

Final Evaluation Report

Your Details	
Full Name	Prince Pascal Agro
Project Title	Up-scaling efforts to safeguard populations of two Vulnerable Pangolin species (<i>Phataginus tricuspis</i> and <i>Phataginus tetradactyla</i>) in the Asukese Forest Reserve
Application ID	30825-2
Grant Amount	6000 Pounds
Email Address	agropascal1981@gmail.com
Date of this Report	2 nd March 2022

1. 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
Conduct surveys to cover new areas and get a greater picture of the status of pangolins in the Asukese Forest.				Using 15 camera traps, we surveyed three forest blocks in the Asukese FR over a 4- month period. Five camera traps were strategically (randomly) deployed at each site. Block one covered areas being exploited for timber in the year 2020 whereas block two covered areas which had been previously exploited for timber more than 20 years ago and block three covered areas of the Asukese forest which had not been previously exploited for timber. The camera traps were deployed relying on the local ecological knowledge of our trained converts (former hunters). We hypothesised that pangolin observations/populations (presence and/or absence) and distribution across the three selected forest blocks with different management regimes would significantly vary.
Revisit earlier surveyed areas to monitor and assess changes in pangolin population and hunting trends by using pangolin encounter rates and illegal activity (empty cartridges) encounter rates as abundance indices.				All previously surveyed compartments during our first Rufford Grant (2018 – 2019) were revisited and monitored for 3 months (periodic visits). Fewer numbers of empty cartridges, wire snares, and local traps were observed. Similarly, the team did not encounter any hunter during our field visits, but a local hunting group numbering three was captured (recorded) by one of our camera traps. This observation from our footage was clear evidence that more needed to be done in terms of community education, awareness-raising, and sensitisation to curb the hunting menace.
Compare threat encounter rates to previous data (i.e., empty cartridges recorded) to				Our fieldwork revealed that hunting as a threat had reduced based on the fewer numbers of empty cartridges (45) recorded throughout our fieldwork.

<p>establish if hunting has reduced following our education program.</p>			<p>Additionally, our community interactions also revealed that people were more aware, vigilant, and willing to report cases of pangolins that have been captured by individuals for our community volunteers to rescue them. As a result, we were able to rescue 10 white-bellied pangolins which were all successfully reintroduced into the Asukese FR by the project team.</p>
<p>To involve local communities, Wildlife Division, Forest Service Division, and District Assemblies in the development of a road map for conserving pangolins and other wildlife species in Asukese Forest.</p>			<p>Due to the Covid-19 pandemic, there were restrictions on public gatherings in enclosed locations during most parts of our project hence we could not carry out this part of the project. We also lacked the technical capacity to engage with the stakeholders through virtual platforms to initiate the idea. We hope to push this idea to reality in our future projects. We believe that facilitating the process to enable local communities to establish their conservation bylaws at the local level could be a guaranteed way to gain commitment and community support for wildlife conservation and the survival of pangolin species in the area.</p>
<p>To provide an opportunity for school kids, teachers, and community members to learn about the pangolin habitat, the importance of forests, and what people can do to help protect pangolins.</p>			<p>More than 300 school kids and 1500 community members from four local communities around Asukese Forest Reserve benefited from our school's/community interactive programmes. The project team was able to distribute more than 200 conservation-related books to some selected primary schools. We also engaged the school kids (aged between 6-16 years) in reading sessions (periodic activity) with the books titled "The Boy and the Pangolin" – Authored by Catherine Barr and "Thick, Tall, Tree" authored by Chris Dorcas Annan. We also used audio-visual materials (i.e., pangolin and wildlife-related videos) to communicate and educate our school kids on the need to conserve forest habitats and save pangolins.</p>
<p>To sensitize, raise awareness, and increase</p>			<p>During the 2021 World Pangolin Day which coincided with the</p>

<p>inhabitants' local ecological knowledge on the current plight, habitat threats, and conservation needs of pangolins in Asukese Forest.</p>		<p>commencement of our Second Rufford project, the project team was hosted at the studios of Greena FM (95.9 MHz) and two local information platforms where we interacted and enlightened listeners on the current global threats and need to save the remaining populations of pangolins in Ghana. However, our community sensitisation at the local level could not go as planned due to covid restrictions on public gatherings. We worked more closely with the younger children who were less vulnerable to Covid-19.</p>
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled.

