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	Kiprop Johnson Kiptoo
Project title	Giving Reptiles a Voice; Living on the Edge of Human Reptile Conflicts-Lake Kamnarok, Kerio Valley-Kenya.
RSG reference	22193-1
Reporting period	July 2017-January 2019
Amount of grant	£ 5000
Your email address	kipropjohnson@gmail.com
Date of this report	28, January, 2019

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
Desktop review of available data on Lake Kamnarok, describe anthropogenic activities and their impacts on habitats and wildlife.				Geographical information and historical background about Lake Kamnarok National Reserve (LKNR) was provided. Threats to LKNR were described which include human encroachment (farming activities, water diversion for agriculture and overgrazing), catchment destruction (encroachment, deforestation uncontrolled burning of charcoal), soil erosion/siltation and growth of hyacinth. The impacts of these threats to wildlife were described i.e. wildlife competing for limited resources and space with humans, death of Nile crocodiles and movement of those which survived into Kerio River in search of favourable habitats as well as siltation and muddy conditions in Lake Kamnarok and effects on large mammal i.e. the African bush elephants.
Investigate, identify and assess Nile crocodile habitat status in Kerio Valley				Nile crocodile habitats and regional conservation/research priorities were identified. Habitats with concentrations of Nile crocodiles were recorded and documented. Nile crocodile nesting places, distribution, abundance and survival were identified. The current statuses of Nile crocodile habitats were assessed and those in need for conservation interventions identified.
Investigate social, economic and cultural factors affecting the adoption of soil and				The underlying root causes of soil erosion, deforestation and land degradation was identified. It was

water conservation practices. (NB: A detailed sample of the questionnaire used in the study can be found at the appendices section of this report)				noted that most locals are not fully aware of conservation measures and how these measures can be adopted to improve agricultural productivity and wildlife habitats. Measures to adopt and conserve the Nile crocodile habitats and the remaining wildlife habitats and ecosystems were formulated.
Investigate Human Crocodile Conflicts (HCCs) with a particular focus on the local Knowledge, Perceptions & Attitudes (KAP).				It was determined that interactions between humans and Nile crocodiles are influenced by activities carried out by people in the rivers, community dams and wetlands. It was also noted that locals perceive Nile crocodiles as dangerous representing risk to humans, domestic animals and livestock. It was concluded that attacks to people, livestock and domestic animals are the major concerns that locals face with Nile crocodiles and are the major cause of the conflicts.
Undertake conservation education for the conservation of reptiles and develop public safety programs to mitigate Human Crocodile Conflicts (HCCs)				Awareness programmes were organised which involved the preposition for the design of warning signs to be installed at Nile crocodile habitats with frequent human access. Conservation education and information talks were undertaken. Conservation educational films were organised and young scholars were educated about avoiding crocodile attacks, about snakes; those venomous and those non-venomous, about reptile biology, ecology and behaviour. Also included was content about snake bites, emergency, first aid and avoidance.

Promote conservation measures to sustainably use resources and restore, conserve the remaining habitats and ecosystems.				Over 4000 seedlings, both indigenous and exotic have been propagated; some are now mature and ready for transplanting. Community mobilisation for construction of gabions in sites identified as prone to deep gully erosion around Cheploch gorge, construction of terraces around Kipsoit Dam to prevent siltation and improve habitats for Nile crocodiles has been finalised. Three dustbins have been designed to promote proper waste disposal and management practices in Cheploch gorge and Kipsoit dam. Restoration activities inside Lake Kamnarok National Reserve will require more time in order to solicit the support and participation of local community in ecological restoration activities and in securing transplanted seedlings against browsing animals.
Undertake reptile surveys at suitable habitats in and around Lake Kamnarok National Reserve				Reptiles were surveyed using visual encounter surveys (VES) and pitfall traps with drift fences. Reptiles were searched along transects, streams, ponds etc. and habitats were characterised using several parameters representing the main habitat features (e.g., vegetation type, presence of rocky outcrops, streams and steepness of the terrain. The reptiles found were documented using photographs and used to educate young generation in the need for reptile conservation. Children were sensitised about reptile biology and ecology and the constant interference/disturbance and fragmentation of their habitats. Young scholars were educated about venomous and non-venomous snakes, about first aid

				in case of snakebite and how to avoid snakebites. However, with the increase in the fatalities of snake bites in the region, there is urgent need for more research especially on the following areas; a) Anti-venom study production programme to reduce snakebite fatalities. b) More education and awareness on first aid in case of snake bites. c) Conservation education on the fragmentation, disturbance and interference of reptile habitats.

