

The Rufford Small Grants Foundation

Final Report

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.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details	
Your name	Sutomo
Project title	Conservation of tropical savannah ecosystem through better understanding of invasive alien species
RSG reference	15619-B
Reporting period	5 July 2014 – 30 May 2015
Amount of grant	£7500
Your email address	sutomo.uwa@gmail.com
Date of this report	May 2015

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
Selection of sampling sites and consolidation with other organisations	-	-	√	GIS study was conducted, and digital maps created. Permits obtained from Ministry of Forestry
Fieldwork	-	-	√	Fieldwork was conducted mainly in Baluran National Park for several times of visit. We also visit other savannahs in West Bali National Park and Rinjani National Park, Lombok.
Identifying plants sample species found on the sites	-	-	√	For this stage, we use flora books such as the Flora of Java, Ecology of Java and Bali and Mountain Flora of Java as well as went to the Herbarium Bogoriense to consult with a botanist.
Data analysis and giving training on field data collection to the national park staff ranger	-	-	√	Data analysed using PRIMER software, data square root transformed, and presence absence transformed. Beside simple diversity indices, ordination analyses were conducted such as Non-Metric multidimensional Scaling and Canonical Correspondence Analysis.
Seeds and plant herbarium display	-	√	-	<i>Acacia nilotica</i> seeds were collected. Plant herbaria were made from samples from the field. Display cabinet and glass jar for seeds storage were established in the national park. Poster-standing banner produced. However, the seeds that were collected at the moment are still only from <i>Acacia nilotica</i> species. In the future, should aim for collecting seeds from various alien-invasive species as well as local species as well. Many species have different time of seeds production and maturity, this sometimes can be hindrances.
Producing book of the research results and distribute it to other stakeholders	-	-	√	The book will be distributing to national parks in Indonesia, the SEAMEO BIOTROP in Bogor, all botanical gardens in Indonesia, LIPI, Forestry Department, and universities.
Scientific manuscript preparation for journal publication	-	-	√	Scientific manuscript on the correlations of invasive <i>Acacia nilotica</i> spreading and role of water buffalo in Baluran National

				Park is prepared and will be submitted to Journal of Indonesian Natural History as a special edition on Rufford conference in Bali.
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

Working in savannah ecosystem means that we have to cope with the high air temperature, and also encounter with other animals. High temperature at first was a hindrance for obtaining optimum data collection time. By using appropriate protection from sunburn, heat stroke and also with taking a lot of water to the field this problem can be handled.

Animals encounter, such as grazing animals need to be careful when buffalo is nearby as some have aggressive behaviour when get too close. Taking picture of these animals is better using a long tele-camera. Other dangerous animals that we encountered are snakes. Using an appropriated shoes and protections and carrying a stick whenever passing tall grasses was done to prevent injury from snake bites. Risk assessment before doing a fieldwork is important.

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

Firstly, is the availability of species lists of savannah vegetation in Indonesia, especially in the largest savannah in Java, the Baluran National Park's savannah and also vegetation in other savannah in different Island such as savannah in Bali and Lombok. This contribution is I think valuable to the scientific community especially for plant ecologist and conservationist, as not many works have been focussing on savannah ecosystem therefore it is still the least study ecosystem, especially in Indonesia.

Secondly, training on field data collection gave a very important contribution to the national park rangers. This training enhances and broadens field rangers' skills and knowledge regarding field vegetation data collection. Following this activity, we hoped that rangers working in the field would be able to collect appropriate data by using the most suited method so the results can be confidently use in making reports and also for decision making materials consideration.

