Darwin Initiative
Final Report

*To be completed with reference to the Reporting Guidance Notes for Project Leaders (http://darwin.defra.gov.uk/resources/) it is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)*

Darwin project information

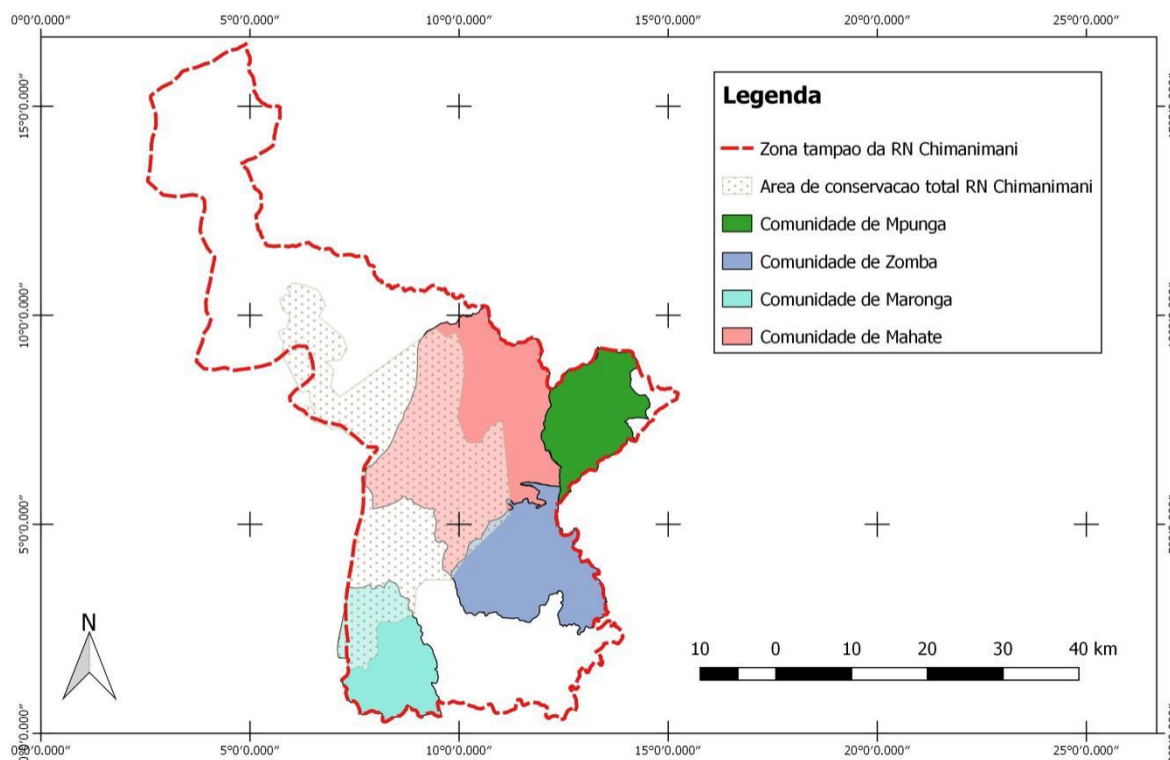|	
Project reference	21006
Project title	Balancing Conservation and Livelihoods in the Chimanimani Forest Belt, Mozambique
Host country(ies)	Mozambique
Contract holder institution	Royal Botanic Gardens, Kew (RBG Kew)
Partner institution(s)	MICAIA Foundation (MICAIA) & Instituto de Investigação Agrária de Moçambique (IIAM)
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Project leader's name	Tiziana Ulian
Project website/blog/Twitter	https://www.kew.org/science/projects/balancing-conservation-and-livelihoods-in-the-chimanimani-forest-belt-mozambique http://www.kew.org/blogs/kew-science/forests-and-woodland-mozambique
Report author(s) and date	Micaia: Hercília Chipanga and Milagre Nuvunga RBG Kew: Alex Hudson and Tiziana Ulian 14/07/2017

1 Project Rationale

This project have been implemented in four community areas of the Trans Frontier Conservation Area (TFCA) buffer zone in the Sussundenga district of Manica province, Mozambique (see figure 1). The TFCA is situated across Mozambique's Western border with Zimbabwe and is part of the Chimanimani-Nyanga Centre of Endemism.

ZONAS DE ACTUACAO DO PROJECTO DARWIN

Figure 1: The Chimanimani Trans-frontier conservation Area, Mozambican side, with the four community areas (Mpunga, Zomba, Maronga and Mahate)

In Mozambique's 4th National report to the Convention on Biological Diversity (CBD), future scenarios outline a continued decline in biodiversity between 2005 and 2025 driven by population growth and poverty, with direct threats from fuel wood extraction and itinerant agriculture. Micaia Foundation (MICAIA) and the Instituto de Investigação Agrária de Moçambique (IIAM) have worked in the Chimanimani TFCA since 2007 and 2000 respectively, confirming these conditions are found there.

The population of the TFCA forest belt (c.10, 000 people), is generally very poor, living below the poverty line with limited access to services. Economic opportunities are few and agricultural productivity is extremely low (<1 ton of maize /ha). High male worker migration has left many women-headed households with very low incomes (<$1/day). Under-employment (working on household plots without a wage) is common. Local development initiatives favour granting large concessions for forestry and agriculture, putting further pressure on smallholders. This contributes to rapid deforestation and degradation, threatening the integrity of the forest and the wider environment.

These have been identified through the extensive past work in the area by IIAM and MICAIA which has been incorporated into the management plan for the reserve in 2010. The challenges are relevant to the ongoing protection of biodiversity across the reserve, and so are important to the managing authorities of the park as well as the communities living with the buffer zone because of their livelihoods investment.

The Chimanimani TFCA is also one of the most populated conservation areas in Mozambique. Considering government's decision not to relocate these families, we set ourselves up to learn about the environment and its biological diversity; the communities and their interaction with the forest; and to use this knowledge to design sustainable livelihood approaches in full compliance

with the management plan approved by the government. 4 community areas (Mpunga-Moribane, Zomba, Mahate and Maronga) have been engaged in discussion about a wide range of alternative natural resources-based livelihoods options that can help increase household incomes and reduce the loss of biodiversity and carbon stocks.

2 Project Partnerships

The implementation of this project has been a collaborative effort between the Royal Botanic Gardens Kew (RBG Kew), MICAIA, IIAM, Chimanimani National Reserve Administration and local communities. The partnerships have been formalised through a Memorandum of Collaboration between RBG Kew and MICAIA Foundation (from August 2012 to 2017) and an Access and Benefit Sharing Agreement between RBG Kew and IIAM (from December 2011 to December 2016). These agreements outline the partners' areas of cooperation (to collect, study, conserve and sustainably use plant material) and benefit sharing responsibilities.

RBG Kew has managed the project, in partnership with MICAIA, and is leading the delivery of Output 1 (Information collected on areas suitable for conservation within the communities and on plant species of conservation interest and potential economic value), whilst contributing to the delivery of Output 4 (Improved tourism services, including community guides and education materials for tourists and local communities).

MICAIA led on the development and implementation of alternative livelihoods options and community managed conservation zones. MICAIA was responsible for day-to-day project implementation and communication with targeted communities and they have also prepared the first draft of project reports which have been updated and edited by RBG Kew before iterative sharing between the two organisations to finalise with confirmation from IIAM. IIAM (Maputo and Sussundenga) supported RBG Kew in the delivery of Output 1.

The two lead partners complement each other well by focussing on their strengths relevant to different outputs of the project. RBG Kew's expertise is in global biodiversity conservation and analysis (Outputs 1 and 4) whilst MICAIA's is in livelihoods and development projects in Mozambique (Outputs 2-4).

Planning, monitoring and evaluation, and decision making have been completed by the lead organisations through scheduled management meetings between Andrew Kingman (MICAIA), Milagre Nuvunga (MICAIA), Tiziana Ulian (RBG Kew), Jonathan Timberlake (RBG Kew), Iain Darbyshire (RBG Kew), Alex Hudson (RBG Kew), Camila Sousa (IIAM) and Tereza Alves (IIAM) on 7th May 2015 at Kew's Millennium Seed Bank; 14th October 2015 in the Herbarium at RBG Kew; on 7th April 2016 at MICAIA office in Chimoio, Mozambique and 03rd and 05th May 2017 at IIAM offices, Mozambique. These included review of project activities and work plan, including discussions of fieldwork trips, project implementation in the field, project review workshop in Mozambique (on 4th May 2017) and future project proposals. During the discussion held at Kew's Millennium Seed Bank, IIAM could not participate.

Further regular email and Skype communications between Jonathan Timberlake, Iain Darbyshire, Tiziana Ulian, Hercilia Chipanga, Milagre Nuvunga, Camila Sousa and Tereza Alves were used to finalise review and monitor project activities, arrange logistics of the two botanical surveys trips, organize the mid-term review trip in November 2015 for Benoît Rivard (LTS International Ltd consultant) and the review workshop on 4th May 2017.