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

Land tussle and the existing grazing regime: There is an ongoing land tussle between locals bordering the Lake Kamnarok National Reserve and Baringo County Government. A total of seven sub-locations in Baringo North Sub-County including Muchukwo, Katibel, Keturwo, Konoo, Barwessa, Kaptilomwo and Kuikui fall inside the reserve. More than 3,000 residents bordering the reserve demand for alternative land before moving out. There is open grazing system which is contributing to "the tragedy of the commons". During the study, we found hundreds of livestock grazing inside the reserve and on the fertile land that used to be part of the lake. This situation derailed conservation efforts by hindered efforts to transplant mature seedlings. Recently, Baringo County Government started negotiation with the local community to solve the land crisis and remove hyacinth which is choking the Lake.

Lack of technical and integrative analysis of Nile crocodiles in the Kerio Valley: This included analysis covering their ranges, habitat status, population, spatial ecology and human-crocodile interactions. This limited our capacity to define habitat conservation priorities. The Nile crocodiles were used as the ecological indicators due to their sensitivity to hydrological conditions. Also, inquiries from the locals helped in the identification of habitats which require conservation measures.

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

Determination of social, economic and cultural constraints hindering the adoption of soil and water conservation practices: Soil degradation in Kerio Valley is prevalent at a tragic rate and each year it is increasing substantially. The existing conservation structures have been designed poorly. There is lack of education awareness about new technology and innovation of new conservation measures. These factors highlighted the need to better understand the factors that encourage or discourage

the adoption of soil and water conservation. Our study explored the constraints faced by farmers in using conservation measures and elicited farmers' opinion for the betterment of future conservation initiatives. The results indicated that majority of local farmers are not fully aware of conservation measures. There is limited knowledge on adoption of conservation measures. Locals have little knowledge that conservation agriculture can reduce land degradation, increase crop production and improve the condition of wildlife habitats. The results will be used in the next stages of the project to educate locals understand that as degradation increases each year, the yield crop production will continue reducing substantially. The local farmers will be made aware that soil erosion is the major cause for the decline in crop production in the area and is also contributing to increase in Human Wildlife Conflicts (HWCs).

Assessment of threats to wildlife habitats and ecosystems: Another important outcome of this project is the study of threats to wildlife habitats/ecosystems and the associated risks that human activities pose on the provision of ecosystem services. This is used to guide the formulation and prioritization of available resources for conservation interventions. As stated, the Nile crocodiles were used as ecological indicators to aid in identifying key threats specific to each habitat. Further, critical knowledge gaps existing were identified. This approach will be used in the future to facilitate prioritization of resource allocation for conservation of wildlife habitats and ecosystems.

Study of human crocodile conflicts and the development of education and safety programs: The growing human population and agricultural development present unique challenges to conservation of Nile crocodiles in the Kerio Valley. Although the species is currently listed as Least Concern by the IUCN, the reduction of habitat in Lake Kamnarok combined with continuous and persistent encroachment by humans into the already diminishing lake is causing increased interactions with humans. The Nile crocodiles which now inhabit along sections of Kerio River and community dams find themselves sharing an essential, but a limited resource with humans; in constant competition for space/resources with humans. Our project for the first time in Kerio Valley looked at human-crocodile conflicts from a perspective of knowledge, attitudes and perceptions (KAP) to help understand the causes and consequences of the conflicts, and how it can be mitigated. The results were used in the development of education and safety programmes and are being used to make recommendations in mitigating conflicts. The attacks of Nile crocodiles on people/livestock/domestic animals are dramatic in nature and often result in retaliation. Through education awareness and development of safety programmes, our project "Gave a Voice to Reptiles" and addressed the conflicts between local people and Nile crocodiles. Local people were made aware that the present threats to Nile crocodiles and other wildlife in Kerio Valley are all anthropogenic in origin; initiated and compounded by human activities which are constantly degrading wildlife habitats and ecosystems.

