

## 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. 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. 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**

Grant Recipient Details	
<b>Your name</b>	Emmanuel Opoku Acheampong
<b>Project title</b>	Impact of road infrastructure on livelihoods and land use in rural Ghana
<b>RSG reference</b>	16890-1
<b>Reporting period</b>	February 2015 – February 2016
<b>Amount of grant</b>	£5,000
<b>Your email address</b>	<a href="mailto:emmanuel.acheampong@my.jcu.edu.au">emmanuel.acheampong@my.jcu.edu.au</a> , <a href="mailto:ea.opoku@yahoo.com">ea.opoku@yahoo.com</a>
<b>Date of this report</b>	23/02/2016

**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
Assess the degree to which improved roads influence farm size and market participation of different typologies of farmers			yes	This objective is a subset of the second objective of the original project <i>"Assess the extent to which improved roads affect farm specialisation, farm size, and land cover change"</i>
Identify the factors that contribute to forest cover change in rural Ghana			yes	This objective is a subset of the second objective of the original project <i>"Assess the extent to which improved roads affect farm specialisation, farm size, and land cover change"</i>
Examine the extent of forest cover change along roads in rural Ghana			yes	This objective is a subset of the second objective of the original project <i>"Assess the extent to which improved roads affect farm specialisation, farm size, and land cover change"</i>
Measure the degree to which improved roads influence different typologies of farmers to adopt non-farm economic activities		yes		To be fully achieved in the second phase of the project, towards the completion of a PhD programme
Measure the influence of roads on incomes from farm and non-farm economic activities among the various types of farmers.		yes		To be fully achieved in the second phase of the project, towards the completion of a PhD programme

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

There were basically no difficulties aside from the rain that prevented me from visiting some communities at scheduled times and the sudden increases in transport fares and other prices which were bound to happen as a result of the increase in the dollar rate at the time of the survey. But these challenges did not affect the output of the project.

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

- Improved roads have the highest probability to influence farmers to commercialise their farm produce. The average proportion of produce sold by an improved road farmer is 84% while that of a hinterland farmer is 31%. When cocoa farmers are excluded, 37.4% of the improved road farmers sell all their farm produce while only one hinterland farmer (0.7%) sell all his farm produce. The hinterland farmers grow mainly for consumption. With the improved road farmers have access to daily markets along the road within their communities and weekly central markets with the farthest distance being 10 km and vehicles moving at averagely 60 km/h. The hinterland farmers on the other hand have access to only weekly markets which is about 29 km from the farming areas with poor road condition. Vehicles move at approximately 34 km/h due to the nature of the road (see Figure 1 below). Once a farmer misses the last vehicle, they have to wait till the next market day, a situation that does not favor perishable farm produce. This discourages the farmers from practising commercial agriculture. Agriculture in the hinterlands could be transformed through improved roads. Details on the influence of roads on farming in rural Ghana are stipulated in a forthcoming paper.



Figure 1: Improved and unimproved roads in rural Ghana

Source: Authors' field survey, June 2015

- Forest, agriculture, and settlements constituted 31.3%, 56.9%, and 1.5% respectively of the total land in the study area as at 1986. Forest, agriculture, and settlements constituted 20.1%, 62.5%, and 14.2% respectively as at the year 2015. Net forest cover loss in the study area from 1986 to 2015 was 33.7% with annual deforestation rate of 1.2%. From 1986 to 2015, as much as 52.8% of forest in the study area was converted to other land uses. Agricultural expansion resulted in the deforestation of 94.9% of the forest cover lost between 1986 and 2002 while settlements expansion and other minor factors caused the remaining deforestation. Between 2002 and 2015, agricultural expansion caused 96.9% of the deforestation in the study area. Agriculture and settlements expansion were the main

causes of deforestation in the study area. Details of the methods used to derive the deforestation trend in the study area are presented in a forthcoming manuscript.

- More than 50% deforestation occurred along both the improved and unimproved roads over the 29-year period (1986-2015). Within 10 km from the roads, deforestation was higher along the unimproved road than the improved road, especially between 2002 and 2015 (62.8% for the unimproved road and 7.5% for the improved road). While along the improved road experienced a decline at a decreasing rate overtime, along the unimproved road experienced deforestation at an increasing rate overtime. This is because agricultural expansion was 63% higher along the unimproved road than the improved road for the 29 years (1986-2015). The reasons why agriculture has been expanding in the hinterlands yet the farmers do not commercialise their food crops are explained in the forthcoming paper.

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

Local farmers from 10 communities were interviewed about their farming practices, their land tenure status, marketing of their farm produce, the challenges they face in their farming activities etc. I engaged the local farmers with foresters on issues concerning farming and clearing of forest, and farming and growing of trees. The local farmers complained that land is scarce and the only way they can expand their farms is to clear some forests. According to the community members, since their settlements were there and surrounded by the forests before some portions of the forests were demarcated as reserves, they do not see why they cannot clear some portions to expand their farms, although they know the benefits they get from the forests. According to some of the community members, they are willing to grow trees to regenerate the degraded portions of the forests if the foresters will apportion to them (the willing farmers) some degraded lands to farm on. According to the farmers, they can at least feed on their new lands for about 5 years before they return to their old farmlands at which time it has already regained its fertility. This is an idea that the forest manager in the study area commended.

Although, the local communities have not benefited yet, the next phase of the project that will involve the tree crop planting will benefit the farmers, gradually regenerate the forest, and help enrich the fertility of the old farm plots since the farmers will be encouraged to allow the previous farmlands to fallow while feeding on the new degraded lands.