Although regular yearly managerial meetings have not been carried out with everybody involved in the project at the same time, communication and coordination have mostly worked well.

One noted area for improvement by the reviewers has been communications and involvement of IIAM in decision making. We agreed that formalising quarterly, biannual or yearly meetings in Mozambique could have improved this from the project start. However, progress has been made to involve IIAM more actively during the last year of the project, including inviting them to the ethnobotanical training event organized by RBG Kew in April 2016 and hosting the final review workshop in IIAM in Maputo on 4th May 2017. Skype has aided communications in the final year, however this does not replace personal interaction which is highly recommended as it is improve the understanding of problems and concerns *in situ*.

The local communities are also key stakeholders and partners for the success of this project. They are active in project activities and participate in all planned actions. The Project Manager in Mozambique, Hercilia Chipanga (MICAIA), has carried out regular visits to the community sites to build good relationships with them and maintain good communication. The Field Officers (Joao Massunde, Dáglasse Muassinar, Betmen Tembo and Saimone Morais) have also spent considerable time in the field supporting the communities with their activities (community organisation, beekeeping and conservation agriculture) and collecting seed for conservation at Ndzou camp with Mpunga community members (Amélia Ranguana and Mário Chimoco). Community traditional leaders have embraced the project and helped to mobailise community members to participate in project activities.

Chimanimani TFCA is an important supporting partner for implementation and success of all planned activities. The TFCA officers were invited to be part of fieldwork activities. Júlio Chironda, community officer for the community department at the TFCA, was involved in the training of the Community Natural Resources Management Committees (NRMC), community rangers and also the wider group of community members. He also participated in traditional leaders meetings, where the project was presented to ensure their support on implementation. In addition, he was part of discussions with community members to agree on the community conservation zones in Mpunga, Maronga and Mahate, including their delimitation and zonation.

3   Project Achievements

3.1 Outputs

o   **Progress towards project outputs**

Output 1:	Information collected on areas suitable for conservation within the communities of Mahate, Mpunga, Zomba and Maronga, and on plant species of conservation interest and potential economic value			
	Baseline	**Change recorded by 2017**	**Annex**	**Comments**
Indicator 1.1	No consolidated of species available	List of species occurring in the area compiled	8	Ethnobotanical work also completed in final year
Indicator 1.2	No quantitative data related to forest structure and composition available	Data on forest structure and composition collected and compiled	9	
Indicator 1.3	Area maps do not show detail relating to vegetation types, conservation areas and the TFCA	Maps for Kew recommended conservation areas produced following field surveys	10	

Output 2	Integrated Land Use Plans created with communities and implemented by their NRMC and Community Rangers in the four project areas (Maronga, Mpunga, Zomba and Mahate)			
	Baseline	**Changes recorded by 2017**	**Annex**	**Comments**
Indicator 2.1	Data/maps show three degraded forest reserves (Zomba Forest Reserve 2,700 ha, Maronga Forest Reserve 14,500 ha and Moribane Forest Reserve 16,200 ha) with a total area protected of 33,400 ha	Existing conservation area increased in Zomba to 3,527.63 ha, and a new 13,729.06 ha area established in Mahate, taking the total protected area to 47,956.63 ha	11(a,b ,c,d)	The 7,034 ha selected in Mpunga is already part of Moribane Forest Reserve
Indicator 2.2	No zoning and land use plans at the communities of Mpunga, Zomba, Maronga and Mahate	35 participatory zoning meetings held with communities of the project areas (Mpunga, Zomba, Maronga and Mahate). Zoning maps produced indicating agriculture, habitation and conservation areas Four community land use plans developed for Mpunga, Zomba, Maronga and Mahate	12 (a,b, c,d)	Women's participation was improved by holding separate meetings for mixed, men and women´s groups. Officers could then collect contributions from all creating an environment for active participation of women.
Indicator 2.3	Natural Resource Management Committees (NRMC) exist in Mpunga and Zomba, with none in Maronga or Mahate	Two NRMCs have been established in Maronga and Mahate with 16 members each. Two NRMCs revitalized in Mpunga and Zomba composed of 13 and 10 respectively. The members of NRMCs met regularly to discuss the conservation of forest areas and fire prevention. Mpunga and Zomba NRMCs resulted to be more	13	Women's participation was improved by holding separate meetings for mixed, men and women´s groups. Officers could then collect contributions from all creating an environment for active

		active because they were established before the project implementation.

NRMCs, community rangers and local community members trained on importance of land use planning processes in four sessions (one for each community area). | | participation of women. |
| Indicator 2.4 | Community rangers had been selected in Mpunga and Zomba, however, they were not involved in patrols conducted by the TFCA rangers and there was not any documentation of their tasks. They were also un-trained. | 29 community rangers trained in Mpunga (11), Zomba (4), Maronga (4) and Mahate (10) to undertake regular patrols in each community.

In Maronga and Zomba, monthly patrols conducted by the community rangers and work carried out with communities on awareness campaigns to avoid forest fires.

In Mpunga and Mahate, weekly/monthly patrols being conducted by community rangers with TFCA rangers. | 14 | One of the community rangers activities has been to open fire breaks |
| Output 3 | Appropriate and viable natural resource based livelihood strategies developed and implemented by 1,000 households in the four project areas (Maronga, Mpunga, Zomba and Mahate) | | | |
| | **Baseline** | **Changes recorded by 2017** | **Annex** | **Comments** |
| Indicator 3.1 | No business plans for expansion of marked oriented livelihoods strategies (beekeeping, tourism and Non-Timber Forest Products (NTFP)) | One Business plan for expansion of honey production & two concept notes for tourism and NTFP livelihoods actvities developed | 15
16 | |
| Indicator 3.2 | All 2,281 Households at the four project areas use shifting | 18.71% of the 2,281 households (427) | | Community members were |

	agriculture to produce crops for their subsistence and markets	participated in the conservation agriculture initiatives. All 427 households (210 women) adopted the use of mulching, intercropping, crop rotation, organic fertilizers, and biological control for pests and diseases.		initially reluctant to adopt conservation agriculture in their fields because they were unsure of how successful they could be.
Indicator 3.3	Traditional livelihoods options for the community members were agriculture and migration to South Africa to work. Communities used to produce honey using hives made from tree's bark but they had no access to any markets. No women were part of beekeeping activity. For agriculture: 86% of 408 households earn between 500 and 1,000 Mt from agriculture, the remaining 14% earn between 1,000 and 2,000Mt	333 households (201 women and 132 men) benefited from 1,601 modern beehives (Kenyan Top Bar Hives); 155 households earned US$3,334 (234,725 Meticais - Mt) from honey sale. 43 households from Mutoe and Mukwawaia associations earned US$314 (22,330 Mt) from conservation agriculture actvities. 10% of 408 households increased their incomes from agriculture actvities to between 2,000 Mt and 5,000 Mt. 90% of 408 households increased their incomes from agriculture to above 5,000 Mt.	17 18 19	196 students of Primary School of Mahate involved in sustainable agriculture
Output 4	Improved tourism services, including community guides and education materials for tourists and local communities			
	Baseline	**Changes recorded by 2017**	**Annex**	**Comments**
Indicator 4.1	Many traditionally used trails exist through the forest which do not have any provision for use in educational or tourist purposes	Eight trails identified in three community areas geo-referenced and included in the community maps.	20	Trails were identified with communities and will be cleaned after rain season

		Four of the trails cleaned at Mpunga community.		
Indicator 4.2	There are no community guides which take tourists of trips through the trails in the area	Still in progress.	N/A	Completion was delayed as waiting for funding from the Mozbio project to enhance number of tarainees and training events.
Indicator 4.3	Booklets and maps are currently not available to be bought at Ndzou camp	Booklets, CDs and maps being produced and will be sold at Ndzou Camp.	21 22 23	Sales affected by political tensions in the region this year (see indicator 0.3).

3.2 Outcome

Outcome: 40+ communities will be engaged in a range of natural resource-based livelihoods options, increasing household incomes and reducing loss of biodiversity and carbon stocks across the Chimanimani forest belt

The two main livelihoods activities, beekeeping and conservation agriculture, have begun to increase household incomes whilst the support and training given to community members on land use and sustainable resource management is helping to reduce loss of biodiversity and carbon stocks. Although 40+ communities have not been reached in this project, the project has brought significant impacts for the communities involved and this has provided a good basis for the development of new projects across the whole of the Chimanimani TFCA buffer zone. As a result of this Darwin Initiative project, the programme is being expanded to all the 12 communities in Chimanimani through the recently funded project 'Mozambique Conservation Areas for Biodiversity and Development – Mozbio'. This new project has been funded by the World Bank (International Development Association - IDA) through the Government of Mozambique (US$1,200,000) and will be implemented up to December 2019.

