

# Darwin Initiative – Final Report

(To be completed with reference to the Reporting Guidance Notes for Project Leaders  
(<http://darwin.defra.gov.uk/resources/reporting/>) -

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

## Darwin project information

Project Reference	14-010
Project Title	Facilitating forest restoration for biodiversity recovery in Indochina
Host country(ies)	Thailand, China, Laos, Cambodia
UK Contract Holder Institution	East Malling Research
UK Partner Institution(s)	East Malling Research, Wildlife Landscapes
Host Country Partner Institution(s)	World Agroforestry Centre - ICRAF, China; Forest Research Centre, Laos; Forest and Wildlife Science Research Institute, Cambodia; Forest Restoration Research Unit, Thailand
Darwin Grant Value	£169,653
Start/End dates of Project	01 April 2005 to 31 March 2008
Project Leader Name	Dr David Blakesley
Project Website	<a href="http://www.forru.org">www.forru.org</a>
Report Author(s) and date	D Blakesley, S Elliott, He Jun, N Sothea and S Ketphanh; 30 June 2008.

## 1 Project Background

This project is located in Indochina, and includes partners in Thailand, China, Laos and Cambodia. It builds on a previous Darwin Initiative project carried out by the Forest Restoration Research Unit of Chiang Mai University (FORRU-CMU), Thailand, in collaboration with East Malling Research (EMR) and Wildlife Landscapes.

The basic problem which it seeks to address, expressed in the project purpose is to facilitate restoration of forest ecosystems for biodiversity recovery in China, Laos and Cambodia, through the following outputs: a forest biodiversity restoration network; a generic manual on establishing a FORRU; six workshops for partners; implementation plans for China, Laos and Cambodia; and translation of the field guide 'How to Plant a Forest' into Chinese, Laotian and Khmer. These outputs represent the outstanding achievements of the project.

## 2 Project support to the Convention on Biological Diversity (CBD)

### Project support of CBD Objectives

Extensive national-level reforestation schemes are underway in Laos, Cambodia and China, mostly involving the establishment of monocultures of pines, eucalypts or a handful of other commercial tree species. These schemes are not believed to make significant contributions to the CBD. It was realised at the outset that provision of new skills and knowledge to encourage development of a more "wildlife-friendly" approach to forestry would significantly increase biodiversity recovery in such reforestation projects, especially those within conservation areas. This project provided a mechanism for training, information exchange and technology transfer that has enabled key organisations involved in forestry and biodiversity conservation in Laos, Cambodia and China to adapt and develop the concept of framework forestry to suit the

different conditions in their countries (Annex 3). This was achieved through workshops and joint publications, which are described in more detail later. This transfer of information and the publication of a field guide and a manual comprised a major component of the Darwin project, and made a substantial contribution to CBD Article 6 (General Measures for Conservation and Sustainable Use); Article 16 (Access to and Transfer of Technology); and Article 17 (Exchange of Information).

The other main output of the Darwin project has been the production of three 'country' implementation plans, which were presented at the final workshop held in Chiang Mai, Thailand in March 2008. These are designed to facilitate the setting up of model forest restoration programmes in Laos, Cambodia and China. Sites for the establishment of nurseries, field plots and education facilities are included. Each implementation plan (Appendix 6) will make a major contribution to the host country's CBD commitment, through Article 7 (Identification and Monitoring); Article 8 (In situ conservation); and Article 10 (Sustainable Use of Components of Biological Diversity).

### **Project support of 2010 biodiversity target**

Through the restoration of tropical forests, this project is indirectly contributing to Focal Area 'Protect the components of biodiversity' – Goal 2 – Target 2.1: Restore, maintain or reduce the decline of populations of species of selected taxonomic groups.

The project is already addressing Focal Area 'Address threats to biodiversity' – Goal 5 – Target 5.1: Rate of loss and degradation of natural habitats decreased. This will be achieved primarily by restoration and planting to protect existing pristine forests.

The project will also contribute to Focal Area 'Promote sustainable use' – Goal 4 – Target 4.1: biodiversity-based products derived from sources that are sustainably managed.

### **Partnership support for host country institutions to meet CBD commitments**

**Laos:** lessons learned from the manual 'How to Plant a Forest' and from the various workshops and field visits allowed Project staff to contribute important ideas to the National Forest Plantation Strategy. This strategy is supported by FAO and the Department of Forestry which is the focus institution.

**China:** a forest restoration project has been implemented in the buffer zone of the Nature Reserve of Yunnan, China which is a world biodiversity hotspot. It has made a significant contribution to the CBD through capacity building at the locality, enhanced knowledge and technology for forest restoration, diversification of tree species being planted, and it has provided an alternative for buffer zone management in the Nature Reserve. This initiative is making a substantial contribution to China's commitment to the CBD Article 6 (General Measures for Conservation and Sustainable Use); Article 7 (Identification and Monitoring); Article 8 (In situ conservation); and Article 10 (Sustainable Use of Components of Biological Diversity).

