Darwin Initiative: Final Report

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

Darwin Project Information

Project reference	23-005
Project title	Promoting the use of plant resources in research and development
Host country(ies)	Ethiopia
Lead organisation	Botanic Gardens Conservation International
Partner institution(s)	Ethiopian Biodiversity Institute
Darwin grant value	£268,475
Start/end dates of project	April 2016 – March 2019
Project leader's name	Suzanne Sharrock
Project website/blog/Twitter	https://www.bgci.org/our-work/projects-and-case-studies/promoting-the-use-of-plant-resources-in-research-and-development/
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1 Project Rationale

Location

This project was implemented in Ethiopia, with activities taking place in Addis Abba and at various other locations, including Bahirdar, Jimma and Adama – see map. The project included plant genetic resource (PGR) collection holders and researchers located across the whole of Ethiopia.

Problem being addressed

At a time of global environmental change, population growth and economic development there is an increasing demand for genetic resources, both for local exploitation and for international research and development. The utilisation of plant genetic material is governed by two international treaties: the Nagoya Protocol (NP), which operates on a bilateral basis through

individually negotiated contracts, and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), which takes a multilateral approach using a standard contract. While the aim of these two agreements is to promote the conservation and sustainable use of genetic resources and equitable sharing of benefits derived through their utilisation, many countries have yet to put in place functional mechanisms to effectively operationalise these agreements. Ethiopia has a framework in place and has identified as a priority the need to further promote and increase the amount of genetic material available for research, development and subsequent commercialisation and benefit sharing, taking into account national legislation and international agreements. However, due to issues with miss-appropriation of plant resources in the past, Ethiopian regulations severely restrict the movement of genetic resources out of Ethiopia and pose limitations on the capacity for Ethiopian researchers to collaborate and share materials and expertise internationally. The project aimed to identify key bottlenecks in the process of using plant resources to generate benefits and to develop policy recommendations to facilitate enhanced research and development.

- *What biodiversity challenge was the project designed address?*

There are a wide range of stakeholders involved in the chain of custody and use of plant genetic resources, and a growing range of institutions that acquire, hold and supply resources as intermediaries. Differences in Access and Benefit Sharing (ABS) understanding between these groups (both within a country and internationally) and the lack of a common 'language' leads to mistrust, misunderstandings and bottlenecks in the flow of plant genetic resources and the generation of benefits that can be shared with providers. Ethiopia believed that the potential of its natural plant resources to generate revenue was not being fully exploited and wished to investigate this issue further. The project aimed to identify the key stakeholders and main constraints associated with the non-commercial (pre-commercial) research on plant genetic resources in Ethiopia and, using examples from other countries around the world, develop policy recommendations to enhance such research activities.

- *What poverty challenge was the project designed to address?*

The project was not designed to address specific poverty challenges and although the issue of benefit-sharing with local communities was discussed, our partner, the Ethiopian Biodiversity Institute (EBI), specifically requested that this project should not address local community issues, but would focus at the researcher level.

- *Why are these challenges relevant and for whom? How did you identify these problems?*

The challenges addressed by the project are particularly relevant for *ex situ* collection holders and researchers. In order for these stakeholders to be recognised as trusted intermediaries between the providers (local communities) and end-users of plant resources, it is important for them to understand the legal framework in which they are operating – both nationally and internationally. In Ethiopia, although an ABS framework has been in place for some years, the challenge identified by EBI was the lack of knowledge and understanding of ABS issues by PGR researchers and collection holders and the need to build capacity in this area.

- *What was the project designed to do to address these challenges?*

The project aimed to understand the specific role of plant collection holders and researchers in Ethiopia in the chain of custody of plant resources from their initial collection from the field, through research and development to a final commercial product. Through consulting with these key stakeholders, the project aimed to identify the main bottlenecks in this chain with respect to non-commercial research. At the same time, the consultation process aimed to raise awareness of ABS issues amongst these stakeholders and provide capacity building opportunities. Having identified the bottlenecks, the project aimed to develop policy recommendation to help EBI develop a system that facilitates access to genetic resources for crop improvement and other plant-related research.

2 Project Partnerships

The main project partner was the Ethiopian Biodiversity Institute (EBI), a government institution. EBI was involved in identifying the key issues the project aimed to address and was involved in project development. During implementation, all project activities were carried out in partnership. EBI was responsible for organising all local activities, including making arrangements for meetings and consultations with local partners and stakeholders and coordinating with the

National Steering Committee. BGCI provided expert technical support, coordination with the International Steering Committee and facilitation for international meetings.

Over the period of the project, the whole ABS team in EBI became more involved in project activities and this led to the building of stronger relationships between BGCI and EBI. The project also helped to build the capacity of the ABS Team in EBI to conduct awareness-raising activities extending beyond the life span of the project. EBI has expressed an interest to continue to work with BGCI on future projects.

3 Project Achievements

3.1 Outputs

Output 1: A methodology for reviewing and identifying ABS bottlenecks for research and benefit sharing and options for overcoming these published.

The project developed a methodology for reviewing and identifying ABS bottlenecks that was based around the indicators provided in the logical framework. This included the following steps:

- *A review of existing ABS agreements and the establishment of the baseline situation*.

A list of 328 ABS agreements signed since 2010 was provided to the project in Year 1. These were essentially Material Transfer Agreements (MTAs) signed between EBI and researchers accessing PGR in Ethiopia. This list was used by EBI to identify researchers that were invited to participate in the researcher stakeholder consultations in Years 1 and 2.

On analysing the list of ABS agreements, a number of issues in the way this data is collected and maintained were identified. These included a lack of unique identifiers for the agreements and inconsistencies in date format and spelling – for example of country and institution names. Weaknesses in the current ABS data management system contribute to EBI not yet being able to issue Internationally Recognized Certificates of Compliance (IRCCs), a core part of the international system established by the Nagoya Protocol to monitor utilization and check compliance. This resulted in the project consultant having further discussions with staff from EBI's ABS directorate about improvements to the system for managing and tracking ABS agreements, including the possibility of developing a module within the existing database used by EBI for collection management - BRAHMS. Discussions were held with the developers of the BRAHMS database who agreed to develop a separate database module for EBI to more effectively register and track ABS agreements. Such a module would also be able to issue alerts to remind EBI and the holder of an agreement when an update or report was due to EBI. However, towards the end of the project, EBI decided not to continue using the BRAHMS system for data management and the development of the tracking module was not taken forward.

Further work to refine the list and identify ways in which the information could be more usefully collected and organised was discussed with EBI and members of the ISC during Year 2 of the project. However, it was recognised that, as the agreements are signed by Ethiopian researchers and not foreign researchers, they are not suitable for use as IRCCs at this time.

- *Stakeholder consultations*

Consultations were held with groups of researchers and *ex situ* collections holders in Year 1 (January 2017) and during Year 2 (July and October 2017). In total 89 individuals from PGR *ex situ* collections and 72 researchers were involved in these consultations.

Consultations were also held with:

- EBI staff from the ABS Directorate to understand the on-going process for ABS awareness raising and how the project could support this process.
- Additional researchers during visits to Bahir Dar University, Gonder University, Wollo University and Addis Ababa University

- International Livestock Research Institute (ILRI) staff involved in genebank management and Bioversity International staff involved in an agro-biodiversity project – Seeds for Needs.