Indicator 1 - Change in level of household incomes for 1000 households. Target: increase from <$1/day (range from .55/day-$1/day) to an average of $1.50/day by end of project
Overall 757 households have been directly involved in the implementation of conservation agriculture (427) and beekeeping (honey production) (333) activities. Of these, 155 households gained US$21.5 each from beekeeping, while 41 households increased their incomes from conservation agriculture from US$8-16 to US$34-84 and 367 households increased this from US$8-34 to over US$84. Although the target increase in incomes for members has not been met yet, the incomes are likely to increase further beyond the lifetime of the project. In addition,

conservation agriculture is serving a second purpose of improving food security and nutrition as well.

Indicator 2 - Change in farming practices. Target: a proportion of 20% of 2,281 households adopts sustainable agriculture practices and contributes for food security and improved nutrition of their households

Sustainable models of food production have been adopted by 18.71% of households (427). The vegetables produced are providing a better quality and variety of food for families. By considering an average household size of 6 people, food security and nutrition intake have been improved for at least 2,562 people. They are using mulching, intercropping techniques, organic compost to fertilize the fields and biological methods to control pests and plant diseases.

Slightly fewer people than targeted were reached because conservation agriculture is a new approach for communities and they were initially reticent to participate, concerned that they could lose their crops if they adopted the new systems. This delayed uptake, but because of the positive results many members are now eager to undertake training, which will continue under the new MozBio project. Micaia personnel also regularly visited the community sites working closely with the community leaders to promote the activities and extend interest in conservation agriculture activities.

Indicator 3 - Increased levels of sustainable forest product use. Target: 5 tons of honey sold to MHC annually by end of the project; new markets identified for at least two additional NTFP; tourist visitor numbers to the area increase from 100/mth to 300/mth

Before the start of the project there was no market for the communities to sell their honey and no contracts existed within the four communities' areas. Contracts have been signed between 332 individuals and one group (Mukwawaia-Mpunga) and the Mozambique Honey Company (MHC) to provide honey every year at a cost of at least 50Mt per kilogram (Kg) (Annex 19). So far 4,394.90 Kg of honey have been harvested and provided to MHC generating US$3,333 for the beneficiaries. Beehives take three years to achieve maximum production of honey, therefore we expect incomes to increase in the next few years improving project impact on poverty.

Currently, there is only an available market for honey as a sustainable NTFP. The field surveys have identified four native useful plant species with potential markets (*Ximenia americana, Uapaca kirkiana, Funtumia africana* and *Coffea salvatrix*) which could be considered for future research and development to increase income generation in the communities.

Prior to the project, Ndzou camp received an average of 100 visitors/month. It has received a total of 2,130 tourists from 2014 to March 2017 at an average of 59 tourists per month. This underachievement has largely been as a result of political tensions in the region leading to lower tourist visits throughout the country. However, there has been a cease fire agreement since December 2016 which has held and is likely to continue in future.

Indicator 4 - Change in size of the area of designated conservation land within the Chimanimani forest belt. Target: increase from the three existing (though severely degraded) official reserves through establishment of two new areas in Zomba (5,000 ha) and Mahate (5,000 ha) with community management and government support by Yr3

The buffer zone included 33,400 ha of 3 degraded forest reserves: Moribane Forest Reserve (16,200 ha), Zomba Forest Reserve (2,700 ha) and Maronga Forest Reserve (14,500 ha) which include extensive areas opened for agriculture. The total protected area has now increased to

47,956.69 ha with the addition of the community conservation zones: Zomba communities added an 827.63 ha conservation zone in addition to their forest reserve and the Mahate communities created a new community conservation zone covering 13,729.06 ha.

Indicator 5 - Reduced rate of carbon emission in the forest belt. Target: no fires registered and no new fields opened in community conservation areas set under this project; 20% of farmers adopt conservation agriculture

Community rangers (29) and Natural Resources Management Committee members (56) are working with the rest of the communities to prepare fire breaks and to monitor activites based on the Land Use Plans which have been developed. This is ensuring that community members are not expanding their areas for agriculture by cutting the remaining forest patches or clearing them with fires. The households involved in conservation agriculture have also not opened any new areas for their farms 'machambas' since the project began. These activities should continue beyond the timeframe of the project and are important for reducing the rate of loss of carbon stocks in the forest belt.

Impact: achievement of positive impact on biodiversity and poverty alleviation

> **Impact statement from logframe**: Effective and sustainable balance between biodiversity conservation, poverty alleviation and scaled development achieved in the Chimanimani Forest belt, Mozambique.

The achievement of a positive long-term impact to biodiversity conservation and poverty alleviation takes time and cannot fully be assessed within three years. To achieve the final targeted impact requires longer commitment of communities and implementers.

The project has moved towards this goal by involving 757 households in two new livelihoods strategies – conservation agriculture and beekeeping. These have begun to provide extra incomes to households in the project area and to improve local food security and access to nutritionally fulfilling diets. The main households have been able to produce food for the whole year using the improved agricultural techniques and they managed to produce surplus to sell for incomes which is in turn used to purchase goods not available locally.

Through the establishment and training of the NRMCs and community rangers the likelihood of fires and deforestation has been reduced lowering carbon emissions from the area and slowing biodiversity losses. So far, 53 fire breaks have been opened in the communities to prevent accidental and illegal fires spreading into forest areas. The 29 community rangers have been working with TFCA rangers to improve documentation of illegal activities (fires and opening of forest areas for agriculture).

Ndzou camp has continued to provide an income to the Mpunga community by improving tourist facilities and actvities. The combined improved policing by rangers, ecotourism and training in alternative livelihoods activities could alter local people's reliance on expanding agriculture.

Contribution to Darwin Initiative Programme Objectives

Contribution to Global Goals for Sustainable Development (SDGs)

Goal 1: Contribution towards ending poverty has been seen through increased incomes for the households, improved access to food security and better participation in decision-making. However, three years is not long enough time to end poverty in this area.

Goal 2: Conservation agriculture is contributing to greater access to food and improved nutrition for participating communities. The adopted conservation agricuture techniques will also contribute to improve soil fertility and conservation which will enhance yearly crop productivity levels.

Goal 8: Facilitation of access to social enterprises (Mozambique Honey Company and Ndzou Camp Lda) has created income opportunities within the formal economy with social and environmental safeguards. These economic opportunities will remain beyond the lifetime of this project. Future opportunities have also been identified with plant species of potential economic value.

Goal 15. NRMCs and community rangers have worked, in coordination with government rangers, to reduce fires and other deforestation and degradation activities. Community Conservation areas have been selected and validated or slightly altered following Kew's advice, providing community supported protection to forests and biodiversity.

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

The project is supporting the Convention on Biological Diversity (CBD), under the CBD programme of work on Forest Biodiversity and the CBD Cross-Cutting issue of Protected Areas. The Aichi targets the project is addressing are:

Target 1 – botanical surveys have increased the knowledge of the value of biodiversity in the TFCA (indicators 1.1-1.2). This information, with previous knowledge, is being used to increase awareness of the values of biodiversity within the project communities (indicators 2.1-2.4). They are also being provided with means to conserve and use the resources sustainably (indicators 3.1-3.3).

Target 4 – Integrated Land Use Plans have been developed with local stakeholders to support the implementation of sustainable production and consumption of natural resources within safe ecological limits (indicators 2.1-4.3).

Target 5 and 7 – alternative, sustainable livelihoods options to itinerant agriculture have been promoted to slow linked habitat degradation and conserve biodiversity (indicators 3.1-3.3 and 4.2).

Target 14 and 15 – through the designation of new conservation areas, ecosystems which provide essential services, such as riverine water services and forest carbon storage, are being safeguarded (indicator 2.2)

Project support to poverty alleviation

The project at the four areas has impacted local development and wellbeing by increasing income generation from improved agricultural practices and beekeeping; improving food security and nutrition by increasing agricultural production from 600 Kg/ha to an average of 2,000-5,000

Kg/ha; and providing community members with information about sustainable use of natural resources, whilst also including them in the decision making process regarding the land management and conservation of their territories. This has been achieved through the provision of technical expertise in new activities, the provision of improved seed handling and the training of community members in new ways to engage with natural resource management in their areas.

It is expected that households in communities with better access to markets will see the best direct economic returns (Mpunga), whilst the communities further away will mostly gain indirect benefits through improved environmental conditions (water, soil and air quality) as well as improved nutrition and health (Zomba, Maronga and Mahate).

So far, incomes generated by beekeeping and agriculture have been used for education by enabling children to go to school and to purchase goods and agricultural equipment, as reported in the database of household surveys completed in the final project year (Annex 19).

