



# Darwin Initiative – Final Report



Department  
for Environment  
Food & Rural Affairs

(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	17-021
Project Title	Restoring Tropical Forests: a Practical Guide
Host country(ies)	Thailand
Contract Holder Institution	Royal Botanic Gardens, Kew
Partner Institution(s)	FORRU, Chiang Mai, Thailand
Darwin Grant Value	£XXX
Start/End dates of Project	01 April, 2009 – 31 March, 2012, extended to 31 March, 2013
Project Leader Name	Kate Hardwick
Project Website	Final Report; 01 April, 2012 – 31 March, 2013
Report Author(s) and date	Kate Hardwick

## 1 Project Rationale

There is now huge interest in restoring the world's tropical forest ecosystems for biodiversity recovery and for carbon storage. The Forest Restoration Research Unit, Chiang Mai University (FORRU-CMU) and the Millennium Seed Bank Partnership, Royal Botanic Gardens, Kew (MSBP) have worked extensively with partners engaged in tropical forest restoration, from government, NGO and private sectors. This experience indicates that many tropical forest restoration projects are hurriedly put together, often using exotic species and failing to carry out follow-up monitoring. To make a significant contribution to biodiversity conservation, these projects must be based on sound scientific methodology, which includes the conservation of native biodiversity as one of the principle aims.

Chiang Mai University's Forest Restoration Research Unit (FORRU) has developed scientifically proven techniques – based on the Framework Species Method – to restore tropical forest ecosystems in Thailand (presented in the Darwin-funded manual "How to Plant a Forest") and it has also designed research protocols that can be used to develop effective restoration techniques for other tropical forest ecosystems in SE Asia (published in the Darwin-funded manual "Research for Restoring Tropical Forests"). The main objective of this project is to thoroughly rework this material into a third Darwin Manual, augmented with a lot of new information relating to projects and forests outside SE Asia and with case studies from around the world, to produce a standard global generic text that will make a major contribution to the efforts of many tropical countries to restore their native forests, and hence improve their ability to meet their obligations under the CBD.

This project was designed to significantly strengthen the long term impact and legacy of two previous Darwin projects (162/11/23 and 14-010), by enabling the two manuals published on tropical forest restoration for biodiversity recovery (designed for use in Indochina) to be collated, adapted and enhanced, for wider use throughout the tropics. Thus the project is not focused on a specific location, but aims to support tropical forest restoration throughout South America, Africa and Asia, by publishing the new guidebook in English, French and Spanish.

## 2 Project Achievements

### 2.1 Purpose/Outcome

The purpose of the project was to “Publish and distribute a global generic guide to facilitate tropical forest restoration for biodiversity recovery and thereby significantly strengthen the long term impact and legacy of two previous Darwin projects”. The publication of the guide has been achieved and electronic distribution to selected projects and partners has commenced. The production process took longer than anticipated, and the book is now being printed in August 2013, so physical distribution of hard copies had not yet commenced at the time of submission of the final report. However, the process of developing a distribution network is well underway, with distribution hubs agreed for SE Asia, S. America, Madagascar, W. and E. Africa.

#### Measurable indicators

- **Records of countries/institutions in which guide is requested and distributed:** see draft distribution list in Appendix 7.
- **Number of countries in which methodology is adopted.** So far the methods of the book are being actively practised in Kenya and Brazil, are planned for Uganda and are being taught in courses online and in Kenya, the Philippines, Malaysia and Thailand, as follows:
  - The framework species methodology has already been adopted in field trials at Brackenhurst Botanic Garden, Kenya, using early proofs from the book (FORRU-Kenya project, currently funded by the Millennium Seed Bank Partnership, RBG Kew).
  - The framework species scoring methodology is being used in the Rio Tinto-Kew Forest Restoration project in Bahia, Brazil, also using early proofs from the book.
  - The book and its methodology was publicized at the Botanical Gardens Conservation International (BGCI) forest restoration workshop at Entebbe, Uganda, 30 July-1 August 2013, which led to a proposal to establish 2 further Forest Restoration Research Units in Uganda, in Tooro and Nature Palace Botanic Gardens.
  - Extracts on from the book were used in a training presentation on monitoring wildlife in restored forests, at the Trees and Forests Conference at Brackenhurst Botanic Garden, February 2012.
  - Extracts from the book were used at a CABI training course in Thailand in November 2012.
  - Extracts from the book were used at the LEAF (Lowering Emission from Asia's Forests) and the Lower Kinabatangan Forest Corridor Project, E. Malaysia (Bring the Elephant Home) workshops in July 2013
  - The electronic Spanish version is planned to be used in the Environmental Training and Leadership Initiative (ELTI) online course in tropical forest restoration in August 2013.
  - The book has been adopted as text for an ELTI training course in the Philippines in November 2013, aimed at starting 26 FORRUs in university campuses there.
  - ELTI are also interested in distributing the book widely through their projects in SE Asia.
- **Demand for a second edition:** the authors are planning a 2<sup>nd</sup> edition in the form of an e-book.