These consultations allowed us to identify key issues and bottlenecks related to the use of plant genetic resources in research and development and provided important opportunities for awareness-raising.

Each 2-day stakeholder consultation followed a similar format:

- Participants were asked to complete an initial questionnaire to assess their baseline level of knowledge, understanding of and attitudes towards ABS issues.
- Trainers from BGCI and EBI provided formal presentations on the NP, the ITPGRFA and the Ethiopian ABS framework. This was followed by a general question and answer session.
- Participants were divided into working groups for information gathering and exchange sessions – this formed the main part of the consultation.
- Before departing, all participants completed a post-consultation questionnaire to capture information from the working group sessions in a format suitable for analysis. This questionnaire also provided additional opportunities for participants to provide comments and input to the consultation.
- For two more heterogeneous researcher-based consultations, the project utilized a professional facilitator, who ably mobilised the discussions, using a panel interview format to explore researchers' experiences of the EBI export permit process.

The participatory discussions in the working groups aimed to generate information about plant materials in collections and/or those used by researchers. Guided by the trainers, participants discussed the following topics:

- Stakeholders involved in the chains of custody and use of plant resources;
- Sources of plant material held in collections and used by researchers;
- Users of plant material supplied by collections;
- Uses and utilisation of plant materials;
- Experiences of working internationally and exporting plant material from Ethiopia using the current Ethiopian processes;
- Data management;
- Benefits received / shared, between providers, collections and users.

Discussing and sharing knowledge and insights in a participatory manner, working in small groups then sharing outcomes with the wider audience was a novel and enjoyable experience for many of the participants. It was considered to be a very useful approach, and one that EBI has now adopted for further consultations and workshops. The consultations also represented the first attempt in Ethiopia to gather baseline information on the *ex situ* collections in the country.

Although the opinions expressed might have been tempered by the active participation of EBI staff in the discussions, there was no doubt that the researchers and collections personnel appreciated the opportunity to communicate directly and constructively with their EBI colleagues about processes that affect their research and collaborations.

Following the consultations, all data provided in the initial and final questionnaires were entered into a Survey Monkey format to allow analysis. While we recognise that it is important to interpret the results of these consultations carefully - they are indicative and not quantitative and, for the researchers, somewhat dominated by agricultural research. However, some general conclusions emerged:

- There is a high level of support for regulating access to genetic resources and community knowledge by law amongst both researchers and PGR collection holders, for the benefit of the country

- The majority of participants agreed that local communities, who are the custodians of local plant genetic resources and community knowledge, should benefit from the use of these resources.
- 90% agreed that Ethiopian ABS laws were relevant to their work
- ~33% were not familiar with the Ethiopian ABS Guide and Code of Conduct, both produced in 2012.

For PGR collection holders, the results showed that most work was carried out within a domestic Ethiopian context, although they might supply material to Ethiopian researcher colleagues working internationally.

Herbarium-based staff were concerned about their inability to share duplicate specimens with foreign institutions under the current law.

For researchers, the main constraints to the use of genetic resources and community knowledge that they identified were not directly related to ABS issues or processes but rather to:

- limited and/or low quality germplasm collections (mixed varieties, low viability, genetic erosion).
- lack of research facilities/technology.
- lack of reliable PGR collections data (little or unreliable passport data).

Other general observations and conclusions arising from the consultations were:

- Researchers and collections holders seek more opportunities to communicate and collaborate with EBI.
- Currently few researchers are honouring their obligation (from the MTA) to report their research results to EBI and deposit copies of theses/research publications.
- PGR collection holders and researchers identified a strong need to improve their own systems and EBI collections' systems for data management.
- Improving PGR collections and data quality is a key means to promote research and development in Ethiopia; data-sharing and feedback between collections, researchers and EBI are examples of non-monetary benefit-sharing that build scientific relationships and knowledge of Ethiopian biodiversity.
- Improved data management will also enable EBI ABS tracking/follow-up, e.g. on researchers' MTA obligation to report results, as well as benefit sharing obligations.
- More communication and capacity building on ABS issues is required – especially for young researchers.
- Collection and export of plant genetic resources may also involve Ministry of Agriculture (quarantine), Customs and a range of other authorities, identified as important stakeholders – there is a need for a joined-up approach to raise awareness of the interactions and procedures required, ideally with those authorities' participation during the project; researchers expressed desire for a simple coordinated process for export.
- There is some unease about working with traditional knowledge and there is a need to build trust with local communities and traditional healers, and also to help to raise their awareness of ABS issues.
- There is a low awareness and understanding of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) and rare use of the Standard Material Transfer Agreement for material on Annex 1 of the ITPGRFA.
- Collections holders and researchers (and EBI) are concerned about potential weak points (e.g. lack of ABS awareness at Customs), loopholes (e.g. embassies), misappropriation abroad and lack of follow-up by EBI on use of material; however researchers also shared experiences of ABS-aware colleagues in foreign labs.
- The MTA for taking research material overseas is only signed by the Ethiopian researcher (usually a PhD student) taking the material abroad –there is no clear link to

the foreign institution, making the MTA a poor tool for monitoring the movement of plant genetic resources and promoting benefit-sharing; furthermore EBI follow-up is disrupted when the PhD student subsequently moves to a new institution.

- Researchers were also critical of the EBI administrative process for the MTA, including the requirement to visit the EBI office in person and the need to deposit with EBI exact copies of any material exported (which may be worthless).

The methodology for carrying out the consultations and a summary of the results obtained were published in January 2019 as an article in BGCI's journal BGjournal (see Annex 1 p. 18-21). Further details of the results of the consultations are provided in Annex 2 (presentation to the project's International Steering Committee) and copies of questionnaires used during the consultations are provided in Annex 3.

The results of the consultations were used to develop policy and guidance recommendations that were provided to EBI's ABS Directorate staff (Annex 4). See Output 4.

Main achievements for this output

A methodology for reviewing and identifying ABS bottlenecks for researchers and PGR collection holders was developed, consisting of a baseline survey and series of stakeholder consultations. The stakeholder consultations themselves adopted a participatory approach that was much appreciated by the participants and ensured good participation by all members of the various groups involved. This methodology proved to be a robust system for identifying not only the key constraints and bottlenecks in the ABS system in Ethiopia, but also other (non-ABS) constraints to the use of plant genetic resources in research and development. At the same time, the stakeholder consultations provided an opportunity to raise awareness of the international and national ABS frameworks amongst a key group of stakeholders.

Main challenges

The project was working at a time of review and updating of the Ethiopian ABS framework – bringing this in line with the newly adopted Nagoya Protocol. Some of the issues raised by our project were being addressed through a parallel project (UNDP-GEF Global ABS project: '*Strengthening human resources, legal frameworks and institutional capacities to implement the Nagoya Protocol*') and at some stages of our project, there were issues of 'moving goal posts'. However, the appointment of the regional coordinator of the UNDP-GEF project to our project's International Steering Committee, did ensure good communication channels between the two projects.

With regard to reaching all relevant stakeholders, the project engaged well with *ex situ* PGR collection holders, but amongst researchers, the focus of EBI (who selected the stakeholders for the consultations) was on the agriculture and forestry sectors, and there was consequently less engagement with those using plant resources for research in the pharmaceutical / cosmetics / medical sectors.