Gender equality

The project has engaged more women in activities that traditionally are defined as men´s work. For example, with the traditional beekeeping system beehives are set up at the top of trees and climbing is an activity not for women, but for the Kenyan Top Bar Hives climbing is not needed so women actively participate. As a result, over 60% of beekeeping beneficiaries who signed contracts with MHC are women and in Mutoe and Mukwawaia they are more active than men. Attitudes have also been changed to allow women to wear the full protective clothing to carry out the work.

The communities in the four areas are mostly traditional and women used to be excluded from the decision making processes. Women are now involved in NRMCs, have been part of the participatory mapping and zoning process, and have attended sustainable natural resource management training courses, so that they are more involved in decision making regarding resource management and conservation than at the beginning of the project.

However, gender equality in traditional communities can only be achieved after many years of work by engaging communities in different activities, such as training and group discussions, and so it is not always easy to show progress during three years. MICAIA has worked in the area since 2008 by building trust with the communities, which will allow them to continue this work into the future.

Programme indicators

Did the project lead to greater representation of local poor people in management structures of biodiversity? The project has trained NRMC (55) and community rangers (29) in all four project areas about biodiversity conservation and managment.

Were any management plans for biodiversity developed? No, the TFCA already has a management plan in place, published in 2010, which includes the buffer zones. Management plans will now be developed for the new community conservation areas.

Were these formally accepted? The process of zonation and delimitation of the four community conservation zones has formal governmental acceptance.

Were they participatory in nature or were they 'top-down'? How well represented are the local poor including women, in any proposed management structures? NRMC members were participatorily selected and decisions for conservation area selection were done in a participatory way with the NRMC members and community rangers. Women were involved in

NRMCs and have been part of the participatory mapping and zoning process, and have attended sustainable natural resource management training courses.

Were there any positive gains in household (HH) income as a result of this project?
Households of all four project areas had incomes resulting from the implementation of the project. This was gained from conservation agriculture, beekeeping and tourism (Ndzou Camp incomes for the Mpunga community).

How many HHs saw an increase in their HH income? Overall 757 households have been directly involved in the implementation of conservation agriculture (427) and beekeeping (honey production) (333) activities and as a result increased their income.

How much did their HH income increase (e.g. x% above baseline, x% above national average)? How was this measured? For conservation agriculture, incomes increased from 500-2,000 Mt (US$8-34) to over 2,000 Mt (US$34), and mostly over 5,000 Mt (US$84) for 408 households (76% increased from between US$8-16 to over US$84; 10% from between US$8-16 to between US$34-84; and 14% from between US$16-34 to over US$84)

Transfer of knowledge

Transfer of knowledge was delivered in different ways throughout the project: joint field expeditions, training events, dissemination of information (e.g. Annex 27 – The Chimanimani Fieldwork report: Plant Conservation in communities on the Chimanimani footslopes, Mozambique), and the final review workshop held in Maputo in May 2017.

During the final review workshop, 50 people attending from NGOs, government, scientific organizations, funders and the communities. Project presentations were given by all project partner organisations (RBG Kew, Micaia Foundation and IIAM), two community members, the Sussundenga Administrator and the Mozambican National Administration of Conservation Areas (ANAC) (see Annex 25 – Darwin Initiative project review workshop report, 2017).

A fieldwork blog was also written and published on the RBG Kew website, which explained the project and fieldwork trip undertaken (http://www.kew.org/blogs/kew-science/forests-and-woodland-mozambique).

Did the project result in any formal qualifications?

The Project manager has benefited from the formal training organised by Tropical Biology Association (TBA) on Effective Management of Conservation Project in 2015. This training covered skills in project management, strategic planning and communication. It has improved the skills on project management and contribution for the Natural Resources Management Programme.

Capacity building

During the two joint field experdition led by RBG Kew (Trip 1 in June-July 2015 and Trip 2 in November 2015), personal from MICAIA and community members received training from RBG and IIAM personal on plant identification, collection and surveys techniques. Livhuwani Nkuna, Kew's Millenium Seed Bank Partnerhip coordinator from SANBI (South Africa), was also invited by the RBG Kew team to join the first trip in 2015 to share his experience and knowledge about plant idenitification and seed collecting (http://www.kew.org/blogs/kew-science/forests-and-woodland-mozambique). After the second trip, Iain Darbyshire (RBG Kew research leader, Identification & Naming), worked alongside the national botanists in the National Herbarium, IIAM

in Maputo, to curate and identifiy herbarium specimens collected during the two field expeditions. Identification activites continued at RBG Kew's herbarium under the supervision of Iain Darbyshire and information was fed back to national botanists in Mozambique.

In April 2016, the MICAIA and IIAM teams and members of the communities received 2 days training course on ethnobotanical surveys by William Milliken (Kew Research Leader - Ethnobotany) with the support from Alex Hudson and Tiziana Ulian. The RGB Kew team advised on data collection and management methods as part of the training.

During the project implementation, the Project Manager, Hercilia Chipanga (female), attended the meeting of Chimanimani TFCA stakeholders in Chikukwa, Zimbabwe. This meeting was organized by Birdlife Zimbabwe and involved community members from Chikukwa in Zimbabwe and Ferreira in Mozambique; TFCA government administrators from Mozambique and Zimbabwe; and, local authority representatives from Zimbabwe. The main objectives of the meeting were to develop a platform for collaboration between all the stakeholders living/working in the TFCA on both sides of the border; to understand what is being done in the two countries; and to identify areas and mechanisms for future collaboration. These meetings have enabled the development of joint project proposal between stakeholders in Moçambique (MICAIA) and Zimbabwe (BirdLife Zimbabwe) implemented in 6 communities of Chimanimani TFCA (5 in Mozambique and 1 in Zimbabwe).

The participation at the Land Use Dialogue in Brazil, have established basis for landscape management and also the planning process involving all stakeholders.

As a result of the capacity building received during the project implementation, the Project Manager has been promoted to the Senior Programme Coordinator for Natural Resources Management. In this position, she deals with all projects in the Manica Province, including the new, World Bank funded MozBio project. This requires very good knowledge on how to integrate the participation of different stakeholders into projects with the promotion of livelihoods strategies.

Sustainability and Legacy

The MICAIA team has raised the profile of the project in Mozambique through working with Chimanimani TFCA Administration and District Government officials and attending conferences, like the World Forestry Congress in Durban, 2015 and Land Use Dialogue in Brazil. This work has been rewarded by help securing the teams involvement in the future TFCA wide project (MozBio project). This is contributing to the expansion and sustainability of this Darwin Initiative project. Within the MozBio project, MICAIA are working with 12 communities, including the 4 funded by the Darwin Initiative, covering all Chimanimani TFCA buffer zone. This project will end in December 2019 and works to expand conservation agriculture, beekeeping, tourism and Non Timber Forest Products use. It will also continue to provide training on biodiversity conservation and other issues. The MICAIA project staff (Project manager, fieldworker and finance officer) will continue to work on new roles within this project.

In addition, a Critical Ecosystem Partnership Funds for a trans-boundary project is currently being implemented in 5 communities of the buffer zone, including the four covered by Darwin Initiative, due to finish in September 2017.

Within the project areas, communities have identified their own community conservation zones which is evidence of their commitment to and understanding of the importance of plant diversity to their livelihoods. The capacity building activities with the Natural Resources Management committees and community rangers, to improve their knowledge about the importance of natural resources, provides a body to monitor the implementation of the land use plans and the means to measure and maintain the activities beyond the length of the project.

The delimitation of community conservation zones in Mpunga, Maronga, Zomba and Mahate, also involved the SPGC (Provincial Services of delimitation and mapping), and the district authorities represented by the district government and the District Services of Economic Activities (SDAE), ensuring their active support in their protection into the future.

The project has facilitated links with social enterprises, such as Mozambique Honey Company and Ndzou Camp Lda, which provide a market for income generation for the communities. This supports the exit strategy of leaving continued improvement of economic livelihoods because these enterprises have an ongoing demand for those products.

The establishment of lead agriculturalists and beekeepers means that the two main income generating activities have the means to grow without continued involvement of the project team. This has caused increased interest on participation at the project activities.

Lessons learned

During the project implementation period, some lessons have been learnt, such as:

- The involvement and participation of community traditional leaders in project activities from the project conception has proven a good strategy for ensuring support from them, and in mobilising communities throughout the project.

- Usually, the community rangers and NRMC members are illiterate but willing to support community development so their training and involvement at all planned activities was key. The work with Chimanimani TFCA rangers, have strengthened their capacity to undertake patrols and protect natural resources.

- It was essential to combine a local NGO (MICAIA) with local knowledge about the communities of Chimanimani and trusted relations, with RBG Kew and IIAM, both research institutions, who could use and combine scientific and traditional knowledge to support management decisions related to the conservation and sustainable utilization of natural resources.

- For a good implementation of project and alignment of project outcome, outputs, activities and indicators, a technician is needed to manage the monitoring and evaluation process. Field officers also have to be trained on how to track the project deliverables.

