

Darwin Initiative Main: Final Report

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

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

Submission Deadline: no later than 3 months after agreed end date.

Submit to: BCF-Reports@niras.com including your project ref in the subject line.

Darwin Initiative Project Information

Project reference	27-001
Project title	Conserving High Atlas agrobiodiversity to improve Amazigh livelihoods in Morocco
Country(ies)	Morocco
Lead Partner	Global Diversity Foundation
Project partner(s)	Moroccan Biodiversity and Livelihoods Association (MBLA); High Commissariat for Water and Forests and Desertification (HCWFD); Cadi Ayyad University; Cagliari Botanical Gardens; Institut Agronomique et Vétérinaire Hassan II, Rabat (IAV); International Center for Agricultural Research in the Dry Areas (ICARDA) and Agropolis Resource Center for Crop Conservation, Adaptation and Diversity (ARCAD); National Institute for Agronomic Research (INRA); Slow Food International; University of Cagliari; Provincial Directorate of Agriculture (DPA); Platform for Agrobiodiversity Research (PAR) and DEAFAL.
Darwin Initiative grant value	£362,686
Start/end dates of project	Start date: 01/06/2020 / End date: 31/05/2023
Project Leader name	Gary [REDACTED]
Project website/blog/social media	www.global-diversity.org <i>A general description of the project is available on GDF's UK website and regular updates are posted on the GDF stories page.</i>
Report author(s) and date	August 2023 - Tasnim [REDACTED], Soukaina [REDACTED], Ugo [REDACTED], Emily [REDACTED], Gary [REDACTED]

NB: All Annexes are uploaded to the following [REDACTED]

1 Project Summary

We observed the erosion of traditional agricultural knowledge, adaptive local practices, and plant genetic resources in High Atlas Amazigh communities through our collective work to maintain their agroecological practices and water management systems. This attrition negatively impacts unique High Atlas agroecosystems that sustain a regional biodiversity hotspot and diversified community livelihoods. These changes accompany a decline in agrobiodiversity, locally-adapted production methods, diet quality, and community values—such as collaboration and reciprocity—that maintain traditional agroecosystems. A key driver of this downward spiral is socio-economic marginalisation, which leads to an increase in rural-to-urban migration and the consequent severing of knowledge and practice transmission. Since 2016, we have documented historical trends attested to by community members: a notable reduction in the extent and fertility of agricultural lands cultivated and traditional crops produced, along with an increase in commercial fruit and nut arboriculture and the cultivation of introduced varieties that require chemical inputs for optimal production and sale. We noted a particular impact on one forage legume (alfalfa, *Medicago sativa*), two grain legumes (fava bean, *Vicia faba*; pea, *Pisum sativum*), and two cereals (barley, *Hordeum vulgare*; durum wheat, *Triticum durum*)—along with associated biodiversity—that are increasingly marginalised by agricultural intensification, land abandonment, and rural exodus.

Aware that these changes render their food security and community wellbeing precarious, local farmers seek to improve their agricultural productivity and income by accessing diverse seeds, selecting climate-resilient varieties, and reaching the growing high-end urban niche markets that celebrate the cultural and geographical origins of High Atlas products. These efforts are consistent with national policy, especially the Green Morocco Plan and its 2020–2030 Génération Green programme, which promotes government-funded solidarity agriculture, natural resource conservation, and the marketing of regional products to increase revenues. We contribute to these positive trends by responding to requests for assistance from Amazigh farmers, Moroccan government agencies, and urban-based agroecological initiatives for assistance. In particular, they are seeking support to characterise and conserve traditional varieties, select new drought-adapted crops, improve agricultural techniques, engage in crop transformation innovations (including novel culinary uses), and curate seed portfolios to ensure food security. We activate knowledge transmission through learning exchange, strengthen local capacities to add value to High Atlas products and sell them in high-end urban niche markets, and promote urban-rural networks of reciprocity and conviviality.

Through this project, GDF supports local Amazigh farmers and government agencies engaged in solidarity agriculture to improve agricultural productivity and income from diverse crop landraces of key cereals and leguminous plants cultivated by these communities.



As part of our wider [High Atlas Cultural Landscapes Programme](#) (HACL), GDF works in the rural communes of Aït M'hamed, Imegdâl, Oukaïmeden and Ourika (see map above), and since 2021 in an additional the Commune of Zaouiat Ahansal, near Ait M'hamed.

2 Project Partnerships

We continued our long-standing partnership with Moroccan Biodiversity and Livelihoods Association (MBLA), a Moroccan NGO which was created in 2015 with sponsorship from GDF during a previous Darwin project. Together with MBLA, we organised successful capacity building programs and conservation measures alongside community events such as [Harvest Festival Marrakech](#) and a [High Atlas Food Market](#). [DEAFAL](#) continue to be integral collaborators in our planning for Farmer Field Schools and agroecological activities generally.

We worked closely with other partners on specific activities, to exchange knowledge and resources, and/or to advise our work. Our collaboration with Cadi Ayyad University is key to our work within this project – in particular with the MARK Regional Herbarium where the regional seed bank was created with Darwin support and through collaboration with Professor Ahmed Ouhammou and his students.

Through this project, we strengthened our programme's connection to the Agronomic and Veterinary Institute of Rabat – IAV through Dr. Loubna Belqadi and the Platform for Agrobiodiversity Research – PAR through Dr. Devra Jarvis. This was essential for our fieldwork using the DATAR tool (Diversity Assessment Tool for Agrobiodiversity and Resilience). Collaborators from the International Center for Agricultural Research in the Dry Areas (ICARDA) and the National Institute for Agronomic Research (INRA) also supported our work on agrobiodiversity.

Alongside the field work achieved in this project, the HACL programme focused more on rural entrepreneurship to address sustainable livelihoods pathways so partnerships in this area have grown including with the UK non-profit Mowgli Mentoring and the IES Social Business School.

3 Project Achievements

Please fill in Annex 2 – summary of progress against the project logframe.

3.1 Outputs

Despite the considerable delays caused by the COVID-19 pandemic and the ramifications of Morocco's prolonged state of emergency, we were able to complete most of the activities outlined in this project.

As part of *Output 1*, which focused on assessing, characterising, and conserving agrobiodiversity in the High Atlas, we completed regional seed surveys on 5 main local crop species in the High Atlas region including *Medicago sativa* (alfalfa), *Vicia faba* (fava bean), *Pisum sativum* (pea), *Hordeum vulgare* (barley), and *Triticum durum* (durum wheat), in various sites throughout the High Atlas (Annex 1.1). We divided these sites into three main hubs: 1) the Al Haouz Hub (comprising the Communes of Aghouatim, Amizmiz, Asni, Imegdâl, Ouirgane, Oukaïmeden, Ourika, Tahannaout, and Talat N'Yaaqoub), 2) the Demnate Hub (comprising the Communes of Ait Abbas, Ait Blal, Ait Boualli, Ait Oumdis, Sidi Boulkhalf, Tabant, and Tifni),

and 3) the Azilal Hub (comprising the Communes of Ait M'hamed, Tamda Noumercid, and Zaouiat Ahansal). The data for these seed surveys was collected through 11 local focus groups, 157 household surveys/interviews with farmers and 6 local market visits (Annex 1.1B). We also completed biometrical characterisations of 6 varieties of the project's 5 key local crop species (Annex 1.1A) with the support of a bachelor's student, Sanaa Elmarini, and a PhD student, Sara Elgadi, from Cadi Ayyad University (Activity 1.1).

Thanks to the support of our local and regional community researchers in our three hubs, we were able to collect 150 accessions of our project's 5 key crop species during the seed surveys, focus groups, and market visits carried out in Activity 1.1. These accessions were then stored in 3 community seed banks and the Cadi Ayyad University's MARK Regional Herbarium, exceeding our initial target by 50 accessions (Activity 1.2). Although we originally indicated in Activity 1.2 that we wanted to store some crop accessions in an international seed bank, we were unable to do so because of the lengthy bureaucratic processes required.

For Activity 1.3, we recruited an Amazigh master's student, Abdessadek Aghrinane, from Cadi Ayyad University's Faculty of Science, to complete conservation assessments for 6 varieties of our project's 5 key species based on the protocol, literature review, and data collected in Year 1 (Annex 1.3). We also developed a standard operating procedure manual for High Atlas community seed banks, which aims to 1) increase the efficacy of our existing community seed banks and 2) provide guidance on how to establish new seed banks in the High Atlas region (Annex 1.4). The manual is currently in English, and we will plan to translate it to Arabic so we can share it with our community researchers and members of partner communities (Indicator 1.4). Furthermore, we completed a multilingual (Arabic, Tamazight, and English) community biodiversity register for 6 landraces (Annex 1.5). We aim to develop registers for all the crop varieties in our community seed banks so we can make learning about the High Atlas' unique agrobiodiversity more engaging and accessible (Activity 1.5).

These registers are an important dissemination tool as we offer the information in relevant local languages. These tools were developed with community dissemination in mind. For audiovisual dissemination, we realised that our original community-oriented video (Activity would not have had the distribution and accessibility required for impact (given the lack of access to internet). So in order to ensure broader dissemination and outreach for our programme, we invested in a feature film trilogy produced by KarmaMotion, a long-term GDF film-making partner. The first film of the trilogy *Ait Atta: Nomads of the High Atlas* received multiple awards and award nominations, as described below.

After facing various challenges organising and implementing Activities 1.6 and 1.7, we decided to combine them to provide the maximum impact that we could. In October 2021, we delivered a capacity-building workshop on sustainable seed collection and seed banking in the Province of Azilal for 5 community researchers (including 2 women) and 32 community members from the Communes of Zaouiat Ahansal and Ait M'hamed (Annex 3.4). Due to the intense summer heat wave we experienced in 2022, community seed bank and plant nursery programming had to be adapted. In December 2022, we delivered a capacity-building workshop on seed collection, post-harvest processing, and seed conservation in the Province of Al Haouz to 5 community researchers (including 1 woman) and 28 community members from the Communes of Imegdral and Oukaïmeden. We trained a total of 70 community members in seed collection, post-harvest processing, and conservation for Activity 1.6. On the other hand, for Activity 1.7, we exceeded our initial targets by training 10 community researchers, including 3 women, to become community seed bank managers.

Based on the data collected during Activities 1.1 and 2.1, we co-authored and published a scientific article in April 2023 entitled *Farmers' Variety Naming and Crop Varietal Diversity of Two Cereal and Three Legume Species in the Moroccan High Atlas, Using DATAR* (Annex 1.8) in the peer-reviewed journal "Sustainability" (Indicator 1.8).

Before discussing the various goals we achieved in *Output 2*, we would like to note that there was a minor error in the indicators that we submitted for this output in the first logical framework we shared in our original proposal. Although Activity 2.2 (*Baseline research for innovative soil, pest, and water management carried out*) was in the activity list of the original proposal, it was not included in the accompanying logical framework, which caused the numbering to become disordered in *Output 2*.

For *Output 2*, which focuses on promoting sustainable and climate-resilient agroecosystems and crop management, we used the DATAR platform to analyse the data collected from our three main hubs: Al Haouz, Demnate, and Azilal. We also selected and tested locally-adapted crop varieties using participatory varietal selection (Indicator 2.1). Based on this data, and the data collected during Activity 1.1, we wrote a data analysis report entitled *Conserving High Atlas Agrobiodiversity to Improve Amazigh Livelihoods in Morocco* (Annex 2.1) and we published the scientific article in the peer-reviewed journal “Sustainability,” as mentioned in the summary of Activity 1.8 above. Initially, it took time for our agrobiodiversity team to understand the newly-created, beta version of the DATAR platform and to navigate the bugs that they encountered in it as its creators resolved issues in real time. However, we are the first organisation to beta test this platform in Morocco, and we look forward to using it in future projects and educating other key stakeholders in the agrobiodiversity field about the platform.