Thirdly, is the availability of information of the research results in a form of seed and herbaria display at the national park and the botanic garden for general visitors. In addition, research results dissemination also took form in a simple and easy to read book with English narrative in order to allow wider audience nationally and internationally. We also add to the display, posters and standing banners as mean to communicate to the public to raise awareness regarding conservation of savannah ecosystem in Indonesia. The book has been distributed to many government departments, universities (national and international), research institutes, agencies, NGOs and also to interested community group. Furthermore, I was honoured to be invited to the Rufford Conference in Bali in December 2014. This event creates opportunity for me to further elaborate my project to other awardees from Indonesia and also to learn from another project as well.

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

Many of the field rangers from the Baluran national park office is local people. They participated in the data collection training and went on the savannah with us to conduct field sampling. We also participate with the field rangers, when they giving approaches and information to the surrounding local community lives near the national park to not to do poaching and illegal hunting of rare and endangered animals species that make use of savannah as their feeding habitat such as deer and Bali starling.

5. Are there any plans to continue this work?

In the near future, I hope, we can continue on working to characterise other savannahs in Indonesia especially in the eastern part of the archipelago. We also need to categorise which savannahs in Indonesia are man-made, naturally, or disturbance-derived origin. This data can be used to inform whether there has been a shift in trend of vegetation in Indonesia, and with special emphasis of conserving the natural of origin, savannah ecosystem as unique ecosystem.

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

We had made book regarding results of this project. This book will be distributed to stakeholders that concern about savannas such as academics, teachers, students, and government agencies, and NGO.

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

No.	Activity	Time	Compared to the anticipated length
1	Preparation	August-September 2014	As anticipated
	Collecting basic information (secondary data)		
	Permit and other administrations		
2	Preliminary surveys	September 2014	As anticipated
	Gathering information from local people and other authority		
3	Fieldwork	October-November 2014	As anticipated
	vegetation and		
	Habitat data observation Field data collection training		
4	Plant Identification	November 2014	As anticipated
5	Data analyses, report and seed display and information posters	December -January 2014	As anticipated
	Data analysed		
	Power point presentation was presented at the Rufford Conference in Bali Seed display and information posters		

	achieved		
6	Book production	January-March 2015	As anticipated
7	Final report	April 2015	As anticipated

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
Permit arrangement cost	500	420	80	The surplus used to subsidise deficit posts.
Supplies and equipment	1700	1995	-295	
Transportation and lodging while fieldwork	2000	2622	-622	Lodging and transportation costs were more expensive than we expected as it was a bit difficult to reach the site and the lodging in the forest-savanna areas. Mini jeep was use for mobile around back and forth from the national park to the city to buy groceries, supplies, medical service and other needs for the fieldworks.
Living Expenses while fieldwork	1000	786	214	On other hand, food expenses while fieldwork was less expensive that we expected as we bring the raw materials and cook for ourselves. The surplus used to subsidise deficit post.
Research assistance and field guide	300	239	61	The surplus used to subsidise deficit posts.
Book Production	1000	1000	0	
Establishment of seed and herbarium display	1000	419	581	The surplus used to subsidise deficit posts.
Total	£ 7500	£ 7481		

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

Next steps are, as mentioned previously is to work to characterise other savannahs in Indonesia especially in the eastern part of the archipelago. We also need to categorise which savannahs in Indonesia are man-made, naturally, or disturbance-derived origin. This data can be used to inform whether there has been a shift in trend of vegetation in Indonesia, and with special emphasis of conserving the natural of origin, savannah ecosystem as unique ecosystem.

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, the RSGF logo was used in every presentation made for presentation with authorities and in scientific seminar, and training. The logo was also used for publication in the form of book and poster, standing banner.

11. Any other comments?

Savannahs have developed under the frequent stress of seasonal water deficits, periodic herbivory and the recurrence of dry season fire. A knowledge of the patterns and characteristics of savannah plants is therefore critical. This study improve our understanding of the vegetation patterns and dynamics of savannah ecosystem in Indonesia. Positioning Indonesia in the world's savannah literature may not be trivial however as the building blocks are yet to be established. Therefore, this study is significant as fundamental building blocks for subsequent studies on Indonesian savannahs.