



Darwin Initiative Main/Post/D+ Project Half Year Report (due 31 October 2016)

Project Ref No	21-002
Project Title	Building mycological capacity for sustainable resource management in Lao PDR
Country(ies)/Territory(ies)	Lao PDR
Lead Organisation	James Hutton Institute
Partner(s)	Royal Botanic Garden, Edinburgh
Project Leader	Dr Andy Taylor
Report date and number (e.g., HYR3)	October, 2016. HYR3
Project website/ Twitter/ Blog/ Instagram etc	http://www.hutton.ac.uk/research/projects/building-mycological-capacity-sustainable-resource-management-lao-pdr
Funder (DFID/Defra)	Defra

1. Outline progress over the last 6 months (April – Sept) against the agreed baseline timetable for the project (if your project has started less than 6 months ago, please report on the period since start up to end September).

Training workshops: A 2nd workshop was conducted in Vientiane from 16-20th May 2016. The teachers included Andy Taylor, Mark Newman, Urmaz Kõljalg, Thomas Laessoe, Nev Kilkenny and Ursula Eberhardt. Prof Verbeke could not attend due to teaching commitments at her University. The course was again held at The Biotechnology and Ecology Institute (BEI) in collaboration with Kongchay Phimmakong and her team. The main focus of this course was on practical mycological issues which will have to overcome when developing mycological resources in Laos. These included the process of describing new species, creating a checklist for Laos, molecular aspects of identification, and gathering storing and utilizing data associated with fungi.

There were 10 attendees with representatives from the National University of Laos (NUoL), BEI, and The Ministry of Agriculture and Forestry (MAF). The course participants included MSc students and a lecturer from NUoL, professional plant pathologists (MAF), herbarium staff from BEI. The course was a mixture of interactive seminars and practical sessions. The inclusion of Mr Phongeun Sysouphanthong from BEI helped greatly as he has a good grasp of the English terms for fungi and was able to translate these into Lao for the other participants. Phongeun has recently been partly employed BEI and supported by this project. The course also included field sessions in the afternoon and laboratory examination of the collected material.

Field work and training: During the 2nd week (22nd-28th) of the May trip to Lao, the project partners flew to the town of Phonsavan, north of Vientiane in Xieng Khouang province. The project also paid for two of the course participants from BEI to accompany us during this week to gain field experience in collecting fungi in the field. This week was jointly organized with Ole Pedersen from the Agro-Biodiversity Project (ABP), Vientiane. ABP has local contacts in the province and they had arranged for visits to villages where a local would act as a guide to show us the forests where they collect fungi. The week was spent collecting more information on Matsutake and making field collections for the National Fungarium which we had previously set up. The evenings were spent working on the collected material. The two participants from BEI were trained in both field collection and in the evening lab sessions. A total of 14 villages were visited and 364 collections were made and identified as far as possible, with most accompanied with photographs. Unfortunately due to local unrest we were not permitted to return to some of the best areas we visited the previous year.

At a number of villages it was possible to obtain information using a prepared questionnaire on the practice of collecting fungi by the locals.

Study on Matsutake: We made new collections of what is locally called Matsutake. Based on this and on material we collected last year, we were able to show using molecular data that what is known as Matsutake is actually a number of species – none of which are true Matsutake, but related species. This information feeds into the accumulated information on Matsutake in Laos.

Poisonings: Together with Ole Pedersen at ABP a field based investigation into poisonous fungi in Laos has been in progress since September last year. The data on which fungi are considered to be poisonous by the locals was gathered in May 2016 during the field collections and interactions with the villagers. All the data will be compiled into a publication with photographs and descriptions of the poisonous fungi. We were involved in an investigation into a fatal poisoning incident which was brought to the attention of Ms Khonesavanh Chittarhat from MAF, a participant on both our courses and one of the two Laotians to complete training in Aberdeen. Ms Chittarhat has become the Laotian contact point for poisoning cases where material needs identified. We were able to assist in the identification of the fungus involved. This is a big step forward as we also now have the medical notes on the symptoms associated with this fungus. It is not considered edible in Europe and we had no previous information on its toxicity.

