

P. O. Box 2494
Iringa
Tanzania
E-mail: info@stzelephants.org
Website: www.stzelephants.org

SOUTHERN
TANZANIA
ELEPHANT
PROGRAM

STEP



Annual Report
January 2021 – December 2021
9th May 2022



Report to:

Tanzania Forest Services Agency (TFS)

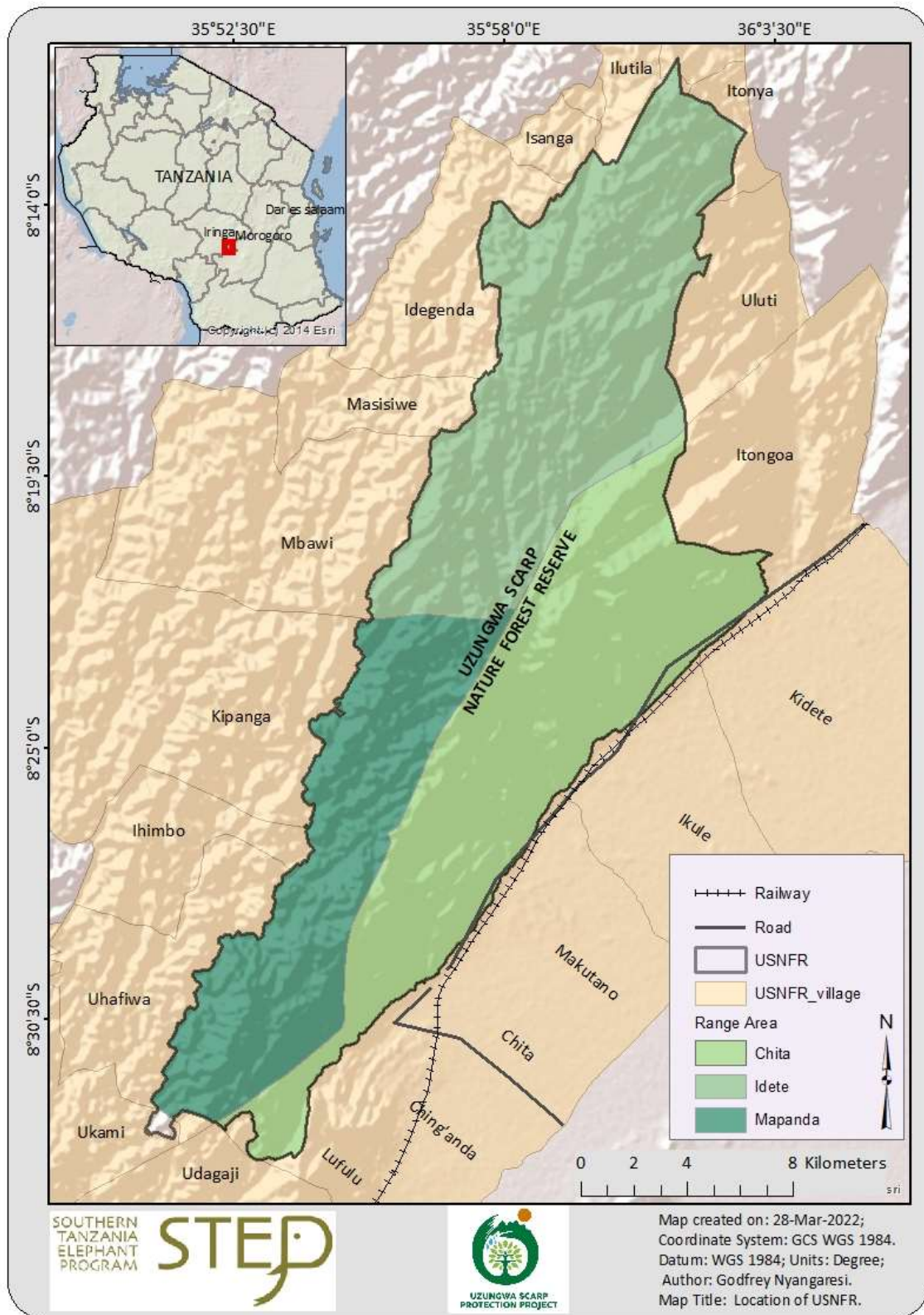
Wild Planet Trust, UK

Fondazione Foresta Futura, Italy

Bristol Zoological Society, UK



PROJECT LOCATION AND IMPLEMENTERS



CONDUCTED BY: SOUTHERN TANZANIA ELEPHANT (STEP) IN COLLABORATION WITH TANZANIA FOREST SERVICES AGENCY (TFS), TANZANIA WILDLIFE MANAGEMENT AUTHORITY (TAWA), AND ADJACENT COMMUNITY VILLAGES



CONTENTS

PROJECT LOCATION AND IMPLEMENTERS	ii
.....	ii
CONTENTS.....	iii
EXECUTIVE SUMMARY	v
MEETINGS	1
Pre-Patrol Meetings	1
Project Meeting Updates	1
TFS-STEP MoU extension	1
TRAINING AND CAPACITY BUILDING.....	2
Village Scouts Training at the Villages Adjacent to USNFR	2
TFS Staff Training	3
PROVISION OF FIELD EQUIPMENT	4
COMMUNITY BENEFITS.....	4
Contribution to the Construction of Ikule Secondary School	4
JOINT ANTI-POACHING PATROL OPERATIONS.....	5
Patrol Team Operations and Management	5
Patrol results	6
a. Summary of Patrols Results	6
b. Wildlife Threats.....	9
c. Illegal Habitat Destruction Signs	11
d. Illegal Hunting Signs	11
e. Confiscated Items	12
f. Summary of Legal Action Against the Offenders.....	13
g. Wildlife Species Encountered During Patrols	13
CAMERA TRAP DEPLOYMENT	13
Camera Trap Deployment Results	14
Arrested Suspects Based on Camera Trap Images.....	14
CHALLENGES	15
SUCCESSSES AND RECOMMENDATIONS	15
APPENDICES	17
2.1 Pre-evaluation form	18
2.2 Post-evaluation form	19
4.2. Post evaluation form.....	22

ABBREVIATIONS AND ACRONYMS

APU	Anti-Poaching Unit
CEO	Chief Executive Officer
EPMD	Effective Patrol Man Days
EPPD	Effective Patrol Person Days
FPC	Forest Protection Coordinator
GIS	Geographic Information System
GPS	Global Positioning System
STEP	Southern Tanzania Elephant
TAWA	Tanzania Wildlife Management Authority
TFS	Tanzania Forest Services Agency
UEMC	Udzungwa Ecological Monitoring Centre
USNFR	Uzungwa Scarp Nature Forest Reserve
USPP	Uzungwa Scarp Protection Project
VGS	Village Game Scout
VNRCs	Village Natural Resources Committees

EXECUTIVE SUMMARY

This report of the Uzungwa Scarp Protection Project (USPP) highlights activities from January 2021 to December 2021. Southern Tanzania Elephant (STEP) has executed this project in collaboration with Uzungwa Scarp Nature Reserve under Tanzania Forest Services Agency (TFS), Anti-Poaching Unit (APU) under Tanzania Wildlife Management Authority (TAWA), and Village Game Scouts (VGS).