For Activity 2.2, we organised focus groups in the Communes of Ait M'hamed and Imegdal to gather baseline data to develop innovative soil, pest, and water management plans (Annex 2.2). With the support of our partners DEAFAL and Rockinsoil, we used these plans to develop an innovative Farmer Field School (FFS) concept for High Atlas farmers. Not only did the customised capacity-building programme aim to build the capacity of local farmers, but it also aimed to promote sustainable agrobiodiversity practices throughout the region. Initially, the FFSs were delayed, as we needed special permission to organise large assemblies or community events in the months following the COVID-19 lockdown. However, despite these challenges, we were able to successfully develop and organise 6 FFSs during the grant period.

We held our first FFS on plant nutrition and health in the Commune of Ait M'hamed in March 2021 (Annex 2.4C). The training educated 28 local community members about the different stages of plant growth and how they could prepare organic fertilisers to boost plant health. We initially aimed to deliver another FFS on the same topic in the Commune of Imegdal, however, authorities refused to grant us permission to do so. Therefore, we consider the training we delivered in Ait M'hamed to be a great success because we were able to deliver it despite all the COVID-19-related restrictions in Morocco at the time. In the following year, in April 2022, we were finally able to deliver a FFS on plant nutrition and health in the Commune of Imegdal, which benefited 20 local community members (Annex 2.4B).

In September 2021, we carried out a livestock assessment in the Communes of Imegdal and Ait M'hamed with the support of DEAFAL, which provided expertise through consultations with local livestock owners. This assessment was used to produce a report and develop the content of our Livestock Management FFSs (Annex 2.4C). In October 2021, we delivered 2 Livestock Management FFSs to 2 community researchers and 17 local community members in the Commune of Imegdal and 2 community researchers and 13 local community members in Ait M'hamed. In March 2022, we delivered 2 FFSs on water management and dry land farming in the Communes of Ait M'hamed and Imegdal (Annex 2.2 & 2.3). The first training benefitted 3 community researchers, including 1 woman, and 20 local community members, including 6 women, while the second benefitted 2 community researchers and 18 local community members, including 5 women (Indicator 2.4). We had to maintain smaller groups due to COVID restrictions.

In the High Atlas, encouraging women to participate in mixed gender events or training sessions, especially for activities that are perceived as being “male-oriented,” can be challenging as mountain communities are quite conservative. We take the lead of the communities we collaborate with: for those open to mixed events, we organise training for all relevant participants. In communities where this is challenging, we make training opportunities accessible to all by offering separate sessions for women. This has been a successful mechanism in our work towards gender parity. In these circumstances, it is a significant

achievement that women represented approximately a quarter of the community researchers and beneficiaries who participated in our last two FFSs. In the future, we will continue to try to increase the number of women who participate in our community engagement and capacity-building activities. As a part of Activity 2.2, our team monitored and implemented innovative soil, pest, and water management practices in terraces and agricultural plots of 10 local farmers (5 in Aït M'hamed and 5 in Imedgal), and they also used sites as didactic sites to highlight agroecological best practices in our FFSs.

For Activity 2.5, we developed and implemented a capacity-building programme for 10 community researchers, including 3 women, exceeding our initial beneficiary and gender targets for this indicator. This programme aimed to train our community researchers in the Communes of Imedgal, Ait M'hamed, Oukaïmeden, and Zaouit Ahnsal to become community agroecology trainers and focal points. In 2021 and 2022, we delivered thematic workshops on 10 different topics in the field of agroecology, including: 1) introduction to agroecology; 2) soil fertilisation; 3) water management; 4) plant health and natural remedies; 5) sowing and multiplying seeds; 6) crop management; 7) arboriculture and agroforestry; 8) seed conservation; 9) agroecological farming practices; and 10) communication and workshop facilitation (Annex 2.5). We anticipate that this network of locally-based, agroecology-trained community members will carry on advising and supporting local farming communities in the future, ensuring the project's long-term impact.

In 2021, we created and launched “Tissoutine N'Oska” and “Amoud N'Oska” or ‘Future Generations’ and “Seeds of the Future’ in Tamazight respectively, two original focus groups that aimed to 1) explore High Atlas agrobiodiversity practices through the lens of gender, 2) promote seed entrepreneurship, and 3) explore new ways to bring the region’s age-old conservation practices into the 21st century (Indicator 2.6 & 3.6). In October 2021, we hosted a women’s focus group in the Commune of Oukaïmeden, which gathered 15 High Atlas women between the ages of 40 and 85 to discuss the indispensable role that women have played in sustainable agriculture in the region (Annex 2.4A). The following month, we hosted a second focus group, which gathered 17 male local farmers in the Commune of Demnate to talk about seed entrepreneurship and the future of seed conservation in the region (Annex 2.6B).

This work eventually led to delivering a seed entrepreneurship training program in Spring 2023 (3.4 & 2.7). The training targeted young producers and members of cooperatives to enhance post-harvest seed handling and management, understanding of seed testing, and quality control and management of seed value chains (See Annex 3.4). We recruited consultant Abderrazak Bassir to deliver these trainings in Demnate, where our cooperative collaborators requested capacity building for members to set up plant nurseries. The innovative model for seed entrepreneurship looks at nurseries that operate within cooperatives to offset wild harvesting for plants essential to their products and therefore ensure greater sustainability. Bassir has since joined our team full time as a Field Agronomist to support our work on terrace agriculture in our Darwin Extra project.

This training experience allowed the project to integrate cooperative beneficiaries into seed conservation interventions. As key institutions for biodiversity conservation, it is essential to engage cooperatives in seed entrepreneurship as a method of product diversification, for product sustainability, and improved traceability. This model of integrating cooperatives into the development, processing, marketing and sale of locally selected varieties was explored by our team (Annex 3.7).

In April and May 2021, 3 members of our agrobiodiversity team (Ugo D'Ambrosio, Meryem Aakairi, and Omar Saadani Hassani) received training from members of the Bioversity International team, a global research-for-development organisation based in Italy, on the Diversity Assessment Tool for Agrobiodiversity and Resilience (DATAR) platform (Indicator 2.7). In November 2021, Meryem Aakairi trained Cadi Ayyad University Regional Seed Bank Community Researcher (Fadma Iligh) and 3 regional community researchers (Abderahim Ihitassan, Nihad Aassimi, and Fatimaezzahra Derdar, who oversee our Demnate, Azilal, and Al Haouz hubs, respectively) received training on the DATAR platform (Annex 2.7).

Output 3, which focused on improving livelihoods through product valorisation and commercialisation, provided support and thematic training to 15 High Atlas cooperatives,

exceeding our original target of 5 cooperatives (Activity 3.1). Initially, we had to provide our partner cooperatives with virtual and phone-based support because of the pandemic. In January 2021, we [successfully obtained a Darwin COVID response grant](#), which allowed us to amplify our efforts with our partner cooperatives. These actions were further extended when we recruited [Hafida Mazoud](#) to be our Rural Entrepreneurship Consultant in 2021. Over the past two years, she has helped us work more closely with cooperatives and improve their businesses, especially regarding food and product innovation.

In 2021, we provided our partner cooperatives with a range of capacity-building opportunities, including a social media and product commercialization training (Annex 3.1A), an entrepreneurship bootcamp supported by the IES Social Business School (Annex 3.1B), and a workshop on pricing strategy (Annex 3.1C). In the autumn of 2022, we provided an intensive and multidisciplinary workshop series for the same 15 cooperatives. The first workshop covered market analysis and testing and brand identity and positioning (August 18-20). The following sessions covered food safety practices and quality control and certification and product labelling, key training areas that will be further developed for ONSSA certification (September 15-17). The topics of project management and administration and grant writing and management were covered in the following workshop (October 7-9). The ultimate goal of this activity was to develop the institutional capacity of cooperatives in the High Atlas while improving their ability to sustainably commercialise their local natural resources. The second series of training took place in March 2023 with the following training sessions: "Advocacy and Communication," "Conflict Management," "Human Resources Management," and "Leadership and Governance."

The main concept of Indicator 3.2 and the methodological approach we were going to use to evaluate and improve agroecosystems in our intervention sites had to be modified for 2 main reasons: 1) the COVID-19 pandemic and the various restrictions imposed by local authorities; and 2) the droughts and water shortages that Morocco has experienced during the grant period. For local communities in the High Atlas, access to seeds of locally appropriate crop varieties is essential, as these climate-resilient seeds play a crucial role in helping High Atlas agricultural ecosystems adapt to the drastic conditions that the mountain region is currently facing.

Therefore, the focus of Activity 3.2 shifted to achieving 3 main goals. Firstly, raising the awareness of local communities in our intervention sites about the importance of local crop varieties and their role in promoting sustainable agriculture and long-term food security. Secondly, providing local community members with access to local seed varieties through community seed banks. Lastly, reviving and promoting the traditional culture of seed exchanges, a central activity in our 5-year Darwin Extra grant project, which launched in April 2022. To achieve these goals, we raised the awareness of 89 community members, including 32 women, in the Communes of Ait M'hamed and Imegdhal about our existing community seed banks.

A total of 12 local seed varieties were distributed from the community seed banks in each commune. The most demanded seed varieties in Ait M'hamed were those of the Atlas Daisy (*Anacyclus pyrethrum*) because it has high yields, and it can be sold at a lucrative price. Other seed varieties distributed in Ait M'hamed included: local barley (*Hordeum vulgare*) and local beans (*Vicia faba*), Durum Wheat (*Triticum durum*); Barley (*Hordeum vulgare*); Red lentil (*Lens culinaris*); Lentils (*Lens culinaris*); Broad beans (*Vicia faba*); Peas (*Pisum sativum*); Irden (*Triticum aestivum*); Kiker (*Vachellia nilotica*) and Mint (*Mentha gattefossei*). In Imegdhal, we distributed two local varieties of zucchini (*Cucurbita pepo*) and long squash (*Cucurbita maxima*); not to mention the seeds of the region's most popular medicinal and aromatic plants to local farmers, as a part of Activity 3.3 (Annex 3.3). During the grant period, we hosted different seed-focused events during the First and Second Editions of the High Atlas Food Market, and the Second Edition of the Azilal-Ait M'hamed Biocultural, which we will discuss in more detail below. Through the aforementioned activities, we managed to educate and engage over 430 people about agrobiodiversity and seed production, conservation, and exchange in the High Atlas region.

Like Indicator 3.2, Indicator 3.3 also had to be modified because of the global health crisis and the negative impacts of climate change. Travel bans and other COVID-19 restrictions imposed by local authorities made it difficult for our specialists and researchers to visit our intervention sites, which limited our ability to 1) evaluate the impact of current farming practices; 2) identify appropriate measures to implement to improve the productivity of local agriculture; and 3) collect precise data on the increase in plant biomass in local agricultural plots. As mentioned earlier, the ongoing drought that Morocco is experiencing has led to a significant decrease in water resources, which has inevitably limited crop growth and reduced biomass production. These adverse conditions only served to exacerbate the difficulties that we were already facing in monitoring and measuring plant biomass production in local agricultural plots.

However, despite these obstacles, we were determined to help local farmers in our partner communities maintain their crops and find appropriate solutions for their complex situation. Subsequently, we trained 5 community researchers from the communities of Ait M'hamed and Imegdral on data collection techniques that they used to help us conduct a field study on good agricultural practices. The community researchers were responsible for organising individual interviews and focus groups with local farmers from our monitoring programme in Activity 2.3 and using detailed questionnaires to gather quantitative and qualitative data from them. The questionnaire responses were then carefully analysed using statistical tools to identify trends, strengths, and gaps in local communities' farming practices. Based on this study, we compiled a report with specific recommendations to improve farming practices and maximise yields in the High Atlas, while also protecting the region's natural ecosystems (Annex 2.3).

