Darwin Initiative Annual Report

DARWIN200

Important note:

To be completed with reference to the Reporting Guidance Notes for Project Leaders – it is expected that this report will be about 10 pages in length, excluding annexes

Submission deadline 30 April 2009

Darwin Project Information

Project Ref Number	18-010
Project Title	Tools for the sustainable harvesting of Maya Nut (Mesoamerica)
Country(ies)	México, Guatemala, El Salvador, Nicaragua, Honduras, Panama & Costa Rica
UK Contract Holder Institution	Natural History Museum
Host country Partner Institution(s)	Maya Nut Institute (Formerly The Equilibrium Fund)
Other Partner Institution(s)	Comision Nacional de Areas Naturales Protegidas CONANP (Mexico), Instituto Internacional de Tecnologia Educativa INITE (Mexico) Ministerio de Medio Ambiente y Recursos Naturales MARN (El Salvador) Ministry of Agriculture and Livestock MAGA (Guatemala) Alimentos Nutri-Naturales (Guatemala) Heifer Project International (Honduras) Centro Universitario de la Costa Sur CUCSUR (Mexico) Direccion General Tecnologica Agropecuaria, DGTA Yucatan, (Mexico) AGAPE (El Salvador)

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	Lancetilla Botanic Garden (Nicaragua)
	Masangni (Nicaragua)
	Instituto Nacional de Biodiversidad, INBio Costa Rica
	Smithsonian Tropical Research Institute (Panama)
	El Color de la Tierra group of Maya Nut women producers, (México)
	New partners:
	UNAM, Escuela de Agronomía Chapingo, Entre Amigos A.C, Alianza Hombre Jaguar A.C.
	Secretaria de Política Comunitaria y Social (Office of community and social politics, Yucatan, Mexico
Darwin Grant Value	£202,374.00
Start/End dates of Project	Start: Sept. 1, 2010. End: Aug. 30, 2013
Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..)	Sept. 1 , 2010 to Mar. 31, 2011.
Project Leader Name	Alex Monro
Project website	
Author(s) and main contributors, date	Cecilia Sanchez Garduno, Alex Monro

1.   Project Background

Brosimum alicastrum (Maya Nut) is one of the most common trees in Mesoamerican tropical forests *w*here it is a major determinant of forest structure. Fruit and leaves of Maya Nut are consumed by over 90 species of mammal and birds including several red-list species. Maya Nut is also a highly nutritious food for humans, providing protein, calcium, potassium, iron, folate, vitamins C, A, B and tryptophan. Maya Nut thrives in primary and secondary forests and tolerates marginal, rocky soils and is extremely drought tolerant once established. Mature trees can produce up to 200kg of edible fruit a year. It is becoming increasingly important for restoration projects in Guatemala, Honduras, Colombia, Haiti, El Salvador, Nicaragua, and Mexico (Vohman 2009) demand for seed-stock increasing 35% since 2003. It is also a strategic species for communities hoping to maintain food security in the face of climate change. Maya Nut not only protects biodiversity, soils and watersheds, but also provides a

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marketable non-timber forest product (NTFP) which ensures long-term stakeholder benefits and community-based protection against fire, clearing & logging.

Maya Nut Institute (MNI) focuses on educating women about the nutritional value, harvesting, processing and consumption of Maya Nut. In 2001 MNI began work to conserve traditional knowledge of Maya Nut through its *Brosimum programme.* The aim of which was to develop a sustainable source of food and income for rural women that also conserved biodiversity. Maya Nut is easy for rural women to harvest, process and sell using resources, skills and knowledge they already possess. To-date MNI has educated over 13,400 rural and indigenous women from 775 communities and as a result of this training, 15 independent women's producer groups have formed in Nicaragua, Guatemala, El Salvador, Mexico and Honduras and impacting >90,000 people living in and around rainforests throughout the region. These micro enterprises generated over $100,000 in revenue in 2008. Through the *Brosimum programme* MNI identified the alarming reduction of native Maya Nut forests, a situation which threatens the long term survival of numerous Neotropical bird and mammal species, and which greatly reduces the environmental services provided by these forests.