Output 2: Capacity built amongst PGR collection holders and researchers to enable the use or appropriate modification of best practices and model ABS agreements, to support development of simplified access measure for non-commercial research.

The stakeholder consultations revealed a number of areas where lack of capacity to implement ABS was a constraint for PGR collection holders as well as researchers.

One issue identified during the first consultations was the inconsistency in record keeping across PGR collections and the lack of databases to manage the information on materials in collections. Without reliable systems to manage collection information (such as origin of material, agreements under which materials are collected and who they are being supplied to) it is very difficult for *ex situ* collections to fully comply with national ABS obligations or good practice, such as identifying opportunities for sharing non-commercial benefits. In March 2017 therefore, two training courses in collection management were held – one focussing on databases and one on the management of living collections. 73 people participated in these courses (Annex 5). These training courses served to highlight the importance of data management in relation to living and herbaria collections.

Following the completion of the consultation process in Year 2, a more in-depth analysis of the data obtained was carried out to guide the further development and delivery of a training strategy during Year 3 of the project

From this analysis it became clear that as well as training in PGR collection and data management, there was need for further guidance on ABS for young university researchers and national agricultural research coordinators.

A two-pronged training strategy was therefore developed. This consisted of developing training materials for PGR collection holders to build their capacity in data management and raise awareness of national and international ABS measures, while at the same time, developing a set of training materials on ABS implementation appropriate for both PGR collection holders and researchers, for dissemination at universities and research institutes.

Training materials were developed and used during two training courses (September 2018 and January 2019). A total of 24 national agricultural research coordinators and 29 collection holders participated in these courses (Annex 6).

The training materials were then put together as an ABS Learning Package aimed to support peer-to-peer learning. These were made available as a set of hard copy documents and as electronic documents on a memory stick (Annex 7). These can also be downloaded from the BGCI website: https://www.bgci.org/resources/bgci-tools-and-resources/abs-learning-package/.

The Learning Package consists of three PowerPoint presentations, each accompanied by a booklet with speaker's notes to assist trainers and support understanding:

- *Introduction to the international ABS framework*: This covers the Convention on Biological Diversity (CBD) and its ABS provisions, the Nagoya Protocol and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), the ABS treaties of highest relevance to most of the stakeholders involved in the project.
- *Access and benefit sharing at the institution*: This looks at how ABS may be implemented in practice in collection-based institutions. Elements of an institutional ABS toolkit are identified.
- *ABS responsibilities for Ethiopian researchers and collection holders*: This bridges the training provided by EBI on the Ethiopian framework and the more international/general ABS training, highlighting particular considerations relevant to Ethiopia.

To test learning and understanding, the package also includes a set of ABS quiz questions and a number of ABS scenarios relevant to the work of researchers and collection holders. The scenarios are a key element of the participatory approach to training and are accompanied by guidance notes for trainers.

Main achievements for this output

Through the stakeholder consultations and the more formal training courses delivered by the project, awareness of ABS issues was raised with over 250 researchers and *ex situ* PGR collection holders across Ethiopia. Materials were produced to support peer-to-peer learning in institutions and disseminated by EBI to universities and agricultural research centres across the country. These will support researchers to pass on relevant information to younger students. A set of these resources has also been modified to make them appropriate for general use outside Ethiopia and these are being widely disseminated by BGCI. These resources are also shared with the global ABS community by being made available on the knowledge repository hub developed by the UNDP-GEF global ABS project and the CBD's ABS Clearing House.

Towards the end of the project, a survey was distributed electronically to participants in the training courses and stakeholder consultations. This aimed to gather information on the value of the consultation and training process and the impact these sessions had on raising awareness and enhancing understanding of the ABS national and international frameworks. This was completed by 31 participants. Similarly, post-training evaluation forms were completed by participants following specific training courses. Feedback obtained indicated a high level of satisfaction and good learning outcomes. Details provided in Annex 8 (final workshop presentation)

Main challenges

As mentioned before, the project operated at a time when Ethiopia's ABS framework was being reviewed and modified. It was therefore necessary to keep the training on this framework fairly general, without being able to delve too deeply into specific issues that were considered likely to change in the short term.

The need for building capacity in data management became clear during Year 1 of the project and indeed data management is an under-explored but critical component of Nagoya Protocol implementation. Data management became a key area of training for courses held both in Years 1 and 3 of the project. At the start of the project, EBI was using the BRAHMS database system to manage its data and was considering expanding this to other collections. Project staff therefore engaged with the BRAHMS developers at Oxford University to ensure the development of an ABS module in the next version of the database (BRAHMS 8). This module was developed and is now included in BRAHMS 8. However, by Year 3 of the project, EBI had decided not to continue to use BRAHMS and to move to a different software platform for collection management. It was therefore not possible to continue the collaboration with BRAHMS to develop further Ethiopia-specific modules (such as the ABS-agreement tracking module).

Output 3: Recommendations on adopting, or modifying as appropriate, best practices for collections and researchers into the existing Ethiopian ABS framework, based on a global review of best practices and case studies and consideration of national and regional context

Wide ranging international contacts have been made with researchers, collection holders and their networks around the world to identify suitable examples of best practice. These examples show how practitioners acquire, use and transfer plant genetic resources, and share benefits in compliance with national and international laws, respecting the rights of provider communities and in accordance with mutually agreed terms.

To date, 23 examples have been identified and descriptions prepared. A list of these is provided in Annex 9. These are all available on the BGCI website: https://www.bgci.org/policy/abscasestudies/

The practical examples highlight measures to strengthen relationships with communities, ABS training and awareness-raising within institutions and via networks, institutional responses to codes of conduct, and data management systems to maintain links between provider and permissions data and material. The examples come a range of countries, including Mexico, Morocco, Germany, France, Sweden, UK and the USA.

The examples are presented under the following themes (it should be noted that some of the examples are relevant to more than one theme):

- Codes of Conduct and their institutional implementation (examples from Mexico, UK, Sweden, Germany, France, USA)
- Working with Communities and their traditional knowledge (examples from Canada, Ethiopia, Morocco and Mexico)
- Data management systems (examples from Mexico, UK, Sweden, France and Germany)
- Benefit sharing (examples from Mexico and the UK)
- Awareness raising by networks and institutions (examples from the UK and France).

Some of the measures are simple, some are more complex, depending on local context, needs and available resources. While staff from EBI's ABS Directorate have been encouraged to review these and assess their usefulness in the Ethiopian context, due to the ongoing updating of the Ethiopian ABS framework, it is presently not clear how (and if) these will be incorporated into the updated framework. We do however hope that they will inspire further ideas for improving practical ABS implementation and in particular that they will help Ethiopian institutions to identify trustworthy potential research collaborators.

Main achievements for this output

The collecting of ABS implementation examples from around the world has helped to raise awareness of the project with researchers and collection holders internationally. It also helps to highlight the steps being taken by many research institutions to put in place systems to ensure plant-based research is carried out legally and equitably. Highlighting such examples can help to build trust between 'providers' and 'users' of genetic material, as well provide guidance to those looking to develop their own systems.