## 2.2 Goal/ Impact: achievement of positive impact on biodiversity and poverty alleviation

'Reforestation' in the tropics often results in monocultures of exotic, commercial species, which make no contribution to improving biodiversity and provide a narrow range of social benefits. The Goal of this project was to support the CBD (especially Articles 8f, 10d and 13) by building capacity throughout the tropics to carry out high-quality forest restoration using a broad range of native species and locally appropriate restoration techniques, thus enhancing biodiversity recovery and providing a local communities with the benefits of ecosystem services, timber and a diverse range of other forest products. The achievement of this Goal is a long-term process, of which the distribution of the book only marks the beginning. However, capacity building using concepts, text and images from the book has already begun, through ongoing forest restoration courses at FORRU-Chiang Mai, the establishment of forest trial plots at FORRU-Brackenhurst in Kenya, and a presentation of the book and its concepts to at least 25 African conservation organisations at the BGCI workshop in Uganda in August 2013 (see 2.1). There was an enthusiastic response at the latter, with requests for multiple copies of the book from over half the participants, representing influential organisations such as IUCN, ITTO, the Green Belt Movement, the Wangari Maathi Institute, Uganda's National Forestry Authority, Rainforest Alliance, Nature Uganda, Nature Kenya, as well as several E. African botanic gardens (see Annex 7). Making the book available to organisations such as these will maximise its positive impact on biodiversity and human welfare.

## 2.3 Outputs

The overall output was to write and publish the book 'Restoring Tropical Forests: a Practical Guide' in English, French and Spanish. The writing, translation proof-reading and layout of the book is now complete and printing is underway at the time of submission of this report.

**Output 1:** Information gathering from projects in partner countries, including lists of potential framework tree species for each site; and additional information sourced from the international literature and through other contacts.

Case studies and real-life examples were written for the book based on information gathered from from Australia (Queensland Parks and Wildlife Service), Madagascar (QMM Madagascar Minerals), Costa Rica (Area de Conservacion Guanacaste), Cambodia (FORRU-Siem Reap), Africa (Kaliro District forest restoration trials), South America (Cristalino conservation project, Brazil) and Thailand (FORRU-Chiang Mai). This list differed slightly from the sources originally planned, as the focus of examples and case studies changed during the course of writing the text.

**Output 2.** Publication of 'Restoring Tropical Forests: Practical Guide'.

The guide has now been published and is being printed at the time of writing this report. The project encountered unexpected problems in the translation of the book. Firstly, the cost of the translation was higher than originally budgeted for, so further funds were raised to cover the extra costs from the Man Group plc-funded Kew Programme in Restoration Ecology. Secondly, although recommended translators from Peru (Spanish) and Cameroon (French) were used, it became apparent that there were problems with regard to the translation of certain technical terms and concepts. As a result, extra funds were leveraged from the Millennium Seed Bank Partnership to pay for further technical checking and proof-reading by native-speaking experts, identified through contacts at RBG Kew.

The proofs are viewable at: <https://www.dropbox.com/sh/g1dy28rrdst2eyk/WhO7G8txpq> and the front and back cover art can be seen in Annex 9.

**Output 3.** Distribution and dissemination of guide in hard copy and electronically, including low graphics version.

Electronic distribution of the book has commenced and physical distribution will begin upon delivery of the printed book at the end of August 2013, starting with those listed in Annex 7. The process of developing the distribution network is ongoing. The English version will particularly focus on Asia, via FORRU-CMU and ELTI, and E. Africa, via a proposed RBG Kew-led project to build capacity for high quality forest restoration in E. Africa.

Initial feedback from users of the book will now initially be handled via the FORRU-CMU website, rather than the RBG Kew website, as originally envisaged

### **3 Project support to the Conventions (CBD, CMS and/or CITES)**

The main contribution is to **Article 8**, “In-situ conservation”, as the methods described in the book will help national agencies to “restore degraded ecosystems”, aid the “recovery of threatened species” and support the management of protected areas. The reality is that many protected areas are already overexploited and highly degraded, with patches of high quality remnant forest, and are thus a logical priority for ecosystem restoration programmes. This book provides clear guidance to local populations for implementing “remedial actions” in such areas (**Article 10**).

The publication and distribution of “Restoring Tropical Forests: a Practical Guide” helps to support “Public Education and Awareness” of measures to conserve biological diversity (**Article 13**) by providing a unique educational resource that clearly explains effective restoration techniques developed in Australia, Thailand and elsewhere over many years. The book has been carefully designed for use by a broad spectrum of end users, with information presented in various formats, from clear line drawings of basic nursery and field techniques for those with limited literacy, through to step by step instructions on databasing and statistical techniques for those undertaking scientific research (**Article 12**).

As also described in section 2.2, extracts from the book are already being used in workshops, courses and studies around the tropics, thus fostering international technical and scientific co-operation (**Article 18**) and facilitating information exchange (**Article 17**).

### **4 Project Partnerships**

**Project partnerships:** This project is essentially a partnership between the Royal Botanic Gardens, Kew (RBG Kew) and Chiang Mai University’s Forest Restoration Research Unit (FORRU-CMU), in collaboration with Dr David Blakesley (Wildlife Landscapes) who was the UK Project Leader for two previous Darwin projects (162/11/23 and 14-010) upon which this project is based. The project partnership worked well, benefiting from over 15 years of field research by FORRU-CMU, the technical expertise of Wildlife Landscapes, and the wide range of contacts and specialist knowledge of RBG Kew.