Because Maya Nut produces copious amounts of food without the need for forest clearing, burning, tilling, irrigation or the application of pesticides and fertilizers, it has the potential to reduce rural poverty, food insecurity, malnutrition and biodiversity loss. Because its harvest, processing and sale are done by women a high proportion of the benefits accrue to the family. Key to achieving this impact is managing/balancing consumer demand and extraction levels using applied population biology and developing participatory species management plans which can be implemented by the communities themselves. Improve the capacity of rural communities to sustainably use, reforest and equitably manage Maya Nut forests in Guatemala, El Salvador, Mexico.

2.   Project Partnerships

Prior to the beginning of the Project the Natural History Museum (NHM) and Maya Nut Institute (MNI, ex Equilibrium Fund) agreed the terms for the Management and functioning of this project. Together with the CEO of MNI, Erika Vohman, we maintain weekly if not daily email contact. In addition we are committed to producing and distributing a newsletter to our partners every nine months, the first of these will be disseminated in the next quarter.

Other Collaboration: In addition to the collaborations listed in the stage 2 application we have initiated the following new collaborations:

Coordinator of Science Communication at the Universidad Nacional Autónoma de México, Dr. Aquiles Negrete the aim of which is to assist in the preparation of training materials.

Dr. Juan Antonio Cruz of the Universidad Autonoma de Agronomía Chapingo, Mexico, the aim of which is to assist in the preparation of the training manual

Entre Amigos NGO, Nicole Swedlow, assistance with training course design, providing contact with local rural communities in Nayarit, Mexico

Alianza Hombre Jaguar NGO, Erik Saracho, providing contact with local rural communities in Nayarit, Mexico

Instituto de Ecologia, UNAM, Ken Oyama, technical support with the design of the molecular tools necessary to undertake the appropriate molecular analyses of Maya Nut populations .

Instituto Internacional de Tecnologia Educativa (INITE). We collaborated for 3.5 months in manual preparation and we cease collaboration to use a different team for manual preparation.

3. Project progress

The main activities for this reporting period have been:

- Course planning and production of teaching materials for three capacity development courses to rural communities (Activity 1.1, 1.2)

- Undertake a test capacity development courses with representatives from the project partner associations representing rural community partners (Activity 1.3)

- Undertake a capacity development course on field methods for women from rural communities to measure Maya Nut tree density, seed production and associated biodiversity (Activity 1.4)

- Identify samples sites and collect leaf samples for molecular research (Activity 3.1)

- Basic forest inventories of major faunal groups associated to absence/presence of Maya Nut trees undertaken (Activity 1.7) As part of the capacity development course from above (Activity 1.4) rural women are recording evidences of faunal groups in the vicinity of Maya Nut fruiting trees.

- Monitoring survey of harvest levels, income, biodiversity undertaken at project inception and end (Activity 4). As part of the capacity development course from above (Activity 1.4) rural women follow a participatory survey to record all these. Therefore, the baseline is being collected at the moment for all the communities we are going to work with.The main change made with respect to the original proposal has been to activity 1.1 and 1.2 'planning and production of teaching materials for three capacity development courses to rural communities'. Following a number of discussions to identify a format for the teaching materials and the actions required to produce this, Cecilia Sánchez Garduno (CSG) decided that our original partners with respect to this, the Instituto Internacional de Tecnologia Educativa (INITE) are not best placed to work with rural women. As a result we have decided to form a multidisplinary work group composed of CSG, Dr. Aquiles Negrete Yankelevich, specialist in science communication at the Universidad Nacional Autónoma de México,; Dr. Juan Antonio Cruz, agroecologist, from Universidad Autonoma de Agronomía Chapingo, Mexico, and Karina Pérez, specialist experienced in working with women from rural communities, freelance.. The impact of this on the project will be to, 1) develop the capacity of project personnel and rural communities rather than an external partner, 2) enable several iterations of the teaching materials to be produced thereby enabling us incorporating our experiences from running each course into the subsequent course. The first version produced (see appendix) has been well received by the participants of the first course on which it was used.

