needs assessments and feedback forms are used for each event and participant to measure the level of change in knowledge.

There have been no changes made to the M&E plan over the reporting period.

9. Lessons learnt

The activities that worked well were the leaflets and the door-to-door interviews. Although these activities presented a unique challenge to our partners, particularly staff of NH due to lower staff numbers compared to Georgian partners, they were highly fruitful in terms of getting target numbers and information. The Change Request forms were also useful as they ensured that communication between partners, lead organisation and LTS were kept and any changes were logged.

Both teams had issues with getting sustained participation during workshops/training events, as working patterns of some community members made it difficult for the them to attend an all-day workshop. We will need to discuss timetabling with the steering committees to ensure we fit future activities around the community members or find another way of conducting training. Close monitoring and evaluation of the project to the standards of Darwin was also a new challenge for all involved. As project partners have different styles of reporting, collating relevant information, particularly for community engagement activities presented a challenge. Since finishing the first year and the annual report, the Co-PI will use the lessons learnt and refine reporting of M&E for the coming years.

16 Harutyunyan, L. (2002) Social Work Methods and Research Methods in Social Work, Guidance for Social Workers. Yerevan State University, Yerevan

17 Della Porta, D and Keating, M. (2008) Approaches and Methodologies in the Social Sciences. Cambridge University Press

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

Section not applicable

11. Other comments on progress not covered elsewhere

All aspects of project progress covered in above sections

12. Sustainability and legacy

Although the project is in its first year, a lot of effort has been made to promote the work both within the countries and to the wider international public. Leaflets mentioned in Section 3.1 and in Section 13 have gone a long way in promoting the project in the target communities. A recent short survey done by the partners showed that prior to the leaflets, 225 residents did not know about the project and 464 thought that the project is interesting enough that they would like to engage in activities relating to it. In Armenia, the project has reached the British Embassy in Yerevan and the Ambassador has shown interest in taking part in the next community visit.

Co-PI has been actively promoting the project activities to the wider public (see Section 13 for more information).

Our exit plan is still valid and there is confidence that the legacy of the project will be sustained through ongoing capacity building and future seed conservation activities.

13. Darwin identity

In all targeted and wider communications, the Darwin Initiative (DI) funding was recognised as the main contributor and the distinction of the project was highlighted. Prior to the project, there was limited understanding of the DI within the host country. Project partners would explain the DI whenever they conducted presentations/workshops/interviews with the target communities and use the DI logo wherever possible, e.g. the DI logo used in the project leaflets sent out to the target communities, neighbouring communities and local NGOs (Annex 4.1.3.2 and 4.1.3.4)

Similarly, the logos were used for the demonstration plot signs in Armenia (Figure 3.1.15).

The project, DI and UK Government's contribution was highlighted in two articles in the 34th issue of the Samara Newsletter (http://kewbotanicald8launch.prod.acquia-sites.com/sites/default/files/2019-03/Samara%2034%20Web_final.pdf). Once in Ed Ikin's article on page 12 and the news section on page 14. This issue of Samara reached at least 900 people (500 hard copies sent out to international subscribers, 300 distributed in the UK and 109 electronic copies sent out via email).

On social media, project communication is made through the Co-PI's personal account (@AisyahFaruk). Approximately 19 project related tweets were made between July 2018 - March 2019 and it received an average of 3.2% engagement rate (i.e. no. of people retweeting/liking etc divided by no. of people seeing the tweet). This is considered a relatively high rate, evidence that the project is capturing the attention of the wider public.

14. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2018 – 31 March 2019)

Project spend (indicative) since last annual report	2018/19 Grant (£)	2018/19 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
Monitoring & Evaluation (M&E)				
Others (see below)				
TOTAL				

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2018-2019

Project summary	Measurable Indicators	Progress and Achievements April 2018 - March 2019	Actions required/planned for next period
Impact Ecosystem services of the Caucasus are utilised sustainably by national populations thereby contributing to rural poverty reduction, increased food security and protection of plant biodiversity.		Knowledge exchange between community and partners contributing to positive impact for biodiversity and poverty alleviation. Demonstration plots will alleviate the pressure of wild harvesting as well as establish potential new income for the community. Ex situ conservation of seeds (four in the bank out of 122 total target). Red list assessments contribute to both biodiversity conservation at a species and ecosystem level by documenting locality and current knowledge of extinction risk of fruit and nut species for use in land planning. In addition, training of local students/researchers on the latest techniques of extinction risk assessments enhances their capacity to conserve national biodiversity. Training local MSc students will further current knowledge gaps of species as well as equip them with the ability to enhance their wellbeing and career progression.	[redacted]
Outcome F&N conservation enhanced in Georgia and Armenia, by community members working together to strengthen economically-important ecosystem-services for rural livelihoods, helping build ecological resilience through knowledge and protection of plant resources.	0.1 Best-practice harvesting techniques employed by 60% of adult community, 497 women and 497 men, by March 2021 to empower decision-making around sustainable resource management and protection of ecosystem services. 0.2 20% of adult community members, 166 men and 166 women, receive and apply practical training in the cultivation of six priority species across two demonstration plots by March 2021 0.3 Using learning from project research, two steering-committees agree in their final meeting in	The number of people engaged directly through leaflet distribution and short surveys can be found in section 3.2 above. When asked if they found the project interesting and would like to participate in the activities, over 90% found the project of interest and would be willing to participate further. This shows that we are steadily progressing towards meeting Outcome Indicator 0.1, as the initial engagement has been positive.	*Workshop for information sharing (project progress etc) with community members (Q1 and Q3).* *Practical training in cultivation for Armenian community (Q1).* *Plant material collected and given to community for demonstration plots.* *Evaluation surveys conducted in Q3*

