

# Year 2 Annual Report

## Taxonomic training for a neglected biodiversity hotspot within Lao PDR

163/13/007



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April 2006

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**Taxonomic training for a neglected biodiversity hotspot**  
**within Lao PDR**

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## Darwin Initiative

### Annual Report

#### 1. Darwin Project Information

Project Ref. Number	163/13/007
Project Title	Taxonomic training for a neglected biodiversity hotspot within Lao PDR
Country(ies)	Lao PDR
UK Contractor	Royal Botanic Garden Edinburgh
Partner Organisation(s)	Forest Research Center (National Agriculture and Forestry Institute), National University of Lao PDR, IUCN Lao
Darwin Grant Value	£156,022
Start/End dates	1 April 2004 - 31 March 2007
Reporting period	1 Apr 2004 to 31 Mar 2005 Report number 2
Project website	<a href="http://www.rbge.org.uk/rbge/web/science/research/tropdivers/laos.jsp">http://www.rbge.org.uk/rbge/web/science/research/tropdivers/laos.jsp</a>
Author(s), date	P Thomas, M Newman, Sounthone Ketphanh and Khamphone Sengdala, April 2006

#### 2. Project Background

Lao PDR is an extreme case of a country that is rich in biodiversity but poor in resources. Over 40% of the primary forest remains but is under increasing pressure. 75% of the population depend directly on natural resources - as population increases, pressures for development and exploitation also increase. A major problem is that floristic diversity is poorly known, even though Lao PDR is identified as a Centre of Plant Diversity and a Global 200 priority area. Surrounding countries (Thailand and Vietnam) have documented floras in excess of 10 000 species but only about 2 000 have been recorded from Lao PDR - botanical work has been almost absent since World War 2. Available botanical information is mainly in French, a language no longer used by many Laotians. A shortage of trained taxonomists is a principal factor inhibiting implementation of biodiversity conservation and utilisation strategies. Taxonomic training, institutional capacity building and collaborative projects involving transfer of skills and knowledge to Laotians, creation of a national species and threatened plant database are all priorities in the draft Biodiversity Action Plan. These aspects were highlighted during a preliminary visit by the UK project leader in 2002, at the invitation of the Forest Research Center (FRC), National University of Lao PDR (NUoL) and IUCN Lao PDR. The aim was to assess taxonomic training needs, design an extended program of training and agree an MoU – this project is the result of that consultation. The project will train up to 30 Laotian counterparts over 3 years in tropical taxonomy through an integrated programme of field work and herbarium based work, using specimens collected in National Biodiversity Conservation Areas (NBCA). It will include staff from the FRC, the NBCAs, lecturers and students from NUoL. It will promote collaboration between national conservation and research agencies, by focussing the work on key NBCAs such as Nakai Nam Theun. This

NBCA is identified by the Lao PDR as a target area for integrated research; one output will be a preliminary checklist. Other key outputs include the foundation of a national species database and threatened plant list, incorporating repatriated data from European herbaria as well as integrating data from previous projects. The threatened plant list will also provide useful data to assist Lao PDR in implementing its obligations under the international treaties and conventions to which it is a signatory e.g. CITES, CBD.

### **3. Project Purpose and Outputs**

**3.1 Project Purpose :** To assist Lao PDR to implement CBD obligations and BAP objectives by providing training in tropical botanical taxonomy to staff in key institutes. To establish the foundation for a National Species Database and Threatened Plant List.

**3.2 Project Outputs:** Multilingual botanical glossary, National Species Database, National Threatened Plant List; NBCA Plant checklist; Incorporation of collections into herbaria; Report to GTI; 3 Scientific papers

### **3.3 Changes and Modifications**

There have been no significant changes to the revised operational plan and timetable that was discussed in the first annual report

## **4. Progress**

### **4.1 Summary of Year 1**

During the first year of the project RBGE staff visited Lao PDR twice; the first visit was a planning visit while the second involved a period of field work in the Nakai Nam Theun NBCA and a period of formal training at the National University in Vientiane. Work on the National Species database, the Botanical Glossary and other major outputs commenced. Details are in the first annual report.

The second year of the project has been very busy for all project staff.