During the extended fourth year, the project has continued to be led by Dr Kate Hardwick (RBG Kew), in partnership with Drs Elliott and Blakesley. At RBG Kew, information for case studies was provided by Drs William Milliken and Paul Smith; information on seed handling was provided by Dr Kate Gold; publication of the Guide was overseen by Kew’s Head of Publications, Gina Fullerlove and project finances were administered by George Sarkis. The co-authors maintained close contact by telephone, email and Skype on a weekly, and sometimes daily basis, and the Head of Publishing was kept informed of progress.

The project partners plan to continue to work together, in particular in a new project being developed by RBG Kew that will use the book as a key resource to build capacity in East Africa to carry out native forest restoration.

**Other collaboration:** as described in Section 2, the co-authors have worked with colleagues at RBG Kew, and several external projects to compile case studies for the guide. Maps of tropical forest distribution across the world have been produced in collaboration with Val Kapos at UNEP-WCMC and Peter Ashton. Discussions are being held with environmental institutions across the tropics to use the guide to help build their capacity to meet CBD commitments, as listed in Annex 7. Further discussion on distribution is planned with CBD focal points in the host country and other countries targeted for distribution.

## **5 Contribution to Darwin Initiative Programme Outputs**

### **5.1 Technical and Scientific achievements and co-operation**

This project aimed to build the capacity of tropical countries to carry out locally appropriate biological research into forest restoration techniques, rather than carrying out such research per se. However, all chapters of the book and certain individual sections were subject to peer review by experts including, Peter Ashton, Peter Buckley, Carla Catterall, John Dickie, Mike Dudley, Kazue Fujiwara, Kate Gold, David Lamb, Andrew Lowe, David Neidel, Bruce Pavlik, Andrew Powling, Moctar Sacande, Roger Steinhardt, Nigel Tucker, Prasit Wangpakapatanawong and Oliver Whaley.

### **5.2 Transfer of knowledge**

This project aimed to transfer knowledge gained during two earlier Darwin projects (162/11/23 and 14-010), by enabling the two manuals published on tropical forest restoration for biodiversity recovery (designed for use in Indochina) to be collated, adapted and enhanced, for wider use throughout the tropics. The transfer of knowledge would support tropical forest restoration throughout South America, Africa and Asia, by publishing a new 344 page guidebook in English, French and Spanish, and making the content of the book available in electronic form. The book is already being used or planned for courses and workshops, as detailed in section 2.1.

Further follow-on projects are planned to transfer and share the research results resulting from the nursery and field trials described in the book, and these are described in more detail in part 5.4.

### **5.3 Capacity building**

The guide builds capacity to carry out restoration of tropical forest ecosystems for biodiversity recovery and environmental protection by presenting clear information and guidance in the following three areas:-

- general concepts of tropical forest dynamics and regeneration that are relevant to the practice of effective tropical forest restoration;
- proven restoration techniques (e.g. Framework Species Method) and case studies of their successful application in Asia and Australia and their potential application in projects chosen from Africa and the Americas.
- research methods to refine such techniques and adapt them to local ecological and socio-economic conditions.

### **5.4 Sustainability and Legacy**

The 4,000 copies of the book produced through this Darwin project will be an enduring legacy in themselves. Around 3,300 of these will be made freely available to selected projects and organisations in non-OECD countries, to encourage and build their capacity in forest restoration, while the remainder will be sold in OECD countries, to offset additional publication costs, which were greater than planned (see part 6). Once the printing plates have been created, it will be possible to print further copies to support further forest restoration projects, as the need arises.

The book provides practical advice on setting up field trial plots to screen native species for high-performing 'framework species', which will catalyse natural forest regeneration. The most

important legacy of the project will be the data and information generated by the implementation of these trials. (For example, research already underway and/or planned at Brackenhurst Botanic Garden in Kenya and Tooro and Nature Palace Botanic Gardens in Uganda). Discussions are underway to explore options for the global dissemination of such data and information, including:

- a proposed Wikipedia-based on-line resource (involving FORRU-CMU, the Yale School of Forestry, RBG Kew and other partners);
- via 'PlantSearch' database (a collaboration between with Botanic Gardens Conservation International & RBG Kew);
- regional dissemination in E. Africa via Vegetation and Climate Change in East Africa (VECEA).

## 6 Lessons learned

The management and writing of the book went largely as planned and the comments of reviewers were carefully addressed. Two areas of unforeseen difficulty were the (i) allocation of resources and (ii) translation.

(i) The length of the book and time taken to write it were underestimated and the budget for publication and translation (which are both based on anticipated word counts) were thus correspondingly insufficient. This problem was dealt with by raising further funds through the Royal Botanic Gardens, Kew (see section 8.2). In retrospect, the decision to raise further funds rather than cut the length of the book was correct, and has resulted in a more comprehensive and detailed book than would have been achieved as originally planned. However, in future projects, it may be wise to attempt to estimate accurately the number of pages of the book, then multiply that number by 1.3 for budgeting purposes, to allow for unforeseen increases and responses to reviewers' comments.