	2021 three community-led actions and identify six neighbouring communities for engagement to improve local collection and cultivation beyond project end 0.4 100% of seed collections are duplicated to two seed banks by March 2021, conserving a total of 122 F&N 0.5 20 global risk assessments of economically-important F&N submitted to the IUCN by March 2021, putting in place the pathway for their threat and status information to be shared with policy-makers and the public 0.6 Genetic research results for 12 taxa delivered to the regional scientific community through two MSc theses and the presentation of a partner-led research paper at Georgia's Annual Biodiversity Conference in May 2020. Two research papers, submitted to regional journals by March 2021, will communicate project findings to the wider scientific community as well as policy-makers	Similarly, the progress being made towards Outcome Indicator 0.2 is evident at the end of the first year. Section 3.1 and 3.2 outlines the number of people that have received practical training, which is under half of the 2020 target. Demonstration plots are also being established in the two communities. By engaging two local MSc students to conduct research activities relevant to the project in the first year, the project has shown progress for Outcome Indicator 0.3 and 0.6. Further progress is being made on Outcome Indicator 0.3 through the establishment of steering-committees in both communities. For Outcome Indicator 0.4, *ex situ* conservation will ensure that rare fruit and nut species are safeguarded from extinction. Progress is being made through partners finalising target species lists for collecting and collating data on potential localities and optimum collecting times for 60 species. The pre-collecting data will increase the probability of successfully collecting 122 F&N at the optimum time of seed ripeness, thereby increasing the longevity of the seeds in storage. Progress is being made for Outcome Indicator 0.5 by increasing the capacity of partner institutions to carry out global risk assessments by the end of the project. Herbarium vouchers from Georgia, Armenia and at Kew for 17 species have been transcribed to give an understanding of their distribution, feeding into the assessment criteria.	*Biodiversity Champion work with social scientist to disseminate information to community* *Collection of seeds, herbarium material and data* *Seeds duplicated to MSB and data sent to Data Warehouse in Q4* *Assessments for 7 species written and submitted to IUCN by Q3* *Training of MSc students at Kew in Q2* *DNA extracted and analysis of 12 taxa done by students by Q4*
Output 1. Two rural communities trained in sustainable harvesting practices and	1.1 60% of community members, 497 women, 497 men and 108 children under 18, are made aware by December 2018 of the project, and by March 2021 of the outcomes	Since approval of the changes, the partners are making steady progress towards achieving Output 1 by its close. Output Indicator 1.1 was delivered through distributing 615 project leaflets, conducting 238 interviews during community surveys and presenting the project to 45 children in the local schools. According	

empowered to deliver in-situ conservation of fruit and nut ecosystem services to enhance rural livelihoods	of shared learning on IUCN threat assessments, genetic research, and sustainable harvesting 1.2 Five members of each community (three of whom are women) take on roles as ambassadors for change in the form of a steering-committee of four people in 2018 and one BC in 2019 1.3 Two demonstration plots are established in 2018 in accessible, local areas with six priority F&N being cultivated by 20% of community members, 166 women and 166 men, by December 2019 1.4 10% of adult community members, 83 women and 83 men, are trained in sustainable harvesting techniques by 2020, and a total of 20% of adult community members, 166 women and 166 men, are trained in sustainable harvesting techniques and the long-term consequences for important F&N by March 2021 1.5 Utilisation and threat data for 20 F&N for IUCN red-list publications and 12 research taxa is collected from 20% of adult community members, 166 women and 166 men, during one workshop in 2018 and one workshop in 2019 and fed into red-list assessments and genetic research 1.6 Steering-committees develop community-led conservation action plans (one in Georgia, one in Armenia) with at least three points to take forward by their last meeting in 2021 1.7 10% of adult community members, 83 women and 83 men, develop plans for continued conservation and dissemination to neighbouring communities of sustainable harvesting techniques by March 2020, and 20% of adult community members, 166 women and 166 men, agree by March 2021 to continued conservation and dissemination to	to community assessments made by partners and social scientists through interviews, there is an average of three adults and one child per household. A conservative estimate shows that the project has reached 1,845 adult residents and 660 children. The recipients of leaflets were 42% women in Armenia and 52% women in Georgia. Reaching this output indicator will ensure that majority of the community is made aware of the importance of plant conservation and activities relating to fruit and nut conservation. In order to empower the community to conserve fruit and nut ecosystems, community led steering-committees and Biodiversity Champions have been identified in both communities. This provides an indication that the community will continue to be engaged throughout and beyond the project. Nine people are engaged in the steering committee in Armenia (78% women) and 14 in Georgia (57% women). In Armenia, one of the engaged community members has agreed to be a Biodiversity Champion. This is also an indication of progress being made towards Output Indicators 1.6 and 1.7. For output indicator 1.3, lands have been pledged in both communities, with Armenia having designed and erected signs for their demonstration plot in the community (see Section 3.1 for details and evidence). The establishment of the plots cultivated by community members will help alleviate wild populations from overharvesting and ensure the legacy of fruit and nut conservation remains within the community after the project ends. For output indicator 1.4, a total of 76 of community members have been trained so far, which is just under half of the intended target numbers by 2020. 69% of those who attended from the Armenian Khachik community were women, whilst 81% from the Mchadijvari community in Georgia were women. Data were collected from 190 residents in Georgia and 29 from Armenia in relation to Output Indicator 1.5. Results from the 2018 surveys were used to prioritise the target list for red-list assessments and research.