- Women have displayed great courage with their involvement in beekeeping and the honey harvesting process. The involvement of women was achieved through the use of modern hives (KTB-Kenian Top Bar Hives) provided by the project. Their enthusiasm will help ensuring that the activity will continue after the project.

- Participation in the project activities is often driven by evidence of improved incomes - after the first harvest of honey in Mutoe, benefiting 14 households, other community members requested beehives; whilst the demand for adopting conservation agriculture techniques increased after the Mutoe association started selling their yields. Once positive results were realized, all community members requested seeds, technical training and other supplies, although the project did not have enough funds for everybody to be involved.

- NTFP based livelihoods are very good strategy to protect the forests from the fires: 2015 was a very dry year, and many places suffered by fires, however, team members noticed that households which have benefited from mounted beehives worked hard to protect their areas from these fires.

- For the community mobilization and decision-making processes it is important to separate the groups of women from men. Women do not participate actively when the men or husbands are present. It is important that in future, land use plans will be developed with more active participation of women because they use natural resources most and so are impacted more by the plans.

- When considering natural resource based livelihoods, it is important to include time for training and engaging with community members before benefits are seen. Three years may be too short a time span and at least five years implementation is recommended.

- Adaptive management might be better followed up with regular (biannually) face-to-face meetings between all partners. This would provide more opportunity to revise work plans and address unexpected issues while discussing opportunities for project expansion or continuation beyond the running project's lifespan.

Monitoring and evaluation

MICAIA hired an M&E officer in August 2015 who unfortunately left and was replaced in February 2017. The team developed a framework to monitor the project activities. The project officers have been involved in recording information for the database of communities, villages, and households and to record the project relevant activities undertaken by these in order to monitor livelihood activity uptake across the project area.

There have been two major project changes which have included approved alterations to the logframe. Change requests were accepted in November 2014 and February 2016. The 2014 change request was due to the October presidential and parliamentary elections, and because of a Kew Science restructure which affected the work plan and personal involved in the project. It was therefore decided to postpone the first botanical fieldwork until April 2015.

The 2016 change request followed a mid-term review carried out by Benoit Rivard from LTS International Ltd from 30 November to 5 December which suggested changes to the project indicators and assumptions. This usefully updated targets to be more realistic for the final year.

Actions taken in response to annual report reviews

In response to Annual reports reviews and a Mid Term Review, received during the end of year 2 (early March 2016) a number of changes to the project were made. These were always discussed between the partners over emails, skype and in person where possible.

The main changes made were:

- Outputs and indicators were revised in line with the reviewer's suggestions. A response was also written and included in the year three half year report (see Annex 7).
- Different communication strategies were attempted between the main partners. More frequent Skype and phone calls improved communications with meetings held between MICAIA, IIAM and RBG Kew in January and February 2017 to organise the final review workshop in May 2017. In addition, meetings were held in person between Milagre Nuvunga (MICAIA) and Camila Sousa (IIAM).
- MICAIA has worked to correct or adopt methods to involve more women.
- Different livelihoods strategies were implemented in different areas regarding livelihoods improvement (money earned versus alternative benefits).
- MICAIA hired a Monitoring & Evaluation staff member to develop a new monitoring framework and work plan which was used in the final year of the project.
- A visit by Tiziana Ulian, Alex Hudson and William Milliken ((Kew Research Leader - Ethnobotany) took place in Mozambique in April 2016 to review progress and plan final year activities. The visit included a project site visit; ethnobotanical training and

management meetings. RGB Kew personal advised on data collection and management methods, as part of the training, and established the progress meeting protocol, as suggested.

Darwin identity

The Darwin Initiative name as the project funder has been promoted during all activities and in communications with stakeholders. At the meetings with community members, government representatives and other relevant stakeholders, the Darwin Initiative was explained to them as the source of funds for the project. The internal reports, working plans, presentations, and the list of participants at the meetings also use the Darwin Initiative logo and partners' logos (RBG Kew, MICAIA, and IIAM).

The Darwin initiative funding is very important to the households in the communities in the Chimanimani forest belt. There is a clear understanding about the purpose of this funding amongst the community members, as outlined in the Mid-term review document. Members of the local community have expressed the importance of the project to give them the opportunity to implement sustainable livelihoods strategies and from this contribute to an increase in their household incomes.

This funding is well known at the National Government level because of its importance on supporting conservation efforts and sustainable livelihoods. Recognising the importance of the Darwin Initiative funds and the project's work with the communities in the forest belt, the Mozambican Government has funded the MozaBio investment project valued at US$1,200,000.

National NGOs are familiar with Darwin initiative funding. During the Darwin review workshop undertaken in May 2017, the main results of the project were presented. This meeting held in Maputo, capital of Mozambique, and was attended by different stakeholders representing the national, provincial and district government, NGOs, Universities (UEM), and donors (GEF, BIOFUND, and Cooperativa para Terras Comunitárias). They had the opportunity to learn about the important work completed in the Chimanimani and the Darwin Initiative funding was made clear by presenters with the logo being featured on presentation slides.

The results of the project, as of the Half year 3 report, were presented at the Forests and Livelihoods: Assessment, Research and Engagement (FLARE) annual meeting in Edinburgh by Alex Hudson from Royal Botanic Gardens, Kew. The Darwin Initiative logo is on the poster, which was seen by over 150 delegates from international Universities, NGOs and Governments (See annex 24).

Finally, the results of the project were presented by Tiziana Ulian during the 'Symposium: Plant conservation and society through the lens of the Darwin Initiative' at the 6th Global Botanic Gardens Congress of Botanic Gardens Conservation International in Geneva, Switzerland, on Monday 26th June 2017 (See Annex 26).

Finance and administration

Project expenditure

Project spend (indicative) since last annual report	2016/17 Grant (£)	2016/17 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)			-7.8%	Pay increases
Consultancy costs			0%	
Overhead Costs			-10.7%	40% of staff cost/include Audit fees
Travel and subsistence			-0.6%	
Operating Costs			0%	
Capital items (see below)			0%	
Others (see below)			87%	Translation costs not fully spent
TOTAL	80,887	**81,296**		

Staff employed (Name and position)	Cost (£)
Tiziana Ulian (PI, RBG Kew)	
Jonathan Timberlake (Field surveys and Plant Identification, RBG Kew)	
Joana Osborne (Plant Identification, RBG Kew)	
Milagre Nuvunga (Director MICAIA)	
Andrew Kingman (Director Eco-MICAIA)	
Alcinda (Finance MICAIA)	
Joao Massunde (Fieldworker MICAIA)	
Hercilia Chipanga (Project Manager MICAIA)	
TOTAL	**33,448**

Capital items – description	Capital items – cost (£)
N/A	N/A
TOTAL	0

Other items – description	Other items – cost (£)
MICAIA - Printing of posters, display material	
Audit costs	
Miscellaneous expenses – e.g. printing poster for FLARE conference	
TOTAL	1,906

Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total (£)
Lansdown Funds	
RBG Kew funds	
MICAIA Foundation funds	
TOTAL	**280,434**

Source of funding for additional work after project lifetime	Total (£)
MozBio	
Bentham-Moxon Trust fund for fieldwork investigating communities use of their most important Non-Timber Forest Products	
TOTAL	**945,667**

Value for Money

The investment has proven that MICAIA can work successfully in the area, forming good relationships with communities and providing good training to improve people's livelihoods. The project has acted as catalyst and as a result the Mozambican Government has seen the value in this and entrusted MozBio funds for community development to MICAIA to continue and expand this work with all the communities of the Chimanimani TFCA.

Many households have received excellent training in how to manage beehives and their natural resources in a more sustainable manner whilst also allowing them to generate higher incomes. For honey production, they have also been linked to the Mozambican Honey Company giving

them access to a viable and long lasting market. The signed contracts ensure there is also legal security for the communities for the continued market availability.

The quality of the training received will allow the community members to continue on beyond the project too, whilst the establishment of community promoters of each activitiy, who have excelled, either because of their prior knowledge or because of their adeptness at learning the new skills, will ensure that community members have somewhere to turn within the community if they have problems or would like to learn more.

From the improved production from Conservation Agriculture, seen as an extension of their normal livelihoods activitites, communities are already aware of how they can market excess production. The obvious results of higher production that they are now seeing will also ensure that the new practices continued long into the future.

Finally, the value has also been seen in the recent joint fieldwork trip in June – July 2017 during which staff from RBG Kew (Alex Hudson), IIAM (Valdemare Fijamo) and MICAIA (Joaoa Massunde) were able to hold focus groups meetings to understand and assess indigenous plant importance across three community sites very quickly and effectively using matching funds received from the Bentham-Moxon Trust.