The team did not anticipate the Covid-19 pandemic which eventually delayed the commencement of the project activities for more than 6 months. The team also did not anticipate the restrictions on mass gathering due to the Covid-19 pandemic. The restrictions affected our awareness-raising and sensitisation efforts in terms of numbers. However, the team was able to devise a strategy to overcome the effects. Our project activities were rescheduled concurrently. The team also strategised to spend more hours/days on the field meeting the inhabitants in smaller groups. This however increased our proposed expenditure on daily subsistence allowances (DSAs) and lodging for field staff.

To be able to carry out our planned interactive sessions with our target groups (i.e., school kids and community members) we produced over 500 reusable or washable nose masks which were distributed to our project participants and school children. This step was taken as a measure to prevent the spread of the Covid-19 and to observe safety protocols even though we did not anticipate this as part of our planned activities.

Again, the team did not anticipate the high inflation rate in terms of currency fluctuations (depreciation of the cedis in value against the Pound Sterling) leading to high pricing of goods and services during the project period. To deal with this challenge, the project team was divided into two groups anytime we visited the project areas. Team one was tasked to undertake field surveys and inspection of the camera traps whereas team two conducted the awareness-raising and sensitisation sessions across the schools and community anytime the project team scheduled a field visit. This was done to reduce repeat visits and travel costs to conduct our project activities.

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

- Four Wildlife Conservation Clubs (WCCs) have been inaugurated in four local community schools (Asamang, Yawbrefo, Kramokrom, and Koforidua) near

the Asukese Forest and they are active. At each of the four schools, the project team also provided conservation awareness-raising billboards with the school's name and the Rufford Foundation logo. We also received conservation-related books (about 300 books authored by Catherine Barr, and Chris Dorcas Annan) which we have donated to the four primary schools where the WCCs were formed as well as two public libraries to benefit those outside of our project area. Through our active social media platforms, the project team had the rare opportunity to be invited by the former Australian Ambassador to Ghana and West Africa (H.E. Gregory Andrews) to his private residence. During the meeting, we shared thoughts on the ways to push the agenda to conserve endangered wildlife species like pangolins in Ghana. During the just-ended World Pangolin Day (19th February 2022) we celebrated the Day with the E.P Primary School Children at Amedzofe in the Volta Region. The kids were engaged in a drawing session after which educative materials were presented to 14 school kids who participated.

- It is worthy to note that our goal to increase conservation awareness among the inhabitants in the local communities around Asukese Forest against the hunting and killing of the pangolins is yielding positive results. About 80% of the people now know the ecological importance of pangolins in the ecosystem and are willing to protect their habitats and stop hunting pangolins. During our recent project, there were fewer reported cases of killings and trading in pangolin meat within the catchment communities. A random house-to-house survey conducted revealed that out of the 20 households visited, none had captured or bought pangolin meat since we commenced our awareness campaigns in the area. Reports from our local informants (both pre- and post-assessment) across 10 selected communities visited, also indicated fewer incidences involving the hunting of pangolins before (after our first project) and during the 10-month period of our second RSG project. This was also evident from our field observations where the numbers of empty cartridges recorded during our second Rufford project compared with our first Rufford project showed a significant reduction from over 400 empty cartridges to about 45 new empty cartridges recorded over the 4 months of our revisits. This is an indication that hunters' compliance and inhabitants' awareness of the plight of pangolins in the area has improved. Thus, to affirm that people's ecological knowledge has improved after our first Rufford project and during our recent community education and sensitization activities (second project).
- We are excited to mention that this second Rufford project has been our most successful and encouraging project in terms of the number of individual pangolins (white-bellied) that we were able to rescue from local hunters as well as the number of sightings recorded by our camera traps. Over the project period (11 months) we rescued 10 white-bellied pangolins comprising four males and six females and we safely reintroduced the healthy individuals back into the Asukese Forest Reserve.