(ii) The translation of certain technical terms into French and Spanish was also more difficult than envisaged. It is suggested that similar projects involving translation of technical manuals or documents avert this problem by employing a three-stage translation process, as follows. 1) The English text (in Word format or similar) is translated by a native-speaking, professional translator, with previous relevant experience. 2) The translated text is then technically checked/reviewed by a native-speaking expert in the field, who liaises closely with the translator until all linguistic issues are resolved. 3) The jointly-approved text is then proof-read by a professional proof-reader, who makes minor amendments to grammar, punctuation, spelling etc, but does not correct terminology without reference to the translator and technical expert. Only when this process is complete, should translated text be sent for typesetting. Those responsible for all 3 tasks should be selected right at the start of the project, at the point of proposal submission, based on completion of a short sample page of text. Ample time should be allocated to the translation process to allow for research and discussion about difficult technical terms and concepts – possibly double that originally envisaged.

In this project, stages 1 and 3 were successfully carried out, but stage 2 was not incorporated into the project plan, and was belatedly implemented *after* typesetting, which resulted in extra expense, and difficult and costly changes being made to the proofs. The importance and difficulty of translation were not recognised in the original logframe.

### 6.1 Monitoring and evaluation

Minor changes to the structure of the logframe were made on the advice of Darwin adviser, Patrick Hardcastle. The main changes requested by the project partners concerned extending the time needed for drafting and translating the book, as described above in section 6.

As this was a book-writing project, the main source of evaluation was from technical reviewers of individual chapters and sections, as listed in 5.1. Their comments were generally made as 'comments' in Word documents and are thus not easily appended to this report. However, the author carefully considered each comment, and it is hoped that the reviewers will consider their comments were adequately dealt with.

An unforeseen but very welcome and thorough review of the final proofs of the book was made by Karen Holl (Professor and Chair, Environmental Studies Department, University of California, Santa Cruz, USA) and her students. Their comments were addressed where possible at this stage, but certain useful and valid suggestions could not be implemented without making further changes to layout and translation. However, the planned subsequent 'e-book' version will provide an opportunity to make additions and more substantial amendments.

A review of the translated text by a native-speaking technical expert should be carried out, as described in item (ii) in part 6 above. This was carried out belatedly for this project by Paulina Hechenleitner (Spanish) and H el ene Ralimanana with help from the team at the Kew Madagascar Conservation Centre (French).

## 6.2 Actions taken in response to annual report reviews

The project logframe was amended in Year 1 in response to comments by Darwin consultant Patrick Hardcastle. No other reviews were received during the lifetime of the project.

## 7 Darwin identity

The book 'Restoring Tropical Forests: a Practical Guide' is considered as a distinct Darwin project, while fully acknowledging the invaluable further contributions (both financial and in-kind) made by the Millennium Seed Bank Partnership, the Man Group plc-funded Kew Programme in Restoration Ecology and John Ellerman Foundation. The Darwin logo is displayed prominently on the book's back cover and title page and it is always described as a Darwin project in any publicity (e.g. RBG Kew website: <http://www.kew.org/science-research-data/directory/projects/RESTORING-TROPICAL-FORESTS,-A-PRACTICAL-GUIDE.htm>). The FORRU website page on this book contains a direct link to Darwin (see [www.forru.org](http://www.forru.org), or new format under development at: [http://www.libazz.com/forru\\_en/content.php?mid=78](http://www.libazz.com/forru_en/content.php?mid=78)). The Foreword kindly written by HRH the Prince of Wales will serve to increase the profile of the book, and thus Darwin's role in supporting it.

## 8 Finance and administration

### 8.1 Project expenditure

Project spend since last annual report	2012/13 Grant (£)	2012/13 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)	XXX	XXX	XXX	XXX
Consultancy costs	XXX	XXX	XXX	XXX
Overhead Costs	XXX	XXX	XXX	XXX
Travel and subsistence	XXX	XXX	XXX	XXX
Operating Costs	XXX	XXX	XXX	XXX
Capital items (see below)	XXX	XXX	XXX	XXX
Others (see below)	XXX	XXX	XXX	XXX
<b>TOTAL</b>	XXX	XXX		

Staff employed (Name and position)	Cost (£)
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N/A	
<b>TOTAL</b>	

<b>Capital items – description</b>	<b>Capital items – cost (£)</b>
N/A	
<b>TOTAL</b>	

<b>Other items – description</b>	<b>Other items – cost (£)</b>
Translation of book into French and Spanish; proof-reading in both languages.	XXX
<b>TOTAL</b>	XXX

NB Extra publication costs in design, layout and copy editing were not charged to the project, but were met by Kew Publishing, who will partially re-coup them through sales of around 700 copies of the book to OECD countries. The remaining 3,300 will be given free of charge to selected projects and organisations to build their capacity in forest restoration.

