

## The Rufford Small Grants Foundation

### Final Report

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Congratulations on the completion of your project that was supported by The Rufford Small Grants Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to [jane@rufford.org](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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Grant Recipient Details	
<b>Your name</b>	Khyne U Mar
<b>Project title</b>	Establishment of centralized elephant data bank in Myanmar
<b>RSG reference</b>	24-05-09
<b>Reporting period</b>	18 months
<b>Amount of grant</b>	£12000
<b>Your email address</b>	<a href="mailto:khyne_umar@hotmail.com">khyne_umar@hotmail.com</a> ; k.mar@sheffield.ac.uk
<b>Date of this report</b>	28-05-2012

**1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.**

Objective	Not achieved	Partially achieved	Fully achieved	Comments
(1) To archive elephant log books and end-of-year reports of the Myanmar Timber Enterprise		Yes		I was not able to finish retrieving data from the elephant log books because I got access to these log books, only in summer, when the elephant were given 4-months long rest period from mid-February to June. I also could not find some of the end-of-year extraction reports because the headquarter of Myanmar Timber Enterprise was moved to Nay Pyi Taw, the New Capital of Myanmar in 2009 and some of the reports and log books might lost in transit. However, I encouraged the Myanmar counterparts to continue searching the log books in the warehouses of the Myanmar Timber Enterprise offices around the country and in Nay Pyi Taw.
(2) To train Myanmar officials to continuing compiling and analysing studbook data			Yes	Myanmar counterparts were given training on MS Office applications, database management and on maintaining veterinary records in spreadsheet.
(3) To assist Myanmar counterparts to develop a centralised databank.			Yes	I managed to set up a computer centre in the Extraction Department of the Myanmar Timber Enterprise, Monywa, Sagaing Division. This region has the highest number of working elephants in Myanmar. Six Myanmar counterparts are now continued entering the life history events of the living (existing) working elephants in the system I have created.

**2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).**

I was awarded RSG Booster grant in May 2009, to establish the centralized elephant databank in Myanmar. I became a naturalised British citizen in December 2009. I was not aware that Myanmar Embassy took a lengthy procedure in processing the applications of Myanmar expatriates for entry visa, especially for the first time. After awaiting more than 6 months, I got entry visa and arrived Myanmar in July 2010 and it coincided with rainy season, that normally lasted 4-5 months from June to September/October. In Myanmar, all elephants finished their work season by mid-February each

year, and work resumed around mid-June depending on the arrival of the monsoon. It was logistically not easy to travel to timber extraction camps in the forests during rainy season. Public transports were not reliable and it was unaffordable to hire four-by-four vehicles from private car-rentals. The forest range officers and vets informed me that they might be not able to help me in finding missing studbook data from the old reports and from the elephant log books because of their busy daily schedule during work season. I came back UK on August 2010 but returned Myanmar in early 2011. The data entries were conducted in summer 2011 (between February and June 2011). When the timber elephants were given rest in summers, the whole herd of working elephants were moved to forest camps where they were allowed around-the-clock foraging. I was given access to elephant log books. The persons I hired for data entry and six Myanmar counterparts from timber enterprise travelled to the major elephant rest camps and copied important information on veterinary and reproductive events from elephant log books. We checked some elephants for their general health, took body weights and measured heights-at-shoulder, chest girths and body lengths. If the timber camps did not have electricity we copied data by hand. These hand-written data were translated and entered into computer spreadsheet, when we reached places or towns where we could have electricity. During the remaining months, we committed our time on copying/scanning/archiving end-of-year reports and log-books of dead elephants at the Head Quarter of Myanmar Timber Enterprise in Yangon and in Nay Pyi Taw, the New Capital of Myanmar. Not all log books of dead elephants were able to retrieve during the project period. However, I encouraged the Myanmar counterparts to continue looking the log books of deceased elephants in the warehouses of the Myanmar Timber Enterprise offices around the country. I could not find some of the early 1970s end-of-year extraction reports during the project period because the headquarter of Myanmar Timber Enterprise was moved to Nay Pyi Taw in 2009 and some might went missing during the transit.

### **3. Briefly describe the three most important outcomes of your project.**

The main aim of this project is to archive the log books of dead elephants and the end-of year extraction reports and to create the error-free database so that I can further extend my analysis to explore the reproductive aging and life history strategies in Asian elephants. The three most important outcomes of this project are:

- (1) **Studbook data was updated with newly-added data**
- (2) **Myanmar counterparts got on-site training** on computer knowledge especially MS office applications, basic data analyses as well as aspects of systematic archiving methodology of both studbook data and medical data and
- (3) **A computer centre was set up in the Extraction Department of the Myanmar Timber Enterprise, Monywa, Sagaing Division.** This region has the highest number of working elephants in Myanmar. The Myanmar counterparts are now continued entering the life history events of the living (existing) working elephants in the system I have created in their computers. They are now able to use internet through the computing equipment I have contributed. They have enjoyed using the computers not only for data entries but also surfing the internet to search the scientific literatures that help updated their professional knowledge.