Meetings: The aforementioned activities resulted from two meetings each month. These routine meetings between STEP's Protection Department and patrol leaders aimed to prepare the patrol plans and discussing patrol protocols. In August 2021 STEP extended its Memorandum of Understanding (MoU) with TFS to cover the next five-year period and this will enhance the collaboration in the conservation of the Natural Resources.

Technical training workshops: Two training workshops were held in 2021. In May 2021, 214 Village Scouts (32% women) from 17 villages adjacent to Uzungwa Scarp Nature Forest Reserve (USNFR) were trained on Human Rights, uses of GPS, and participatory management. Also, in July 2021, 17 TFS staff (14% women) were trained on conservation technologies (mobile data collector - survey 123 and camera traps), refreshing their GPS skills, as well as reviewing the chain of arrest procedures and Human Rights.

Provision of patrol field gear: In June 2021 and October 2021, STEP handed over patrol equipment to the USNFR Office. The equipment included GPS units, tents, tarps, gumboots, sleeping pads, raincoats, uniforms, cooking utensils, first aid kit contents, and two android smartphones (Black view 9700 Pro). This equipment was handed over to support and improve the efficiency of patrol activities in the Nature Reserve.

Supported joint patrol operations, 19 joint patrols were supported, each lasting for an average of six days. All patrols were strategically planned and executed, with mapping, analysis, and reporting of findings. The effective patrol man-days averaged 77 per month and the total coverage was 784 kilometres of the steep slopes of the Scarp, a 91.8% increase in patrol coverage relative to 2020. Patrols resulted in the apprehension of six suspects, confiscation of 608 items (473 snares inclusive), closure of 11 timber cutting sites, and 23 poachers' camps. Averagely, the patrol teams encountered an average of 40 illegal signs per month categorised as charcoaling, farming, logging, poachers' camp, and snaring. Wildlife observations were encountered 19 times on patrol. Three pilot camera trap deployments were made between July and October (aimed to support patrol teams in the areas with high poaching threats), and resulted in apprehending two suspects.

A community benefits audit was conducted in November 2021, based on the JFMs in the six villages adjacent to USNFR. The assessment process went well, and STEP organized the obtained data for analysis and reporting. Also, fifteen bags of cement were donated by the joint efforts of USNFR and STEP to aid the construction of pit latrines of Ikule secondary schools, one amongst 19 villages bordering USNFR.

Challenges, success, and recommendations: The rainy season was among the challenges which, as usual, limits the patrol coverage. Insufficiency of funds due to the COVID-19 pandemic was another key challenge that faced USPP led to fewer patrols conducted in the first quarter. Also, there was no patrol in December due to a delay in funds. Furthermore, there was a reduction of TAWA armed rangers from four to two due to transfer from southern highland APU. USPP has succeeded to capacitate patrol team members by providing working gear and training 14 and 214 VGS; Various stakeholders have been engaged in the USPP as the collaborative efforts with TFS, TAWA, UEMC, and local communities; and adjacent local communities have benefited from accessing non-timber forest products i.e., for worshipping, herbs, water, and mushroom. 2021 patrol results show the reductions of most illegal activities apart from snaring which needs prolonged effort and some community conservation awareness and benefit works. Based on the availability of funds, STEP is willing to continue supporting USNFR in carrying out protection activities, increasing working gear, strengthening adjacent local communities' involvement and benefits, and the use of conservation technologies to reduce illegal activities.

ACKNOWLEDGEMENT

STEP would like to acknowledge the collaboration from TFS (headquarter, southern highland zone, and USNFR) who have generously provided cooperation in the project's implementation and all related activities. Special thanks to Prof. Dos Santos Silayo (TFS-Conservation Commissioner), Mr Cosmas Ndakidemi (TFS- Zonal Conservation Commissioner-southern highland zone), and the Acting USNFR Conservator, Mr Oscar Nkonomagaka.

STEP would also like to acknowledge with much appreciation the crucial role of the rest of the TFS staff from USNFR, Kilombero Nature Reserves, TFS Iringa and Kilolo offices, southern highland APU Rangers, and Village Game Scouts from USNFR adjacent villages, who were on the ground in joint anti-poaching patrol operations. Likewise, thanks go to Udzungwa Ecological Monitoring Centre (UEMC) for sharing the encountered illegal activities data with STEP and USNFR for further follow-ups.

STEP is grateful for the partnership with Wild Planet Trust – UK, the financial support from Fondazione Foresta Futura – Italy via Association Mazingira, Bristol Zoological Society – UK, and BIOPAMA.

CONFIDENTIAL

MEETINGS

Pre-Patrol Meetings

For this reporting time, two meetings were held monthly. The FPC had a meeting with TFS staff (The Acting Conservator and patrol leaders of USNFR), discussed the previous month's patrol findings, and planned the next month's patrol (Figure 1). After that, patrol team leaders did a debriefing of the patrol plan to the rest of the patrol team, including rangers and the village scouts before executing the plan.



Figure 1: Pre patrol planning at STEP main office.

Project Meeting Updates

On 19th April 2021, the meeting was held at the STEP office with TFS_USNFR acting Conservator and his assistants. The main aim was to provide project progress updates, discuss the upcoming activities with the support of the additional acquired BIOPAMA funds, and lay down the implementation schedule. Also, we agreed on the way forward on jointly extending the Memorandum of Understanding between STEP and TFS.

TFS-STEP MoU extension

A Memorandum of Understanding (MoU) between different project partners enhances the collaboration in the conservation of Natural Resources. In August 2021 STEP extended its MoU with TFS to cover the next five-year period. The agreement between STEP and TFS aims to strengthen the collaborative conservation activities not limited to: the support for the joint patrol operations, enhancing conservation technologies and training of TFS personnel and adjacent local communities, equipping the patrol teams, and supporting local



community engagement in Nature Reserve monitoring and protection. Likewise, Tanzania Wildlife Management Authority (TAWA) entered a five-year MoU with TFS to collaborate on protection activities on Natural Resources protection which reduces the bureaucracy in obtaining rangers for the joint patrols.