### **4.2 Year 2 UK Work**

In July 2005, three senior Lao staff undertook a study tour in the UK. They were Mr Sounthone Ketphanh, project leader, Forest Research Center (FRC), Madame Bouakhaykhone and Mr Vichit Lamxay, the project's botanical consultants from the National University of Lao PDR (NUoL). Mme Bouakhaykhone's visit was supported by the Royal Society of Edinburgh. During their visit they visited the University of St Andrews and the University of Aberdeen. Discussions were held with university staff about the possibilities of staff exchanges and placements for Lao students. An additional benefit was that contact was established with staff from the Darwin project 'Conserving the Southeast Asian Guano Bat - Sustaining Livelihoods Across Borders' based in Thailand, Myanmar, Cambodia and Vietnam. Lao PDR contains significant populations of the Guano Bat but was not originally included in this project due to lack of contacts. As a result of the visit to Aberdeen, project researchers have been invited to visit Lao PDR.

Arrangements had been made for the Lao staff to attend the Flora of Thailand conference in Dublin as well as the Paris herbarium. However, unforeseen delays at the French embassy in Lao PDR made it impossible for the Laotians to obtain their Irish visas in time so that the visit to Ireland had to be cancelled.

During the reporting period, RBGE project staff continued the identification and processing of specimens collected in the first and second year although work has been hampered by the redevelopment of the RBGE's herbarium. The National Species database continues to develop. Drafts of the Botanical Glossary and the Guide to the Botanical Resources for Lao PDR were prepared for testing during the visit to Lao PDR. A large proportion of this work was done during the visit to the UK by senior Lao staff. Final publication of these outputs has been delayed until the start of the third year (See Section 9).

### 4.3 Lao PDR Field work (October 18 to November 7, November 18 – November 24)

RBGE staff visited Lao PDR for a period of almost 9 weeks between October and December 2005 to undertake further field work in the Nakai Nam Theun NBCA (Khammouan Province) and botanical training at the University. A complete list of the trainees involved in the field work and the laboratory work is given in Table 1.

The field team consisted of 3 UK staff, 1 consultant from NUoL, 2 assistant trainers (the project coordinator and his assistant) and 4 post graduate trainees from FRC and NUoL, 2 science students from NUoL and 2 trainees from the NBCA. In addition to this the field team was regularly accompanied by local foresters and guides. The majority of the field work concentrated on the areas around Ban Mak Pheuang within the NBCA and the forests around Nakai. These are the same areas that the team visited in the first year (February 2005) in the middle of the dry season. The second visit took place at the end of the wet season and the start of the dry season so that a different set of species would be in flower or fruit. A small team consisting of project staff, NBCA staff and local foresters also visited the remote mountain of Phou Yang on the Lao Vietnamese border.

During the first visit, the project team surveyed and collected specimens of the remnant trees around the school and medical centre in the village of Ban Mak Pheuang. (see section 4.2.1 of the Year 1 annual report). These specimens were identified at the RBGE with their correct scientific names and then matched with their Lao names. During the second visit a competition for the local school children was organised to see if they could identify the trees. Twenty children took part, working in pairs (see Figure 1). Following this each tree was labelled.

Additional field work was carried out in Houaphan Province in north eastern Lao and in Phou Khao Khouay NBCA close to Vientiane. The main aim of this work was to collect material for the conifer guide (one of the Year 3 outputs) and to investigate reports of species currently only known from adjacent areas of Vietnam. It was also an opportunity for the FRC staff to establish relations with the provincial Forestry Department.

#### Field Training

During the field work the trainees continued to gain experience in field identification, collecting techniques and field work. Trainees organised and led the short expedition to Phou Vang and took charge of the day to day collecting and processing of specimens during the rest of the field work. For the majority of the time, the team divided into smaller groups – one result of this was that the number of collections was almost double that of the first year.

#### General Results

A total of 771 collections were made, mostly in sets of 8. Notable collections included the first records for Lao PDR for the family Stylidiaceae along with two conifer genera (*Cephalotaxus* and *Amentotaxus*), approximately 15 new species records and at least one new species (*Aeschynanthus* sp. nov. from the family Gesneriaceae).

### 4.4 Lao PDR Formal Taxonomic Training (November 14 – December 7, 2005)

As in the first year, the formal training was based at the University in Vientiane. The number of trainees was increased to 20 and included staff from the Wildlife Conservation Society and the Medicinal Plants Institute. Training followed a broadly similar pattern to that of the first year (see section 4.3.1 of the Year 1 annual report). The best students from the first year took on a more proactive role in helping the trainers demonstrate identification techniques to the other trainees.