## 8.2 Additional funds or in-kind contributions secured

<b>Source of funding for project lifetime</b>	<b>Total (£)</b>
Yr 1: from Biotropica Australia Plc for FORRU member of staff	XXX
Yr 2: from John Ellerman Foundation for KH salary	XXX
Yr 3: from John Ellerman Foundation for KH salary	XXX
Yr 4 (extended): extra translation costs not covered by original budget, paid for by RBG Kew Restoration Ecology programme, funded by Man Group plc	XXX
Yr 4 (extended): extra translation costs not covered by original budget, paid for by Millennium Seed Bank Partnership	XXX
Yr 4 (extended): extra translation costs not covered by original budget, paid for by John Ellerman Foundation	XXX
<b>TOTAL</b>	XXX

<b>Source of funding for additional work after project lifetime</b>	<b>Total (£)</b>
Further funding for distribution is being sought by Kew Foundation (unconfirmed)	XXX
Funding for distribution of guide provided by Millennium Seed Bank Partnership	XXX
<b>TOTAL</b>	XXX

## 8.3 Value for Money

The project partners consider that this book provided excellent value for money as an educational resource, given that additional funds were leveraged to pay for extra work to improve the quality (of both the additional English text and the translations) beyond what was originally envisaged in the project proposal. Even before publication there has been high demand for electronic versions of the book's content in workshops and training events as described in 2.1 above, as well as substantial advance orders for hard copies (Annex 7). However, the real value for money can only be judged by evaluating the amount of high quality forest restoration that will result from the methods and research advised in the book and the number of local communities that will benefit from this – indicators that cannot realistically start to be estimated until at least 10 years after publication.



# Annex 1 Report of progress and achievements against final project logframe for the life of the project

**Note:** For projects that commenced after 2012 the terminology used for the logframe was changed to reflect DFID's terminology.

- This logframe is the version presented in the first Annual Report (2010), which incorporated changes advised by Darwin adviser Pat Hardcaste.

Project summary	Measurable Indicators	Progress and Achievements in the last Financial Year 2012-13	Actions required/planned for next period
<p><b>Goal/Impact:</b></p> <p>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.</p>		<p>This project particularly supported Articles 8 (<b>In-situ conservation: restore damaged ecosystems</b>) and 13 (<b>Public Education and Awareness</b>), see Annex 3. The Guide will be used as an educational resource to promote high-diversity forest restoration in S. America (including via the Darwin-funded project, "Forest futures: livelihoods and sustainable forest management in Bolivian Amazon"), Africa and S. and C. America (see Annex 7).</p>	Do not fill not applicable
<p><b>Purpose/Outcome</b></p> <p>Publish and distribute a global generic guide to facilitate tropical forest restoration for biodiversity recovery and thereby significantly strengthen the long term impact and legacy of two previous Darwin projects</p>	<p>Records of countries/institutions in which guide is requested and distributed</p> <p>Number of countries in which methodology is adopted</p> <p>Demand for 2<sup>nd</sup> edition</p>	<p>A draft distribution list is attached (Annex 7).</p> <p>Plans are being developed to adopt methodologies described in the book in Kenya, Uganda and Brazil (see 2.1)</p> <p>It is now intended to develop the Guide as an e-book, rather than focus on a 2<sup>nd</sup> printed edition.</p>	Do not fill not applicable
<p><b>Output 1.</b></p> <p>Information gathering from projects in partner countries, including lists of potential framework tree species for each site; and additional information sourced from the international literature and through</p>	<p>Network established and functioning</p>	<p>Forest Restoration Research Units (FORRUs) have already been established in SE Asia in Thailand, China and Cambodia. A FORRU network is now being developed in Africa, starting with a pilot project at Brackenhurst Botanic Garden in Kenya (funded in 2012-14 by the Millennium Seed Bank Partnership), with 2 further FORRUs under discussion in Uganda at Tooro and Nature Palace Botanic Gardens.</p>	

Project summary	Measurable Indicators	Progress and Achievements in the last Financial Year 2012-13	Actions required/planned for next period
other contacts.	Information gathered on case study sites, including provisional lists of framework tree species	<p>Final or provisional lists of framework tree species now exist for Australia, N. and S. Thailand, Cambodia, and Uganda (see Annex 8), with work ongoing at Brackenhurst Botanic Garden to develop a list for central upland Kenya. Discussions are underway to explore options for the global dissemination of information on framework species, including:</p> <ul style="list-style-type: none"> <li>• a proposed Wikipedia-based on-line resource (involving FORRU-CMU, the Yale School of Forestry, RBG Kew and other partners);</li> <li>• via 'PlantSearch' database (a collaboration between with Botanic Gardens Conservation International &amp; RBG Kew);</li> <li>• regional dissemination in E. Africa via Vegetation and Climate Change in East Africa (VECEA).</li> </ul> <p>The 'network established' indicator is not entirely suitable as an indicator for the success of the project at this stage, as it will take several years to establish fully. However, progress towards this output can already be clearly seen.</p>	
Activity 1.1. Visit/gather information from Australia, Indonesia, Cambodia, Africa and South America.		Achieved in previous years.	
Activity 1.2. International editorial meeting at Kew		Achieved in previous years.	
Activity 1.3. Draft case studies		Achieved in previous years.	
<b>Output 2.</b> Publication of 'Restoring Tropical Forests: Practical Guide'	<p>Peer review of manuscript by minimum of two external experts</p> <p>Feedback from experts within RBG Kew</p> <p>Manuscript ready for translation and publication by end Year 2</p> <p>Guide translated and published at the end of Year 3</p>	<p>The project was extended for an additional year, with the handover of the manuscript delayed until the fourth year of the project. Drafting, translation and layout are all now complete. The translation process was much more complex and lengthy than originally envisaged, as it became apparent that additional rigorous quality checking was needed, to ensure the accuracy and consistency of translated technical terms and phrases. Additional expert advice was sought from native-speaking, conservation/science professionals both within RBG Kew and externally, financed by the Millennium Seed Bank Partnership. The guide is currently being printed. The indicators are appropriate. The proofs are viewable at: <a href="https://www.dropbox.com/sh/g1dy28rrdst2eyk/WhO7G8txpq">https://www.dropbox.com/sh/g1dy28rrdst2eyk/WhO7G8txpq</a> and see cover in Annex 9.</p>	
Activity 2.1. Draft text of guide		Achieved in previous years.	