TRAINING AND CAPACITY BUILDING

Village Scouts Training at the Villages Adjacent to USNFR

In collaboration with Tanzania Forest Services Agency (TFS), STEP held a six-day training for 214 Village Game Scouts (VGS) and 34 village leaders from 17 villages bordering Uzungwa Scarp Nature Forest Reserve from 19th up to 24th May 2021 (Figure 2 and Appendix 1). The training covered the following:

- Participatory Protected Area Management of USNFR;
- Use of GPS in navigation and patrol data collection, and
- Human Rights. The training included a theoretical part followed by simulations and practical exercises.

Pre- and post-training evaluations showed an improvement and increase in knowledge and skills averaged by (30 to 40 %) and skills as a result of the training workshop (Appendix 1 and Appendix 2). At the end of the training, the trainees voluntarily signed the Agreement of observing Human Rights when conducting their duties. Village leaders officially opened, participated, and closed the training sessions and expressed their support for such a positive initiative. This training will enhance village-based and participatory law enforcement to be conducted in a way that meets the required standards. The conservator urged the participants to help educate their fellow community members on forest conservation and village by-laws to support their efforts.



Figure 2: VGS in different training sessions

TFS Staff Training

STEP conducted a training workshop to strengthen the protection of the USNFR from 14th to 18th July 2021, 14 TFS staff (14% females) were trained on the use of GPS, PAMS a mobile data collector (Survey 123), camera trapping, chain of arrest, and 17 staff (drivers inclusive) on Human Rights (Figure 3 and Appendix 3). The training aimed to equip foresters with new patrol data collection techniques and refresh their GPS skills, as well as review the chain of arrest procedures and Human Rights.

Presentations, interactive discussions, simulations, and practical exercises were applied to enhance participants gaining knowledge and skills in the aforementioned topics. The participants spent two days at Kibebe Farms conducting practical exercises, including the data collection using ArcGIS Survey 123, using handheld GPS devices, and deploying camera traps. Every practical exercise was followed by an in-class discussion to broaden knowledge and resolve the encountered challenges.

This training will enhance forest protection and participatory law enforcement to be conducted to the required standard. Pre-and post-test evaluation questions (Appendix 4) were used to assess the participants' knowledge that they have gained. Considerable knowledge gain, on average 56.5% in all four sessions covered, was demonstrated through the evaluation. At the end of the training, the trainees voluntarily signed the Agreement of observing Human Rights when exercising their duties. At the closing ceremony, certificates of participation in the training workshop were awarded to the TFS staff by the STEP's Protection Manager (Appendix 5).



Figure 3: TFS staff in different training sessions

PROVISION OF FIELD EQUIPMENT

In June 2021 and October 2021, STEP handed over patrol equipment to the USNFR Office. The equipment included GPS units, tents, tarps, gumboots, sleeping pads, raincoats, uniforms, cooking utensils, first aid kit contents, and two android smartphones (Black view 9700 Pro). This equipment was handed over to support and improve the efficiency of patrol activities in the reserve. The USNFR's Conservator was grateful for the donation and emphasised that the equipment will heighten the effectiveness of patrol teams in the Nature Reserve in mobile camping in the forest, and assist VGS, patrol teams in navigation, and camouflaging during patrols.



COMMUNITY BENEFITS

Community Benefits Audit

From 7th up to 14th November 2021, STEP conducted an audit on the community benefits based on the JFMs in the six representative villages adjacent to USNFR. Two villages were selected from each management zone based on population status, socio-economic activities, dominant tribes, and origins of the dwellers. Six participants from each village were selected to participate in the interview (Figure 4). Participants' selection was based on proximity (near, mid, and far from the Nature Reserve), gender, origin, relation with the village leader, and employment status. The assessment process went well. STEP organized the obtained data for analysis and reporting



Figure 4: Community benefits audit interviews

Contribution to the Construction of Ikule Secondary School

On the 26th of November 2021, the USNFR office in collaboration with STEP donated 15 bags of cement (Figure 5) to aid the construction of pit latrines of the newly Ikule Secondary School. The school is located in

Ikule village. The Ikule is among 19 villages bordering the USNFR. From next year, the school will be serving the expected newly formed Ikule Ward with four primary schools and had no secondary school. Recently, more than 400 students traveled about five kilometers to Mchombe Secondary School at the nearby Mngeta Ward (that makes ten walking kilometers a day). This situation (A long and risky walk to school) resulted in the challenges of students’ dropout (averagely 25 students annually) and low performances for students from the Ikule area. https://www.instagram.com/p/CW--KOHtkyK/?utm_medium=share_sheet



Figure 5: Constructed Ikule Secondary School (left) and USNFR officers handing over cement bags to Ikule Village Chairman (right).

JOINT ANTI-POACHING PATROL OPERATIONS

Patrol Team Operations and Management

Nineteen villages are adjacent to the USNFR. The USNFR is accessed through these villages, and the Nature Reserve is divided into three management ranges, namely Chita, Mapanda, and Idete with eight, four, and seven Forest Management Units (FMUs) respectively. The range falls under three districts where Chita is in Mlimba, Morogoro Region; Mapanda is in Mufindi and Idete in Kilolo, both in Iringa Region. In each patrol, an average of 10 participants have involved: four VGS members, two TFS staff, and four Anti-Poaching Unit (APU) armed rangers



Figure 6). STEP assists the patrol teams in organising the patrols, promoting the proper data collection, sharing patrol data, and facilitating the patrol database maintenance, analysis, and report writing. During the patrol, leaders discussed the patrol itinerary with the team members and took records of the patrol, including members’ names, coordinates of the starting point, and the time of departure. In the course of the patrol, the team employed different techniques including searching and ambushing depending on the observation

made. All signs of illegal activity and wildlife encountered were marked with GPS hand-held devices, photos were taken, and recorded in the standard patrol datasheet. Monthly meetings were held at STEP's office and at USNFR headquarters to discuss patrol outcomes. The strategy for forthcoming patrols was adopted based on the comments and lessons learned at these meetings.



Figure 6: Patrol teams' in distinct situations

Patrol results

a. Summary of Patrols Results

From January 2021 to December 2021, STEP supported 19 joint foot patrol operations at the USNFR. The frequency of patrols varied from one to two trips per month, each patrol lasted an average of six days (range five to seven days). No single patrol was conducted in December 2021, due to financial constraints, and Patrols were resumed in January 2022. The patrol teams covered 817 km, an average of 43 km per patrol, and 74 km per month (an increase of 91.8% coverage relative to 2020). The average EPMD was 77 (An increase of 15.3% relative to 2020). The notable variance was due to dual patrols, increased frequencies, and patrol days. These patrols intervened in most illegal activities, including snares, poacher camps, logging, charcoaling, encroachment of farmland, mining sites, and wildfire in the Nature Reserve (n.