3.1 Progress in carrying out project activities

Course planning and production of teaching materials for three capacity development courses to rural communities (Activity 1.1, 1.2) Participating partners were contacted and a questionnaire sent to them the aim of which was to identify their requirements and input to the training materials.

a) Preparation of capacity course corresponding to activity 1.4 'Field data gathering':Draft teaching materials were prepared by the group listed above and tested on the trial course (see below). As part of the development of the course materials and content the following training was undertaken by the project partner: 1) Rosa Orozco (MNI, Mexico) participated in the training workshop 'Co-Actores en Diagnóstico, Monitoreo y Evaluación con métodos PRA/PLA *Participatory, Learning and Action*) *Participatory*

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Rural/Rapid Appraisal y SARAR' in Tepoztlán, México. The techniques learned were shared with the participants of this project's trial capacity development course and so to the national branches of MNI in the region.

b) Preparation of capacity course corresponding to activity 1.5 'Technical aspects of sustainable harvesting'. This course is in the process of being planned and requires a better understanding of how rural women use such information and their capacity to do so. Each community has its own capacity and needs and we are endeavouring to make the course as flexible as possible so as to meet these.

c) Preparation of capacity course corresponding to activity 1.6 'Marketing and accounting'. As part of the development of the course materials and contentCSG undertook a course entitled "How to teach accounting in a day" at Tehuacán Puebla, México, taught by Alternativas y Procesos de Participación Social A.C.. This course was targeted at working with rural communities and much of what was learnt on this course is being incorporated into the training courses that we will be supplying.

Trial course implemented, materials & contents tested/ improved if necessary (activity 1.3). The trial course took place from February 14 to 23 in San Francisco, Nayarit and Cuzalapa, Jalisco. This involved a discussion and revision of the methodologies to be used to estimate seed production and tree density, field tests of specific aspects of the methodologies and discussions with rural women from two target communities. Participants originated from Guatemala, El Salvador, Honduras and México. In addition Alex Monro participated as project leader and Erika Vohman as Chief Executive Officer of the Maya nut Institute. Participants came from a number of backgrounds (agronomy, forestry, taxonomy, ecology, natural resources management and rural marketing). This enabled a broad discussion of the course content and dissemination and of the methodology to be used. One of the issues that arose is that Maya Nut grows across a variety of different forest types, at very different densities and at sites subject to varying degrees of human impact. Measuring seed production and tree density could therefore be problematic. These same criteria also impact on the significance of the resource to rural communities. A low density of trees in undisturbed forest representing a resource that is harder to measure and access compared to a high density of trees in a highly impacted forest. During this workshop we were able to simplify and modify the methodology so that it could cope with the above issues as well as meet the capacity of rural communities to apply it.

120 Mesoamericans in 3 countries trained in field data gathering for calculation of sustainable Maya Nut seed harvest levels and the biodiversity associated with Maya Nut forests (Activity 1.4)

We have developed to the training materials and course format and will deliver 20 courses in three countries (Mexico, Guatemala and El Salvador) in 3yrs To date Field data gathering capacity course is being provided to our rural community partners *El Color de la Tierra* group of Maya Nut women producers, Mujeres Semilla group of Maya Nut women producers and Committee for Rural Women's Development CODEMUR from March to June (depending on the end of the fruiting season) at Cuzalapa, Jalisco, Chulavista, Nayarit, Mexico and Patulul, Suchitepéquez, Guatemala.

Identify samples sites and collect leaf samples for molecular research (Activity 3.1).

We are identifying field sites in collaboration with our partners. To date we have sampled seven populations on the Pacific and Caribbean sides of Mexico, Belize, Honduras and the Pacific and Caribbean sides of Costa Rica. We have also sampled populations from Peru and Cuba which we will use to place Central American diversity, the focus of this project, in a wider context.

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3.2 Progress towards Project Outputs

Communities obtain capacity to sustainably manage Maya Nut forests with minimal external assistance and/or supervision

The capacity development courses (first course, Activity 1.4) have only just begun and are still in process in Jalisco and Nayarit, Mexico and Patulul, Suchitepéquez, Guatemala. Informal verbal feedback fro one of these, Cuzalapa, Jalisco, México, indicates that the participants are performing well on the courses and are motivated to sustainably manage their Maya Nut forests.