**Cambodia:** the Cambodia Biodiversity Action Plan, prepared under the CBD identifies the lack of effective nursery facilities for growing native forest trees as an impediment to reforestation efforts in the country: "there is limited production of native trees for reforestation purposes. Proper development of existing and new facilities should be oriented towards native tree production for reforestation." This project helps directly with capacity building to address this problem. It also addresses strategic objective 1.3.3 "Increase use of native trees used for reforestation projects (number of native plants used in reforestation activities)" as well as strategic objective 5.1 "promote reforestation and rehabilitation of degraded forest areas in all provinces (area reforested)" and the stated option to "ensure reforestation projects use native tree species naturally occurring within the same ecosystems" Lack of technical capacity within the country for dealing with indigenous forest tree species is a major constraint and one that has been addressed comprehensively by this project. The manuals produced in Khmer language, in particular have provided long term training aids in this regard.

### **Interaction with host country CBD Focal Points:**

In 2007 FORRU-CMU staff contributed to a major workshop on improving planting stock for forest restoration projects throughout Thailand, organized by the Royal Forest Department of Thailand. Copies of 'How to Plant a Forest' (in Thai) were distributed to all RFD nursery managers during the meeting. The training manual "Research for Restoring Tropical Forest Ecosystem" has also been translated into Thai and has been made available to all organizations involved in CBD implementation in Thailand,

The project staff at Tengchong, China continues to be actively involved at provincial level and participated in workshops on CBD issues in Yunnan and Sechuan in 2007. During the Laos National Forestry workshop held by the Ministry of Agriculture and Forestry in February 2008, the Forestry Research Centre provided 400 copies of 'How to Plant a Forest' (in Lao) to participants from 17 Provincial Agriculture and Forestry Offices. In addition, the Faculty of Forestry and the Faculty of Science were also given copies to distribute. The manuals were regularly on display at various forestry workshops in Laos.

### **Support for CMS or CITES**

This project has not supported CMS or CITES.

## **3 Project Partnerships**

East Malling Research (EMR) is the lead partner, working in close collaboration with Wildlife Landscapes (WL) (founded by the Darwin Project Leader, Dr David Blakesley). Together, these organisations have maintained a close link on a day-to-day basis with the host country partners, primarily through email and telephone conversations. In addition, EMR and WL representatives participated in two of the workshops run by the project. In addition, FORRU-CMU has acted as a 'lead partner' in SE Asia, and has organized most of the project activities locally, including workshops and other meetings with the other project partners. The UK partners have worked with FORRU-CMU on a previous Darwin, so a very good working relationship exists. Consequently, FORRU-CMU has been able to provide local advice to the other host countries, and support the work of the UK partners, for example by providing guidance at local workshops on administrative tasks such as financial recording.

The partnerships were based on demand for the forest restoration techniques developed by FORRU-CMU, in collaboration with EMR and WL. In 2002, a Darwin Education Team was established to disseminate this original knowledge to local organisations in northern Thailand. The education team gained valuable experience in running workshops, extension visits and producing educational materials, for government officers and community groups, to encourage them to establish their own tree nurseries and start forest restoration projects. During this project, several organisations from neighbouring countries requested assistance from FORRU-CMU to replicate the unit's approach to forest restoration, and its resultant benefits for biodiversity recovery. Requests were received for technology transfer, training and the translation of FORRU-CMU's literature into their local languages, in order to select, propagate, plant and care for framework species indigenous to each country and adapt the framework species method to the various socio-economic conditions of each country. This was the reason why the present Darwin project was proposed. All the host country partners were closely involved in the preparation of the original proposal, and have remained closely involved throughout the lifetime of the project. An MoU was not necessary. Furthermore, during the lifetime of the current project, the demand for information and support from other countries has continued. This resulted in production of a Vietnamese edition of 'How to Plant a Forest' (production costs funded separately by GTZ) (included in the Final report package). Furthermore an Indonesian edition is now in preparation (also funded independently). This demonstrates how much regional organizations value the outputs from this project, in that they are prepared to independently pay for other language editions to make the book available to their own staff in their own native languages. We anticipate that the new book, "Research for Restoring Tropical Forest Ecosystems" will be similarly in demand in other languages.

## **Involvement with other UK or regional institutions**

These have been extensive, and are listed below:

**In Cambodia**, the partnership project (FORRU-Cambodia) is also working in partnership with the Community-Based Forest Gene Conservation project, formerly called the Cambodia Tree Seed Project. It works closely with various community forestry initiatives in Cambodia, focussing on the in situ and ex situ conservation of indigenous tree species, to ensure their sustainable management and equitable use. This partnership project has also been able to identify some target areas for FORRU-Cambodia's programme. After the workshop in Thailand, discussions were held with Forest Landscape Denmark about the possibility of funding the FORRU-Cambodia Implementation Plan.

**In China**, the project partnership with ICRAF (now the World Agroforestry Centre) deserves special mention here in terms of the extra technical and financial inputs provided to the project. The Darwin grant has helped tremendously to boost the technical skills of the Chinese partners, but the present stage of development at the Tengchong nursery and field station would not have been possible without substantial funding provided by ICRAF-China. During the course of the project an additional 30,000 USD has been added to the Darwin project to build basic infrastructure, i.e. a small greenhouse, improve the building to host the small herbarium and building a cold storage for germination trials. Freezers, computers, camera's etc. have been funded and in collaboration with the Kunming Institute of Botany, Chinese Academy of Sciences, training and capacity building of local staff has been carried out in Kunming, and researchers from Kunming visited the field sites and helped with the taxonomy work *in situ*. To further facilitate forest restoration efforts ICRAF supported the Yunnan Forestry Vocational College to institutionalise a new unit on the same topic and to develop and include a new course on forest restoration into their curriculum from 2007 onwards. For this course the English material of 'How to Plant a Forest' had to be adapted and translated into a text book for teaching. The college has set-up three more small nurseries for teaching their students at the college and at the college training site close to Kunming. In addition, in 2006 an area of land was used for enrichment planting with seedlings from their own nursery; germinated from seeds collected in the first year of the project, again with a major funding input by ICRAF-China.