Main challenges

While many institutions in developed countries have put in place good systems to track and monitor the use of material in their collections / research programmes, most of these are large, well-resourced organisations. Examples of systems of ABS implementation by researchers and their institutions in developing countries – in situations similar to those in Ethiopia -were less easy to find. However, the Code of Conduct for working with local communities in Mexico is of particular relevance for Ethiopian researchers and PGR collection holders – and we have encouraged EBI to study this. Another challenge is finding institutions that are confident enough to share information; ABS and Nagoya implementation is a work in progress so most institutions are still finding their way, and many feel it is risky to put forward examples that could be criticised by governments or NGOs.

Output 4: A widely-disseminated policy brief making recommendations for the development of simplified measures for access for non-commercial research and use of best practices

A policy brief was developed based on the outcomes of the stakeholder consultations and discussion with other stakeholders during the course of the project. This was peer-reviewed by the project's International Steering Committee and other international experts before being provided to EBI. It was decided that this should remain an internal guidance document for EBI and has therefore not been disseminated outside Ethiopia. Copies were however made available to the UNDP-GEF ABS Global Project Regional Coordinator and it is hoped that some of the issues raised will be taken up by this project.

The policy guidelines cover the following areas;

- Legal process for non-commercial research and export
- Data management for MTAs and other ABS agreements
- Facilitated access under the Multilateral System of the International Treaty on Plant Genetic Resources for Food and Agriculture
- Improving communication between EBI and researchers to promote research and ABS compliance
- Guidance tools
- Fostering interaction with communities

A copy of the policy guidance document is provided in Annex 4.

3.2 Outcome

Project outcome: Collection holders, researchers and policy makers will have a 'road map' to guide decision-making and policy development to facilitate access to and utilisation of plant resources for research and development.

We believe the project did achieve its intended outcome, both in terms of providing guidance to policy makers on facilitating the use of plant genetic resources in research and development and in helping researchers and collection holders to understand and address ABS issues. This assessment can be substantiated by referring to the indicators in the logframe:

Indicator 01: By year 3, a tested methodology to identify research and benefit sharing bottlenecks in national ABS frameworks at collection holder/researcher level and options for addressing these will be available.

A methodology to identify research and benefit sharing bottlenecks has been developed. This consists of carrying out a baseline survey of existing agreements, identifying key stakeholder groups and conducting in-depth consultations with these groups. On this basis, key constraints for researchers/collection holders can be identified and recommendations for addressing these developed.

Indicator 0.2: By the end of the project, recommendations on simplified measures for access to materials for non-commercial research will be submitted to policy makers.

A number of policy recommendations have been made to EBI related to the non-commercial use of plant resources in research and development. These have also been shared with an ongoing UNDP-GEF project that continues to work with EBI in Ethiopia. It is hoped that the recommendations will be taken up and addressed by this project and EBI.

Indicator 0.3. By the end of the project, stakeholders in Ethiopia will have a better understanding of, and involvement in, ABS issues.

Over 250 scientists from across Ethiopia were involved either in stakeholder consultations or training courses. Feedback from these events was positive – both in terms of information gained and the opportunity they provided for researchers to engage with EBI staff. Many requested that EBI continue to organise such events on a regular basis. The participatory methodology adopted by the project is also now being used by EBI for their own ABS awareness-raising activities.

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

Impact: Plant genetic resources are being used in research and development and such activities enable the generation and sharing of benefits thus helping to achieve the ABS provisions of the CBD

The project has identified a wide range of activities where plant resources are being used in research and development, in Ethiopia and abroad. Documentation of the extent and range of use is an essential first step in being able to measure increased use. The stakeholder consultations conducted as part of the project also served to identify and document how well benefits are being shared – and a point raised in several of the consultations was if, and how well, benefits are returning to local communities – the custodians of the plant genetic resources. It was also recognised that in many cases benefits are non-monetary and as such are not always acknowledged as benefits. Again, documentation of benefit sharing is essential and prior to this project, no effort had been made to document and record non-monetary benefit sharing.

Examples of benefits provided to local communities, as recorded by those researchers who use locally-collected plant resources, include:

- Employment opportunities / salaries / per diems
- Payments in exchange for plant materials
- Payments to the community
- Priority to supply the raw materials required for producing products
- Educational materials
- Supply of high-yielding crop varieties to local communities

Non-monetary benefits that researchers reported they both provide and receive through ABS agreements include:

- Opportunities to participate in fieldwork / research
- Exchange of knowledge and expertise
- Short and long-term training opportunities
- Access to technology / facilities
- Co-authorship of publications
- Free access to databases

It was beyond the scope of the project to investigate such benefit-sharing further, but it was clear that the researchers and PGR collection holders consulted had a strong sense of the importance of their relationships with their partners – and especially the communities from whom they collect

plant genetic resources, and in some cases recorded community knowledge. User responsibilities towards communities are communicated in Ethiopia in the 2012 Code of Conduct, but many consulted did not know about this tool.

The issue of community-researcher interactions is addressed in our policy recommendations and primarily we recommend that EBI work with the UNDP-GEF project to facilitate the development of community protocols setting out communities' expected processes for positive interactions with researchers. These would include basic information such as whom researchers should contact, and at what stage, and how different types of community knowledge may or may not be recorded, kept and further disseminated via publication or other means, and how researchers should keep in touch with communities as research progresses. Researchers and collections-holders should also be able to participate in some discussions around the development of such protocols. Awareness of these protocols can be raised via the EBI website, the updated Code of Conduct, and training activities and materials.

Researchers wondered if communities knew their own rights under the ABS framework but there was uncertainty over whether it was appropriate for researchers to inform communities or do outreach; we would not recommend that researchers be expected to formally take on such responsibilities but clearly raising researchers' own awareness of any protocols that are developed in future would be helpful.

We also recommend that researchers and *ex situ* collections keep good records of the communities contacted during their research and any obligations they have to them. These data should be maintained with specimen passport data in a good data management system.

4 Contribution to Darwin Initiative Programme Objectives

4.1 Contribution to Global Goals for Sustainable Development (SDGs)

The following SDGs are relevant to our project:

SDG 15 – Life on land, especially Target 15.6: *Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed.*

Our project has contributed to raising awareness of and building capacity to achieve fair and equitable sharing of the benefits arising from the utilization of genetic resources. It has produced an ABS Learning Package to help *ex situ* collection holders and researchers understand the relevant international ABS framework and how ABS should be implemented in research institutions.

The project is also contributing to:

SDG 1: End poverty in all its forms everywhere, and particularly Target 1.4: *By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance*.

Although our project does not directly address community rights, by building awareness and capacity amongst PGR collection holders and researchers of ABS issues, this will ensure that plants accessed from communities will be done with due recognition of communities' rights and involve the sharing of benefits from plant research with communities. This issue is also covered in our policy guidance (Annex 4)

4.2 Project support to the Conventions or Treaties (CBD, CITES, Nagoya Protocol, ITPGRFA)

The project was specifically focused on the implementation of the Nagoya Protocol (NP) and the ITPGRFA. The main project partner (EBI) is the ABS and ITPGRFA Focal Point in Ethiopia, and the Institute is currently updating their pre-NP ABS laws and measures so that Ethiopia will be in compliance with both the NP and the ITPGRFA. The project particularly contributed to core NP provisions on benefit sharing (Article 5) and identifying opportunities to implement Article 8a (Special Considerations) regarding non-commercial research, provided guidance on best practices and model ABS agreements (Articles 20 and 19), and contributed to awareness-raising (Article 21) and capacity-building (Article 22). The project also raised awareness and promoted the NP amongst a wide range of stakeholders, with a focus on *ex situ* collection holders and researchers, and built capacity to implement the NP amongst these groups. With regard to the ITPGRFA, the project helped to raise awareness of the ITPGRFA, and made recommendations on how this and the Nagoya Protocol can be implemented in a mutually supportive manner, gathering and analysing relevant case studies and examples.

