Darwin Initiative Main 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 2018

Darwin Project Information

Project reference	24-010
Project title	Mobilising useful plant conservation to enhance Atlas mountain community livelihoods
Host country/ies	Morocco
Contract holder institution	Global Diversity Foundation (GDF)
Partner institution(s)	Moroccan Biodiversity and Livelihoods Association (MBLA); High Commissariat for Water and Forests and Desertification; Faculté des Sciences Semlalia Marrakech, Université Cadi Ayyad; Institut Agronomique et Vétérinaire Hassan II, Rabat (IAV); Ressources Ingénierie (RESING); Beya Capital; International Center for Agricultural Research in the Dry Areas (ICARDA) and Agropolis Resource Center for Crop Conservation, Adaptation and Diversity (ARCAD); Association des Amis du Centre Hospitalier Universitaire (CHU).
Darwin grant value	£ 312,660
Start/end dates of project	1st April 2017 – 31st March 2020
Reporting period	1st Apr 2017 – 31st Mar 2018, Annual Report 1
Project Leader name	Gary Martin
Project website/blog/Twitter	www.global-diversity.org A general description of the project is available on GDF's UK website and periodic updates are posted on the news page; and see blog post links in this report.
Report author(s) and date	Christina Ashford, GDF-UK Programme Manager, 30th April 2018, with the support of Dr Hassan Rankou (Director of MBLA) and the MBLA team, Dr. Ugo D'Ambrosio (GDF Mediterranean Ethnobiology Programme Director), Gary Martin (Lead Consultant for the Mediterranean Programme), Emily Caruso (GDF-UK Director) and Pommelien Da Silva Cosme (GDF Communications and Field Officer).

1. Project rationale

As detailed in our project proposal, GDF addresses inter-connected issues of plant conservation and poverty in the High Atlas biodiversity hotspot of Morocco. We seek to answer the question: how can Amazigh people remain the custodians of Important Plant Areas and

useful species while improving their livelihoods in a changing socio-economic context and under new national biodiversity laws?

In our previous Darwin Initiative project (2013-2016), we documented how smallholder farming and grazing traditionally contributed to livelihoods and biodiversity conservation, while the collection of wild species provided additional sources of food, fodder, fuelwood and medicines that enhance local wellbeing. We gathered evidence of contemporary changes in practice including decreased cultivation of local crop varieties, overgrazing and unsustainable harvest of wild plants. Accentuated by climate change, these drivers threaten High Atlas biocultural landscapes, local livelihoods and unique biodiversity.

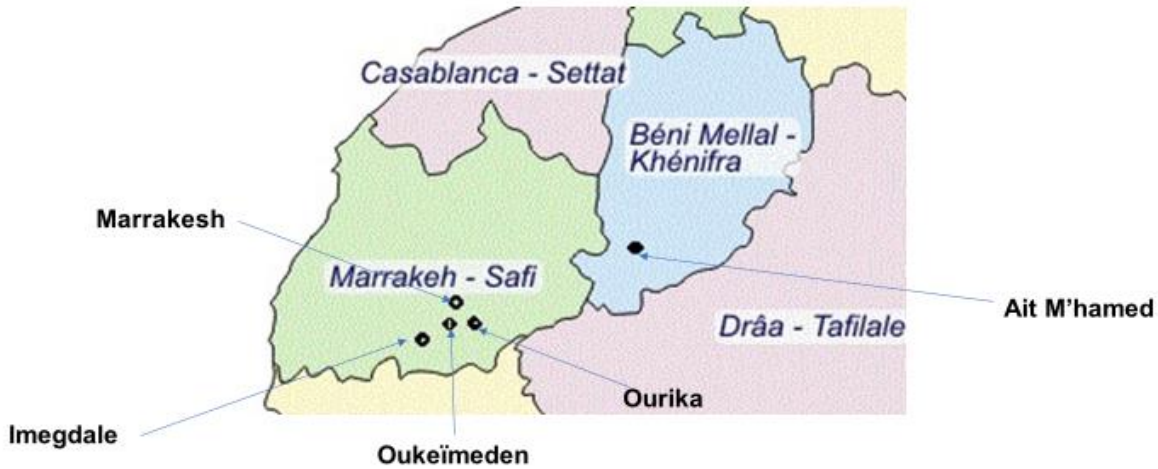
Socio-economic transitions bring affluence to some families, but provide limited benefits to most households, putting the most vulnerable at a disadvantage. This is exacerbated by limited access to education, diminishing agricultural production, and health problems related to poor hygiene and nutrition, resulting in high levels of outmigration which local informants affirm is a primary obstacle to community wellbeing.

To counter this trend, Amazigh communities seek to enhance their livelihoods by increasing access to rapidly expanding national retail, wholesale and export markets for plant products; adding value to traded products; and strengthening cooperatives to increase competitiveness. They strive to maintain the ecological integrity of Important Plant Areas where they harvest wild edible, medicinal and other useful plants that provide non-monetary benefits.

Our project strengthens these positive conservation and livelihood trends through participatory research and practical action, including conservation assessment and monitoring of flagship species, agroecological cultivation and enrichment planting of threatened plants, capacity building on adding value and marketing plant products, and improving access to irrigation, schooling, adequate nutrition and healthcare, with a special focus on marginalized and vulnerable households.

Where we work

As part of our wider [High Atlas Cultural Landscapes Programme](), GDF works in the communities of Ait M'hamed, Imegdale, and Ourika. We recently launched a new project site in Oukeïmeden.



2. Project partnerships

Effective partner collaboration and stakeholder management is key to the successful implementation of this project. We have continued to operate an excellent working relationship with our lead project partner – the Moroccan Biodiversity and Livelihoods Association (MBLA) which was created with sponsorship from GDF during our previous Darwin project. In July 2017, we held a successful High Atlas Programme kick off meeting in Morocco during which GDF and MBLA staff developed the programme results chain, discussed project activities and agreed detailed implementation plans and team roles. Throughout the course of the project's first year, GDF and MBLA have worked closely on the delivery of the activities reported on below. This has involved quarterly face to face meetings between the High Atlas Senior Management team (Gary Martin, Mediterranean Programme Lead Consultant; Emily Caruso, GDF-UK Director; Christina Ashford, GDF-UK Programme Manager, Hassan Rankou, MBLA Director and Mediterranean Conservation Programme Director & Ugo D'Ambrosio, Mediterranean Ethnobiology Programme Director) as well as bi-monthly Steering Committee meetings. Please see the monitoring and evaluation section below for further details of the role and function of our Steering Committee.

To successfully deliver project activities at Dar Taliba boarding house, we have collaborated closely with permaculture design and capacity-building consultancy RADIANT Design and the management of Dar Taliba itself. The weekly training sessions delivered by our colleagues Fabien Tournan and Laila Khabouz from RADIANT Design have been extremely well received by the students. "*I really enjoyed learning about organic fertilisers*", Leila, aged 14, told us. "*It surprised me how simple and cheap it is, and how it will benefit plants and vegetables to grow*". Similarly, we have successfully collaborated with our partner organisation RESING to install new water infrastructure in all projects sites and develop the design for upcoming irrigation and water management interventions. We continue our excellent collaboration with Cadi Ayyad University, in particular the MARK Regional Herbarium. With Darwin funds we supported the creation of a regional seed bank located at MARK and continued to collaborate on floristic studies and ecological monitoring with Professor Ahmed Ouhammou and his students, some of whom have joined the project field team. We have been in dialogue with our partners ARCAD, ICARDA and IAV all of whom will be involved in agrobiodiversity-related field activities in year 2. Our excellent partnership with the Association des Amis du CHU allowed us to deliver the highly successful Health Caravan in Ait M'hamed in the first quarter of 2018 (see below for details).

Finally, during this reporting period, we have established MoUs and Partnership Agreements with all relevant local partner organisations (including the Imegdale Znaga Cooperative and ASKA Women's Association in Ait M'hamed) to support effective collaboration and the successful delivery of our programme. We also obtained all the necessary permits from local authorities to carry out field research in the community conserved areas (agdals) and other communal territories.

The primary change in our partnerships is that we are not planning to pursue a broad relationship with Beya Capital, one of our initial project partners. Staff changes at Beya – including the departure of Lauren Carter, our main contact – have diminished their capacity to deliver the expected results on plant commercialisation, beyond a limited consultancy on specific aspects of market analysis, especially as they have shifted their focus to climate change adaptation and mitigation as an intermediary for Green Climate Fund projects in Morocco. We do not expect this change to adversely affect our ability to meet our goals because we are creating an expert panel on plant commercialisation, drawing on established and new relationships with colleagues who will serve as advisors as needed. In addition, our ability to select and contract consultants is enhanced by our involvement in an economics overarching initiative coordinated by Dr Gretchen Walters, programme officer of a new partner, the IUCN's Global Forest and Climate Change Programme. This overarching initiative, which is part of the MAVA Foundation's Cultural Landscapes programme, provides advice and external consultancy services to four field programmes in the Mediterranean, including the High Atlas site coordinated by Global Diversity Foundation.

3. Project progress

3.1 Progress in carrying out project Activities

Considering that we have reached the end of the first year of this three-year project, this report focuses primarily on progress made towards completing the project activities applicable to Year 1. As the project advances, our subsequent reports will consider in more detail the progress achieved towards the wider project outputs and outcomes.

Output 1. **Conservation action plans for threatened useful plants implemented**

Output 1 focuses on developing conservation action plans for 12 regionally threatened and culturally important species. Excellent progress has been made in collecting baseline data through the completion of full floristic accounts, ecological monitoring, threats surveys and conservation assessments (the initial steps in the process). As set out in our project implementation plan, during this reporting period, we finalised the species accounts (floristic, ecology, distribution, maps, threats, conservation measures) and conservation assessments for these species according to IUCN criteria and categories (see Annex 1). Of these, five species assessments have been published on the IUCN Red List of Threatened Species following a rigorous review process. Please find attached (Annex 2) the *Fraxinus dimorpha* IUCN assessment, published 2017, as an example. The remaining seven species' assessments have been uploaded to the IUCN Species Information Service (SIS) database and will be submitted to IUCN for publication following the completion of final fieldwork during the current floristic season (March – May 2018).