The in-country workshop held early March 2006 in Tengchong, China hosted researchers and practitioners from various national and international organisations, together with policy makers from the State Forestry Administration for 4 days and resulted in a set of new project ideas and proposal drafts (see attached workshop report Annex 7).

During the past year, researchers and forestry officials from Southwest China visited the field sites and colleagues from Tengchong presented their work at many meetings at provincial and national level. A paper is presently in print on work presented at an international symposium in Luang Prabang in Lao PDR. Colleagues from the food security working group, a consortium of NGOs and GOs from Myanmar went to visit some of the restoration field sites in 2006.

In September to October 2007 ICRAF further supported training activities for local staff and sent another 3 officers from Southwest China to Chiang Mai for further training in plant collection, herbarium preparation and data base management and data analysis.

In 2008, ICRAF has sponsored 24 college students from Yunnan Forestry Vocational School to carry out their graduate thesis in Tengchong, focusing on various aspects of forest restoration included in the Darwin project, in buffer zones of the Nature Reserve. This will result in a more comprehensive research programme on the adaption of the framework species approach in China. These activities will also provide an opportunities for undergraduates to link theory to practice.

**In Laos:** The initial visit of Laotian staff from the FRC to Chiang Mai was supported by the DANIDA - Tree seed Project. Workshops have been attended by staff from FRC/ National Agriculture and Forestry Research Institute (NAFRI), Faculty of Forestry, Department of Forestry, and the National Forestry Extension office. The project site in Sangthond District was selected in agreement with FRC, the Faculty of Forestry and the Governor of the District.

## **Other Collaborations:**

The project has attracted much interest and funding from other organizations in SE Asia, resulting in engagement of two additional Indochinese countries in similar project activities.

Funded by GTZ, an additional workshop, replicating the ones run for the partner countries, was run for Vietnamese foresters involved in restoration of Tum Dai National Park in N. Vietnam. This group also funded a draft translation of 'How to Plant a Forest' in Vietnamese and a production run of 1,000 copies. A second workshop of Vietnamese participants, this time funded by the BCI project of WWF- Greater Mekong has now been scheduled for August. FORRU-CMU has also received requests for permission to print 'How to Plant a Forest' in Portuguese (for Brazil); and to use the book in Africa (for the "Plant a Billion Trees Project" of Nobel Laureate Wangari Maathai). We supplied text files and images to officials in Indonesia for an Indonesian edition of How to Plant a Forest for the Harapan Rainforest Project (restoration of 1,000 sq km of Sumatran rainforest by a consortium involving RSPB and BirdLife International). As a result of contacts made during the final Chiang Mai workshop, FORRU-CMU staff have been requested to provide on-site technical assistance with this major restoration initiative scheduled for October 2008.

FORRU representatives were invited to teach at 2 workshops for the Meetha Foundation in Myanmar. Furthermore, a delegation from Myanmar visited the project in Thailand, hosted by the Regional Community Forestry Training Centre, Bangkok.

Representatives from WWF Malaysia and Vietnam (Hua University) visited the project in May 2006.

FORRU co-hosted a meeting in Chiang Mai, organised by Biodiversity International (formerly IPGRI) in November 2007 on biodiversity in forest restoration.

FORRU-CMU was asked to provide advice for a wildlife corridor project (linking Thailand's Western Forest Complex with Kaeng Krachan National Park) being implemented by the Department of National Parks and Wildlife and funded by Asian Development Bank. Copies of 'How to Plant a Forest' were provided as a text for tree planting activities.

Several parts of 'How to Plant a Forest' were reworked by the Plant a Tree Today Foundation for use by children as part of the Foundation's School tree Nurseries Project.

The final Darwin workshop which was partly funded by through the Darwin Initiative project was co-sponsored by IUCN – World Conservation Union, FAO, ICRAF and the British Council. Representatives of many organisations attended the workshop, including FAO; IUCN; British Council; Royal Botanic Gardens, Kew; WWF; Botanic Gardens Conservation International; and the Harapan Rainforest project.

After receiving the Lao version of the manual on 'How to Plant a Forest', a number of rural development Projects requested more information from FRC. These included the Pakading National Protected Area in Bolikhamsay Province, and the Opium Eradication Project in Northern Laos. Both projects requested training for their staff and for local people to establish nurseries to propagate framework species.

## **4 Project Achievements**

### **4.1 Impact: achievement of positive impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits**

The purpose or 'goal' of this Darwin project is to reverse forest loss through restoration of natural forest ecosystems for biodiversity. The project was not designed to have a direct impact on forest loss within its lifetime, but to improve the institutional capacity of the host country partners to undertake forest restoration for biodiversity. The main achievements therefore have been to raise awareness of what can be achieved in a forest restoration programme for biodiversity; successfully train staff from the host country institutes; publish two manuals to support this work; and finally to produce detailed implementation plans for each country, setting

out a programme of research and development to establish national forest restoration research units (FORRUs).