4.3 Project support to poverty alleviation

While the project did not include a specific focus on poverty alleviation, as mentioned under point 4.1 above, the project is helping to build awareness of the role of local communities in providing plant resources for research and development – and the need for benefits (both commercial and non-commercial) to be shared with such communities. During the stakeholder consultations, explicit efforts were made to identify and discuss specific benefits that communities might receive from the use of their plant resources.

4.4 Gender equality

The project did not have a specific focus on gender issues and we are aware that women were very much under-represented in our stakeholder consultations and training sessions. This reflects the lack of women researchers in general in the plant-based research community in Ethiopia. However, during the course of the project, we did stress to EBI the importance of inviting and including women whenever possible in any project activities and, although women are under-represented, we deliberately selected a number of women for leading roles during the consultation activities.

4.5 Programme indicators

- **Did the project lead to greater representation of local poor people in management structures of biodiversity?**

This was not a focus of the project

- **Were any management plans for biodiversity developed and were these formally accepted?**

This was not a focus of the project

- **Were they participatory in nature or were they 'top-down'? How well represented are the local poor including women, in any proposed management structures?**

This was not a focus of the project

- **How did the project positively influence household (HH) income and how many HHs saw an increase?**

This was not a focus of the project

- **How much did their HH income increase (e.g. x% above baseline, x% above national average)? How was this measured?**

This was not a focus of the project

4.6 Transfer of knowledge

The project did not include any formal training for project partners. However there was considerable transfer of knowledge – from the project consultant to EBI staff members and participants in stakeholder consultations and training sessions. As well as the project consultant, a number of national and international experts were involved in delivering training for the project. These included experts in collection management and database systems. An international facilitator also worked with EBI staff to build their capacity in conducting consultations and participative training.

4.7 Capacity building

The project had a significant focus on capacity building – mainly aimed at building capacity for researchers and PGR collection holders to understand and implement the Nagoya Protocol and ITPGFRA in their day-to-day work. The resources developed by the project are very much aimed at helping these people to pass on their newly-acquired knowledge to their peers and others (including students) in their institutions.

We also worked with staff members from EBI's ABS Directorate and helped to build their capacity to deliver training in a more participatory manner. By using these staff as resource-people during the stakeholder consultations and asking them to lead discussions on aspects related to the Ethiopian ABS framework, we helped to build confidence and skills in ABS training. We did request that project funds be allocated to supporting a younger member of EBI's ABS team to participate in CBD COP 14 in 2018, but the Ethiopian government's policies would not allow this.

5 Sustainability and Legacy

We hope that the policy guidance developed by the project and provided to EBI will be reflected in the updated ABS framework presently being developed in Ethiopia. The Global ABS Project, which is continuing to work with EBI on this, has received a copy of this guidance document and is keen to consider our recommendations as they take forward policy development with EBI.

A number of the participants in the stakeholder consultations have been identified as ABS 'champions' and we have recommended that EBI maintain regular contact with these people, as well as seeking regular opportunities to talk to other researchers and collection managers.

The resources developed by the project have been adapted to make them suitable for a broad audience and these are being widely distributed by BGCI through its global network. Furthermore, the resources are available on the Global ABS Project website and will be available through the ABS Clearing House hosted by the CBD.

6 Lessons learned

As reported in Year 1, face-to-face meetings of the International Steering Committee (ISC) were very difficult to organise due to the busy schedules of all members of the Committee. In Years 2 and 3 we therefore focused more on individual discussions with members of the Committee as and when these were possible and joint skype calls/meetings were kept to a minimum. This issue is discussed further in 6.1.

While all consultations with PGR collection holders were well attended, the first consultation with researchers was organised at rather short notice by EBI and attendance was poor. For the second researcher consultation, much greater notice was given and efforts were made to follow-up invitations individually with telephone calls to ensure that participants had received the invitation and were able to attend. This did ensure good participation and the need for preparing early for such meetings was acknowledged as important by EBI.

Working with a professional facilitator for some of the consultations was very helpful – especially in further developing the participatory approach we had adopted from the beginning of the project. Engaging the facilitator for the first set of consultations, rather than the second, may have been beneficial. However, it was also useful to have a good 'baseline' and an understanding of the situation on the ground, before engaging the facilitator.

Communication with EBI by email has been challenging at all stages, from project planning onwards; Ethiopia-based actions centred almost exclusively around BGCI visits. Implementation

at EBI was likely hampered by the institutional structure, whereby formal responsibility for project implementation was predominantly assigned outside the actual ABS Directorate, though the latter team's active and substantial input and involvement was critical.

The improvement in Years 2 and 3 communications stemmed in part from BGCI getting to know some of the individuals in the ABS Directorate team, and communicating more directly with those who are engaged, willing and able to follow up on specific activities.

In Year 3 of the project, although the EBI team were more fully engaged in all activities, efforts to stimulate independent activities and actively contribute to the development of capacity building resources remained challenging throughout the project.

Timely financial reporting by EBI was difficult, in part due to the financial system operated by EBI and in part due to changes in personnel within EBI's Finance Directorate. Although not requested by EBI during project development, a dedicated financial officer, supported by the project, would have helped to address this problem.

Our project was one of several being implemented by EBI at the same time, and although there were some opportunities for synergy between these projects, there was also competition for the local project leader's time and attention. This situation was compounded by the initiation of the Global ABS Project in Ethiopia during Year 2 of our project. However, efforts to ensure good communications between the two projects (in particular, inviting the project's Regional Coordinator to join our International Steering Committee) we believe worked to the benefit of both projects.

6.1 Monitoring and evaluation

There were minor changes to the project logframe before the project commenced.

The M&E system developed by the project involved the development of national and international steering committees.

At the international level, as mentioned above, face-to-face meetings were very difficult to organise due to the busy schedules of all members of the Committee. However, as all members of the Committee were international ABS experts, it was very helpful to have them available on an individual basis to advise and assist with issues as they arose. For this type of project, getting the balance between working with over-stretched and time-limited experts and having the support of those with more time available but with perhaps less experience to share is always going to be an issue. On balance, we believe being able to call on the individual members of our ISC as and when needed for advice, was more important than having regular meetings of the whole committee.

A National Steering Committee was established and this Committee met annually to review project progress.

There has been no external evaluation of the project, but an internal survey of participants in stakeholder consultations and training courses was conducted. The response rate to the survey was somewhat disappointing (around 30%), but those who did respond were very positive about their experiences of participating in the project.

6.2 Actions taken in response to annual report reviews

The comments raised by the reviewers of the year 2 report are provided below. It was requested that these be addressed in the next annual report;

Please provide detail on the specific benefits that communities might / will receive from the use of their plant resources as a result of the successful completion of this project:

This is addressed in Section 3.3

'….Staff from EBI's ABS directorate have been 'encouraged to review [other national best practice and model agreements] and assess their usefulness in the Ethiopian context'. Please provide detail on the outcome of this process.