We also made notable progress in cultivating the 12 target species. During this reporting period, we redesigned and expanded by 7,000m^2 our Imegdale community nursery and today it is flourishing. In 2017 we cultivated some 2,000 plants of each species which were then either distributed to local communities for enrichment planting in designated wild areas and semi-cultivated terraces (see Output 2 below for further details) or retained in the nursery to ensure continued cultivation of all species during subsequent years and for seed production. In the other partner community of Ait M'hamed, the existing nursery had suffered from water management issues. In 2017, we established partnership agreements with the local authorities and the ASKA Women's Association to begin construction of a new community nursery. We are pleased to report that the new nursery has now been established and will be co-managed with ASKA. It includes two greenhouses, new terraces, a community herbarium and seed bank. The nursery terraces have been designed according to permaculture design principles and plant production has begun. We expect to cultivate 2,000 plants of all 12 species during Year 2. However, we would like to take this opportunity to note that Ait M'hamed has experienced an unusually long and cold winter this year, with snow engulfing the area as late as April 2018 (usually the start of the floristic season) and subsequently we expect a delay in plantation in 2018 (see images below taken in Ait M'hamed on 13th April 2018).

Please see Annexes 3 and 4 for Imegdale and Ait M'hamed community nursery plant lists as of the end of project year 1 (March 2018). We have also enclosed a photo essay documenting progress over the last year in both Imegdale and Ait M'hamed plant nurseries (Annex 5).

Last year our teams collected, identified, mounted and stored in the communities and regional MARK Herbaria around 700 herbarium and plant specimen vouchers from the High Atlas - including the 12 species targeted under this project. We have also completed the construction of community seed banks in all project sites (Imegdale and Ait M'hamed) and in the MARK Regional Herbarium, where the seeds of these 12 species will be stored to ensure their future availability. The team was also successful in securing the necessary permits required for seed collection and multiplication and developed a High Atlas seed protocol (see Annex 6a) with key stakeholders (including the Forest Department, Cadi Ayyad University and the relevant local communities). With the necessary infrastructure and processes put in place, during Year 1 our teams collected, identified, tested, mounted and stored around 100 seed vouchers from the High Atlas including the seeds of 7 of the 12 target species under this project. Please see Annex 6b for community seedbank accession records. Plant and seed identification were carried out during workshops at regional Herbarium MARK of Cadi Ayyad University (see Annex 7) following which plant and seed vouchers for all species were mounted, labelled, databased in BRAHMS and published online. Accessions of each species (seed and herbarium specimens) are now stored in the regional MARK herbarium and seedbank as well as in the Imegdale and Ait M'hamed community herbaria and seed banks. Prior to storage, our team of Community Researchers carried out seed cleaning, cut dehydration and germination testing on each species. The results of these tests are kept in the seed bank databases (see Annex 8 for a photo essay on seed collecting and banking).

In part due to the delay in the Q1 advance payment which was received in August 2017, the team was unable to complete seed collection for all 12 species during the Year 1 floristic season (March to May). The remining five species will be collected during the Year 2 floristic season.

To support this project's activities on sustainable plant commercialisation, this year we began laboratory-based plant quality testing. This involves conducting two comparative analysis of the composition of essential oils for all 12 species to better understand 1) the difference between wild and plant nursery cultivated plants and 2) the difference in quality between plants grown in the two community nurseries. We recruited Abdellah Aghraz, a Cadi Ayyad University PhD student, as a part-time Plant Quality and Laboratory Scientist to deliver this project element. We are pleased to report that all materials and plant specimens have now been collected and lab testing will be completed during Year 2.

In addition to the above, we have completed an annual cycle of participatory ecological monitoring and remote sensing of species habitat and enrichment planting areas, as described

in our project implementation plan. We calculated the biodiversity indices (to determine the floristic composition and richness), the frequency of the species distribution, the structures of plant population and how individuals are distributed among various species using two methods; 1) the method of Line Intercept Transect (LIT) is used in all the sites (Imegdale, Ait M'hamed and Oukeïmeden) and 2) Remote sensing via satellite imagery analyses, vegetation index NDVI (Normalized Difference Vegetation Index). See Annex 9 for the Ecological monitoring studies results.

We made progress on creating a methodology and gathering initial data for market analysis and business plans for sustainable commercialisation of promising species. Consultant Shaden Boustany drew upon a Center for International Forestry Research (CIFOR) methodology for characterising non-timber forest products to create a matrix that consolidates the rich base of information we are deriving from our field studies. We selected an initial six promising species for commercialisation (*Quercus ilex, Fraxinus dimorpha, Ceratonia siliqua, Thymus satureioides, Mentha sauveolens* and *Hordeum vulgare*) and began in-depth characterisations for each – involving phenotypic, morphological, socioeconomic, ecological and genetic analyses.

Work on plant commercialisation will accelerate as planned in Year 2. This year, we expanded our field team to include Hajar Salamat, who will be responsible for conducting socio-economic surveys in participating communities; Abdellah Aghraz, who will assess quality of medicinal and aromatic plants; and Abdeddaim Elhajjam, who is in charge of the characterisation of commercially valuable plants. Given the departure of Lauren Carter from our project partner Beya Capital – and the emergence of Economics overarching initiative headed by the IUCN Global Forest and Climate Change Programme – we have begun to establish an expert panel to advise us on the sustainable commercialisation of plant products. The panel, to be consolidated in April 2018, will include Gretchen Walters and Seline Meijer, IUCN programme officers; Janet Lowore, Programme Manager for Africa, Bees for Development; Dena Freeman of the Department of Anthropology, London School of Economics and Political Science; Anastasiya Timoshyna, Medicinal Plants Programme Leader at TRAFFIC International and Nicolas Hamelin-Ermolieff Associate Professor of Marketing and International Management of Franklin University Switzerland. We expect to engage some members of the panel as consultants who can advise us on the commercialisation of specific products. For example, with consultancy funds from Darwin Initiative and MAVA Foundation, we plan to invite Anastasiya Timoshyna to Morocco to provide advice on medicinal and aromatic plant marketing as well as the relevance of applying FairWild certification criteria to wild harvested plants in the High Atlas, In addition, we will ask Janet Lowore to give insights on the production and sale of honey, specifically by the Wabzaza Honey Cooperative in Ait M'Hamed.

This external advisory panel will complement the insights provided by an in-country panel of experts from academia and the private sector with whom we already collaborate. They include Lhoussaine El Rhaffari of the Faculty of Sciences, Université Moulay Ismail, Meknès; Mohammed Ater of the Department of Biology of Abdelmalek Essaâdi University, Tétouan; Rachid Jaafari of Terre d'Eveil holistic center; Sadek Tazi of PalmOrchids Nursery; and Mustapha Mokass of Beya Capital. We envision, for example, contracting Mustapha Mokass to assist with market assessments (specifically turnover and 20/80 analysis) for some of the 12 target species, and requesting that Sadek Tazi evaluate the potential market for plants produced in the community nurseries.

Output 2. Livelihood improvements for Amazigh villages, households and residents achieved

With co-funding from a Replenish Africa Initiative (RAIN) project secured by our local partner MBLA, we have been collaborating with RESING, a Marrakech-based engineering firm, to successfully install water infrastructure including new and efficient drip irrigation systems in the Imegdale, Ait M'hamed and Dar Taliba plant nurseries. We are pleased to report that we have also begun design consultations for the repair of existing infrastructure (including *seguias* – traditional water canals) and building new irrigation systems to serve arable lands in partner

communities. This will provide irrigation to large tracts of land currently with insufficient water for cultivation – 25 hectares each in Imegdale and Ait M'hamed – and we are on target to complete this in year 2.

With the community nurseries now flourishing, this year we were able to fulfil our annual commitment to distribute commercially valuable plants across Amazigh villages. During the months of December and January, GDF distributed ***14,992 plants to 40 members of local cooperatives from 9 different villages of the Imegdale commune*** who will plant them in designated wild areas and semi-cultivated terraces to boost wild populations and reduce harvesting pressure. All species distributed are of commercial value and will therefore help to enhance rural incomes. Species included, amongst others, wormwood (*Artemisia arborescens*), oregano (*Origanum compactum*), rosemary (*Rosmarinus officinalis*) and lavender (*Lavandula dentata).* For further details, please see the attached plant distribution records (Annex 10) and our online blog post.

We are also pleased to report that in February 2018 we organised the first annual health caravan in the commune of Ait M'hamed. In partnership with MBLA and l'Association des Amis du CHU Mohammed VI (a Moroccan organisation providing improved access to health services in mountainous areas) a temporary medical centre and pharmacy were established in the local primary school where free consultations and medicines were provided. Over the course of just one day, a medical team of 50 people (including paediatricians, gynaecologists and general practitioners, amongst others) carried out more than **1,800 free medical exams for men, women and children.** The overwhelming success of this intervention has allowed us to consolidate an excellent relationship with the communal authorities in Ait M'hamed and the Governor of the province of Azilal. It has cemented trust with community members, lending our programme even greater legitimacy and visibility among our local beneficiaries. For further information, please see attached for a detailed report (in French) by l'Association des Amis du CHU Mohammed VI (Annex 11), an illustrative photo essay (Annex 12) and our online blog post.

As part of our commitment to support local livelihoods, in addition to the health caravans described above, we delivered annual food packages to 70 highly vulnerable households (far exceeding our yearly target of 25 households) across Ait M'hamed during the cold 'famine period' in February. Please see Annex 13 for the full recipient list. The food packages included necessities such as flour, cooking oil, tea, sugar, lentils, laundry powder and washing soap.

Table 1: Food package distribution in Ait M'hamed

Item	**Quantity**
Flour sack (25kg)	70
Cooking oil (5L)	70
Tea (200 g)	140
Sugar (2Kg)	140
Laundry powder (0.5 Kg)	210
Soap package	140
Lentils (1 kg)	70

Finally, through Darwin co-funding, GDF has continued its support to Dar Taliba, an all girls' boarding house that provides Amazigh girls (ages 13 – 18) from remote villages of surrounding High Atlas communes an opportunity to continue their education beyond primary school. This support includes supplementing staff salaries, building 6,000 m^2 of ethnobotanical, vegetable and demonstration gardens as well as a community nursery and more efficient water management infrastructure, and delivering training and capacity building sessions for the students (as detailed below). This support has ensured the continued operation of Dar Taliba boarding house for its 130 students, which included 65 new students from 20 different villages located in the communes of Ourika, Setti Fadma and Oukeïmeden. Please see Annex 14 for the residency list detailing the new students who joined in September 2017.

Output 3. Capacity-building for Amazigh associations, community members, community researchers and institutional representatives delivered

Capacity building at all scales is a central component of our project. During this reporting year, we have worked closely with our partners MBLA, RADIANT Design and RESING to establish an educational space and programme for the students of Dar Taliba boarding house which focuses on conservation practices and indigenous plant knowledge. This year, we completed the construction of construction of 6,000 m^2 of school gardens which includes:

- A plant nursery and greenhouse for cultivation and production from seeds of wild species and traditional crops;
- An ethnobotanical garden to help students learn about the local flora and the diverse High Atlas Landscape;
- A vegetable garden to grow produce on site for school meals;
- An aromatic and medicinal garden where we have now successfully planted 20 useful, valuable and threatened species such as lavender, thyme and sage. These will be distributed to students and local communities who will plant them in designated areas, thus enhancing community incomes as well as wild populations. A small amount will be kept for the demonstration garden within the school grounds;
- An ornamental garden for recreation, enjoyment and training for students.