Table 1), an average number of Illegal signs were 43 per patrol. All of these patrols were planned and executed based on the strategic plans developed before each patrol. Patrol data were aided with GPS, camera, BV 9700 phones, and patrol datasheets. The BV 9700 phones aided the trial of the using Survey 123 application. The pilot application of ESRI ArcGIS Online seems to work smoothly without expected challenges and will be a useful tool in the management of USNFR in making an informed decision.

Table 1: Summary of patrol results

Month	Forest Management Unit	Management zone	Illegal signs	#Patrol	Patrol days	#Participants	#Illegal signs	EPMD	Coverage (km)
Jan	Ihimbo, Lufulu, and Uhafiwa	Chita, and Mapanda	Encroachment of farmland, poachers' camps, beehives, and snaring.	1	5	10	27	46	32
Feb	Ilutila, Itonya, and Uluti	Idete	Snaring.	1	5	10	36	45	37
Mar	Idegenda, Makutano, Masisiwe, and Mbawi	Chita and Idete	Snaring, poacher, weapon, pieces of timber, and cross-cut saws.	1	5	10	13	34	29

Month	Forest Management Unit	Management zone	Illegal signs	#Patrol	Patrol days	#Participants	#Illegal signs	EPMD	Coverage (km)
Apr	Idegenda, Itongoa, Masisiwe, Uluti, Uhafiwa, Ukami, Udagaji, Lufulu, and Ching'anda.	Chita, Idete, and Mapanda	Poachers' trail, snaring, poachers' camps, and old mining site.	2	13	10	15	75	83
May	Mbawi and Masisiwe	Idete	Snaring and poachers' camps.	2	13	10	65	71	96
Jun	Chita, Ikule, Kidete, and Ihimbo.	Chita and Mapanda	Snaring, poachers' camps, logging, and charcoaling.	2	13	10	71	107	88
Jul	Chita, Ikule, Makutano, and Mbawi	Chita and Idete	Snaring, poachers' camps, and logging.	2	13	10	66	103	95
Aug	Chita, Ikule, Makutano, and Kipanga.	Chita and Mapanda	Poacher, charcoaling, cutting down trees for firewood, and snaring.	2	13	10	36	81	81
Sep	Itongoa, Ikule, Ilutila, Uluti, Itonya, and Idegenda.	Chita and Idete	Snaring, poachers' camps, encroachment of farmland (three farms), tree cuts for firewood collection.	2	13	10	76	94	89
Oct	Mbawi, Kipanga, Ihimbo, Ching'anda, Ikule, Kidete, Uhafiwa, Kipanga	Mapanda	Snaring, poachers' camps, and tree cutting.	2	13	10	31	121	109
Nov	Ihimbo, Itonya, and Uluti.	Mapanda	Snaring, burnt area, and new farm.	2	13	10	39	77	79
Dec									
Total				19	119	110	475	852	817

A total of 63 of 81 grids were patrolled, representing 77.8 % of the Nature Reserve over these 12 months. The most patrolled grid was visited nineteen times and the least patrolled grid was visited once with a patrol coverage of 4.9 and 0.1 kilometres, respectively. (Figure 7) shows the patrol effort in kilometres walked per grid cell (500 m by 500 m). The darker colour indicates a higher intensity of patrol coverage. The rainy season, poor access to the reserve, rangers' permits, and financial difficulties inhibited patrol coverage for various in the first quarter and the last month of the year.

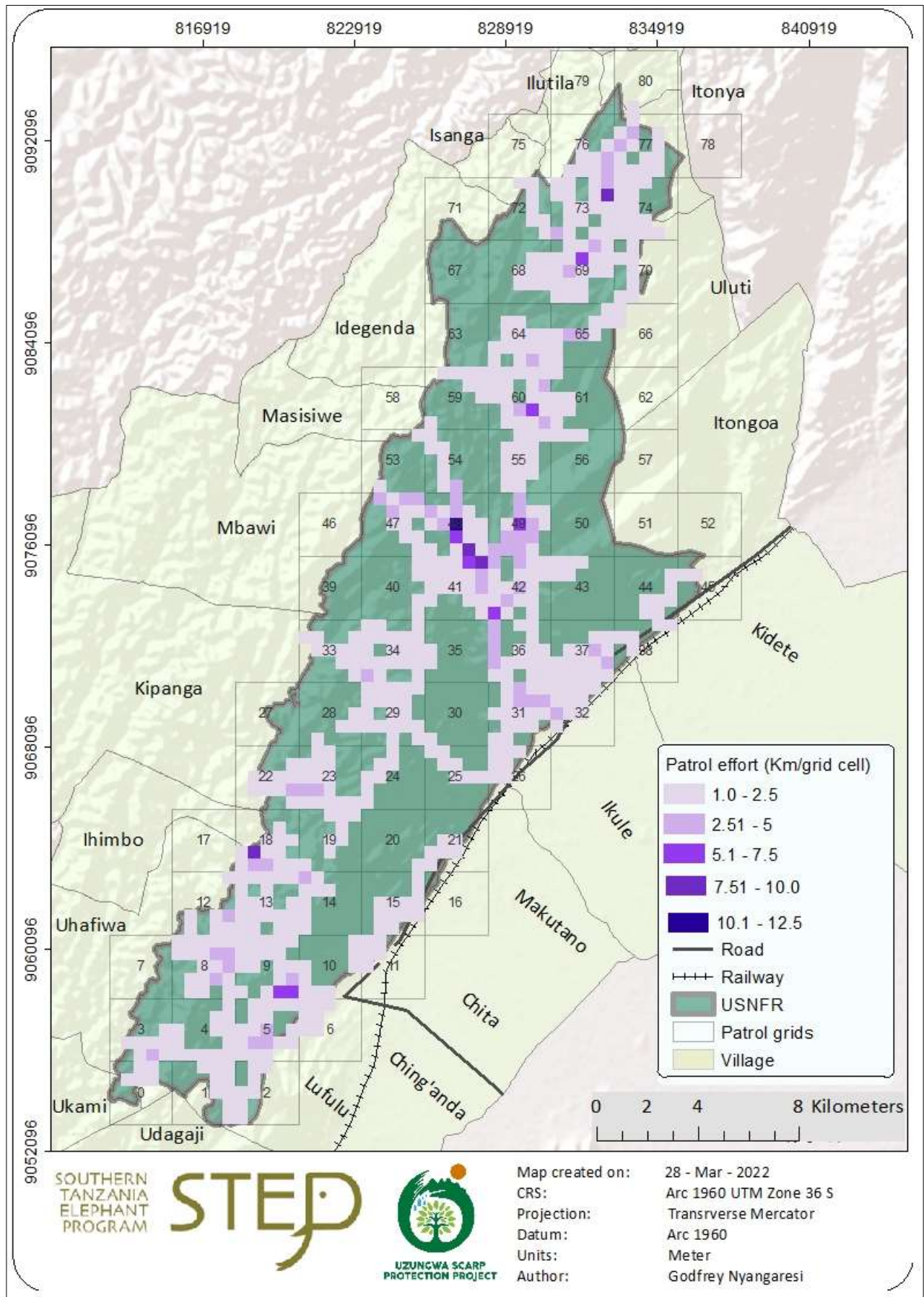


Figure 7: Patrol effort in kilometers per grid cell in the last twelve-month period