3.3 Standard Measures

Table 1   Project Standard Output Measures

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	Total to date	Number planned for this reporting period	Total planned from application
Establishe d codes								
3 (new)	Number of people to attain other qualifications (ie. Not outputs 1 or 2 above)	2					0	2 (new)
6A	Number of people to receive other forms of education/training (which does not fall into categories 1-5 above)		40	40	40		0	120
6B	Number of training weeks to be provided		12	12	12	0	0	36

Code	Description							Total
7	Number of (ie different types - not volume - of material produced) training materials to be produced for use by host country		2	2	3	0	0	7
8	Number of weeks to be spent by UK project staff on project work in the host country	2				3	3	8
9	Number of species/habitat management plans (or action plans) to be produced for Governments, public authorities, or other implementing agencies in the host country			3	3	0	0	6
10	Number of individual field guides/manuals to be produced to assist work related to species identification, classification and recording		2	2	2	0	0	6
11A	Number of papers to be published in peer reviewed journals	0	0	1	1	0	0	2
11B	Number of papers to be submitted to peer reviewed journals	0	0	0	1	2	0	3
12A	Number of computer based databases to be **established** and handed over to host country	0	0	0	3	0	0	3
13B	Number of species reference collections to be **enhanced** and handed over to host country(ies)			3				3

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14 A	Number of conferences/seminars/ workshops to be **organised** to present/disseminate findings	4	2	2	2	4	1	10 from 5 in application
14 B	Number of conferences/seminars/ workshops **attended** at which findings from Darwin project work will be presented/ disseminated.	1	2	1	1	1	1	5
15A	Number of national press releases in host country(ies)	0	2	2	2	0	0	6
15B	Number of local press releases in host country(ies)	0	4	4	4	0	0	12
15C	Number of national press releases in UK				1			1
16A	Number of newsletters to be produced	0	1	2	1	0	0	4
16B	Estimated circulation of each newsletter in the host country(ies)	0	100	100	100	0	0	100
16C	Estimated circulation of each newsletter in the UK	0	12	12	12	0	0	12
17A	Number of dissemination networks to be **established**	0	0	1	0	0	0	1
17B	Number of dissemination networks to be **enhanced/ extended**	0	1	2	2	0	0	5

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18A	Number of national TV programmes/features in host country(ies)	0	0	1	2	0	0	3
19B		0	0	1	2	0	0	3
18C	Number of local TV programmes/features in host country(ies)							7
19A	Number of national radio interviews/features in host county(ies)							3
19C	Number of local radio interviews/features in host country(ies)	0	0	2	4	0	0	6
21	Number of permanent educational/training/research facilities or organisations to be established and then continued after Darwin funding has ceased	1	0	1	1	1	1	3
22	Number of permanent field plots to be established during the project and continued after Darwin funding has ceased	1	1	2	1	1	1	5

In Table 2, provide full details of all publications and material produced over the last year that can be publicly accessed, eg title, name of publisher, contact details, cost. Mark (*) all publications and other material that you have included with this report.

Table 2   Publications

Type (eg journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £

3.4   Progress towards the project purpose and outcomes

Purpose

Sustainable guidelines for Maya Nut seed harvesting and plantations are designed and implemented by stakeholders. The training format and materials to support the project purpose have been developed and tested are beginning to be applied. Sustainable guidelines will be filed with MNI and relevant in-country natural resources and protected areas ministries (CONAP in Guatemala, MARN in El Salvador, CONANP in Mexico.

We are in contact with MARN and CONANP and both have confirmed their interest. Once we have harvest guidelines we will contact them to discuss these. Maya Nut producer surveys will be conducted by MNI in-country staff in 2013 and 2014

3.5   Progress towards impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits

We are six months into the first year of the project. To date our rural community partners and course participants are enthusiastic and aware of the need to use Maya Nut sustainably.

MNI and implementing partners will maintain a dialogue with the GOs responsible for Natural Protected Areas. These will acknowledge that they have examined and approved the key project outputs (training, sustainable harvest yields, associated biodiversity) and express an undertaking to support the application of sustainable harvest guidelines. The Government organisation partners are: CONANP, Mexico, CONAP and MAGA, Guatemala, MARN, El Salvador..

4.   Actions taken in response to previous reviews (if applicable)

In response to the proposal reviewer suggestions that we need to strengthen communication between the project partners, Government organisations and NGOs we have maintained contact with our existing partners by email and updated them on the activities of the project. We have also developed a number of new collaborations: with Alianza Jaguar, Nayarit, Entre Amigos, Nayarit, Instituto de Ecología, UNAM, Michoacán and Secretaria de Política Comunitaria y Social (Office of community and social politics, Yucatan, Mexico.