**China:** the Darwin project has made a major contribution to addressing the issue of loss of biodiversity. The programme has significantly enhanced the knowledge and skill base of local foresters to practice forest ecosystem restoration. The improved institutional capacity from this project will enable this approach to be extensively used in higher education, forest management practice, nature reserve management as well as policy-making.

**Cambodia:** this project worked mainly with officials from the Forestry Administration (FA) and its various subsidiary units. FA staff were the main beneficiaries of capacity building and are now capable of training others in forest restoration techniques and research methodologies by using the manuals that they have now translated into Khmer.

**Laos:** meeting the requirements of the Biodiversity Convention is the stated goal for the land designated as National and Provincial Protected Areas (PA) (also referred to as Protection forests). These forests are mostly multi-use areas with the exception of designated core zones inside them. Currently there is little protection for these areas and considerable deforestation and degradation is taking place. It has been suggested that increased recognition of the value of the native trees within them strengthen their protection.

## **4.2 Outcomes: achievement of the project purpose and outcomes**

The main purpose of this project was to facilitate restoration of forest ecosystems for biodiversity recovery in China, Laos and Cambodia through transfer of the framework species method to key forestry stakeholders. The project has assisted these countries in the process of setting up Forest Restoration Research Units – which include nurseries and experimental plots to adapt the technique to local ecological and socio-economic conditions – to demonstrate forest restoration to local people. For example, the Cambodian Forestry Extension Office has been using the project manuals in its training and awareness programmes for local communities. The main activities and outcomes are listed in Sections 4.1 and 4.3, and all were achieved. Everything has been set in place for the host countries to raise funds, and carry out their implementation plans, using the resources provided during the lifetime of this project. The success of the outcomes will be determined over the next year or so, as these plans are implemented.

At this early stage, we are already in a position to state that the Chinese partners have made substantial progress on implementing pilot forest restoration programmes, including research components, and have far exceeded the expectations at the start of the Darwin project. The significant outcome from this project in China has been the building up the Forest Restoration Unit. FORRUs established in China throughout a long process of capacity building. Local foresters, teachers from forest school, forest authorities, as well as researchers in research institute and international organization have already received extensive training in the forest restoration concepts, methods and practices. Also, with additional funding support, the Chinese have been able to link theory with practice for implementing framework species approach for forest restoration. This has resulted in extensive research and scientific outcomes. More importantly, due to this success, the project has attracted the attention from the State Forestry Administration, who now appreciate the value of the forest restoration methodology. This link to policy-making will facilitate the scaling up of the impact and outcome of project.

## **4.3 Outputs (and activities)**

As reported earlier, the project achieved all of its outputs, as laid out in the final project logframe (Annex 1; Annex 2). All workshops took place (an extra workshop was included to allow all the host countries to meet early in the final year), publications have been produced, and the implementation plans were written and presented to funders. In addition, extra funding was raised from IUCN, FAO and the British Embassy, Bangkok, which enabled a much larger

final workshop to be arranged. This was of considerable benefit to the host country partners, due to the substantial input and advice from other organisations represented at the meeting.

Problems: not all outputs were achieved on schedule, but all were complete by the end of the project. We had originally planned to have the Manual peer reviewed by each host country, but decided that we would rely on peer review of the English version, together with feedback on this from the partners and other participants at the final workshop.

#### **4.4 Project standard measures and publications**

Project standard measures have been quantified in Annex 4, and publications detailed in Annex 5. We have not submitted any papers to high profile journals, but the local language versions of the Field Guide and Manual will have a significant impact on the discipline. We also believe that these publications will be used outside of the partner countries; 'How to Plant a Forest' has already been published in Vietnamese, and is currently being translated into Indonesian. We confidently expect to see more translations of How to Plant a Forest, and the manual, "Research for Restoring Tropical Forest Ecosystems", which was written as part of this project.

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

This project was primarily about technical and scientific cooperation, leading to capacity building and consequently these issues have been described in some detail in many other sections.

#### **4.6 Capacity building**

This project was primarily about technical and scientific cooperation, leading to capacity building and consequently these issues have been described in some detail in many other sections. The Laotian partners have stressed that the Darwin Manual and Field Guide will be invaluable tools for the Forest Plantation Strategy, supporting the work of NAFRI and the Department of Forestry

#### **4.7 Sustainability and Legacy**

**Thailand:** The most enduring outputs of this project are probably the literature and its various translations, which will obviously continue to have an impact in terms of guiding the development of forest restoration research and practices throughout the region for many years to come. FORRU-CMU's research and education teams continue their work, supported by several other funding agencies. In the immediate future we will provide workshops for several organizations in Northern Thailand as well as the WWF-Greater Mekong project, working to establish transnational biodiversity corridors among, Laos, Cambodia and Vietnam. We have applied for a grant from the Asia Pacific Forestry Skills and Capacity Building Programme (APFSCBP) of the Australian government to continue to provide technical input in Laos, China and Cambodia, in the form of on-site training for nursery and field staff, once the national FORRU's are being implemented and staff have been recruited. FORRU-CMU is in regular contact with the partners regarding funding opportunities for implementation of the project proposals presented at the final workshop and we have been involved in preparation of a project proposal with the Chinese partners "Making the Mekong Connected (MMC): Development of carbon market and conservation financing mechanisms for multifunctional landscape bio-corridors in the Upper Mekong" submitted to GTZ/BMZ.