	neighbouring communities of sustainable harvesting techniques of local F&N, led by the steering-committee and BC.		
Activity 1.1 Two social scientists are engaged, one in Georgia, one in Armenia		Social scientists have been engaged by project partners in both countries. Evidence provided in Section 3.1, Annex 4.1.1.1-4.1.1.2. This activity is complete.	Continued engagement with social scientist for community workshop in Year 2.
1.2 Partners and social scientists conduct community assessments and engage members		Community assessments and engagement of steering-group members completed for both countries. Evidence provided in Section 3.1 and Annex 4.1.2.1-4.1.2.4	Armenian partners are planning to conduct a community engagement workshops in June 2019 and October 2019, Georgian partners are planning workshops in April 2019 and October 2019.
1.3 300 project leaflets are prepared and distributed to 200 households, the target school and the church in each community		A total of 665 were designed and printed. A total of 615 were distributed to households, target school and the local church in the community. Evidence provided in Section 3.1 and Annex 4.1.3.1-4.1.3.3 shows a declaration by partner members who distributed the leaflets and PDF of the English version of leaflets.	Partners in Armenia have printed more copies of the leaflets to continue distributing them during their planned workshop in June. Partners in Georgia have started and will continue to distribute leaflets to the target and neighbouring communities.
1.4 Partners and social scientists recruit volunteers for the steering-committees (consisting of 1 partner staff and four community members) and plan future meetings during the first workshop		9 volunteers recruited in Armenia and 13 in Georgia. Biodiversity Champion for Armenia agreed (evidence provided in Section 3.1). BC for Georgia has been agreed in principal, but declaration to be completed during a future workshop (see Annex 4.1.1.1).	Declaration signed by Georgian BC. Photo of final committee members to be taken during RBG Kew visit in June (Armenia) and October (Georgia).
1.5 Steering-committees, partners and social scientists meet for training and activity planning, including planning of demonstration plots		Discussions with Armenian group is largely through social media/phone due to the distance of the community, however, partners have met with the committee members and social scientists twice prior to the workshops. In Georgia, steering committee meetings met with partners and social scientist three times (twice in the community to plan project activities and school quiz, and once at NBGG). Evidence provided in Section 3.1 includes meeting discussions and photos of meetings.	Both steering committees meet to finalise plans for upcoming propagation workshop in the community.

1.6 Presentations and quizzes are delivered to school-children during the school term in Y1 and Y3	Completed for Y1. Evidence provided in Section 3.1 includes photos of the presentation and quiz. Annex 4.1.6.1-4.1.6.4 are the final quiz and baseline results for Y1.	Planning Y3 presentation and quiz with partners, teachers and steering committees.
1.7 Workshops for information sharing are conducted with community members	A total of two workshops for information sharing done for Y1. 76 people trained for both countries. Evidence given in Section 3.1. Annex 4.1.7.1 – 4.1.7.2 show registers for the various community workshops conducted.	Information sharing workshop planned for April-May for Georgia and June in Armenia.
1.8 Land secured for two demonstration plots and signs created	Are partly completed. Armenia has 2 potential plots secured with signs developed (evidence in section 3.1). The target school in Georgia has pledged part of their land, signs to be created in the next phase.	Signs for Georgian plot created and placed in demonstration plot.
1.9 Baseline/evaluation surveys conducted	Completed baseline survey. See evidence in Section 3.1 and Annex 4.1.2.1-4.1.2.4.	Evaluation survey to be done between October – December 2019 for both communities.
1.10 Plant material for demonstration plots (three important F&N) collected and provided to each community (six species in total)	Completed for Georgia in March 2019: 3 species propagated (evidence provided in Section 3.1). Partially completed for Armenia as collecting season hasn't started yet.	Plans to complete collection and to provide material between June - December 2019 for Armenian community.
1.11 Practical and theoretical training is delivered by partners and social scientists on planting, cultivation and harvesting	Completed for Georgia in March 2019 (evidence in Section 3.1 and Annex 4.1.7.1 tab 2 shows register of practical training). Partially completed for Armenian community (evidence in Section 3.1, Annex 4.1.11.1 shows the practical training register)	Armenian partners plan to conduct practical training for planting and propagating priority species in May-June 2019
1.12 Two BCs are engaged and coached in knowledge dissemination by the social scientists	Armenian partners have engaged a BC ahead of 2019 schedule (evidence in Section 3.1). Georgian partners have engaged with BC, but confirmation is pending from the selected individual.	Confirmation by Georgian community BC to be done between April – July 2019. Coaching to be done in October – December 2019.
1.13 Steering-committees, BCs and communities meet at partner-led workshop to develop a post-project community conservation action plan	Not done yet	Planned for Year 3

