

## Projects Update: October 2018

### Project achievement

In this second phase we achieved the following: -

- ✓ Data collection.
- ✓ Data cleaning.
- ✓ Data analysis.
- ✓ Interpretation of the data (statistical figure and values).

The following are the summary of key findings basing on the project objectives.

Objective1: Local community perceptions towards lion conservation in dispersal areas/communal land in Maasai steppe ecosystem

The assumption that people's attitude towards lion conservation in communal land would be more negative in core area than in control area was supported by the findings from this study see (Table 1 below).

Table 1: Community attitude towards lion conservation in communal land in the Maasai steppe ecosystem

Items	1%	2%	3%	4%	5%	P values and $\chi^2$
<b>Killing or disturbing lion should be allowed by the laws</b>						
Core area	26.7	8.3	3.9	10.6	50.6	p=0.003
Control area	27.8	8.3	2.2	25.6	36.1	$\chi^2=16.408$
<b>If lion is around it's good to give information</b>						
Core area	21.1	12.8	17.2	12.2	53.9	p=0.001
Control area	7.8	2.8	10.6	51.6	27.2	$\chi^2=73.205$
<b>Lion protection is there responsibility of every one in our community</b>						
Core area	18.3	10.6	9.4	12.8	48.9	p=0.001
Control area	8.3	5.0	3.9	51.1	31.7	$\chi^2=62.51$
<b>The only solution to depredation of livestock by lion is to retaliate by kill</b>						
Core area	13.3	13.3	2.8	25	45.6	p=0.001
Control area	73.3	14.4	4.4	1.2	6.7	$\chi^2=167.01$
<b>Lion conservation is beneficial tour community</b>						
Core area	42.8	10	6.1	26.7	14.4	p=0.001
Control area	20	6.7	26.7	20.6	14.4	$\chi^2=59.55$
<b>Government consolations is justifiable</b>						
Core area	41.7	50	4.4	1.7	2.2	p=0.001
Control area	67.2	9.4	1.1	6.1	16.1	$\chi^2=87.7$
<b>It's good to support conservation initiative in our village</b>						
Core area	40	10	8.3	26.7	15	p= 0.0001
Control area	8.3	5	3.8	51.1	31	$\chi^2=67.79$
<b>Outreach program from TANAPA is satisfactory</b>						

Core area	42.8	10	22	26.6	14.4	p=0.001
Control area	19.4	12.8	28.8	22.8	16.1	$\chi^2=43.756$
<b>Conservation based service from TAWA is satisfactory</b>						
Core area	53.9	8.9	7.2	12.8	17.2	p=0.001
Control area	33.9	23.9	17.2	11.1	13.9	$\chi^2=28.77$
<b>Conservation participatory approach is satisfactory</b>						
Core area	47.2	10	8.9	20.6	13.3	p=.001
Control area	18.3	37.2	13.9	17.2	13.3	$\chi^2=53.667$
<b>Lion has to be present in my home land</b>						
Core area	67.8	22.8	5.6	2.8	1	P=0.001
Control area	94.4	5	0.6	0	0	$\chi^2=42.734$
<b>Lion has to be protected and conserved</b>						
Core area	13.4	6.2	12.8	39.4	28.2	p=0.001
Control area	5.6	4.4	3.8	40.6	45.6	$\chi^2=22.02$

1=strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree.

Objective 2. Determinants that influence illegal human-lion killings in Maasai steppe ecosystem

A total of 183 (90 lion killers and 93 non-lion killers), respondents from two major tribes Waarusha (42.1%) and the Maasai (57.9%) were involved in the study. All the respondents were male warriors since they were community members who were responsible for security of members of the community and their properties.

The binary logistic regression model consisted of six predictor variables and explained ( $R^2= 61\%$ ) of the observed variation among factors that influence actual lion killing behavior by Maasai warriors. [Dependent variable = lion killing history (kill=1, not kill=0)]. The model revealed that only four factors could statistically and significantly explain the reasons for the actual behavior of killings lions (See table below).

Table 2: The binary logistic regression model of variables for illegal lion killings

Independent variables	$\beta$	S.E.	Wald	df	Sig.	Exp ( $\beta$ )	95% C.I.for EXP( $\beta$ )	
							Lower	Upper
General attitude	-0.02	0.03	0.731	1	0.39	0.979	0.940	1.020
Traditional customs	-0.05	0.05	0.842	1	0.36	0.953	0.875	1.039
Benefit sharing	-0.27	0.06	19.270	1	0.001	0.763	0.690	0.844
Consolation scheme	-2.25	0.42	28.088	1	0.001	9.449	4.706	18.973
Defensive killing	0.142	0.05	9.718	1	0.002	1.152	1.069	1.241
Social killing	-0.25	0.01	7.282	1	0.007	0.774	0.662	0.905
Constant	-0.05	0.97	.219	1	0.640	0.635		