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

The data collectors who were recruited during the project were youth from around the study area. A total of 8 youths were recruited to take part in this project. They received training on survey techniques and learned hands-on experience. During the entire project implementation, light refreshments, food and water was purchased from shops available at the local community centres. The school children received education on the natural history, biology and ecology of Nile crocodiles and other reptiles. They were enlightened about mitigation measures of human-crocodile conflicts through safety and awareness programmes. The young scholars and locals were educated and sensitized on soil and water conservation practices through conservation agriculture. Rim papers (A4) and basic stationery etc. used during interviews and administration of questionnaires were all purchased locally. The t-shirts, interview questions and questionnaires were also printed locally. The materials i.e. scrape metals used to prepare dustbins were also obtained locally. 4WD vehicle and motorbikes hired during project implementation for local running belonged to locals who benefited in one way or another from this project.

5. Are there any plans to continue this work?

Yes. The extent and magnitude of disturbance/interference of wildlife habitats and ecosystems in and around Lake Kamnarok National Reserve indicates that there is still more work needed to be done. The following important elements were identified and are considered in the next stages of the project;

The need for integrated approach to biodiversity conservation and sustainable agriculture: The project revealed that wildlife habitats and ecosystems are being encroached and utilised for agriculture (food crops and grazing). For instance, Lake Kamnarok National Reserve has already been encroached for grazing. Kerio River riparian ecosystem (sections) and shores of Lake Kamnarok have already been converted into agriculture. Land clearing for agriculture, charcoal burning, over-stocking of livestock has led to soil degradation and has negatively impacted the natural environment. Invasive hyacinth species have spread rapidly, blocked the inlet streams, choked the lake and is contributing to the drying of Lake Kamnarok.

Applications of pesticides on farmlands inside the reserve are harming wildlife. The most affected species are grey crowned crane (Endangered; IUCN) which depend on farmlands for food. The ground pangolin (Vulnerable; IUCN) feeding on termites is also facing new threats in the form of pesticide application on farmlands. Thousands of insect pollinators and many other species have been severely affected. The African elephants; also categorised as Vulnerable (IUCN) have been hugely impacted by water scarcity, siltation and muddy waters in Lake Kamnarok.

Projections indicate that human population is expected to grow and food demand is expected to grow even faster. Feeding the growing population using current agricultural methods could result in converting more wildlife habitat to agricultural production. A serious limiting factor is water, as the scarce freshwater used by

people is already devoted to agriculture. It is apparent that agricultural productions need to focus more explicitly on ecologically sensitive management systems. In the next plans to continue this work, we argue that local farmers, agricultural planners and conservationists need to reconsider the relationship between agriculture production and conservation of biodiversity. There is need for an urgent, fully integrated approach to agriculture, conservation and rural livelihoods in the Kerio Valley.

Education and participation/involvement of local communities in ecological restoration of disturbed wildlife habitats and ecosystems: The project investigations revealed that wildlife adjacent communities depend on wildlife habitats for various needs including firewood, grazing, edible wild fruits, vegetables and medicinal plants. This indicates that there is need for education of the local people about the vital ecological services provided by Kerio River and Lake Kamnarok in terms of water storage, river flow regulation, and flood mitigation, recharge of ground water, reduced soil erosion and siltation, water purification, conservation of biodiversity and micro-climate regulation. Through conservation education, the local communities will understand the importance of natural habitats in the provision of ecological services. Through sensitization, locals will comprehend the need for ecological restoration, encourage their participation which will enhance ecosystem recovery, improve its capacity to supply products and services to people and wildlife.

Contribution of County Governments in catchment restoration, protection and conservation: During project implementation, we focused on the two major catchments of Lake Kamnarok i.e. Tugen Hills in Baringo County and Embobut Forest in Elgeyo Marakwet County. The project established that these catchments have been seriously degraded by activities of communities residing in and around them. Human activities such as firewood collection, overstocking livestock, settlements, encroachment, illegal logging for timber and charcoal production is contributing to catchment destruction. There is need for County Government's contribution in ensuring coordinated and participatory restoration of these critical water catchments in the Tugen Hills and Embobut Forest using enrichment planting, natural regeneration and other appropriate means. Going forward, the County Governments' will be encouraged to promote participatory forest management to enhance the livelihoods of forest adjacent communities through involvement in afforestation and restoration among others, promotion of value addition to forest products and encouragement of on-farm forestry to reduce catchment degradation and dependence of forest products.