Output 2. Seeds of 122 wild fruit and nut species from the Caucasus are protected through *ex-situ* seed banking in-country and at the MSB	2.1 65% of seed collections are duplicated to two seed banks by December 2020 and a further 35% by March 2021, conserving a total of 122 F&N (61 in Armenia, 90 in Georgia – an overlap of 29 species) 2.2 Data on cleaning, counting and viability testing of 65% of collected species is available by March 2020 and 35% by March 2021, to the Millennium Seed Bank Partnership 2.3 Six partner staff, of which 50% women (three in Georgia and three in Armenia) are trained in seed collecting, processing and banking by December 2019	All partners have submitted their target lists for seed collecting (see Annex 4.2.1.1), which contain around 140 species. There is an overlap of 21 species between the lists for Armenia and Georgia, continued coordination and cooperation will ensure there is minimal duplication of species collected and that the original target of 122 species is met by the end of the project. Partners have started gathering information from their herbarium and in the field to ensure that the locality of the species is correct, and that they start their collecting at the optimal time (ripe fruits/nuts) (Figure 3.1.22, 3.1.23, 3.1.24 and Annex 4.2.2.1). This is as planned and ahead of the collecting season for the target species. Finally, training for partner staff will take place prior to December 2019. Experienced partner staff in Georgia have trained 10 young staff members in seed collecting, field data input forms and seed banking procedures already (see Annex 4.2.2.2 for attendance list).	
Activity 2.1 Final target species list is completed, including distribution data		Target list has been compiled by partners. Evidence in Section 3.1, and target seed collecting list for each country in Annex 4.2.1.1.	Refinement of target list based on the pre-collection assessment and field work.
2.2 Pre-collection assessments are conducted on the target species		Partners have collected data for 60 species. Evidence in Section 3.1. Herbarium data for selection of species provided in Annex 4.2.2.1.	Continue to collect pre-assessment data on target species.
2.3 Training is delivered by partner staff in seed collecting, processing and banking		10 Georgian staff members trained.	Training for Armenian staff members in 2019
2.4 Seeds, herbarium vouchers and data are collected in the field for 122 F&N		Georgian partners have collected seeds from 4 species.	Further collections to be made by all partners in both countries.
2.5 Seeds are counted, cleaned and viability tested in-country		Georgian partners cleaned and counted seeds from 4 species.	To be completed by March 2021
2.6 Seeds of 122 F&N are duplicated to the MSB via DHL courier		Georgian partners sent seeds from 4 species.	Seeds from 4 species sent to be accessioned into the Seed Bank Database and the MSBP Data Warehouse. Similarly, for future seed collections to be completed by March 2021.
2.7 Duplicated seeds are counted, cleaned and viability tested at the MSB		Not done yet	To be completed by March 2021
2.8 Data is shared by partners and the MSB on cleaning/counting/viability testing of seed collections		Not done yet	To be completed by March 2021