With the gardens fully established, in September 2017 (the start of the academic year) a weekly training programme was established by Jamila Boussata (MBLA Community Liaison & Dar Taliba Director) whereby all 130 students participate in plant-related training sessions. This year they have focused on the following topics: permaculture training, making organic fertiliser, seed planting, sustainable plant harvesting and transformation of valuable plants. Alongside this training programme, the students have participated in the ongoing management of the gardens and plant nursery. Please see Annexes 15, 16a and 16b for the participant list of all named workshops, an illustrative photo essay and training video.

In addition to the above, our partners RESING and MBLA delivered a one-day training session on sustainable water harvesting to 18 members (including three women) of the Imegdale Znaga Cooperative and our Community Researchers in Imegdale.

During this reporting period, we employed six local Community Researchers (three women and three men) working in the communes of Imegdale and Ait M'hamed. All have received continuous on-the-job training in nursery management and new skills – such as permaculture design, drip irrigation, seed saving and cultivation of wild species – that complement their traditional agroecological knowledge and practices. They have also participated in specific training sessions, along with 15 Master and 22 Undergraduate students from Marrakech University, on conservation and ethnobiology techniques including: conservation assessment and Red listing of plant species according to IUCN criteria and categories; herbarium techniques; plant and seed collection; floristic monitoring and ethnobotanical research methods. During year 2, we plan to recruit a further three to four further community researchers as we expand our programme to a third project site in Oukeïmeden.

Finally, in November 2017, we organised a capacity-building workshop for 19 Moroccan young researchers on *Making Research Matter: how to transform new knowledge on biodiversity into conservation action and benefits for local communities.* The workshop sought to exchange ideas and lessons learned around plant commercialisation for community benefit. Participants at the workshop were keen to continue the relationships developed during this event and further similar small workshops will be organised in the future.

Output 4. Case study on implementation of new national law #29-05 and its relationship to law #22-07 submitted

Mohamed El Haouzi, GDF field coordinator, is leading a revision of the database of fauna and flora commercialized in the markets (*souks*) of Marrakech and its rural hinterland, prior to repatriating information to the Regional Directorate – Haut Atlas-Marrakech of the High Commissariat for Water and Forests and Desertification. This sharing of data has been delayed

by the long bureaucratic process of finalising a Memorandum of Understanding with the national office of the High Commissariat in Rabat, which we expect to be signed in April of this year. In the meantime, we are expanding our knowledge of the species complexes that present a particular challenge to government authorities responsible for implementing the new national law (#29-05) on commercialisation of flora and fauna. These include the *zatar/zaitra* complex, which includes wild oreganos and thymes, such as *Origanum compactum* and *Thymus satureioides*, endemic Mediterranean species we are cultivating in community plant nurseries. Because plant products derived from these related genera and species in the Mint family are all commercialised under a single generic name, it is difficult to monitor the impact of harvesting and sale on any particular species if there is insufficient knowledge on all the species and volumes traded. Our ongoing market surveys and interactions with rural and urban herbalists are establishing baseline data useful not only for the implementation of law #29-05 but also for the market analyses and business plans that we are developing.

Another activity we completed is obtaining permits under law #29-05 for seed collection and multiplication in nurseries for many species, including the 12 target wild plants chosen for the Darwin project.

Output 5. **Identification and characterization of additional plant genetic resources completed**

Efforts to identify and document additional species of useful plants are proceeding well. We have already met our Year 2 target by completing ethnobotanical surveys for an additional 50 species which include detailed information on how each is used by rural communities. This research will be included in a journal article identifying species of most cultural significance in the Imegdale and Ait M'hamed communities (Activity 5.6) which is due for completion in Year 3.

We are pleased to report that we have also made rapid progress in completing the conservation assessments of the additional 50 species. As of Year 1, assessments have already been completed for 30 species (data complied, fieldwork completed, species mapped, species Red Listed and 30 SIS accounts completed in the IUCN Red List of Threatened Species) and desk assessments for the remaining 20 have been carried out, putting us in an excellent position to conclude this work well in advance of our Year 3 deadline.

All ethnobotanical, floristic and ecological data collected under our programme will be stored in a centralised GDF database which is currently in development. This comprehensive database will include detailed information on species, habitat, location, uses and conservation status. As of the end of April 2018, the ethnobotanical database contains over 300 interviews, 4,206 use reports and at least 224 botanical tax (Annex 17).

3.2 Progress towards project Outputs

Overall progress towards projects outputs has proceeded as planned.

We have made progress towards achieving Indicator 1.1 of Output 1 *'conservation action plans for threatened useful plants*' through the publication of 5 conservation assessments for the 12 target species and the quasi-completion of the remaining 7 (to be published in Year 2). This is from a baseline of no or incomplete existing species assessments. The example publication in the IUCN Red List of Threatened species for *Fraxinus dimorpha* (Annex 2) provides evidence of this. We have collected seeds of 7 of the 12 species and begun the cultivation of these 12 in both our project sites, compared to a baseline of no collection, storage and cultivation of these seeds. We are slightly behind our indicator target of 12 species collected and conserved because of the late start to fieldwork (resulting in part from the delay in the first disbursement) and the short yearly timeframe available for seed collection for each species. We have also begun the in-depth plant characterisation for 6 commercially important species (*Quercus ilex, Fraxinus dimorpha, Ceratonia siliqua, Thymus satureioides, Mentha sauveolens* and *Hordeum vulgare*) as a first step towards their commercialisation (Indicator 1.3). In the newly expanded Imegdale nursery we cultivated 2000 plants of useful, threatened and endangered species, including the 12 target species of this project (Indicator 1.4). We are slightly behind target on

this indicator in the Ait M'hamed nursery because of the water management issues described in section 3.1 above. Plantation of the 2000 seedlings is about to begin and we will achieve this indicator early in Year 2. We continue to expand our longitudinal data collection on wild plant populations in Imegdale and Ait M'hamed, and the impacts of our conservation actions, through the ecological monitoring process described in Annex 9 (Indicator 1.5).

Progress towards '*livelihood improvements for Amazigh villages, households and residents*' is advancing well and we have exceeded many of our Year 1 targets under this output. In Imegdale, we reached 9 villages (180% of the 5-village target) with the distribution of 14,992 commercially valuable plants to help enhance rural incomes, compared with a baseline of no distribution (Indicator 2.1). We began laboratory-based plant quality testing of all 12 species, compared to a baseline of no phytochemical analyses of these populations available, and expect to complete this work on target by Year 2 (Indicator 2.2). In Ait M'hamed we provided free medical consultation and medicine to some 1,800 residents and delivered food packages of key necessities to 70 highly vulnerable households (280% of our yearly target of 25 households), compared to a baseline of no medical caravans and no food distribution (Indicators 2.5 and 2.7). Through our continued support of Dar Taliba boarding house, 65 new students joined at the start of this academic year (87% of our three-year target of providing access to secondary school for 75 girls; Indicator 2.6). With this project we contributed to improved irrigation in all three nurseries and we have begun to work on improved water management for 50ha of agricultural land in both communes (Indicator 2.3). Please refer to Annex 5 and Annexes 10 to 16 as evidence of our continued support to improve local livelihoods in the communities where we work.

Concerning Output 3 '*capacity-building for Amazigh associations, community members, community researchers and institutional representatives*' we have made excellent strides. In Year 1 alone, we delivered training to all 130 Dar Taliba boarding house residents through a comprehensive educational programme designed to build new skills and knowledge in plant conservation, plant uses, agroecology techniques and indigenous practices (exceeding our indicator 3.4). Furthermore, we have delivered training on sustainable water harvesting to local cooperative members in Imegdale (contributing towards the implementation of Indicator 3.1) and provided continuous on-the-job training for six (men and women) Community Researchers from the communities where we work (Indicator 3.3). We are on target to achieve all other indicators as planned by Year 3.

On Output 4 "*Case study on implementation of new national law #29-05 and its relationship to law #22-07*", we made progress towards repatriation of a database on commercialised plants and animals (indicator 4.1), as described above, and we formalised the seed collection permit, the seed collection protocol and the commune nursery MoUs, thus completing 60% of Indicator 4.3 (see Annexes 6 and 7). We expect to develop the permit for plant sale by Year 2, after our work on plant commercialisation is further advanced.

Lastly, the progress made during Year 1 means we are on target to achieve Output 5 *'the identification and characterization of additional plant genetic resources'*. We have already met our Year 2 target through the completion of ethnobotanical surveys for an additional 50 species (Indicator 5.1) and are ahead of our Year 3 target to complete assessments of an additional 50 species (Indicator 5.2). As of the end of this project year, assessments have already been completed for 30 species and desk assessments for the remaining 20 were carried out. Please refer to our comprehensive database containing over 300 interviews, 4,206 use reports, and at least 224 botanical taxa (Annex 17) as evidence of this. Given this progress we expect to achieve all other indicators as planned by Year 3.

3.3 Progress towards the project Outcome

Project outcome: Integrated conservation of regionally threatened culturally-important plant species and management of Important Plant Areas in the Atlas Mountains is achieved through Amazigh community action and capacity building, accompanied by improved livelihoods.

To date, we have made steady progress on key elements of the project outcome expected by the end of Year 1.

As detailed previously, we have completed conservation assessments for all 12 regionally threatened plant species, begun cultivation in both project sites, established the process for assessing the plant quality of all harvested species, distributed almost 15,000 plants to community members and deepened the ecological monitoring process for these species. We are therefore on track to meet the first indicator under our project outcome: '*twelve regionally threatened plant species and varieties are assessed, cultivated, distributed, sustainably harvested and monitored over three years'* (Indicator 0.1).

Considering the progress made this year with annual distribution of almost 15,000 commercially valuable plants and annual food packages to 70 households, delivery of free health care to 1800 vulnerable community members and improved access to secondary education for 65 girls, we are in a good position to achieve indicator 0.2 (*in three rural municipalities of the High Atlas, 2500 people, including from the 50 most vulnerable households, benefit from modest income increases and improved wellbeing through useful plant cultivation and marketing, irrigation, access to secondary school for girls, health improvements and adequate nutrition*). The plant commercialisation process, which started with a slight delay, will contribute significantly to the achievement of this indicator.