We monitored our 15 trap stations over a 4-month period (periodic visits to check and change batteries and SD cards) and recorded some interesting results which we have shared and can be watched via YouTube link

(<https://www.youtube.com/watch?v=CWFw7L-iFD8>). We also recorded footage of white-bellied pangolins (*Phataginus tricuspis*) across all three forest blocks where our camera traps were deployed. The three forest blocks where our camera traps were deployed were more than 20 km distances apart (approximately). Over the period, there were four sightings at Site 1 and three each at Site 2 and 3 from our camera traps. This was evidence that the Asukese Forest was home to a viable population of the endangered, white-bellied pangolin.

4. What do you consider to be the most significant achievement of this work?

5. Briefly describe the involvement of local communities and how they have benefited from the project.

Local communities were involved in all aspects of our second Rufford project right from the onset. Rapport was established with all the focal communities before the start of all activities and where necessary, and traditional community protocols were duly observed.

The local communities have benefited in diverse ways and could be classified into two, knowledge acquisition and material gain. Materially, we supplied Rufford branded t-shirts and reusable nose masks to about 200 school kids (aged between 4 and 16) in all the four schools where WCCs had been formed. We also supplied books to four schools and Rufford branded t-shirts to some of the project participants, local leaders, teachers, and heads of the schools. This identifies them and signifies their commitment as agents of change through our community campaigns.

In terms of knowledge, we were able to train two new local field guides. They were recruited to provide traditional ecological knowledge (TEK) services e.g., tracking, trapping site identification, and elucidating historical ecological trends in the Asukese forest. This brings to six the number of local hunters we have converted, built their capacity, and subsequently employed as field assistants - laymen lacking a formal conservation background yet trained to perform specific field tasks – in the project areas to carry out field monitoring, inspect camera traps, and report pangolin related issues from the various communities to the project team, especially after the project period. Last but not the least, four community primary schools have benefited through the installation of conservation educational billboards in their communities. The billboards now serve as a knowledge platform for the local community members as well as anyone who visits the area to protect the habitats of pangolins and avoid hunting pangolin species.

6. Are there any plans to continue this work?

Yes, plans are far advanced to continue this project. The team has plans to carry out a habitat rehabilitation and restoration programme to restore some of the degraded sections of the Asukese FR. This planting programme will help restore the degraded habitats due to timber extraction and extend the habitat corridors and home range of the species. We will support the participating communities to raise indigenous tree

seedlings associated with pangolin habitats. We intend to raise about 8000 seedlings (i.e., 2000 seedlings per community in four project communities). The seedlings will be raised by selected community members mainly women. Women's involvement is key as they could play a vital role in protecting pangolins. This is because women are generally caring and since they are choosy in their meal composition in the local settings, they could be a key to reducing consumption of pangolin meat at the homes.

We also plan to train our six converted hunters now conservationists in alternative livelihoods (preferably beekeeping and rabbit keeping or livestock) to help them meet some of their income needs. Finally, we also plan to carry out a pangolin rescue mission which will help us to save live pangolins which will be sent to the Onepene Endangered Species Refuge in the Volta region for release into the wild. The Onepene Endangered Species Refuge is a community-managed forest currently being co-managed with Herp-Ghana a conservation NGO that will provide the needed protection and conditions to ensure the survival of the pangolins that will be rescued.

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

First, we plan to publish the outcome of our project with the local community members through visual presentations. Francis Asamoah who is our environmental photographer and video editor has pieced our field images from our previous and current project together which will be shown to the school children and community members in all the project communities. Secondly, we have plans to publish our findings in high impact peer-reviewed journals to contribute knowledge in academia.

We are happy to announce that we as part of fulfilling our commitment to sharing knowledge with a larger population, have published our first peer-reviewed article based on our fieldwork from the first and second Rufford projects. The article was authored by Yaw Boakye Agyeman, Naomi Nsiah, Agro Prince Pascal & Augustine Oti Yeboah (2022) titled "Hunting behaviour and wildlife value orientations of farmer-hunters, Human Dimensions of Wildlife", DOI: 10.1080/10871209.2021.2023710.

Two other manuscripts are being prepared for submission and publication. We are also actively using our social media platforms to share project activities with the general public. We have gained a lot of online followers with some actively supporting our pangolin conservation activities through donations (i.e., in-kind and equipment support) e.g., we received a donation of two monoculars from John H. Probert aka "Johnpango").