2.9 Data is uploaded to the DW		Not done yet	To be completed by March 2021
Output 3. Global extinction risk assessments are completed and submitted to IUCN SIS for 20 of the target seed conservation species	3.1 14 partner-affiliated individuals (of which 50% women) can conduct global red-list assessments to the standard of the IUCN by September 2018 3.2 Full assessment data are available for seven species by December 2019 and a further 13 species by December 2020 3.3 IUCN global-scale assessments are made and submitted to the IUCN SIS, detailing the threats to, and status of, each of the 20 F&N; seven assessments made and submitted by March 2020 and a further 13 made and submitted by February 2021 3.4 Relevant learning from global IUCN assessments integrated into community workshops in 2020 and incorporated in community conservation plans by March 2021	Progress in achieving this output is being made and we believe it will be met by its close. We conducted a training event in Yerevan, Armenia attended by 14 participants from all partner institutes. This increased the capacity of partner institutes to conduct global red-list assessments. At the end of the course, 62% of the participants felt confident that they could assess species independently and the same percentage said they could train others in IUCN assessments. Since the training partners and Kew staff have made progress towards finalising the list of species for red list assessments according to community surveys. To date, partners and Kew staff have compiled locality data from herbarium labels of nine species, including two from Kew's herbarium. A draft of the assessments will be sent to Kew's Co-PI for review by July 2019 ready for a December 2019 submission to IUCN.	
Activity 3.1 IUCN-accredited Kew staff travel to Armenia to deliver training to all project partners in IUCN assessments		Completed in September 2018. Evidence in section 3.1.	N/A
3.2 Training is delivered to 14 participants		Completed in September 2018. Annexes 4.3.1.1-4.3.1.2 attendance register, feedback forms and signed certificates.	N/A
3.3 Fieldwork is conducted for data collection		Two species in Armenia and one in Georgia	Further field work for species identified in gap analysis as additional data required.
3.4 Desk-based research on 20 target-species is delivered		11 species done for this season (Annex 4.3.1.5 and 4.3.1.7)	Further species needed for write up.
3.5 Community data-collection surveys are delivered		Surveys were conducted in conjunction with community baseline questionnaires. See Section 3.1 for details and evidence.	Further surveys planned in Q1 and Q3 to capture additional data from community.
3.6 Red-listing workshops are conducted to analyse and summarise the gathered data		Four workshops have been conducted by project partners (two with Kew Coordinator facilitating). See Section 3.1 for description and photo evidence.	Further workshops planned in Q1 Year 2

3.7 Red-list assessments are submitted to the IUCN SIS for publication after project end		Each partner institute now has a member of staff with access to SIS and training to write assessments.	Write up seven species by December 2019 with available data.
3.8 Results from the red-listing assessments of 20 species are shared with communities at workshops and through steering-committee meetings through 2019 – 2021		Not done yet.	Project partners and Co-PI planning to visit Armenian community in May-June 2019 and October 2019 to share project progress.
Output 4. Increased understanding of the genetic diversity and uses of 12 fruit and nut taxa, highlighting valuable traits for climate change resilience	4.1 Two MSc students (Georgia and Armenia) in post by March 2019, and capable of conducting genetic analysis for 12 fruit and nut taxa (8 in Armenia, 4 in Georgia) by March 2020 4.2 DNA extraction completed on 12 taxa (8 in Armenia, 4 in Georgia) by January 2020 and laboratory analyses completed on 12 taxa by December 2020 4.3 MSc and partner research findings disseminated to the scientific community and available to policy makers by March 2021 4.4 Two communities include relevant learning from research on traits related to climate change resilience for 12 F&N in their conservation plans by March 2021	The project is making good progress to achieving Output 4. Two MSc students, one in Georgia (Ana Qvlividze) and one in Armenia (Razmik Papikyan) have been successfully engaged to study the genetic diversity of the targeted 12 fruit/nut taxa. DNA extraction has been completed for 8 taxa from the Rosaceae family by Razmik, who will complement this with the potential antibacterial value and therefore, potential use, of the targeted species. Collection of DNA material of 2 taxa from Georgia have been completed by Ana. Further trips to four regions across Georgia are planned between April-July 2019 to collect the remaining material. DNA extraction will take place between July-August 2019 prior to Ana's trip to Kew in September 2019 to conduct PCR analysis. Data collection and analysis is still on-going therefore dissemination of findings have not started. Razmik has submitted a progress report with initial finding (Annex 4.4.3.1). Plans to include MSc students and/or their progress reports in upcoming community workshops have been discussed with Kew and partner project managers. This will contribute to an increased understanding of the diversity and use of economically useful species and discussions with communities on these will also contribute to the 2021 conservation plans.	
Activity 4.1 MSc students engaged and trained by partner staff in genetic analysis techniques		Two MSc students have been engaged in Armenia and Georgia. Evidence in Section 3.1. Annex 4.4.1.1-4.4.1.3 shows further evidence of MSc student involvement with the project.	Partner staff will continue to supervise the students throughout their MSc study.
4.2 MSc students two-week residential training at RBG Kew, delivered by Conservation Science Department		Kew Coordinator met with students and their supervisors in February 2019. Plans underway to host students at the Jodrell Laboratory at Kew for 2-weeks. Annex 4.4.2.1-4.4.2.2 shows lab access forms completed for both, which were approved by Kew lab manager.	Finalising training activities with student supervisors and Kew researchers, organising flights and accommodation for students and hosting students at Kew for 2-weeks in September.