Project summary	Measurable Indicators	Progress and Achievements in the last Financial Year 2012-13	Actions required/planned for next period
Activity 2.2. Internal and external peer review		Achieved in previous years.	
Activity 2.3. Translation		Achieved in previous years.	
Activity 2.4. Layout and design of guide		All three languages laid out and proof-read.	
Activity 2.5. Printing		Printing in progress, with delivery scheduled for 30 <sup>th</sup> August 2013.	
Activity 2.6. Launch		Kew Publishing to lead on post-printing PR campaign.	
Output 3. Distribution and dissemination of guide in hard copy and electronically, including low graphics version	<p data-bbox="609 485 1079 549">Number of copies distributed and location sent to.</p> <p data-bbox="609 715 1079 778">Guide accessible on RBG Kew and FORRU websites</p> <p data-bbox="609 944 1079 1008">Numbers and quality of web response forms completed</p>	<p data-bbox="1106 485 2114 676">The book will be distributed in SE Asia, S. America, Madagascar, W. and E. Africa (see draft distribution list in Annex 7 - this is a working document and is being continually expanded). Funds are being sought by RBG Kew to extend the distribution network in E. Africa, under the project 'Building capacity to carry out high quality forest restoration in East Africa'. It is expected that all freely available copies will be have been distributed by end of 2015.</p> <p data-bbox="1106 721 2114 912">Links to the Guide are available via the Kew website at: <a href="http://www.kewbooks.com/asps/ShowDetails.asp?id=1019">http://www.kewbooks.com/asps/ShowDetails.asp?id=1019</a>, University of Chicago Press Books at: <a href="http://www.press.uchicago.edu/ucp/books/book/distributed/R/bo13281503.html">http://www.press.uchicago.edu/ucp/books/book/distributed/R/bo13281503.html</a> and the FORRU website at: <a href="http://www.libazz.com/forru_en/content.php?mid=78">http://www.libazz.com/forru_en/content.php?mid=78</a></p> <p data-bbox="1106 957 2114 1053">On-line feedback on the book's methods via the FORRU website. This indicator is not appropriate at this stage, as the book has not yet been distributed or the methods applied.</p>	

## Annex 2 Project's full logframe, including indicators, means of verification and assumptions

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

\* NB This logframe is the version presented in the first Annual Report (2010), which incorporated changes advised by Darwin consultant Patrick Hardcastle – his additions are shown in bold text.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<b>Goal:</b> <i>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.</i>			
<b>Purpose</b> Publish and distribute a global generic guide to facilitate tropical forest restoration for biodiversity recovery and thereby significantly strengthen the long term impact and legacy of two previous Darwin projects	<ul style="list-style-type: none"> <li>• <b>Records</b> of countries/ institutions in which guide is requested and distributed</li> <li>• Number of countries in which methodology is adopted</li> <li>• Demand for 2<sup>nd</sup> edition</li> </ul>	<ul style="list-style-type: none"> <li>• Guide published and presented to Darwin</li> <li>• Peer reviews submitted to Darwin</li> <li>• Annual and 6 month Darwin reports</li> </ul>	<ul style="list-style-type: none"> <li>• Biodiversity conservation remains a priority in reforestation policies in tropical countries around the world</li> <li>• Methodology is embraced by target countries, including governments, NGOs, communities and business</li> <li>• Value of 'native' framework species appreciated</li> <li>• Local demand for expertise</li> <li>• FORRU Thailand continues to receive core funding for its other activities and facilities</li> </ul>
<b>Outputs</b> (add or delete rows as necessary)			
1. Information gathering from projects <b>in partner countries</b> , including lists of potential framework tree species for each site; additional information sourced from the international literature <b>and through other contacts</b>	<ul style="list-style-type: none"> <li>• Network established <b>and functioning</b></li> <li>• Information gathered on case study sites, including provisional lists of framework tree species</li> </ul>	<ul style="list-style-type: none"> <li>• Reports on visits and case studies</li> <li>• <b>Quality and comprehensiveness of information received from partners</b></li> </ul>	<ul style="list-style-type: none"> <li>• Participants in Australia, Indonesia, and selected case-study countries in Africa and Tropical America provide sufficient information and host visits of project staff</li> <li>• Case study partners remain motivated and committed to trial the methodology on publication of the guide</li> </ul>