Draft versions of the botanical glossary and the resource pointer were given to each trainee to assist their work and to provide a practical test of their content and format. At the end of the training students were asked to provide feedback on these outputs and as a result several changes were made to the Resource pointer to make it more user-friendly. The final drafts will be available for the next training (June 2006) and the actual publications should be ready by the end of the next visit.

Nine powerpoint presentations for specific families were prepared and used in conjunction with specimens collected during field work. The presentation are being translated into Lao and compiled on a CD. Two afternoons were also devoted to GPS training and mapping.

Database training on the BRAHMS system was scheduled but technical problems prevented it from happening. Since then, staff from the BIOTIK project held a three day database management training workshop at NUoL (See also Section 6.2.1).

During the training part of one afternoon was set aside to allow for a feedback session in which the trainees were asked by the Lao trainers for their comments about the content and structure of the training. A report was prepared by the Lao project leader and given to the UK staff.

At the end of the training, a short exam was prepared that include identification of specimens (as in the first year) as well as more general questions about collecting techniques, botany and GPS work. The exam was translated into Lao and marked by the Lao trainers. The examination was much broader than that of the first year in an attempt to gain a better overview of the trainee's skills. A hard copy of the feedback report and the exam are included with the printed version of this report as Appendix 2 and Appendix 3.

#### 4.5 Trainers and Trainees in Year 2.

Table 1 Trainers and Trainees in Year 2.

\* trainees from Year 1 acting as assistant trainers for Year 2 and 3

\*\* new trainees

<b>Participants for Field Work in Nakai Nam Theun NBCA 8<sup>th</sup> – 22<sup>nd</sup> February 2005</b>			
	<b>Trainers</b>	<b>Organisation</b>	<b>Position</b>
1	Dr Mark Newman	RBGE	Darwin Project Leader (UK)
2	Philip Thomas	RBGE	Darwin Project Coordinator (UK)
3	Kate Armstrong	RBGE	trainer
4	Khamphone Sengdala	FRC (Head of NTFP Unit)	Project Coordinator (Lao)
6	Mr Vichit Lamxay	NUoL Faculty of Science	Lecturer
	<b>Trainees</b>	<b>Organisation</b>	<b>Position</b>
5	Mr Banxa Thammavong*	FRC	Project Assistant/trainee
7	Mr Singkone Saynhalat*	FRC	Researcher
8	Mr Mr Souny Phomdouangsy**	FRC	Researcher
9	Ms Phetlasy Souladet*	NUoL Faculty of Forestry	Teacher
10	Ms Phayvone Phonphanom**	FRC	Researcher
11	Mr Soulivanh Lansavanh*	NUoL Faculty of Science	Teacher
12	Ms Vongdao**	NUoL Science Faculty	Student
13	Ms Viengkhorn**	NUoL Science Faculty	Student
14	Mr Lakhon**	Nakai Nam Theun NBCA	Researcher
15	Mr Chanthalaphone Nanthavong	Nakai Nam Theun NBCA	Researcher
<b>Participants for Formal Training in Vientiane 23<sup>rd</sup> February – 8<sup>th</sup> March 2005</b>			
	<b>Trainers</b>	<b>Organisation</b>	<b>Position within Organisation</b>
1	Dr Mark Newman	RBGE	Project Leader
2	Philip Thomas	RBGE	Coordinator
3	Kate Armstrong	RBGE	trainer
4	Mr Sounthone Ketphanh	FRC	Darwin Project Leader (Lao PDR)
5	Mr Khamphone Sengdala	FRC	Darwin Project Coordinator (Lao)
6	Dr Bouakhaykhone Svengsuksa	NUoL	Consultant
7	Mr Vichit Lamxay	NUoL	Lecturer
	<b>Trainees</b>	<b>Organisation</b>	<b>Position</b>
1	Mr Banxa Thammavong	FRC	Project Assistant
2	Mr Singkone Saynhalat*	FRC	Researcher
3	Ms Phayvone Phonphanom**	FRC	Researcher
4	Mr Souny Phomdouangsy**	FRC	Researcher
5	Mr Nynhom Chanthalagshy	FRC	Researcher

