

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	Claudia María Monzón Alvarado
Project title	Fire landscapes in Calakmul, Mexico: examining the link between institutions and escaped fires
RSG reference	10918-1
Reporting period	June 2012-June 2013
Amount of grant	£5640
Your email address	cmonzon@ufl.edu
Date of this report	15 June 2013

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
Mapping the occurrence of forest fires at a landscape level		X		I was able to map fire occurrence with polygons that I got from the Mexican Forest Agency (CONAFOR). I did not use remote sensing as initially planned.
Mapping fire management programmes		X		I was able to obtain the information about fire management programmes for two institutions. I am still missing the information from one.
Examine motivations for preventing forest fires among farmers			X	I achieve this through interviews and field observation of agricultural burns
Examine common knowledge about formal and informal rules, monitoring and sanctioning systems associated with fire management			X	I have finished data collection through interviews and focus groups. Although I have preliminary results, I still need to do more in-depth analysis.
Examine how the rules for fire management are interpreted, transformed or resisted locally			X	I have finished data collection through interviews and focus groups. Although I have preliminary results, I still need to do more in-depth analysis.
Capacity building	X			I did not organise formal sessions for capacity building. However, I have actively shared the outcomes of the research with authorities at different levels through meetings and focus groups.

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

Mapping fires: After examining the imagery available to map forest fires, I realised that the spatial resolution of the available ones is not fine enough to identify the small agricultural burns or the low intensity fires that take place in the region. The high temporal resolution imagery available (MODIS) does not allow the identification of small scale agricultural burns. Luckily, I was able to identify the forest affected by fires from the polygons drawn by the Mexican forest agency. This information is relevant for this project but also for future research in mapping forest fires in the tropics.

Capacity building: I was not able to organise formal training sessions as initially proposed. However, due to the applicability of research findings in adapting fire management policy, I organised meetings with authorities at different levels of governance to share research results with them and

get feedback. Fortunately, there is a proposition to modify current burn law and I am making efforts to participate in this process as actively as allowed.

I had proposed to evaluate the fire severity and signals of regeneration after wildfires. However, 2012, the year I was in the field, was very humid and there were no forest fires registered in the region of study. Considering this limitation, I decided to focus more in the social aspects of fire management.

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

- I focused in one institution for fire management, the burn calendar, to examine how this institution is perceived at different levels of governance. Through interviews and participant observation of agricultural burns, I found that it is very difficult for a farmer to comply with this regulation that specifies the time and date to burn. The barriers to follow the calendar are associated with the local climate variability.
 - Diurnal variation: Interviews with farmers and climate data records indicate that although the burn law specifies that burns should be done in the morning (4-11 am), moist does not allow fire to spread. Farmers unlawfully burn in the evening when relative humidity is lower, but wind speed is higher, which increases the chances of uncontrolled fires.
 - Seasonal variation: the burn law specifies a period in which agricultural burns are allowed. However, burning probabilities are alike outside the official period, which explains why some farmers do not comply with the regulation.
 - Landscape variation: the official period to burn is adequate for every station when considering average climatic records. However, in extreme years, when rainfall comes earlier or late in the season, the burn calendar is not appropriate.
- I examined the shared perceptions of how should fire management policy evolve. Through Q-methods I interviewed 25 stakeholders at different levels of governance to assess what is the problem with forest fires and the use of agricultural burns; what are the challenges in governance and the potential alternatives.
- I did two specific activities aiming at bridging research and policy design
 - Sharing project results with local authorities and government agents to initiate a dialogue for the design of more adequate and flexible policies. Specifically take advantage of the fact that there is an opportunity to adapt the law for burning and that this research has produced results that can feed into this process.
 - Publishing a paper entitled “Fire management and climate variability: challenges in designing environmental regulations” to be published in the Journal of Land Use Policy.

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

Local communities are in the midst of meeting subsistence objectives, climate change and environmental regulations. They have to comply with regulations that are not always possible to follow. It is important to document the difficulties faced at the local level using different qualitative and quantitative approaches. Through an active effort to share these issues with policy makers, they

can use this information to create more legitimate and salient regulations. The ultimate outcome of this project would be that the findings are used in the adaptation of fire management policy. Nevertheless this is a long term objective.