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

The project results were shared during the education on safety programmes. I am working on publishing two articles from the results of this project i.e. study of human-crocodile conflicts and study of social, economic and cultural factors affecting the adoption of soil and water conservation practices. I am also planning to publish an article on the Crocodile Specialist Group (CSG) newsletter as well as on Nature Kenya nature net (www.naturekenya.org). Additionally, I am finalising a flyer entitled "Biodiversity, Agriculture and Sustainability-Kerio Valley" which will be shared with

officials from the Elgeyo Marakwet County Government and Baringo County Government.

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

The Rufford Foundation grant was used from August 2017 to November 2018. The political atmosphere leading up to the 2017 general elections delayed project commencement until late October 2017. This way, the project took longer period than anticipated. Also, some project objectives took longer duration to accomplish and extended project duration.

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
Scientific Equipment (Purchased 1 Laptop, 1 Projector, 2 Cameras, 2 GPS)	£525	£540	+£15	
Transport cost (1 reconnaissance visit, several trips to study area during implementation, hiring 4WD vehicle and motorbikes during data collection)	£800	£ 800		
Refresher training (Hall hiring, food/drinks during training)	£200	£200		
Allowances for data collectors during surveys on Human Crocodile conflicts and on the constraints on adoption of soil and water conservation practices	£200	£210	+£10	
Purchase toner (HP Lacer jet P100) for printing and photocopying. Purchase basic stationery-pencils, pens, notebooks and Ream papers.	£150	£175	+£25	
Tree nursery establishment for restoration and conservation (Cost of purchasing construction materials, tools/	£900	£915	+£15	

equipment for maintenance, plastic sachets for plant propagation and labour wages).				
Education and awareness creation (Design and print banners, posters and leaflets, purchase food and refreshments etc.	£355	£300	-£55	The remaining £55 was used to cover shortages encountered during tree nursery establishment. The remainder was used during printing, photocopying and in paying allowances for data collectors during surveys.
Purchase plastic buckets, transparent polythene bags and equipment i.e. machetes/forks used to set-up pitfall traps during reptile surveys. Purchase torches, head lamps, leather gloves, cell batteries.	£375	£385	+£10	
Accommodation(Cost of room reservation for project team members in the field)	£350	£300	-£50	£50 was used to support budget for which communication cost (internet data bundles and airtime credit for regular emails and phone calls to project team members i.e. for updates on delegated activities. Some of it was also used to prepare signages and dustbins.
Cost of purchasing First Aid Kit and basic medical drugs. Purchase large extension power cables (4 pieces) for connecting power from wall sockets	£450	£450		
Communication cost (cost of Purchase 2 Modems i.e. mobile internet unit, data bundles for internet access and airtime credit for project administration	£200	£225	+£25	
Cost of designing signage's for marking HCCs hotspot regions	£495	£500	+£5	

and dustbins for proper waste disposal				
Total	**5000**	**5000**		Exchange rate used: £ 1.00 = K.sh 129.00

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

I think it is prudent to study the important elements identified during this project and develop a conservation plan of Lake Kamnarok. The conservation strategy ought to be easy to communicate (for local understanding) and easy to implement. It is important is to design a programme to ensure that all the tree seedlings contained inside the established tree nursery are transplanted and ensured that they grow to maturity. It is of most importance to educate the locals to embrace the culture of "tree growing" other than "tree planting". This will promote and help assure restoration of degraded wildlife habitats and ecosystems. It is also vital to help conserve the remaining, yet threatened habitats in Lake Kamnarok and the wildlife species therein. As mentioned in section 5 of this report, the habitat is significant for species of global and national conservation concern. The next step is to structure this project in such a way that it will have a pragmatic outlook and help constitute conservation success of both habitat and the existing wildlife. A continuation project will be developed to target the adjacent communities (the school children and locals) who share resources with wildlife and provide them with necessary education and practical interventions about biodiversity conservation, agricultural sustainability and ecological restoration of Lake Kamnarok, the reserve and its environs.

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?