6	Mr Khamtanth	FRC	Researcher
7	Mr Outhong Vongsay	FRC	Researcher
8	Ms Phetlasy Souladet*	NUoL Faculty of Forestry	Teacher
9	Ms Phoyphet Southavong	NUoL Faculty of Science	Teacher
10	Mr Soulivanh Lanosavanh*	NUoL Faculty of Science	Teacher
11	Mr Thongluang**	NUoL Faculty of Science	Teacher
12	Mr Khamseng**	NUoL Faculty of Forestry	Teacher
13	Ms Bouly	NUoL Forestry Faculty	Teacher
14	Ms Phoyphet Southavong	NUoL Forestry Faculty	Teacher
15	Mr Bounhouang Sengvilay	DoF Forestry Inventory	Forester
16	Ms Montha Namsena	NUoL Faculty of Forestry	Lecturer
17	Ms Somchanh Nanthavong	WCS	Researcher
18	Mr Onevilay Souliya	Medicinal Plants Institute	Lecturer
19	Mr Lakhon	Nakai Nam Theun NBCA	Researcher
20	Mr Chanthalaphone Nanthavong	Nakai Nam Theun NBCA	Researcher
21	Various (up to 6)	NUoL	undergraduate students attending for half days

#### 4.6 Year 3 proposed timetable

Table 2 Year 3 proposed timetable

TIME PERIOD	LOCATION	ACTIVITY
April – mid May 2006	RBGE	Identification of specimens from Year 2 Master Database enhancement Year 2 annual report
April – mid May 2006	Lao PDR	Preparation for field work and training visit
Mid May – July 1	Lao PDR	Third training visit Publication of Botanical Glossary and Resource Pointer
July 2006 – Jan 2007	RBGE/Lao PDR	Identification of specimens from Year 3 Database and herbarium enhancement Year 3 half year report Draft checklists produced Guides to Gingers and Conifers produced
Feb - Mar 2007	Lao PDR	Final visit 1-2 week visit and final seminar to Lao PDR by UK staff Publication and launch of National and NBCA checklists, threatened species lists/evaluations and conifer and ginger guides launched

## **5. Actions taken in response to previous reviews**

The comments and queries from the first year's report were answered in the half year report after consultation with our Lao partners. The majority of the comments from the reviewer related to the formal training and the changes that were made are detailed in Section 9 and 11.

## **6. Partnerships**

### **6.1 RBGE, FRC, NUoL and IUCN**

Overall, collaboration between all partners has continued to be excellent although there continue to be minor problems due to the relatively poor communication infrastructure within Lao PDR. Most Lao staff are still relying on private hotmail accounts although there has been an improvement in terms of their access to internet-capable computers. Several trainees and the Lao coordinator have also been attending regular English classes in Vientiane

The Darwin Project has also been awarded a small contract from the IUCN to review the current CITES listings for Lao PDR. The contract involves a taxonomic review by RBGE and NUoL staff and the identification of particular species (mainly orchids) that are exploited as NTFPs. This aspect will mainly be carried out by FRC staff who specialise in NTFPs. The contract will aid the IUCN to develop programmes to assist the Lao Government to implement its CITES commitments. The first stage is due to be completed before May 2006.

### **6.2 Collaboration with other projects**

#### **6.2.1 Biodiversity Informatics and co-Operation in Taxonomy for Interactive shared Knowledge base (BIOTIK)**

The BIOTIK (described in Section 6.2.1 of the first annual report) project continues to be active in Lao PDR. The main areas for collaboration are the sharing of specimens and information and the development and training of Lao staff on databases. The differing implementation schedules have prevented joint field work but have allowed the trainees to receive a wider range of training. Most communication is via email although a meeting in Vientiane with the French coordinator was held during the last visit. BIOTIK botanists have also helped with the identification of specimens collected during the field work. In March 2006, BIOTIK staff held a three day workshop at NUoL on database management.

#### **6.2.2 Sustainable Forestry and Rural Development Project (SUFORD)**

The SUFORD project (described in Section 6.2.2) have decided to focus the biodiversity monitoring strategy on fauna rather than flora and as a result the potential for collaborative work described in the first year's report has not been realised.