Additional training sessions were organised as a part of Activity 2.3 to raise local farmer's awareness about new farming practices and encourage them to adopt the good practices identified. We simultaneously monitored agricultural plots in the Communes of Ait M'hamed and Imegdral to assess the impact that the good farming practices had on these plots. We monitored a total of 26 hectares (10 irrigated and 16 non-irrigated) of farming land in Imegdral and 17.5 hectares (8.5 irrigated and 9 non-irrigated) in Ait M'hamed. Our community researchers continue to work closely with local farmers, providing them with advice and technical assistance in order to ensure that they continue to implement all the good agricultural practices we have been promoting throughout the grant period.

Due to the challenges that we faced organising large group gatherings in 2020 and the beginning of 2021, we had to postpone hosting the seed-related events mentioned in Activity 3.5. In May 2021, we were finally able to organise the First Edition of the High Atlas Food Market (HAFM), an original gastronomic, community, and cultural event concept that we developed. The aim of the HAFM is to celebrate High Atlas food culture and help rural cooperatives connect with urban consumers and businesses. The first HAFM gave 8 rural cooperatives (each represented by 2 women) the opportunity to sell their products to consumers in Marrakech on the International Day for Biological Diversity, which is celebrated annually on May 22 (Annex 3.5A). A total of 72 people attended the inaugural edition of the event hosted at The Spot coworking space in Marrakech. After the success of the first edition, we organised a second edition of the HAFM at Terre d'Eveil in Marrakech on World Food Day, which is celebrated annually on October 16. During the event, the 11 participating rural cooperatives (each represented by 2 women) engaged with and sold their products to a total of 93 visitors (Annex 3.5B).

Regional gastronomy was a key aspect for the Azilal Biocultural Festival and during Harvest Festival events in Marrakech (3.6). During the Second Edition of the Biocultural Festival hosted in the Province of Azilal in July 2022, women from across the High Atlas shared traditional recipes from their communities in a cooking competition. Each dish highlighted regional specialties, such as dishes pertaining to specific holidays or types of food preservation. Three main types of dishes were highlighted: breads, couscous, and porridges. Because it was hosted at the Azilal Festival, all participants attended the competition. Following editions of the Festival build on the success of this first event to highlight regional gastronomic diversity. Within Marrakech, the HACL programme continues to work with chefs and linking them to High Atlas products. Cooperative products have been successfully integrated into menus for the Harvest Festival period.

During the Festival, we organised a Farmer Seed Fair with various activities including workshops, screenings, discussions, and a culinary competition. To enrich the event's discussions, we invited more than 15 scientific stakeholders from various national organisations, including L'Institut National de la Recherche Agronomique (INRA), The International Centre for Agricultural Research in the Dry Areas (ICARDA), L'Association Oasis Ferkla pour l'environnement et le patrimoine (AOFEP), Terre et Humanisme et le Réseau des Initiatives Agroécologiques au Maroc (RIAM), as well as universities based in Marrakech, Rabat, and Meknes. In addition, more than 15 traditional local seed growers took part in the Farmer Seed Fair event. While 89 participants officially registered for the 2022 Biocultural Festival's Farmer Seed Fair, at least 2 dozen additional guests attended without registering. This event provided over 100 people with a unique opportunity to learn about traditional seeds and crop varieties in the High Atlas region (Annex 3.5C). We were able to host three community events during the grant period that educated over 340 people, including 36 female cooperative members, about seed conservation and agrobiodiversity in the High Atlas.

To support the achievement of *Output 4*, which focused on promoting the participation of key stakeholders in national policy-making on small agriculture and seeds and the implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), we recruited a Policy Analysis and Dissemination Consultant in March 2021.

In July 2021, we held a policy workshop on the ITPGRFA and the Green Generation 2020-2030, Morocco's national agricultural policy, in the Commune of Ourika (Indicator 4.1). This workshop gathered 26 High Atlas cooperative and agricultural association stakeholders from the Marrakech-Safi region (including the Communes of Tahanaout, Oukaïmeden, Setti Fadma, Ourika, Asni, Ouirgane, Imegdâl, and Ijoukak) and the Beni Mellal-Kenifra region (including the Communes of Azilal, Ait M'hamed, Zaouiat Ahensal, Ait Abbas, and Ait Bouguemez). Ultimately, this workshop aimed to develop participants' understanding of conservation measures and national and international agricultural policies and their significance for the High Atlas region. Participants examined the mechanisms and principles of the International Plant Treaty (ITPGRFA) and its implementation in Morocco, and learned about Morocco's current agricultural strategy, Green Generation 2020 - 2030. Through breakout sessions, participants discussed policy implications in their local contexts and key takeaways on the international and national policies presented. Including the 26 regional stakeholder representatives, 5 members of the MBLA and GDF teams, and 1 workshop facilitator, a total of 32 people—21 women and 11 men—participated in the workshop, exceeding our initial goal of 30 participants, of whom 15 had to be women.

During the Second Edition of the Biocultural Festival hosted in the Province of Azilal in July 2022, the Moroccan ICCA Consortium (CAM Maroc, a member of the International [ICCA Consortium](#)), of which our local partner MBLA is a founding member and lead coordinator, gathered more than 200 participants to discuss "territories of life" and national policy-making. During the event, we organised a national policy workshop on Morocco's agricultural legal and policy frameworks and their interactions with the ITPGRFA. We also disseminated the key findings that emerged while preparing the policy briefs for Activity 4.3. Our partners, ICARDA, IAV, and INRA, were participants in the national workshop and supported the festival's reach by getting the participation of their audiences. The Biocultural Festival celebrating High Atlas ICCAs was an important venue for this policy dialogue. Workshops and discussions drew from the written outputs produced by the project including our case study on the High Atlas and engagement with international conservation policy.

3.2 Outcome

- Did the project achieve its intended Outcome (as laid out in the original logframe unless a change has been approved)?
- What evidence/indicators can you present to support this? Please reference the agreed indicators in the logframe and means of verification as listed in the logframe in addition to any other sources of evidence used to support your comments.

- If your project did not fully achieve the project Outcome what was the reason for this? Was it due to factors outside your control? If so, had you identified these in the assumptions of your original logframe? If it was due to factors outside your control, please comment on what actions you took to recover from this?

Please support all comments with reference to evidence and logframe indicators.

0.1 High Atlas varieties of five crops surveyed, assessed, characterized and conserved in 3 community, 1 regional and 1 international seed banks, by year 3; at least 150 other cultivated plants, arable wild species and wild crop relatives inventoried, with 20% represented in seed banks and 10% with conservation assessments completed, by year 3

0.2 At least 30ha of community-owned agricultural land under improved management, by year 3

0.3 At least 500 Amazigh households from three communities experience improved livelihoods and enhanced wellbeing, measured using the RHoMIS survey, by Year 3

0.4 At least 80 key stakeholders participate in national policymaking on smallholder agriculture and seeds, and implementation of ITPGRFA, by year 3

Project Outcome: Agroecological research, farmer participation and capacity-building support the conservation and sustainable commercialisation of High Atlas agrobiodiversity, contributing to food security, poverty reduction, and biodiversity-rich agroecosystems in three Amazigh rural communes.

During the grant period, we achieved almost all of the goals outlined in Indicator 0.1 (*High Atlas varieties of five crops surveyed, assessed, characterised, and conserved in 3 community, 1 regional and 1 international seed banks, by year 3; at least 150 other cultivated plants, arable wild species and wild crop relatives inventoried, with 20% represented in seed banks and 10% with conservation assessments completed, by year 3*). We completed regional seed surveys of the project's 5 key High Atlas crop species. Moreover, we collected and stored 150 crop accessions of the project's 5 species in 3 community and regional seed banks in Year 1. As mentioned before, although we wanted to store some crop accessions in an international seed bank, we were not able to do so as a result of bureaucratic challenges. We also completed biometric characteristics, conservation assessments, and community biodiversity registers for 6 varieties of the project's 5 key species with the support of graduate students from Cadi Ayyad University (Annexes 1.1 and 1.3). Additionally, we completed a procedural manual for High Atlas community seed banks (Annexes 1.4). We also delivered capacity building workshops in seed-related topics for 10 community researchers, including 3 women, and 60 community members (Annexes). Lastly, we published a scientific article on the project's key crop species in the peer-reviewed journal "Sustainability" (Annex 1.8).

For Indicator 0.2 (*at least 30ha of community-owned agricultural land under improved management, by year 3*) we were able to gather baseline data and develop soil, pest, and water management plans for the Farmer Field Schools (FFS)s (Annexes 2.4). We used the DATAR platform to analyse data we collected in our three main hubs to produce a data analysis report that focused on conserving High Atlas agrobiodiversity to improve local livelihoods. We also organised and delivered 6 FFSs on plant nutrition and health, livestock management, and water management and dry land farming. Furthermore, we delivered an intensive training programme to enable 10 community researchers to become agroecology trainers who can provide technical assistance to farmers in their communities. We also hosted gender and agricultural caravans, "Tissoutine N'Oska" and "Amoud N'Oska," or 'Future Generations' and "Seeds of the Future" in Tamazight (Annexes 2.6). Last but not least, 3 members of our agrobiodiversity team and 3 of our regional community researchers were trained on how to use the DATAR platform. In total, our field team monitored and evaluated over 43.5 hectares of irrigated and non-irrigated farming land in two High Atlas communes.

Due to various challenges, including the COVID-19 pandemic and successive years of drought in Morocco, various activities in Indicator 0.3 (*At least 500 Amazigh households from three communities experienced improved livelihoods and enhanced wellbeing, by Year 3*) had to be modified. As noted in our first annual report, we found the RHoMIS surveys presented multiple challenges as they were very time consuming, which limited our ability to conduct surveys on a larger scale. Consequently, we developed a new approach, which we called Socio-Economic Impact Assessments (SEIA), for which we developed a tailor-made questionnaire. Our approach to assessing improved livelihoods and enhanced wellbeing continues to be refined in our Darwin Initiative Extra project, which launched in April 2022. This 5-year project seeks to work with 200 High Atlas cooperatives to regenerate agro-pastoral landscapes, improve local product commercialisation, and increase revenues for 5000 households. During the grant period, we organised and delivered a wide range of thematic capacity-building training to 15 cooperatives in the High Atlas region and Marrakech (Annexes 3.1). We raised the awareness of 89 High Atlas community members, including 32 women, about our existing community seed banks; in addition to distributing 12 local crop varieties. Additionally, we provided data collection training to five community researchers who later assisted us in conducting a field study on good agricultural practices. Based on this study, we produced a report with specific recommendations to improve farming practices, maximise yields, and protect natural ecosystems in the High Atlas. During the grant period we monitored 43.5 hectares of irrigated and non-irrigated farming land in our partner communities. Finally, we educated and engaged over 340 people, including 36 female cooperative members, about seed conservation and agrobiodiversity in the High Atlas at three seed-related community events (Annexes 3.4).

Finally, we achieved the goals outlined in Indicator 0.4 (*At least 80 key stakeholders participate in national policymaking on smallholder agriculture and seeds, and implementation of ITPGRFA, by year 3*) through the organisation of 1 regional policy-making workshop on the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) in July 2021 in Ourika and 1 national ITPGRFA policy workshop at the Second Edition of the Biocultural Festival in the Province of Azilal in May 2022. A total of 32 people—21 women and 11 men—participated in the regional policy workshop, while a total of 200 people attended the national policy workshop. We also produced three policy briefs on seeds, smallholders, and the ITPGRFA in addition to a case study on our programming's connections to international environmental frameworks.

3.3 Monitoring of assumptions

Monitoring of critical conditions (risks and assumptions) is crucial to project success. For this section, consider the following:

- Were Outcome and Output level assumptions monitored throughout the course of the project?
- If there were changes in assumptions, how did the project meet or manage these?
- Does the expected pathway to change hold true?

Please support comments with evidence.