Project summary	Measurable Indicators	Means of verification	Important Assumptions
2. Publication of 'Restoring Tropical Forests: Practical Guide'	<ul style="list-style-type: none"> <li>• Peer review of manuscript by minimum of two external experts</li> <li>• Feedback from experts within RBG Kew</li> <li>• Manuscript ready for translation and publication by end Year 2</li> <li>• Guide translated and published in June Year 3</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Peer and internal</b> reviews, presented to Darwin</li> <li>• Manuscript completed by end of Year 2</li> <li>• Guides published in <b>three languages</b> by June Year 3</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Reviews do not bring up issues that require major time extension</b></li> <li>• Book meets publication standards of Kew Publishing</li> </ul>
3. Distribution and dissemination of the guide in hard copy and electronically, including low graphics version	<ul style="list-style-type: none"> <li>• Number of copies distributed and location sent to</li> <li>• <b>Guide accessible</b> on RBG Kew and FORRU websites</li> <li>• Numbers and quality of web response forms completed</li> </ul>	<ul style="list-style-type: none"> <li>• Data supplied by Kew Publishing and RBG Kew by end Year 3</li> <li>• <b>Reports from webmasters of hits, responses and downloads</b></li> <li>• <b>Analysis of completed forms</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Expressed interest from regions other than SE Asia is maintained</b></li> <li>• Kew delivers undertaking to maintain the websites and record and assess feedback <b>post project</b></li> <li>• Users of the book willing to record the results of their projects on Kew's web forms</li> </ul>
<p><b>Activities</b> (details in workplan)</p> <p>1.1 Visit/gather information from Australia, Indonesia, Cambodia, Africa and South America</p> <p>1.2 International editorial meeting at Kew</p> <p>1.3 Draft case studies</p> <p>2.1 Draft text of guide</p> <p>2.2 Internal and external peer review</p> <p>2.3 Translation</p> <p>2.4 Layout &amp; design guide</p> <p>2.5 Printing</p> <p>2.6 Launch</p>			
<p><b>Monitoring activities:</b></p> <p>We will liaise closely with Kew Publishing during the production stage to monitor progress. Upon publication, project staff will manage and monitor the free distribution of the book while Kew Publishing will supply regular sales reports. Kew's IT department will monitor web downloads and project staff will record web-based feedback.</p>			

## Annex 3 Project contribution to Articles under the CBD

### Project Contribution to Articles under the Convention on Biological Diversity

Article No./Title	Project %	Article Description
6. General Measures for Conservation & Sustainable Use		Develop national strategies that integrate conservation and sustainable use.
7. Identification and Monitoring		Identify and monitor components of biological diversity, particularly those requiring urgent conservation; identify processes and activities that have adverse effects; maintain and organise relevant data.
8. In-situ Conservation	40%	Establish systems of protected areas with <b>guidelines for selection and management</b> ; regulate biological resources, promote protection of habitats; manage areas adjacent to protected areas; <b>restore degraded ecosystems and recovery of threatened species</b> ; control risks associated with organisms modified by biotechnology; control spread of alien species; ensure compatibility between sustainable use of resources and their conservation; <b>protect traditional lifestyles and knowledge on biological resources</b> .
9. Ex-situ Conservation		Adopt ex-situ measures to conserve and research components of biological diversity, preferably in country of origin; facilitate recovery of threatened species; regulate and manage collection of biological resources.
10. Sustainable Use of Components of Biological Diversity	15%	Integrate conservation and sustainable use in national decisions; protect sustainable customary uses; <b>support local populations to implement remedial actions</b> ; encourage co-operation between governments and the private sector.
11. Incentive Measures		Establish economically and socially sound incentives to conserve and promote sustainable use of biological diversity.
12. Research and Training		Establish programmes for scientific and technical education in identification, conservation and sustainable use of biodiversity components; promote research contributing to the conservation and sustainable use of biological diversity, particularly in developing countries (in accordance with SBSTTA recommendations).
13. Public Education and Awareness	30%	<b>Promote understanding of the importance of measures to conserve biological diversity and propagate these measures through the media</b> ; cooperate with other states and organisations in developing awareness programmes.
14. Impact Assessment and Minimizing Adverse Impacts		Introduce EIAs of appropriate projects and allow public participation; take into account environmental consequences of policies; exchange information on impacts beyond State boundaries and work to reduce hazards; promote emergency responses to hazards; examine mechanisms for re-dress of international damage.
15. Access to Genetic Resources		Whilst governments control access to their genetic resources they should also facilitate access of environmentally sound uses on mutually agreed terms; scientific research based on a country's genetic resources should ensure sharing in a fair

Article No./Title	Project %	Article Description
		and equitable way of results and benefits.
16. Access to and Transfer of Technology		Countries shall ensure access to technologies relevant to conservation and sustainable use of biodiversity under fair and most favourable terms to the source countries (subject to patents and intellectual property rights) and ensure the private sector facilitates such assess and joint development of technologies.
17. Exchange of Information	10%	Countries shall <b>facilitate information exchange</b> and repatriation including <b>technical scientific and socio-economic research, information on training and surveying programmes and local knowledge</b>
19. Bio-safety Protocol		Countries shall take legislative, administrative or policy measures to provide for the effective participation in biotechnological research activities and to ensure all practicable measures to promote and advance priority access on a fair and equitable basis, especially where they provide the genetic resources for such research.
Other Contribution		Smaller contributions (e.g. of 5%) or less should be summed and included here.
12. Research and Training  16, 18?	5%	Establish programmes for scientific and technical education in identification, conservation and sustainable use of biodiversity components; <b>promote research contributing to the conservation and sustainable use of biological diversity, particularly in developing countries (in accordance with SBSTTA recommendations).</b>
Total %	100%	Check % = total 100