This is discussed in Section 3.1 (Output 3)

7 Darwin identity

The project, and the Darwin Initiative itself, has been publicised at a number of events and conferences over the course of the project. These include:

- Side events at the 13th and 14 Conferences of the Parties to the CBD (Mexico, December 2016 and Egypt, November 2018). These side events were each attended by at least 50 COP participants and provoked lively discussion on the issues around ABS, differing national approaches, implications for *ex situ* collections and the importance of data management. Annex 10 provides details of each side event.
- Two sessions held at the 6th Global Botanic Gardens Congress in Geneva in June 2017. This congress was attended by over 550 delegates from 65 countries. The first was a session focused on Darwin Initiative projects, where a presentation was made on the project itself. The second event was a symposium on ABS where the initial results of the project were presented, together with presentations on ABS from other countries around the world (Annex 11).
- Global Genome Biodiversity Network 2018 Conference (2018): A presentation on: Positive examples to promote action and trust in an uncertain ABS world, focusing on the international examples of good practices collected for the project
- Eurogard VIII (2018): A symposium on: Managing Plant Collections in a Post-Nagoya World: How Are Botanic Gardens Adapting To New Access And Benefit Sharing Regulations?

The project also helped to support the participation of two EBI staff members (Dr. Melesse Maryo, Director General of Ethiopian Biodiversity Institute and Mr. Ashenafi Ayenew, Director, Genetic Resource Access and Benefit Sharing Directorate, EBI) in an ABS consultation meeting held from August 27 - 31, 2017 at the International Academy for Nature Conservation, Isle of Vilm, Germany.

The meeting – T*he Vilm ABS Dialogue – Informing about Domestic Measures for Access to Genetic Resources* had as its objectives:

- To identify and present best practices on available, clear and transparent access regulations with representatives of CNAs/NFPs of provider countries.
- To allow users of genetic resources to be better informed by countries that have structured, clear, and transparent access measures in place.

The Ethiopian team presented the Ethiopian ABS law (proclamation and regulation), detailed ABS procedures with prepared flow charts and an Ethiopian ABS case study.

The Darwin Initiative was duly acknowledged for supporting this participation.

The collection of ABS examples and case studies by the Project Consultant has helped to raise the profile of the project with the wider international ABS community.

Within Ethiopia, the Darwin logo and identity have been prominently used/referenced during all of our project activities. As a result, a number of future potential Darwin projects have been proposed to BGCI and discussed with Ethiopian researchers.

At the international level, members of the International Steering Committee come from the CBD Secretariat, the ABS Capacity Development Initiative and Bioversity International. All are now well aware of the project and the support from the Darwin initiative for this work.

The ABS Learning Package clearly displays the Darwin Initiative logo and acknowledges support from the UK Government. This package is available for download from the BGCI, ABS Global Project and CBD ABS Clearing House websites.

An issue of BGCI's members' journal – BGjournal – was themed on ABS and carried the Darwin initiative logo – see Annex 1. This issue of the journal carried an article about the project and was distributed to all BGCI member gardens worldwide.

8 Finance and administration

If all receipts have not yet been received, please provide indicative figures and clearly mark them as Draft. The Actual claim form will be taken as the final accounting for funds.

8.1 Project expenditure

Project spend (indicative) since last annual report	2018/19 Grant (£)	2018/19 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)			-12%	EBI have not charged technical staff time to the project
Consultancy costs			0%	
Overhead Costs			0%	
Travel and subsistence			21%	Travel costs for workshops greater than anticipated when budget set in early 2016
Operating Costs			-12%	Underspend in costs of workshops
Capital items (see below)				
Monitoring & Evaluation			-4%	
Others (see below)				
TOTAL				

Staff employed (Name and position)	Cost (£)
S Sharrock – Project Leader BGCI	
H Desta – Finance officer EBI	
TOTAL	

Capital items – description	Capital items – cost (£)
TOTAL	

Other items – description	Other items – cost (£)
TOTAL	

8.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total

	(£)
Kirsty Shaw, BGCI – time for supporting training courses in Ethiopia	
EBI staff costs	
International Steering Committee members (Hartmut Meyer, Kathryn Garforth, Michael Halewood, Fouad Bergigui) participation in meetings, reviewing documents, informal discussions 60 days	
Participation and presentation in COP 13 Side event, Dec. 16 (Emiliano Sanchez Martinez, Manuela de Silva, China Williams) 1 day	
Delivering training in Brahms database – Denis Filer – 5 days	
Delivering training in collection management – Ben Jones – 5 days	
Preparation of ABS implementation examples – 23 people (1 day per person)	
Presentation in 6GBGC ABS symposium (Conny Loehne, Emiliano Sanchez Martinez) 0.5 days	
Presentation at COP14 side event (Chris Lyal, Tim Hirsch) 1 day	
Delivering training in collection management (John Grimshaw) 5 days	
Delivering training in databases (Pete Atkinson) 5 days	
Writing articles for BGjournal issue on ABS – 4 people (3 days each)	
TOTAL	

Source of funding for additional work after project lifetime	Total (£)
TOTAL	

8.3 Value for Money

The project has provided value for money in a number of respects:

- A number of international experts on ABS and *ex situ* collection management have provided input into the project without charge. These include members of the International Steering Committee who have participated in meetings, reviewed documents and provided advice. Other experts who have contributed to events and training courses organised by the project include senior staff members from GBIF, the UK's Natural History Museum, The Mexican Association of Botanic Gardens, World Federation of Culture Collections, Royal Botanic Gardens, Kew, Cambridge University Botanic Garden, The Yorkshire Arboretum and Oxford University.
- The ABS Learning Package produced as a project output was designed by BGCI's designer at a reduced price and to a very high standard. This is being very widely disseminated by BGCI at no cost to the project.
- Researchers from around the world have put time into producing case studies and examples of ABS implementation for publishing both on the BGCI website, and also in BGCI's journal BGjournal at no cost to the project.
- The project consultant put considerably more time into the project than the number of days she was contracted to provide.

- An internationally-recognised facilitator participated in the project at a considerable lower fee than she would normally charge due to her links with members of the International Steering Committee.

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

Note: Insert your full logframe. If your logframe was changed since your Stage 2 application and was approved by a Change Request the newest approved version should be inserted here, otherwise insert the Stage 2 logframe.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Impact: Plant genetic resources are being used in research and development and such activities enable the generation and sharing of benefits thus helping to achieve the ABS provisions of the CBD (Max 30 words)			
Outcome: (Max 30 words) Collection holders, researchers and policy makers will have a 'road map' to guide decision-making and policy development to facilitate access to and utilisation of plant resources for research and development.	0.1 By year 3, a tested methodology to identify research and benefit sharing bottlenecks in national ABS frameworks at collection holder/researcher level and options for addressing these will be available. 0.2 By the end of the project, recommendations on simplified measures for access to materials for non-commercial research will be submitted to policy makers. 0.3. By the end of the project, stakeholders in Ethiopia will have a better understanding of, and involvement in, ABS issues.	1.1 Methodology available on CBD and BGCI websites. 1.2 Relevant text in Ethiopian ABS reports. 1.3 Researcher questionnaires and comparison with baseline information.	There is political will to implement ABS agreements in Ethiopia. Stakeholders understand that utilisation is necessary for benefit sharing. Simplified access measures are acceptable to stakeholders and policy makers. Lead agency will actively promote supportive policies to relevant decision makers.
Outputs: **1**. A methodology for reviewing and identifying ABS bottlenecks for research and benefit sharing and	1.1 By December 2016, review of existing ABS-agreements carried out and baseline established with respect to stakeholders involved 1.2 By September 2017, at least 8 stakeholder consultations completed	1.1. Report on baseline situation 1.1 Reports from stakeholder consultations including information on key ABS bottlenecks.	Stakeholder groups are representative of the wider community.