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

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Impact: Effective and sustainable balance between biodiversity conservation, poverty alleviation and scaled development achieved in the Chimanimani Forest belt, Mozambique.			
Outcome: 40+ communities will be engaged in a range of natural resource-based livelihoods options, increasing household incomes and reducing loss of biodiversity and carbon stocks across the Chimanimani forest belt.	Indicator 1. **Change in level of household incomes for 1000 households**. Target: increase from <$1/day (range from .55/day-$1/day) to an average of $1.50/day by end of project Indicator 2. **Change in farming practices**. Target: a proportion of 20% of 2281 households adopts sustainable agriculture practices and contributes for food security and improved nutrition of their households Indicator 3. **Increased levels of sustainable forest product use**. Target: 5 tons of honey sold to MHC annually by end of the project; new markets identified for at least two additional NTFP; tourist visitor numbers to the area increase from 100/mth to 300/mth. Indicator 4. **Change in size of the area of designated conservation**	Indicator 1. Baseline and annual surveys within the project Local government data Indicator 2. Community-based surveys. Ministries of Agriculture and Tourism reports Indicator 3. Community-based surveys. Project reports Indicator 4. Official and community maps and agreements Indicator 5. Remote sensing studies and surveys undertaken by University of Edinburgh, UEM and partners	Assumption 1. Government, community members and the Administration of the Chimanimani TFCA remain committed to the project objectives Assumption 2. The information collected by the botanical surveys provides practicable information for developing new livelihoods and conservation strategies. Assumption 3. Honey produced in the project area meets the quality criteria set by Mozambique Honey Company. Assumption 4. Beekeeping, tourism and sustainable agriculture contribute significantly to an increase in households' incomes. Assumption 5. The adoption of sustainable agriculture contributes to a reduction of forest loss and carbon emissions.

	land within the Chimanimani forest belt. Target: increase from the three existing (though severely degraded) official reserves through establishment of two new areas in Zomba (5,000ha) and Mahate (5,000ha) with community management and government support by Yr3 Indicator 5. **Reduced rate of carbon emission in the forest belt**. Target : no fires registered and no new fields opened in community conservation areas set under this project ; 20% of farmers adopt conservation agriculture		Assumption 6. Early benefits from tourism, beekeeping and sustainable agriculture activities are a sufficient incentive for communities to improve behaviour and actively engage in conservation activities. Assumption 7. Ndzou Camp is an attractive platform for the growth of tourism in the Chimanimani TFCA, additional services and active promotion will be provided to support an increase in visitor numbers. Assumption 8. Participatory Community Land Use Plans lead to community ownership and empowerment and become therefore an important tool for sustainable management of natural resources
Outputs: **Output 1.** Information collected on areas suitable for conservation within the communities of Mahate, Mpunga, Zomba and Maronga, and on plant species of conservation interest and potential economic value	1.1 List of plant species recorded with information on frequency, distribution, uses and threats for the most desired species (locally useful and those of conservation priority) produced by Q4 of Y2. 1.2 Quantitative data on forest structure and composition for two project areas (Maronga & Mpunga) produced by end Q4 of Y2	1.1 Field survey reports and species list 1.2 Maps and species lists.	Assumption 1. Government and community leaders remain committed to the project agenda and, once established, to the conservation zones. Mitigated by working closely with the Administration of the Chimanimani TFCA and relevant government entities.

	1.3. Functional map of forest and other vegetation types, highlighting the distribution and extent of key areas for valued biodiversity in the four project areas, produced and available to be used by end of Q1 of Y3.		Assumption 2. Honey produced in the project area meets the quality criteria set by Mozambique Honey Company. Mitigated by providing technical support and training to producers.
Output 2. Integrated Land Use Plans created with communities and implemented by their Natural Resource Management Committees (NRMCs) and community rangers in the four project areas (Maronga, Mpunga, Zomba and Mahate)	2.1 Consensus on conservation zone boundaries reached by the communities in all four project areas by Q2 of Y3 2.2 Participatory Community Maps and Integrated Land Use Plans produced and in place for all four project areas with proposed conservation zones in each of them by Q2 of Y3 2.3 Members of the NRMCs from all four project areas to have met regularly (at least once a month) and decisions documented on allocation of land in line with the Integrated Land Use Plan by the end of Y3 2.4 Community rangers from all four project areas to have conducted regular patrols (at least once a week with or without TFCA rangers) and documented cases of carrying out their tasks (e.g. controlling fires and	2.1 Maps 2.2 Maps, plans 2.3 NRMC meeting decisions documented in reports 2.4 Community ranger patrol reports produced 2.5 Report from Chimanimani TFCA administration (or rangers) about the involvement of community rangers	

	verifying land for opening *machambas*).		
Output 3. Appropriate and viable natural resource based livelihood strategies developed and implemented by 1,000 households in the four project areas (Maronga, Mpunga, Zomba and Mahate).	3.1 At least three Business and Resource Management Plans produced by end of Y2 for expanding market oriented livelihood strategies 3.2 At least 20% of 2,281 households to have adopted at least one conservation agriculture practice by end of Y3 3.3 60% of income for 1,000 households generated as a direct result of participation in at least one new or expanded livelihood activity supported by the project by end of Y3.	3.1 Project reports, monitoring visit reports, evaluation studies; 3.2 Business plans and concept notes for Tourism and NTFP processing 3.3 Number of households involved with sustainable agriculture 3.4 Households assets	
Output 4. Improved tourism services, including community guides and education materials for tourists and local communities	4.1 Four 'Forest Learning Trails' linking community based and managed information stations created and used by tourists and communities by end of Q2 of Y3 4.2 At least 10 community guides trained in each of the four project areas and positive tourist reviews received	4.1 Publications, photos, case studies 4.2 Training report and list of trainees 4.3 Number of booklets and maps produced and sold	

	4.3 At least 200 items (e.g. booklets and maps) sold from Ndzou Camp by end of Y3		

Activities

Output 1

1.1 Carry out targeted plant surveys in each of the four forest areas, focussing on less-disturbed areas.

1.2 Identify (at IIAM and Kew) botanical voucher specimens collected during survey work

1.3 Map vegetation types and habitat quality using field survey data and available spatial imagery

1.4 Compile summary botanical report for each of the four forest areas

1.5 Establish forest sample plots in two forest areas [3-4 plots in each area]

Output 2

2.1 Mobilize communities and facilitate the production of maps and land use plans (zones) using a variety of participatory methodologies

2.2 Organise the involvement of officials from the government's department of geography and mapping to demarcate officially the proposed conservation zones

2.3 Work with each community, through a series of organised meetings, to prepare plans for access to forest resources (off-take), establish management committees for the conservation zones, and provide training to the members of these committees.

Output 3

3.1 Commission Eco-MICAIA Ltd to develop business plans for expanding livelihood activities (honey, tourism and forest fruits) and link these plans with resource management plans based on the inventories and land use planning exercises

3.2 On the basis of the studies present key recommendations to community leaders and mobilize local households around one (or more) of the proposed livelihood strategies, putting in place a package of training and organisational capacity building appropriate to the chosen strategy.

3.3 Identify and work with established private companies and/or new investors to create a market access plan to include agreement on price, quality standards, input supply, and defining collection points.

Output 4

4.1 Work with communities to identify routes for trails and information points for visitors and organise working parties of local people to prepare the trails

4.2 On the basis of information gathered in the surveys and other research, commission a local consultant to draft content for display materials and other information

4.3 Translate all materials and publish

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: Effective and sustainable balance between biodiversity conservation, poverty alleviation and scaled development achieved in the Chimanimani Forest belt, Mozambique.		The establishment of community conservation areas and the training of community structures to work with traditional chiefs on the sustainable management of biological resources helped in cementing conservation knowledge and practice among community members. Linking production to trade (e.g. Mozambique Honey Company), the project addressed critical sustainability issues.