**4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).**

Not relevant.

**5. Are there any plans to continue this work?**

Updating the existing data on yearly basis is paramount to this project. With the help of other collaborators (see below) I have plans to extend my project.

**6. How do you plan to share the results of your work with others?**

I shared the important information of this project in scientific papers in two peer-reviewed journals and in three international conferences (for details of my papers and presentations see below). I also attended an International Conference on Women Scientists in the Changing World, in Beijing, China (27-30 June, 2010), organised by the Third World Organization for Women in Science (TWOWS), Italy and the Chinese Academy of Science, China as an invited guest of TWOWS, representing Myanmar Women scientists working in the field of wildlife biology and conservation. Scientists from the University of Sheffield (UK), the Smithsonian Institution (USA) and the Institute of Zoo and Wildlife Biology (Germany) are now collaborating with me in assisting the analyses of the newly-added data.

**7. Timescale: Over what period was the RSG used? How does this compare to the anticipated or actual length of the project?**

The fund was transferred in December 2009. Myanmar Embassy in London delayed issuing me an entry visa. I started my research activities after my arrival in Myanmar in July 2010. That is why the reporting period of this project is from July 2010 to December 2011. The project lasted for 18 months instead of 12 months.

**8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.**

Item	Budgeted Amount	Actual Amount	Difference	Comments
Computing equipment to 6 laptops, printers and accessories	£ 6000	£6000	NIL	Six Myanmar counterparts from the Myanmar Timber Enterprise were now using these laptops for office use and data entries
Setting up Computer centre in Sagaing Division for data banking	£ 1200	£2000	+£800	Instead of contributing four desktops and accessories, as stated in my original proposal, my Myanmar counterparts urged me to buy one digital projector and a wall-mounted screen, which would be useful in future trainings or workshops. I bought one Desktop, a printer, UPS and stationeries (worth £600) and a

				projector along with a screen (£600). The remaining money (£ 800) was used to buy Tshirts, books and stationeries for mahouts and house hold medicines for mahout families.
Photo copying and digitalisation of rare photos, reports and old end-of-year reports	£ 2000	£ 2000	Nil	
Hired assistants to copy old records	£1000	£1000	Nil	
Training computer science to Myanmar counterparts	£1000	£1000	Nil	
Household medicines for mahout families, stationeries and T-shirts for mahouts	£ 800	-	Nil	It was not originally allocated in the proposed budget
<b>Total</b>	<b>£12,000</b>	<b>£12,000</b>		<b>Local exchange (1GBP=1200 Myanmar Kyats)</b>

### 9. Looking ahead, what do you feel are the important next steps?

The important next steps will be:

- (1) To convince the Myanmar Government (a) that Myanmar counterparts should continue the data entry in the central data bank and (b) that the studbook data should be given on-line access so that the Myanmar elephant management system can be learnt by both general public and scientists around the world.
- (2) To re-analyze the studbook data with newly-added updated data. We are now planning to:
  - (1) investigate the patterns of senescence in Myanmar elephants by determining how mortality and reproductive rates and success change with age;
  - (2) determine how reproductive investment or stressful events (such as capture/taming) early in life influences mortality rates and reproductive success later in life;
  - and (3) to explore the effects of local ecology and demography on longevity and fecundity in Asian elephants.

### 10. Did you use the RSGF logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?

Yes, I fully acknowledged RSGF in the following publications I made during the project period:

1. Mar, KU., M. Lahdenpera, M and Lummaa, V (2012). "Causes and Correlates of Calf Mortality in Captive Asian Elephants (*Elephas maximus*).". Plos One 7(3): e 32335. doi:32310. 31371
2. Robinson, M. R., Mar, KU and Lummaa , V (2012). "Senescence and age-specific trade-offs between reproduction and survival in female Asian elephants." Ecology Letters 15(3): 260-266.

Yes, I have used RSGF logo in the following presentations

3. Mar, KU, Robinson, M.R, Russell, AF and Lummaa, V (2010): Early reproductive investment depresses age-specific survival and fitness in female Asian elephants. In EU Asia-Link Project Symposium on “Health and Reproduction of Asian Elephants”, The Imperial Mae Ping Hotel, Chiang Mai, Thailand (31st May – 2nd June 2010).
4. Mar, KU (2011). Ophthalmic diseases in captive Asian elephants. Paper presented in the International Symposium on the Diseases of Zoo and Wild Animals (1-4 June, 2011), Lisboa, Portugal
5. Mar, KU (2011). A plenary talk on “ Demography and driving forces of population change in working elephants of Myanmar” at International conference on Elephant and Wildlife Health, Kasetsart University, Bangkok, Thailand (5-9 September, 2011)

#### **11. Any other comments?**

I wish to extend my heartfelt thanks to the Rufford Booster Grant for Nature Conservation, for the financial support which made possible for this project to achieve its fruitful results. Without its support, I could not update the studbook database.