**China:** the major achievement of this project is the improved capacity in both in terms of institutions and personnel. The local forest authority is able to use the framework species methods for forest restoration in biodiversity-sensitive areas. The Forest School has adopted the forest restoration approach to develop their curriculum for higher education. When the Darwin project ends, ICRAF-China is looking for funding for scaling up the project impact and

implementation in China. Recently, a seed fund (USD 5000) has been provided by ICRAF to Tengchong to continue the nursery research, tree domestication, plantation trail, monitoring etc.

**Cambodia:** a site for a national FORRU has been identified for Siem Reap Province near Angkor Wat World Heritage Site. Funding is being sought to implement the project and FORRU-CMU has offered to continue to provide technical support once the unit is up and running.

**Laos:** The extensive training, site visits and the two manuals are the most enduring outputs for the Laotian (and Cambodian) partners. Researching and writing the Implementation Plans for forest restoration programme are potentially enormous steps towards developing a reforestation strategy for Laos. After the project ends, FORRU-Lao staff will remain in their own organizations, but will continue to collaborate closely with each other.

It is the intention of the partners to apply for post-project funding from the Darwin Initiative to maximise the outcome of the project and to strengthen its long-term impact and legacy.

## **5 Lessons learned, dissemination and communication**

The key lessons learned from this project were i) there is a high demand for forest restoration technical support in the region and ii) there is a clear need to provide easily accessible training materials translated into local languages.

The target audience includes key forestry organizations in each country, with staff and infrastructure likely to establish viable research programmes.

As already mentioned several times above, information dissemination will continue after the project ends through FORRU-CMU's website and through distribution (and reprinting if needed) of the two main publications "How to Plant a Forest" and "Research for Restoring Tropical Forest Ecosystems". In addition FORRU-CMU continues to provide workshops and capacity building for a wide range of Thai and regional organizations, based largely on the training materials developed as a result of this project.

### **5.1 Darwin identity**

The present project was also presented as a distinct project, with a clear identity. However, it was clear that this project was also part of a much larger programme which has been underway since 1994, and indeed has been funded in the past by Darwin. The present project publicised the Darwin Initiative at every available opportunity. The Darwin logo has been used on all versions of all publications, including the copies of the Field Guide published in Vietnamese. It has been prominently displayed at all workshops and associated paperwork, including the final workshop which was open to other organisations and projects. At the final workshop, a presentation was given by the UK partners on the work of the Darwin Initiative across the world, using publicity material and slides provided by the Darwin Secretariat. This prompted a number of questions from the floor from other organisations. At the final workshop, the Darwin Initiative was also discussed at length with the host country partners. The Darwin Initiative was widely publicised in Laos, where the Initiative is known from an earlier project on taxonomy.

The Project Leader has also spoken on several occasions with the Defra press officer to try to secure an article on the project in one of the broadsheets. The Darwin Secretariat also drafted a press release for the forthcoming Darwin funding round, which cited this project as an example of a high quality Darwin project.

## **6 Monitoring and evaluation**

There were no major changes in project design. One additional workshop was arranged early in year 3 to allow the host country partners to meet, and extra funding was successfully found to allow many more organisations to attend the final workshop.

The activities and outputs of this project were relatively straightforward, in the sense that they comprised a series of workshops, publications and implementation plans. Each training



workshop ended with an evaluation exercise, which was included in the workshop report, together with a list of participants. This constituted the planned monitoring and evaluation for the workshops. The English version of the Field Guide 'How to Plant a Forest' was evaluated during the previous Darwin project. During the present project, the manuscript was translated into Chinese, Laotian and Khmer. At this stage, new material was added of local relevance, particularly on forest types and framework species. The additions were reviewed locally by colleagues of the host country partners (mostly university professors). The Manual was drafted in English, and subject to independent review by Dr. George Gale, a long-time lecturer at King Mongkut's University in Bangkok on biodiversity and natural resource issues. The corrected manuscript was then provided to the other partners for direct translation. Since this book dealt only with research protocols, there was no need for local adaptation, so no new material was added at the translation stage.

Internal and external evaluation: three of the main outputs of this project were the Field Guide, the Manual and the Implementation Plans. Each of these will, by their nature, be subjected to continued internal and external scrutiny and comment. It is anticipated that the books will be used by a large number of people in their forest restoration activities. Indirect evidence of their value comes from the growing number of requests for permission to translate the Field Guide into other languages.

The Implementation Plans will perhaps represent the most important longer term evaluation of the project, because these are designed to be implemented at National Level, and each will require external funding. To some extent, the Chinese Plan is already being implemented, as has been described earlier, but further funding is still required. The test of this and the strength of the Laotian and Cambodian Plans will become evident in the next year or so, as the partners negotiate with funders and other potential partners to implement these plans. This was the main theme of the final workshop, at which valuable help and support was provided by organisations such as FAO and IUCN (see workshop report included in the Final report package).