options for overcoming these published.	and major ABS bottlenecks for research identified. 1.3. By September 2018, options for overcoming bottlenecks reviewed and recommendations provided to Ethiopian partners. 1.4 By December 2018, a report detailing the methodology used to identify and overcome bottlenecks available on CBD and BGCI websites.	1.2 Project reports including information on draft methodology and mechanisms for finalising. 1.3. Methodology available.	Methodology developed in Ethiopian context is applicable in other country contexts. Stakeholders are willing to participate in the process.
2. Capacity built amongst collection holders and researchers to enable the use or appropriate modification of best practices and model ABS agreements, to support the development of simplified access measures for non-commercial research.	2.1 By September 2017, capacity gaps amongst collection holders identified and training strategy developed. 2.2 By October 2018, training materials developed, 4 national training courses held and at least 20 staff trained. 2.3 By March 2019, training resources available on-line to support capacity building more widely.	Training course reports including self-assessments from participants on knowledge gained. Training materials available on-line .	Full participation of collection holders in the consultation and training process. Collection holders remain in post. Existing best practices and model agreements are appropriate or can be modified to fit the Ethiopian context.
3. Recommendations on adopting, or modifying as appropriate, best practices for collections and researchers into the existing Ethiopian ABS framework, based on a global review of best practices and case studies and consideration of national and regional context.	3.1 By September 2017, examples of best practice and case studies on simplified measures for access from around the world compiled and made available on the CBD and BGCI websites. 3.2. Recommendations on adopting these provided to Ethiopian partner by December 2017.	Project reports. Information on CBD and BGCI websites.	Suitable case studies and examples are available and can be accessed.

	3.3 Continuing addition of cases studies to websites until March 2019.		
4. A widely-disseminated policy brief making recommendations for the development of simplified measures for access for non-commercial research and use of best practices.	4.1. By August 2018, policy brief drafted based on examples and case studies and on field experience in Ethiopia. 4.2 By December 2018, policy brief reviewed and finalised and disseminated via BGCI and CBD channels. 4.3 Final results of the project reported at final project meeting in March 2019.	Project report. Policy brief available. Documentation for final project meeting.	Policy makers are interested in adopting new policies that facilitate research.

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

1.1 Establish Steering Committee

1.2 Identify key stakeholder groups

1.3 Develop guidelines and process for stakeholder consultations

1.4 Carry out ABS baseline survey

1.5 Carry out stakeholder consultations

1.6 Analyse results of stakeholder consultations, identify capacity gaps and research and benefit sharing bottlenecks

1.7 Review examples of best practice including model agreements and make recommendations for their use in existing frameworks

1.8 Publish report on methodology used to carry out review

1.9. Disseminate results of stakeholder consultations

2.1 Use results of consultations with collection holders to identify capacity gaps (see Activity 1.5)

2.2 Prepare training strategy and training materials

2.3 Work with EBI to deliver ABS training at national level

2.4 Adapt training materials to self-learning modules and make available on-line.

2.5 Carry out survey of trained researchers to evaluate learning success

3.1 Compile examples and case studies of best practice,

3.2 Analyse, review and make recommendations for adopting these into existing Ethiopian framework (see Activity 1.6)

3.3 Make cases studies etc. available on-line and continue updating.

4.1 Draft policy brief based on field experience in Ethiopia and using examples of best practice (see Activity 3.1)
4.2 Carry out peer review of policy brief.
4.3 Develop strategy for communicating policy brief
4.4 Launch final version at final project meeting and disseminate according to strategy

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

Project summary	Measurable Indicators	Progress and Achievements
Impact Plant genetic resources are being used in research and development and such activities enable the generation and sharing of benefits thus helping to achieve the ABS provisions of the CBD		The project has identified a wide range of projects where plant resources are being used in research and development, in Ethiopia and abroad. Non-monetary benefits being derived from these projects have been identified and documented for the first time. See Section 3.3
Outcome Collection holders, researchers and policy makers will have a 'road map' to guide decision-making and policy development to facilitate access to and utilisation of plant resources for research and development.	0.1 By year 3, a tested methodology to identify research and benefit sharing bottlenecks in national ABS frameworks at collection holder/researcher level and options for addressing these will be available. 0.2 By the end of the project, recommendations on simplified measures for access to materials for non-commercial research will be submitted to policy makers. 0.3. By the end of the project, stakeholders in Ethiopia will have a better understanding of, and involvement in, ABS issues.	The project has gathered a significant amount of information on the role of *ex situ* collection holders and researchers with respect to the use of plant resources in research and development. Through the methodology used by the project, key ABS bottlenecks and capacity gaps for these stakeholders have been identified and a series of policy guidelines and recommendations on non-commercial use of plant resources have been provided to the ABS Directorate of EBI. The implementation of these recommendations will depend on how the ABS framework in Ethiopia develops and whether greater trust can be built between Ethiopian and foreign researchers. Mechanisms and opportunities to build such trust are outlined in the policy guidelines. The project has helped to establish communication between the policy implementing body (EBI) and researchers and the policy guidelines make recommendations as to how this relationship can be strengthened.
Output 1. A methodology for reviewing and identifying ABS bottlenecks for research and benefit sharing and options for overcoming these published.	1.1 By December 2016, review of existing ABS-agreements carried out and baseline established with respect to stakeholders involved. 1.2 By September 2017, at least 8 stakeholder consultations completed and major ABS bottlenecks for research identified.	A methodology for reviewing and identifying ABS bottlenecks was developed, including the steps as identified in the indicators: - *A review of existing ABS agreements*. This was carried out as one of the first project activities and allowed us to identify some of the key stakeholders for subsequent consultations. - *Stakeholder consultations* and analysis of results

	1.3. By September 2018, options for overcoming bottlenecks reviewed and recommendations provided to Ethiopian partners. 1.4 By December 2018, a report detailing the methodology used to identify and overcome bottlenecks available on CBD and BGCI websites.	A report on the methodology for the stakeholder consultations is provided in Section 3.1. and Annex 1 (p. 18-21) Options for overcoming the constraints were developed as Output 4
Activity 1.1 Establish Steering Committee		Completed
Activity 1.2 Identify key stakeholder groups.		Completed
Activity 1.3: Develop guidelines and process for stakeholder consultations		Completed
Activity 1.4: Carry out an ABS baseline survey		Completed
Activity 1.5 Carry out stakeholder consultations		Completed
Activity 1.6 Analyse results of stakeholder consultations, identify capacity gaps and bottlenecks		Completed
Activity 1.7 Review examples of best practice and make recommendations for their use in existing frameworks		Completed
Activity 1.8 Publish report on methodology used to carry out review		Completed
Activity 1.9 Disseminate results of stakeholder consultations		Completed
Output 2. Capacity built amongst collection holders and researchers to enable the use or appropriate modification of best practices and model ABS agreements, to support the development of simplified access measures for non-commercial research.	2.1 By September 2017, capacity gaps amongst collection holders identified and training strategy developed. 2.2 By October 2018, training materials developed, 4 national training courses held and at least 20 staff trained. 2.3 By March 2019, training resources available on-line to support capacity building more widely.	Capacity gaps were identified and a training strategy developed. Training materials were developed and 4 training courses held. These covered collection management (x 2), data management (x 1) and ABS implementation for researchers (x1). A total of 126 people participated in these courses. The training resources are available on-line. See Section 3.1 and Annex 6 A post-training survey of participants in stakeholder consultations and training courses was carried out. See Annex 8
Activity 2.1. Use results of consultations with collection holders to identify capacity gaps		Completed