b. Wildlife Threats

Table 2 summarises 475 illegal signs recorded. Patrol teams intervened in most of the encountered events and prevented some offenders from committing unlawful activities. The most frequently encountered illegal sign was snare at 81.3%, while the rarely encountered were poachers' trail, carcass, old tree cut, old charcoal kiln, burnt area, and mining site each at 0.2%. Despite patrol team efforts, snaring activities keep rising in the USNFR yearly. Regarding the range area, Idete had most of the encountered illegal activities (attributed to a high number of snares) and the least was Chita.

Table 2: Illegal signs by range areas

Illegal activity		Ranger post area			Total	% Encounter rate [(N/Km) *100]
		Chita	Idete	Mapanda		
Habitat disturbance	Beehive	0	11	9	20	4.2
	Mining site	0	1	0	1	0.2
	Burnt area	0	0	1	1	0.2
	New farm	0	3	0	3	0.6
	New sawing site	11	0	0	11	2.3
	New Tree cut	9	2	1	12	2.5
	Old Charcoal Kiln	1	0	0	1	0.2
	Old sawing site	7	1	0	8	1.7
	Old tree cut	1	0	0	1	0.2
Hunting	Carcass	0	1	0	1	0.2
	Poacher	4	2	0	6	1.3
	Poachers' camp	3	13	7	23	4.8
	Poachers' trail	1	0	0	1	0.2
	Snare	57	217	112	386	81.3
Total		94	251	130	475	100

Patrols were carried out throughout the year in the wet season (December to April) and dry season (May to November). There were slight changes in the habitat destruction signs observed during both seasons. The hunting signs were high in the dry season than in the wet season. The variation may be attributed to fewer agricultural activities to communities around the USNFR as major sources of food and income and opt for hunting. Also, the scarcity of water and less forage material for herbivores makes them concentrate in a few areas and that makes them prone to poaching.



Figure 8 portrays the spatial distribution of the recorded illegal activities. This map shows the locations of each grid and threats posed by human activity. In all patrolled areas, detected illegal activities were all over the Nature Reserve and mostly in deeper areas. Snares, logging, and poachers' camps were frequently encountered.

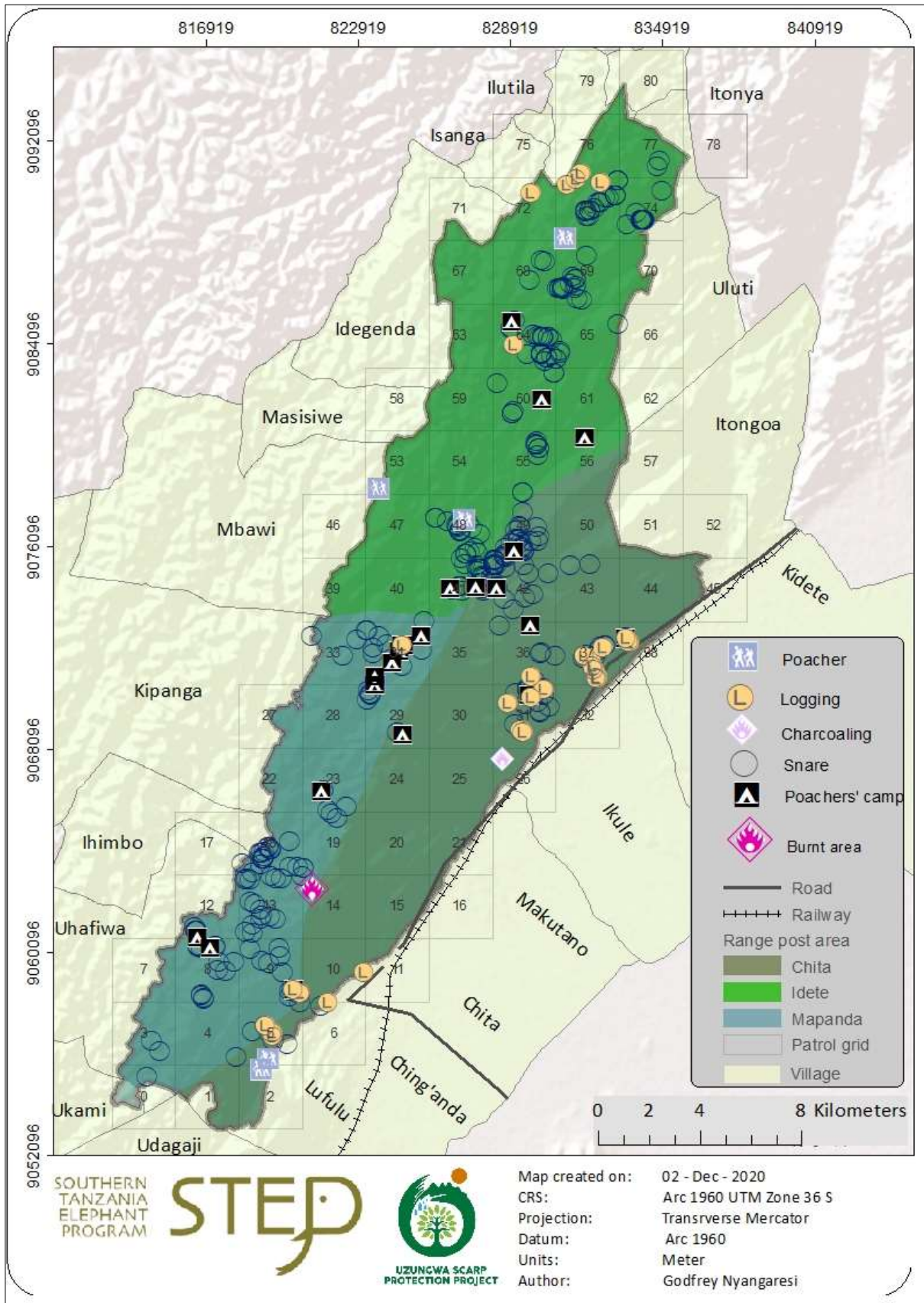


Figure 8: Spatial distribution of the encountered illegal activities at USFNR for the last twelve months.

c. *Illegal Habitat Destruction Signs*

Figure 9 depicts illegal habitat destruction signs comprising encroachment of farmland, logging, local beehives (due to cutting down trees and use of fire in honey harvesting), and charcoaling (n. Table 1). The patrol team recorded 58 habitat destruction signs and arrested three suspects with habitat destruction-related offences. The patrol team destroyed the encountered local beehives and timber sawing sites and confiscated 13 sawn pieces of timber (*Milicia excelsa*) and two crosscut saws.