Outcome: 40+ communities will be engaged in a range of natural resource-based livelihoods options, increasing household incomes and reducing loss of biodiversity and carbon stocks across the Chimanimani forest belt.	Indicator 1. Change in level of household incomes for 1000 households. Target: increase from <$1/day (range from .55/day-$1/day) to an average of $1.50/day by end of project	Indicator 1. Households have been involved in the implementation of economic activities and some have derived additional income from the sale of honey and agricultural products. Communities of Mpunga, have also benefited from Ndzou Camp income.
	Indicator 2. Change in farming practices. Target: a proportion of 20% of 2281 households adopts sustainable agriculture practices and contributes for food security and improved nutrition of their households	Indicator 2. Sustainable agriculture has been implemented and adopted by 427 households, representing 18.71% of households. This now contributes to improved food security and nutrition of their households. In addition, with the MozBio extended project, which began during the last year of this project, 1,200 households are now involved in conservation agriculture across the whole Chimanimani TFCA buffer zone, a direct result and impact of the implementation of the project.
	Indicator 3. Increased levels of sustainable forest product use. Target: 5 tons of honey sold to MHC annually by end of the project; new markets identified for at least two additional NTFP; tourist visitor numbers to the area increase from 100/mth to 300/mth.	Indicator 3. During the botanical surveys, four species with commercial potential were identified: *Ximenia americana, Uapaca kirkiana, Funtumia africana* and *Coffea salvatrix*. 4,394 kg (4.394 tonnes) of honey has been harvested and sold by 155 households to Mozambique Honey Company (MHC). 332 contracts have been signed between community members and MHC and one between the Mukwawaia-Mpunga women association and MHC. All beehives are now colonised and all households will sell honey to MHC in upcoming seasons. 408 farmers had additional incomes from conservation agriculture. From April 2014 to March 2017, Ndzou Camp received a total of 2,130 tourists, of which, 529 were foreigners. The number of tourists visiting Ndzou Camp per month was an average of 59.
	Indicator 4. Change in size of the area of designated conservation land within the Chimanimani forest belt. Target: increase from the three existing (though severely degraded) official reserves through establishment of two new areas in	Indicator 4. Community conservation zones identified and delimited by SPGC within each participating community- designated conservation land within Chimanimani forest belt is 30,374.93 ha. The protected area has now increased by 14,556.69 ha. Community conservation areas are:

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	Zomba (5,000ha) and Mahate (5,000ha) with community management and government support by Yr3	• Zomba conservation area increased from 2,700 ha to 3,527.63 ha.
		• Mahate community conservation area established at 13,729.06 ha.
		• Mpunga confirmed 6,615.9 ha (part of 16,200 ha Moribane forest reserve already established).
		• Maronga with 6,502.34 ha (part of 14,500 ha Maronga Forest Reserve).
	Indicator 5. Reduced rate of carbon emission in the forest belt. Target: no fires registered and no new fields opened in community conservation areas set under this project ; 20% of farmers adopt conservation agriculture	Indicator 5. Natural Resources Management Committees and community rangers are working in coordination with their communities to ensure reductions in the incidences of fires and the number of new fields opened up. By providing economic gain the hives in the forest belt are giving value to the forest influencing community members to protect the forest from loss 18.71% households also adopted conservation agriculture practices. This also will ensure the reduction of numbers of farms and the use of fires as management practice.

Output 1. Information collected on areas suitable for conservation within the communities of Mahate, Mpunga, Zomba and Maronga, and on plant species of conservation interest and potential economic value	1.1 List of plant species recorded with information on frequency, distribution, uses and threats for the most desired species (locally useful and those of conservation priority) produced by Q4 of Y2. 1.2 Quantitative data on forest structure and composition for two project areas (Maronga & Mpunga) produced by end Q4 of Y2. 1.3. Functional map of forest and other vegetation types, highlighting the distribution and extent of key areas for valued biodiversity in the four project areas, produced and available to be used by end of Q1 of Y3.	Completed. Information collected in eight forest areas. List of plant species recorded for four project areas (Mpunga, Zomba, Maronga and Mahate) Useful plants recorded with species of interest for conservation at four project areas (Mpunga, Zomba, Maronga and Mahate) Quantitative data on forest composition and structure for Maronga and Mpunga produced Functional maps of forest recommended conservation areas completed
Activity 1.1 Carry out targeted plant surveys in each of the four forest areas, focussing on less-disturbed areas.		Completed. Eight forest areas were investigated: - **Mpunga**: Mpunga Centro, Mbiquiza forest and Chikó Forest - **Zomba**: Muranga/Thekeza forest, Mapira Swamp, Zomba Centro Swamp - **Mahate**: Mahate community conservation area - **Maronga**: Comeni forest
Activity 1.2 Identify (at IIAM and Kew) botanical voucher specimens collected during survey work		Completed. A total of 616 plant specimens collected and identified at IIAM and Kew: - **Mpunga**: 198 - **Zomba**: 163 - **Mahate**: 81 - **Maronga**: 174

Activity 1.3 Map vegetation types and habitat quality using field survey data and available spatial imagery	Completed
Activity 1.4 Compile summary botanical report for each of the four forest areas	Completed. Report on botanical surveys presented at the Project review meeting in Maputo (May 2017).

Activity 1.5 Establish forest sample plots in two forest areas [3-4 plots in each area]	Completed. Detailed forest sample plots were established in Mpunga and Zomba. Tree diameter plots were established in Mpunga, Zomba and Maronga. Characterisation plots were established in all community areas.

Community areas	Tree composition plots		Vegetation characterisation plots
	Forest plots	**Tree diameter plots**	
Mpunga	4	6	17
Zomba	5	3	13
Mahate	0	0	11
Maronga	0	3	10
Total	**9**	**12**	**51**

Output 2. Integrated Land Use Plans created with communities and implemented by their Natural Resource Management Committees (NRMCs) and community rangers in the four project areas (Maronga, Mpunga, Zomba and Mahate)	2.1 Consensus on conservation zone boundaries reached by the communities in all four project areas by Q2 of Y3 2.2 Participatory Community Maps and Integrated Land Use Plans produced and in place for all four project areas with proposed conservation zones in each of them by Q2 of Y3	Completed. Community meetings held and consensus reached about the conservation zones' boundaries in 4 community areas (6 conservation areas selected in total) Meetings held for mapping and zoning process, including the indication of community conservation zones, held with households from all four project areas. 4 community conservation zones identified. 4 Community Conservation Areas delimited by Government officers in Mpunga (Moribane), Mahate, Zomba and Maronga.

| | 2.3 Members of the NRMCs from all four project areas to have met regularly (at least once a month) and decisions documented on allocation of land in line with the Integrated Land Use Plan by the end of Y3

2.4 Community rangers from all four project areas to have conducted regular patrols (at least once a week with or without TFCA rangers) and documented cases of carrying out their tasks (e.g. controlling fires and verifying land for opening *machambas*). | 475 Community members, representing community rangers, NRMC and other community members attended the training on importance of community land use planning processes.

A total of 147 NRMC members and community members not part of NRMC have been trained to understand the Chimanimani National Reserve Management Plan, and their principles and rules for protection and sustainable use of forest and wildlife resources under Forest and Wildlife law and conservation law. The community officer of Chimanimani National Reserve, Mr. Júlio Chironda, was involved in these events:

• **Mpunga**: 13
• **Zomba**: 73
• **Mahate**: 12
• **Maronga**: 49

A total of 29 community rangers have been trained across all communities. Community rangers in Mpunga (11) and Mahate (10) conduct regular patrols with Chimanimani TFCA rangers. Rangers in Maronga (4) and Zomba (4) have no support from TFCA rangers because the rangers do not currently patrol in those areas yet. |
| Activity 2.1 Mobilize communities and facilitate the production of maps and land use plans (zones) using a variety of participatory methodologies | Completed. 4 Community Land Use Maps and plans produced.

Development of community Integrated Community Land Use Plans: 43 meetings undertaken with 1,065 community members of Mpunga, Zomba, Maronga and Mahate for the development of community land use plans. Four plans have been confirmed, one for each community. The communities' use restrictions were confirmed, creating two different zones: 1- **Multiple Use Zone** – for habitation, farming, pasture and forest for traditional ceremonies; and 2- **Community Conservation Zone** - to promote biodiversity conservation and income generation from tourism. |

Activity 2.2 Organise the involvement of officials from the government's department of geography and mapping to demarcate officially the proposed conservation zones	Completed. Five community conservation areas officially demarcated in all four project areas.
	Officials from Government Department in coordination with MICAIA Foundation conducted the demarcation of proposed conservation zones: five officials of government institutions, representing the Provincial Department of Geography and Mapping in Manica (SPGC), Sussundenga District Government Officer, Sussundenga District Services of Economic Activities (SDAE) and Chimanimani National Reserve in coordination with MICAIA Foundation have undertaken the demarcation of the community conservation zones in Mpunga, Zomba, Maronga and Mahate (see maps in Annex 6). The selected community conservation areas will be named "Community Reserves" as stipulated in the Chimanimani National Reserve Management Plan and Community Conservation Areas as indicated under the Biodiversity Conservation Law (n. 16/2014). Total community Conservation Area is 30,374.93ha, (3,527.63ha in Zomba, 6615,90ha in Mpunga, 13,729.06ha in Mahate and 6,502.34ha in Maronga).
Activity 2.3 Work with each community, through a series of organised meetings, to prepare plans for access to forest resources (off-take), establish management committees for the conservation zones, and provide training to the members of these committees.	Completed.
	29 Community rangers trained in Mpunga (11), Zomba (04), Maronga (04) and Mahate (10). These members are responsible in coordination with the Natural Resources Management to control the access and use of natural Resources. Also are responsible for the monitoring of the implementation of Land Use Plans.
	2 Natural Resources Management Committees established in Maronga (16 members) and Mahate (16 members).
	2 Natural Resources Management Committees revitalized and became operational in Mpunga (13 members) and Zomba (10 members).
	Natural resources management committees and community rangers meet at least once monthly to discuss issues related to Natural Resources

Management at the communities and the evaluation of Community Land Use Plan application.

