

The Rufford Foundation

Final Report

Congratulations on the completion of your project that was supported by The Rufford 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	Gilbert Baase Adum
Project title	Scaling up Activities for the Protection of Ghana's Iconic Giant Squeaker Frog (<i>Arthroleptis krokosua</i>) and Co-occurring Endangered Species
RSG reference	19411-D
Reporting period	One year
Amount of grant	£10,000
Your email address	gilbert@savethefrogs.com, adumgilbert@gmail.com
Date of this report	June, 2017

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
Sustain amphibian population monitoring programme				<p>We recorded a total of 23 amphibian species belonging to 11 genera and nine families. This increases the total amphibian checklist for Sui Forest to 28 species, from a previous record of 23. This update includes two 'new' frog species and first time records of the West African brown frog (<i>Aubria subsigillata</i>), Hallowell's sedge frog (<i>Hyperolius concolor</i>), and striped spiny reed frog (<i>Afrixalus dorsalis</i>). For the second consecutive year, we also made another record of the giant squeaker frog (<i>Arthroleptis krokosua</i>), an adult male. This brings the total recorded individuals of the giant squeaker frog to 33 since its original discovery in 2002. This also means 29 individuals are now thought to be surviving, since four are currently preserved by scientists as voucher specimens.</p> <p>As part of the monitoring programme, we also organised field training courses at the Sui and Bobiri Forest Reserves. We took participants through standardised protocols for the survey of amphibians including where to look for frogs; how to capture and handle frogs; what data to collect; and what to do with this data. One of these students, Master Prince Adu-Tutu at the Kwame Nkrumah University of Science and Technology (KNUST), received a scholarship, specifically sponsored by our RSG funds to carry out his undergraduate thesis project. His project has also contributed important data on the impacts of mining on endangered amphibians.</p>
Assess impacts of mining on amphibians				<p>With information provided by hunters and forest rangers, we located a Hill Sanctuary where illegal mining activities seemed to</p>

			<p>be concentrated. Worryingly, these areas including inselbergs are also the preferred habitats for the giant squeaker frog, the endangered ringed river frog <i>Prynobatrachus annulatus</i> and most other resident terrestrial species. We established two 2 ha plots in these areas and another two 2 ha plots in un-mined sites as control. We recorded a total of 43 mine pits, along with their specific site characteristics and geographic coordinates.</p> <p>We identified two causative factors for the drastic impacts of mining on leaf litter dependent frogs. Mining activities have reduced their habitat, both in size and quality. The leaf litter depth has been reduced by nearly two-thirds, average of 94.0 mm in control versus 37.7 mm in mined-out areas. The depletion of leaf litter means loss of habitat for breeding, predator escape and protection from desiccation for associated frogs. The second causative factor is the nature of mine pits, majority were both extremely wide and deep, making it challenging for frogs when they get trapped. The widest pits (12%) were 301-400cm and the deepest (3%) 400-500cm. In addition, majority (83%) of pits were 201-300cm wide and half of them 101-200cm deep. We found one white-lipped frog (<i>Amnirana albolabris</i>) and nine western clawed frogs (<i>Xenopus tropicalis</i>) trapped in two pits. We successfully rescued the white-lipped frog but failed to rescue the western clawed frogs, which were in an inundated pit 200 cm deep. All other pits up to or deeper than 200 cm collected water all year round, which we suspect posed greater danger of trapping and "drowning" to leaf litter frogs such as the giant squeaker frog. We produced distribution maps of mined pits against threatened amphibian species in the Sui River Forest Reserve (Sui Forest).</p>
<p>Raise seedlings and reclaim mined-out areas</p>			<p>We organised refresher courses for three nursery attendants on the use of waste drinking sachets and organic matter to</p>

			<p>raise seedlings. With their help, we raised +2,000 seedlings of Limba (<i>Terminalia superba</i>), African mahogany (<i>Khaya anthotheca</i>) and kapok (<i>Ceiba pentandra</i>) which we used for the land reclamation exercise.</p> <p>We studied the geology of the place and the surrounding natural environment. Using residual top soil from logged areas with similar geological features, we filled the pits to elevations of surrounding areas. We then replanted these areas with the native tree seedlings from our community nurseries. We planted seedlings to connect with previously restored habitats of the giant squeaker frog.</p>
Intensify awareness campaigns			<p>Together with students from our KNUST Chapter and conservation scientists from the USA, we gave live broadcasts on KNUST Focus FM and reached out to at least 1,000 people within the campus and its environs. We educated the public on the plight of endangered amphibians, especially the giant squeaker frog and how to save them. We also initiated junior high and lower primary outreaches to engage and mentor the younger generation. Altogether, four schools were visited and an estimated 500 students between the ages of 10-15 years were educated on amphibian biology and conservation. We are mentoring these kids to serve as environmental stewards within their local communities. A German film crew from Deutsche Welle (DW-TV) travelled with our team to Yawkrom and the Sui Forest to document our incredible work towards saving amphibians, particularly the giant squeaker frog. This has been broadcast to over 60 million audience size of DW-TV and also hosted online on YouTube.</p> <p>We also launched an online educational project dubbed, the Ghana Online Amphibian Literacy (GOAL) Project. Once a month, an article on a selected frog's ecology, biology, threats and conservation needs was blogged online</p>