Outcome and output level assumptions were monitored throughout the full project, while assuring the minimization of risks during the multiple phases and activities. In this way, we were able to develop most actions with partners and the full commitment and active participation of local community members (as can be observed from the myriad of exchanges, training, capacity-buildings and local product fairs, shared as annexes). These substantiated the initial assumptions that there are opportunities for further maintaining and promoting the unique agrobiodiversity of the region, and for the ongoing expansion of High Atlas cultural products in niche markets of Marrakech and other large cities of the Moroccan Kingdom.

COVID-19 restrictions impacted the breadth and depth of our work, especially at the start of the project. Before the pandemic, we had assumed that we could be doing profuse fieldwork (data collection) and gathering large amounts of people for training and exchanges. Due to the restrictions, we had to delay these kinds of actions requiring large amounts of fieldwork or large gatherings of people while prioritising activities requiring deskwork and online interactions, which substituted face-to-face alternatives. This did not stop us from achieving most outputs of our project.

Beyond COVID-19, there were no significant changes in assumptions, therefore, the expected pathway to change held true. No major nor minor other risks arose in the past 12 months, and we were able to recuperate some of the time lost during COVID, especially on agrobiodiversity research and action.

3.4 Impact: achievement of positive impact on biodiversity and poverty reduction

The Impact is not intended to be achieved solely by the project. This is a higher-level situation that the project will contribute towards achieving. All Darwin Initiative projects are expected to contribute to biodiversity conservation and poverty reduction.

- What Impact was in your original application form?
- What contribution did your project make to the higher-level impact on biodiversity conservation?
- What contribution did your project make to the higher-level impact on human development and wellbeing (poverty reduction)?

Please support all comments with evidence.

Impact: Unique and threatened High Atlas agrobiodiversity is maintained and promoted, leading to healthy agroecosystems, improved Amazigh livelihoods and resilience to environmental change, providing a model for ITPGRFA implementation in Morocco.

This project contributes to the higher goal of biodiversity conservation and poverty alleviation by:

- 1) Building knowledge of High Atlas agrobiodiversity through seed surveys, biometric characterisations, and conservation assessments, in addition to producing seed banking manuals and community biodiversity registers. The research carried out as part of this project contributes to conservation practices and sustainable management and use of High Atlas agrobiodiversity.
- 2) Supporting community seed banks and encouraging varietal selection, through which we provide farmers with access to seeds and varieties that build the resilience and diversity of their agricultural practices and food systems. By complementing cultivation of local, underutilised, and selected varieties with innovative soil, water and pest management and targeted trainings to Amazigh farmers through Farmer Field Schools, we improve crop productivity and adaptive capacity of agroecosystems.
- 3) Strengthening rural cooperatives through trainings and access to markets and supporting local farmers as seed entrepreneurs. This project supports building community capacities, allowing High Atlas community members to participate in high value niche markets for local, culturally-relevant and sustainable food products and thus improving rural incomes through the organisation of events such as the High Atlas Food Market and Harvest Festival Marrakech. Through engaging with urban buyers, retailers, chefs and urban agroecology initiatives, we build urban-rural solidarity and trade networks, brokering direct commercial relationships that contribute to community livelihoods and poverty alleviation.
- 4) Contributing to Moroccan smallholder agriculture and seed-related policy-making through the organisation of multistakeholder workshops, publication of policy briefs and case studies and the development of a model for ITPGRFA implementation in Morocco.

4 Contribution to Darwin Initiative Programme Objectives

Section 4 should be concise and ideally no more than 3 pages long. Please support comments with evidence and report against Darwin Initiative Standard Indicators (see Annex 3 for details). It is unlikely that each Darwin Initiative project will have made contributions to all of these higher level Programme objectives, therefore please only concentrate on those to which your project has made significant contribution. Please do not use this section to merely report on the activities carried out by the project – try to consider the Impact and Outcome of these activities instead. We do not require a summary at the start, just clear reporting under 4.1 to 4.5.

4.1 Project support to the Conventions or Treaties (e.g. CBD, Nagoya Protocol, ITPGRFA, CITES, Ramsar, CMS, UNFCCC)

Using evidence where available, please detail how your project has contributed to national policy (including NBSAPs, NDCs, NAPs etc.) and in turn international biodiversity and development conventions, treaties and agreements that the country is a signatory of. Where appropriate, please refer to the Convention texts including the CBD objectives, and post-2020 global biodiversity framework action targets, and other relevant materials.

This project focuses on the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), in particular articles 5 (Conservation, Exploration, Collection, Characterisation, Evaluation and Documentation of Plant Genetic Resources), 6 (Sustainable Use of Plant Genetic Resources), 9 (Farmers' Rights) and 11 (the Multilateral System) of the Treaty. This project supported the creation of a series of policy outputs to evaluate the policy environment of our activities, programmatic contributions to policy implementation, and remaining challenges. See annexes 4.2.

We use ethnobotanical approaches to survey, inventory and collect germplasm and associated knowledge of High Atlas cereal and legume crops, along with accompanying biodiversity including other cultivated plants, arable wild species and wild crop relatives. We take a systematic approach to assessing status and threats to these plants, based on our experience redlisting species according to IUCN categories and criteria (article 5.1a,b).

We support farmers' efforts to manage, conserve and benefit from their cereal and legume varieties on-farm through innovative ecological, soil and water management approaches, including approaches that mobilise underutilised varieties in seed portfolios to enhance management (5.1c). We invest in community and regional seed banks, linked to the ICARDA international seed bank, for ex situ conservation of local and underutilised crops, paying particular attention to documentation and the development of a locally appropriate standard operating procedure manual for high quality seed bank management (5.1e).

We provide gender and youth appropriate capacity building – including training of community trainers – to support the use of agroecological design and techniques for farm management, including agrobiodiversity-based management techniques using local and underutilised crops (6.2e,f). We carry out research that supports the participatory selection and testing of new varieties that promote on-farm resilience to environmental and socioeconomic challenges (6.2b,c), helping to increase the range of genetic diversity available to farmers (6.2d). We support stakeholder participation in policy-making that promotes traditional biodiversity-rich agroecosystem management and the maintenance of local, traditional and underutilised varieties (6.2a; 9.2c). We promote – through biocultural diversity fairs, seed fairs, regional exchanges, access to niche markets and the production of informational materials - the expanded use and knowledge of locally adapted crops, varieties and underutilised species, including in high-end gastronomy (6.2e). We document and promote traditional knowledge and practices related to agrobiodiversity, establishing a Free, Prior and Informed Consent process that protects farmers' rights to that knowledge (9.2a). We promote short commercial value-chains, participatory systems of guarantee and the sale of local and underutilised crop products in regional niche markets to support equitable sharing of benefits from the utilisation of traditional varieties (9.2b).

We also contribute to the Convention on Biological Diversity (CBD) Aichi Target 7 by promoting the conservation and sustainable management of agricultural areas. Morocco's National

Biodiversity Strategy and Action Plan (NBSAP) of 2004 details the country's approach to targets of the CBD. Our project's actions support principles of the CBD and mirror the strategic goals of the NBSAP.

In addition, we contribute to the CBD's Global Strategy on Plant Conservation, through actions that support:

- Target 2 on conservation assessments, through the characterization and evaluation of varieties of five crop species;
- Target 9 on the conservation of crop genetic diversity by documenting, assessing and conserving crop germplasm and diversity and associated traditional knowledge;
- Target 13 on indigenous and local knowledge maintained by documenting traditional agroecological knowledge and including it in our sustainable agriculture management plans

4.2 Project support to poverty reduction

Darwin Initiative projects are required to contribute to a reduction in poverty. Projects working in Upper Middle Income Countries must clearly demonstrate how they:

- *advance knowledge, evidence and impact in Least Developed or Low-Income Countries, or*
- *contribute to the global public good, for example by advancing understanding and/or strengthening the knowledge base related to biodiversity conservation/sustainable use and poverty reduction, or*
- *contribute to serious and unique advancements on a critical issue as a result of specific circumstances of the Upper Middle Income Country that could not be made elsewhere.*

Describe how your project contributed to a reduction in poverty. When writing this section, consider the following:

- *How did the project contribute to improved human development and wellbeing?*
- *Who were the project beneficiaries and what benefits did the project generate for them?*

Please support all comments with evidence and use indicators from your logframe.

The Darwin Initiative has produced an [Information Note on Poverty](#) which may help you understand the multi-dimensional aspects of poverty that can be reported on.

In the HACL Programme's ongoing capacity building for rural cooperatives, we have offered workshops on pricing strategies, in addition to providing access to urban markets and consumers through the organisation of High Atlas Food Markets and the Harvest Festival are aimed at increasing cooperative sales which support local livelihoods. Beyond training, our programme has integrated digital entrepreneurship within our efforts to support cooperatives reach of diverse markets. Through creation of e-commerce websites, a collective online marketplace (Digital Tiwizi), and social media marketing for High Atlas products, we expect a greater impact on household incomes due to diversified marketing and access to these tools and spaces. Our COVID-19 Rapid Response grant on online local product commercialization, marketing and promotion to sustain biodiversity-friendly livelihoods is giving us with a unique insight into poverty alleviation, as it has provided us with data on annual revenue (and how profit is distributed among members) of 15 rural cooperatives of the High Atlas from 2019 and 2020. Through our current Darwin Extra project, we are developing a more robust approach to monitoring changes in cooperative income as a result of training and market opportunities. These data will serve as a proxy for assessing poverty alleviation, complementing information on non-monetary benefits that accrue to communities.

Through our capacity building for rural cooperatives in the High Atlas and our support in providing spaces and events for the sale of their products, we expect to significantly improve the monetary income of at least 500 households. This project supports the economic

empowerment of rural women, as the large majority of the cooperatives we work with are all female, which enhances the effectiveness of poverty reduction in our partner communities. In addition, our Farmer Field Schools training for Amazigh smallholders and the development of soil, pest and water management plans are aimed at improving agricultural productivity for improved food security as well as increase in rural incomes. Our capacity building for rural cooperatives on themes such as pricing strategies, in addition to providing access to urban markets and consumers through the organisation of High Atlas Food Markets and the Harvest Festival are aimed at increasing cooperative sales which support local livelihoods. We are monitoring changes in income for all cooperatives involved. These data will serve as a proxy for assessing poverty alleviation, complementing information on non-monetary benefits that accrue to communities through our Darwin project.

4.3 Gender equality and social inclusion

All projects are required to promote equality between persons of different gender and social characteristics. Describe how your project has proactively contributed to ensuring individuals achieve equitable outcomes and how you have engaged participants in a meaningful way. If there have been any notable achievements of the project please include these within your response.

Please support all comments with evidence and use any relevant indicators from your logframe.

MBLA, our local implementing partner, considers gender equality a core principle that guides every aspect of its work. It always tries to respect the cultural values of our partner organisations and communities while striving to find new ways to promote the equal participation of men and women in all our activities. However, it can be challenging for MBLA to incorporate women into the different research and capacity-building activities that we organise in rural High Atlas, especially activities that are mixed or perceived as “male-oriented,” because these communities are still quite conservative and they may not always accept having their gender norms disrupted. With these challenges in mind, we worked tirelessly to design and implement activities that aim to promote the equal participation and personal growth of women in our team and partner communities. In areas where we are unable to host gender-mixed events, we host separate ones to create safe spaces for women to benefit from capacity-building activities, participate in communal decision-making, and share feedback on project progress.

Over the past 3 years, our female community researchers have benefited from trainings that focused on community seed bank management, agroecology, and the DATAR platform. Meryem Aakairi, a core member of our agrobiodiversity team, played a key role in the implementation of this project. Not only did she help collect data in the field, she also supported the implementation of the FFS capacity-building programme in addition to training our field team in how to use the DATAR platform. She also helped co-author the scientific article *Farmers’ Variety Naming and Crop Varietal Diversity of Two Cereal and Three Legume Species in the Moroccan High Atlas, Using DATAR*, which we published in the peer-reviewed journal “Sustainability.”