Within the first year of this project, we delivered training to 130 students of Dar Taliba boarding house on a broad range of conservation topics (see activity update above for full details) and to 18 members (including three women) of the Imegdale Znaga Cooperative on sustainable water harvesting. We are therefore on track to deliver on our commitment to benefit '*three hundred and twenty-five people benefit from capacity building delivered in training courses, workshops, a community exchange, and on-the-job experience by project end'* (indicator 0.3).

During this reporting period, we also made progress towards repatriation of a database on commercialised plants and animals, as described in section 3 above, and formalised the seed collection permit, the seed collection protocol and the commune nursery MoUs (see Annexes 6 and 7). We have therefore made good progress towards indicator 0.4 (*one detailed case study of implementation of the new national law #29-05 on the protection and commercialization of wild flora and fauna and its relationship to law #22-07 on protected areas developed and disseminated within Morocco, by year 3).*

Lastly, as described in further detail above, we have conducted conservation assessments for a further 30 species and desk assessments for 20. As we have already completed the ethnobotanical surveys for the 50-additional species and have developed a systematic approach to participatory plant characterisation, we are in an excellent position to achieve and surpass indicator 0.5 *'A participatory process of characterizing 50 additional species for the household basket of useful plant resources that bring monetary and non-monetary benefits, launched by year 2'*.

3.4 Monitoring of assumptions

All our assumptions hold true at this stage of project implementation.

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

Impact statement: '*Atlas Mountains Amazigh people are empowered to expand their role as stewards of Important Plant Areas and plant genetic resources while improving their livelihoods in a changing socio-economic context'.*

The project contributes to the higher goal of biodiversity conservation and poverty alleviation through the development of:

1) *Locally appropriate sustainable management plans and the empowerment of local communities to deliver them*. Working in close collaboration with the local communities,

we have made excellent progress in establishing these conservation measures. All 12 regionally threatened plant species and varieties which are to be assessed, cultivated, distributed, sustainably harvested have been identified in partnership with local communities using a participatory approach. This ensures a sense of project ownership amongst the communities. We have also delivered a series of capacity building sessions to equip and empower our partner communities to expand their role as environmental stewards. This year, we have worked with six community researchers, cooperatives, students and other community members to deliver training in the following: sustainable water harvesting, ecological monitoring, plant nursery management, seed collection, enrichment planting and community-based research design, amongst others. We will continue to support local communities as they expand their role as stewards of IPAs with the development of sustainable harvesting and commercialisation action plans and strengthen local cooperatives as they engage more actively with wide markets.

2) *Support for local livelihoods and establishment of sustainable, reliable sources of plant material in rural communities*. This is being implemented through the management and expansion of community plant nurseries, enrichment planting and distribution of valuable plant species to vulnerable communities. These activities will be supported by on-going capacity building on sustainable plant harvesting and transformation of valuable plants to support improved annual incomes from the sale of plant based products.

3) *Improved community wellbeing* is a core element of our project. We are achieving this through the following: (i) empowerment of community members and community researchers through training and sharing decision-making and responsibilities in project implementation, (ii) delivery of annual medical caravans and food distribution to support health improvements and adequate nutrition (iii) improved access to secondary school for girls.

4) *New knowledge regarding conservation status of key plant species in Important Plant Areas of Morocco*. Expanding our knowledge of plant conservation status is essential for developing targeted conservation measures and establishing a baseline upon which to assess the impact of these measures. This will be achieved through the creation of conservation assessments for twelve regionally threatened plant species and varieties, five of which have been completed during this reporting year.

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

Our project contributes to Sustainable Development Goal (SDG) # 2 on food security (zero hunger) by (1) supporting community livelihoods through the production, propagation and distribution of plant species that are used for daily consumption by Amazigh communities, (2) the use of permaculture design principles, improved water management, organic agricultural methods and capacity-building around sustainable agriculture to enhance food yields and reduce external inputs, and (3) the distribution of food packages during the February 'famine month' to the most vulnerable households in our partner communities. Through our conservation actions (in particular enrichment planting in community territories of threatened plant species, community seed banks and improved territorial resource management) the project contributes to halting biodiversity loss and protecting, restoring and promoting sustainable use of ecosystems in partner communities' territories (SDG #15 – life on land). Given the project's focus on developing measures for sustainable plant harvesting, implementing sustainable plant commercialisation and building associated capacities locally and regionally, the project also contributes to SDG # 12 on responsible consumption and production. Additionally, in collaboration with MBLA and their donor RAIN, the project implements improved water management for all community nurseries as well as 50ha of agricultural plots throughout Imegdale and Ait M'hamed communes, contributing to SDG #6 on sustainable water management. The project also addresses SDG #3 on good health and wellbeing through the implementation of the highly successful medical health caravans and the distribution of medicines. Finally, it contributes to both SDG #4 on quality education and SDG#5

on gender equality by supporting the education of 130 Amazigh girls living in Dar Taliba boarding house.

5. Project support to the Conventions, Treaties or Agreements

As detailed in our proposal, one of our explicit objectives of the project is to support the Moroccan government as it implements the Convention on Biological Diversity (CBD), specifically a series of targets under the Global Strategy of Plant Conservation (GSPC) as detailed below:

Target 1: An online flora of all known plants – Since the beginning of 2016, we have collected and identified 1400 new herbarium specimens which have been mounted, labelled and uploaded to the BRAHMS database and published online.

Target 2: An assessment of the conservation status of all known plant species, as far as possible, to guide conservation action - During the first year of this project, GDF has published conservation assessments for five new species with the IUCN to support effective prioritisation of our conservation actions.

Target 3: Information, research and associated outputs, and methods necessary to implement the Strategy developed and shared - GDF has developed an integrated agroecology-biodiversity-hydrology approach to plant conservation that provides communities with livelihoods benefits whilst ensuring plant conservation, more efficient water management and protection of cultural practices of plant and landscape management as well as the development of collaborative methods for implementing the integrated approach through the training of community researchers. We will disseminate this model and approach in Year 2, including at the Global Partnership for Plant Conservation Conference on *Supporting the worldwide implementation of the Global Strategy for Plant Conservation* in Cape Town, South Africa from 28-30 August 2018, organized by the GPPC, in association with the Secretariat of the Convention on Biological Diversity (SCBD) and Botanic Gardens Conservation International (BGCI).

Target 4: At least 15% of each ecological region or vegetation type secured through effective management and/or restoration GDF contributes towards this target through restoration measures that include integrated *ex situ* - *in situ* conservation actions: seeds are collected and conserved in community seed banks, propagated and cultivated in community nurseries, and translocated to the wild through enrichment planting where they enrich existing populations helping to buffer these against environmental change, enhancing connectivity and improving species richness.

Target 7: At least 75% of known threatened plant species conserved in situ GDF activities work towards conservation of threatened taxa *in situ* via a range of methods and practices such as research to assess the ecological needs of the species, management protocols, monitoring and survey of existing populations, application of management protocols and further monitoring to assess population response to management.

Target 13: Indigenous and local knowledge innovations and practices associated with plant resources maintained or increased, as appropriate, to support customary use, sustainable livelihoods, local food security and health care Documenting, promoting and maintaining traditional skills and indigenous conservation practices is the focus of all GDF projects in the High Atlas. We work with indigenous community members to promote their endogenous knowledge and practices, and to support them as they seek to adapt and modify these to ensure sustainable use.

Target 14: The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes This year GDF efforts have focused on training of community members, students, and local

researchers in botany and plant identification, seed collection and conservation, and permaculture design for resilient and diverse agroecosystems.

Target 16: Institutions, networks and partnerships for plant conservation established or strengthened at national, regional and international levels to achieve the targets of this Strategy GDF continues to maintain a strong and wide-reaching network of partners and associates as described in section 2 above and to actively support and mentor our main partner Moroccan Biodiversity and Livelihoods Association, a young and upcoming Moroccan NGO. It also continues to actively support the IUCN specialist group Moroccan Plant and Livelihoods Specialist Group, which is composed of Moroccan and foreign practitioners, scientists and professionals with an interest in Moroccan plants and livelihoods – particularly through the *Making Research Matter* workshop described above.

In addition, under this project GDF contributes to the implementation of the ITPGRFA in the following ways:

Article #5 on Conservation, Exploration, Collection, Characterization, Evaluation and Documentation of Plant Genetic Resources for Food and Agriculture and Article #6 on Sustainable Use of Plant Genetic Resources

We address article 5.1a by proposing a participatory approach to surveying and inventorying agrobiodiversity to increase benefits to farmers. We use ethnobotanical approaches and a systematic approach to assess status and threats to this agrobiodiversity, based in part on our experience red-listing wild plant species according to the IUCN categories and criteria. We address article 5.1c by supporting farmers' efforts to manage, conserve and benefit from their agrobiodiversity on-farm by working with men and women to enhance their cultivation in different areas of local agroecosystems and in both privately and commonly managed areas in the broader High Atlas cultural landscape.

Through our work in Dar Taliba, we provide gender and youth appropriate training and extension services to support the use of agroecological (permaculture) design and techniques for the management of agrobiodiversity (article 6.2c).

Finally, with this project we are developing an efficient and sustainable system of *ex situ* conservation of High Atlas agrobiodiversity by investing in community and regional seed banks, linked to national and international seed banks (5.1e).

6. Project support to poverty alleviation

Whilst it remains too early to accurately assess how our project has supported poverty alleviation, notable progress towards this goal has been made.

With the distribution of plants for cultivation and sale, over the course of this project we expect to improve the monetary income of 2500 Amazigh people by 20%. So far, we have been able to provide 40 members of the local cooperatives from 9 different villages of the Imegdale commune with some 14,992 commercially valuable plants to be distributed amongst their members. We will enhance our existing socioeconomic baseline data by launching a socioeconomic survey process across both communes early in Year 2. We will continue our annual plant distribution in both Ait M'hamed and Imegdale over the next two years and conduct annual follow-up household surveys to measure the increase in income derived from sale of plant products. Plant distribution will be supported by upcoming training designed to build local knowledge and capacities to add value through the transformation of the most commercially promising plant products, and to strengthen the local cooperatives as they engage more actively with wide markets. As our plant commercialisation process takes off, we will be able to catalyse an increase in income for community members from the sustainable harvest and sale of local plants and plant products.

As detailed in our proposal, we support the economic empowerment of women in the communities where we work. This year, we have provided access for 65 girls to secondary education through residency at Dar Taliba boarding house and provided continuous training in

plant conservation and value adding to help enhance their socio-economic opportunities. We have also have signed a new partnership agreement with the ASKA Women's Association who will be trained and responsible for managing the new community plant nursery and plant commercialisation processes in Ait M'hamed as the project continues.