4.3 DNA extraction and PCR techniques are used to conduct research on 8 taxa in Armenia and on 4 taxa in Georgia.	DNA vouchers collected for 2 intra-specific taxa for Georgia. Evidence in Section 3.1. Annex 4.4.3.1 shows progress report by Armenian MSc student including results from DNA extraction.	For Georgia, DNA extractions to be done before September 2019 for all 4 taxa. Genetic analysis to be done during training at Kew in September 2019. Armenian student will work on analysing his results for his thesis.
4.4 CBD focal point contact invited to Georgia's Annual Biodiversity Conference 2021	Not done yet.	Focal point will be contacted regarding conference in 2021 in July 2020.
4.5 MSc students complete theses and submit	Not done yet.	Continue with data collection and analysis. Draft thesis expected at the end of 2019.
4.6 Attendance by partners at Georgia's Annual Biodiversity Conference 2021	Not done yet.	All project coordinators to meet and finalise plans for attendance by March 2020.
4.7 Presentation of latest research findings, including red-listing and community engagement learning, at Georgia's Annual Biodiversity Conference 2021	Not done yet.	Data collection to continue for presentation of research findings.
4.8 Research results of 12 taxa are shared with communities at workshops and through steering-committee meetings in 2021	Not done yet.	MSc students to meet communities in year 2 to give project progress reports and share findings.
4.9 Research paper finalised and submitted to regional journals;	Not done yet.	Data collection to continue and research paper drafted together with Kew staff by March 2021.
4.10 IPTGRFA focal point contacted and made aware of the imminent publication	Not done yet.	Await approval of publication by selected journal.

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

Note that changes have been made to the original log frame. Below is the most recent log frame approved by LTS via email correspondence on the 21/03/2019

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Impact: Ecosystem services of the Caucasus are utilised sustainably by national populations thereby contributing to rural poverty reduction, increased food security and protection of plant biodiversity.			

(Max 30 words)			
Outcome: (Max 30 words) **F&N conservation enhanced in Georgia and Armenia, by community members working together to strengthen economically-important ecosystem-services for rural livelihoods, helping build ecological resilience through knowledge and protection of plant resources.**	0.1 Best-practice harvesting techniques employed by 60% of adult community, 497 women and 497 men, by March 2021 to empower decision-making around sustainable resource management and protection of ecosystem services. 0.2 20% of adult community members, 166 men and 166 women, receive and apply practical training in the cultivation of six priority species across two demonstration plots by March 2021 0.3 Using learning from project research, two steering-committees agree in their final meeting in 2021 three community-led actions and identify six neighbouring communities for engagement to improve local collection and cultivation beyond project end 0.4 100% of seed collections are duplicated to two seed banks by March 2021, conserving a total of 122 F&N 0.5 20 global risk assessments of economically-important F&N submitted to the IUCN by March 2021, putting in place the pathway	0.1 Workshop attendance registers; community baseline and evaluation surveys 0.2 Training attendance registers; community baseline and evaluation survey sections on cultivation (demonstration plots); photographic evidence 0.3 Community action plan; steering-committee meeting minutes 0.4 Notification of Transfer documentation; DW data search 0.5 Field survey forms; IUCN red-list assessment submission receipt	Political climate continues to enable partners to access rural areas Political climate continues to enable the shipping of plant material to the UK Exchange rate variation (e.g. as Brexit progresses) remains within bounds that enable project work to be fulfilled Natural disasters which would prevent project delivery do not occur in the project region Target F&N produce sufficient mature seeds for project needs

	for their threat and status information to be shared with policy-makers and the public 0.6 Genetic research results for 12 taxa delivered to the regional scientific community through two MSc theses and the presentation of a partner-led research paper at Georgia's Annual Biodiversity Conference in May 2020. Two research papers, submitted to regional journals by March 2021, will communicate project findings to the wider scientific community as well as policy-makers.	0.6 Two partner research papers and 2 MSc theses in pdf format; receipts of submission to regional journals for former; receipt of submission of abstract to conference.	
Outputs: **1. Two rural communities trained in sustainable harvesting practices and empowered to deliver in-situ conservation of fruit and nut ecosystem services to enhance rural livelihoods**	1.1 60% of community members, 497 women, 497 men and 108 children under 18, are made aware by December 2018 of the project, and by March 2021 of the outcomes of shared learning on IUCN threat assessments, genetic research, and sustainable harvesting 1.2 Five members of each community (three of whom are women) take on roles as ambassadors for change in the form of a steering-committee of four people in 2018 and one BC in 2019 1.3 Two demonstration plots are established in 2018 in accessible, local areas with six priority F&N being cultivated by 20% of	1.1 Community survey section on household engagement at baseline then annual evaluations; leaflet distribution confirmed by signed declaration of delivery for each community by partner staff in 2018 and 2021; school quiz results baseline and end of project 1.2 Community engagement reports; community surveys; steering-committee minutes; letter accepting post as BC 1.3 Community engagement reports;	All engaged community members remain in the region for the entire project period Access to communities remains politically and physically possible Environmental conditions enable sapling establishment successful within the project timeframe