The following materials produced and used during project implementation had Rufford Foundation logo on them. These include:

a) The laptop, projector, camera and GPS used for education/results dissemination.
b) All the questionnaires used in data collection.
c) The t-shirts used by the project team members and recruited data collectors.
d) The equipment used in the tree nursery i.e. watering cans.

Additionally, future publications from this project will have acknowledgements to the Rufford Foundation.

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

Mr. Abraham Kipchirchir Barsosio: A dedicated project team member. In 2018, he was appointed the County Executive Committee Member in charge of Water, Environment, Natural resources and Physical planning in Elgeyo Marakwet County.

His support to the project was very paramount and despite his busy schedule, Mr. Barsosio took part in the coordination of project activities.

Mr. Evans Kimeres Koech: Mr. Kimeres worked with full commitment and dedication during the entire project duration. Evans coordinated data collection on Human Crocodile Conflicts and on constraints affecting the adoption of soil and water conservation.

Mr. Amos Kosgei: Project team member and a student at Maasai Mara University-Kenya. Amos took part and participated in all the project activities with hard work and dedication.

Mr. Samson Odero Nyore: contributed immensely during the process of keying in the collected data from the field. He is also assisting in data analysis and assisted in production of educational materials.

All the data collectors recruited during project implementation (**Ms. Lily Kimosop, Mr. Hesbond Kemboi, Mr. Edwin Kiptoo, Mr. Gerald Kipyegen, Mr. Henry Kimetto, Mr. Hillary Kiplagat, Ms. Sylvia J. Kiyai** and **Mr. Dillian Kandie**) all played a significant role in the success of the project

12. Any other comments?

I would like to sincerely thank the Rufford Foundation for the financial support which facilitated this project implementation. Appreciation is extended to the Rufford Foundation Grants' team and to the Rufford Small Grants administrator for effective communication; from the news of RSG grant approval, grant transfer and for confirming safe receipt of our project updates and accompanying photos. I would also want to thank Christine Lippai; the Regional Chair, Crocodile Specialist Group (CSG), East and Southern Africa for encouragement and networks. The same applies to Dr. Simon Pooley, Lambert Lecturer in Environment (Applied Herpetology)-Department of Geography, University of London for sharing an educational template on crocodile attack and avoidance which was very fundamental during education programs. Finally, special thanks to the local people in Kerio Valley who took their time to answer interview questions, to fill in the questionnaires and supporting all the project activities.

APPENDICES BELOW:

Appendix A: Highlighted project photos

Photos: Drying, muddy lake bed of L. Kamnarok (Left) and Invasive hyacinth spp. in L. Kamnarok (Right)

Photos: Boat used to help remove hyacinth spp. from the lake (Left) and N. crocodiles basking on a rock near water channels, L. Kamnarok (Right

Photos: Water channel directing water from the diminishing lake to farmland for irrigation (Left) and Zebras looking for water in the drying L. Kamnarok (Right)

Photos: Heaps of sand used for construction excavated from Kerio River (Left) and workers load the excavated sand for transportation (Right)

Photo: Uncontrolled settlements, encroachment, poor farming methods and limited knowledge on the adoption of soil and water conservation measures has led to catchment destruction and is contributing to the demise of Lake Kamnarok.

Photos: The magnitude and extent of land degradation in Kerio Valley.

Appendix B: Questionnaire (Sample)

Title: Social, Economic and Cultural Factors Affecting the Adoption of Soil and Water Conservation Practices in and around Lake Kamnarok, Kerio Valley in Kenya.

You have been identified and selected for this study. The purpose of this questionnaire is to request you to participate in this study by providing information sought. The information obtained is strictly for academic and research purpose and shall be treated with utmost confidentiality.

Instructions
Please answer all questions appropriately and tick (☑) *all that apply*

Part I: Demographic Information

Age: _____

Marital Status: _____ (Married/ Single/ Widow/ Divorced/

Ethnicity: _____

Household Number: _____ Male _____ Females

Education level: Kindly indicate your highest and partner's academic qualification

Highest academic level	Myself	Partner
Never went to school		
Lower primary (1-4)		

Upper primary (5-8)		
K.C.S.E (form 4)		
A' Level		
Teacher (P1)		
College (diploma)		
Undergraduate degree		
Masters and above		
Other (specify)		

Professional training: _____

Training in soil and water conservation: (Yes/No)

Duration of training ……..……..