#### **6.2.3 Mekong River Commission (MRC).**

Collaboration with the MRC (described in Section 6.2.3 of the first annual report) on the development of a multinational (Thailand, Lao PDR, Cambodia and Vietnam) project to produce the first Guide to the Aquatic Plants of the Lower Mekong Delta is continuing. The MRC coordinator (Dr Chartlotte MacAlister) visited the RBGE in July 2005 for meetings with senior RBGE management; these were followed up by meetings in Lao PDR during the project team's visit. Contract specifications are still being worked on. The Darwin team hope that this project will provide opportunities for collaboration between the RBGE, Lao institutions and leading Thai herbaria after the current project.

#### **6.2.4 Nakai Nam Theun Water Management and Protection Authority (WMPA)**

The project's involvement with the WMPA continues to develop. During the second year visit the WMPA moved its headquarters to Nakai, the last major town and supply point for the the field team before entering the NBCA. This made it easier for the team to debrief officials about the field activities (see also Section 7.1). The WMPA has also recently awarded a contract to the Wildlife Conservation Society for biodiversity related work. During the third year's field work, a joint WCS/WMPA/Darwin team will be visiting the most southern part of the NBCA where an anti-poaching patrol has recently reported a very unusual forest type. This is the type of collaboration that the project has been aiming to facilitate. As in the first year, WMPA staff participated in both field work and training in Vientiane. In the final year

## 6.2.5 ECOLAO

The Darwin project has had no further contact with this organisation since the first year. ECOALO will receive a copy of the National Checklist when it is ready.

## 6.2.6 Wildlife Conservation Society (WCS)

In 2005 WCS was awarded a contract to develop a baseline on which to monitor changes in the Nam Theun watershed and the NBCA. This will mainly focus on monitoring large mammals and means that WCS trained teams will be patrolling through large parts of the NBCA on a regular basis. During the second year's field visit WCS staff met up with the Darwin team to discuss collaboration in the field. There are plans for a joint visit to the most southern part of the NBCA during the next field visit. WCS and NBCA staff have been encouraged to collect samples of unusual plants or those that are critical food sources for animals such as the saola. WCS staff also attended the formal botanical training in Vientiane.

## 6.3 General Comments on Collaboration

In the first year, the number of organisations and projects working on biodiversity related issues in Lao PDR contacted by the Darwin project presented a wide range of options for collaboration. Some of these contacts (MRC and WCS) have developed into more formal collaborative arrangements that will help the Darwin project to enhance its legacy.

## 7. Impact and Sustainability

### 7.1 Project Profile

In November 2005, the WMPA moved its headquarters from the provincial capital of Thakhek to new buildings in Nakai, close to the NBCA and the headquarters of the Nam Theun 2 project. The Minister of Agriculture was present for the formal opening of the headquarters and his visit coincided with the return to the Darwin field team. The team were able to meet with the Minister and demonstrate the practical work of the project. Senior members of the team were also invited to a formal breakfast with him and had the opportunity to discuss the overall project and possible future work. The minister stated that he was already aware of the project, that he was pleased with the progress of the work and that he would be supportive of any future work. Such high level support is very encouraging.

The project's profile has also been raised through the participation of trainees from other organisations, especially the Medicinal Plants Institute (MPI). As their name implies, the MPI is primarily concerned with medicinal plants, especially those that form part of the traditional pharmacopeia. Darwin project staff will be visiting this institute in the final year for discussions on future work.

The Darwin project also part-financed a study tour of *Aquilaria crassna* plantations in Thailand by Mr Khamphone Sengdala. During his visit he gave several presentations that included the work of the Darwin project. *Aquilaria* is a key species for conservation work and the development of sustainable forestry practices.

### 7.2 Increasing interest and capacity for biodiversity resulting from the project

The developments in the work with the IUCN, MRC, WCS and the WMPA can all be taken as evidence of increasing interest and capacity for biodiversity resulting from the project. Additionally, as reported in the previous annual report, Mr Vichith Lamxay has started his PhD with the University of Uppsala. FRC staff have also been involved in workshops with the Darwin project *Facilitating Forest Restoration for Biodiversity Recovery in Indochina*. One of the project's FRC trainees (Ms Phonevilay Sichanthongthip) has commenced an MSc in Forest Botany in the Philippines, partly as a result of her participation in the first year training. A second FRC trainee (Mr Singkone Saynhalat) is likely to gain a place during the third year of the Darwin project. The MScs are funded by SIDA; candidates are selected by FRC and NAFRI managers on the basis of their technical skills and practical experience. Field work and botanical training undertaken during the Darwin project have contributed to the success of these two students.