Finally, as highlighted in our proposal, we are working to support the health of communities where we work through the delivery of medical caravans and food distribution during 'famine months' when people are most vulnerable. We are already making progress towards this target after the first year. Our project site of Ait M'hamed is home to an estimated population of 24,000 spread over dozens of remote villages and has only two nurses, one doctor and one dispensary to serve the entire commune. During the one-day medical caravan, a team of 50 people (including paediatricians, gynaecologists and general practitioners, amongst others) carried out more than 1,800 free medical exams for men, women and children (reaching 7.5% of the population). The caravan was such a resounding success that we are providing follow-up care to patients that need it in coming months before launching the same process in Imegdale.

7. Project support to gender equality issues

GDF is committed to ensuring that gender is mainstreamed across all our programmes. We do so by recognising women and men as equal actors and beneficiaries throughout the project cycle; take a gender perspective when evaluating issues arising in project implementation as well as in the assessment of project impact; promote equal male and female participation in all community led workshops and consultations and operate gender-balanced teams at all levels (including Senior Management and Field Teams, to which three new female members have been recruited: Christina Ashford, Pommelien Da Silva Cosme and Hajar Salamat). We have been successful in recruiting and training three female Community Researchers who hold an integral role in engaging with other women in their communities to ensure that applied research results are gender-balanced. As further explained in this report (section 6 above), we place an emphasis on supporting women's empowerment and are pleased to report that during the first year we have been able to target the following: 130 girls at Dar Taliba boarding house, three female CRs received continued employment and on-the-job training, three female members from the Imegdale Znaga Cooperative were trained in sustainable water harvesting and we have partnered with the ASKA Women's Association to lead on the management of the Ait M'hamed community nursery. Given the challenges of working directly with women or on gender issues in the conservative society of the Amazigh communities in the High Atlas and in Morocco more generally, we consider these successes significant.

8. Monitoring and evaluation

Monitoring and evaluation of achievements is built in to the very structure of the project.

To support our M&E process, at the beginning of the project we established a new quarterly internal reporting process to facilitate regular assessment of progress against project indicators and to identify adaptive management needs or changes in strategy as required. In addition to this, we formalised a GDF-MBLA internal communications policy, which all staff adhere to and ensures regular communication and coordination across the project team, including with daily WhatsApp updates, allowing us to monitor progress in the field very closely. On a day-to-basis the Steering Committee is responsible for ensuring the delivery of the project outputs and outcomes. Meetings are held on a bi-monthly basis during which project progress is discussed, implementation issues identified and resolved, and forward planning agreed. It is composed of seven representatives of GDF and MBLA. All GDF/MBLA teams (including Conservation, Ethnobiology, Communications & Coordination) are represented through the Steering Group Committee Membership:

GDF Members: Gary Martin (Mediterranean Programme Lead Consultant); Emily Caruso, (GDF-UK Director); Christina Ashford (GDF-UK Programme Manager); Ugo D'Ambrosio (Mediterranean Ethnobiology Programme Director) and Inanc Tekguc (Media Director).

MBLA Members: Hassan Rankou (Mediterranean Conservation Programme Director and Morocco Institutional Partner Coordinator), Pommelien Da Silva Cosme (Communications Officer).

In March 2018 we launched a yearly external evaluation process for our High Atlas Cultural Landscapes programme (which this project contributes to) led by Moroccan consultant Najwa Es-siari, who spent 10 days in the field and with the team at the end of Year 1. Her report will be made available shortly to the Darwin Initiative.

9. Lessons learnt

The first year of this project has gone relatively smoothly and significant progress has been made against our planned activities (as detailed in section 3).

A significant challenge during the last year relates to the considerable expansion of our High Atlas programme. In 2017, alongside this project, we launched a complementary three-year project ('Integrated Approach to Plant Conservation in the Moroccan High Atlas' funded by the MAVA Foundation) and work under three additional consortium led projects began. In order to manage this expansion and ensure the successful delivery of our programme, we had to rapidly recruit and train new staff (during this reporting year we recruited 5 new staff to the programme – please see Annex 18 for GDF's current organigramme) and simultaneously establish a series of new internal processes and policies to support project coordination, monitoring, evaluation and communications. This scenario challenged our ability to be effective in project implementation, in particular for new areas of work such as plant commercialisation. Although the unexpected nature of this scenario meant that there was little we could do to prepare for it, a powerful lesson learned for us is to have our internal strategies, policies and processes established in advance of organisational shifts, to ensure that these shifts take place in a systematic, stress-free and productive way.

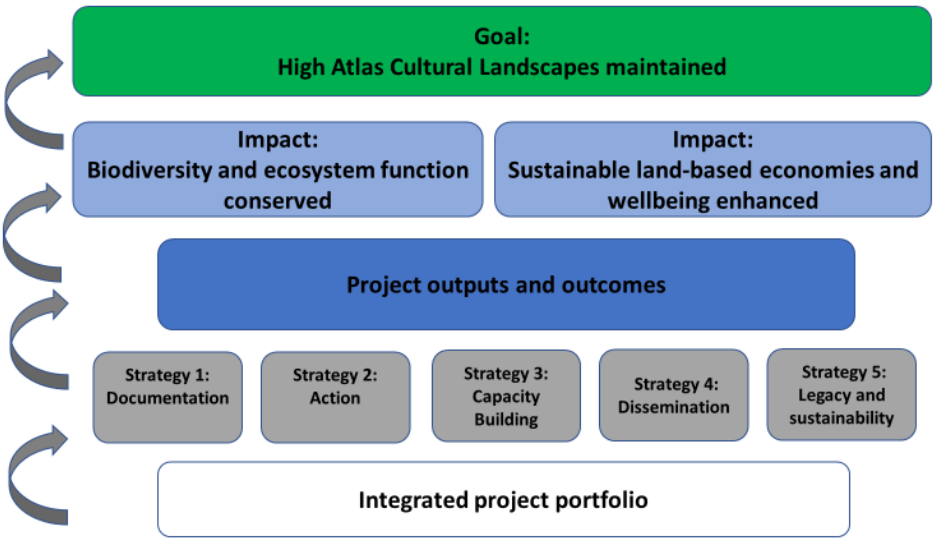
A further challenge which we faced relates to the lengthy process involved in establishing MoUs and Partnership agreements with all relevant local authorities. These are required to carry out work in the project sites. This has translated into some delays in activities such as the establishment of the new community nursery in Ait M'hamed. The lesson learned is, again, that the earlier one starts with establishing the framework and foundations for project delivery, the better. This is not always possible if funds are not immediately available for staff time and travel, but some ground can be laid in advance especially for processes that require a great deal of in-person communication and negotiation. Despite this challenge, we are pleased to report that all necessary agreements are now in place to support the continued delivery of this project over the next two years.

10. Actions taken in response to previous reviews (if applicable) NA. This is the first annual report for the project.

11. Other comments on progress not covered elsewhere NA

12. Sustainability and legacy

This is a stand-alone project that dovetails with our broader and longer-term High Atlas Cultural Practices Programme (HACL) in Morocco where our goal is to maintain cultural practices of conservation which have, for millennia, conserved the rich biodiversity of the region and supported rural economies and livelihoods programme. To achieve our goal, we implement a five-pronged strategy of which legacy and sustainability is one:



Under this strategy, our focus is to support the scaling-up of outcomes both geographically and over time. We are pleased to report that last year our programme expanded significantly and during this reporting year it was funded by the UK Government Darwin Initiative, MAVA Foundation, GlobalGiving donations and (through our key implementing partner the Moroccan Biodiversity and Livelihoods Association - MBLA) the Replenish Africa Initiative (RAIN) and UNDP Small Grants Programme. We have submitted concept notes for two new 3-year projects to complement ongoing activities under the programme (to the Critical Ecosystem Partnership Fund and the ITPGRFA's Benefit-sharing Fund). If successful, these would allow us to expand our reach - we are currently scaling up our integrated agroecology-biodiversity-hydrology approach to a third project site in the commune of Oukeïmeden – as well as consolidate our financial stability in the medium-term.

We have also made significant strides in building local capacity to deliver quality biodiversity conservation and livelihoods projects throughout the High Atlas. The MBLA team continues to grow: new community researchers and young conservationists have joined the team and the organisation continues to fundraise, develop its grant-management capacities and extend its reach. It also has created a strong network of collaborators and supporters locally and established excellent partnerships with all stakeholders. These include the local cooperatives in our partner communes that will be responsible for ensuring the maintenance of the project outcome. The building of local and national capacities in this way forms the foundation of our legacy and sustainability.

Our exit strategy as described in our proposal remains the same.

13. Darwin identity

GDF actively and regularly shares progress updates and news from our Darwin funded project as part of our wider High Atlas Cultural Landscape Programme on its website, social media profile (with 481 Twitter, 2,940 Facebook and 130 Instagram followers), our annual Newsletter distributed to our 3,280 subscribers and in GDF's Annual Report. Please note that our 2017 Annual Report will be shared with Darwin following its publication in May this year. To support our communication efforts and increase our reach and capacity, in December 2017 we recruited Pommelien Da Silva Cosme as our new Communications and Field Officer based in Morocco (please find our current Organigramme in Annex 18).

Support received from the Darwin Initiative is recognised on our dedicated project page and referenced across our blog updates where relevant and appropriate. Please see our recent

blog post on the Darwin funded Health Caravan as an example and Annex 19 for a summary of our online activity during this reporting period.

We are also pleased to report that early this year, GDF's implementing partner MBLA launched its new website recognising funding from the Darwin Initiative and displaying its logo. The Darwin logo is also displayed alongside our other programme donors on materials which we share with local communities when communicating our work, this included informational flyers and posters used at community biocultural festivals for example (see Annex 20).

We also regularly contribute to the Darwin newsletter when the theme is relevant for our project, and just submitted an article on our project for the upcoming 25th Anniversary commemorative issue.

14. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2017 – 31 March 2018)

Project spend (indicative) since last annual report	2017/18 Grant (£)	2017/18 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)			0.4%	NA
Consultancy costs			0%	NA
Overhead Costs			0%	NA
Travel and subsistence			5.5%	NA
Operating Costs			2.3%	NA
Capital items (see below)				
Monitoring & Evaluation (M&E)				
Others (see below)			9.9%	NA
TOTAL			**1.3%**	**NA**

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2017-2018

Project summary	Measurable Indicators	Progress and Achievements April 2017 - March 2018	Actions required/planned for next period
Impact Atlas Mountains Amazigh people are empowered to expand their role as stewards of Important Plant Areas and plant genetic resources while improving their livelihoods in a changing socio-economic context.		Considering that we have just completed the first year of this project, it is too early to assess the progress against our project's overall expected impact.	[redacted]
Outcome Integrated conservation of regionally threatened culturally-important plant species and management of Important Plant Areas in the Atlas Mountains is achieved through Amazigh community action and capacity building, accompanied by improved livelihoods.	0.1 Twelve regionally threatened plant species and varieties are assessed, cultivated, distributed, sustainably harvested and monitored over three years 0.2 In three rural municipalities of the High Atlas, 2500 people, including from the 50 most vulnerable households, benefit from modest income increases and improved wellbeing through useful plant cultivation and marketing, irrigation, access to secondary school for girls, health improvements and adequate nutrition. 0.3 Three hundred and twenty-five people benefit from capacity building delivered in training courses, workshops, a community exchange, and on-the-job experience by project end 0.4 One detailed case study of implementation of the new national law #29-05 on the protection and commercialization of wild flora and fauna and its relationship to law #22-07 on	0.1 Conservation assessments for 12 regionally threatened plant species and varieties completed (five published on the IUCN Red List of Threatened Species). Cultivation, plant quality testing and distribution activities begun. 0.2 Distribution of 14,992 valuable plants to households in 9 villages of Imegdale carried out. Irrigation systems for both community nurseries established, 65 girls gain residency to secondary school, 1800 people in Ait M'hamed receive medical consultations and 70 receive food packages during vulnerable famine period. 0.3 Delivered training to 130 students of Dar Taliba boarding house on a broad range of conservation topics (see activity update above for full details). 18 members (including three women) of the Imegdale Znaga Cooperative received training on sustainable water harvesting and a team of six CRs received continuous on the job training.	0.1 Remaining seven conservation assessments to be published with IUCN, cultivation and plant quality testing of all 12 species to completed and annual distribution to be continued. 0.2 Medical caravans and food distribution to be carried out in Imegdale partner community in September/October and follow up medical consultations to be delivered in Ait M'hamed to those identified as most vulnerable during year 1 medical caravans; plant distributions to begin in Ait M'hamed in December 2018; ongoing training and education of Dar Taliba residents 0.3 Workshops on plant transformation, processing and value-adding to be delivered by GDF partner Rachid Jaafari, Founder-Director of the holistic training center Terre d'Eveil to Imegdale Znaga Cooperative, ASKA Women's Association and Dar Taliba students. Continued training for existing 6 community

	protected areas developed and disseminated within Morocco, by year 3 0.5 A participatory process of characterizing 50 additional species for the household basket of useful plant resources that bring monetary and non-monetary benefits, launched by year 2	0.4 Initial collation and database revision for the repatriation of data on fauna and flora commercialised in Marrakech markets 0.5 30 full conservation assessments completed, and 20 desk assessments completed; ethnobotanical survey of these 50-species completed	researchers and additional 3/4 CRs to be recruited in Year 2. 0.4 Full data repatriation to the Marrakech delegation of the Ministry of Water and Forests; work to start on the case study of law #29-05 0.5 Remaining 20 conservation assessments completed with fieldwork; phenotypic, genetic, ecological and morphological characterisations of selected species to be launched.
Output 1. Conservation action plans for threatened useful plants implemented	1.1 Conservation assessments and action plans for 12 species of threatened useful plants updated and drafted in year 1; published in year 2 1.2 Collection and conservation of seed of these 12 species in community seed banks in year one 1.3 Market analysis and business plans for sustainable commercialization of the six most commercially promising species, by year 2 1.4 Cultivation of at least 2000 plants of each of the 12 species in community nurseries by year 1, and enrichment planting by year 2 1.5 Participatory ecological monitoring and matrix modelling of population trends in enrichment planted areas by year 3 1.6 Journal article on outcome of conservation actions plans by year 3	1.1 Species accounts and conservation assessments for all 12-species completed. See section 3.1 and Annexes 1 and 2 1.2 Seeds of 7 species collected and stored in community seed banks. See section 3.1 and Annex 6b. 1.3. Phenotypic, genetic, ecological and morphological characterisation of 6 species selected as the most commercially viable begun. 1.4. Cultivation of 2000 plants of all 12 species in Imegdale community nursery achieved and plantation in Ait M'hamed begun. See section 3.1 and Annexes 3 and 4. Enrichment planting was conducted in Imegdale by local communities (following plant distribution) in designated areas and local terraces to reduce the pressure of collection on wild habitat and populations. 1.5 Annual cycle of participatory ecological monitoring and remote sensing completed (see section 3.1). 1.6 No update. To be completed in Year 3	
Activity 1.1 Conservation assessments compiled and published, including GIS mapping of species and threats		12 conservation assessments completed. 5 published on the IUCN Red List for Threatened Species. Please see activity narrative report for further details and means of verification (Annexes 1 and 2)	

Activity 1.2, Community seed banks established, and seeds collected and stored		60% completed - community seed bank accession records for achieved for 7 species. Accession records for the remining 4 species will be completed in Year 2. Please see activity narrative report for further details and means of verification (Annex 6b)
Activity 1.3 Market analyses and business plans elaborated		Methodological approach refined and expert panel constituted. Full characterisation begun for 6 species selected for their commercial potential (*Quercus ilex, Fraxinus dimorpha, Ceratonia siliqua, Thymus satureioides, Mentha sauveolens* and *Hordeum vulgare*) as the first step towards developing market analyses and business plans for these species. To be completed in Year 2.
Activity 1.4 Cultivation of plants in community plant nurseries established		2000 plants of all 12-species cultivated in Imegdale during year 1 and cultivation started in Ait M'hamed. Please see activity narrative report for further details and means of verification (Annexes 3, 4 and 5).
Activity 1.5 Quality of plants grown controlled through participatory processes and phytochemical analysis and necessary adjustments made		All plant specimens and equipment collected for laboratory-based phytochemical analysis to compare the quality of (1) wild specimens with those cultivated in the community nurseries and (2) plants of the same species grown in the two nurseries.
Activity 1.6 Enrichment planting implemented		Enrichment planting carried out in Imegdale through plant distribution to local community members (Annexes 3, 4, 5 and 10)
Activity 1.7 Participatory ecological monitoring and matrix modelling completed		Annual cycle of participatory ecological monitoring and remote sensing of species habitat and enrichment planting areas completed.
Activity 1.8 Peer-reviewed article on conservation actions submitted		No update.
Output 2. Livelihood improvements for Amazigh villages, households and residents achieved	2.1 Annual distribution of commercially valuable plants – an average of 10 useful trees (e.g. almond, oak, ash as well as carob, olive, walnut and others) and 100 medicinal and aromatic herbs (e.g cultivated thyme, mint, sage) – to 400 households in 5 Amazigh villages, compared with no distribution at present 2.2 Medicinal and aromatic plants (e.g. thyme, mint, etc) and produce of useful trees (e.g. almond, carob, etc.) are of suitable commercial quality, as tested through participatory processes	2.1 Completed - distribution of 14,992 valuable plants carried out in 9 villages of Imegdale (see Annex 10). 2.2. To support the sustainable plant commercialisation element of this project, this year we began laboratory-based plant quality testing. This involves conducting two comparative analysis of the chemical composition and essential oils for all 12 species to better understand 1) the difference between wild and nursery-cultivated plants and 2) explore difference in quality between plants grown in the two community nurseries. We recruited Abdellah Aghraz, a part-time Plant Quality and Lab Scientist, to deliver this project element; all materials and

	with farmers and commercial buyers and laboratory-based phytochemical analysis, at end of year 1 and year 2. 2.3 Improved irrigation of 50 hectares of arable land benefitting a total of 5 Amazigh villages, 400 households and 2500 residents, on plots currently with insufficient water for cultivation, by year 2 2.4 Increase of 20% in annual income derived from sale of commercialized medicinal and aromatic plants from the baseline of 1000 – 2000 Dhs (£75 - £150) annually per household, by year three 2.5 Reduction, in children of 0 -15 years, by 75% in incidence of intestinal parasites (currently found in 30% of this age group), goitre (20% of the age group) and dermatological problems (3%) by year 3 2.6 Access to secondary school for 75 girls from 5 communities through residency in boarding houses over three years, compared to no girls in secondary school from these families 2.7 Annual supplements of locally-produced food provided to approximately 25 highly vulnerable households in February 'famine period' compared to no food relief presently)	plant specimens have now been collected and lab testing will be completed during Year 2. Participatory processes to evaluate plant quality will be carried out simultaneously during Year 2. 2.3 We have established new irrigation systems for both community nurseries established. We have begun design consultations for the repair of existing infrastructure (including *seguias* – traditional water canals) and the construction of new irrigation systems to serve arable lands in partner communities. This will provide irrigation to large tracts of land currently with insufficient water for cultivation – 25 hectares each in Imegdale and Ait M'hamed. 2.4 Early in year 2, we will carry out a household survey to complete our socioeconomic baseline upon which to measure income increase in year 3. Actions implemented in Year 1 towards increasing incomes include the distribution of nearly 15,000 useful and valuable plants in Imegdale in 2017 and the launch of the process to develop market analyses and business plans for selected species. 2.5 Baseline data exists; survey to be carried out in year 3 to measure change. 2.6 In the first year alone, though our continued support of Dar Taliba boarding house, 65 new students gained residency in the September 2017 (the new academic year). See section 3.1 and Annex 14. We are therefore on target to meet this indicator ahead of schedule. 2.7 This year we delivered food packages to 70 vulnerable households across Ait M'hamed during the February 'famine period'. See section 3.1 and Annex 13.
Activity 2.1. Annual distribution of an average of 10 trees and 100 MAPs per household		Completed. 14,992 valuable plants distributed to households of 9 villages in Imegdale during December and January. Please see activity narrative report for further details and means of verification (Annex 10)
Activity 2.2. Efficient irrigation systems for community nurseries and smallholder parcels established		Efficient irrigation systems have been established in three community nurseries (Imegdale, Ait M'hamed and Dar Taliba).