	community members, 166 women and 166 men, by December 2019	community surveys; photographic evidence	
	1.4 10% of adult community members, 83 women and 83 men, are trained in sustainable harvesting techniques by 2020, and a total of 20% of adult community members, 166 women and 166 men, are trained in sustainable harvesting techniques and the long-term consequences for important F&N by March 2021	1.4 Training attendance registers; community baseline and evaluation surveys; photographic evidence	
	1.5 Utilisation and threat data for 20 F&N for IUCN red-list publications and 12 research taxa is collected from 20% of adult community members, 166 women and 166 men, during one workshop in 2018 and one workshop in 2019 and fed into red-list assessments and genetic research	1.5 Workshop attendance registers; workshop data forms; community surveys; IUCN red-list assessments; research report	
	1.6 Steering-committees develop draft ideas for community-led conservation action plans (one in Georgia, one in Armenia) by March 2019, with at least three points to take forward by their last meeting in 2021	1. 6 Two community conservation action plans	
	1.7 10% of adult community members, 83 women and 83 men, develop plans for continued conservation and dissemination to	1.7 Two community conservation action plans; steering-committees meeting minutes; community	

	neighbouring communities of sustainable harvesting techniques by March 2020, and 20% of adult community members, 166 women and 166 men, agree by March 2021 to continued conservation and dissemination to neighbouring communities of sustainable harvesting techniques of local F&N, led by the steering-committee and BC.	engagement reports; end-of-project workshop attendance register	
2. Seeds of 122 wild fruit and nut species from the Caucasus are protected through *ex-situ* seed banking in-country and at the MSB	2.1 65% of seed collections are duplicated to two seed banks by December 2020 and a further 35% by March 2021, conserving a total of 122 F&N (61 in Armenia, 90 in Georgia – an overlap of 29 species) 2.2 Data on cleaning, counting and viability testing of 65% of collected species is available by March 2020 and 35% by March 2021, to the Millennium Seed Bank Partnership 2.3 Six partner staff, of which 50% women (three in Georgia and three in Armenia) are trained in seed collecting, processing and banking by December 2019	2.1 Field data sheets; cleaning/counting/testing data sheets; notification of transfer paperwork; photographic evidence 2.2 DW data search 2.3 Copies of training assessments and certificates; photographic evidence	Mature seeds are available for collection within the project timeframe. Partners and Kew able to continue to work under the current terms of their ABSAs for exchange of seeds Seed collection size is large enough to be divided and banked in 2 locations (i.e. contains >1,000 seeds, which can be a problem for rare/endangered plants)
3. Global extinction risk assessments are completed and submitted to IUCN SIS for 20 of the target seed conservation species	3.1 14 partner-affiliated individuals (of which 50% women) are capable of conducting global red-list assessments to the standard of the IUCN by September 2018	3.1 Training register of attendance; scan of competence certificate signed by IUCN-accredited trainer	Sufficient data can be found on the target species to conduct meaningful assessments

	3.2 Full assessment data are available for seven species by December 2019 and a further 13 species by December 2020 3.3 IUCN global-scale assessments are made and submitted to the IUCN SIS, detailing the threats to, and status of, each of the 20 F&N; seven assessments made and submitted by March 2020 and a further 13 made and submitted by February 2021 3.4 Relevant learning from global IUCN assessments integrated into community workshops in 2020 and incorporated in community conservation plans by March 2021	3.2 Audited species data forms 3.3 IUCN red-list assessment submission receipt; final assessments 3.4 Community action plan; steering-committee meeting minutes; community surveys	Kew trainer is able to travel and deliver training in year one IUCN accepts and publishes data within 12 months of project end
4. Increased understanding of the genetic diversity and uses of 12 fruit and nut taxa, highlighting valuable traits for climate change resilience	4.1 Two MSc students (Georgia and Armenia) in post by March 2019, and capable of conducting genetic analysis for 12 fruit and nut taxa (8 in Armenia, 4 in Georgia) by March 2020 4.2 DNA extraction completed on 12 taxa (8 in Armenia, 4 in Georgia) by January 2020 and laboratory analyses completed on 12 taxa by December 2020 4.3 MSc and partner research findings disseminated to the	4.1 Signed MSc Student contract, training assessments; photographic evidence 4.2 Annual research reports; data from research 4.3 Two MSc theses in pdf format; receipt of abstract submission to	Target species populations are of sufficient size to enable material collection Two suitable local students are found within the project timeframe for completion of the Masters projects Results are sufficiently conclusive to provide new information to the scientific community

	scientific community and available to policy makers by March 2021 4.4 Two communities include relevant learning from research on traits related to climate change resilience for 12 F&N in their conservation plans by March 2021	conference; copy of presentation for conference; two partner research papers in pdf format; receipts of submission to regional journals; email exchanges with ITPGRFA focal point in Armenia 4.4 Community action plan; steering-committee meeting minutes; community surveys	Research proceeds according to plan and will be completed in time to feedback learning to communities before project end

Activities (each activity is numbered according to the Output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)

1. Two rural communities trained in sustainable harvesting practices and empowered to deliver *in-situ* conservation of fruit and nut ecosystem services to enhance rural livelihoods