5.   Other comments on progress not covered elsewhere

6.   Sustainability

This project does not create new NGOs, communities or NTFP. Rather it adds capacity and information critical to sustainability to a network of past and existing partnerships between local communities, NGOs and GOs and an established NTFP system. At the end-point the communities have the information, capacity and tools to ensure the sustainable use and conservation of their forests.

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7. Dissemination

Seminar to the Rotary Club, Yucatan. This resulted in an offer by the Rotary club to act as intermediaries with the state government and to provide financial assistance to communities wanting to plant Maya Nut.

Seminar to the Instituto de Ecología, UNAM, Michoacán. This resulted in an offer to collaborate on the development of guidelines for sustainable harvesting and with the molecular genetics part of this project.

Seminar to local government officials involved in promoting rural development at the Secretaria de Política Comunitaria y Social de Yucatán (Office of community and social politics). This resulted in an offer to implement basic training for the use of Maya Nut for human consumption in late 2011 and promote planting of Maya Nut trees.

Presentation at a round table meeting on environmental justice at an international meeting entitled, 'Values culture and law' (http://www.emv2010.org/) organised by Consejo para la Promoción de Valores y Cultura de la Legalidad in Monterrey, Mexico. This spread the projects aims and awareness to a number of 40 undergraduate students.

8. Project Expenditure

Table 3   Project expenditure during the reporting period (Defra Financial Year 1 April 2008 to 31 March 2009)

Item	Budget	Expenditure	Variance	% Variance	Comments
Staff costs specified by individual					
Overhead costs					

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Travel and subsistence	
Operating costs	
Capital items/equipment (specify)	
Others: Consultancy	
Others (please specify) Manual design	
Field material for workshops	
TOTAL	

Highlight any agreed changes to the budget and explain any variation in expenditure where this is +/- 10% of the budget. Have these changes been discussed with and approved by LTS?

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

I agree for LTS and the Darwin Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here)

Feedback on course (in Spanish):

http://www.youtube.com/user/mayanutinstitute#p/u/57/fA4TL3rz7yQ

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Please see Appendix 3

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Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2008/09

Project summary	Measurable Indicators	Progress and Achievements April 2008 - March 2009	Actions required/planned for next period
Goal: To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but constrained in resources to achieve *The conservation of biological diversity,* *The sustainable use of its components, and* *The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources*		*(report on any contribution towards positive impact on biodiversity or positive changes in the conditions of human communities associated with biodiversity eg steps towards sustainable use or equitable sharing of costs or benefits)*	*(do not fill not applicable)*
1a.Sustainable guidelines for Maya Nut seed harvesting and plantations are designed and implemented by stakeholders 1b. 60% of participating communities report increases in benefits from Maya Nut forests including food, income, and ecosystem services from Maya Nut trees.	1a.Sustainable guidelines filed with MNI and relevant in-country natural resources and protected areas ministries (CONAP in Guatemala, MARN in El Salvador, CONANP in Mexico. 1b. Maya Nut producer surveys conducted by MNI in-country staff in 2013 and 2014	1a. Sustainable guidelines for specific sites available online at MNI website 1b. MNI project reports	(Highlight key actions planned for next period)
Output 1. Communities obtain capacity to sustainably manage Maya Nut forests with minimal external assistance and/or	1a. 120 Mesoamericans from 20 village forest committees trained in technical aspects of forest management: calculation of	1a.Workshop reports Appropriate indicator. 30 women in three forests in training for field data	

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	sustainable Maya Nut seed harvest levels, the biodiversity associated with Maya Nut forests, marketing, and accounting by year 3. 1b. Basic forest inventories of major faunal groups associated to absence/presence of Maya Nut trees and in relation to some measure of forest conservation status i.e. Biodiversity value of Maya Nut	gathering and associated biodiversity to Maya Nut 1b Report and evaluation summary by community Training Co-ordinator Appropriate Indicator. In progress as part of the information gathered at the capacity trainings of the participant forest communities .
supervision		
1.1 Course content and structure planned in consultation with partners		Capacity training (1.4) Advanced draft of materials and methods finished and tested in 3 forests in Mexico and Guatemala Capacity training (1.5) contents and structure consulted and discussed with partners and is in development at present Capacity training (1.6) Partners participating in specialized trainings to develop contents and structure for this course. Following periods: contents will be continually evaluated to verify its scope and usefulness and adapted if necessary.
1.2 Course materials produced		Draft materials were produced for capacity training (1.4). Materials and methods for capacity trainings (1.5) and (1.6) in progress.
1.3 Trial course implemented, materials & contents tested/ improved if necessary		Completed with partner representatives from six countries. Course contents were discussed, and improved by collaborator partners and are tested in by rural women at present
1.4 120 Mesoamericans from 20 village forest committees trained in field data gathering for calculation of sustainable Maya Nut seed harvest levels		In process in 3 village forests

