Darwin Initiative/D+ Project
Half Year Report
(due 31st October 2019)

Project reference	25-017
Project title	Enhancing rural Caucasian community livelihoods through fruit and nut conservation
Country(ies)/territory(ies)	Armenia and Georgia
Lead organisation	Royal Botanic Gardens Kew
Partner(s)	Nature Heritage NGO (Armenia), National Botanical Garden Georgia (Georgia) and Institute of Botany, Georgia (Georgia)
Project leader	*Dr Elinor Breman (PI), Dr Aisyah Faruk (Co-PI)*
Report date and number (e.g. HYR3)	*31/10/2019 (HYR2)*
Project website/blog/social media etc.	https://www.kew.org/science/our-science/projects/enhancing-rural-caucasian-livelihoods-fruit-and-nut-conservation ; https://www.kew.org/read-and-watch/adventures-in-armenia ; *Tweets done on Co-PI account*

1. Outline progress over the last 6 months (April – Sept) against the agreed baseline timetable for the project (if your project has started less than 6 months ago, please report on the period since start up to end September).

Output 1: Partners continue to engage with their respective communities in the start of the second year to ensure that project and its activities are highlighted to different community groups. In June, the Georgian steering committee and partners met in the National Botanical Garden. During this meeting the group elected Leila Migdisel, the most active member of the community and group, as their Biodiversity Champion (BC). Both the Armenian and Georgian communities have established their steering committees and appointed BCs, meaning the project has successfully achieved Output 1.2 ahead of schedule (Dec 2019).

In June and July, our Georgian partners engaged with adults and children from their community. They conducted a field trip with active collectors (~15 people) from the community and advised on sustainable harvesting techniques. They also organised a 1-day training workshop at the National Botanical Gardens for 15 school children from the community to highlight the processes of seed banking and the importance of floral biodiversity. In the same month, the Armenian partners trained 13 people in the importance of sustainable harvesting in the Khachik Community. They also distributed a further 48 leaflets to 42 houses informing about the importance of sustainable harvesting. To date, the project has trained through workshops and field work 104 adults and reached 663 households through information leaflets (Output 1.1 and 1.4).

Both the Georgian and Armenian partners have finished developing their community fruit and nut demonstration plots, showcasing the important harvested species in the area. Both partners have worked with their respective steering committees to choose species that are of use to the local community, but also rarely found in the wild. In the Armenian community plot, the partners have chosen an accessible plot with reliable irrigation system. In the beginning of October, they will cultivate *Rosa hemisphaerica, Crataegus orientalis, Crataegus armena, Pyrus sosnovskyi and Berberis vulgaris*. In Georgia, the plot has already been cultivated with *Staphylea colchica, Sambucus tigranii* and *Amygdalus georgica*. The location is in the centre of the village within the school grounds. To highlight the plot and get as many of the local community members as

possible involved in caring for the plants, we plan to distribute leaflets explaining the plots and conduct a short survey during the second half of this year to identify levels of interest (Output 1.3).

Partners are continuing to gather relevant data for the red list assessments from their respective community members (Output 3 provides details of the data collected). In the next six months, the Armenian partners plan to add questions on locality and use to their short survey leaflet (Output 1.5).

Committee members are continuing to discuss with project partners their respective conservation action plans. They are on track to have them ready by the end of the project. There are also discussions on both sites regarding ways of disseminating learning to nearby communities. We have targeted relevant nearby villages for this through consultation with collectors from both steering committees (Output 1.6 and 1.7).

Output 2: To date the partners have collected 58 species (23 Armenia; 37 Georgia; 2 overlap species), which is just under half for the target for the project (122 species with 29 species overlapping). The partners reported issues relating to timing, where seeds of some species had already dispersed when they arrived or were not ready for collection. These are typical problems encountered in previous collecting projects and partners are well trained to overcome this challenge. We believe the project is on track to deliver the 122 species banked by 2021 (Output 2.1). In Armenia, the partners have trained three Armenian staff in seed banking techniques (Output 2.3). This includes the MSc student Razmik Papikyan (male) and two new staff members, Ashken Danielyan and Nare Melqonyan (both female). Georgian partners have already met this output as reported in last year's annual report. Output 2.3 has, therefore, been achieved.