Through mentoring, training, and capacity building, our project has helped 15 all-female rural cooperatives raise their product sales and enhance the quality of life in their communities. In our current Darwin Extra project, we have centred cooperatives as essential partners for biodiversity conservation and sustainable livelihood pathways. Cooperatives offer economic opportunities for rural women and are key for gender-sensitive rural economies.

Both our organisation and the organisation of our Moroccan implementing partner, demonstrate a great commitment to gender equality. In MBLA, women are strongly represented in its field team, board, and community researchers, and it is committed to continuously working on equal representation across the board. As a part of its monitoring and evaluation process, MBLA collects and analyses gender-disaggregated data on all community engagements through accurate participant lists, beneficiary interviews, and survey data from its ethnobotanical and socioeconomic research. This data allows both our organisations to track and achieve our gender-related targets.

Please quantify the proportion of women on the Project Board ¹ .	2
Please quantify the proportion of project partners that are led by women, or which have a senior leadership team consisting of at least 50% women ² .	2

¹ A Project Board has overall authority for the project, is accountable for its success or failure, and supports the senior project manager to successfully deliver the project.

² Partners that have formal governance role in the project, and a formal relationship with the project that may involve staff costs and/or budget management responsibilities.

4.4 Transfer of knowledge

Comment on the extent to which the project has sought to transfer knowledge (including new knowledge generated by Darwin Initiative projects) to practitioners or policy makers to apply this thinking to practical conservation challenges. What form has this transfer of knowledge taken e.g. national platforms, international platforms, print media etc.?

We developed different types of content to document and share the knowledge that we accumulated during the grant period. We developed and delivered an innovative Farmer Field School (FFS) concept for High Atlas farmers to promote sustainable agrobiodiversity practices in the High Atlas region. In each FFS, we delivered customised training syllabi on plant nutrition and health, livestock management, and water management and dry land farming. Ultimately, the FFSs aimed to empower local farmers to address the specific environmental and socio-economic challenges they face in their respective communities. We also produced an engaging bilingual (Arabic and English) community biodiversity register for the project's 5 key crop species to make knowledge about the High Atlas' agrobiodiversity more accessible to the public. Furthermore, this community biodiversity register aims to provide an engaging approach for our community seed banks to document, preserve, and celebrate the High Atlas' agrobiodiversity and ancestral knowledge. We also produced a standard operating procedure manual for High Atlas community seed banks to improve the efficacy of our existing community-based seed banks and establish best practices that can be used to establish new community seed banks in the region. Furthermore, we published a scientific article entitled *Farmers' Variety Naming and Crop Varietal Diversity of Two Cereal and Three Legume Species in the Moroccan High Atlas, Using DATAR* in the peer-reviewed journal "Sustainability" to make more accurate research on the High Atlas region's agrobiodiversity accessible to the international scientific community. The article also aims to encourage more academics and researchers to explore and study the region's agrobiodiversity, which is still understudied and poorly studied.

4.5 Capacity-building

- *Did any staff from developing country partners see an increase in their status nationally, regionally or internationally? For example, have they been invited to participate in any national expert committees, expert panels, have they had a promotion at work?*
- *What gender were they?*

Almost every single member of our implementing partner's team, MBLA, has participated in capacity-building, professional development, or experience-sharing opportunities of some sort, many offered or paid for by GDF, during the grant period. Over the past three years, 6 members of the MBLA team (4 men and 2 women) participated in the MAVA Foundation's Leaders for Nature Academy, an inter-generational leadership programme that aimed to empower experienced and emerging leaders to work collaboratively to produce bold, creative, and innovative environmental action. In January 2022, Meryem Aakairi (an MBLA field agronomist and researcher) attended a week-long training on participatory guarantee systems (PGS) organised by CIRAD in Montpellier, France. This training aimed to educate participants about PGS, how to identify the ideal conditions for establishing them, and the different methods that can be used to enhance their functioning. In July 2022, Dr. Soufiane M'sou (Regional Director of MBLA's Central High Atlas Programme and MBLA's ICCA Focal Point) represented the Moroccan and North African ICCA Networks at the Second Regional Assembly of African ICCAs in Kigali, Rwanda. This event aimed to connect and inspire young African leaders who advocate for Indigenous Peoples rights', local communities' rights, community-driven conservation, and biocultural diversity. Lastly, in December 2022, Omar Saadaani Hassani (an MBLA field agronomist and researcher) attended the Plant Genetic Resource Conservation and Use Training organised and hosted by ICARDA in Terbol, Lebanon. The training focused on in situ/ex situ conservation, the utilisation of agrobiodiversity, documentation, and the gap analysis approaches used by different national plant genetic resource conservation programmes in the Central and West Asia and North Africa regions.

5 Monitoring and evaluation

Please record any major changes in the project design, especially approved changes to the logframe. Annex 1 is the full final logframe, including means of verification and indicators, Annex 2 provides for a narrative report against the final logframe).

Looking back over the life of the project, was the M&E system practical and helpful to provide useful feedback to partners and stakeholders?

During the project period, has there been an internal or external evaluation of the work or are there any plans for this? Note succinctly the key findings from any evaluation and whether these were useful for the project.

Major changes in the project design were mostly linked to the impact of the COVID-19 pandemic and the restrictions derived from it, as these impacted significantly on fieldwork from the first months of the project and up until end 2021. We recognise effective Monitoring & Evaluation processes were necessary and crucial to ensure successful outcomes over the life of this project, with the increased impact caused by COVID-19. Therefore, we maintained an online M&E table, linked to all projects within the wider HACL programme, to track progress against indicators and outcomes. We also organised 4-monthly collective evaluations during which team members presented progress against project activities and discussed any challenges and upcoming work plans. In addition, we held weekly team meetings and bi-weekly meetings with our partner MBLA to maintain a good overview of project activities and plan for important events. The M&E system was significantly practical/helpful in providing feedback to partners and stakeholders, adapting to changing conditions.

We carried out quarterly internal evaluations, especially with our main local partner, MBLA as well as evaluations as needed with remaining partners. The yearly reviews provided by the DEFRA reporting system were also of high relevance to measure our progress towards achievements while addressing the recommendations given. As these reports suggested, we improved the management of our collaborative partnership through M&E mechanisms and we consolidated the sustainability of the project by maintaining and increasing our activities in the region, creating further links between rural and urban environments and by sustaining funding for the programme for 5 more years, allowing us to expand to additional regions of the High Atlas (westward first and eastward after).

Along with the ongoing monitoring through meetings and internal evaluations, we organised biennial external evaluations for our High Atlas Cultural Landscapes programme, which includes this project. Our 2021 annual evaluation was carried out by external evaluator Najwa Es-siari, by doing field visits to our project sites and interviewing project partners and beneficiaries. The evaluation report, which provides an important opportunity for team members to assess progress and evaluate and present achievements during the year, is provided in the annexes.

These multiple evaluations have significantly helped the project, including but not limited to:

- Increased collaboration with sectorial governmental departments (regional and national levels) and territorial collectivities (regions and communes), as has been shown with the ICCA Moroccan network, and the biocultural fairs carried out in the Azilal province after COVID-19 restrictions were lifted, with the alliance of governmental and non-governmental institutions of the region and the country.
- Increased collaboration with national academic and research centres, such as Cadi Ayyad University-CAU (with whom we are co-organizing the next International Society of Ethnobiology Congress), Université Mohamed VI Polytechnique-UM6P, Alliance for Mediterranean Nature and Culture-AMNC, and Platform for Agrobiodiversity Research-PAR, favouring research and the exchange of knowledge and experiences.
- Gender approaches have continued to be at the heart of our projects, despite the inequalities present in the country and especially in remote areas. Therefore, our projects have been increasingly taking into consideration gender from the conception and writing of proposals (as can be seen in our recently awarded Darwin

Extra grant entitled “Ensuring the socio-ecological viability of High Atlas cultural landscapes”, where women-led cooperatives are at the centre of the project) to its execution and monitoring and evaluation. The use of gender specific indicators has helped in this process.

- Continued mobilization of funds for the HACL programme (Darwin Extra, knodel foundation, MAVA legacy grant and Hans-Wildorf Foundation) has secured funds for the next 5 years of the programme.

We also are undergoing a final external evaluation individually of this project by consultant Sana Mzoughi that will take place in the month of September 2023, and will be sent to the Darwin Initiative by the end of that month.

6 Actions taken in response to Annual Report reviews

For those that have received feedback from Annual Reports, have you responded to all issues raised in the reviews of your Annual Reports? Please use this section as an opportunity to comment on any outstanding issues.

Have you discussed the reviews with your partners and other collaborators?

The following feedback from annual reports has been discussed with project partners as relevant to our collaboration on grant activities and integrated in our programme’s approach.

1 The project could consider how its work relates to the Moroccan NBSAP (2004) actions and strategic priorities for biodiversity conservation.

Please see Question 4 on contributions to environmental policy.

2 The Activities and corresponding Output Indicators are very similar in many cases; the project might reconsider the phrasing of its Activities and Outputs to ensure that the Activities represent the actions carried out in project implementation whilst the corresponding SMART Output Indicators represent what is delivered and the effect of this, as a result of Activities being completed.

This feedback on distinction between activities and output indicators has been taken into consideration and we consider it as a lesson learned through this project. Due to the project timeline and the delays caused by the COVID-19 pandemic, we carried on with the proposed framework for activities and indicators. However, the importance of this distinction has been implemented in our other fundraising efforts.

3 In relation to Indicator 0.3, the project experienced some difficulties with its RHoMIS surveys in Year 1, and subsequently developed an alternative approach – Socio-Economic Impact Assessments. The project discusses how the improved livelihoods measure represented in this Indicator will be greatly expanded through a new, longer term Darwin Extra project, but it is not clear whether the original Indicator will be met in the lifetime of the current project.

The goal of using the RHoMIS survey was to collect baseline data on community livelihoods and monitor the impacts as a result of the project. For a multitude of reasons, this approach was not appropriate for our project and we therefore developed the Socio-Economic Impact Assessments. In addition, we shifted to better incorporate surveying of financial data at markets and through surveying of cooperatives. We are

actively working on this through our Darwin Extra project where the 5-year time frame allows us to better evaluate change over time as a result of the project's interventions.

4 The project ensures female participation in more conservative communities by offering separate workspaces for women; it would be interesting to learn more about the effectiveness of this approach in a future report.

We have noted throughout our evaluation of activities progress the indicators related to gender — mainly through women's participation in capacity building and the focus on women's cooperatives within our work on rural entrepreneurship. This approach to offer separate gatherings for women community members was key in hubs where community members were not interested in mixed gender events. This approach allowed us to work with community values without excluding young and women members. Our programme's evolution to focus on cooperatives offers and additional approach to ensure women community members benefit from livelihoods support and features strongly in the Darwin Extra project.

7 Lessons learnt

What lessons learned/or failures/challenges from this project could be used to improve/inform future Darwin Initiative projects or the wider Darwin Initiative programme?

Consider issues such as:

- *What worked well, and what didn't work well?*
- *If you had to do it again, what would you do differently?*
- *What recommendations would you make to others doing similar projects?*
- *What key lessons have been learnt as a result of this project? (including administrative, management, technical, M&E).*

Over the past 3 years, GDF and our implementing partner, MBLA, have learnt many valuable lessons. First and foremost, we learned that both organisations are agile and capable of adapting to challenging situations, such as the one presented by the global COVID-19 pandemic. Despite the health restrictions and travel bans that persisted after the nation-wide lockdown in Morocco, our agrobiodiversity team maintained continuous contact with our community researchers via phone and explained all the tasks they needed to do on the ground. Not only did this experience teach us the importance of delegation, but it also taught our team how to effectively delegate tasks to our non-expert field team. Moreover, the COVID-19 experience also demonstrated to us the great value of having local community members be directly involved in our project implementation process. Thanks to the work that our community researchers did during that period, we were able to make significant progress in our project even when many other projects in the country were forced to come to a grinding halt. With that in mind, we would recommend that current and future beneficiaries of Darwin Initiative funding consider trying to have a certain percentage of their project implementation team be based in their target communities. Not only does this help facilitate communication and the acceptance of social impact projects on a local level, but it also allows projects to be agile and respond to all kinds of expected and unexpected challenges.