			<p>and on SAVE THE FROGS! Ghana's various social media pages. The GOAL Project helped us to increase interactions on social media especially amongst the youth and internet users. Within 3 months of its inception, we have reached up to 8,000 people and awarded six participants with customised t-shirts and air time.</p>
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

Prior to the implementation of the land reclamation activities, we faced opposition from a handful of illegal miners within the community who were in favour of continuous mineral exploration. Together with the Forestry Commission of Ghana and community chiefs and elders, we held dialogues with these factions. Thankfully, a consensus was reached by all parties involved to see to the halt of all mining activities. This now paves way for land reclamation and dialogue for a more sustainable and environmentally friendly livelihood alternative in the shortest possible time for affected miners.

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

Removal of threats to amphibians, wildlife and humans: Human deaths as a result of abandoned mine pits is on the ascendancy in Ghana. The removal of these pits will not only prevent the deaths of wild animals but also humans especially our field workers, forest guards and hunters whose activities are sometimes conducted under low visibility. Reclaiming abandoned mine pits and replanting with native trees also has the potential of increasing species' habitat size and establishing vegetation corridors within their ranges. The tree planting exercise also has the potential of reducing the exposure of threatened amphibian species to the full impacts of the regions deteriorating climatic changes.

Increase in awareness using innovative tools: Our radio and video broadcast programmes reached at least 5,000 local people who now have convincing reasons to save amphibians. The DW-TV broadcast and our GOAL project has not only helped us to reach thousands of global audience but also increased interest in amphibian conservation among Ghanaians especially the youth. A lot of students have shown interest in amphibian research and conservation.

Traditional Chief for Frogs and Environment: For his impressive accomplishments in protecting Sui Forest, and improving local livelihoods, the traditional rulers within the project site honoured the project leader, Gilbert Adum and his collaborator, Dr Kerry Kriger of US-based SAVE THE FROGS! with chieftaincy titles and roles. This historical honour, the first of its kind in biodiversity conservation perhaps across Africa, implies that Gilbert now rules together with the custodians of the reserve, the traditional council of Sefwiman. Working under the stool name, Nana Kwabena Bosompem I,

Gilbert now represents the community on matters concerning frogs, and the environment. This event, which also coincided with the 2nd Anniversary of Save The Giant Squeaker Frog Day, was covered and aired to an estimated 1 million audience by DW-TV.

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

Local people, traditional leaders, school children and teachers formed an integral part of this project. They were involved in the nursery establishment, seedling planting exercises and filling of mine pits. Through our outreach programmes, school children were also mentored to serve as environmental stewards within their local communities.

5. Are there any plans to continue this work?

Yes. In consultations with the Sefwi-Wiawso Traditional Council and local opinion leaders, there is urgent need for the creation of a sanctuary, which will be managed as a Community Resource Management Area (CREMA). CREMA is a newly developed legal framework for community based management of natural resources. It provides the conditions and rules that enable communities to really benefit economically from sustainable natural resource use and as such promotes community rights and local ownership. This way, a community with a CREMA is motivated to protect a natural resource since economic benefits flow directly to them. We plan to seek funds for a feasibility study towards the creation of this dream sanctuary.

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

While we will continue to share our findings about ways to protect the Giant Squeaker Frog and co-occurring wildlife, we have already published several articles, blogs and press releases. The list is as follows:

Press Releases and Articles

Gyamfi K. A. (2016) Ghanaian wins grant to save endangered frogs. Available at pulse.com.gh/innovation/illegal-mining-ghanaian-wins-grant-to-save-endangered-frogs-id5175580.html. Accessed on 03/04/17.

Hüttmann K. (2016) Mr Adum, How Do You Save Frogs? Available at www.humboldt-foundation.de/web/Mr-Adum-how-do-you-save-frogs.html. Accessed on 03/04/17.

Kaledzi I. (2016) Why Ghanaian frogs need a hero. Available at www.dw.com/en/why-ghanaian-frogs-need-a-hero/a-19452052. Accessed on 03/04/17.

Nhyira A. (2016) Ghanaian wins grant to save endangered frogs. Available at rakghana.com/Ghanaian-wins-grant-save-endangered-frogs. Accessed on 03/04/17.

Owusu-Gyamfi S. (2016) Ghana gets its first Traditional Chief for Frogs and the Environment. Available at www.amphibians.org/news/ghana-traditional-chief-for-frogs-and-the-environment. Accessed on 03/04/17.

Owusu-Gyamfi S. (2016) Gilbert Adum of STF! Ghana Wins \$14,700 Award to Tackle Illegal Mining. Available at www.savethefrogs2.com/countries/ghana/atewa-hills/gilbert-adum-award-illegal-mining. Accessed on 03/04/2017.