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

Yes, the second phase of the project will commence soon. I have already discussed with the forest manager who is ready to lease out degraded areas to farmers to grow trees amidst their food crops. Two forest guards/rangers have also been given to assist me in moving around the communities, the farming areas, and the degraded sites that will be used for the voluntary tree planting project.

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

Two research articles have already been written, waiting to be published after my supervisors have finished reviewing them. The Rufford Small Grants Foundation will be cited as the funding body with the logo displayed on the papers if allowed. This will add to the body of knowledge concerning the

influence of roads on farming systems and forest cover change in Ghana. It will also help publicise the contribution of RSGF in development projects and research in Ghana.

The complete document on the project will be made available online and at the Rufford Small Grants Foundation's website (if possible) so that anyone who is interested in the findings of the research as well as the community development projects associated with it can have access to it. Hard copies of the document will also be given to the Forest Service Division and the Agricultural Development Unit in the study area for reference and future development guidance purposes.

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

The Rufford Small Grant was used within 8 months and the first phase of the project including its documentation was completed within 1 year. The grant's usage time frame was therefore in line with the project's length.

**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	Actual Amount	Budgeted Amount	Difference	Comments
<b>Transportation (Subtotal)</b>	<b>3869.22</b>	<b>2331</b>	<b>1538.22</b>	Increase in transport fares due to increase in the dollar value at the time of the survey. Also, since the rural areas were not having good roads, vehicles could not go at all times. The cheapest and convenient means in terms of time and moving around various areas was to hire motorbikes. The riders were the forest guards/rangers who were trained and had motor riding license.
Round trip to Ghana	1845			
Accra-Kumasi	39.244			
Kumasi-Accra (round trip)	58.866			
Kumasi-Asankragua (round trip, 3 persons)	41.2065			
Trip to study communities with 3 motorbikes	147.165			
Kumasi-Asankragua, 3 persons	20.603			
10 days interview trip	1177.32			
2 days road inventory/stock taking	235.464			
Asankragua-Kumasi, 3 persons	20.603			
5 round trips to study communities	88.299			
3 round trips: Kumasi-Offinso/Techiman	52.9794			
10 round trips for interview	50.16			
1 day road inventory/ stock taking	33.44			
Kumasi-Accra (round trip)	58.866			
<b>Accommodation &amp; food (subtotal)</b>	<b>820.86</b>	<b>942</b>	<b>121.14</b>	The working days were reduced but it did not

<b>Labour cost for field work (subtotal)</b>	<b>1203.84</b>	<b>1413</b>	<b>209.16</b>	affect the output
<b>Other items (subtotal)</b>	<b>766.13</b>	<b>870</b>	<b>103.87</b>	3 instead of 4 GPS devices were acquired. This was done to reduce cost.
3 Garmin Etrex 20 GPS device	326.367			
AA energizer batteries (80 pairs)	72			
First Aid kit (2 * £54.3945)	109			
Stationary	27			
Maps (Shapefiles of reserves, communities and roads in Ghana)	83.6			
Questionnaire printing	98			
Communication (phone vouchers)	50.16			
<b>TOTAL</b>	<b>6660.04</b>	<b>5555</b>	<b>1105.04</b>	Increase in prices due to the rise of the dollar rate.

Exchange rate as at 10/03/2015: GHS1=€0.1672.

Detail income and expenditure account including dates and specific activities is outlined in the accompanying excel file.

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

The second phase of the project will commence soon. This is the phase where the communities will be involved fully in voluntary afforestation projects through which their livelihoods will also improve. This project could be seen as a farmer-based afforestation project. This will be carried out within 1 year at a particular place, then it will be replicated at the next degraded area in the following year and so on. However, for each initiation, it will take about 5 years for its impacts to be realised, that is, the maturity of the trees. Below is a brief summary of the steps.

1. I, the forest manager, and the two forest rangers will survey the degraded forest areas within the study region and map the extent. This has already been discussed and agreed upon.
2. We will then visit the communities near the degraded sections of the forests and organise a focus group discussion with the farmers, identify those who will be willing to undertake the tree planting project, and document their details.
3. We will then secure a plot of land and nurse the trees the farmers will grow based on the number of farmers who are interested and the size of land that will be apportioned to each farmer for the first year.
4. The degraded land that will be apportioned among the farmers will be cleared at no cost to the farmers. This will motivate the farmers to engage themselves fully in the project.
5. After the seeds (or sticks) have germinated, the cleared land will be apportioned among the farmers and the seedlings distributed. Accurate records will be taken. The types of crops the farmers can grow will be advised by the forest manger and an Agriculturalist.

I and the foresters have formed a team to run and sustain the continuity of this project to demonstrate the contribution of Rufford Small Grant Foundation in farmers' livelihoods improvement and forest regeneration in rural Ghana.

**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 has been placed in the thesis written which was financed by RSGF. The logo will also be placed in the two manuscripts written for publication. The field survey was carried out as a RSGF funded project and all the institutions I met were aware of this. The Forest Service Division, the District Agricultural Development Unit, and the communities in the study area had confidence in the continuity and sustainability of the next phases of the project because they know RSGF is funding the project.

**11. Any other comments?**

I will like to express my sincere gratitude to RSGF for supporting this project that will have a long term benefits to communities. I strongly believe that this project will continue and be sustained for several years. Through the support of RSGF, the unit/team set up will voluntarily work selflessly to ensure that this project is replicated throughout Ghana and possibly beyond. Rural livelihoods improvement through forest regeneration is the main focus of this team.