## **6.1 Actions taken in response to annual report reviews**

Comments on the first annual report were addressed in the second annual report. Further comments were set out in the review of the second annual report. These were addressed in detail in an appendix to the third half yearly report, and consequently we do not believe that there are any outstanding issues. All reviews were discussed with partners.

## 7 Finance and administration

### 7.1 Project expenditure

Costs for April 2005 - March 2008

£GB

#### Salaries

Thailand  
Project Manager - UK  
East Malling Research  
China  
Laos  
Cambodia

#### Rent/overheads

East Malling Research  
Thailand

#### Office costs

Thailand  
China  
Laos  
Cambodia

#### Travel & subsistence

Thailand  
Project Manager - UK  
East Malling Research

#### CNX Workshop

Delegate Travel & subsistence

#### Printing

Art and Layout  
'How to plant a forest'  
Translation  
Xeroxed to 5 languages

#### Workshop running costs

Thailand  
China  
Laos  
Cambodia

#### Capital

laptop

## **7.2 Additional funds or in-kind contributions secured**

We secured grants of £3,000 from the British Embassy, Bangkok (through the auspices of the British Council, Chiang Mai) and \$3,848 from IUCN HQ in Switzerland (through the IUCN office in Bangkok) to expand the final workshop of the project into a regional conference.

ICRAF-China has provided additional funding for setting up the local nursery, phenology study, local herbarium and experimental plots for field study. Also, ICRAF-China sponsored the formal publication of the two manuals and integration of the manuals for higher education and 24 college students to undertake thesis research on forest restoration. Additionally funding from ICRAF was also granted for the National Symposium for Forestry Restoration as well as the participations of Chinese delegates to the final Chiang Mai workshop. The value of this funding is \$45,000.

## **7.3 Value of DI funding**

This Darwin Initiative funding has potentially enormous implications for the restoration of forest ecosystems for biodiversity recovery in China, Laos, Cambodia and possibly other countries in the region. Without the Darwin funding, the extensive training programmes could not have taken place, and the framework species method could not have been transferred. Forest restoration efforts in these countries may have continued to focus on the planting of small numbers of exotic 'plantation' species. There would have been no appreciation or understanding of restoring forests for biodiversity, and no national implementation plans in place. One can see from the work of the Chinese partners – with the additional support of ICRAF how these implementation plans could be taken forward in Laos and Cambodia.

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

Project summary	Measurable Indicators	Progress and Achievements April 2007 - March 2008	Actions required/planned for next period
<p><b>Goal:</b> 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</p> <ul style="list-style-type: none"> <li>• The conservation of biological diversity,</li> <li>• The sustainable use of its components, and</li> <li>• The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</li> </ul>		(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)
<p><b>Purpose</b> To facilitate restoration of forest ecosystems for biodiversity recovery in China, Laos and Cambodia</p>	<ul style="list-style-type: none"> <li>- Key stakeholders in Laos, China &amp; Cambodia implementing the 'implementation plans'</li> <li>- Manual and Field Guides being requested and used</li> </ul>	Main progress is the successful achievement of all of the project actions and outputs. Chinese plan being implemented, Laos and Cambodian plans actively fund raising following workshop, as planned.	Setting up the FORRUs proposed in the host country implementation plans
<p><b>Output 1.</b> A forest biodiversity restoration network within each country</p>	Network established in year 1	Achieved and reported in Year 1 – indicator appropriate	
Activity 1.1 Collate information on stakeholders that would be involved in establishing and managing a forest restoration research unit, and establish network by Mar 06		Achieved and reported in Year 1 – indicator appropriate	
<p><b>Output 2.</b> Generic Manual on Establishing a Forest Restoration Research and Training Unit in three countries</p>	Peer review of Manual; publication in year 3	Manual written, published and translated into Chinese, Laotian and Khmer	
<p><b>Activity 2.1</b> Collation of information from FORRU educational material and workshop inputs. Draft manual produced by April 07, publication by December 07.</p>		The draft manual was available for inspection by all participants at the Final Workshop, with an opportunity for all to provide feedback and comments. The final versions have been translated and printed in English, Chinese, Laotian and Khmer.	
<p><b>Output 3.</b> Three workshops in Thailand training 45 key personnel</p>	Workshops held, participation target reached, feedback from	Achieved and reported in Year 1	