## Annex 4 Standard Measures

Code	Description	Totals (plus additional detail as required)*
<b>Training Measures</b>		
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( i.e. not categories 1-4 above)	
6a	Number of people receiving other forms of short-term education/training (i.e. not categories 1-5 above)	11 [3 FORRU-CMU staff (2 Thais + 1 British) trained in latest framework spp. methods and carbon markets in Australia in Yr1. 8 FAO staff trained in the ANR techniques described in the book, providing feedback on book's methodology in Yr 2]
6b	Number of training weeks not leading to formal qualification	
7	Number of types of training materials produced for use by host country(s)	1 book ['Restoring Tropical Forests, a Practical Guide']
<b>Research Measures</b>		
8	Number of weeks spent by UK project staff on project work in host country(s)	4 [William Milliken, 1; Martin Cheek, 1, Paul Smith, 1].
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (s)	
10	Number of formal documents produced to assist work related to species identification, classification and recording.	
11a	Number of papers published or accepted for publication in peer reviewed journals	
11b	Number of papers published or accepted for publication elsewhere	
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	



Code	Description	Totals (plus additional detail as required)*
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)	
<b>Dissemination Measures</b>		
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	6 so far completed or planned, in Uganda, Kenya, Thailand, Malaysia, Philippines and online (see 2.1).
15a	Number of national press releases or publicity articles in host country(s)	All events relating to #15 are still being planned for the media launch in autumn 2013.
15b	Number of local press releases or publicity articles in host country(s)	
15c	Number of national press releases or publicity articles in UK	
15d	Number of local press releases or publicity articles in UK	
16a	Number of issues of newsletters produced in the host country(s)	
16b	Estimated circulation of each newsletter in the host country(s)	
16c	Estimated circulation of each newsletter in the UK	
17a	Number of dissemination networks established	6 so far [FORRU, Kew books and University of Chicago Press Books websites (see Annex 1); ELTI and FORRU-CMU in SE Asia; BGCI botanic garden network in Africa].
17b	Number of dissemination networks enhanced or extended	
18a	Number of national TV programmes/features in host country(s)	
18b	Number of national TV programme/features in the UK	
18c	Number of local TV programme/features in host country	
18d	Number of local TV programme features in the UK	
19a	Number of national radio interviews/features in	

Code	Description	Totals (plus additional detail as required)*
	host country(s)	
19b	Number of national radio interviews/features in the UK	
19c	Number of local radio interviews/features in host country (s)	
19d	Number of local radio interviews/features in the UK	
<b>Physical Measures</b>		
20	Estimated value (£s) of physical assets handed over to host country(s)	
21	Number of permanent educational/training/research facilities or organisation established	
22	Number of permanent field plots established	2 so far at Brackenhurst Botanic Garden, Kenya (in 2012 & 2013), 2 more currently planned in Uganda, possibly 26 in the Philippines (see 2.1).
23	Value of additional resources raised for project (See Section 8.2 above)	£XXX
<b>Other Measures used by the project and not currently including in DI standard measures</b>		

\*NB These figures refer to the total for the whole project

## Annex 5 Publications

Type * (e.g. journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (e.g. contact address, website)	Cost £
Book	'Restoring Tropical Forests: a Practical Guide', S. Elliot, D. Blakesley & K. Hardwick, 2013.	Royal Botanic Gardens, Kew.	<b>Kew Books:</b> <a href="http://www.kewbooks.com/asps/ShowDetails.asp?id=1019">http://www.kewbooks.com/asps/ShowDetails.asp?id=1019,</a> <b>University of Chicago Press Books:</b> <a href="http://www.press.uchicago.edu/ucp/books/book/distributed/R/bo13281503.html">http://www.press.uchicago.edu/ucp/books/book/distributed/R/bo13281503.html</a> <b>FORRU-CMU:</b> <a href="http://www.libazz.com/forru_en/content.php?mid=78">http://www.libazz.com/forru_en/content.php?mid=78</a>	XXX

\*c. 700 copies of the book will be sold at this price to partially offset extra publication costs met by Kew Publishing and the remaining 3,300 copies will be given free of charge to selected projects and organisations to build their capacity in forest restoration.

## Annex 6 Darwin Contacts

<b>Ref No</b>	17-021
<b>Project Title</b>	Restoring Tropical Forests: a Practical Guide
<b>Project Leader Details</b>	
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<b>Partner 2 etc.</b>	
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Role within Darwin Project	Co-author
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## **Attached documents**

**Annex 7:** Distribution list for 'Restoring Tropical Forests: a Practical Guide'

**Annex 8:** Collated sources for lists of provisional Framework Species

**Annex 9:** Book covers