8 Risk Management

- *Have any new risks arisen in the last 12 months that were not previously accounted for?*
- *Has the project made any significant adaptations to the project design to address changes to risk?*

No major nor minor risks arose in the past 12 months, and we were able to recuperate some of the time lost during COVID, especially on agrobiodiversity research and action. Outputs were slightly delayed in time, but finalised at the end of the project.

The project has followed a landscape approach, ensuring that adaptive management was achievable. Most significant adaptations were linked to postponing intensive fieldwork and large gatherings to later phases of the project, while focussing on activities requiring more deskwork and collective online meetings.

GDF manages the risk and threats to our projects through our risk management framework. Having worked in Morocco for two decades, we understand both internal and external context and consider this a low-risk project and are satisfied with our risk-reduction strategy which includes:

- Establishing accountabilities (who is responsible for what) within the project work plan and activities, with most staff and consultants named and recruited prior to project start;
- Involving partner organisations through the process of developing the project and budget to ensure their ownership and buy-in;
- Clear financial policies in place for lead and partner organisations including segregation of financial authority and detailed procurement procedures;
- Tried-and-tested regular internal and external communication and narrative and financial reporting mechanisms for management, staff, consultants and partners;
- Robust financial regulations and processes overseen and implemented by strategic accountant Manish Panjabi, a core team member;
- A disclosure of malpractice in the workplace policy (Whistleblower Policy) in place to report malpractices including financial wrongdoing including theft, bribery, fraud, money laundering and aid diversion.
- Project overheads, which are not required for rent or running costs ensure a buffer for unexpected costs, including exchange rate fluctuations (which are not expected in the Moroccan context).

9 Sustainability and Legacy

Discuss the profile of the project within the country/ies and what efforts have been made during the lifetime of the project to promote the work.

- *Are the intended sustainable benefits post-project still valid given the project is now running, or have you made changes to what was originally proposed?*
- *What will happen to project staff and resources now the Darwin Initiative funding has ceased?*

In order to ensure the sustainability and legacy of the project, we have focused our efforts on fundraising and supporting the organisational strengthening and building the capacity of rural cooperatives and of our main implementing partner Moroccan Biodiversity & Livelihoods Association (MBLA). In Year 1 of this project, we provided mentoring and support to MBLA in proposal writing and grant management. As a result of this process, MBLA was able to hire

Grant Management Officer, Soukaina Rachidi, to support their fundraising as part of a large grant (€180,000) from MAVA Foundation to support their institutional strengthening. In addition, they were successful in obtaining a 3-year grant of £324,000 in core support from the Sigrid Rausing Trust in April 2022, following an initial year of support in 2021. This is evidence of a positive trend among some donors who are increasingly keen to provide direct support to local civil society rather than through international NGOs. As a result of these successes, MBLA has gained more and more administrative, financial and technical autonomy as the programme progresses. This fits in the larger vision for MBLA to become fully independent and the primary leader of the HACL programme by 2027.

GDF was successful in securing significant funding (£949,269) to ensure the sustainability and legacy of our High Atlas Cultural Landscapes programme, by obtaining a five-year (2022-2027) Darwin Extra grant for “*Ensuring the socio-ecological viability of High Atlas cultural landscapes*” (DAREX002). This was further supplemented by €285,000 in co-funding for the project from MAVA Foundation. Our main funder is MAVA Foundation, which will cease operations in October 2022. In the lead up to their closing, they have been providing GDF – and other grantees – with multiple grants for specific projects (e.g. €80,000 for a project on establishing a High Atlas Harvest label, and €65,000 for rural entrepreneurship capacity building). More importantly, they have been providing training, financial support and networking for fundraising which has led, most recently, to a five-year grant of €750,000 in non-restricted funds from a Swiss foundation. These various sources of support have allowed us to expand the number of staff members and consultants in Morocco, including ones who are specifically dedicated to agroecology, labelling and certification, liaison with rural cooperatives, rural entrepreneurship, local product commercialisation and Harvest Festival Marrakech. These successful fundraising efforts provide an excellent basis for expanding the geographical scope of this Darwin project, as we have the ambitious goal of working with 200 cooperatives across a broad arc of the High Atlas by 2027.

10 Darwin Initiative identity

- *What effort has the project made to publicise the Darwin Initiative, e.g. where did the project use the Darwin Initiative logo and promote funding opportunities or projects?*
- *How has the UK Government’s contribution to your project’s work been recognised?*
- *Was the Darwin Initiative funding recognised as a distinct project with a clear identity or did it form part of a larger programme?*
- *To what extent is there an understanding of the Darwin Initiative within the host country and who is likely to be familiar with it?*
- *If you have a Twitter/Instagram/Flickr/Blog/YouTube etc. account, is this effective and have you linked back to the Darwin Initiative / Biodiversity Challenge Funds social media accounts.*

We recognise the support of the UK Darwin Initiative for this project through the development of [a dedicated project page on our website](#), and we reference the Darwin Initiative across our blog updates where relevant and appropriate. We have also included the Darwin Initiative logo on our [Community](#) page.

In addition, 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 [stories page](#) (under HACL programme), social media profiles (4,200+ Facebook, 1,593 Instagram and 1,347 LinkedIn followers), and in GDF’s Annual Reports. Please note that our 2022 Annual Report will be shared with Darwin following its online publication.

11 Safeguarding

Biodiversity Challenge Funds are committed to supporting projects develop and strengthen their safeguarding capabilities and capacity to prevent, listen, respond and learn. Defra will not

automatically penalise projects where safeguarding concerns are identified, but will help projects respond and learn from the experience.

Has your Safeguarding Policy been updated in the past 12 months?	No
Have any concerns been investigated in the past 12 months	No
Does your project have a Safeguarding focal point?	Yes, Lorenza [REDACTED]
Has the focal point attended any formal training in the last 12 months?	No (however she has attended them in the past)
What proportion (and number) of project staff have received formal training on Safeguarding?	Past: 13% [2] Planned: 20% [3]
<p>Has there been any lessons learnt or challenges on Safeguarding in the past 12 months? Please ensure no sensitive data is included within responses.</p> <p>We have had no issues with safeguarding in the past 12 months. However, we are actively revising our organisational policies including the Safeguarding Policy. All staff will be invited to attend a workshop during which the revised policy will be presented and the team will be asked to carry out small group work to ensure they understand the policy and how to implement it in their work.</p>	

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

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

Thanks to the funding we received from the Darwin Initiative and the support of our local implementing partner, MBLA, and other project partners, we were able to implement two activities that had never been implemented in the High Atlas region before.

We collected and biometrically characterised 5 key High Atlas crop varieties, which are considered to be the main crop species in the region. Using the same data, we also developed conservation assessments and a community diversity register for each species. However, the bilingual (Arabic and English) community biodiversity registers are particularly unique because they seek to make the knowledge that we have collected about agrobiodiversity in the High Atlas more accessible to the public. They also seek to support the work that we do in our community-based seed banks by a) providing a template and approach for the development of engaging profiles for other important crop varieties in the High Atlas region and b)

documenting, preserving, and celebrating the traditional knowledge that has preserved local agrobiodiversity and promoted food security in the High Atlas for millenia.

Secondly, we developed and implemented an innovative Farmer Field School (FFS) concept for High Atlas farmers. Over the course of our project, we delivered 6 Farmer Field Schools on plant nutrition and health, livestock management, and water management and dry land farming, which were customised to address the specific environmental and socio-economic challenges that exist in partner communities. Whereas many institutional agricultural capacity-building programmes tend to be more generic, we conducted focus groups in our partner communities and used their feedback to create the training modules for Farmer Field Schools so they would truly resonate with and empower local farming communities. We hope that our approach to developing and implementing our Farmer Field School concept will inspire more institutional and civil society organisations in the High Atlas region to develop unique, adapted, and community-driven solutions and approaches to addressing the High Atlas region's most pressing challenges.

Annex 1 Project's original (or most recently approved) logframe, including indicators, means of verification and assumptions.

5)

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Impact: Unique and threatened High Atlas agrobiodiversity is maintained and promoted, leading to healthy agroecosystems, improved Amazigh livelihoods and resilience to environmental change, providing a model for ITPGRFA implementation in Morocco.</p>			
<p>Outcome: Agroecological research, farmer participation and capacity-building support the conservation and sustainable commercialisation of High Atlas agrobiodiversity, contributing to food security, poverty reduction and biodiversity-rich agroecosystems in three Amazigh rural communes.</p>	<p>0.1 High Atlas varieties of five crops surveyed, assessed, characterised and conserved in 3 community, 1 regional and 1 international seed banks, by year 3; at least 150 other cultivated plants, arable wild species and wild crop relatives inventoried, with 20% represented in seed banks and 10% with conservation assessments completed, by year 3</p> <p>0.2 At least 30ha of community-owned agricultural land under improved management, by year 3</p> <p>0.3 At least 500 Amazigh households from three communities experience improved livelihoods and enhanced wellbeing, measured using the RHoMIS survey, by Year 3</p> <p>0.4 At least 80 key stakeholders participate in national policymaking on smallholder agriculture and seeds, and implementation of ITPGRFA, by year 3</p>	<p>0.1 Seed bank accession records, inventory database, regional survey datasets, characterisation reports, IUCN conservation assessments, manuscript for peer-review</p> <p>0.2 Soil and agroecological monitoring datasets (baselines developed in 2019); DATAR datasets; training manual; photo essays</p> <p>0.3 RHoMIS survey datasets (baselines for 250 HH produced in 2019); participatory appraisals; blog posts for fairs and exchanges; video for gastronomy event; reports and participant lists for capacity-building events</p> <p>0.4 Case study, policy brief, workshop reports and participant lists, community dissemination products</p> <p>Local varieties of the five crops are available and farmers are willing to share associated knowledge and seeds</p> <p>At least 150 species of accompanying agroecological biodiversity identified</p> <p>Farmers are committed to improving their soil, water and pest</p>	<p>Local varieties of the five crops are available and farmers are willing to share associated knowledge and seeds</p> <p>At least 150 species of accompanying agroecological biodiversity identified</p> <p>Farmers are committed to improving their soil, water and pest management and to use agrobiodiversity-based management techniques</p> <p>Existence and ongoing expansion of Marrakech niche markets for High Atlas cultural landscape products and local varieties</p> <p>Community members eager to produce and trade agrobiodiversity-based products</p> <p>Government agencies and actors are interested in collaborating for the national implementation of ITPGRFA</p>