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

The project funds were used over 12 months just as anticipated. The Covid-19 pandemic delayed the start of the project. This notwithstanding, the project team believes that more fieldwork and education are needed. Therefore, the project team will continue to monitor the Asukese Forest Reserve and the project

communities while additional funds will be sourced to continue with our pangolin conservation activities and help conserve and ensure the survival of pangolins and other threatened species in the area. We are looking forward to securing additional funds from The Rufford Foundation to initiate our Pangolin Rescue and Habitat Restoration Program which we anticipate will help us to rescue about 150 individual pangolins within and beyond the project area.

9. Budget: 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. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Contingency	100	100		
Cost of technical services (cost of data analysis, printing of reports, publication)	300	300		
Cost of Refreshment: Food and snacks for School Wildlife Clubs members (Periodic)	300	350	+50	Covered by the project team
Cost of Printing Awareness T-shirts and educative materials embossed with Rufford logo	700	1500	+800	These amounts were covered by co-funding from a philanthropic individual (Catherine Barr and Faith Barcroft) and Johnpango
Cost of hiring 4x4 vehicle for fieldwork	1200	1600	+400	
Cost of designing posters, printing questionnaires, scorecards for evaluation and impact assessment, and production of billboards	150	400	+250	
Local protocols: Cost of Community entry/protocols	50	50		
DSA for 2 field assistants for ten months	1200	1200		
Cost of Apeman camera traps	800	800		We were not able to buy the camera traps due to two reasons. There was a ban on package deliveries due to

				the covid-19 pandemic and this could have delayed our planned activities. Secondly, the courier or delivery cost outweighed our budget. Hence, we spent the amount to hire 10 camera traps in addition to the 5 we have to conduct our field surveys
Cost of Radio Airtime (periodic)	150	150		
Health and Safety: Cost of PPEs and Medical Supplies	200	400	+200	This amount was covered by the project team i.e., we used the amount budgeted for workshops to cover the production cost of over 500 reusable (washable) nose masks which were distributed to our project participants
Workshop cost	200		-200	The workshops were cancelled due to the restrictions on public gatherings involving more than 30 participants
Travels: Cost of fuel and maintenance of field vehicle	1200	1500	+300	This amount was covered by the project team i.e., we used the difference of 300 recovered from the DSA for the technical team to cover the additional expenditure on fuel cost to travel
DSA for 4 technical team members (Periodic) for 10 months	2500	2200	-300	The difference of 300 came as a result of the reduction in the number of the technical team members from 6 (planned) to 4 (actual)
Total	9050	10550	+2300	

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

Looking ahead, we at Alliance for Pangolin Conservation – Ghana (Pangolin-Gh) believes that empowering or training the converted pangolin hunters who now serve as pangolin guardians in alternative livelihoods to generate income will go a long way to motivate other hunters to stop the behaviour. By this, we intend to train all six converted hunters plus 10 other community members from each of our project

communities where the WCC has been formed. The beneficiaries will be trained in beekeeping to produce natural honey which will generate sustainable income to support their homes. Each beneficiary will be given two beehives and the needed equipment to facilitate honey production. Honey production is considered a sustainable livelihood intervention as there are good sources of freshwater bodies and citrus stands around the areas. Due to the proximity of the communities to the reserve, bees will be readily available to colonise the hives. Beekeeping is seen as an eco-friendly venture, less stressful compared to hunting, and provides good and sustainable income without causing harm to wildlife and nature.

We also plan to undertake a habitat restoration activity in the Asukese FR aimed at extending the habitats and delimiting the home range of the pangolins. We plan to raise tree seedlings that will be planted to cover the degraded portions of the reserve. Again, part of our planned future project will focus on commencing a national pangolin recovery programme dubbed "Pangolin Rescue Mission" aimed at saving live pangolins from hunters, rehabilitating them, and reintroducing them back into the wild where they belong. This programme will aim to rescue an estimated number of 150 pangolins within one year. We will achieve this aim by increasing our advocacy campaigns through our social media platforms.