from China, Laos and Cambodia in forest restoration, and planning adaptation of generic manual to local conditions	questionnaires	
<b>Activity 3.1</b> Yr 1: Three training workshops in Thailand to assist partners to adapt the Framework Species technique to local ecological and socio-economic conditions		Achieved and reported in Year 1
<b>Output 4.</b> Three workshops in China, Laos and Cambodia; training 75 individuals and developing proposals	Workshops held, participation target reached, feedback from questionnaires	Reports on the workshops including participant lists were included in the second year report package.
<b>Activity 4.1</b> Yr 2: One training workshop in China, Laos and Cambodia focussing on application of techniques locally, and gather information for Field Guide and Implementation Plans		All three workshops took place in year 2, with the added bonus that some workshops were attended by more than two partners.
<b>Activity 4.2</b> Yr3 Mini-workshop for all participants to work on implementation plans		The mini workshop was added to the programme during the first year of the project. This took place in August 2007 at the Forest Research Centre in Cambodia. It was attended by all the host country partners
<b>Output 5.</b> Plans to implement model forest restoration programmes in each country	- Draft implementation plans reviewed at joint workshop in year 3 - 3 implementation plans completed end year 3	The reviews of the implementation plans at the in country workshops worked well. Plans were completed on schedule and presented at the Final Darwin workshop, to an audience of more than 50 people.
<b>Activity 5.1</b> Collate information from in-country workshops, drafts complete by Dec 07		Partners in Laos, China and Cambodia produced draft implementation plans which were discussed in formal sessions at each in country workshop. Final implementation plans were completed on time.
<b>Output 6.</b> One joint implementation workshop	Implementation workshop Mar 2008 (year 3)	The Implementation workshop was held in Chiang Mai in March 2008. Co-sponsorship from other organisations allowed many more participants to be invited from across the region.
<b>Activity 6.1</b> Plans presented at Implementation workshop in Thailand, Mar 08.		Implementation plans were presented by the partners from China, Laos and Cambodia to a large audience. Good feedback was obtained from delegates, including good ideas for funding mechanisms.
<b>Activity 6.2</b> Workshop evaluation produced one month after final workshop		Report produced and included in the Final report package.

<b>Output 7.</b> Field guides on How to Plant a Forest in each country respectively	Field guides published at end of year 2	Field guides translated and published; copies of each language included in the Final Report package.
<b>Activity 7.1</b> Collation of information from FORRU research databases, educational material and workshop inputs. All Field Guides published by Mar 07		Text was supplied to China, Laos and Cambodia – text was amended and local examples of framework species included, together with descriptions of local forest types. Field guides all published.

## Annex 2 Project’s final logframe, including criteria and indicators

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<b>Goal:</b> To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve <ul style="list-style-type: none"> <li>• the conservation of biological diversity,</li> <li>• the sustainable use of its components, and</li> <li>• the fair and equitable sharing of benefits arising out of the utilisation of genetic resources</li> </ul>			
To facilitate restoration of forest ecosystems for biodiversity recovery in China, Laos and Cambodia	<ul style="list-style-type: none"> <li>- Key stakeholders in Laos, China &amp; Cambodia implementing the ‘implementation plans’</li> <li>- Manual and Field Guides being requested and used</li> </ul>	<ul style="list-style-type: none"> <li>- Local networks established in each country</li> <li>- Manual and Field Guides published and presented to Darwin</li> <li>- Workshop evaluations submitted to Darwin</li> <li>- Evaluation of uptake through final participatory workshop</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 participating countries.</li> <li>- Local demand for expertise and training</li> <li>- Enthusiasm will enable project participants to follow through with project proposals</li> <li>- FORRU- Thailand continues to receive core funding for its other facilities</li> </ul>
<b>Outputs</b> 1. forest biodiversity restoration network within each country	<ul style="list-style-type: none"> <li>- network established in year 1</li> </ul>	<ul style="list-style-type: none"> <li>- list of participants</li> </ul>	<ul style="list-style-type: none"> <li>- Local participants will provide</li> </ul>

<p>2. generic manual on Establishing a Forest Restoration Research and Training Unit in 4 countries</p> <p>3. three workshops in Thailand training 45 key personnel from China, Laos and Cambodia in forest restoration, and planning adaptation of generic manual to local conditions; three workshops in China, Laos and Cambodia training 75 individuals; developing proposals one joint implementation workshop</p> <p>4. plans to implement model forest restoration programmes in each country</p> <p>5. field guides on How to Plant a Forest in each country respectively</p>	<ul style="list-style-type: none"> <li>- peer review of Manual; publication in year 3</li> <li>- workshops held, participation target reached, feedback from questionnaires, years 2 and 3</li> <li>- draft implementation plans reviewed at joint workshop early year 3</li> <li>- 3 implementation plans completed in year</li> <li>- implementation workshop late year 3</li> <li>- field guides published at end of year 2</li> </ul>	<ul style="list-style-type: none"> <li>- published reviews and feedback on Manual; copies sent to Darwin</li> <li>- participant list for workshops</li> <li>- report on workshop feedback questionnaires sent to Darwin</li> <li>- Field Guides sent to Darwin</li> <li>- three implementation plans sent to Darwin</li> <li>- independently reviewed Darwin Initiative reports</li> </ul>	<p>sufficient information to enable the generic template guide to be adapted to local environment and conditions – they need to be paid to do so</p> <ul style="list-style-type: none"> <li>- Motivation and commitment of participants in China, Laos and Cambodia remains high, and is sustainable</li> <li>- Exit strategy relying on other organisations to fund the project proposals is successful</li> </ul>
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Activities	Activity Milestones (Summary of Project Implementation Timetable)
<p>1. Networks: Collate stakeholder information Establish network</p>	<p>1. Collate information on stake holders that would be involved in establishing and managing a forest restoration research unit, and establish network by Mar 06</p>
<p>2. Generic manual: Collate and write book Draft produced Publish</p>	<p>2. Collation of information from FORRU educational material and workshop inputs. Draft manual produced by Dec 07, publication by Mar 08.</p>
<p>3. Workshops Three workshops in Thailand Three workshops in Laos, China and Cambodia respectively One joint implementation workshop</p>	<p>3. Yr 1: Three training workshops in Thailand to assist partners to adapt the Framework Species technique to local ecological and socio-economic conditions; Yr 2: One training workshop in China, Laos and Cambodia focussing on application of techniques locally, and gather information for Field Guide and Implementation Plans; Yr 3 Workshop for all participants to work on implementation plans; Yr 3 Implementation workshop in Thailand (Mar 08); Workshop evaluation produced one month after final workshop</p>
<p>4. Implementation plans Collate Drafts Publish</p>	<p>4. Collate information from in-country workshops, drafts complete by Dec 07; plans presented at workshop Mar 08.</p>
<p>5. Field Guides Collate material Write country-specific text Publish</p>	<p>5. Collation of information from FORRU research databases, educational material and workshop inputs. All Field Guides published by Dec 07.</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	40	Develop national strategies that integrate conservation and sustainable use.
7. Identification and Monitoring	10	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	10	Establish systems of protected areas with guidelines for selection and management; regulate biological resources, promote protection of habitats; manage areas adjacent to protected areas; restore degraded ecosystems and recovery of threatened species; control risks associated with organisms modified by biotechnology; control spread of alien species; ensure compatibility between sustainable use of resources and their conservation; protect traditional lifestyles and knowledge on biological resources.
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	10	Integrate conservation and sustainable use in national decisions; protect sustainable customary uses; support local populations to implement remedial actions; 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		Promote understanding of the importance of measures to conserve biological diversity and propagate these measures through the media; 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 and equitable way of results and benefits.