		management and to use agrobiodiversity-based management techniques Existence and ongoing expansion of Marrakech niche markets for High Atlas cultural products and local varieties Community members eager to produce and trade agrobiodiversity-based products G	
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<p>Output 1 High Atlas agrobiodiversity surveyed, assessed, characterised and conserved</p>	<p>1.1 One regional seed survey of High Atlas cereals, fodder and grain legumes and wild relatives completed, including gender disaggregated data where relevant, by Year 2; selected varieties of 5 crop species biometrically characterised by year 3</p> <p>1.2 100 accessions of landraces of 5 species (increased from a baseline of 25) and seeds of 30 species of accompanying biodiversity conserved within 3 community seed banks, 1 regional seed bank and 1 international seed bank, by year 3</p> <p>1.3 Adapted IUCN conservation assessments carried out for High Atlas varieties of the 5 selected crops, by Year 2, and IUCN conservation for 15 species of accompanying biodiversity completed by year 3</p> <p>1.4 One standard operating procedure manual for High Atlas community seed banks established and implemented by Year 2</p> <p>1.5 Community Biodiversity Registers established by each community by Year 1 and completed with all available data by Year 3</p> <p>1.6 At least 150 men, women and youth (at least 50% women) trained in seed collection, post-harvest processing and conservation, by Year 3</p> <p>1.7 Six community researchers (at least 3 women) trained as CSB managers, actively implementing management plans, by Year 2</p> <p>1.8 Manuscript submitted for peer-reviewed publication on the diversity, status and conservation of High Atlas agrobiodiversity, by year 3</p>	<p>1.1 Regional survey dataset, biometric characterisations</p> <p>1.2 Community seed bank accession records</p> <p>1.3 IUCN conservation assessments for selected species</p> <p>1.4 CSB standard operating procedure manual</p> <p>1.5 Community Biodiversity Registers for Ait M'hamed, Imegdaj, and Oukaimeden</p> <p>1.6 Capacity-building workshop reports, photo essays and participant lists</p> <p>1.7 Photo essays, workshop reports, and training manual for community seed bank managers</p> <p>1.8 Manuscript and confirmation email for submission</p>	<p>Farmers willing to participate in the regional survey</p> <p>Viable seed or other germplasm available and not affected by drought, insect predation or other environmental factors</p> <p>Community researchers motivated to train as CSB managers</p> <p>Community members interested in and available for participating in capacity building events, and provide permission for photographs taken at events</p> <p>Community permission granted to use survey results and data from community-based interviews in publication</p>
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<p>Output 2</p> <p>Sustainable and climate resilient agroecosystem and crop management implemented</p>	<p>2.1 At least 3 crop varieties selected and tested by farmers through Participatory Varietal Selection (PVS), by year 3</p> <p>2.2 Baseline research for innovative soil, pest and water management carried out, by year 1</p> <p>2.3 Soil, pest and water management plans established in 3 communities, by year 2</p> <p>2.4 Three farmer field schools, benefitting 100 farmers (at least 30 women), implemented in Year 1, Year 2 and Year 3</p> <p>2.5 Three community researchers (at least 1 woman) trained as community farmer trainers by Year 1</p> <p>2.6 Approximately 60 men and 140 women participate in 'Gender and Agriculture' caravans by Year 2</p> <p>2.7 100 farmers engaged in the use of the Diversity Assessment Tool for Agrobiodiversity and Resilience (DATAR), by Year 2</p>	<p>2.1 PVS process reports</p> <p>2.2 Baseline data</p> <p>2.3 Soil, pest and water agroecological management plans</p> <p>2.4 Farmer field school event reports, photo essays and participant lists</p> <p>2.5 Workshop reports, photo essays, interviews and blog post on capacity-building of 'Community Farmer Trainers'</p> <p>2.6 Gender and agriculture caravan reports and photostories</p> <p>2.7 DATAR dataset</p>	<p>Material Transfer Agreements successfully negotiated and obtained for crop variety testing</p> <p>Climatic conditions allow for varieties to be grown in PVS trials</p> <p>Farmers available and interested in learning about and implementing innovative soil, pest and water management approaches and DATAR</p> <p>Community researchers available and interested in training as 'Community Farmer Trainers'</p>
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<p>Output 3</p> <p>Livelihood improvements through valorization, commercialization and exchange of local agrobiodiversity and increased collaboration within and between communities and regional support networks, achieved</p>	<p>3.1 Five rural cooperatives increase their sale of agricultural products (including from the target species) by 30%, leading to livelihood benefits for at least 500 households, by year 3, as compared to project start baseline</p> <p>3.2 4000 Amazigh farmers (at least 50% women) provided access to seed of locally appropriate crop varieties and accompanying biodiversity through 3 community seed banks, by year 3</p> <p>3.3 Useable crop biomass increased by at least 10% on average in private agricultural plots tended by 300 households, benefitting approximately 1800 community members (about 50% women), by year 3</p> <p>3.4 At least 5 community youth (at least 3 women) trained and mentored as 'seed entrepreneurs' by year 2</p> <p>3.5 Three provincial seed fairs and community exchanges implemented, serving an audience of at least 300 Amazigh farmers and cooperative members (at least 30% women), by year 3</p> <p>3.6 At least one regional gastronomic event organized in Marrakech on High Atlas agrobiodiversity, with at least 50 participants (at least 50% women) by Year 2, leading to at least 10 new dishes based on High Atlas community products and local agrobiodiversity developed and served by leading chefs by Year 3</p>	<p>3.1. Sales records of rural cooperatives</p> <p>3.2 Seed distribution records, publicity materials</p> <p>3.3 Useable crop biomass monitoring results; RhoMIS survey</p> <p>3.4 Training manual for seed entrepreneurs exchange and sales records</p> <p>3.5 Blog posts, workshop reports and participant lists</p> <p>3.6 Video and blog post on the gastronomy event; chef dish descriptions and restaurant menus</p> <p>3.7 Draft model for the development, processing, marketing and sale of locally-selected climate-resilient varieties</p>	<p>Increase in number of Marrakech food/retail actors and networks interested in organic food, agroecology and cultural products</p> <p>Farmers available and interested in engaging in seed fairs and knowledge exchange Agricultural intensification delivers expected increase in yield under diverse conditions</p> <p>At least 5 young community members eager to develop their skills and capacities in the seed market Leading chefs are committed to putting dishes with High Atlas products on their menus</p> <p>Climate-resilient crop varieties are available, do not suffer from germination issues in multiplication process, and are marketable</p> <p>Permission granted by participants at events, and government agency responsible for film permits, for filming and taking photographs at events.</p>
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	3.7 Model for the development, processing, marketing and sale of locally-selected, climate-resilient crop varieties in regional niche markets developed and disseminated throughout the High Atlas, by Year 3		
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<p>Output 4 Stakeholder participation in national policy-making on smallholder agriculture and seeds, and implementation of ITPGRFA, accomplished</p>	<p>4.1 One regional capacity-building workshop on ITPGRFA and its interactions with the Green Morocco Plan (around 30 participants, at least 15 women), by Year 1</p> <p>4.2 One national policymaking workshop on the Moroccan agricultural legal and policy frameworks and their interactions with ITPGRFA (50 participants, at least 20 women), by Year 2</p> <p>4.3 Case study of the High Atlas agroecosystem and agrobiodiversity management and policy implications compiled, published and disseminated by year 2</p> <p>4.4 One policy brief on Morocco's compliance with the ITPGRFA, by Year 3</p> <p>4.5 Community-oriented dissemination products (short brochure and video) in Arabic and Tamazight by Year 3</p>	<p>4.1 Workshop report, participant list and blog post</p> <p>4.2 Workshop report, participant list and blog post</p> <p>4.3 Published case study</p> <p>4.4 Policy brief on Morocco's compliance with ITPGRFA</p> <p>4.5 Video and brochure in Arabic and Tamazight</p>	<p>Stakeholders are interested in participating in capacity building and policy-making events on ITPGRFA and Green Morocco Plan Government agencies and actors are interested in collaborating in the national implementation of ITPGRFA</p>
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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. High Atlas agrobiodiversity surveyed, assessed, characterised and conserved

1.1 Regional seed survey and biometric characterisations completed

1.2 Seeds of landrace accessions of selected and species of accompanying biodiversity collected and conserved in community, regional and international seed banks

1.3 Conservation assessments for High Atlas crop varieties and species of accompanying biodiversity completed compiled and published

- 1.4 Standard operating procedure manual for High Atlas community seed banks compiled and published
- 1.5 Community Biodiversity Registers established and completed with available data by project end
- 1.6 Community capacity-building events on seed collection, post-harvest processing and conservation implemented
- 1.7 Capacity-building for community seed bank managers implemented
- 1.8 Peer reviewed manuscript submitted

Output 2. Sustainable and climate-resilient agroecosystem and crop management implemented

- 2.1 Locally-adapted crop varieties selected and tested using PVS
- 2.2 Baseline research for innovative soil, pest and water management carried out
- 2.3 Soil, pest and water management plans developed and implemented, including in Farmer Field Schools and other capacity-building events
- 2.4 Farmer Field Schools, including one on topics of importance for women, implemented
- 2.5 Training for community farmer trainers implemented
- 2.6 Gender and agriculture caravans organised
- 2.7 Training on the use of the Diversity Assessment Tool for Agrobiodiversity and Resilience (DATAR) implemented

Output 3. Livelihoods improvements through valorization, commercialization and exchange of local agrobiodiversity and increased collaboration within and between communities and regional support networks, achieved

- 3.1 Capacity-building and institutional strengthening for rural cooperatives implemented
- 3.2 Access to seed of locally appropriate crop varieties and accompanying biodiversity provided
- 3.3 Increase in net useable crop biomass measured
- 3.4 Young seed entrepreneurs trained and mentored
- 3.5 Provincial seed and biocultural diversity fairs, including community exchanges, organised
- 3.6 Regional gastronomic event in Marrakech organised and new dishes by urban chefs developed and served
- 3.7 Model for the development, processing, marketing and sale of locally-selected, climate resilient crop varieties developed and shared with seed entrepreneurs in targeted trainings
- 3.8 Second RHoMIS survey carried out, data published online and analysed in comparison with existing baseline

Output 4. Stakeholder participation in national policy-making on smallholder agriculture and seeds, and in the implementation of the ITPGRFA, delivered

- 4.1 Regional capacity building workshop on the ITPGRFA and its interactions with the Green Morocco Plan implemented
- 4.2 National policy-making workshop on the Moroccan agricultural legal and policy frameworks and their interactions with the ITPGRFA implemented
- 4.3 Case study of the High Atlas agroecosystem and agrobiodiversity management and policy implications compiled, published and disseminated
- 4.4 Policy brief, including policy recommendations, compiled, published and disseminated
- 4.5 Community-oriented video and brochure developed and disseminated widely

Annex 2 Report of progress and achievements against final project logframe for the life of the project

Annex 2

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2023
<p>Impact</p> <p>Unique and threatened High Atlas agrobiodiversity is maintained and promoted, leading to healthy agroecosystems, improved Amazigh livelihoods and resilience to environmental change, providing a model for ITPGRFA implementation in Morocco.</p>		<p>In the final year of the project, we have completed all the research and field-work related activities. despite the COVID-19 delays. We finalised regional seed surveys, biometric characterisations and conservation assessments of 6 varieties of the project's 5 key crop species. Furthermore, we delivered a wide range of capacity building activities for farmers, rural cooperatives, field staff, and local community members in our partner communities with the ultimate objective of preserving High Atlas agrobiodiversity and improving local livelihoods. We also produced 3 policy briefs and organised 1 regional capacity and one national policy workshop.</p>