### 7.3 Exit Strategy

This has not changed from the original exit strategy detailed in the accepted application and is still valid.

### 8. Post-Project Follow up Activities (max 300 words)

Future projects that may be suitable for Darwin funding were discussed during the second year visit. Further discussions will be held during the next visit (May 2006) with a view to submitting another application to the Darwin Initiative. The project has also submitted an application for a Darwin scholarship for Mr Soulivanh Lanosavanh.

### 9. Outputs, Outcomes and Dissemination

#### 9.1 Outputs and Publications

Differences between the actual outputs for the second year and those agreed in the initial 'Project Implementation Timetable' and the 'Project Outputs Schedule' are explained in the relevant section of Table 3 and below Table 4.

**Table 3. Project Outputs for Year 2**

NOTE: Training weeks are based on 5 day weeks of 40 hours (Mon-Fri), then percentage of one week. During field work, all project staff and trainees work and train every day i.e. no weekends. During the formal training in Vientiane, trainers worked or trained every day and 4 trainees also worked or were trained by trainers every day

Code No./Qty Specified on original schedule	Description	Achieved quantity	Additional / Slippage
4A <i>Not listed on original schedule</i>	under-graduate trainees for field work and for laboratory training	2	2 undergraduates in field team, There were also up to 6 undergraduates attending formal training in Vientiane each, according to their class timetable
4B <i>Not listed on original schedule</i>	Training weeks for undergraduates	7.2	2 undergraduates in field team for 3.2 weeks each; 1 undergraduate (Ms Viengkhorn) for 1 week during Vientiane training
4C/ 10 people	post-graduate trainees for field work and laboratory training)	17 people	a) Field work:- 5 postgraduates b) laboratory work:- 17 postgraduates, including same 5 from field work
4D/ 35 weeks	5 people for 4 weeks and five people for 3 weeks	64.6 weeks	5 people x 3.2 weeks (Nakai field work) + 1x1 week (Houaphan fieldwork) + 13x2.8 weeks (Vientiane training, 5 days per week) + 4 x 0.8 weeks
6A/ 7 people	NBCA staff and village foresters	6	2 NBCA staff + 4 village foresters
6B/ 15 weeks	Training for NBCA staff and village foresters	16	2 NBCA staff in field work (2 x 3.2) and laboratory work (2 x 2.8) 4 village foresters field trained for 2 weeks each ( 2 x 2)
7/ 1 or2	Training materials	10	Draft botanical glossary and 9 family profiles as power-point presentations
8 / 24 weeks	2 UK staff for 9 wks each, 1 for 8 weeks	26	Single visit by all 3 staff; 2 x 9 (M Newman & K Armstrong) + 1 x 8 (P Thomas)
13B/ 3 herbaria	herbarium collections enhanced at FRC, NUOL, RBGE	6	Herbarium collections enhanced at FRC, NUoL (2), RBGE. Specimens for Paris and Leiden also exported from Lao with RBGE set. Specimens deposited at Paris and Leiden
14A/ 0 <i>Not listed on original schedule</i>	seminars; 1 in UK	1	1 seminar presented by 2 people during the visit to the UK by Lao staff
15A/B/C 3 <i>Not listed for Year 2 (deferred from Year 1)</i>	publicity articles national press releases in host country	2	15A Press release for Formal Training session in Vientiane ( <i>Year 1 outputs deferred to Year 2</i> ) 15C Newsletter update

XX/ 3	articles on websites	0	Slippage: the project's website was due to be expanded late in Year 2 or in early Year 3; due to staff commitments this will not happen until after July 2006
20	herbarium materials, collecting equipment references	Ca £2250	herbarium materials, collecting equipment references Note: original schedule of outputs should not have included Lao salaries

**Table 4: Publications**

Type *	Detail	Publishers	Available from	Cost £
Newsletter	'Taxonomic training for a neglected biodiversity hotspot in Lao PDR'. Newman, M.F. et al, September 2004	ECTF	Website: <a href="http://www.nmw.ac.uk/ectf">www.nmw.ac.uk/ectf</a>	Free