Output 3: Both partners have finished digitising herbarium labels of the target species for red listing (total 13 species by December 2020). Partners are now in the process to verifying the localities and gathering data from literature reviews, field visits and speaking to local communities. To date, partners in Armenia write up their findings for 4 species. In Georgia, field assessments have finished for 5 species and they are also in the process of writing up their assessments. There are some challenges regarding identification of some species due to the presence of hybrids, however, expert taxonomists from the Institute of Botany are available to verify plants either in the field or via herbarium vouchers. We feel that this output will be achieved by the end of December 2019 (Output 3.2).

Output 4: Earlier in the year, the Armenian MSc student (Razmik Papikyan) was taught by his university supervisor techniques in DNA extraction from leaf material. In early September, he travelled to the UK to work with researchers from the Jodrell Laboratory, RBG Kew to further analyse his extracted DNA (Output 4.1 and 4.2). Razmik managed to sequence four of the most important DNA regions for his genus and constructed a phylogenetic tree for the species of roses he collected. He will continue to refine this tree with researchers in Armenia and ready his findings for dissemination both to the scientific community and the Khachik community (Output 4.3 and 4.4). The MSc student in Georgia (Ana Kvilividze) has finished collecting leaf material of different morphotypes of Prunus from different populations across Georgia. In the coming months, she will work with her university supervisor to extract DNA from the leaf material ready for her trip to the Jodrell Laboratory, RBG Kew. Flights and accommodation have all been finalised for her trip scheduled in February 2020 (Output 4.1 and 4.2).

2a. Give details of any notable problems or unexpected developments/lessons learnt that the project has encountered over the last 6 months. Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

Lessons learnt/Challenges

We found it difficult to reach the target number of adults outlined in the project, particularly when it comes to conducting workshops and training events. Weekdays are when community members are busy with their various employment, which means events had to be done over the weekend, when people are resting. We hope that having active steering committee members in

the communities will encourage more individuals to engage with project activities as the project progresses. We have learnt the real value of having the Biodiversity Champion on the project as both have been very active promoting the project across their respective communities and organising various events. Additionally, the short survey we are conducting in the second half of the project will help shed some light on how to raise interest levels for the demonstration plots. Although these challenges may not affect the budget, it may delay intended deadlines as we try to ensure we reach our targets.

Notable change 1

In the first year of collecting our Armenian partners have found that several species of fruit and nut collected for this project produce seeds that are much larger than those collected previously (e.g. wild grass or herbs collected under past projects). These collections therefore require more storage space than previously thought. We have requested for underspend from the consumables budget to be used to purchase a freezer to add to the capacity of our partners to store seeds adequately. No change to the overall budget amount or project activities.

Notable change 2

Unfortunately, Ana Kvilidze, our MSc student from Georgia, was unable to join the September genetic analysis training schedule at Kew. Therefore, a separate training course is now organised and confirmed for the beginning of February 2020.

2b. Have any of these issues been discussed with LTS International and if so, have changes been made to the original agreement?

Discussed with LTS:	**Yes**/No
Formal change request submitted:	**Yes**/No
Received confirmation of change acceptance	**Yes**/No

3a. Do you currently expect to have any significant (e.g., more than £5,000) underspend in your budget for this year?

Yes ☒ **No** ☐ Estimated underspend: £

3b. If yes, then you need to consider your project budget needs carefully.

We expect a significant underspend from the Kew budget under International travel and salary cost of a senior research leader . We would like to take the travel cost over to the following year to enable key steering committee members from Armenia to travel to Georgia for NBGG's annual Biodiversity Conference. We feel that this would enhance knowledge transfer between the two communities and develop stronger links between the two countries. In the end, we were able to fulfil output 4.1 and 4.2 without the input from a senior research leader. We would like to request this underspend be taken over to the final year to be used to secure the legacy of project impacts past the project end. More details will follow in the Change Request Form sent in a separate email.

4. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures?

N/A