<p>Outcome</p> <p>Agroecological research, farmer participation and capacity-building support the conservation and sustainable commercialisation of High Atlas agrobiodiversity, contributing to food security, poverty reduction and biodiversity-rich agroecosystems in three Amazigh rural communes.</p>	<p>0.1 High Atlas varieties of five crops surveyed, assessed, characterised and conserved in 3 community, 1 regional and 1 international seed banks, by year 3; at least 150 other cultivated plants, arable wild species and wild crop relatives inventoried, with 20% represented in seed banks and 10% with conservation assessments completed, by year 3</p> <p>0.2 At least 30ha of community-owned agricultural land under improved management, by year 3</p> <p>0.3 At least 500 Amazigh households from three communities experience improved livelihoods and enhanced wellbeing, measured using the RHoMIS survey, by Year 3</p> <p>0.4 At least 80 key stakeholders participate in national policymaking on smallholder agriculture and seeds, and implementation of ITPGRFA, by year 3</p>	<p>0.1 Regional seed surveys, biometric characterisation and cultivation, conservation assessments and a community biodiversity registry for 6 varieties of the project's 5 key crop species completed. 150 crop accessions collected and stored in 3 community seed banks and one regional seed bank. Two capacity-building workshops on seed-related topics delivered to 10 community researchers, including 3 women, and 60 community members.</p> <p>0.2 Baseline data and plans for soil, pest, and water management developed. Six Farmer Field Schools on plant nutrition and health, livestock management, sustainable water management and dry land farming delivered; 10 agroecology training modules delivered to 10 community researchers, including 3 women. One Tissoutine N'Oska focus group and one Amoud N'Oska focus group discussion hosted. Three members of our agrobiodiversity team and 3 regional researchers benefited from trainings on the DATAR platform. One scientific article published in the peer-reviewed journal "Sustainability"</p> <p>0.3 A multidisciplinary series of workshops to improve the sales of 15 rural cooperatives and the livelihoods of their rural communities delivered. Two High Atlas Food Markets and two Harvest Festivals (regional gastronomic event) hosted to support cooperatives and rural livelihoods. Supported the execution of the Second Edition of the Biocultural Festival. Increased local communities' awareness about community seed banks and distributed 12 local seed crop varieties. Five community researchers trained in data collection techniques and 43.5 hectares of irrigated and non-irrigated farming land monitored.</p> <p>0.4 Three policy briefs produced and 1 regional and 1 national workshop on ITPGRFA organised. One feature film on terraced agroecosystems in development.</p>
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<p>Output 1. High Atlas agrobiodiversity surveyed, assessed, characterised and conserved</p>	<p>1.1 One regional seed survey of High Atlas cereals, fodder and grain legumes and wild relatives completed, including gender disaggregated data where relevant, by Year 2; selected varieties of 5 crop species biometrically characterised by year 3</p> <p>1.2 100 accessions of landraces of 5 species (increased from a baseline of 25) and seeds of 30 species of accompanying biodiversity conserved within 3 community seed banks, 1 regional seed bank and 1 international seed bank, by year 3</p> <p>1.3 Adapted IUCN conservation assessments carried out for High Atlas varieties of the 5 selected crops, by Year 2, and IUCN conservation for 15 species of accompanying biodiversity completed by year 3</p> <p>1.4 One standard operating procedure manual for High Atlas community seed banks established and implemented by Year 2</p> <p>1.5 Community Biodiversity Registers established by each community by Year 1 and completed with all available data by Year 3</p> <p>1.6 At least 150 men, women and youth (at least 50% women) trained in seed collection, post-harvest processing and conservation, by Year 3</p> <p>1.7 Six community researchers (at least 3 women) trained as CSB managers, actively implementing management plans, by Year 2</p> <p>1.8 Manuscript submitted for peer-reviewed publication on the diversity, status and conservation of High Atlas agrobiodiversity, by year 3</p>	<p>Activity 1.1 Regional seed surveys and biometric characterisation and cultivation of 6 varieties of 5 selected crop species completed (Annexes 1.1 A & B).</p> <p>Activity 1.2 150 seed accessions of 6 varieties of 5 selected crop species in 3 community seed banks and 1 regional one. Annex (1.2).</p> <p>Activity 1.3 Conservation assessment protocol for agrobiodiversity developed and conservation assessments of selected crops completed with the support of a Cadi Ayyad University master's student (Annex 1.3).</p> <p>Activity 1.4 Standard operating procedure manual for High Atlas community seed banks produced (Annex 1.4).</p> <p>Activity 1.5 Data gathered on 6 varieties of 5 selected crop species used to produce community biodiversity registers (Annex 1.5).</p> <p>Activity 1.6 One capacity building workshop delivered on sustainable seed collection and seed banking in the Province of Azilal for 5 community researchers, including 2 women, and 32 community members from the Communes of .Commune of Zaouiat Ahansal and Ait M'hamed. One workshop on seed collection, post-harvest processing, and conservation in the Province of Al Haouz delivered to 5 community researchers, including 1 woman, and 28 community members from the Communes of Oukaïmeden and Imegdal (Annexes 1.6 - 1.7)</p> <p>Activity 1.7 Ten community researchers, including 3 women, trained on community seed bank management in the Communes of Zaouiat Ahansal, Aït M'hamed, Imegdal and Oukaïmeden (Annexes 1.6 - 1.7).</p> <p>Activity1.8 Published 1 scientific article entitled <i>Farmers' Variety Naming and Crop Varietal Diversity of Two Cereal and Three Legume Species in the Moroccan High Atlas, Using DATAR</i> in the peer-reviewed journal "Sustainability" (Annex 1.8).</p>
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<p>Output 2. Sustainable and climate resilient agroecosystem and crop management implemented</p>	<p>2.1 At least 3 crop varieties selected and tested by farmers through Participatory Varietal Selection (PVS), by year 3</p> <p>2.2 Baseline research for innovative soil, pest and water management carried out, by year 1</p> <p>2.3 Soil, pest and water management plans established in 3 communities, by year 2</p> <p>2.4 Three farmer field schools, benefitting 100 farmers (at least 30 women), implemented in Year 1, Year 2 and Year 3</p> <p>2.5 Three community researchers (at least 1 woman) trained as community farmer trainers by Year 1</p> <p>2.6 Approximately 60 men and 140 women participate in 'Gender and Agriculture' caravans by Year 2</p> <p>2.7 100 farmers engaged in the use of the Diversity Assessment Tool for Agrobiodiversity and Resilience (DATAR), by Year 2</p>	<p>Activity 2.1 DATAR data collected and analysed.</p> <p>Activity 2.2 Baseline data for soil, pest, and water management plan for the Communes of Imegdral and Ait M'hamed gathered (Annex 2.2 - 2.3).</p> <p>Activity 2.3 Soil, pest, and water management plans developed for the Communes of Imegdral and Ait M'hamed (Annex 2.2 - 2.3).</p> <p>Activity 2.4 Six Farmer Field School on plant nutrition and health, livestock management, and water management and dry land farming implemented (Annexes 2.4 A-D).</p> <p>Activity 2.5 Ten-module agroecology program delivered to 10 community researchers, including 3 women (Annex 2.5).</p> <p>Activity 2.6 "Tissoutine N'Oska" and "Amoud N'Oska" or 'Future Generations' and "Seeds of the Future" focus groups hosted, which benefitted 15 women aged between 45-85 years of age and 17 local male farmers, respectively (Annexes 2.6 A-B).</p> <p>Activity 2.7 Three GDF members and 3 Regional Community Researchers received training in the use of the DATAR platform (Annex 2.7).</p>
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<p>Output 3. Livelihood improvements through valorisation, commercialisation and exchange of local agrobiodiversity and increased collaboration within and between communities and</p>	<p>3.1 Five rural cooperatives increase their sale of agricultural products (including from the target species) by 30%, leading to livelihood benefits for at least 500</p>	<p>Activity 3.1 Fifteen rural cooperatives benefited from various capacity-building training and an intensive and multidisciplinary workshop series (Annex 3.1 A-D).</p>
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<p>regional support networks, achieved</p>	<p>households, by year 3, as compared to project start baseline</p> <p>3.2 4000 Amazigh farmers (at least 50% women) provided access to seed of locally appropriate crop varieties and accompanying biodiversity through 3 community seed banks, by year 3</p> <p>3.3 Useable crop biomass increased by at least 10% on average in private agricultural plots tended by 300 households, benefitting approximately 1800 community members (about 50% women), by year 3</p> <p>3.4 At least 5 community youth (at least 3 women) trained and mentored as 'seed entrepreneurs' by year 2</p> <p>3.5 Three provincial seed fairs and community exchanges implemented, serving an audience of at least 300 Amazigh farmers and cooperative members (at least 30% women), by year 3</p> <p>3.6 At least one regional gastronomic event organized in Marrakech on High Atlas agrobiodiversity, with at least 50 participants (at least 50% women) by Year 2, leading to at least 10 new dishes based on High Atlas community products and local agrobiodiversity developed and served by leading chefs by Year 3</p>	<p>Activity 3.2 Increased the awareness of 89 community members, including 32 women, about existing community seed banks and distributed 12 local crop varieties in High Atlas communities.</p> <p>Activity 3.3 Five community researchers trained in data collection. Trained community researchers helped monitor 43.5 hectares of irrigated and non-irrigated farming land in the Communes of Imegdajel and Ait M'hamed.</p> <p>Activity 3.4 In October 2021, we organised a capacity building workshop in Zaouiat Ahansal on sustainable seed collection and seed banking for a group of 20 community members.</p> <p>Activity 3.5 We organised 2 High Atlas Food Markets and 2 Harvest Festivals to support cooperatives and rural livelihoods, and supported the hosting of the Second Edition of the Biocultural Festival (Annexes 3.5 A-C).</p> <p>Activity 3.6 In October 2021, we launched Harvest Festival Marrakech, during which brought together urban and rural communities celebrating local food and new dishes through food markets, food tastings, and more.</p> <p>Activity 3.7 To be completed in Year 3 as set out in the project implementation plan.</p> <p>Activity 3.8 New questionnaire established using an online data gathering tool called Kobo Toolbox. This activity was completed in Year 3 as set out in the project implementation plan.</p>
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	<p>3.7 Model for the development, processing, marketing and sale of locally selected, climate-resilient crop varieties in regional niche markets developed and disseminated throughout the High Atlas, by Year 3</p> <p>3.8 Second RHoMIS survey carried out, data published online and analysed in comparison with existing baseline</p>	
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<p>Output 4. Stakeholder participation in national policy-making on smallholder agriculture and seeds, and implementation of ITPGRFA, accomplished</p>	<p>4.1 One regional capacity-building workshop on ITPGRFA and its interactions with the Green Morocco Plan (around 30 participants, at least 15 women), by Year 1</p> <p>4.2 One national policy making workshop on the Moroccan agricultural legal and policy frameworks and their interactions with ITPGRFA (50 participants, at least 20 women), by Year 2</p> <p>4.3 Case study of the High Atlas agroecosystem and agrobiodiversity management and policy implications compiled, published and disseminated by year 2</p> <p>4.4 One policy brief on Morocco's compliance with the ITPGRFA, by Year 3</p> <p>4.5 Community-oriented dissemination products (short brochure and video) in Arabic and Tamazight by Year 3</p>	<p>Activity 4.1 One regional policy workshop on the International Plant Treaty (ITPGRFA) and Morocco's national agricultural policy (Green Morocco Plan) hosted.</p> <p>Activity 4.2 One national policy workshop on Morocco's agricultural legal and policy frameworks and their interactions with the ITPGRFA hosted.</p> <p>Activity 4.3 The case study was finalised in the last year.</p> <p>Activity 4.4 Policy brief on ITPGRFA produced, in addition to two other policy briefs covering seeds and smallholders.</p> <p>Activity 4.5 Initial filming and field work for a feature film on terraced agroecosystems in a High Atlas community has started in October 2021. We have identified locations and community members who will participate in the filming planned in Autumn 2023.</p>
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Publications

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
* Farmers' Variety Naming and Crop Varietal Diversity of Two Cereal and Three Legume Species in the Moroccan High Atlas, Using DATAR.	Peer-reviewed journal research article	Bernis-Fonteneau, A.; Aakairi, M.; Saadani-Hassani, O.; Castangia, G.; Ait Babahmad, R.; Colangelo, P.; D'Ambrosio, U.; Jarvis, D.I. (2023).	Female	French	Sustainability 15, 10411. https://doi.org/10.3390/su151310411	https://www.mdpi.com/2071-1050/15/13/10411
* Placing the High Atlas on the global map: experiences and insights from a cultural landscapes approach to conservation and human wellbeing.	Book	Global Diversity Foundation and Moroccan Biodiversity and Livelihoods Association (2022).	Male	Spanish	GDF: Canterbury, England (UK).	https://global-diversity.org/wp-content/uploads/2022/07/Placing-the-High-Atlas-on-the-Global-Map.pdf
High Atlas Virtual Story, v.1.0. Retrieved from https://global-diversity.org/hacl-virtual-story/	Online platform	Global Diversity Foundation (GDF) and Moroccan Biodiversity and Livelihoods Association (MBLA) (2022).	Male	Spanish	GDF: Canterbury, England (UK).	https://global-diversity.org/hacl-virtual-story/