Activity 2.2. Prepare training strategy and training materials.		Completed
Activity 2.3 Deliver training courses		Completed
Activity 2.4 Adapt training materials to self-learning modules and make available on-line		Completed
Activity 2.5 Carry out survey of trained researchers to evaluate learning success		Completed
Output 3. Recommendations on adopting, or modifying as appropriate, best practices for collections and researchers into the existing Ethiopian ABS framework, based on a global review of best practices and case studies and consideration of national and regional context..	3.1 By September 2017, examples of best practice and case studies on simplified measures for access from around the world compiled and made available on the CBD and BGCI websites. 3.2. Recommendations on adopting these provided to Ethiopian partner by December 2017. 3.3 Continuing addition of cases studies to websites until March 2019.	Examples and case studies of best practice have been collected and are available on the BGCI website. See Section 3.1 and Annex 9 Case studies of particular relevance to the Ethiopian situation have been highlighted to the EBI ABS Directorate staff. However it remains to be seen how much these are taken up.
Activity 3.1 Compile examples and case studies of best practice,		Completed
Activity 3.2 Analyse, review and make recommendations for adopting these into existing Ethiopian framework		Completed
Activity 3.3 Make cases studies etc. available on-line and continue updating		Completed
Output 4 Recommendations on adopting, or modifying as appropriate, best practices for collections and researchers into the existing Ethiopian ABS framework, based on a global review of best practices and case studies and consideration of national and regional context.	4.1. By August 2018, policy brief drafted based on examples and case studies and on field experience in Ethiopia. 4.2 By December 2018, policy brief reviewed and finalised and disseminated via BGCI and CBD channels. 4.3 Final results of the project reported at final project meeting in March 2019.	A set of policy and guidance recommendations were developed based on the feedback from the stakeholder consultations. This was peer-reviewed before being provided to EBI. It was agreed that this would remain an internal document for use by EBI and therefore copies have not been made more widely available. The policy recommendations were presented to the a group of stakeholders, including the national steering committee at a final project workshop. More details in Section 3.1 and Annex 4
Activity 4.1 Draft policy brief based on field experience in Ethiopia and using examples of best practice		Completed
Activity 4.2 Carry out peer review of policy brief		Completed

Activity 4.3 Develop strategy for communicating policy brief	It was decided not to widely communicate the policy brief
Activity 4.4 Launch final version at final project meeting	Completed

Annex 3 Standard Measures

Code	Description	Total	Nationality	Gender	Title or Focus	Language	Comments
Training Measures							
1a	Number of people to submit PhD thesis						
1b	Number of PhD qualifications obtained						
2	Number of Masters qualifications obtained						
3	Number of other qualifications obtained						
4a	Number of undergraduate students receiving training						
4b	Number of training weeks provided to undergraduate students						
4c	Number of postgraduate students receiving training (not 1-3 above)						
4d	Number of training weeks for postgraduate students						
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification (e.g., not categories 1-4 above)						
6a	Number of people receiving other forms of short-term education/training (e.g., not categories 1-5 above)	102	Ethiopian	14 women, 88 men	ABS and the management of *ex situ* collections	English	3 training courses involving 22, 51 and 29 people at each course.
6b	Number of training weeks not leading to formal qualification	3					

7	Number of types of training materials produced for use by host country(s) (describe training materials)	3			ABS Learning Package	English	Powerpoint presentations with speakers notes; ABS scenarios for participatory training; quiz questions to test knowledge. All available as hard copy and electronically.
Research Measures		**Total**	**Nationality**	**Gender**	**Title**	**Language**	**Comments/ Weblink if available**
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (ies)						Participatory process?
10	Number of formal documents produced to assist work related to species identification, classification and recording.						
11a	Number of papers published or accepted for publication in peer reviewed journals						
11b	Number of papers published or accepted for publication elsewhere	1			Promoting the ABS-compliant use of plant resources in research and development	English	Paper in BGjournal: Vol 15 (1) https://www.bgci.org/resources/bgci-tools-and-resources/bgjournal/
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country						
12b	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country						

13a	Number of species reference collections established and handed over to host country(s)						
13b	Number of species reference collections enhanced and handed over to host country(s)						

Dissemination Measures		**Total**	**Nationality**	**Gender**	**Theme**	**Language**	**Comments**
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	7	Ethiopian and international		ABS and collections holders / researchers	English	5 project workshops and 2 CBD side events
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	4	International		Genomics / ABS/ABS and collection holders	English	Botanic garden conferences (x2) Genomics meeting (x1) International ABS meeting (x1)

Physical Measures		**Total**	**Comments**
20	Estimated value (£s) of physical assets handed over to host country(s)		
21	Number of permanent educational, training, research facilities or organisation established		
22	Number of permanent field plots established		Please describe

Financial Measures		Total	Nationality	Gender	Theme	Language	Comments
23	Value of additional resources raised from other sources (e.g., in addition to Darwin funding) for project work	£81,283					

Annex 4 Aichi Targets

	Aichi Target	Tick if applicable to your project
1	People are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	
2	Biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	
3	Incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.	
4	Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	
5	The rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	
6	All fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	
7	Areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	
8	Pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	
9	Invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	
10	The multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	
11	At least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	
12	The extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	
13	The genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	

14	Ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	
15	Ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	
16	The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.	√
17	Each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	
18	The traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.	√
19	Knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	√
20	The mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.	

Annex 5 Publications

Type * (e.g. journals, manual, CDs)	Detail (title, author, year)	Nationality of lead author	Nationality of institution of lead author	Gender of lead author	Publishers (name, city)	Available from (e.g. web link, contact address etc)
Journal*	BGjournal: Access and benefit-sharing: botanic garden responses, BGCI, January 2019	UK / Canada	UK	Female	BGCI, London	https://www.bgci.org/resources/bgci-tools-and-resources/bgjournal/
Learning package *	An ABS Learning Package for Botanic Gardens, 2019	Canada	UK	Female	BGCI, London	https://www.bgci.org/resources/bgci-tools-and-resources/abs-learning-package/
Case studies	A series of ABS implementation examples	Various	Various	Male and female	BGCI, London	https://www.bgci.org/our-work/policy-and-advocacy/access-and-benefit-sharing/implementing-access-and-benefit-sharing/

Annex 6 Darwin Contacts

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Checklist for submission

	Check
Is the report less than 10MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	
Is your report more than 10MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	√
Have you included means of verification? You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	√
Do you have hard copies of material you want to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	
Have you involved your partners in preparation of the report and named the main contributors	√
Have you completed the Project Expenditure table fully?	√
Do not include claim forms or other communications with this report.	