Activity 2.3 Annual health caravans carried out		Completed. 1800 people in Ait M'hamed receive free health consultation and medicine. Please see activity narrative report for further details and means of verification (Annexes 11 and 12)
2.4 Annual food supplements distributed during 'famine month' to most vulnerable families		Completed. 70 households receive food packages during February in Ait M'hamed. Please see activity narrative report for further details and means of verification (Annex 13)
2.5 Annual selection of girls for entry to boarding houses completed		Completed. 65 girls obtain residency at Dar Taliba boarding house. Please see activity narrative report for further details and means of verification (Annex 14)
Output 3. Capacity-building for Amazigh associations, community members, community researchers and institutional representatives delivered.	3.1 Twelve leaders (50% women) of 3 community associations participate in 3 training courses on economical use of water, plant product marketing and new Moroccan laws on wild species conservation and commercialization by year 3 3.2 Two hundred community members (40% women) participate in 12 workshops on water harvesting, sustainable harvest and adding value to plant resources by year 3 3.3 Ten community researchers (6 men/4 women) receive continuous on-the-job training over 3 years 3.4 Seventy-five girls in secondary school boarding houses participate in 2 workshops on transformation and adding value to plant products, every year 3.5 Twenty-five representatives of institutions working on biodiversity and livelihoods in Atlas Mountains throughout North Africa participate in a Community Exchange on the topic of wild	3.1 and 3.2 - 18 members of the Imegdale Znaga Cooperative (including three women) participated in an annual workshop on sustainable water harvesting. During Year 2, workshops on plant transformation, processing and value-adding are planned. 3.3 Six community researchers (three men and three women) have received continuous on the job training throughout year 1. As we expand our programme to a third project site (Oukeïmeden) we will recruit and train a further 3 – 4 local community researchers during the remainder of this project. 3.4 All 130 students have participated in classes focused on the following topics: permaculture training, making organic fertiliser, seed planting, sustainable plant harvesting and transformation of valuable plants. 3.5 No update - to be completed in Year 2.

	plant species conservation, community seed banks and nurseries in year 2	
Activity 3.1 Training courses on economical use of water, plant product marketing and new Moroccan laws implemented		To be completed in year 2
Activity 3.2 Community workshops on water harvesting, sustainable plant harvesting and adding value to plant resources implemented		Workshops on sustainable water harvesting to delivered to 130 students at Dar Taliba boarding house and to 18 members of Imegdale Znaga Cooperative. See Annexes 15, 16a and 16b.
Activity 3.3 Community researchers trained		Completed and ongoing. All six community researchers received continuous on the job training. See section 3.1
Activity 3.4 Workshops for secondary school girls on transformation and adding value to plant products carried out		Completed and ongoing. All 130 students of Dar Taliba boarding house trained. Please see activity narrative report for further details and means of verification (Annexes 15, 16a and 16b)
Activity 3.5 Community Exchange on wild plant species conservation, community seed banks and nurseries implemented		To be completed in Year 2 as set out in project implementation plan
Output 4. Case study on implementation of new national law #29-05 and its relationship to law #22-07 submitted	4.1 Repatriation of 10 years of GDF data on local commercialization of fauna and flora to the Marrakech Delegation of Water and Forests 4.2 Action plan for participatory natural resource management strategy around Toubkal National Park under law #22-07 on protected areas developed with the Marrakech Delegation, by year 2 4.3 Permits under law #29-05 for seed collection, multiplication and sale for 12 wild plants species obtained, by year 1 4.4 Working paper on implementation of new national law #29-05 completed and disseminated to government agencies, academic institutions and non-governmental organizations, by year 3 4.5 Journal article on protection and marketing of wild flora submitted, by year 3	4.1Initial data collation for the repatriation of data on flora and fauna commercialised in Marrakech markets 4.2 Research carried out on community-based resource management and initial community consultations planned for the development of participatory resource management action plan.4.3 Permits for seed collection and multiplication have been obtained during year 1. We will obtain the permit for plant sale in Year 2. 4.4. No progress to report. We remain on track to complete the working paper on during Year 3 4.5. No progress to report. We remain on track to complete journal article in Year 3

Activity 4.1 GDF database on commercialization of fauna and flora in Marrakech markets repatriated		Process has begun and will be completed in Year 2.
Activity 4.2 Participatory action plan on natural resource management around Toubkal National Park elaborated		To be completed in Year 2 as set out in project implementation plan
Activity 4.3 Permits for seed collection, multiplication and sale sought and obtained		The permits for seed collection and multiplication have been obtained and Seed Protocol established. Please see section 3.1 and Annex 6a. The permit for plant sale will be obtained in Year 2.
Activity 4.4 Working paper on implementation of law 29-05 completed and disseminated		To be completed in Year 3 as set out in project implementation plan
Activity 4.5 Peer-reviewed paper on protection and marketing of wild flora submitted		To be completed in Year 3 as set out in project implementation plan
Output 5. Identification and characterization of additional plant genetic resources completed	5.1 Floristic and ethnobotanical surveys provide information on an additional 50 species of useful plants by year 2 5.2 Conservation assessments of 50 additional useful plants completed by year 3 5.3 Initial analyses of market potential prepared for at least 20 species by year 3 5.4 Seed collection, cultivation and distribution to community members, on a small experimental scale, of at least 10 additional species of high potential, by year 3 5.5 Popular manual, in Arabic and French, of the household basket of more than 50 useful plants that can improve local livelihoods and wellbeing, disseminated in High Atlas communities by year 3 5.6 Journal article on cultural keystone species of the High Atlas	5.1 Floristic and ethnobotanical surveys on the 50-additional species have been completed 5.2 Conservation assessments of 30 additional species have been completed; desk-based assessments for the other 20 have been completed (fieldwork to finalise them will be carried out in Year 2) 5.3 To begin in Year 2 5.4 To begin in Year 3 5.5 To be completed in Year 3 5.6 The process has begun and we will complete in advance of the Year 3 deadline
Activity 5.1 Floristic and ethnobotanical surveys conducted		Completed. Ethnobotanical surveys carried out in Year 1 for an additional 50 species which includes detailed information on how each is used. Please see activity narrative report for further details and means of verification (Annex 17)

Activity 5.2 Conservation assessments of 50 additional species completed	80% complete – conservation assessments for 30 species completed and desk assessments carried out for a further 20 species. Please see activity narrative report for further details and means of verification.
Activity 5.3 Initial market analyses of 20 species achieved	To be completed in Year 3 as set out in project implementation plan
Activity 5.4 Seed of at least 10 species collected and cultivated; plants distributed	To be completed in Year 2 as set out in project implementation plan
Activity 5.5 Popular manual completed and disseminated	To be completed in Year 3 as set out in project implementation plan
Activity 5.6 Peer-reviewed paper on cultural keystone species submitted	To be completed in Year 3 as set out in project implementation plan

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

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Impact: (Max 30 words) Atlas Mountains Amazigh people are empowered to expand their role as stewards of Important Plant Areas and plant genetic resources while improving their livelihoods in a changing socio-economic context.			
Outcome: (Max 30 words) Integrated conservation of regionally threatened culturally-important plant species and management of Important Plant Areas in the Atlas Mountains is achieved through Amazigh community action and capacity-building, accompanied by improved livelihoods.	0.1 Twelve regionally threatened plant species and varieties are assessed, cultivated, distributed, sustainably harvested and monitored over three years 0.2 In three rural municipalities of the High Atlas, 2500 people, including from the 50 most vulnerable households, benefit from modest income increases and improved wellbeing through useful plant cultivation and marketing, irrigation, access to secondary school for girls, health improvements and adequate nutrition. 0.3 Three hundred and twenty-five people benefit from capacity-building delivered in training courses, workshops, a community exchange, and on-the-job experience by project end 0.4 One detailed case study of implementation of the new national law #29-05 on the protection and commercialization of wild flora and fauna and its relationship to law #22-07 on protected areas developed and disseminated within Morocco, by year 3 0.5 A participatory process of characterizing 50 additional species for the household basket of useful plant resources that bring monetary and non-monetary benefits, launched by year 2	0.1 Conservation assessments, business plans, cultivation and distribution records, harvesting and monitoring data, peer-reviewed article 0.2 Project updates and photo essays, list of secondary school students, results of household surveys, medical assessments and participatory appraisals. 0.3 Exchange, training course and workshop reports with participant lists; photo essay on community researchers 0.4 Action plan, working paper and peer-reviewed article 0.5 Herbarium collections, database, popular manual and peer-reviewed article on cultural keystone species	Selected species are easily cultivated and resilient to attested harvest levels Community associations capable of consensus on the most vulnerable families in their villages Community members and students available and interested in participating in capacity-building events Government authorities open to collaboration on implementation of new law Sufficient candidate useful species
Outputs: 1. Conservation action plans for threatened useful plants implemented	1.1 Conservation assessments and action plans for 12 species of threatened useful plants updated and drafted in year 1; published in year 2 1.2 Collection and conservation of seed of these 12 species in community seed banks in year one	1.1 Updated assessments published and uploaded to IUCN Red List of Threatened Species 1.2 Seed collection protocols and community seed bank	Government permission for collection of seed granted under new law #29-05 Viable seed or other germplasm available and not affected by drought, insect

	1.3 Market analysis and business plans for sustainable commercialization of the six most commercially promising species, by year 2 1.4 Cultivation of at least 2000 plants of each of the 12 species in community nurseries by year 1, and enrichment planting by year 2 1.5 Participatory ecological monitoring and matrix modelling of population trends in enrichment planted areas by year 3 1.6 Journal article on outcome of conservation actions plans by year 3	accession records for all species 1.3 Written business plans, incorporating market analysis 1.4 Community nursery and enrichment planting records and photo documentation 1.5. Monitoring and matrix modelling data sets and photo documentation 1.6 Manuscript and confirmation email of article submission	predation or other environmental factors Multiplication of threatened plants does not confront problems of seed dormancy or recalcitrance Community members agree to participate in enrichment planting trials on their lands
2. Livelihood improvements for Amazigh villages, households and residents achieved	2.1 Annual distribution of commercially valuable plants – an average of 10 useful trees (e.g. almond, oak, ash as well as carob, olive, walnut and others) and 100 medicinal and aromatic herbs (e.g cultivated thyme, mint, sage) – to 400 households in 5 Amazigh villages, compared with no distribution at present 2.2 Medicinal and aromatic plants (e.g. thyme, mint, etc) and produce of useful trees (e.g. almond, carob, etc.) are of suitable commercial quality, as tested through participatory processes with farmers and commercial buyers and laboratory-based phytochemical analysis, at end of year 1 and year 2. 2.3 Improved irrigation of 50 hectares of arable land benefitting a total of 5 Amazigh villages, 400 households and 2500 residents, on plots currently with insufficient water for cultivation, by year 2 2.4 Increase of 20% in annual income derived from sale of commercialized medicinal and aromatic plants from the baseline of 1000 – 2000 Dhs (£75 - £150) annually per household, by year three	2.1 Plant distribution records 2.2 Community research protocols; reports on plant quality and commercial viability, including recommendations for adjustments to improve quality 2.3 Water engineering reports detailing irrigation infrastructure and m3 of water provided 2.4 Household surveys on income derived from sale of plant products 2.5 Reports from annual public health caravans, including sections from dermatologists, gastroenterologists and other specialists	Sufficient and suitable useful plants can be grown in community nurseries or purchased at reasonable cost from commercial nurseries Drought conditions, limiting water availability and flow, do not prevail Irrigation leads to higher production of medicinal and aromatic plants; associations negotiate beneficial sale prices. Families willing to send children for medical visits and their girls to secondary school