We are currently in talks with some communities to collaborate and co-manage their existing community-managed forests or sacred grooves which will eventually serve as a release area for our saved pangolins. The aim is to monitor the sacred grooves, restore them and use them as safe recovery areas for the endangered pangolin species that will be rescued from our future project. Sacred grooves are mainly community-owned, exclusively managed by local communities, and governed by strict traditional laws which prevent activities of inhabitants that have the potential to negatively affect the resident wildlife and plant species. We aim to gain the consent of one or two of the identified community sacred grooves which we can co-manage with the local communities and use as safe areas to protect pangolins. We will then be able to achieve our objective of developing local conservation by-laws within the communities which will prevent the hunting, killing, and consumption of pangolin as meat. We plan to engage some prominent local authorities in Ghana to add their voices to diffuse the idea that pangolin meat is "royal meat" (locally known as Adehyenam) and prevent its consumption.

Finally, we intend to organise the first national forum to discuss the way forward for pangolin conservation in Ghana. We seek to use the platform to raise greater awareness among key stakeholders including wildlife division, traditional leaders, bushmeat traders, representatives from academia, NGOs, etc. the forum will focus on how to develop a national agenda to eliminate the trade in the endangered species and save the remaining populations in their known ranges.

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

Yes, the Rufford Foundation logo was used on all our printed educational materials including posters on the four billboards, t-shirts, and educative banners. Again, The

Rufford Foundation was acknowledged (tagged) in all our public presentations, and social media communications on the project activities. Rufford Foundation was duly acknowledged for funding the project that led to the publication of our peer-reviewed article.

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

Name: Agro Prince Pascal

Role: Project Leader (Awardee) and Founder of Pangolin-Gh

Main Duties: Scheduling project/field activities, leading community rapport sessions, conducting ecological surveys, writing update reports, managing finances of the project, training of field guides, leading monitoring of camera traps, leading community/school awareness campaigns, and monitoring impact.

Name: Augustine Oti Yeboah

Position: Co-Founder of Pangolin-Gh/Project Assistant

Duties: Conducted habitat suitability modelling, conducting ecological surveys, writing reports, managing finances of the project, and leading community/school awareness campaigns and monitoring impact

Name: Asamoah Bofo Francis

Position: Photographer/Video Editor

Duties: Captured most of the images on our project, and also designed our conservation banner and the posters for the billboards.

Name: Amprofi Ampah Amprocie

Position: GIS Expert

Duties: Provided assistance with the development of distributional maps using GIS and habitat suitability modelling

Name: Kweku Owusu

Position: Project Driver

Duties: Drove the project team to and from the project areas, and assisted in mobilizing field equipment throughout the period

Names: Strongman and Wotumi

Position: Field Guides

Duties: Helped in locating sites for pangolins, and assisted in monitoring the camera traps

Ishmael and Naomi: Fortunately got permanent appointments for new jobs after their programs so were not part of the team.

13. Any other comments?

The project team would be grateful if The Rufford Foundation will provide additional funding support for us to continue with our pangolin population inventories, recovery, rescue, and environmental conservation projects in Ghana. We have built

close working rapport with other communities outside of our current operational areas during the second phase of our project and would like to continue the education program to safeguard the vulnerable wildlife populations in the area.

There was a delay to the start of the project activities due to the Covid-19 pandemic. We also had challenges with the university accounts office in the release of cheques to cover the project activities. A change in the top hierarchy of the university during the period also brought some bureaucratic challenges which often delayed our activities. It is good to note that Pangolin-GH is now a legally registered NGO in Ghana (Alliance for Pangolin Conservation – Ghana LBG) hence these administrative challenges will be easily dealt with easily in the future.

Over the two periods of our pangolin conservation programs, we have gained significant media coverage and our activities are being followed by several reputable individuals like Dr Matthew Shirly (Chair, IUCN SSC Pangolin Specialist Group), Dr Dan Challender (former Chair IUCN PSG), other local and international NGOs including the Arocha Ghana, Pangolin Crisis Fund, Pangolin Africa and other pangolin conservation interest groups which can be verified via our Twitter, Instagram and Facebook pages (www.twitter.com/pangolingh, www.facebook.com/pangolingh, www.instagram.com/pangolingh).