5. Are there any plans to continue this work?

Absolutely, this is the first section of a long term project/research. Now that there is more evidence of the mismatches between policy and local socio-ecological conditions, I propose to address the issue of natural resources governance under the identified climatic variation. To design policy that considers daily, annual and landscape variation I will present the outcomes of Q-methods in which it is possible to identify the common beliefs or shared perception among the whole array of stakeholders, from local users to federal enforcers and policy designers. Afterwards, I will open-up spaces for discussing alternate ways of managing fire considering uncertainties such as climate variability through a participatory toll called scenario planning.

I am particularly interested in working in this region for my dissertation and after I graduate. My motivation is to participate in research that helps bridging the gap between science and policy. Concretely, I would like to link the topic of fire management with the dialogue of carbon emissions and global environmental change.

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

I have and will continue to share the results of this research in meetings with government and non-government authorities at different levels of jurisdiction. This will be possible to the extent that the authorities allow me to participate in their planning processes. Fortunately, over nearly five years I have cultivated good relations with various stakeholders. Moreover, I will present these research findings in academic journals and conferences.

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

The RSG was used over 1 year. This corresponds to half of the length of the anticipated life of the project.

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
Equipment - long zoom camera to capture fire effects in the landscape	255	292	37	
Equipment - GPS with good reception under dense canopy cover	245	228	-17	
Equipment - Office supplies: paper, ink, markers, folder, course packs, certificates	300	360	60	additional materials were needed for workshops
Equipment - Posters, pamphlets, maps and documents to share outcomes	300	200	-100	
Subsistence salaries - two persons hired	300	400	100	salaries more expensive

in 20 workshops to assist with logistics and data collection				than expected
Subsistence salaries - transcription of 20 workshop records (11 pounds each)	220	650	430	more transcriptions, more expensive than expected.
Subsistence salaries - two persons hired for 30 days to assist with field measurements	440	0	-440	
Food - 33 services of snacks and beverages (25 pounds each) provided in the 20 workshops, 3-day courses and meetings for sharing outcomes	800	650	-150	
Lodging - 60 nights in Calakmul, Mexico (17 pounds/night) for lodging during workshops (25 nights), short courses (5 nights) and field work (30 nights)	1020	690	-330	fewer nights in Calakmul than expected
Lodging and food - 10 months in Campeche, Mexico (352 pounds/month) and 4 months in Gainesville Fl (650 pounds/month)	0	0	0	
Transportation - two roundtrip tickets from Gainesville, Florida to Campeche, Mexico	530	625	95	increase in transportation costs
Transportation - 35 trips from Campeche to Calakmul (650 km roundtrip at 30 pounds each) for field measurements, meetings and workshops	1050	1365	315	increase in gasoline cost
Total	5460	5460	0	

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

Analyse Q sorts to identify what are the shared beliefs among the stakeholders. In other words, to what extent does a fire user has common beliefs with other users and also compared with local, state or federal authority. Identifying common ground is key to collaboration efforts among different interested party.

Keep cultivating good relationship by sharing results with policy makers. Findings should be useful to adapt regulations or create more applicable ones. By keeping good communication, it will be possible to keep addressing questions that are relevant for policy and management of fire.

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?

During the last year I used RSGF logo when presenting my research in different academic forums, as well as in meetings with Mexican authorities. I participated in the following forums:

Monzón-Alvarado, C. (2013). Regulating natural resources under climate variability: Fire management in Calakmul, Mexico. Presentation given at the 8th Annual Conference of the Social Sciences "Envisioning Common Ground", Gainesville, Florida

Monzón-Alvarado, C. (2013). Fire landscapes in Calakmul, Mexico: Integrating multiple actors in forest management. Guest lecture, Global Forests, School of Forest Resources and Conservation, University of Florida, Gainesville, FL.

I mentioned RSGF support to this project in the research paper that is going to be published in the Journal of Land Use Policy. I recommended RSGF to at least 4 persons

11. Any other comments?

I am very grateful with Rufford for having supported this research project.