The original schedule of outputs stated that the multilingual Botanical Glossary would be published by the end of the second year. Final publication has been delayed until the next visit to Lao PDR by UK staff at the start of the third year (May 2007). The main purpose of the glossary, at least within the main timeframe of the project, was to assist the trainees in the translation of French botanical texts such as the *Flore du Cambodge, du Laos et du Viêt Nam* (FCLV). The main draft was prepared during the visit to the UK by the senior Lao staff; a revised version was available for the trainees to use during the visit to Lao by the UK team. In that respect, the delay in publication has not affected the training. The main reason for the delay was that the project team decided to include Khmer translations as well so that the publication would be useful in Cambodia where there are similar problems in accessing the French botanical literature. Madame Sovanmoly Hul, the Paris based editor of the FCLV agreed to do the translation. Unfortunately ill health prevented her from doing so and the project has now decided to go ahead with the Lao-French-English version. The Mekong River Commission has expressed an interest in publishing the Khmer version when the translation is done.

In addition to the Botanical glossary the project will, as an additional output, produce a small publication entitled *Selected resources for plant identification in Lao PDR*. This will complement the glossary and provide a guide to the most up-to-date treatments of the plant families that occur in Lao.

## 9.2 Dissemination activities

No specific dissemination activities were undertaken during the second year. The project concentrated on building links and initiating other projects with other organisations in Lao and in Thailand and Cambodia (e.g. IUCN – CITES work, WCS - collaboration in Nakai Nam Theun NBCA and the MRC – Guide to the Aquatic Plants of the Lower Mekong Delta). The project has also been approached to submit regular short articles to the Non Timber Forest Products Newsletter, an email based monthly newsletter produced by SNV, the Netherlands development organisation and circulated to over 400 people working in more than 15 countries of which most are based in Laos. The theme of these articles will probably be the identification of popular plant based NTFPs, hopefully based on identifications by trainees.



were checked at the end of each day by trainers). They were also reflected by the fact that the field team was invited by the local people to 'bring their own fishing nets to fish in the rivers' the next time they visited. In Lao, this is a sign of welcome and trust as fish are an important food source and access is closely monitored by each village.

Three trainees had not previously worked in the field (see Table 1); training for these people was mainly carried out by other trainees. Towards the end of the field work (after the Phou Vang group returned) a field test was organised. The main aim of this was to ensure that the newer trainees had achieved the basic competencies that the first year trainees had achieved.

At a wider level, monitoring of the project's progress has been undertaken through reference to and revision of the logical framework and the implementation timetables (see Revised versions in this report).

In the previous annual report it was stated that '*Communication between UK and Lao organisations has been slow at times but technical problems have recently been overcome and there is now a free flow of information between the partners*'. At the time, this was true as the university upgraded its communication infrastructure giving improved internet access and phone lines. However, the Ministry of Agriculture and Forestry (MAFF) and the National Forestry and Agriculture Research Institute (NAFRI) have decided to relocate the Forest Research Centre main office to a field station some 40km from Vientiane. Previously they were based in buildings adjacent to the university. The consequence of this has been that email communications with FRC staff has become more difficult and they are even more reliant on the facilities provided by the Darwin project at the IUCN in the centre of Vientiane. Communication infrastructure to the FRC main office are due to be upgraded sometime in 2006 or 2007.

## **11.2 Lessons from the second year**

The lessons mentioned in the first annual report (Section 11.2 of that report) were implemented successfully e.g. the use of smaller groups in the field, shorter periods in the field to allow for a wider range of training. They will also prove useful for the third year.