Figure 9: On the top left is a maize farm, a local beehive at the top right, and on the bottom is a logging activity.

d. *Illegal Hunting Signs*

Illegal hunting signs encountered by the patrol teams comprise carcass, poachers, poachers' camps, poachers' trails, and snares (

Figure 10). The predominant hunting sign encountered (81.3%) was using animal traps. Most of these traps were newly laid and some of the snares were found with trapped animals. Similarly, patrol teams destroyed 23 poachers' camps and arrested three suspects for hunting-related offences.



Figure 10: Some of the encountered snares (left), poachers’ camp (top right), and one of the arrested poachers (bottom right).

e. Confiscated Items

All encountered equipment used in committing illegal activity in USNFR were confiscated by the patrol teams. Then, the equipment were taken to USNFR’s office in Iringa for storage. Snares were the most confiscated item (77.8%) followed by bush knives (16.3%), and the least confiscated items were spears, machetes, spades, and a firearm (muzzleloader) all with less than 1% (Table 3). In collaboration with VNRC, patrol teams had physical meetings for briefing their work and challenges. The VNRC handed over to USNFR the confiscated items from the USNFR.



Table 3: List of confiscated items

Item	Frequency	Percentage (%)
Bush knife	99	16.3
Machete	3	0.5
Cross-cut saw	6	1
Axe	10	1.6
Spade	2	0.3
Snare	473	77.8
Bush meat	9	1.5
Spear	5	0.8
Firearm	1	0.2
Total	608	100

f. Summary of Legal Action Against the Offenders

Table 4 displays the number of apprehended suspects at USNFR and legal actions taken according to the National Forest Act No. 14 of 2002 and Wildlife Conservation Act No. 5 of 2009. Six offenders, all males from Chita and Idete zones were arrested. Offenders faced different legal actions including education, village by-laws, police cases, and fines. One court case was filled while other offenders were judged at the village level.

Table 4: Number of Arrests and legal action taken

Season	Month	Gender	Age	Offence	Zone	FAV	xcoord	ycoord	Action	Fine (TZS)
Wet	Feb	Male	40	Hunting	Chita	Lufulu	819136	9055480	Fined	500000
Wet	Feb	Male	65	Farming	Chita	Lufulu	819404	9055907	Educated	
Wet	Feb	Male		Farming	Chita	Lufulu	819404	9055907	Educated	
Wet	Mar	Male	48	Hunting	Idete	Mbawi	827143	9077118	Police case	
Dry	Aug	Male	37	Charcoaling	Chita	Ikule	832687	9071820	Fined	600,000
Dry	Aug	Male	50	Illegal entry	Chita	Ikule	831113	9069144	Village by-law	

g. Wildlife Species Encountered During Patrols

Several key wildlife species were encountered and recorded during patrols of this global biodiversity hotspot. The patrol team recorded 15 groups of forest vertebrates from nine different species. These include aardvark, duiker, black and white colobus, skyes' monkey, snakes and frog (Figure 11), red colobus, sanje mangabey, and vervet monkeys.



Figure 11: Encountered animals during patrols the Usambara bush viper (left) and camouflaged yellow-spotted tree frog (right)

CAMERA TRAP DEPLOYMENT

The camera traps technique was employed to increase the chances of the patrol teams intervening in poaching incidents in areas where patrols are not regularly carried out. Six camera traps were deployed twice in July and September. These cameras were serviced after a month for each deployment that means in August and October in the Chita and Idete Ranges by the patrol teams (Figure 12). Cameras were set on trees along identified poachers' trails and camouflaged with nearby natural materials resembling the trees' environment.



Figure 12: Patrol team deploying camera traps.

Camera Trap Deployment Results

Based on two deployments conducted, among all photos downloaded from the camera traps, images of suspects were shared with the USNFR’s Conservator, and planned how the patrol team would identify and arrest the suspects (Figure 13).



Figure 13: suspects captured by camera traps

Arrested Suspects Based on Camera Trap Images

The use of informers and village leaders aided the arrest of two suspects who confessed to conducting illegal activities (charcoaling) in the forest after they had seen their photos. The suspects were punished based on village by-laws and Forest Act, No. 14 of 2002 and its regulations.

CHALLENGES

- Rainfall was the main challenge, especially from January to March 2021, and limits the patrol coverage. The patrol team made use of field survival skills to manage patrols during the rainy season. In addition, the team had to work while it was raining and had malfunctioned electronic devices (GPS and digital camera) on some patrol days. Despite these challenges, patrol teams intervened in the poaching activities during the rainy season. Sleeping bags, raincoats, and gumboots were useful in these situations.
- Insufficiency of funds due to the COVID-19 pandemic was the challenge facing USNFR and as a result, single patrols were conducted from January up to March 2021. Furthermore, no patrol was conducted in December 2021, due to fund payments delayed to support project activities.
- Monitoring the permitted villager groups to access the agreeable benefits (i.e., for worshipping, herbs, water, and mushroom) by Village Natural Resources Committees (VNRCs) were somehow difficult in the two villages out of 19 villages surrounding the USNFR. More conservation education to the village leaders and VNRCs will continue to be provided by the USNFR's office to raise supervision roles.
- The Ramsar site, Kilombero valley [area adjacent to USNFR) faced several challenges by the invasion of livestock keepers. This situation leads to the Minister of Natural Resources and Tourism to order the Tanzania Wildlife Management Authority (TAWA) which includes the Anti-Poaching Unit (APU) to transfer rangers from various stations including the southern highland APU to Kilombero Valley for re-enforcement. From that regard, the southern highland APU supported the USNFR with two-to-four-armed conservation rangers instead of four in every patrol based on the availability.

SUCSESSES AND RECOMMENDATIONS

Successive stories:

- *Building the capacity of the patrol team members:* To ensure effective law enforcement, additional patrol equipment (android smartphones, GPS units, and adhesive spray glue) were provided to facilitate effective patrol operations. Furthermore, STEP training 14 TFS staff (14% women) in new patrol data collection techniques (Survey 123 mobile collector), Camera traps operations, and refreshing their GPS skills, as well as reviewing the chain of arrest procedures and Human Rights. Likewise, 214 village scouts (32% women) from adjacent local communities to USNFR were trained on Human Rights, uses of GPS, and participatory management of the Nature Reserve.
- *Stakeholder engagement: in joint management of USNFR:* This project enhances the collaborative joint patrol efforts of Natural Resources Government Agencies TFS and TAWA, and Adjacent Local Communities all work together most constructively. The adjacent local communities have positively responded and participated in the training, joint patrol operations, and community benefits audit. This was a good indication of the intention of local communities' involvement in the protection of the USNFR.
- *Community benefits undersigned Joint Forest Management agreement:* Forest-adjacent communities have been accessing the benefits resulting from non-timber forest products and other natural resources use from the USNFR under the supervision of the VNRCs. As the result, today, more than 85 villager groups that depend most on these resources (i.e., for worshipping, herbs, water, and mushroom) have benefited from the established system. Involvement of local communities in conserving (joint patrol operations) of the USNFR and the legality to access the benefits resulting from non-timber forest products and other natural resources use will help increase a sense of ownership and protection.