Owusu-Gyamfi S. (2016) Ghanaian wins UK grant award to tackle illegal mining. Available at www.amphibians.org/news/ghana-illegal-mining. Accessed on 03/04/17.

Xlive M. (2016) Ghanaian wins grant to save endangered frogs. Available at xliveafrica.com/2016/11/03/ghanaian-wins-grant-to-save-endangered-frogs. Accessed on 03/04/17.

GOAL Project Articles

Asamoah Bofo F. and Antwi-Baffour E. (2017) Meet Ghana's Beloved "Lady": The Night Spirit Frog. Available at www.savethefrogs2.com/countries/ghana/amphibians-of-ghana/spirit-night-frog. Accessed on 03/04/17.

Owusu-Gyamfi S. (2016) Why The Giant Squeaker Frog Is "Giant." Available at www.savethefrogs2.com/countries/ghana/amphibians-of-ghana/goal-squeakers. Accessed on 03/04/17.

SAVE THE FROGS! Ghana Publicity team (2016) Ghana Online Amphibian Literacy Project-GOAL Project. Available at www.amphibians.org/news/goal-project. Accessed on 03/04/17.

Social Media Posts

We regularly put and updated information on our social media web-pages:
Facebook: www.facebook.com/SAVETHEFROGS.Gh/

Twitter: @GhanaFrogs

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

We conducted the project within its proposed 1 year period. However, we needed an additional month for data analysis and reporting.

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
Daily Subsistence Allowance (DSA) for 5-team members	2,750	2,750	0	Team members' subsistence allowance was maintained regardless of inflation.
Stipend: 3 local nursery attendants	900	900	0	No changes made.
Accommodation for 3 non-resident team members	300	396	96	Team members spent an extra 2 days in the field. Lodging cost was also reviewed from £5 to £6/night.
Consultancy fee: soil scientist and landscaping expert	600	700	100	There was an extra charge of £100 by the two consultants due to inflation.
Soil sample analysis	350	400	50	There was a slight increase in analysis charge.
Transportation of tailings	500	0	0	Analysis of liquid in the pits came out low for heavy metal contamination and other toxins. Thus, there was no need to transport this liquid.
Food and water for volunteers during habitat restoration	800	840	40	We spent an extra £0.2 on each of the 20 volunteers due to increases in commodities.
Fuel for project vehicle	1,250	2,132	882	We spent an extra 2 days conducting activities. Additionally, there was fuel increase by approximately £1.
Lunch and snacks at workshops	480	480	0	Although there was an increase, we had support from other organisations.
Workshop booklets	175	175	0	Although there was an increase, we had the support from other organisations.
Radio broadcasts	425	425	0	Cost of airtime/broadcast remained the same.
Project materials and conservation education	1,000	1,000	0	Although there was an increase, we had the support from other organisations.
Supplies: 5,000 sachet	490	390	100	Bulk purchases of discarded bags

water bags and 30kg of planting seeds				and seeds attracted a reduction.
TOTAL	10,020	10,588		

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

To ensure the long-term survival of the giant squeaker frog and the region's amphibian species, we think the most important next steps should include:

1. Improve our knowledge of the distribution of amphibian species in the Sui Forest; SAVE THE FROGS! Ghana is the only organization that has conducted research in the Sui Forest area, and we are still finding new amphibian populations.
2. Survey landowners and community leaders to determine current land ownership, historical land prices and leasing opportunities. Land in the area is not available for sale, but is available for long-term lease.
3. Create a CREMA covering critical habitat sites, which ultimately will also promote community rights and local ownership.
4. Sustain education efforts, aimed at creating stewards for frogs and the environment.

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

Yes. We acknowledged Rufford's support on our website (this is still there to date); in all our presentations; blogs and Facebook. In addition, the Rufford logo was featured on all materials (t-shirts, posters and flyers) produced in relation to the project.

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

12. Any other comments?

We are grateful to The Rufford Foundation for their unflinching support in helping to save the giant squeaker frog from imminent extinction. We also appreciate the Whitley Fund for Nature and SAVE THE FROGS! US for co-funding this project. Our sincere gratitude also goes to Ms Mabel Gundlach and Deutsche Welle TV for the documentary 'Frog researcher Gilbert Adum Global 3000.' Also, to the Forestry Commission of Ghana and its staff especially Mr Raphael Yeboah, Mr Hugh Brown, Dr. Kwakye Ameyaw, and Mr Benjamin Torgbor for their support. Finally, to all the 27 local communities surrounding the Sui Forest especially the natives and Paramount Chief of Yawkrom Traditional Area, Nana Agyeman Bosompem I. Finally, we are grateful to our project advisors: Dr Markus Eichhorn (University of Nottingham), PD Dr Mark-Oliver Roedel (Naturkunde Museum, Berlin), Christian Atsu Fumey-Nassah (Ghana Forestry Commission-RMSC), Dr Maoliang Bu (Nanjing University, China) and Dr Kerry Kriger (SAVE THE FROGS! US).