Farmer field schools ……..….

Type of activities involved in: _____

Give some details of the enterprise: _____

Income

Amount per month (self): _____ source: _____

Amount per month (spouse): _____ source: _____

Other income sources: (Yes/No)

Explain the sources: _____

Amount of income from other sources: _____

Farming system

(i) Experience in farming (no of years in farming): _____
(ii) Which year did you start living here _____
(iii) Size of your farm _____
(iv) Area currently farming on _____
(v) Land ownership (land tenure):
(Owned with title /owned without title/ Rented/ Borrowed/ an empty plot)
(vi) Crops grown on your farm:

Crop	Acreage	Average production	Where marketed

Attitude towards irrigation water management practices and techniques

Agree or disagree with the following statements related with water use management, using the following rating scale:

1=Strongly Disagree, 2=Disagree; 3=Moderately Agree; 4=Agree; 5=Strongly Agree.

Soil and Water management practices and technologies	**Rating**				
	1	**2**	**3**	**4**	**5**
Terraces are important to protect soil from erosion					
Contour farming assists in reducing soil erosion					
Gabions reduce erosion and stabilize gullies					
Planting of grass or vegetation strips along the contour can assist in protecting soil from erosion					
Protecting the riparian area					
Grass seeding on bare areas can help in stabilizing the soil					
Planting trees can aid in controlling soil erosion					
A lot of livestock cause overgrazing and soil loss					
You need to spend money to protect soil					
Working collectively as a group is easier in soil and water conservation activities					
We need to protect the environment					

Knowledge on soil and water conservation technology

(i) Are you trained in soil and water conservation practices: (Yes/No)
(ii) Where were you trained……
(iii) Length of training: ……..……
(iv) Have you visited other farmers undertaking soil and water conservation: (Yes/No)
(v) Gauge your level of knowledge on the following practices related to soil and water management practices on a scale of 0 to 4 (0= no knowledge, 4 =high knowledge)

Soil and water conservation activities	**Rating**				
	0	**1**	**2**	**3**	**4**

Terracing						
Contour farming						
Stone lines						
Grass strips or vegetation strips						
Protection of riparian areas						
Grazing management (conserve fodder)						
Planting trees						
Seeding with grass species						
Protecting trees to aid in soil stabilization						
Cultivation on steep slopes						
Gabions						
Types of soils						

Collective action

(i) Membership to group (Yes/No)

(ii) Number of groups you are a member _____

(iii) Name of groups _____

(iv) Group activities: marketing of crops ( ); transport provision ( ); loans ( ); merry go round ( ); burial ( ); other name them _____

(v) Are groups involved in soil and water conservation practices: (Yes/No)

(vi) Name of the groups_____

Part 2: Adoption of environmental conservation activities on farm Soil conservation

(i) Terraces on your farm (Yes/No)
(ii) Type ……..……
(iii) Length of terraces on your farm ……
(iv) Grass strips (Yes/No)
(v) Length of grass or vegetation strips ……..
(vi) Grass species used on the grass strips ……..……
(vii) Contour planting (Yes/No)
(viii) Number of contour on your farm ……length ……
(ix) Cut off drains (Yes/No)
(x) Stone lines on contours (Yes/No)
(xi) Length of cut off drains on your farm ……..……

Water conservation

(i) Run off harvesting from roads (Yes/No)
(ii) Storage pond (Yes/No)…….. pond lined with plastic (Yes/No)
(iii) Mulching (Yes/No) type of mulching (plastic/ dead plant material)

Tree planting/Agroforestry

Name of species	Number existing	Where planted: boundary, within the farm, woodlot

Soil Fertility Enhancement

(i) Compost heap (Yes/No)
(ii) Fertilizer application (Yes/No)
(iii) Amount of fertilizer per planting season ……

Grazing management

(i) Zero grazing (Yes/No);
(ii) Type and number of animals kept under zero grazing ……
(iii) Fodder plots (Yes/No)
(iv) Size of fodder plot ……..
(v) Species planted on fodder plot ……..……..
(vi) Fodder conservation (Yes/No)

Riparian Area Management

Removing animals from the riparian zone (area on the banks of rivers and stream) (Yes /No)

Planting vegetation on the riparian area (Yes /No)

Species used:

……
……