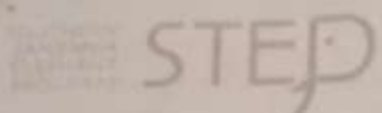

The following recommendations are based on USPP 2021 results:

- 2021 USPP results indicate that protection shows the reduction of most illegal activities while snaring, which is spatially diffused continues to be a problem and needs prolonged effort and some community conservation awareness and benefit works.
- The introduction of using camera traps at USNFR to aid patrolling activities added impacts to law enforcement by increasing the detection of poaching activities. Also, a trial of using Survey 123 Mobile Collector for the collection of patrol data, saves time, increases efficiency, and helps to prioritize patrols. Therefore, we recommend the continuation and adoption of these conservation techniques at USNFR.
- Depending on the availability of funds, STEP will continue to support the joint anti-poaching patrol operations within USNFR in 2022. Patrols for the next USPP year apart from the routine plan should consider revisiting the threatened areas.

CONFIDENTIAL

APPENDICES

Appendix 1: Lufulu VGS training list of participants

WASHA MAALUM YA MAFUNZO YA ASKARI WA KIJIKI JUU YA MATUMIZI YA GPS, DORIA SHIRIKISHI, NA HAKI ZA BINADAMU




MAUDHURIO

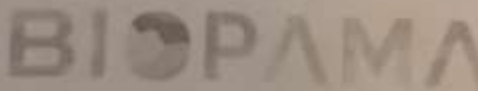

Wazeezaji:

1. Solomon Sembasi
2. Godfrey Nyangaresi
3. Agosty Silver

Tarehe: 22/5/2021
Eneo: LUFULU

No.	JINA	Jinsia	Wadhifa	Taasisi	Namba ya simu	Sahibi
1	XITANASI KALINGA	MS	MWNY-WAMNY	LUFULU	0789-455671	A Kalinga
2	MATWO Y. LUGIDA	MS	MATIBU-WAMNY	==/==	0688-069489	MATWO
3	HABIBA NDANDWA	WE	MJUMBE	==/==	0782-276520	HABIBA
4	MALIANA M. CHOGA	WE	==/==	==/==	0684-548664	M. Choga
5	SIZANA MWINDANGI	WE	==/==	==/==	0683-131304	SIZANA
6	YOHANA MBILINYI	MS	==/==	==/==	0684-782106	YOHANA
7	CHRISTOPHER MWINI	ME	==/==	==/==	-	CHRISTOPHER
8	ZAINABU MURAMU	WE	==/==	==/==	0686-802779	Z.M
9	DIANA KAPYELA	WE	==/==	==/==	-	DIANA
10	XVELINX MTUPA	WE	==/==	==/==	0682-442252	XVELINX
11	ZUEL CHANGAMBE	MS	==/==	==/==	0685-18805	ZUEL
12	KASHIMBE MWANA	MS	==/==	==/==	0682-227217	KASHIMBE
13	ENOCK L. MSHULA	MS	MWNY-MWNY	==/==	162769870	ENOCK
14	MINDILI S. JUMANNE	MS	MATIBU-MWNY	==/==	0784-44527	MINDILI

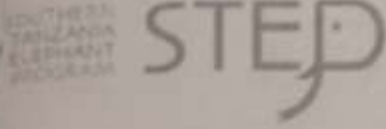





With the financial support of the European Union and the Organisation of African, Caribbean and Pacific States through the BIOPAMA Programme

Appendix 2: VGS Trainees Knowledge Evaluation form

2.1 Pre-evaluation form



STEP




USPP
MEMBER STATE
PROTECTION PROJECT

VGS PARTICIPATORY PROTECTED AREA MANAGEMENT TRAINING
PRE-TRAINING EVALUATION FORM


DATE: 24/05/2021 LOCATION: KIOTE

S/N	Evaluation Question	# respondents (Tally)	Responses (list)	Remark (% of awareness)
1	Define PPAM?	1/1	- Collaboration of the villages in conservation activities.	20%
2	List three importance of PPAM.	1	- To help reducing illegal activities.	50%
3	List three methods of PPAM.	1	- meetings for - groupings	30%
4	List three considerations of patrol operation.	1/1	- Reporting to the village office. - meeting to arrange patrol strategies	60%
5	Who manage USNFR?	1	- Villagers around the forest.	40%

2.2 Post-evaluation form



SOUTHERN TANZANIA ELEPHANT PROGRAM




USPP PROTECTION PROJECT


VGS PARTICIPATORY PROTECTED AREA MANAGEMENT TRAINING
POST-TRAINING EVALUATION FORM

DATE: 24/05/2021 LOCATION: KIDETE

S/N	Evaluation Question	# respondents (Tally)	Responses (list)	Remark (% of awareness)
1	Define PPAM?	/	- Involvement of all the stakeholders in Conservation.	100%
2	List three importance of PPAM?	///	- Helps to identify illegal activities - Increase in patrols - Helps to maintain illegal activities	100%
3	List three methods of PPAM.	////	- Sharing of information - Meetings - Prepare patrol strategies	100%
4	List three considerations of patrol operation.	///	- Information sharing - Labour division - To notify village offices	100%
5	Who manage USNFR?		- Villagers around the Forest reserve - Government	100%

Appendix 3: TFS staff training List of participants





WASHA MAALUM YA MAFUNZO YA WATUMISHI WA WAKALA WA HUDUMA YA MISITU TANZANIA (TFS) JUU YA MATUMIZI YA TEKNOLOJIA ZA UHIFADHI, TARATIBU ZA MILOONGO WA KESI, NA HAKI ZA BINADAMU

MAUDHURIO


Wawezeshaji:


- 1. Frank Lihwa - Meneja wa Uhifadhi, STEP.
- 2. Solomoni Sembosi - Afisa Uhifadhi na Teknolojia, STEP
- 3. Godfrey Nyangaresi - Mratibu Miradi ya Ulinzi wa Misitu, STEP
- 4. Alex Mwita - Mwendesha Mashtaka wa Umma, Iringa DC.