## LOGICAL FRAMEWORK Revised March 2006

<i>Project summary</i>	<i>Measurable indicators</i>	<i>Means of verification</i>	<i>Important assumptions</i>
<p><i>Goal:</i></p> <p>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</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>			
<p><i>Purpose</i></p> <p>To assist Lao PDR to implement CBD obligations and BAP objectives by providing training in tropical botanical taxonomy to staff in key institutes. To establish the foundation for National Species Database and Threatened Plant List</p>	<p>Up to 30 Laotians from FRC, NBCAs, NUOL trained in tropical botanical taxonomy</p> <p>Collection of 3-4000 identified specimens</p> <p>National Species List and Threatened Plant List published</p>	<p>Assessment and evaluation records of trainees at end of each training period</p> <p>Specimens in herbaria</p> <p>Databases established within 2 institutes; printouts available after Yr 1</p>	<p>That key areas in the draft NBSAP will form part of the final plan.</p> <p>That all specimens will be identified; Lao PDR flora is poorly known so new species may be found that may take longer to describe</p>
<p><i>Outputs</i></p> <p>Multilingual botanical dictionary Nat. Species Database Threatened Plant List NBCA Plant checklist Incorporation of collections into herbaria</p> <p>Report to GTI 3 Scientific papers</p>	<p>Publication of dictionary by end of Yr2 Printouts from database</p> <p>checklist available Representation of Lao PDR flora in herbaria increased by 25% by Yr 3 Report submitted Papers written</p>	<p>Publication completed; copies available National Species List and Threatened Species List widely available Specimens in herbaria</p> <p>Report acknowledged Papers published</p>	<p>Linguistic expertise available within the project team</p>
<p><i>Activities</i></p> <p>3 x 3-4 week field training sessions in NBCA Identification of specimens 3 x 3-4 week taxonomy training sessions Collation of data ex-Lao PDR; Collation of data within Lao PDR Seminars in Lao PDR and UK</p>	<p><b>Activity Milestones (Summary of Project Implementation Timetable)</b></p> <p><u>Year 1:</u> Collation of data from published Flore du Cambodge du Laos et du Viet Nam completed; first 2 month training visit to Lao PDR (field and herbaria, database installation; project planning meeting); collation of Lao PDR data commenced; visit to UK by Laotian counterparts (training, liaison)</p> <p><u>Year 2:</u> Collation of other data ex Lao PDR completed; 2nd 2 month training visit to Lao (field and herbaria project progress meeting); collation of data in Lao PDR continues;</p> <p><u>Year 3:</u> Publication of botanical dictionary in Laotian; Final 6 week field and herbaria training (May-June 06). Final wrap up visit (Feb/March 2007); National Species and Threatened Plant List published; scientific papers and reports written and submitted</p>		

Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2004/2005

Project summary	Measurable Indicators	Progress and Achievements April 2004-Mar 2005	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 poor 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>			
<p><b>Purpose</b> To assist Lao PDR to implement CBD obligations and BAP objectives by providing training in tropical botanical taxonomy to staff in key institutes. To establish the foundation for National Species Database and Threatened Plant List</p>	<p>Up to 30 Laotians from FRC, NBCAs, NUOL trained in tropical botanical taxonomy</p> <p>Collection of 3-4000 specimens</p> <p>National Species List and Threatened Plant List published</p>	<p>Main Training visit by UK staff (Oct-Dec 2005)</p> <p>Year 2 fieldwork (Oct 2005). 770 collections, 6000+ specimens (including duplicates)</p> <p>Database enhanced</p>	<p>Key Actions for Year 3</p>
<p><b>Outputs</b></p>			
<p>Nat. Species Database and Threatened Plant List</p>	<p>Printouts from database</p> <p>Conservation assessments</p>	<p>Available electronic and printed data sources identified. Collation in progress</p> <p>Lao experts consulted;</p>	<p>Key Actions for Year 2 Continue data collation and input; continue training in database management through collaboration with BIOTIK</p> <p>Agree format for plant list; undertake training in conservation assessment and agree criteria for listing of threatened plants</p> <p>Disseminate publications</p>
<p>Multilingual botanical dictionary (French – Lao – English)</p> <p><i>Selected resources for plant identification in Lao PDR</i></p>	<p>Publication of dictionary by end of Yr2</p>	<p>Translation completed; draft versions tested</p>	<p>Key Actions for Year 3: Publish final versions by July 2006</p> <p>Disseminate publications</p>

NBCA Plant checklist	checklist available	Existing information sources identified and assessed. 95% of specimens collected during first visit identified to family level, 75% to genus level and 45% to species level	Key Actions for Year 3: integrate information from year 2 into main database; identify specimens from year 2 field work Disseminate publications
Incorporation of collections into herbaria	Representation of Lao PDR flora in herbaria increased by 25% by Yr 3	Herbarium mounting materials purchased Preparation for mounting of specimens from Year 2 Duplicates distributed to other herbaria	Key Actions for Year 3 Mount specimens from Year 2 Prepare specimens from year 2 for mounting
Report to GTI	Report submitted	Discussions with relevant Lao counterparts	Key Actions for Year 2: Prepare draft report by July 2006 Disseminate publication
3 Scientific papers	Papers written	Initial discussions with Lao counterparts	Key Actions for Year 3; identify subjects, prepare outlines; submit for publication

Note: Please do NOT expand rows to include activities since their completion and outcomes should be reported under the column on progress and achievements at output and purpose levels.