	2.5 Reduction, in children of 0 -15 years, by 75% in incidence of intestinal parasites (currently found in 30% of this age group), goitre (20% of the age group) and dermatological problems (3%) by year 3 2.6 Access to secondary school for 75 girls from 5 communities through residency in boarding houses over three years, compared to no girls in secondary school from these families 2.7 Annual supplements of locally-produced food provided to approximately 25 highly vulnerable households in February 'famine period' compared to no food relief presently	2.6 Lists of boarding house residents with village of origin; student surveys 2.7 List of beneficiaries, and of contents of supplementary food packages	Most vulnerable families easily identified
3. Capacity-building for Amazigh associations, community members, community researchers and institutional representatives delivered	3.1 Twelve leaders (50% women) of 3 community associations participate in 3 training courses on economical use of water, plant product marketing and new Moroccan laws on wild species conservation and commercialization by year 3 3.2 Two hundred community members (40% women) participate in 12 workshops on water harvesting, sustainable harvest and adding value to plant resources by year 3 3.3 Ten community researchers (6 men/4 women) receive continuous on-the-job training over 3 years 3.4 Seventy-five girls in secondary school boarding houses participate in 2 workshops on transformation and adding value to plant products, every year 3.5 Twenty-five representatives of institutions working on biodiversity and livelihoods in Atlas Mountains throughout North Africa participate in a Community Exchange on the topic of wild plant species conservation, community seed banks and nurseries in year 2	3.1 Training course reports, including participant list and evaluation 3.2 Workshop reports, including participant list and evaluation 3.3 Community researcher work records; interviews and photo essays 3.4 Workshop videos; reports, including participant list and evaluation 3.5 Exchange video, photo essay and report including participant list and evaluation	Association leaders, community members and students available to participate in training events Permission granted by participants to film and photographs events Sufficient co-funding obtained to allow candidates from other North African countries and areas of the Mediterranean to attend the Community Exchange
4. Case study on implementation of new national law #29-05 on the protection and	4.1 Repatriation of 10 years of GDF data on local commercialization of fauna and flora to the Marrakech Delegation of Water and Forests	4.1. Fauna and flora market inventory database formatted for use by government agency	Government authorities find database information relevant for implementation of law #29-05

commercialization of wild flora and fauna and its relationship to law #22-07 on protected areas submitted	4.2 Action plan for participatory natural resource management strategy around Toubkal National Park under law #22-07 on protected areas developed with the Marrakech Delegation, by year 2 4.3 Permits under law #29-05 for seed collection, multiplication and sale for 12 wild plants species obtained, by year 1 4.4 Working paper on implementation of new national law #29-05 completed and disseminated to government agencies, academic institutions and non-governmental organizations, by year 3 4.5 Journal article on protection and marketing of wild flora submitted, by year 3	4.2 Written action plan, submitted in French 4.3 Copies of permit applications and approvals 4.4 PDF of working paper 4.5 Manuscript and confirmation email of article submission	Government authorities grant permission in a timely manner, as envisioned by law #29-05 Sufficient data available for publication by end of project Community permission granted to use local surveys and community research data in publication
5. Identification and characterization of additional plant genetic resources completed	5.1 Floristic and ethnobotanical surveys provide information on an additional 50 species of useful plants by year 2 5.2 Conservation assessments of 50 additional useful plants completed by year 3 5.3 Initial analyses of market potential prepared for at least 20 species by year 3 5.4 Seed collection, cultivation and distribution to community members, on a small experimental scale, of at least 10 additional species of high potential, by year 3 5.5 Popular manual, in Arabic and French, of the household basket of more than 50 useful plants that can improve local livelihoods and wellbeing, disseminated in High Atlas communities by year 3 5.6 Journal article on cultural keystone species of the High Atlas	5.1 Databases of floristic and ethnobotanical surveys; useful plant photos 5.2 Conservation assessments published and uploaded to IUCN Red List of Threatened Species 5.3 Report on market potential analysis 5.4 Collection and distribution records, photo essays 5.5 PDF of popular manual 6.6 Manuscript and confirmation email of article submission	Existence of at least 50 additional species about which community members share their knowledge Sufficient information available about market demand and commercial potential of selected species Collected seeds do not demonstrate excessive dormancy or recalcitrance Community permission granted to publish traditional knowledge about useful plants.
Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1) **Output 1. Conservation action plans for threatened useful plants implemented**			

1.1 Conservation assessments compiled and published, including GIS mapping of species and threats
1.2 Community seed banks established, and seeds collected and stored
1.3 Market analyses and business plans elaborated
1.4 Cultivation of plants in community plant nurseries established
1.5 Quality of plants grown controlled through participatory processes and phytochemical analysis and necessary adjustments made
1.6 Enrichment planting implemented
1.7 Participatory ecological monitoring and matrix modelling completed
1.8 Peer-reviewed article on conservation actions submitted

Output 2. Livelihood improvements for Amazigh villages, households and residents achieved

2.1 Annual distribution of an average of 10 trees and 100 MAPs per household
2.2 Efficient irrigation systems for community nurseries and smallholder parcels established
2.3 Annual health caravans carried out
2.4 Annual food supplements distributed during 'famine month' to most vulnerable families
2.5 Annual selection of girls for entry to boarding houses completed

Output 3. Capacity-building for Amazigh associations, community members, community researchers and institutional representatives delivered

3.1 Training courses on economical use of water, plant product marketing and new Moroccan laws implemented
3.2 Community workshops on water harvesting, sustainable plant harvesting and adding value to plant resources implemented
3.3 Community researchers trained
3.4 Workshops for secondary school girls on transformation and adding value to plant products carried out
3.5 Community Exchange on wild plant species conservation, community seed banks and nurseries implemented

Output 4. Case study on implementation of new national law #29-05 and its relationship to law #22-07 submitted

4.1 GDF database on commercialization of fauna and flora in Marrakech markets repatriated
4.2 Participatory action plan on natural resource management around Toubkal National Park elaborated
4.3 Permits for seed collection, multiplication and sale sought and obtained
4.4 Working paper on implementation of law 29-05 completed and disseminated
4.5 Peer-reviewed paper on protection and marketing of wild flora submitted

Output 5. **Identification and characterization of additional plant genetic resources completed**

5.1 Floristic and ethnobotanical surveys conducted
5.2 Conservation assessments of 50 additional species completed
5.3 Initial market analyses of 20 species achieved
5.4 Seed of at least 10 species collected and cultivated; plants distributed
5.5 Popular manual completed and disseminated

5.6 Peer-reviewed paper on cultural keystone species submitted

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
4A	Number of undergraduate students to receive training *	14 M and 12 F	Moroccan and other African countries	26 (4 of which received in the field training on ecological monitoring and climate change data gathering)			26	60
4C	Number of postgraduate students to receive training *	11 M and 7 F	Moroccan, American, British and French	18 (3 of which received 6- week field training in ethnobotanical techniques)			18	60
5	Number of people to receive at least one year of training (which does not fall into categories 1-4 above) *	3 M and F	Moroccan	6 Community Researchers receive continues on-the-job training			6	10
6A	Number of people to receive other forms of education/training (which does not fall into categories 1-5 above) *	15 M and 133 F		148 Total. 130 students of Dar Taliba boarding house trained in a range of conservation topics and 18 members of the Imegdale Znaga Cooperative received training on sustainable water harvesting (see section 3).				200
7	Number of (i.e., different types - not volume - of material			Manuals (English and French) produced on the following topics: 1) biodiversity conservation	8			12

	produced) training materials to be produced for use by host country			monitoring and assessment, 2) floristic and ecological monitoring 3) ecological remote sensing and modelling 4) seed bank techniques 5) climate change modelling 6) ethnobotany techniques 7) team work and time management 8) community-based research design				

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)
Fraxinus dimorpha, Wild Ash	Electronic journal	Rankou, H., M'SOU , S., Alifriqui , M. & Martin, G. 2017	Male	British-Moroccan	The IUCN Red List of Threatened Species, United Kingdom	http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T109366166A109366170.en
Quercus ilex, Holm Oak	Electronic journal	Rankou, H., M'SOU , S., Barstow, M., Harvey-Brown, Y. & Martin, G. 2017	Male	British-Moroccan	The IUCN Red List of Threatened Species, United Kingdom	http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T62537A3116134.en
Ceratonia siliqua, Carob	Electronic journal	Rankou, H., M'SOU , S., Chadburn, H., Rivers, M.C., Ouhammou, A. & Martin, G. 2017	Male	British-Moroccan	The IUCN Red List of Threatened Species, United Kingdom	http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T202951A112823254.en
Anacyclus pyrethrum, Atlas Daisy	Electronic journal	Rankou, H., Ouhammou, A., Taleb, M., Manzanilla, V. & Martin, G. 2017	Male	British-Moroccan	The IUCN Red List of Threatened Species, United Kingdom	http://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T202924A53798702.en

Pistacia atlantica - Desf	Electronic journal	Rankou, H., M'SOU , S., Ait Babahmad, R.A., Ouhammou, A., Alifriqui , M. & Martin, G. 2017	Male	British-Moroccan	The IUCN Red List of Threatened Species, United Kingdom	-

Annex 4 Onwards – supplementary material (optional but encouraged as evidence of project achievement)

Annex 1: Darwin species list

Annex 2: IUCN Assessment example (Fraxinus dimorpha)

Annex 3: Nursery Species List Ait M'hamed

Annex 4 - Nursery Species List Imegdale

Annex 5 - Photo Essay Imegdale and Ait M'hamed

Annex 6a - High Atlas Seed Banking Protocol

Annex 6b - Darwin seed accession records

Annex 7 - Plant and Seed identification workshop

Annex 8 - Darwin seed accession records

Annex 9 - HACL Ecological Monitoring Results

Annex 10 - Plant distribution records

Annex 11 - Medical caravan report

Annex 12 - Photo essay medical caravans

Annex 13 - Food distribution records

Annex 14 - Dar Taliba Residency records

Annex 15 - Workshop participants Dar Taliba

Annex 16a - Photo essay Dar Taliba

Annex 16b – Dar Taliba training video

Annex 17 - GDF ethnobotanical database

Annex 18 - Organigramme GDF March 2018

Annex 19 - Social media activity

Annex 20 - Project poster and donor identity

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.	Yes
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.	No
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.	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.	