Objective 3. Seasonal distribution/variation of human illegal lion killings behaviour in the Maasai steppe ecosystem

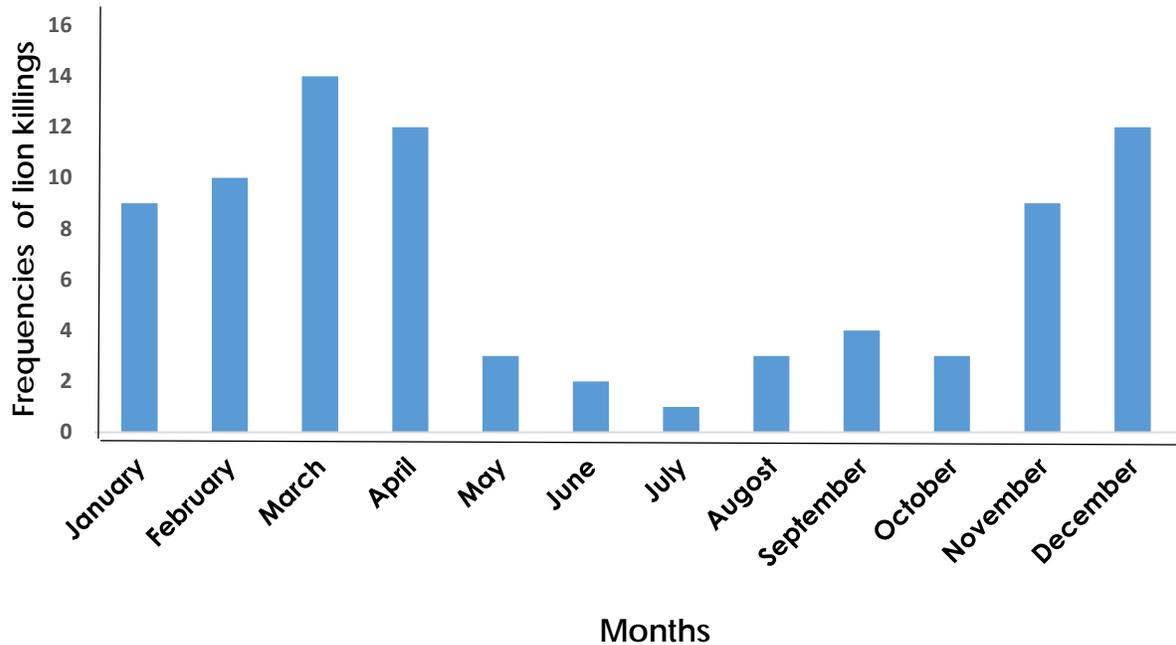


Figure 1: Monthly distribution human illegal lion killings in the Maasai steppe ecosystem (2005-2017). The figure shows highest frequencies lion killings took place during the wet season months (September to April).

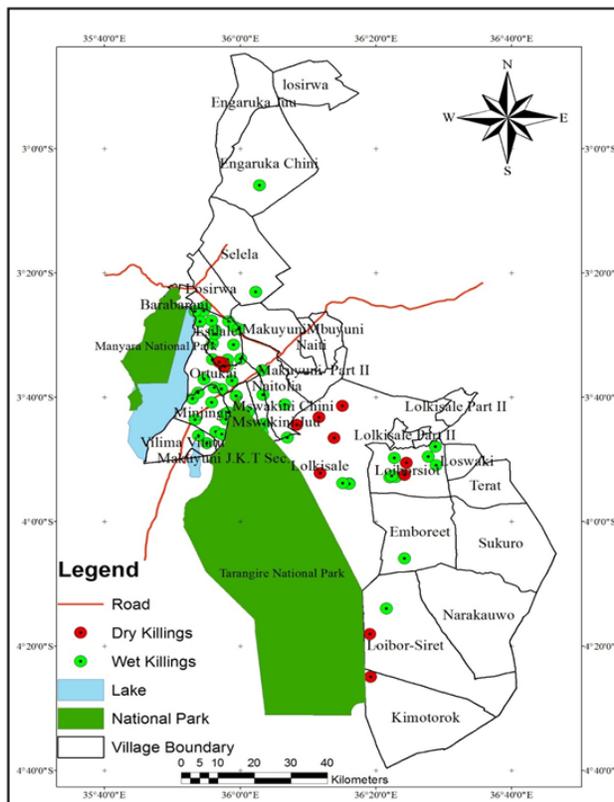


Figure 2: Seasonal distribution of the human illegal lion killings in the Maasai steppe ecosystem (2005-2017). The figure shows highest frequencies of attack took place during the wet season in the area between the national parks (Tarangire-Manyara)