1.1 Two social scientists are engaged, one in Georgia, one in Armenia

1.2 Partners and social scientists conduct community assessments and engage members

1.3 300 project leaflets are prepared and distributed to 200 households, the target school and the church in each community

1.4 Partners and social scientists recruit volunteers for the steering-committees (consisting of 1 partner staff and four community members) and plan future meetings during the first workshop

1.5 Steering-committees, partners and social scientists meet for training and activity planning, including planning of demonstration plots

1.6 Presentations and quizzes are delivered to school-children during the school term in Y1 and Y3

1.7 Workshops for information sharing are conducted with community members

1.8 Land secured for two demonstration plots and signs created

1.9 Baseline/evaluation surveys conducted

1.10 Plant material for demonstration plots (three important F&N) collected and provided to each community (six species in total)

1.11 Practical and theoretical training is delivered by partners and social scientists on planting, cultivation and harvesting

1.12 Two BCs are engaged and coached in knowledge dissemination by the social scientists

1.13 Steering-committees, BCs and communities meet at partner-led workshop to develop a post-project community conservation action plan

2. Seeds of 122 wild fruit and nut species from the Caucasus are protected through *ex-situ* seed banking in-country and at the MSB

2.1 Final target species list is completed, including distribution data

2.2 Pre-collection assessments are conducted on the target species

2.3 Training is delivered by partner staff in seed collecting, processing and banking
2.4 Seeds, herbarium vouchers and data are collected in the field for 122 F&N
2.5 Seeds are counted, cleaned and viability tested in-country
2.6 Seeds of 122 F&N are duplicated to the MSB via DHL courier
2.7 Duplicated seeds are counted, cleaned and viability tested at the MSB
2.8 Data is shared by partners and the MSB on cleaning/counting/viability testing of seed collections
2.9 Data is uploaded to the DW

3. Global extinction risk assessments are completed and submitted to IUCN SIS for 20 of the target seed conservation species
3.1 IUCN-accredited Kew staff travel to Armenia to deliver training to all project partners in IUCN assessments
3.2 Training is delivered to 14 participants
3.3 Fieldwork is conducted for data collection
3.4 Desk-based research on 20 target-species is delivered
3.5 Community data-collection surveys are delivered
3.6 Red-listing workshops are conducted to analyse and summarise the gathered data
3.7 Red-list assessments are submitted to the IUCN SIS for publication after project end
3.8 Results from the red-listing assessments of 20 species are shared with communities at workshops and through steering-committee meetings through 2019 – 2021

4. Increased understanding of the genetic diversity and uses of 12 fruit and nut taxa, highlighting valuable traits for climate change resilience
4.1 MSc students engaged and trained by partner staff in genetic analysis techniques
4.2 MSc students two-week residential training at RBG Kew, delivered by Conservation Science Department
4.3 DNA extraction and PCR techniques are used to conduct research on 8 taxa in Armenia and on 4 taxa in Georgia.
4.4 CBD focal point contact invited to Georgia's Annual Biodiversity Conference 2021
4.5 MSc students complete theses and submit
4.6 Attendance by Georgian partners at Georgia's Annual Biodiversity Conference 2021
4.7 Presentation of latest research findings, including red-listing and community engagement learning, at Georgia's Annual Biodiversity Conference 2021
4.8 Research results of 12 taxa are shared with communities at workshops and through steering-committee meetings in 2021
4.9 Research paper finalised and submitted to regional journals;
4.10 IPTGRFA focal point contacted and made aware of the imminent publication

Annex 3: Standard Measures

Table 1 Project Standard Output Measures

Code No.	Description	Gender of people (if relevant)	Nationality of people (if relevant)	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
Established codes								
2	Number of people to attain Masters qualification in genetic analysis (mixed)		Georgian and Armenian	0			0	2
3	IUCN-accredited training course certification (English)	50% women	Georgian and Armenian	14			14	14
6A	Training in seed conservation techniques (Armenian and Georgian)	50% women	Georgian and Armenian	10			10	6
6A	Theoretical and practical training on fruit and nut conservation and sustainable harvest	50% women	Georgian and Armenian	109			109	332
6A	Biodiversity Champion coached in knowledge sharing techniques		Georgian and Armenian	0			0	2
9	Conservation Action Plans of fruit and nut species			0			0	2
11B	IUCN assessments submitted for publication			0			0	12
11B	Peer reviewed paper based on MSc thesis work			0			0	2
13A	Seed and associated			4			4	122

	herbarium collections							
14B	Research presented at biodiversity themed conference			0			0	1
14A	Workshop organised to share current findings to community			2			2	6
20	Capital assets							
21	Steering-committee		Georgian and Armenian	2			2	2
22	Demonstration plots for fruit/nut species			1			1	2
23	Matched funding							

Table 2 Publications

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

Checklist for submission

	Check
Is the report less than 10MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	No
Is your report more than 10MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	Yes
Have you included means of verification? You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Yes
Do you have hard copies of material you want to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	No

Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	