Tarehe: 17/06/2021


Eneo: TFS-IRINGA / MIANDEGE




Na.	JINA	Jinsia	Wadhifa	Taasisi	Namba ya simu	Sahiti
01	YUJINA B KAGYA	KE	FOREST ASS II	TFS-KILOLO	0769158137	[Signature]
02	OLIVER S. LIHULUKU	KE	BLOTICOR II	TFS-KNR	0762030321	[Signature]
03	OSCAR - B. NKONDIMAGAKA	ME	FO II	TFS-USNR	076391532	[Signature]
04	ANWARI H. KENGOTI	ME	BLASISTANT II	TFS-KNR	0765771111	[Signature]
05	ABDALLAH S RULO	ME	FAH	TFS-KAR	0759370411	[Signature]
06	JONAS MWETA	ME	INTERN	STEP-IRINGA	0755914785	[Signature]
07	ELIAS W. AMUJI	ME	FAH CONS.	TFS-KNR	0768054477	[Signature]
08	LUCAS B. BWIFE	ME	FO	TFS-IRINGA	0712857343	[Signature]
09	CHARLES B. MAFURU	ME	CRIT	TAMU(KDU)	0756004477	[Signature]
10	AGAS MSUVEZA	ME	DRV	TFS USNR	0759112404	[Signature]
11	PESSA L NGENDAME	ME	FOREST ASS	TFS-KILOLO	0620897634	[Signature]
12	JONAS I. KALEMGE	ME	FOREST ASS II	TFS-KNR	0626131144	[Signature]
13	SOLOMON K. KALAGE	ME	FOREST ASS	TFS-KNR	0789937150	[Signature]
14	ALEX JOHN MURRAY	ME	FOREST ASS II	TFS-IRINGA	0762140235	[Signature]
15	ROBERT E. NZEDE	ME	DRV IRINGA	TFS-IRA	078861788	[Signature]
16	DAVID MUMELA	ME	CR/PP	KDU-IR	075978715	[Signature]
17	JOSEPH MUYA	ME	DRV	TFS-KILOLO	0766525041	[Signature]
18	DAVID NKANJA	ME	DRV	TFS-KNR	074760976	[Signature]
19	ERNEST MABOAWA	ME	FOREST ASS II	TFS-IRINGA	0717095367	[Signature]
20	PAULUS SAMA	ME	COTT	KDU-IRINGA	0745222017	[Signature]





Bristol Zoological Society
Saving Wildlife Together





With the financial support of the European Union and the Organisation of African, Caribbean and Pacific States through the BIOPAMA Programme

Appendix 4: TFS staff Knowledge Evaluation

4.1. Pre-evaluation form



STEP



UZUNGWU SCARP
PROTECTION PROJECT


PROTECTED AREA MANAGEMENT SYSTEM (Survey 123) TRAINING

PRE-TRAINING EVALUATION FORM


DATE: 14 - June - 2021 LOCATION: TFS - IRINGA CONFERENCE HALL.

S/N	Evaluation Question	# respondents (Tally)	Responses (list)	Remark (% of awareness)
1	List five (05) mobile data collection methods you know.	###	i. <u>Ranball App.</u> ii. <u>SMART App.</u> iii. <u>Kobo App.</u> iv. _____ v. _____	60%
2	Outline three advantages of using mobile data collection.	####	<ul style="list-style-type: none"> • Easy to collect data • Ranball App. • SMART App. • Easy to access & store data. • Easy to do analysis. • Time saving 	80%
3	Mention mobile data collection applications you have used.	##	i. <u>Ranball App.</u> ii. <u>SMART App.</u> iii. _____	66%
4	List five (05) challenges of using Mobile data collection.	###	<ul style="list-style-type: none"> • Battery dry out • Network inaccessibility. • Weather condition (rain). • • 	60%
5	What do you know about ArcGIS PAMS?	+	• An app to draw maps online.	40%

4.2. Post evaluation form



SOUTHERN TANZANIA ELEPHANT PROGRAM



IZUNGWA SCARP PROTECTION PROJECT

PROTECTED AREA MANAGEMENT SYSTEM (Survey 123) TRAINING

POST-TRAINING EVALUATION FORM

DATE: 14 - June - 2021 LOCATION: JFS IRINEA CONFERENCE HALL

S/N	Evaluation Question	# respondents (Tally)	Responses (list)	Remark (% of awareness)
1	List five (05) mobile data collection methods you know.		i. <u>Kanball App</u> ii. <u>SMART App</u> iii. <u>Kobo App</u> iv. <u>Google form</u> v. <u>Cybertracker</u>	100%
2	Outline three advantages of using mobile data collection.	####	- Reduce error - Save time - Simplify data analysis - Obtain data in time at the office.	95%
3	Mention mobile data collection applications you have used.	###	i. <u>Kanball App</u> ii. <u>SMART App</u> iii. <u>Survey 123</u>	100%
4	List five (05) challenges of using Mobile data collection.	###	- Battery dry out. - Need knowledge & skills (literale) - Need time to learn - Weather condition.	100%
5	What do you know about ArcGIS PAMS?	+	- An App developed by ESRI to simplify data collection in managing PA.	100%

Appendix 5: Certificate of participation



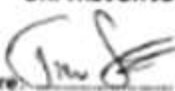
Appendix 6: List of the equipment handed over



**FIELD EQUIPMENT DONATED TO
UZUNGWA SCARP NATURE FOREST RESERVE BY SOUTHERN TANZANIA
ELEPHANT FOR UZUNGWA SCARP PROTECTION PROJECT**

S/N	Item	Qty
1	Camping	
a	Tent	6
b	Mattress	10
c	Tarp	5
d	Vinyl sheet (metres)	12
e	First Aid contents	2
2	Cooking utensils	
a	Saucepan	4
b	Plate	24
c	Cup	24
d	Table spoon	24
e	Water bucket	4
3	Uniform	
a	Staff patrol uniform (trouser, belt, shirt, cap)	5
b	Staff patrol raincoats	5
c	VGS Gumboot	74
d	VGS T-shirt	74
4	Traveling	
a	Sanitizer	24
b	Simba jerk	1

SOUTHERN TANZANIA ELEPHANT
CHIEF EXECUTIVE OFFICER
DR. TREVOR JONES

Signature:  Date: 18/06/2021

**SOUTHERN TANZANIA ELEPHANT
P.O. BOX 2494
IRINGA**

UZUNGWA SCARP NATURE FOREST RESERVE
Ag. CONSERVATOR
OSCAR B. NKONOMAGAKA

Signature:  Date: 18.06.2021

**FOR CONSERVATOR
UZUNGWA SCARP NATURE RESERVE
P.O. BOX 710 IRINGA**