<b>Article No./Title</b>	<b>Project %</b>	<b>Article Description</b>
16. Access to and Transfer of Technology	15	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	15	Countries shall facilitate information exchange and repatriation including technical scientific and socio-economic research, information on training and surveying programmes and local knowledge
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 (eg of 5%) or less should be summed and included here.
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	Chinese site is used for undergrad training of students from Vocational Forestry college
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)	
6b	Number of training weeks not leading to formal qualification	Three workshops (each 10 days) in Chiang Mai in 2005/06 for 44 people Workshop in Laos for 27 people (5 days) Workshop in China for 56 people (5 days) Workshop in Cambodia for 30 people (5 days)
7	Number of types of training materials produced for use by host country(s)	One Field guide One Manual One CD summary of presentations at final workshop
<b>Research Measures</b>		
8	Number of weeks spent by UK project staff on project work in host country(s)	4
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (s)	3 implementation plans

<b>Code</b>	<b>Description</b>	<b>Totals (plus additional detail as required)</b>
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	
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	8 workshops
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	2 (Seoul and KMUTT)
15a	Number of national press releases or publicity articles in host country(s)	Press present at the workshop in China; report in Yunnan Daily and Tengchong Newspaper on March 15 2007.
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)	6 FORRU newsletters; 900 copies each , of which 300 distributed internationally
16b	Estimated circulation of each newsletter in the host country(s)	900
16c	Estimated circulation of each newsletter in the UK	
17a	Number of dissemination networks established	
17b	Number of dissemination networks enhanced or extended	1

<b>Code</b>	<b>Description</b>	<b>Totals (plus additional detail as required)</b>
18a	Number of national TV programmes/features in host country(s)	National V crew present at the workshop in Laos. TV report from China workshop broadcast on March 23 2007 on Yunnan TV and also Tengchong TV. Broadcast on Yunnan Radio Station on March 15 2007.
18b	Number of national TV programme/features in the UK	
18c	Number of local TV programme/features in host country	2
18d	Number of local TV programme features in the UK	
19a	Number of national radio interviews/features in 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	One in China – but potential for two more planned.
22	Number of permanent field plots established	Plots in China
23	Value of additional resources raised for project	
<b>Other Measures used by the project and not currently including in DI standard measures</b>		

## Annex 5 Publications

Type * (eg journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £
Oral presentation at Symposium on Biodiversity Management	Managing Forest Succession for Biodiversity Recover: balancing ecological and economic needs. S Elliott and D Blakesley. 2007.	King Mongkut's University of Technology		
Oral presentation at the symposium in Lao PDR, paper to be published May 2007	Farm forestry & buffer zone enhancement in Southwest China Horst Weyerhaeuser (ICRAF-China), Zhou Zhemai (Baoshan For. Dep.), Wu Xinfong (YFVS), Laura Ediger (ICRAF-China), Chen Huafang (ICRAF-China), ICRAF-China, Luang Prabang, SSLWM 2006, December 12-15, 2006.			
Book (Field guide)	Research for restoring tropical forest ecosystems: a practical guide. Compiled by S. Elliott, D Blakesley and S Chairuangsri. 2008  Available in English, Thai, Chinese, Laotian, Khmer	FORRU	In Thailand from: FORRU In China from: ICRAF In Laos from: FRC/NAFRI In Cambodia from: Forestry Administration	
Book (Manual)	How to Plant a Forest. 2007 Chinese, Laotian and Khmer language versions.  Thai and English also available	FORRU	In Thailand from: FORRU In China from: ICRAF In Laos from: FRC/NAFRI In Cambodia from: Forestry Administration	

## Annex 6 Darwin Contacts

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