Objective 4. The annual spatial patterns of human illegal lion killings in Maasai steppe ecosystem

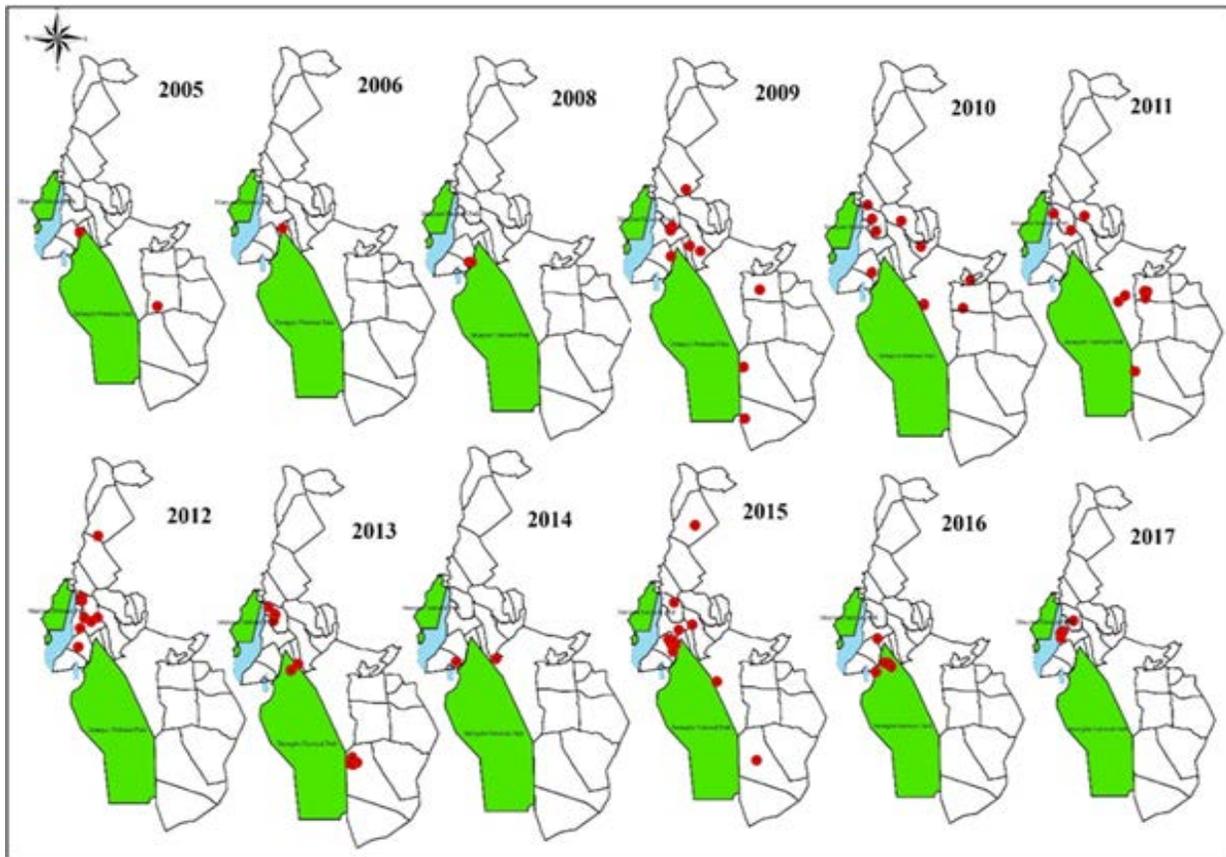


Figure 3: The Annual spatial distribution of the human illegal lion killings in village lands in the Maasai steppe ecosystem from the year 2005 to 2017. The lion killings incidences were rampant in the ester side but slightly clustered in the northern part.

Objective 5. The spatial variable that were associating with the illegal lion killing behaviour

There were only four spatial factors that were statistically significant associating with the illegal human lion killings. See table 3 bellow.

Table 3: Spatial logistic regression

Term	$\beta$	EXP( $\beta$ )	95% CI		P value
			Lower	Upper	
Constant	2.203	0.0520	0.0015	1.7767	0.001
NDVI	-2.96	0.1036	0.0162	0.6620	0.094*
Distance to the road	-2.267	30.3195	5.7171	160.7930	0.025
Distance to the river	3.412	0.3253	0.0864	1.2240	0.001
Distance to the lake	-1.123	1.0239	1.0137	1.0342	0.089*
Aspect value	0.02360	1.0809	1.0505	1.1122	0.001
Distance to the settlement center	0.0778	0.0778	0.0146		0.001