Molecular lab: The PI and a colleague from the James Hutton institute will be in Vientiane in November 2016 to complete the installation of the molecular lab. This will be done with the assistance of the two Laotians who were trained in Aberdeen. Additional consumables have been purchased and will be delivered during this period.

Fungal collections: The collections made in May 2016 were added to the National Fungarium held at BEI as part of the National Herbarium of Laos. Phongseun Sysouphanthong (see below) is in charge of curating these. All metadata associated with the collections have been entered into the Excel spreadsheet already containing the data from Lao collections from previous years. This spreadsheet forms the basis of the National Lao Fungal collection and is with the BEI staff. The information relating to the collections is also being made available internationally on the PlutoF database (<https://plutof.ut.ee/>) supported by Prof Kõljalg in Estonia. The collection now comprises in excess of 1400 collections. Given the rather precarious conditions under which the collections are held at BEI, we have arranged with BEI that half of each collection is held for safe keeping in Scotland. This was done in accordance with the Nagoya protocols for sharing genetic materials. This has enabled much of the material collected in May 2015 to be sequenced by Prof Kõljalg in Estonia. The availability of this data has greatly enhanced the importance of the national collection. Prof Verbeken is currently preparing two publications on new species from the collection, where authorship will include Lao nationals.

Market visits: As reported previously we were very fortunate to be approached by a local, Phongsou Sysouphanthong, who has a Masters degree in mycology in Thailand. Phongsou is very competent and has been partly employed by BEI and the project. He has been making regular visits to the local markets in order to gather information about the fungi on sale and making collections for the Fungarium. Phongsou has also been working with the collections we have made, making additional identifications and keeping them in good order.

An assessment of the impact of logging: This is the part of the project which has proved the most difficult to achieve. It proved impossible to carry out sampling below ground in the northern province of Xieng Khouang due to the dangers from unexploded ordnance. However, with the assistance of Mrs Toulaphone Keokene at NUoL and Kongchay Phimmakong at BEI, an area of suitable pine forest has now been identified about two hours drive from Vientiane. This will be visited and sampled during the visit in November 2016. The root material will be processed in the molecular lab at NUoL and the DNA sent off for sequencing to give the necessary data.

2a. Give details of any notable problems or unexpected developments/lessons learnt that the project has encountered over the last 6 months. Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

The only notable problem was again our failure to collect suitable samples for the logging assessment in the northern province. None of the areas we visited were considered safe enough to allow sampling below ground. However, as noted above we have now identified a

suitable area within a days drive of the capital Vientiane. This does not impact on the project budget.

2b. Have any of these issues been discussed with LTS International and if so, have changes been made to the original agreement?

Discussed with LTS: No

Formal change request submitted: No

Received confirmation of change acceptance NA

3a. Do you currently expect to have any significant (e.g., more than £5,000) underspend in your budget for this year?

Yes No Estimated underspend: £

3b. If yes, then you need to consider your project budget needs carefully. Please remember that any funds agreed for this financial year are only available to the project in this financial year.

If you anticipate a significant underspend because of justifiable changes within the project please submit a rebudget Change Request as soon as possible. There is no guarantee that Defra will agree a rebudget so please ensure you have enough time to make appropriate changes if necessary.

4. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures?

If you were asked to provide a response to this year's annual report review with your next half year report, please attach your response to this document.

Please note: Any planned modifications to your project schedule/workplan can be discussed in this report but **should also be raised with LTS International through a Change Request.**

Please send your **completed report by email** to Eilidh Young at Darwin-Projects@ltsi.co.uk . The report should be between 2-3 pages maximum. **Please state your project reference number in the header of your email message e.g., Subject: 22-035 Darwin Half Year Report**