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and the biodiversity associated with Maya Nut forests		
1.5 30 Mesoamericans from 20 village forest committees trained in technical aspects of forest management: logical basis and basic interpretation of the gathered data as tools for sustainable Maya Nut seed harvest levels		To be carried out in yr 2 and 3
1.6 30 Mesoamericans from 10 village forest committees trained in marketing and accounting		To be carried out in yr 2, 3 and 4
1.7 Basic forest inventories of major faunal groups associated to absence/presence of Maya Nut trees undertaken.		To be carried out in yr 2, 3 and 4
1.8 Inventory data related to forest conservation status measures, data fed into the guidance document on sustainable harvesting of Maya Nut		To be carried out in yr 2, 3 and 4
1.9 Field data compiled in each country and analyzed for calculation of sustainable Maya Nut seed harvest levels by partners		To be carried out in yr 2, 3 and 4
2. Stewardship agreements at provincial and village levels in place and functioning	2 a. Draft position agreements for 20 local forest areas by year 2, revised by year 3 2 b.Guidance document on sustainable harvesting of Maya Nut seeds for 20 forest areas produced and disseminated by year 3	To be carried out in yr 2, 3 and 4
Activity **2.1** Draft position agreements for 20 local forest areas by year 2, revised by year 3.		To be carried out in yr 2 and 3
Activity **2.2-2.3** Sustainable harvest levels of Maya Nut seeds for 20 forest areas compiled and analysed together with the faunal inventories to produce the guidance document on sustainable harvesting of Maya Nut.		To be carried out in yr 2 and 3

Guidance document on sustainable harvesting of Maya Nut seeds for 20 forest areas disseminated.		
3. Knowledge of inter and intrapopulation variability for Maya Nut in Mesoamerica. Protocol for the long-term storage of Maya Nut seed developed. Promising seed transfer zones for Maya Nut landraces are delineated and genetic diversity (germplasm) conserved both in and ex situ as sources of seed for reforestation throughout its former range.	3a. Produce and disseminate at least one scientific document (journal paper, thesis) on Maya Nut genetic diversity and agronomic species improvement potential based on phenotype. 3b. Produce and disseminate a document naming and recommending Maya Nut landraces for restoration and reforestation 3c.Ex-situ genetic conservation plots established in La Ceiba, Honduras, and Yucatan, Mexico.	3 a and b. Annual reports, plus occasional academic and public media articles and presentations 3c.Acknowledged by partner institutions. 3d. Seed storage protocol published.
3.1-3.5 Select sample sites with partners and sample Maya Nut populations across 7 countries throughout Mesoamerica. Undertake molecular analysis of Maya Nut samples. Interpret the molecular data, produce an overview of how diversity within the species is partitioned across Mesoamerica, identify and name the principle land-races. Recommend land-races of agronomic potential based on phenotype. Produce and disseminate a document naming and recommending Maya Nut landraces for restoration and reforestation. Protocol for the long-term storage of Maya Nut developed by project staff at the Millennium Seed Bank.		Discussions as to sample site selection undertaken as part of trial training course. We have identified collectors and sites in El Salvador, Guatemala and Panama and produced a training video fro sample collection on YouTube (see Appendix 3). We have also collected samples from Mexico, Belize, Honduras, Costa Rica and an outlier population in Peru.