4 training events have been undertaken with members of Natural Resources Management Committees and community rangers in all project areas

Community Natural Resources Management Committees and community members trained on importance of community land use plan: During the Community Land Use Plan development meetings a training session on the importance of the Integrated Land Use Plans was held with the NRMC members and community rangers from Mpunga, Zomba, Maronga and Mahate. It was attended by other community members totalling, 475.

A total of 88 community members, representing Natural Resources Management Committees (59) and Community leaders and members (29) have been trained in committee operations, ledership, natural resources management and conflict resolution mechanisms.

Community management and administration training: 51 members of NRMCs and community rangers from Mpunga, Zomba, Maronga and Mahate were trained on planning and monitoring techniques as well as how to write meeting minutes.

Community patrols of community areas: 36 patrols have been undertaken by the community rangers in Mpunga (6), Maronga (12), Mahate (12) and Zomba (2). In Mpunga and Mahate, the patrols have been run in coordination with the Chimanimani National Reserve Rangers based at those communities.

Monitoring the work of NRMC and Community rangers in all four project areas. Chimanimani National Reserve's ranger registration in Mahate and Mpunga has been monitored to confirm patrol activity. Notes made during NRMC and Community ranger meetings have been used to corroborate patrols.

Community rangers and patrols financed using funds made from livelihoods activities: In Mpunga, the community has agreed to use funds from tourism

		activities to support community rangers and their patrols. Is important to underline that this was a willing of the community members, but, still not happening in the field.
Output 3. Appropriate and viable natural resource based livelihood strategies developed and implemented by 1,000 households in the four project areas (Maronga, Mpunga, Zomba and Mahate).	3.1 At least three Business and Resource Management Plans produced by end of Y2 for expanding market oriented livelihood strategies 3.2 At least 20% of 2,281 households to have adopted at least one conservation agriculture practice by end of Y3 3.3 60% of income for 1,000 households generated as a direct result of participation in at least one new or expanded livelihood activity supported by the project by end of Y3.	In order to ensure early adoption the project targeted conservation friendly business propositions with known markets that would have the potential to provide good livelihood opportunities. Beekeeping and tourism provide two good options for which Business plans have been developed. Resource management plans will be produced during the current fiscal year incorporating the results of the botanical survey. Though 18.71% of the 2,281 households are implementing conservation agriculture (mulching, intercropping, and crops rotation, organic composts for soil fertilizer, and biological control of pests and crops diseases) in all four community areas. This was new practice of farming and some community members were sceptical in the beginning. Now there is an increased interest in being involved in activities, to be supported with other funds. 75.7% of 1,000 households had additional incomes as direct result of participation in conservation agriculture and beekeeping livelihoods based. Potential economic edible fruit species have been noted (e.g. *Sclerocarya birrea*, *Uapaca kirkiana*, *Ximenia caffra*, *Dovyalis* spp., *Azima* spp, *Vangueria infausta, Strychnos madagascariensis* and *Vitex doniana*). *Funtumia africana* was found in Mpunga, Zomba and Maronga which could be used in the production process of high value paper. Four species with marketable edible fruits were highlighted; Three species were highlighted which are already used in the production of high value timber-based products, such as furniture and kitchen utensils. Thirteen species have potential use for essential oils. A potential coffee species, *Coffea salvatrix* was found in Zomba. Finally, papyrus (e.g. *Cyperus papyrus*) could be used for handcraft products in Zomba.

		Three areas have been identified in Zomba for potential community tourism camps:
		- Thekeza forest - Zichau povoado swamp area - Mukutuku river waterfalls Two areas have been identified in Comeni forest, Maronga, for potential community tourism camps: - Murere River - Chiira River
Activity 3.1 Commission Eco-MICAIA Ltd to develop business plans for expanding livelihood activities (honey, tourism and forest fruits) and link these plans with resource management plans based on the inventories and land use planning exercises		Completed. A market access strategy for honey production; an Eco-tourism development strategy for the Chimanimani TFCA; and a Market access strategy for natural products have been produced. Resource management plans to be concluded by June 2017.
Activity 3.2 On the basis of the studies present key recommendations to community leaders and mobilize local households around one (or more) of the proposed livelihood strategies, putting in place a package of training and organisational capacity building appropriate to the chosen strategy.		330 households benefitted from 1,601 beehives and required training for beekeeping implementation. 22 bee promoters trained in skills to help them spread their knowledge of bee keeping with other community members: **Mpunga**: 4 **Zomba**: 6 **Maronga**: 6 **Mahate**: 6 13 lead beekeepers trained to support the bee promoters and other beneficiaries of beehives in all project area with management and administration activities. 427 households involved at the conservation agriculture (seeds distributed and additional incomes started to be received). Training undertaken in

		mulching intercropping, crops rotation, production of organic composts and bio-pesticides (biological control of pests and plants diseases).
		2 camp sites identified in Zomba and Maronga.
		2 viewpoints identified for Mpunga (Moribane) and Mahate. One viewpoint built in Mpunga.
		4 main Non-Timber Forest Products, namely *Ximenia* sp.*, Uapaca kirkiana, Funtumia africana* and *Coffea salvatrix* with confirmed market.
Activity 3.3 Identify and work with established private companies and/or new investors to create a market access plan to include agreement on price, quality standards, input supply, and defining collection points.		Mozambique Honey Company (MHC) was identified for honey.
		Ndzou camp for tourism promotion, the one for community tourism.
		Agriculture products were sold at the communities, Sussundenga and Chimoio. The potential buyers use to contact the farmers and get products at the community areas.
Output 4. Improved tourism services, including community guides and education materials for tourists and local communities	4.1 Four 'Forest Learning Trails' linking community based and managed information stations created and used by tourists and communities by end of Q2 of Y3	8 Trails identified and geo-referenced in all four community areas:
		- **Mpunga**: 4
		- **Zomba**: 2
	4.2 At least 10 community guides trained in each of the four project areas and positive tourist reviews received	- **Maronga**: 2
		4 trails have been prepared in Mpunga.
		Community tourist guides have not currently been trained.
	4.3 At least 200 items (e.g. booklets and maps) sold from Ndzou Camp by end of Y3	4 different items was developed. These include leaflets for agriculture, beekeeping and tourism. 1 CD with Moribane Mammals was also produced.
Activity 4.1 Work with communities to identify routes for trails and information points for visitors and organise working parties of local people to prepare the trails		Routes for trails identified and information points for visitors identified.
		- 8 routes have been identified for the trails.

	• **Trails prepared in Mpunga community.** • 2 Houses identified for tourist information deposit.
Activity 4.2 On the basis of information gathered in the surveys and other research, commission a local consultant to draft content for display materials and other information	4 materials produced. Leaflets for agriculture, beekeeping and tourism. 1 CD with information about Chimanimani Mammals have been produced.
Activity 4.3 Translate all materials and publish	Not 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)	1,328	Mozambican	562 women and 766 men	Beekeepers, farmers, community rangers, NRMC, traditional leaders, other	Ndau	330 beekeepers, 427 farmers, 29 community rangers, 55 Natural Resources Management

		Total	Nationality	Gender	Title	Language	Comments/Weblink if available
							community members
							Committees, 12 traditional leaders, 475 other community members
6b	Number of training weeks not leading to formal qualification	20					8 for community rangers, 4 weeks for NRMC, 8 weeks for other community members
7	Number of types of training materials produced for use by host country(s) (describe training materials)						
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)						
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						

		Total	Nationality	Gender	Theme	Language	Comments
11b	Number of papers published or accepted for publication elsewhere						
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	1	Mozambique		BRAHMS database of Chimanimani collections	English	
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	1	Mozambique	Both		Portugues / English	Took place on 4th May 2017
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	1	United Kingdom	Both	(1) to advance cutting-edge knowledge and practices regarding	English	Took place from 2nd to 5th December 2017

Dissemination Measures		Total	Nationality	Gender	Theme	Language	Comments
					forest-based livelihoods, governance, biodiversity, and climate change; (2) increase dialogue and interactions between practitioners and researchers/scholars; and (3) create a global community of practice on forest-livelihood		

Dissemination Measures		Total	Nationality	Gender	Theme	Language	Comments
					interaction s		

Physical Measures		Total	Comments
20	Estimated value (£s) of physical assets handed over to host country(s)		Toyat Highlux vehicle (License plate: MAA-21-98)
21	Number of permanent educational, training, research facilities or organisation established		
22	Number of permanent field plots established		

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						

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)
Fieldwork report	Plant Conservation in communities on the Chimanimani footslopes	UK	UK	Male	Kew, London	

Annex 6   Darwin Contacts

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