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Annex 2 Project's full current logframe

LOGICAL FRAMEWORK

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Goal: Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.			
Sub-Goal: Maya Nut forests in Mesoamerica are restored and sustainably managed for food production, income, ecosystem services and biodiversity conservation by rural communities with minimal dependence on external assistance and aid.	Measurable changes in farmers, community leaders and community members' attitudes toward Maya Nut forests Maya Nut genotypes identified, conserved and made available for rainforest restoration, reforestation in new areas, and to Neotropical agronomic research institutions in participating countries. Capacity for Ex-situ conservation of Maya Nut by long-term storage of Maya Nut germplasm (seed) exists. Ground surveys show recovery in size class and increased	Interviews and/or focus groups conducted and made available in MNI reports. At least 3 distinct Maya Nut genotypes are identified, named, and planted at Lancetilla Botanic Garden in Honduras, Yucatan (DGTA) in Mexico and other sites if necessary. Germplasm storage protocol published.	

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	forest cover in target biological corridors within 5 years of end of project. 60% of Maya Nut producing communities are harvesting Maya Nut using sustainable guidelines three years after project ends	Participatory vegetation assessments using permanent transects in target areas available in MNI project reports Sustainable management plans for Maya Nut forests are submitted, evaluated and, if approved, filed with MNI and local relevant ministries.	
Purpose 1a.Sustainable guidelines for Maya Nut seed harvesting and plantations are designed and implemented by stakeholders 1b. 60% of participating communities report increases in benefits from Maya Nut forests including food, income, and ecosystem services from Maya Nut trees.	1a.Sustainable guidelines filed with MNI and relevant in-country natural resources and protected areas ministries (CONAP in Guatemala, MARN in El Salvador, CONANP in Mexico. 1b. Maya Nut producer surveys conducted by MNI in-country staff in 2013 and 2014	1a. Sustainable guidelines for specific sites available online at MNI website 1b. MNI project reports	Ministries in every country prioritise adoption of guidelines for site -specific management plans and establish policies for current and future producer groups and mechanisms for enforcement. 1b. Maya Nut producer groups remain cohesive and organised

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Outputs (add or delete rows as necessary)	1a. 120 Mesoamericans from 20 village forest committees trained in technical aspects of forest management: calculation of sustainable Maya Nut seed harvest levels, the biodiversity associated with Maya Nut forests, marketing, and accounting by year 3.	1a.Workshop reports	Trainees remain active in the project and village committees
1. Communities obtain capacity to sustainably manage Maya Nut forests with minimal external assistance and/or supervision			Forest neighbours maintain the goodwill required for local co-operation and with project leaders.
	1b. Basic forest inventories of major faunal groups associated to absence/presence of Maya Nut trees and in relation to some measure of forest conservation status i.e. Biodiversity value of Maya Nut		Poorest and indigenous communities are well-represented
		1b Report and evaluation summary by community Training Co-ordinator	
2. Stewardship agreements at provincial and village levels in place and functioning	2 a. Draft position agreements for 20 local forest areas by year 2, revised by year 3 2 b.Guidance document on sustainable harvesting of Maya Nut seeds for 20 forest areas produced and disseminated by year 3	2a and b. Agreements and guidelines document on sustainable harvest checked, approved, and analysed by project collaborators and village authorities.	Land tenure policies remain stable. Provincial and village authorities are supportive to producer groups Local and national governments remain stable

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3. Knowledge of inter and intrapopulation variability for Maya Nut in Mesoamerica. Protocol for the long-term storage of Maya Nut seed developed. Promising seed transfer zones for Maya Nut landraces are delineated and genetic diversity (germplasm) conserved both in and ex situ as sources of seed for reforestation throughout its former range.	3a. Produce and disseminate at least one scientific document (journal paper, thesis) on Maya Nut genetic diversity and agronomic species improvement potential based on phenotype. 3b. Produce and disseminate a document naming and recommending Maya Nut landraces for restoration and reforestation 3c.Ex-situ genetic conservation plots established in La Ceiba, Honduras, and Yucatan, Mexico.	3 a and b. Annual reports, plus occasional academic and public media articles and presentations 3c.Acknowledged by partner institutions. 3d. Seed storage protocol published.	3a.Inter and intrapopulation genetic variability of Maya Nut can be identified with molecular markers 3b. Genetic variability found and current tools for restoration genetics will define the scope for advice of useful seed transfer zones 3c. Collaborators discuss and agree on suitable genotypes to conserve 3d. The Seed Conservation Department of the Millennium Seed Bank remain World leaders in the storage of recalcitrant seed.

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